The development and evaluation of a portfolio of learning in the workplace for postgraduate family medicine education in South Africa

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Declaration

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_____ 4 November 2013

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Abstract

A portfolio of learning is one way of showing evidence of performance over a period of time. Worldwide, the need for social accountability and health services reforms has led to an increased interest in competency-based medical education with specific outcomes. Postgraduate training increasingly focuses on life-long adult learning, placing emphasis on close supervision with feedback and workplace-based assessment.

South Africa, although better resourced, faces many similar socio-political and health services challenges as the rest of Africa. The democracy is less than 20 years old, with 80% of the previously disadvantaged population now having access to health services. In this new era medical schools have aligned their curricula to focus on patient-centred primary health care. The huge demand for appropriately trained family physicians has become a national priority. Subsequently, the College of Family Physicians of the Colleges of Medicine of South Africa developed a national exit examination for postgraduate family medicine training. One component of the examination is the submission of a satisfactory portfolio of learning.

The aim of this thesis was to develop a national portfolio for postgraduate family medicine education in South Africa. It needed to be valid, acceptable, useful for learning, and be assessed in a reliable way. The research process involved a collaboration with registrars, supervisors and programme managers from all eight medical schools in the country over four years and culminated in the first national portfolio for family medicine in the country. The thesis was done by way of publication, which involved four articles being published in international journals, outlining the development, implementation and assessment of our portfolio.

Content and construct validity of the draft portfolio was established through a Delphi process. Subsequently, the portfolio was implemented at all eight medical schools. Workshops over two years at all the universities facilitated implementation and provided feedback on the use of the portfolio across the country. After implementation of this initial portfolio, the acceptability,

educational impact, and usefulness for assessment were evaluated through a national survey and in-depth interviews. A portfolio assessment tool was developed and its reliability was established for the overall score. The assessment tool has also been implemented nationally. The portfolio's requirements have made the expectations and challenges of workplace-based learning and assessment more visible, with supervision, safe learning environments and more user-friendly learning and assessment tools needing further research.

The abstracts of the 4 articles are given here.

Article 1: Development of a portfolio of learning for postgraduate family medicine training in South Africa: a Delphi study.

Background

Within the 52 health districts in South Africa, the family physician is seen as the clinical leader within a multi-professional district health team. Family physicians must be competent to meet 90% of the health needs of the communities in their districts. The eight university departments of Family Medicine have identified five unit standards, broken down into 85 training outcomes, for postgraduate training. The family medicine registrar must prove at the end of training that all the required training outcomes have been attained. District health managers must be assured that the family physician is competent to deliver the expected service. The Colleges of Medicine of South Africa (CMSA) require a portfolio to be submitted as part of the uniform assessment of all registrars applying to write the national fellowship examinations. This study aimed to achieve a consensus on the contents and principles of the first national portfolio for use in family medicine training in South Africa.

Methods

A workshop held at the WONCA Africa Regional Conference in 2009 explored the purpose and broad contents of the portfolio. The 85 training outcomes, ideas from the WONCA workshop, the literature, and existing portfolios in the various universities were used to develop a questionnaire that tested the proposed portfolio's content and construct validity. The content and construct of the portfolio was addressed by a panel of 31 experts in family medicine in South Africa, via the Delphi technique in four rounds. Eighty five content items (national learning outcomes) and 27 principles for constructing the portfolio were tested. Consensus was defined as 70% agreement.

For those items that the panel thought should be included, they were also asked how to provide evidence for the specific item in the portfolio, and how to assess that evidence.

Results

Consensus was reached on 61 of the 85 national learning outcomes. The panel recommended that 50 be assessed by the portfolio and 11 should not be. No consensus could be reached on the remaining 24 outcomes and these were also omitted from the portfolio. The panel recommended that various types of evidence be included in the portfolio. The panel supported 26 of the 27 principles, but could not reach consensus on whether the portfolio should reflect on the relationship between the supervisor and registrar.

Conclusion

A portfolio was developed and distributed to the eight departments of Family Medicine in South Africa, and the CMSA, to be further evaluated in implementation.

Article 2: The national portfolio of learning for postgraduate family medicine training in South Africa: A descriptive study of acceptability, educational impact, and usefulness for assessment.

Background

Since 2007 a portfolio of learning has become a requirement for assessment of postgraduate family medicine training by the Colleges of Medicine of South Africa. A uniform portfolio of learning was developed and its content and construct validity established among the eight postgraduate programmes. The aim of this study was to investigate the portfolio's acceptability, educational impact, and perceived usefulness for assessment of competence.

Methods

Two structured questionnaires of 35 closed and open-ended questions were delivered to 53 family physician supervisors and 48 registrars who had used the portfolio. Categorical and nominal/ordinal data were analysed using simple descriptive statistics. The open-ended questions were qualitatively analysed with ATLAS.ti software.

Results

Half of registrars did not find the portfolio clear, practical or feasible. Workshops on portfolio use, learning, and supervision were supported, and brief dedicated time daily for reflection and writing. Most supervisors felt the portfolio reflected an accurate picture of learning, but just over half of registrars agreed. While the portfolio helped with reflection on learning, participants were less convinced about how it helped them plan further learning. Supervisors graded most rotations, which suggested an understanding of the summative aspects, while only 61% of registrars reflected on rotations, suggesting the formative aspects were not yet optimally utilised. Poor feedback, the need for protected academic time, and pressure of service delivery impacted negatively on learning.

Conclusion

This first introduction of a national portfolio for postgraduate training in family medicine in South Africa faced challenges similar to those in other countries. Acceptability of the portfolio related to a clear purpose and guide, flexible format with tools available in the workplace, and appreciating the changing educational environment from university-based to national assessments. In terms of educational impact and assessment, the role of the supervisor in direct observations of the registrar and dedicated educational meetings, giving feedback and support, cannot be overemphasized.

Article 3: The national portfolio of learning for postgraduate family medicine training in South Africa: Experiences of registrars and supervisors in clinical practice.

Background

In South Africa the submission of a portfolio of learning has become a national requirement for assessment of family medicine training. A national portfolio has been developed, validated and implemented. The aim of this study was to explore registrars' and supervisors' experience regarding the portfolio's educational impact, acceptability, and perceived usefulness for assessment of competence.

Methods

Semi-structured interviews were conducted with 17 purposively selected registrars and supervisors from all eight South African training programmes.

Results

The portfolio primarily had an educational impact through making explicit the expectations of registrars and supervisors in the workplace. This impact was tempered by a lack of engagement in the process by registrars and supervisors who also lacked essential skills in reflection, feedback and assessment. The acceptability of the portfolio was limited by service delivery demands, incongruence between the clinical context and educational requirements, design of the logbook and easy availability of the associated tools. The use of the portfolio for formative assessment was strongly supported and appreciated, but was not always happening and in some cases registrars had even organised peer assessment. Respondents were unclear as to how the portfolio would be used for summative assessment.

Conclusion

The learning portfolio had a significant educational impact in shaping work-place based supervision and training and providing formative assessment. Its acceptability and usefulness as a learning tool should increase over time as supervisors and registrars become more competent in its use. There is a need to clarify how it will be used in summative assessment.

Article 4: The reliability of a portfolio assessment tool for postgraduate family medicine training in South Africa.

Background

Competency-based education and the validity and reliability of workplace-based assessment of postgraduate trainees has received increasing attention worldwide. Family medicine was recognised as a speciality in South Africa six years ago and a satisfactory portfolio of learning is a prerequisite to sit the national exit exam. A massive scaling up of the number of family physicians is needed in order to meet the health needs of the country. The aim of this study was to develop a reliable portfolio assessment tool (PAT) for South Africa.

Methods

Six raters each rated nine portfolios from the Stellenbosch University programme, using the PAT, to test for inter-rater reliability. This rating was repeated three months later to determine test–retest reliability. Following initial analysis of the ratings and feedback from the assessors the PAT was modified and the inter-rater reliability again assessed on nine new portfolios. An acceptable intra-class correlation was considered to be $\geq$0.80.

Results

The total PAT score was found to be reliable, with a coefficient of 0.92. For test–retest reliability, the difference in mean total score was 1.7%, which was not statistically significant. Amongst the subsections, only assessment of the educational meetings and the logbook showed reliability coefficients >0.80.

Conclusion

This was the first attempt to develop a reliable national PAT to assess postgraduate family medicine training in the South African context. The tool was reliable for the total score, but the low reliability of several sections in the PAT helped us to develop 12 further recommendations regarding the use of the portfolio, the design of the PAT and training of raters.

Opsomming

‘n Portefeulje met bewyse van opleiding is een manier om bevoegdheid en prestasie oor ‘n periode van tyd te demonstreer. Sosiale verantwoordelikheid en hervormings in gesondheidsdienste wêreldwyd het gelei tot vaardigheids-gebaseerde mediese opvoeding met spesiefieke uitkomste. Nagraadse opleiding fokus toenemend op lewenslange volwasse leermetodes met ‘n groot klem op nabye toesig, terugvoer en werksgebaseerde evaluasies.

Alhoewel Suid-Afrika beter toegerus is as meeste lande in Afrika, staar die land baie soortgelyke sosiaal-politiese en gesondheids uitdagings in die gesig. Met die jong demokrasie van 20 jaar het 80% van mense wat voorheen nie toegang gehad het tot goeie gesondheidsdienste nie nou wel toegang. Mediese skole het hul kurrikulums aangepas om te konsentreer op pasient-gefokusde primêre gesondheidsorg. Die Kollege van Huisartse van die Kolleges van Geneeskunde van Suid-Afrika het ‘n nasionale eksamen vir nagraadse opleiding in huisartskunde in die land geimplementeer. Een van die komponente van die eksamen behels die inhandiging van ‘n bevredigende opleidingsportefeulje.

Die doel van hierdie tesis was om ‘n nasionale portefeulje vir nagraadse opleiding in huisartskunde in Suid-Afrika te ontwikkel. Die portefeulje moes geldig en aanvaarbaar wees, asook nuttig vir leer en ook op ‘n betroubare manier evalueer kon word. ‘n Proses van samewerking tussen kliniese assistente, toesighouers en programbestuurders van al agt mediese skole in die land oor ‘n periode van vier jaar het die eerste nasionale opleidingsportefeulje vir huisartskunde in Suid-Afrika die lig laat sien. Hierdie is ‘n tesis by wyse van publikasie deur vier artikels wat in internasional journale verskyn het, wat die ontwikkeling, implementering, en evaluering van die portefeulje beskryf.

Die geldigheid van die inhoud en samestelling van die portefeulje was ontwikkel deur ‘n Delphi proses. Nadat die portefeulje geimplementeer was, was die aanvaarding, leerimpak en nuttigheid vir evaluering ondersoek deur ‘n nasionale opname en in-diepte onderhoude. Werkswinkels by al die universiteite het die geldigheid en implemetering van die portefeulje verder versterk. ‘n Instrument om die portefeulje te evalueer was ontwikkel en in gebruik geneem landwyd, en

betroubaarheid van die totale telling was bewerkstellig. Die behoeftes van die portefeulje het die verwagtinge en uitdagings van werksgebaseerde opleiding en evaluering meer sigbaar gemaak, met toesighouding, veilige leeromgewings en meer gebruiksvriendelike leer- en evalueringsinstrumente as areas identifiseer wat aangaande navorsing benodig.

I dedicate this work to Sue-Jëanne and Sanjo and Franki,
who sacrificed close times for lonely times

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During the last four years I have grown to deeply appreciate the value of good supervisors. Without my two study supervisors, Professor Bob Mash from Stellenbosch University in South Africa and Professor Anselme Derese from Ghent University in Belgium, this work would not have grown from the seedling it was to the tree it has become. Their continuous encouragement, close mentorship, and critical and early feedback, have helped me along the road where it is difficult to find many such companions. Indeed, we have become close colleagues and friends.

Part of my stress as a doctor in clinical practice has been how to balance patient care and managerial responsibilities 'at work' with doing a PhD. My team of colleagues in George hospital and the district hospitals have gracefully accepted the delegated responsibilities and supported me without complaints. My managers, Dr Martin Viljoen and Mr Mike Vonk, and the higher provincial government management structures, particularly Dr Linda Herring, have been most accommodating and supportive in allowing me time and leave to pursue my studies.

This work on the portfolio for our country would not have made any sense if it was not for the contributions, criticisms, and concerns of many registrars, supervisors and programme managers from the family medicine departments of all eight universities in South Africa. Throughout this work I was conscious that thoughts should not stay in my head, but should be tested in practice and be moulded by the thoughts of other family physicians and health educators. The support from colleagues in the College of Family Physicians, the various heads of family medicine departments, and the Academy of Family Physicians was simply fantastic. I had the privilege to meet and work with many of these folk, many of whom have become close friends.

The many meetings and discussions with Mr Justin Harvey, the statistician at Stellenbosch University, has given me much insight and cleared many frustrations in the strange world of statistical lingo.

I am very grateful for the financial support I received from the Discovery Foundation, the Harry Crossley Fund, and from the Stellenbosch University Rural Medical Education Partnership Initiative (SURMEPI). These funds have made it possible for me to take sabbatical leave, acquire skills in assessment at the Advanced Assessment Course in London and in qualitative research methods at a Stellenbosch University workshop in Cape Town, attend conferences and present this work to wider audiences at the Ottawa conference in Kuala Lumpur, Malaysia, and the WONCA Regional African Family Medicine conference in Zimbabwe, and visit and learn from like-minded colleagues at four universities in the Netherlands and Belgium. The funds also supported the presentations of multiple workshops around portfolio learning at all eight universities in South Africa.

Without the love, close support and encouragement during many early mornings and weekends from my wife, Sue-Jëanne, and my two daughters, Sanjo and Franki, the last two mentioned who have subsequently left home and started their own studies and lives, I would be much less complete and fulfilled, and again, this work would not have seen fruition. I know that they, and many others, have been faithfully praying that I may remain in good health and persevere towards the completion of this work. God is gracious.

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List of Abbreviations

ACGME	Accreditation Council for Graduate Medical Education
AIDS	Acquired immune deficiency syndrome
AMEE	Association of Medical Education in Europe
ART	Anti-retroviral therapy
BEME	Best Evidence in Medical Education
CanMEDS	Canadian Medical Educational Directives for Specialists
CMSA	Colleges of Medicine of South Africa
CFP	College of Family Physicians
CILPs	Critically intense learning periods
CBME	Competency-based medical education
DOPS	Direct Observation of Procedural Skills
EPAs	Entrustable professional activities
ETC	Education and Training Committee
FP	Family physician
GMC	General Medical Council
GP	General practice
HPCSA	Health Professions Council of South Africa
HIV	Human immune deficiency virus
LMICs	Low or middle income countries
MMed	Master of Medicine

MDR-TB	Multidrug resistant tuberculosis
MDGs	Millennium development goals
Mini-CEX	Mini-Clinical Evaluation Exercise
MSF	multi-source feedback
NCCEMD	National Committee for Confidential Enquiries into Maternal Deaths
NCDs	Non-communicable diseases
NHI	National health insurance
OSCE	Objective Structured Clinical Examination
PAT	Portfolio assessment tool
PHC	Primary health care
RCGP	Royal College of General Practitioners
SA	South Africa
SAAFP	South African Academy of Family Practice
UK	United Kingdom
USA	United States of America
WDI	Worker-disease index
WPBA	Workplace-based assessment
WONCA	World Organization of National Conferences and Associations of Family Physicians
XDR-TB	Extensively drug-resistant tuberculosis
YLL	Years of life lost

List of Addendums

Registrar with portfolio of learning

"Back in 1994 Jensen and Saylor stated 'we believe portfolios should be a recognized legitimate aspect of a course or program, not a busywork activity' – a sentiment that has been echoed consistently by many authors since – both the belief in portfolios, and the concept of embedding them in study or work. It would appear that with substantial and sustained commitment at all levels when implementing a portfolio (organisational, faculty, mentor/peer/supervisor and user) it can facilitate a range of learning and work-based development."

Tochel C et al. The effectiveness of portfolios for postgraduate assessment and education: BEME Guide No 12. Medical Teacher 2009; Vol. 31:320-339.

Chapter 1: Introduction and overview of this thesis

1.1 Brief background

Although South Africa is still perceived as a developing country, it has a significant role to play in sub-Saharan Africa. The country has undergone massive political changes in the last 20 years. Our first democratic elections in 1994 ushered in a new era, in which 80% of the population, previously disenfranchised, could now vote, apply for any job, move around freely, and own property. Our new constitution places a heavy focus on human rights, including the right to basic education and health for all. Some of the implications of these changes are that the country needs to correct many health inequalities of the past that are reflected in the heavy burden of infectious diseases, such as tuberculosis and HIV, as well as poor maternal and child health.(1-3)

Simultaneously, there has been a world-wide movement in the approach to education, including health education and training. Outcomes-based education, competency-based training, and workplace-based assessment have all gradually become part of the learning and teaching environment, replacing traditional pedagogic frameworks of a classroom-based lecture style.(4-12) Since the 1990s there has been a transition from testing to assessment, characterised by the integration of assessment and instruction, with assessment increasingly perceived as useful for instruction and learning in context.(13-18) Assessment of learners, including doctors in training or registrars as they are called in South Africa, is not primarily focussed on measuring knowledge in conventional tests, but has grown into a process that involves various assessment methods, which measure whether construction of meaning has taken place, particularly as registrars learn while they work in the clinical context.(13,19-21) Since 1990 when Miller reported that very few tools existed to measure performance, portfolios have increasingly become part of medical education.(22,23) In South Africa, under- and postgraduate medical education programmes that are responsible for training and

preparing 21st century doctors for the health needs of the country and the African continent, have been influenced by these international changes.(3,24,25) A symposium on portfolios held in Durban in 2007 by the Colleges of Medicine of South Africa (CMSA), explored the differences between logbooks and portfolios and is one example of this shift that is particularly relevant to this thesis.(26,27)

The family physician is seen as the clinical leader within a multi-professional district health team in all 52 health districts in South Africa. To be effective, family physicians need a wide spectrum of competencies that can address 90% of the health needs of the communities in their districts.(28) Family medicine training has been part of the South African landscape for about 20 years, but the discipline of family medicine was only formally recognized in 2007 as a speciality by the Health Professions Council of South Africa (HPCSA). This paved the way for more uniform structured training programmes and assessment methods among the eight university postgraduate training programmes. The College of Family Physicians (CFP) of the CMSA, which is responsible for the assessment of postgraduate family medicine training, subsequently developed a national exit examination for specialist training in family medicine. Part of the national examination includes the submission of a satisfactory portfolio of learning that shows evidence of learning by the registrar over three years in an accredited training complex. The eight university departments of family medicine in the country have identified five unit standards broken down into 85 training outcomes for postgraduate training, which the family medicine registrar must achieve by the end of their training.(29) Beyond the examination the district health managers must also be assured that the family physician will be competent to deliver the expected service.

1.2 Reason for this research

Why did we need to develop a national portfolio of learning for postgraduate family medicine training in South Africa? The answer is really three-fold. Firstly, it is a requirement of the newly established national exit examination for family medicine training through the CFP of the CMSA. Secondly, it is in line with international developments in learning and assessment, particularly in postgraduate medical education. Thirdly, there is a growing local need in each university training programme to find more valid and authentic ways of assessment and learning.

Portfolios were introduced in the last 10-20 years in Europe, the United Kingdom, Australia, Canada and the United States, and also in some of our departments of family medicine in the country, although these were often more like logbooks than portfolios.(23,30-34) A rapidly expanding body of literature has been reporting on the evidence for and experiences of using portfolios in learning and assessment. A systematic review leading to the Best Evidence in Medical Education (BEME) Guide No. 12, concluded that portfolio learning has particular strengths and can work well if the following are taken into account: (30)

- Implementation of a portfolio must be well designed and sustained with high-level organisational support to ensure good uptake;
- a well-informed mentor who gives regular feedback can have considerable impact on uptake;
- registrars and supervisors can be simultaneously sceptical about a portfolio's intended purposes and appreciative of what it can deliver for them personally;
- there is evidence that portfolio users experience increased responsibility for their learning;
- summative assessment of portfolio contents can be reliable when performed by multiple raters, although triangulation with other sources is still recommended;
- the benefits of electronic portfolios include flexibility of access and content, potential for links to other sources, more time spent on the portfolio by the user, and more effective feedback and reflection. Assessments, however, are well correlated in both electronic and paper based portfolios.

Despite this evidence from other contexts there was a need to develop our own context-specific national portfolio that would be based on our own learning outcomes and health needs in South Africa. We were conscious of the factors previously described that would influence the implementation of such a portfolio. Key factors include matching the purpose of the portfolio with its contents and structure, considering the educational changes in the learning environment, and taking cognisance of the context, particularly the clinical context and the roles of supervisors.(35) Consequently, we took a collaborative approach engaging many family medicine registrars, supervisors, and programme managers from all eight university programmes, including all eight heads of family medicine departments, who also serve on the CFP council, in an iterative process over a period of 4 years. This doctorate

study was undertaken to address this need and describes in detail how we went about developing, implementing, and assessing the first national portfolio for postgraduate family medicine training in South Africa.

The central research question therefore was "What is the best design for a portfolio of learning that is valid, reliable, and practical and can be used to assess the competency of registrars in South African postgraduate family medicine education?"

1.3 Aim

The aim of this study was to develop a reliable, valid and practical format for a portfolio of learning that could be used to assess the competency of family medicine registrars in the South African context.

1.4 Objectives

The key objectives of the study were to:

1. Develop and validate a portfolio for assessment of competency for family medicine registrars in the South African context.
2. Implement the portfolio as a summative and formative assessment tool nationally through the CMSA for all family medicine postgraduate registrars.
3. Evaluate the acceptability, educational impact, and usefulness for assessment of the portfolio.
4. Develop and evaluate the reliability of a portfolio assessment tool to standardise portfolio assessment for the CMSA.

1.5 Theoretical framework

The theoretical framework for this research was informed by various theories. Adult learning, or andragogy, and theories of critical reflection, namely reflexivity, postmodernism, and critical theory all played a role.(36-39) Reflexivity related to awareness of how our personal

and discipline-specific perspectives impact on our learning, while postmodernism encouraged us to explore alternative options to conventional ones, and critical theory explored how our learning related to the sociocultural and broader healthcare environment.(36) Furthermore, we embraced the suggestions from literature that propose a hermeneutic, constructivist approach to portfolio development and assessment.(21,40,41) Hermeneutical theory is part of the social subjectivist paradigm where meaning is created inter-subjectively rather than assuming scientific realism in an empirical universe.(42) Because of the rich, qualitative content of portfolios, the individual nature and context-specificity, we were concerned with how learning is constructed, understood, and captured by registrars in the workplace, and what conditions lead to enhanced learning.(21,43) However, to remain practical, appreciating limitations in the clinical context, especially around supervision, where concepts of credibility, trust, prolonged engagement, persistent observation, and supervisors assessing from various perspectives are well recognized, we often took a very pragmatic approach.(21,44)

1.6 Overview of the thesis

Figure 1.1 gives an overview of the thesis and the steps that were taken to carry out the work and fill the knowledge gap.(45)

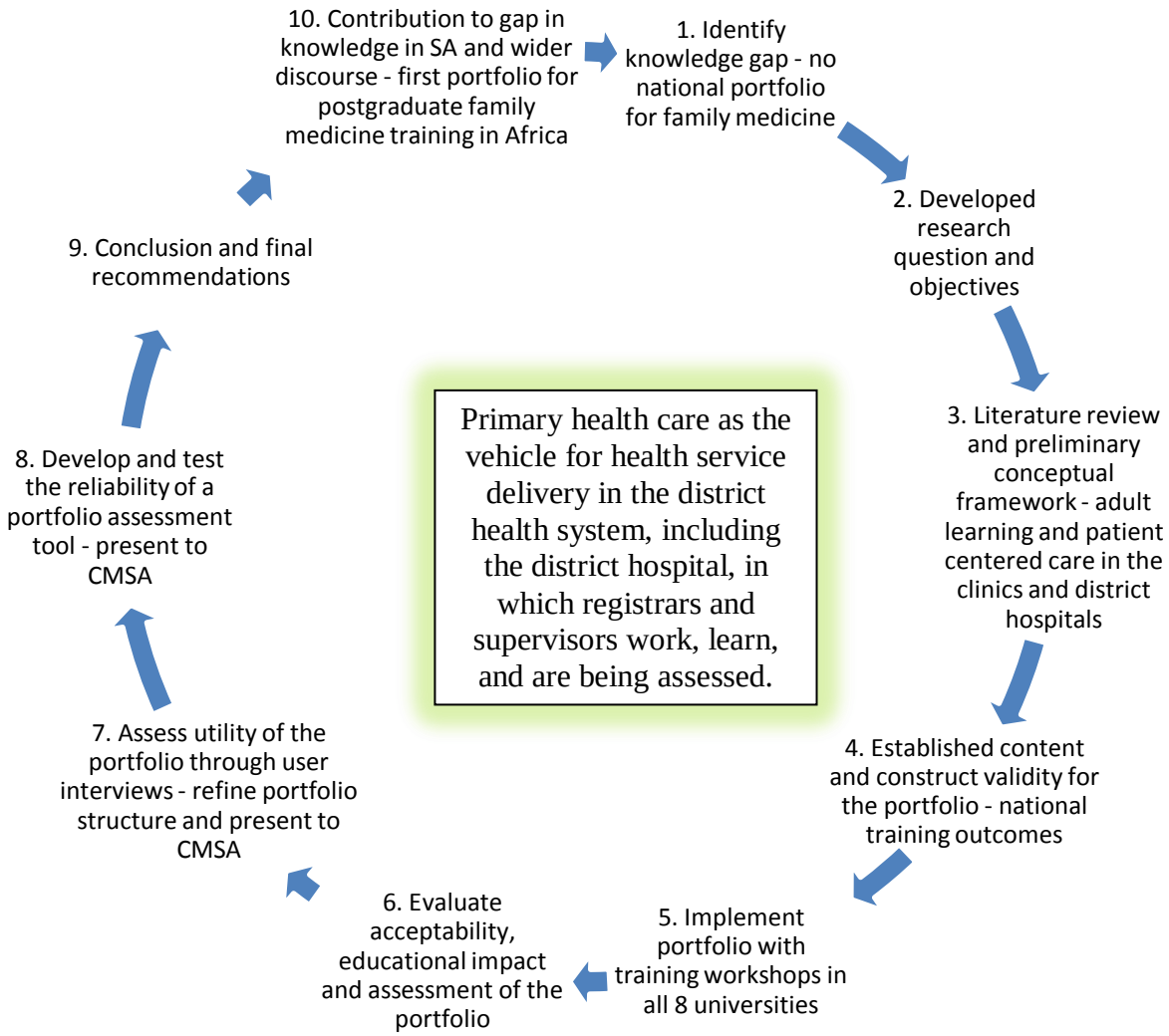

Figure 1.1: Overview of this thesis (adapted from Leshem and Trafford 2007) (45)

The identified knowledge gap was the absence of a valid, reliable, and practical national portfolio of learning that could be used in postgraduate family medicine training. This identified gap led to the final research question, aim and objectives that are described above. A thorough literature review was performed, which helped establish a preliminary conceptual framework. This framework became much clearer as the research progressed, and the final framework is presented in Chapter 5. For easier understanding it is briefly mentioned here. This framework embedded the portfolio in the centre of a relationship between the registrar and supervisor in the primary health care clinic or district hospital, whilst attending to a patient. It is vital that the whole aim of assessing performance in formative and summative ways continually focuses on how it ultimately benefits the patient, their families, and their community. The next step in the process was to develop a draft portfolio and to establish its

content and construct validity. After reaching agreement on the content and structure of the portfolio, it was implemented countrywide through a series of training workshops at all the universities. Feedback from these workshops helped to design the next step, which was to evaluate how practical the use of the portfolio was, particularly the acceptability, educational impact and usefulness for assessment of the portfolio, by means of a national survey. These same issues were further assessed through qualitative interviews with registrars, programme managers and supervisors, to make final adjustments to the portfolio, after which the final product was presented to the CMSA for approval. The final step involved developing a reliable portfolio assessment tool (PAT), which all eight training programmes in the country could use to assess the portfolios. This would also enable the formal recommendation to the CMSA as to whether a particular portfolio was satisfactory or not. Finally the thesis concludes with eight recommendations or implications, with a brief discussion on each one.

Chapter 1 gives an introduction to and overview of the thesis (Point 1 and 2 in Figure 1.1). The knowledge gap is identified and the research question, aim and objectives are specified.

Chapter 2 gives an overview of the South African health context into which the portfolio was introduced. Per definition the purpose of the portfolio relates to showing how the registrar learns and develops during normal service delivery in the work place. It is therefore essential to clearly understand what this complex health environment looks like within which this tool must be used (Point 3 in Figure 1.1).

Chapter 3 gives an overview of the development of medical education, particularly competency-based medical education and work-place based assessment over the last century. Apart from a rapidly changing socio-political and health service environment, the medical education and assessment climate has also been changing dramatically. The portfolio, as a learning and assessment tool, is one component of a much larger paradigm shift that has taken place over the last few decades, and it is essential that registrars, trainers and service managers are aware of these changes (Point 3 in Figure 1.1).

Chapter 4 contains four articles that sequentially illustrate the process of our portfolio development. All of these articles have been published or accepted for publication in line with the regulations for a PhD by publication.

- Article 1: Development of a portfolio of learning for postgraduate family medicine training in South Africa: a Delphi study. Published in BMC Family Practice 2012, **13**:11. (Point 4 in Figure 1.1).
- Article 2: The national portfolio of learning for postgraduate family medicine training in South Africa: A descriptive study of acceptability, educational impact, and usefulness for assessment. Published in BMC Medical Education 2013, **13**:101. (Point 5 and 6 in Figure 1.1).
- Article 3: The national portfolio of learning for postgraduate family medicine training in South Africa: Experiences of registrars and supervisors in clinical practice. Accepted for publication by BMC Medical Education, 31 October 2013. (Point 7 in Figure 1.1).
- Article 4: Reliability testing of a portfolio assessment tool for postgraduate family medicine training in South Africa. Accepted for publication by the African Journal of Primary Health Care and Family Medicine, 31 August 2013. (Point 8 in Figure 1.1).

Chapter 5 contains the conclusion and recommendations derived from the 4 articles (Point 9 in Figure 1.1).

1.7 Ethical considerations

The PhD study was carried out in compliance with the Helsinki Declaration and approved by the Health Research Ethics Committee of Stellenbosch University (Reference number N09/10/258).

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Registrars doing a caesarean section on a patient in a district hospital, with the supervisor present.

Registrars doing an exchange transfusion on a jaundiced neonate in a district hospital, with the supervisor observing.

Chapter 2: Health, health services, family medicine and the context of training.

2.1 Introduction

This chapter outlines the realities of the South African health environment, describes the challenges facing the health services, and then gives an overview of the contribution of family medicine to the country's health needs. In order to understand how registrars are being educated in health it is imperative to understand the socio-political and health policy environments in which their education is taking place.(1,2) It is in this complexity that we find the registrar and patient, being supervised and assessed by a clinical trainer, and building his or her portfolio of learning.

2.2 South African demographics

South Africa is a country with 51 770 553 inhabitants, spread out over 1 220 813 square kilometres, at the southern tip of Africa.(3) The historic roots of many of the current health challenges and issues can be identified well before 1994, when political, economic, and geographic policies structured society according to race. These policies greatly influenced the organisation of social life, access to basic resources for health, and health services. During 1994 the country underwent a political transformation towards its first non-racial democracy. Today South Africa is a multiracial democracy, comprising of 79.2% black Africans, 9.2% white, 9.0% coloured, and 2.6% Indian people.(4)

The official unemployment rate is 25.5% with only 53.6% of households living in dwellings that are fully owned and 12.1% of households are living in informal housing.(5,6) While access to electrical power is relatively high nationally (82.7%), 47.2% of households in Limpopo and 36.0% of households in the Eastern Cape still rely on wood or paraffin for cooking.(6) Likewise, while nationally 89.5% of households have access to piped water; this figure is only 56.8% in the Eastern Cape. While 60.1% of households nationally have access to flush toilets, the proportion of households that have no access to sanitation or rely on the bucket system is still high in the Eastern Cape (17.0%), Limpopo (7.9%) and Northern Cape (7.6%). Ownership of refrigerators had increased from 51.2% in 2001 to 68.4% in 2011. However, the most dramatic change is in access to cellular telephones (from 32.3% to 88.9%).(7)

Vulnerable groups in South Africa have been identified as children, youth, women and the elderly.(8) It has been shown that the burden of the major categories of ill-health and disability is greater amongst lower socio-economic groups, although limited data on two non-communicable diseases (diabetes and hypertension) suggested that these conditions are becoming more evenly distributed over time.(9)

2.3 The health environment

The country's health sector can be broadly divided into a private sector that mainly serves the affluent and insured, and a public sector that must meet the needs of the majority (85%) of the uninsured population.(10) These public health services have been organised into nine provincial departments of health, divided into 52 health districts as shown in Figure 2.1.(11)

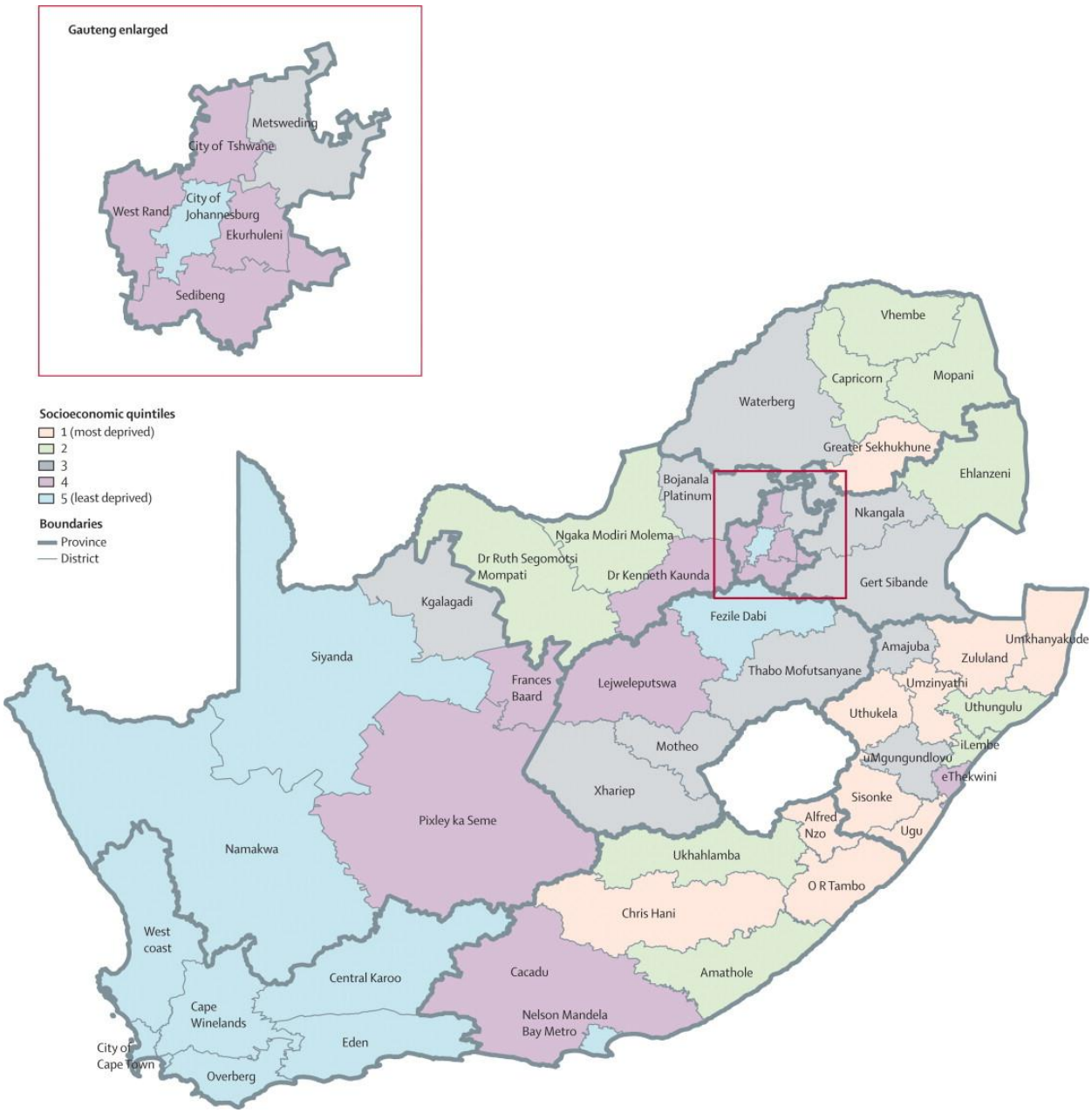


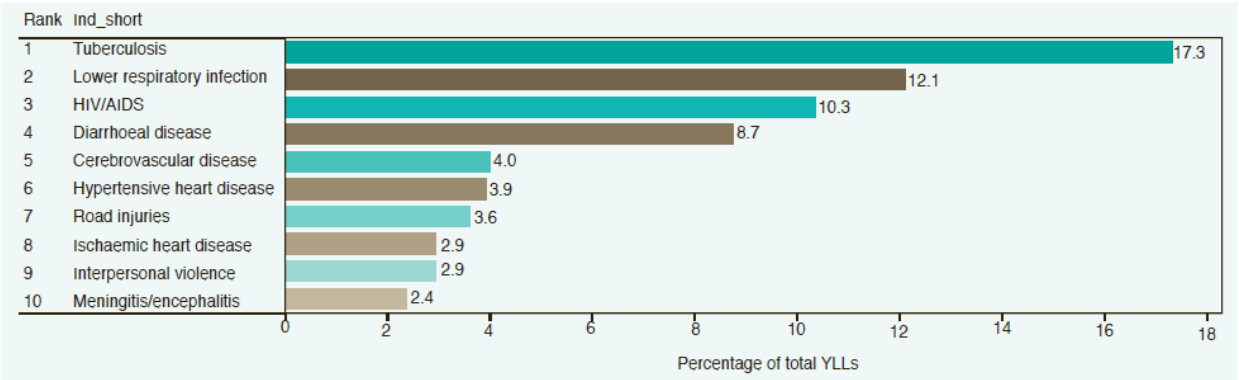
Figure 2.1: Map of the 52 health districts in South Africa

During the past 18 years health policy in the country has aimed to redress the inequities of the past, through various news laws and regulations, by extending access to primary health care and revitalising district health services.(12) At the South African Medical Association conference in 2010, the national minister of health, Dr Aaron Motsoaledi, elaborated on several issues. Countrywide a massive up-scaling of health facility infrastructure is taking place (well beyond the extent of the 2010 Soccer World Cup stadia), the HIV/AIDS pandemic is being systematically managed in national programmes, the country's nursing

colleges, many of which were closed in 1986, are being re-opened and a ninth medical school (the current eight have been producing 1200 doctors per year for the past 8 years) is planned to compensate for the current 35% shortfall in existing public sector posts.(13)

Large differences exist in the relative burden of diseases between the nine provinces, for example the years of life lost (YLL) per 100 000 population in KwaZulu-Natal is double that in the Western Cape, which is the province with the lowest premature mortality. HIV/AIDS, homicide/violence, tuberculosis, diarrhoea, road traffic accidents, and lower respiratory infections were the leading causes of premature mortality in all provinces in 2000 with deaths from HIV/AIDS ranging from 14% of total years lost in the Western Cape to 51% of the total in KwaZulu-Natal.(14,15)

In 2009, the most common cause of death remained 'certain infections and parasitic diseases', accounting for 25.0% of all deaths. This included 1 184 deaths due to multidrug resistant tuberculosis (MDR-TB) and 151 deaths due to extensively drug-resistant tuberculosis (XDR-TB), representing increases of 65.6% and 11.0% over 2008, respectively. The second most common cause of death was 'diseases of the circulatory system', which accounted for 14.7% of reported deaths.(16) Figure 2.2 illustrates the most common YLL for SA in 2009.(17)



Source: DHB 2011/12,[54] based on analysis of StatsSA Causes of death 2009.

Figure 2.2: Leading causes of years of life lost (YLL) for South Africa in 2009 (17)

One of the country's greatest challenges is the control of the concomitant HIV and tuberculosis epidemics. HIV continues to spread and tuberculosis has been declared a

national emergency. In 2007, South Africa, with 0.7% of the world's population, had 17% of the global burden of HIV infection (23 times the global average), together with one of the world's worst tuberculosis epidemics, at seven times the global average compounded by rising drug resistance and HIV co-infection.(13) Care for acutely ill AIDS patients and long-term provision of anti-retroviral therapy (ART) are two issues that dominate everyday medical practice in the health-care system. Among other steps, adequate human resources and sustainable development of health-care services are needed to combat these epidemics.(18)

A recent review looking at progress since the 2009 Lancet 'Health in South Africa' series, optimistically noted that although life expectancy in the country has increased to 60 years (predominantly, but not exclusively as a result of the scaling up of the HIV treatment programme), the country is still burdened with the four so-called "colliding epidemics", namely HIV and tuberculosis; chronic non-communicable diseases and mental health; injury and violence; and maternal, neonatal, and child health issues.(19-21) South Africa has the world's largest programme of antiretroviral therapy, with 2 million people accessing ART at the end of 2012. Consequently, the national mother-to-child transmission of HIV rate has been reduced from 30% to below 3%.(7) The reported prevalence of tuberculosis in 2011 was 993 per 100 000 population, with South Africa being one of 4 countries contributing to 60% of the world's MDR-TB burden.(22) Globally, and also in South Africa, the burden of non-communicable chronic diseases has risen, with an aging population and diseases of lifestyle becoming more prevalent.(23) The South African Health Review of 2013 reports that non-communicable diseases (NCDs) now account for 37% of all-cause mortality and 16% of disability-adjusted life years in South Africa. The 'big four' NCDs are heart disease (including hypertension), cancer, type II diabetes and asthma/chronic obstructive pulmonary disease.(7) This has implications for health care and particularly issues of disability, rehabilitation, and social care, as recent reports concluded that the global disease burden is shifting away from communicable to non-communicable diseases and from premature death to years lived with disability.(24,25) Reviewing the country's progress with achieving the Millennium Development Goals (MDGs), as shown in Figure 2.3, it is clear where to prioritise health service and training resources.(21) While poverty and hunger indicators remain static, universal primary education coverage is on track at 94%, as is MDG 3 regarding gender equality and women empowerment. In terms of MDG 4, the large HIV prevention of mother-to-child transmission programmes has led to a decrease in the 6-week vertical transmission rate of HIV, from 30% in the previous decade to 2.7% in 2011,

benefitting child mortality. However, neonatal mortality has remained more or less static with challenges around postnatal feeding support, including breastfeeding schemes and kangaroo-mother care programmes, neonatal resuscitation for preterm births by district health workers, and non-invasive ventilation at district hospitals.(26) An excellent review of child mortality concluded that "South Africa is one of the countries in which neonatal mortality has remained the same or increased over the last 20 years".(27) The key clinical interventions that are known to make a difference include: providing basic and comprehensive emergency obstetric care, use of antenatal steroids for women in preterm labour, training in immediate care of the newborn and neonatal resuscitation, post-resuscitation management and ongoing neonatal care (e.g. continuous positive airway pressure), especially to babies who are born preterm.(27) This clearly gives an indication of the scope of practice and level of clinical training needed in the district health facilities, especially bearing in mind that most clinical care takes place in environments without adequate specialist support. In terms of MDG 5, there are indications that maternal mortality might be reducing, but disturbingly, the HIV prevalence among young pregnant women has not changed much in the last decade, with the national antenatal prevalence of HIV remaining around 30%.(21,28) It is also clear that there has been little change in mortality associated with non-communicable diseases, with an increased recognition of the interaction between infectious diseases (like tuberculosis) with chronic diseases (like chronic lung diseases). The role of lifestyle modification is also important, for example halving the current salt intake from 10 to 5 g/day could result in 7400 fewer cardiovascular deaths and 4300 fewer non-fatal strokes per year.(21) While overall injury mortality has decreased in the past decade, it seems that the biggest change has been in the indicators for homicide and traffic mortality, while mortality from gender-based violence has not decreased.(21)

Figure 2.3: Progress towards Millennium Development Goals (MDGs) 1-6 and for non-communicable diseases and injuries (21)

[ASSA=Academy of Science of South Africa. IHME=Institute for Health Metrics and Evaluation. VR=vital registration.]

"Falling pregnant, being born, or living for the first five years is very risky in South Africa", admitted the national minister of health, Dr A. Motsoaledi, during a speech in 2010.(13) To address this situation, the Strategic Plan for Maternal, Newborn, Child and Women's health and Nutrition in South Africa sets out the targets for 2012-2016 as follows:(29)

1. Reducing the Maternal Mortality Ratio from a baseline of 310 per 100 000 live births (2009) to 270 (2014);
2. Reducing the Under 5 mortality rate from a baseline of 56 per 1 000 live births (2009) to 50 (2014) and 40 (2016);
3. Reducing the Infant Mortality Rate from a baseline of 40 per 1 000 live births (2009) to 36 (2014) and 32 (2016); and
4. Reducing the Neonatal Mortality Rate from a baseline of 14 per 1 000 live births (2009) to 12 (2014) and 11 (2016).

Detailed plans, for example, involve ensuring all children with diarrhoea receive zinc (currently only 5%) and all district hospitals doing caesarean sections have blood available. Two key issues from the SA Health Review 2013 conclude that there is evidence from the most recent report of the National Committee for Confidential Enquiries into Maternal Deaths (NCCEMD) that institutional Maternal Mortality Rates had decreased in 2011, compared with 2008-2010, attributable to increasing access to ART in pregnant women and the establishment of District Clinical Specialist Teams as one initiative that is intended to strengthen maternal and child health services.(7) South Africa has seen a rapid decline in total fertility in the last 50 years, which is the largest recorded decline in Africa.(30) The recorded fertility rate in 2011 was 2.4, and, interestingly, 67.5% of submitted Notice of Birth forms (DHA-24) omitted mention of the father's details. This supposedly absence of fathers and reliance on mothers as carers has social and child health implications, considering that the majority of deaths in sub-Saharan Africa are due to infectious, maternal, neonatal and nutritional causes, with AIDS the leading cause of death, particularly amongst young women.(31)

Violence, including road traffic accidents and intimate partner violence is part and parcel of South African life, with the country carrying 1.3% of the global burden of injuries.(13) South Africa is among the most violent countries in the world, with the chances of dying violently about 30% higher than in the World Health Organization's AFROa region.(32) The country

has estimated homicide rates of more than eight times the global average among males and five times the global average among females.(33) Interpersonal violence was ranked second among the leading causes of death and disability in SA in 2000 and accounted for 6.5% of all disability adjusted life years (DALYs).(34) In terms of alcohol, South African drinkers are among the top five riskiest globally, with 33% to 40% of drinkers consuming alcohol at risky levels.(7) The South African Stress and Health Survey estimated the lifetime prevalence of mental illness amongst adults to be at 30.3%.(35) These statistics do not escape the registrars, who are exposed to them through their patients, or sometimes being patients themselves, or through having an impact on their supervisors. Work with primary health care (PHC) doctors in Cape Town showed that 76% experienced burnout, 27% of doctors had moderate depression, while 3% were identified with severe depression.(36) It also means the registrars need a wide range of skills, including emergency and surgical skills to deal with physical trauma and obstetric emergencies, counselling skills to deal with substance abuse, chronic non-communicable diseases, intimate partner violence or mental illness, and skills in building personal resilience, to deal with vicarious trauma and maintaining personal health in this environment.

2.4 The health service response

With our democracy now 18 years old and three years after the 2009 general elections that ushered in new national health leaders and legislation, South Africa is undergoing a number of health sector reforms aimed at transforming the public and private health landscapes and overcoming massive inequities between rich and poor. There is a substantial focus on strengthening the effectiveness of health systems, primarily through the introduction of PHC re-engineering and the implementation of National Health Insurance (NHI) as a financing mechanism for the health system.(7) The national department of health has set out a ten point plan in its Annual Performance Plan 2012/13-2014/15, as shown in Table 2.1.(37)

Table 2.1: The National Department of Health Ten Point Plan 2009 – 2014.(37)

The Ten Point Plan 2009 – 2014 consists of the following priorities:

1. Provision of strategic leadership and creation of a social compact for better health outcomes;
2. Implementation of National Health Insurance (NHI);
3. Improving the quality of health services;
4. Overhauling the health care system by:
    a. Refocusing on Primary Health Care;
    b. Improving the functionality and management of the health system
5. Improving human resources, planning, development and management;
6. Revitalisation of infrastructure, with a focus on:
    a. Accelerating the delivery of health infrastructure through Public Private Partnerships;
    b. Revitalising primary level facilities;
    c. Accelerating the delivery of health technology and information communication technology infrastructure
7. Accelerated implementation of HIV and AIDS and Sexually Transmitted Infections National Strategic Plan, 2007 – 2011 and reduction of mortality due to TB and associated diseases;
8. Mass mobilisation for better health for the population;
9. Review of the drug policy; and
10. Strengthening research and development

NHI is being piloted in 10 health districts, with the focus on testing various components including the health service delivery platforms, private provider contracting models and improved health facilities management. Significant progress has been made towards the development of a re-engineered PHC model for South Africa, which consists of three streams, namely: District Clinical Specialist Teams; Ward-based Outreach Teams (ward refers to a group of households in a municipal ward) and the School Health Services programme.(38)

The School Health Services programme aims to address basic health issues among school-going children such as eye care, dental and hearing problems, contraception and teenage pregnancies, HIV/AIDS, substance abuse, and immunisation. The programme for each group of schools is led by a professional nurse.

The Ward-based Outreach Teams will be based in a municipal ward and will have seven PHC workers per ward, namely six community health workers and a specialist PHC nurse. Each team will be responsible for community-orientated primary care to an average of 1 619 households, or approximately 7 660 people.(39) PHC teams will be supported by additional staff at a local PHC clinic, including a doctor.

The District Clinical Specialist Teams consist of a principal obstetrician and gynaecologist, principal paediatrician, principal family physician, anaesthetist, advanced midwife, advanced PHC nurse and advanced paediatric nurse. By the end of 2011 a total of 1200 specialists had been recruited, made up of 1000 nurses and 200 clinicians, who are working in the districts, which signify a shift away from a referral hospital based curative model. The main objective of these teams is to enhance clinical governance and service delivery with respect to maternal and child health.

With these massive developments in the health sector, a large scaling up of human resources is envisioned. A doubling of the number of South African medical graduates from 1200 to 2400 per year by 2014 had been put forward in the National Human Resources Plan for Health in 2006, and the National Department's Human Resources for Health Strategy for the Health Sector 2012/13 – 2016/17 also makes provision for this.(40,41) The reported number of health professionals in the public sector has grown considerably from 153 383 in 2004 to 210 511 in 2010. However, this increase has been mainly in the nursing category.(37) In 2012 the following total numbers of medical practitioners were registered: 25053 registered general practitioners, of which 12 508 were in the public sector, and 13 391 specialists, of which 4776 were in the public sector. This translated to 29.4 medical practitioners and 11.2 specialists in the public sector per 100 000 population.(42,43) While we compare favourably with Sub-Saharan Africa, which has a physician-to-population ratio of 18/100 000, compared to countries such as India (60/100 000), Brazil (170/100 000), and France (370/100 000), a huge shortage is evident.(44) Inequities are also seen between public and private healthcare, and also between urban and rural communities, for example only 19.7% of public sector doctors were working in rural areas during 2003 serving 46.3% of the population, and in the Mount Frere district the doctor-to-population ration was noted to be as low as 3/100 000.(45,46) There was a calculated shortage of 80 000 health care professionals in the public sector and vacancy rates for doctors well over 50% in various provinces.(40,47)

The migration of skilled health workers poses particular challenges. The United States of America and Canada have the highest proportion of all healthcare workers (37%) for 10% of the global burden of disease, yielding a worker-disease index (WDI) of 3.7, with Europe having a WDI of 2.8, and Africa, carrying 24% of the world's burden of disease, having a WDI of 0.125.(48,49) Other authors have found similar inequities, reporting that sub-Saharan

Africa has an estimated 145 000 physicians (one twentieth of the practicing physicians in Europe) -- to serve a population of 821 million (greater than Europe's).(50,51)

South Africa had the following number of health facilities in 2012:(52)

Public clinics	3075
Community health (day) centres	282
District hospitals	254
Regional hospitals	55
Provincial tertiary hospitals	10
Specialised hospitals	68
National central hospitals	6

2.5 The role and response of Family Medicine

The model of providing comprehensive PHC in the community, including community-based teaching and learning, was already being practiced in over 40 rural communities about 60 years ago in South Africa.(53) However, in the 1940s the government of the day closed down Sidney and Emily Kark's attempts to provide community orientated primary care to some of the poorest communities in the country. This model has now been resurrected as stipulated in the first four points of the ten point plan of the National Department of Health.(37)

Various authors have looked critically at how we appropriately train and retain doctors for our continent and country's health needs.(40,54-58) In 1999, while there were vocational training programmes in family medicine, South Africa was noted to be behind modern trends in patient-centred care, problem-based and community-based learning, and the value of general practitioners as clinical supervisors was poorly recognized.(54) In particular the need for context-specific training and assessment, with a focus on PHC, beginning at the undergraduate level, was highlighted.(40) Assessment drives learning, and students attach value to the way the curriculum is assessed. Continuing to train in the districts, but assessing in tertiary centres sends a mixed message of the value of primary and district health care to students.(40)

Throughout Africa there is a realization that to address the health needs of communities on the African continent requires training a family physician according to a set of principles that differ from traditional Western family medicine contexts.(57) Severe resource constraints, traditional health beliefs, difficulty in referring patients to the next level of care, and a strong dependence on procedural skills are among the contextual issues to be taken into account.(57) A process of global consensus for social accountability of medical schools involving 130 organizations culminated in a conference in 2010 at Walter Sisulu University in South Africa. The conference, which was co-hosted by the University of British Columbia, and supported by the World Health Organization and the World Federation of Medical Education, emphasized that training, education, research and health service priorities need to be aligned with the needs of society, particularly around issues of equity, quality, relevance and effectiveness.(59)

Subsequently, health education curricula have been reformed, with most medical schools in South Africa now having moved towards an outcomes-based approach, with elements of problem-based learning and community-based education.(2,58,60) Patient-centred primary health care and family physicians have been playing an increasingly dominant role in these reforms.(2,58,60)

In 2009 the World Health Assembly resolved that it is necessary "to train and retain adequate numbers of health workers, with appropriate skill-mix, including primary health care nurses, midwives, allied health professionals and family physicians, able to work in a multidisciplinary context, in cooperation with non-professional community health workers in order to respond effectively to people's health needs" at the primary care level.(61) This resolution was endorsed at the Primafamed conference in 2012 when family physicians and educators from 20 countries agreed that the family physician in Africa need to be trained within a community-based, inter-professional PHC team and at the district hospital.(62) The principles of a community-based team approach that includes nurses, family physicians, mid-level workers (associate clinicians, health promoters and community health workers); with a focus on accessibility, connectedness, health promotion and disease prevention, comprehensiveness, continuity, and coordination, in the context of families and communities, were already agreed upon during the African regional WONCA Conference three years earlier.(56) This conference agreed that the training of family physicians in sub-Saharan Africa should include the following guidelines:(56)

1. Training should take place in all the District Health Services where teachers of Family Medicine function, with in-patient, out-patient, and outreach programmes.
2. Both full-time residential and part-time training programmes may be necessary to maximise training opportunities.
3. Teaching sites must be of sufficient size, with a 'critical mass' of trainers to create teaching and practice centres of excellence.
4. Experience in the management of chronic disease and undifferentiated illness should be part of the training throughout the programme.
5. Research must be included in all graduate programmes.
6. Training should include cross-cutting themes of specific relevance to Family Medicine, such as communication and consultation skills, reflective practice, holistic care, health systems management, and how to teach.
7. Training should be outcome- and competency-based.
8. Training should have a strong academic (university-based) foundation.
9. The principles of Family Medicine should be introduced early in undergraduate medical training and continue throughout the training.
10. Internship programmes should include rotations with exposure to family physicians and Family Medicine registrars.
11. Length of postgraduate Family Medicine training should be sufficient to teach core competencies and prepare for life-long learning. The length of the programme must take into account the local postgraduate university requirements.
12. All relevant stakeholders (e.g. Ministries of Health and Education, Medical Councils, and professional organisations) should ideally be involved from the start of Family Medicine training programmes.
13. Trained and qualified family physicians should have consultant status and be remunerated at the same level as other specialists.
14. Family physicians should be locally produced and of international standard.
15. The family physician should be involved in the training of medical personnel in the public and the private sectors. Private-sector facilities may form part of the training sites for undergraduate students.
16. The family physician should collaborate with general practitioners in the development of clinical guidelines.

17. Training of family physicians should include an understanding of traditional health practices and integrative medicine.
18. Training should have equivalent length to other specialities, especially with the need for procedural skills in an African context.
19. Training should allow registrarship in Family Medicine during community service.
20. Training should be outcome-based and the location of training will depend on the learning opportunities offered.
21. The rotation of a specific registrar must depend on their prior skills and competency.

These statements correlate with findings on innovative training methods from a survey of sub-Saharan medical schools, where respondents reported a number of non-traditional teaching methods, including community based education, problem based learning and multi-disciplinary team-based learning.(44) Training of family physicians (FPs) for Africa has important differences from North America and Europe, with recent work on the principles of family medicine in Africa showing that in 70% of African settings the FP is required to perform clinical procedures and operations at the district hospital.(63) At the same time there is a growing realisation that in order to make a difference FPs must be active in PHC teams and support the development of community-orientated primary care.(64) Figure 2.4 shows the role of the family physician in South Africa.(63) This model was agreed to by the eight heads of family medicine departments in 2010.

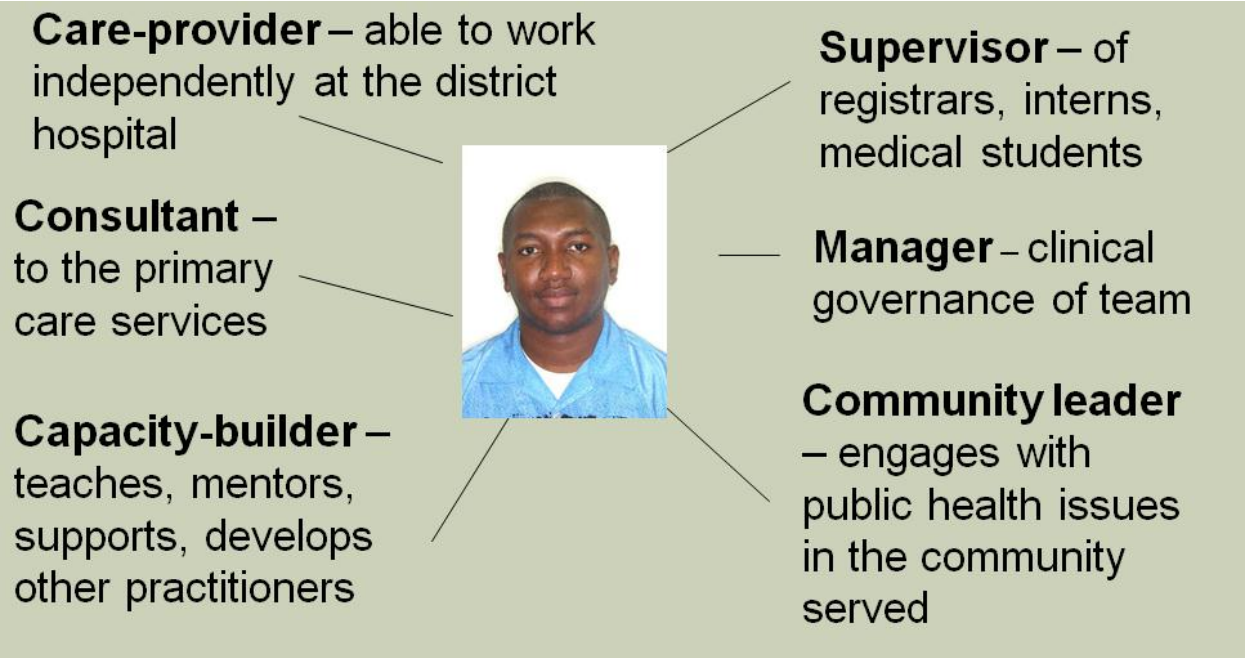


Figure 2.4: The role of the family physician in Africa.(63)

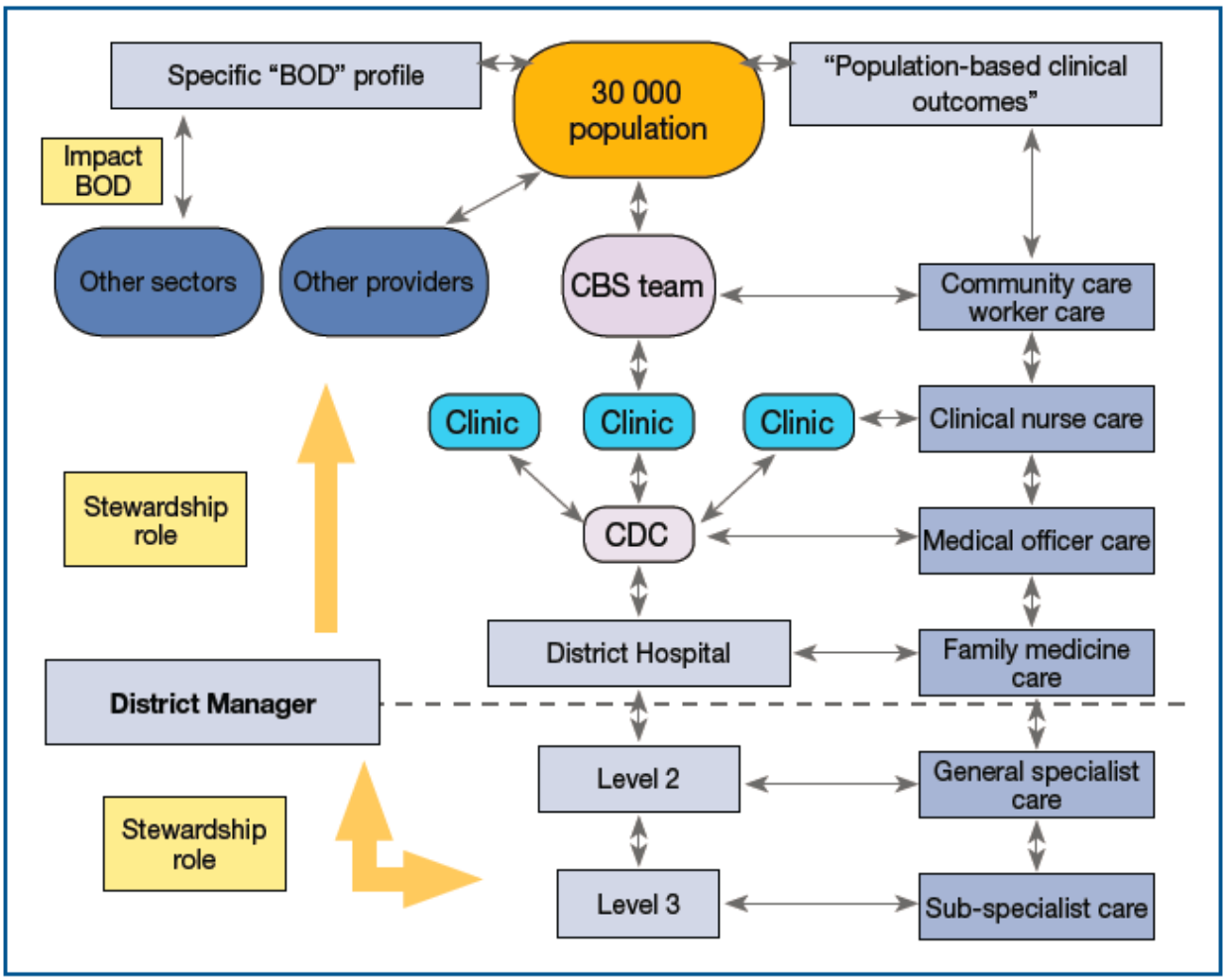
In South Africa the Department of Health aims for 900 trained FPs over the next 10 years who can work within the 52 health districts.(41) If FPs are to adequately support PHC teams then even more FPs will be required as it is estimated that the country needs 7000 such teams. Therefore, to address the burden of disease in South Africa, a huge scaling up of family medicine training is being envisaged, which has relevance for appropriate postgraduate assessment.(41)

Although family medicine had been taught and assessed for decades, the discipline has only started full time training recently, being recognized as a specialty in 2007.(65) A review of the development of family medicine in the Western Cape province over the last 15 years summarises the main events very well.(66) Since 1994 there has been a simultaneous transformation of health services and health sciences education. The new government implemented the national district health system and the primary healthcare approach. During this time of transition, family medicine had moved away from a focus on continuing professional development and private general practice in the 1980s, to training family physicians within full-time training posts in the public sector. This required the development of an academic framework for family medicine, which was strongly influenced by the Canadian principles of family medicine, assuming that the family physician would be the first-line primary care provider.(67,68) In the Western Cape this led to a conflict of vision between the discipline of family medicine, who viewed themselves as providers of first-contact primary care, and the provincial health services, who felt that it was only feasible to deliver first contact primary care through nurses, supported by doctors.

During this time the health science faculties started emphasising community-based education and increasing the exposure of undergraduates to family medicine and primary care.(69) Undergraduate curricula were revised to align more with the new political priorities, social accountability, community needs, and developments in health science education. By the late 1990s, all eight universities had established departments of family medicine and primary care and introduced formal rotations in family medicine for medical students in primary care settings, and this exposure continues to expand to this day. Many specialist family physicians have now been appointed in the public sector, and this new worker cadre is still carving out the family medicine niche in a complex and overburdened district health service. Nationally,

the departments of family medicine at each of the eight medical schools created a Family Medicine Education Consortium, with support and inspiration from Belgian family physicians and the Flemish Interuniversity Council, enabling a national dialogue and a co-ordinated advocacy at the Health Professions Council of South Africa (HPCSA) for family medicine as a speciality.(70,71)

With the publication of the District Hospital Service package for South Africa in 2002, defining the scope of practice of the district hospitals and the team of health workers needed to deliver the expected service, the role of the family physician as an integral component in the district hospital became much clearer.(72) Research among doctors working in district hospitals in the Western Cape highlighted the knowledge and skills gaps of these doctors, with subsequent suggestions for strategies on how to address these training needs.(73,74) With the big need for clinical skills training, in the absence of sufficient specialists in many health districts, a national set of clinical skills needed for family physicians was identified through a consensus process.(75) Key role players started to see the need for a well-trained generalist with the appropriate skills set to practice and improve the quality of care at the district hospitals. This was in line with national thinking, which emphasized that rural medicine was a part of family medicine, and which placed emphasis on the need to train family physicians for rural hospitals.(66) Figure 2.5 illustrates the schematic place of the family physician in the health system from the viewpoint of the Western Cape's Department of Health.(66)



Source: Dr K Cloete, Director, Metropolitan District Health Services

Figure 2.5: The place of the family physician in the health system from the viewpoint of the Western Cape's Department of Health (66)

[BOD: burden of disease; CBS: community-based services; CDC: community day centre]

This convergence of the needs of the health system and the role of the family physician has led to completely new training programmes. Nationally, a consensus process of developing training outcomes, consolidated into five national unit standards for family medicine, was finalised and implemented.(76) A summary of the unit standards for family medicine training in South Africa are as follows- the candidate will be able to:

1. Effectively manage him/herself, his/her team and his/her practice, in any sector, with visionary leadership and self-awareness, in order to ensure the provision of high-quality, evidence-based care.
2. Evaluate and manage patients with both undifferentiated and specific problems cost-effectively, according to the bio-psycho-social approach.

3. Facilitate the health and quality of life of the community.
4. Facilitate the learning of others regarding the discipline of family medicine, primary health care, and other health-related matters.
5. Conduct all aspects of health care in an ethical and professional manner.

The promulgation of the new speciality enabled all eight universities to change their programmes to Master of Medicine (MMed) degrees, in line with specialist training in all disciplines. It also required the Department of Health to create registrar posts for structured full-time training under the supervision of family physicians. By 2008 the number of family physicians in the Western Cape had risen to 20, with new posts slowly but surely being created in many health districts in South Africa. Training programmes were aligned with the nationally agreed set of learning outcomes, based on the competencies expected of a family physician in South Africa.(76) This brought South African medical education thinking in line with competency-based programmes in medical education in the rest of the world.(77-82) Typically registrars are assigned to a 4-year training post, in an accredited training complex, aligned to a university family medicine department. The HPCSA has as a minimum requirement that registrars spend three years in such a training post, with most university programmes expecting registrars to train for four years. In Europe the typical training period for family medicine registrars is three years, with a move to increase this to four years in the UK.(83)

In the Western Cape, the district health services and the universities of Cape Town and Stellenbosch are in partnership to train specialist family physicians. Five training complexes have been established, with about 80 funded registrar posts created over a four-year period, and with the first intake of 20 registrars having taken place in 2008. The complexes are spread out over 500 kilometres, divided between urban (Cape Town) and rural (George, Worcester, and Paarl) areas. Family physician and other specialities provide consultant clinical supervision, while a process is underway to create more joint university-service posts. An on-going need remains to recognise and reward the development of clinical supervisors. Registrars entering the 4-year training programme now typically spend most of their time in the district hospital. They ‘rotate’ through male and female ward, the children’s ward, and labour ward, and consult patients in the out-patients’ department. They also do surgery or give anaesthetics in theatre, run the HIV clinic, and assist with clinical governance in the sub-district, which involves doing mortality and morbidity reviews, doing audits, and being part

of local management. The registrars also spend time in the PHC clinics, TB services, palliative care services, and home-based care services. For specific skills identified as a learning need, they rotate to the nearby regional hospital to spend time in focussed clinical specialities for a few months. Their week consists of 40 daytime hours, including 6 hours of academic time, as well as an additional 16 after hours commitment.

Registrars are assessed by a unitary exit exam for postgraduate family medicine training, overseen by the College of Family Physicians of the Colleges of Medicine of South Africa (CMSA).(84) The basic structure of the exam is as follows:

- To be accepted for the Part A exam, the registrar needs to have:
    - completed three years fulltime in a numbered registrar post,
    - obtained a current cardio-pulmonary resuscitation (CPR), advanced cardiac life support (ACLS) or advanced trauma life support (ATLS) certificate of competence,
    - completed the CMSA approved portfolio of learning.
- Part A: Written: Paper 1: Multiple Choice Questions (2 hours)
- Part A: Written: Paper 2: Modified Essay Questions (2 hours)
- Part A: Written: Critical Reading (2 hours)
- If the candidate passes the above, he or she is invited to the Part A clinical examination, which consists of an OSCE (Objective Structured Clinical Examination) and three observed consultations on real patients.
- Part B – Successful completion of the research component, is needed to qualify.

In an attempt to improve the validity and robustness of postgraduate assessment there has been a move to implement work-place based assessment (WPBA) of registrars, with the CMSA holding various national discussions and three workshops on WPBA in Cape Town, Durban and Johannesburg during 2010, facilitated by Prof. Cees Vd Vleuten. Subsequently, with inputs from various stakeholders and a CMSA symposium in Durban in 2007, the CMSA decided to implement a national portfolio for every speciality, including family medicine, with an emphasis on formative assessment.(85,86) The need to develop a national portfolio of learning as part of the new training programmes in family medicine acted as the stimulus to this thesis.

2.6 Conclusion

This chapter provided insight into the health of the South African population and the health service environment in which the discipline of family medicine has been developing its contribution and training programmes. The combination of the overwhelming burden of diseases and the scarce human resources poses particular challenges to training and assessment of registrars in the workplace, particularly in under resourced countries like South Africa. The place and importance of the portfolio of learning within these training programmes is described. The next chapter will give an overview of the educational issues that shape our understanding of the portfolio of learning and how to develop it within this context.

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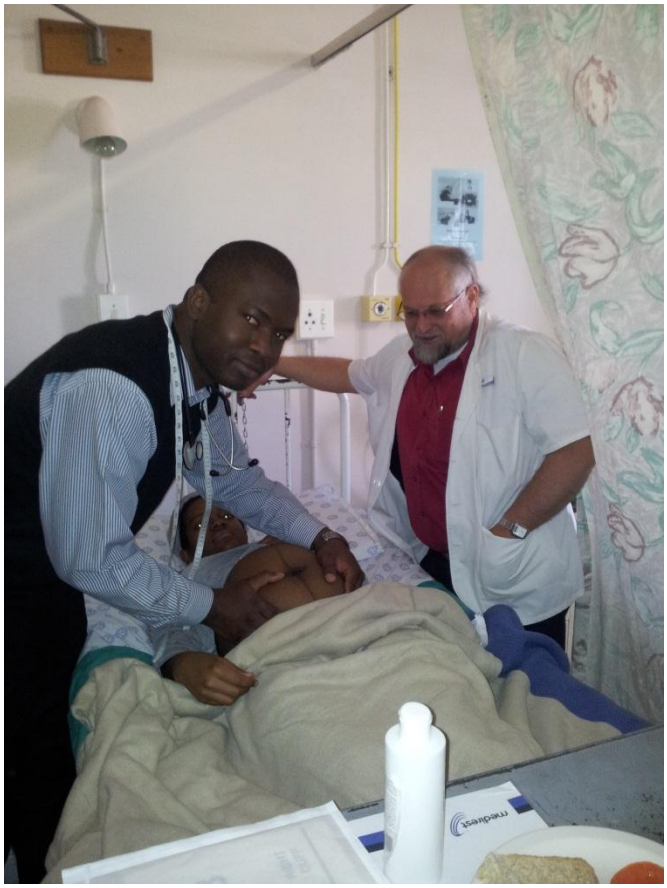

Registrar examining a pregnant woman, with supervisor directly observing.

Registrar in consultation with a patient, being observed by her supervisor.

"There is no more difficult art to acquire than the art of observation, and for some men it is quite as difficult to record an observation in brief and plain language."

Sir William Osler

"Every patient you see is a lesson in much more than the malady from which he suffers."

Sir William Osler

Chapter 3: The development of workplace-based assessment and portfolios of learning

3.1 Introduction

This chapter will try to answer the question, “Why must I keep a portfolio?” This is a question that most registrars have in their minds, sometimes with understandable resistance.(1) From meeting with registrars in South Africa, Swaziland, Botswana, Lesotho, and Belgium, the researcher received feedback that the portfolio is often seen as an additional burden and is instituted by training programmes as the most recent clever idea, to keep registrars busy. There was a sense that registrars may comply in order to meet the requirements, but with an external locus of control. Locus of control refers to the extent to which people believe that they can control events that affect them. Understanding of the concept was developed by Rotter in 1954. A person's "locus" is conceptualized as either internal (the person believes they can control their life) or external (believing that their decisions and life are controlled by environmental factors which they cannot influence). Individuals with a high internal locus of control believe that events in their life derive primarily from their own actions. For example, when receiving test results, people with an internal locus of control would tend to praise or blame themselves and their abilities, whereas people with an external locus of control would tend to praise or blame an external factor such as the teacher or the test.

In the light of these concerns from registrars this chapter will critically appraise the literature on the value of learning portfolios. As background to this appraisal of what we already know about learning portfolios the chapter will also give an overview of the development of postgraduate medical education, and how competency-based education and workplace-based assessment became a worldwide priority.

3.2 A brief history of medical education

Medical education goes back a long way, with evidence of medical education systems in India around the 6th century BC, lectures in Chinese medicine at the Imperial Academy in 624 AD and documented ancient Arab, North African, Greek and Mesoamerican systems of medical learning.(2-4) In the United Kingdom, the Royal College of Physicians, with the core function of maintaining standards in medical education, started in 1518, and the General Medical Council in 1858.(5) In the 1950s graduate medical education developed as postgraduate training, similar to an apprenticeship, via residency programmes in academic hospitals.(6) Today, 2420 medical schools, 467 schools or departments of public health, and many nursing institutions train about 1 million new doctors, nurses, midwives, and public health professionals worldwide every year.(7)

The 20th century experienced three generations of educational reforms. The first generation, launched at the beginning of the 20th century with the recommendations from the Flexner report in 1910, taught a science-based curriculum.(8) Around the mid-century the second generation introduced problem-based instructional innovations, and more recently a third generation of systems-based education has evolved. Systems based education attempts to improve the performance of health systems by adapting core professional competencies to specific contexts.(7) Figure 3.1 illustrates the three generations of reform.(7)

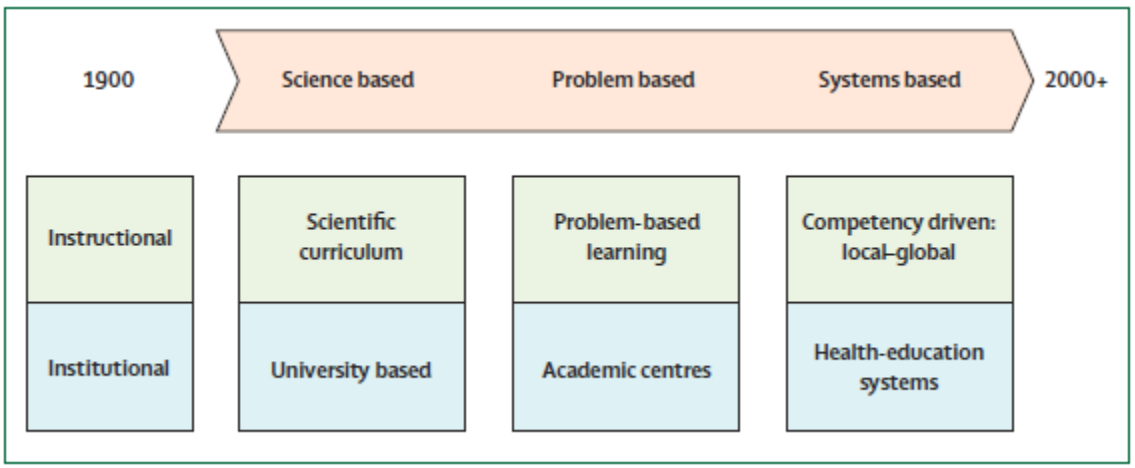

Figure 3.1: Three generations of health education reform (7)

The global challenges of inequity, re-emergence of infectious diseases, increase in diseases of lifestyle, population migrations and consumerist patient expectations, together with developments in education, forced medical educationalists and policy makers to relook at the way we train doctors. A growing mismatch between medical competencies and the needs of patients, poor teamwork, narrow technical focus, lack of understanding of the broader context, episodic instead of continuous care, hospital instead of primary care orientation, and weak leadership around health systems improvements have been identified as key issues.(7) A review by the Carnegie Foundation for the Advancement of Teaching in 2010 (See Table 3.1) clearly showed the shift from the 1910 recommendations of university-based, standardised, scientific education to a more integrated, community-based, flexible educational system.(9)

Table 3.1: Contemporary Challenges and Recommendations Identified by the Carnegie Foundation for the Advancement of Teaching in 2010 (9)

Theme	**Challenges**	**Recommendations**
Standardization and individualization	Medical education is: Not outcomes based Inflexible Overly long Not learner-centred	Standardize learning outcomes through assessment of competencies. Individualize the learning process, allow opportunities to progress within and across levels when competencies are achieved. Offer elective programmes to support the development of skills.
Integration	Poor connections between formal knowledge and experiential learning. Fragmented understanding of patient experience. Poorly understood nonclinical and civic	Connect formal knowledge to clinical experience, including early clinical immersion and adequate opportunities for more advanced learners to reflect and study. Integrate basic, clinical, and social sciences. Engage learners at all levels with a more comprehensive perspective on patients' experience of illness and care, including

	roles of physicians. Inadequate attention to the skills required for effective team care in a complex health care system.	more longitudinal connections with patients. Provide opportunities for learners to experience the broader professional roles of physicians. Incorporate inter-professional education and teamwork in the curriculum.
Habits of inquiry and improvement	Focused on mastering today's skills and knowledge without also promoting knowledge-building and an enduring commitment to excellence. Limited and often pro forma engagement in scientific inquiry and improvement exercises. Inadequate attention to patient populations, health promotion, and practice-based learning and improvement. Insufficient opportunity to participate in the management and improvement of the health care systems within which they learn and work.	Prepare learners to attain both routine and adaptive forms of expertise. Engage learners in challenging problems and allow them to participate authentically in inquiry, innovation, and improvement of care. Engage learners in initiatives focused on population health, quality improvement, and patient safety. Locate clinical education in settings where quality patient care is delivered, not just in university teaching hospitals.
Identity formation	Lack of clarity and focus on professional values.	Provide formal ethics instruction, storytelling, and symbols (honour codes, pledges, and 'white coat' ceremonies).

	Failures to assess, acknowledge, and advance professional behaviours. Inadequate expectations for progressively higher levels of professional commitments. Erosion of professional values because of pace and commercial nature of health care	Address the underlying messages expressed in the hidden curriculum and strive to align the espoused and enacted values of the clinical environment. Offer feedback, reflective opportunities, and assessment of professionalism, in the context of longitudinal mentoring and advising. Promote relationships with faculty who simultaneously support learners and hold them to high standards. Create collaborative learning environments committed to excellence and continuous improvement.

3.3 Competency-based medical education (CBME) and outcomes-based training

Just over 100 years ago, in 1911, Sir William Osler in the United States of America and Professor Pieter Pel in Amsterdam introduced the first postgraduate residency-based training programmes.(10) The residency time-period was rather open-ended, and could take 7 or 8 years, during which time the trainee doctors would have almost monastic lives on the site of clinical teaching. Postgraduate training has always been workplace-based, where trainees learn through ward-based, bedside teaching, and through listening to and observing the patient in everyday clinical practice, rather than lectures. Teunissen and co-workers have provided a theoretical construct based on grounded theory in which they have shown how learning starts with participation in work-based activities, from which, through interpretation and construction of meaning, growth in personal knowledge takes place.(11,12) The simultaneous emergence of problem-based learning, with the first such curriculum in Canada at McMaster University in Toronto in 1969 also brought into sharp focus the importance of contextual learning and learner-centred teaching.(13) Residency training periods over the years have become standardised to a fixed period of 3-5 years for most specialties, with rotations through different clinical areas for a number of months. Structure- and process-

based educational programmes have been characterised as focusing on accumulating sufficient training time, acquiring enough knowledge or passing assessment based on the curriculum content. These types of programmes have been challenged in order to make way for competency-based postgraduate medical education (CBME), which rather asks whether certain abilities have been obtained.(14,15) The elements of CBME have been described as more individual flexibility in learning experiences, a culture of critical inquiry, socially responsible professionalism, more regular assessments through direct observations of trainee-patient interaction, meaningful supervision with formative feedback, life-long learning, and a collaborative engagement of both teachers and trainees, pursuing abilities and not just knowledge (See Table 3.2).(7,14,16,17)

Table 3.2: Comparing the elements of structure- and process-based versus competency-based education (14)

Variable	Structure- and process-based educational programmes	Competency-based educational programmes
Driving force for curriculum	Content—knowledge acquisition	Outcome—knowledge application
Driving force for process	Teacher	Learner
Path of learning	Hierarchical (teacher ⇒ student)	Non-hierarchical (teacher ⇔ student)
Responsibility for content	Teacher	Student and teacher
Goal of educational encounter	Knowledge acquisition	Knowledge application
Typical assessment tool	Single subjective measure	Multiple objective measures (‘‘evaluation portfolio’’)
Assessment tool	Proxy	Authentic (mimics real tasks

		of profession)
Setting for evaluation	Removed (gestalt)	‘‘In the trenches’’ (direct observation)
Evaluation	Norm-referenced	Criterion-referenced
Timing of assessment	Emphasis on summative	Emphasis on formative
Program completion	Fixed time	Variable time

There have been many criticisms of CBME.(18) Functional analysis of occupational roles is not easy and it is difficult to identify a spectrum of competencies that truly cover the roles of the doctor in their broadest sense and which adequately represent the types of knowledge relevant to these competencies.(19,20) Also, the assessment of competencies is not value free, and people may use assessments to shape their own meaning and agenda. It has also been argued that the competency approach is based on the behaviourist framework, which attempts to break down work roles into small discrete tasks, ignoring the connections between individual tasks and the meaning underlying each task, and failing to represent the complex nature of situations in the real world.(18) However, Miller has provided us with his well-known hierarchy of competencies and assessments, allowing for development of competency and for the constructivist nature of meta-competency to be reconciled with the reductionist origins of the terms competency, meta-competency, and performance.(21,22) Studies have shown improved performance by doctors and better safety of patients from trainees who have attended courses based on competencies.(14,23)

Hundert and Epstein have defined competence in medicine as “the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individuals and communities being served”.(24) An integrated and holistic, rather than a reductionist approach to competencies, is important; recognizing that developing specific competencies is not a once-off

achievement, but should rather become a habit of lifelong learning.(18,25) Competence is content-specific, developmental, and contextual, reflecting the correlation between a person's abilities and the tasks required to perform in a specific situation in the real world.(26)

In South Africa, work done in the Western Cape on the competencies needed for doctors to practice in rural areas and the best way to develop those competencies showed that doctors preferred in-service learning with supervision and feedback, small group discussions and workshops; as opposed to internet-based learning, reading journal articles, or tertiary hospital rotations.(27) The authors proposed a conceptual framework for how such competencies could be acquired (See Figure 3.2).

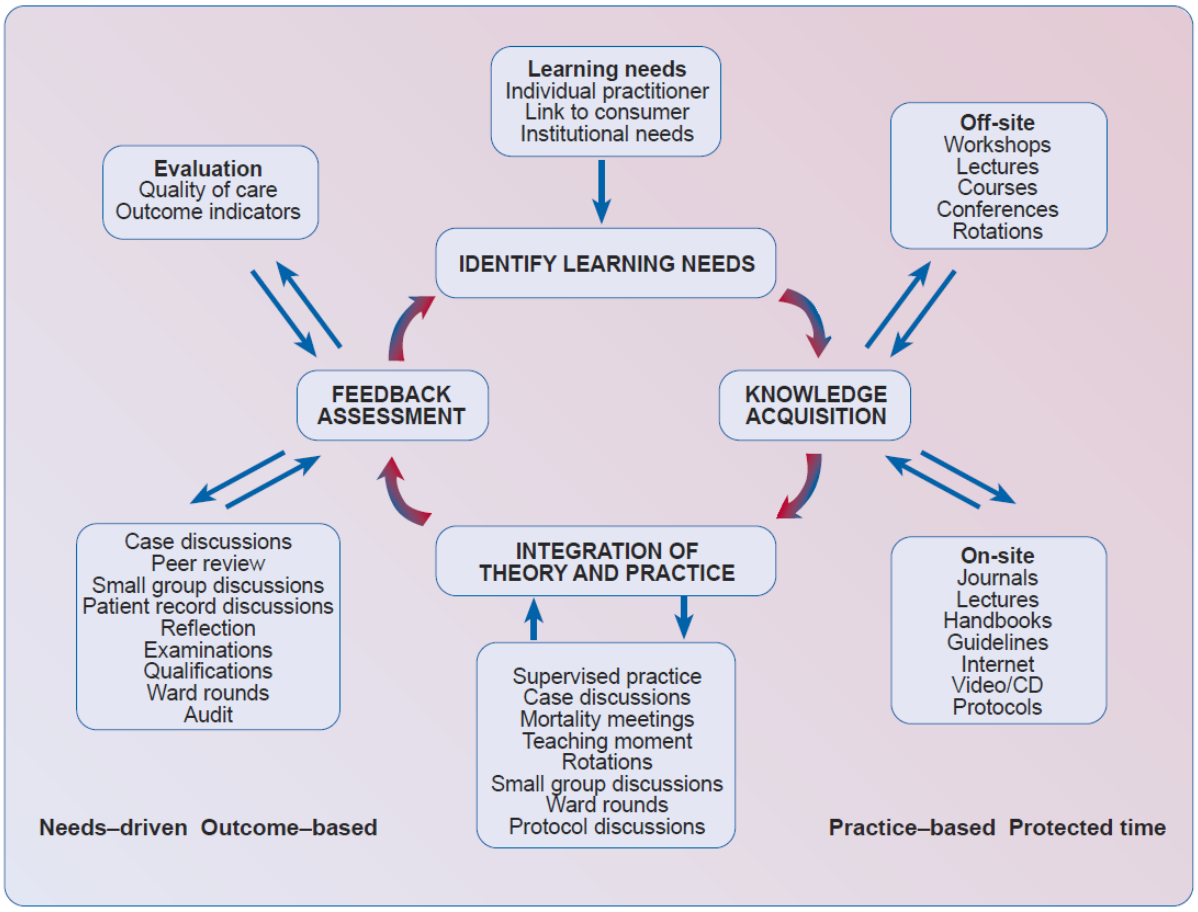

Figure 3.2: Conceptual framework for acquiring competencies in district hospitals.(27)

The focus of medical education should in the end be on how to best help the patient. Patients are people in families, who belong to specific communities, with very specific social contexts. As patients engage the health services they expect a standard of professionalism and

ability to trust in the doctor's competency. This trust is earned through a combination of technical and cultural competence, high ethics and a strong sense of social accountability. While patients can judge a doctor's personal qualities, they have to take clinical competence on trust because they cannot assess it satisfactorily. Instead they have to rely on medical regulation to ensure good medical practice. A review in the United Kingdom (UK) of the history of the General Medical Council (GMC) noted an observation by George Bernard Shaw in 1930, when he said, "The condition of the medical profession is now so scandalous that unregistered practitioners obtain higher fees and are more popular than registered ones".(5,28) The GMC subsequently took cognisance of their responsibility to rectify the problem underlying this kind of public perception.

In 1990, in an attempt to fulfil its obligations to the public to ensure competence amongst general practitioners the Royal College of General Practitioners (RCGP) established a working party to report on higher professional education. This led to the development of new educational strategies, including portfolio-based learning, assessment and accreditation. This emphasised a more flexible, learner-centred approach (encouraging more choice and control) and initiating a shift of responsibility for learning from the trainer to the trainee.(29) In 1993 the UK's GMC Education Committee produced a framework for basic medical education called Tomorrow's Doctors, which insisted for the first time that all medical schools should follow the same outcomes.(30) These guidelines, now regarded as standard, were updated in 2001 and 2009, with a strong focus on trust, patient-centeredness, and an outcomes-based approach built on the roles of the doctor as a scientist and scholar, a practitioner and a professional.(31,32) However, because competency is a function of the individual doctor and one cannot assume that the competency of doctors at undergraduate qualification is sufficient for life, it was felt necessary to review the performance of qualified doctors in the workplace.(33-35) In fact an inverse relationship has been shown between quality of care and years in practice.(36) The many reports of poor performance of doctors have led to recommendations for continual medical education and workplace-based assessments.(37) Revalidation via performance appraisal of all doctors in the UK was introduced in December 2012.(38) Revalidation requires an assessment of a doctor's medical work against Good Medical Practice, which was a new code of patient-centred practice published in 1995, and which has subsequently become accepted internationally as a generic set of medical standards.(39) The basis of this assessment was originally intended to be a folder of evidence showing a doctor's personal competence and performance, an annual workplace appraisal by

a peer, and a 5-yearly external evaluation of all the evidence by a small group, including a member of the public.(38) At that same time the RCGP had been operating a national system of standards and assessments for about 20 years to ensure quality of teaching practices.(5)

Of course scandals surrounding incompetent doctors were not the main reason for the evolution of the competency approach to education and assessment. Competency based education has its roots in teacher education during the 1960s in the USA. Calls for greater relevance in teachers' training as well as greater visibility and accountability to the taxpayer, as a distinct response to changes in society, were heard by the USA Office of Education. In 1968 it gave ten grants to colleges and universities to develop training programmes for the preparation of primary school teachers. The prescribed characteristics of these programmes included exact specifications of competencies to be learned, modularisation of instruction, assessment and feedback, personalisation, and field experience, with a focus on pupil achievement and an expected connection between teacher competence and pupil learning.(40) These models extended into secondary school education and vocational training programmes, particularly in health in many countries, for example the national qualifications framework in New Zealand, the national training board in Australia, the national skills standards initiative in the USA, and the national vocational qualifications in the United Kingdom.(18)

In line with these third generation reforms in health education, to improve the performance of health systems, core competencies expected of doctors, including patient-centred care, interdisciplinary teamwork, evidence-based practice, continuous quality improvement, use of informatics, and public health skills have been developed by various countries.(7) The medical profession in Canada developed essential competences and roles through the Canadian Medical Educational Directives for Specialists (CanMEDS) 2000 Project Societal Needs Working Group, who identified seven roles of specialist physicians, which are currently in review:(41-43)

1. Medical expert
2. Communicator
3. Collaborator
4. Manager
5. Health advocate
6. Scholar

7. Professional

In the United States, the assessment of medical residents is based on a model developed by the Accreditation Council for Graduate Medical Education (ACGME), which uses six interrelated domains of competence, namely medical knowledge, patient care, professionalism, communication and interpersonal skills, practice-based learning and improvement, and systems-based practice.(44) The Netherlands developed the 2009 Framework for Undergraduate Medical Education, based on the CanMEDS model.(45) In Australia the Australian Curriculum Framework for Junior Doctors were developed.(46) In the UK, all five Scottish medical schools have adopted the Dundee three-circle model for undergraduate learning outcomes, based on the three essential aspects of competence of a generalist physician, as illustrated in the Figure 3.3.(47) The inner sphere describes what the doctor is able to do, including the clinical, procedural, investigatory, management, health promotive, communicative, and information handling skills. The middle layer represents how the doctor approaches the skills with knowledge and understanding, ethical and legal principles, clinical reasoning and decision-making abilities. The outer layer represents the development of the personal characteristics, including understanding the physicians' roles in society and their personal development as lifelong learners and professionals.(48) This model has also been used in other countries such as Spain and Sweden and in the training of junior doctors and specialists in the UK.(49)

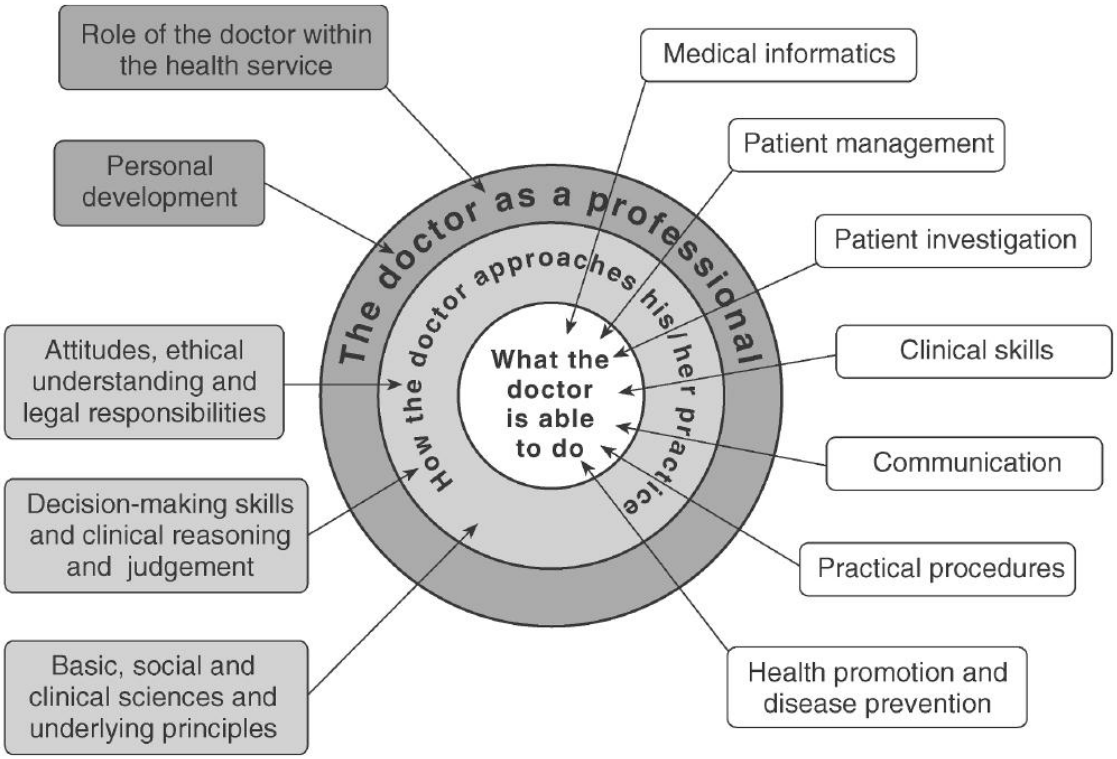

Figure 3.3: The Dundee three-circle model for undergraduate learning outcomes.(47)

South Africa has also moved forward with traditional curricula making way for more problem-based and integrated approaches.(50) Hospital-based specialist instruction has also moved towards more community orientated primary care training.(51) Postgraduate education in family medicine was recognized in 1993 when a special category of registration (family physician) was introduced by the Health Professions Council of South Africa (HPCSA). After vocational training for two years in an accredited programme, attending various lectures and teaching events, and completing a research thesis, a doctor could obtain a qualification in family medicine and register as a family physician. This did not mean recognition as a specialty, but it was implied by the fact that the public sector allowed family physicians to be appointed as specialists.(52) In 2007 the HPCSA formally recognized family medicine as a new speciality in the country, paving the way for creating and filling much needed posts in the public primary health care sector.(53,54) Also during this time the CMSA held a symposium to deliberate the place and contribution of portfolios (versus traditional logbooks) in formative assessments, and agreed that portfolios needed to be part of postgraduate training.(55,56) With the national emphasis on a generalist approach in health

service delivery via primary health care, family medicine has been taking an increasingly central role in undergraduate and postgraduate medical education, producing 'doctors for tomorrow'.(57) Students are being taught more relevant medicine in underserved district-based primary health care settings, where they are more likely to practise after qualifying.(51,58-60) All eight medical schools now have undergraduate and postgraduate training programmes in family medicine, contributing to the training of registrars in family medicine, delivering on the capacity needed for the health challenges in the country.(61)

Considering the geographic size of the country, roughly equivalent to France, Germany and the United Kingdom put together, with vast rural areas, lack of transport and sufficient traditional specialist support services, which is typically also the case for most African countries, there is a large emphasis on training doctors for rural practice.(62) This means the family physician needs a wide range of skills, including primary health care, surgical, obstetric, anaesthetic, managerial (governance), teaching and leadership skills.(63,64) Consequently, it has been essential to link the delivery of health services to the education of doctors, requiring a co-ordinated continuum of undergraduate, postgraduate and continuing professional development within the health service.(51)

In response to the identified health needs of the country, and the type of family physician needed to work in the district health system, the eight departments of family medicine in South Africa went through a process of consensus to establish the national outcomes for postgraduate family medicine training in 2010, and reviewed these in 2012. The 85 outcomes are consolidated into five national unit standards, as summarised below, and provide clear expectations for both registrars and trainers to meet in order to qualify as family physicians through the national CMSA exit exams.(65) The candidate will be able to:

1. Effectively manage himself or herself, his or her team and his or her practice in any sector with visionary leadership and self-awareness in order to ensure the provision of high-quality, evidence-based care.
2. Evaluate and manage patients with both undifferentiated and more specific problems cost-effectively according to the biopsychosocial approach.
3. Facilitate the health and quality of life of the community.
4. Facilitate the learning of others regarding the discipline of family medicine, primary health care, and other health-related matters.

5. Conduct all aspects of health care in an ethical and professional manner.

The Health Professions Council of South Africa (HPCSA) determine that registrars work for a minimum of three years (usually four years) in a registrar training post in an accredited training complex, submit a satisfactory portfolio with evidence of learning, as well as complete a research assignment, in addition to passing the national exams.

3.4 Workplace-based assessment

In preparing medical students for the 21st century, a review of American medical education 100 years since the Flexner report, made the following observation:(66)

"It has long been observed that assessment drives learning. If we care whether medical students and residents become skilful practitioners and sensitive and compassionate healers, as well as knowledgeable technicians, our approaches to the evaluation of learners must reach beyond knowledge to rigorously assess procedural skills, judgment, and commitment to patients. Self-assessment, peer evaluations, portfolios of the learner's work, written assessments of clinical reasoning, standardized patient examinations, oral examinations, and sophisticated simulations are used increasingly to support the acquisition of appropriate professional values as well as knowledge, reasoning, and skills."

The goal of CBME is to finally assess whether a trainee can demonstrate the ability to provide safe and effective patient care, as conceptualized by the top of Miller's pyramid, with trainees having shown progression from "know", "know how", "show how", and finally, "do".(16,21) Progress is defined purely by the competencies achieved and not the underlying processes or time served in formal educational rotations.(21) Assessment plays an integral role in assisting trainees to identify and respond to their own learning needs.(67) Burton and Jackson explain how work-based learning relates to learning for work, learning at work, and learning from work.(68,69) The assessment of competence (what the trainee is able to do) should provide insight into actual performance (what the trainee does habitually when not observed), including the capacity to adapt to change, find and generate new knowledge, and improve overall performance.(70) Some of the potential benefits include individualised flexible training, transparent, criterion-referenced standards, and allowing the trainee to take responsibility for seeking feedback in what has been described as "self-directed assessment

seeking".(71) Examples of such assessments include feedback from multiple observers, in-training exam results, practice audits, or simulated scenarios.(16) Epstein summarises the principles of assessment very well in Table 3.3.(26)

Table 3.3: The principles of assessment.(26)

Goals of assessment	Provide direction and motivation for future learning, including knowledge, skills and professionalism Protect the public by upholding high professional standards and screening out trainees and physicians who are incompetent Meet public expectations of self-regulation Choose among applicants for advanced training
What to assess	Habits of mind and behaviour Acquisition and application of knowledge and skills Communication Professionalism Clinical reasoning and judgement in uncertain situations Teamwork Practice-based learning and improvement Systems-based practice
How to assess	Use multiple methods and a variety of environments and contexts to capture different aspects of performance Organize assessments into repeated, ongoing, contextual, and developmental programs Balance the use of complex, ambiguous, real-life situations requiring reasoning and judgement with structured, simplified, and focussed assessments of knowledge, skills and behaviour Include directly observed behaviour Use experts to test expert judgement Use pass-fail standards that reflect appropriate developmental levels Provide timely feedback and mentoring
Cautions	Be aware of the unintended effects of testing

	Avoid punishing expert physicians who use shortcuts Do not assume that quantitative data are more reliable, valid, or useful than qualitative data

Assessments should be based on a set of clearly defined outcomes, so assessors and trainees can judge whether or not each trainee has achieved them.(72) An assessment is more valid the closer it gets to the activity one wishes to assess.(73) If we want to know how a doctor consults, we should watch him do it. This authenticity is important in the assessment of competence because expertise is domain-specific and contextual.(74) We know that rigorous assessment can potentially inspire learning, influence values, reinforce competence, and also reassure the public.(24) Cognitive psychology has shown us that facts and concepts are best recalled and put into practice when they are taught, practiced, and assessed in the context in which they will be used.(75) Responsibility for the care of patients has been shown to be a powerful stimulus for learning, with active learning requiring that cognitive and procedural clinical skills be attained through supervised patient care.(76)

No single assessment method is sufficiently reliable or valid on its own, and a combination of assessment methods has been strongly recommended.(77-82) Similarly, individual, professional and system-wide changes have been suggested to incorporate a quality improvement approach to linking learning and assessment.(67) In the Netherlands, through the work of the Dutch Advisory Board for Postgraduate Curriculum Development (DAPCD), a three-step curriculum design was followed:(83)

1. Structuring the content of the specialty into themes (across rotations);
2. Choosing a limited number of entrustable professional activities (EPAs) (84) for each theme; and
3. Matching the EPAs to the CanMEDS roles by using an assessment toolbox.(85)

EPAs are holistic by nature, helping trainers to decide when a trainee may be trusted with the responsibility to perform a professional activity, given the level of competence reached. They include a number of competencies, serving both education and patient care. Examples could include neonatal resuscitation, performing an appendectomy, conducting a handover ward round after a night call, designing a clinical protocol, or chairing a multidisciplinary meeting.

In the UK, five principles underpin the design of the workplace assessment for GP trainees, as overseen by the Postgraduate Medical Education and Training Board (PMETB), namely that it is competency-based, developmental, evidential, locally assessed, and triangulated.(86)

Pivotal in the assessment of CBME is a sufficient number of direct observations by skilled supervisors in a safe learning environment.(16,79,87,88) A study on surgical residents which used a performance rating instrument with only 3 items concluded that reliability of assessment depended more on the number of observations than the number of items in the assessment tool itself.(88) In this study, one rating item asked for a global rating of clinical performance, which included history taking, physical examination, differential diagnosis, diagnostic approach, patient management, independent learning habits, and surgical skills. The second item asked for a global rating of professional behaviour, which included communication skills, relationship with patients and their families, relationship with other medical personnel, dependability, ability to assume responsibility, and equanimity. The third item asked supervisors to ‘‘rate this resident’s overall performance in comparison to that of other residents at the same level of training.’’ All 3 items used a 5-point rating scale with excellent, very good, good, fair, and poor as behavioural anchors.(88) The authors concluded that using this assessment tool with a single global rating for each of these three items, an average number of observations required to achieve a consistent classification of resident performance (0.80 reliability) varied from 9 to 12 observations per year. The number varied depending on what aspect of competence, for example clinical performance or professional behaviour, was being assessed.(88) They suggested to attempt to acquire not the average, but rather the maximum number of observations needed to consistently classify trainee performance in the least stable performance area, for example professional behaviour. This would mean that 36 observations of each trainee’s performance would ensure a reliable rating of competence (reliability coefficient of 0.80), safe-guarding against variability in year-to-year differences in trainee ability, rater characteristics, and environmental circumstances.(88) Other authors, like Carline, have demonstrated that for individual items the number of observations required to obtain reliable assessments varies from 10 to 32, with an average of 18.(89) McGill and colleagues looked at trainee score variance for each of 14 competency items, and found the trainee variance for the ‘overall rating’ competency item to be 28.8%, necessitating 169 (for emergency skills), seven (for communication skills), 17 (for an average of all competency items) and 28 (for the overall rating item) assessments for a reliability of 0.80.(79) It is, however, important to note that they ascribe the reason for the high number of

assessment needed for assessing emergency skills to the fact that direct observation did not often take place and raters were forced to rely on a global impression, which reduced inter-rater reliability.(79) Hence the value of a sufficient number of direct observations cannot be overemphasized. The challenge of sufficient reliability, and thus also validity, is strongly connected with finding the most efficient ways to assess portfolios entries.(90)

A summary from 29 reports of large-scale standardized, patient-based assessments of clinical performance of residents and medical students concluded that the major source of score variation was due to variation in trainee performance from situation to situation (case-specific), and that 16 hours of performance observation across a variety of clinical situations was necessary to achieve reproducible estimates of clinical competence. These studies were done under almost ideal conditions, with carefully controlled cases, observations, instruments and rater training.(87) Hence more hours of performance observation would be required to achieve reproducible estimates of clinical competence in less controlled clinical settings. Patient satisfaction surveys and nurse observations have also been evaluated to assess their utility and reliability in unobtrusive observation of normal clinical performance, and while not reliable on their own, they have been recommended as part of an overall assessment of trainee performance.(91,92) While the primary goal should be to increase the range of situations and procedures observed, each trainee should also be rated by a number of different raters, due to raters having idiosyncrasies regarding clinical focus (competencies they observe) and standards (stringency and leniency). To achieve a global estimate of trainee competence that is generalizable, between seven and eleven ratings are necessary for clinical skills, with more ratings necessary to obtain reliable estimates of competence in other competence domains. For example up to 30 ratings are needed in the so-called non-cognitive areas, such as interpersonal patient communication and professional behaviour.(93) Recent work in the Netherlands looked at the composite reliability of a WPBA toolbox for inclusion in a postgraduate learning portfolio and showed that a minimum of seven mini Clinical Evaluation Exercises (mini-CEXs), eight Direct Observation of Procedural Skills (DOPS), and one multi-source feedback (MSF) was sufficient to give reliable results in evaluating competency.(80) Driessen at Maastricht in the Netherlands recognizes the pervasive problem of the absence of observation of trainees and the lack of feedback based on observations and proposes a shift from assessment of trainee performance to the learning of trainees.(94) In his view WPBA should focus less on assessment and testability and more on supporting supervisors to take decisions by complementing their “gut feeling” with information from

formative assessments. He continues to explain that to make assessments from non-standardised observations meaningful for learning, they should not be perceived as summative, but rather that they should provide narrative feedback for the learner and be integrated into the trainees' self-assessments.(94)

WPBA tools such as the mini-CEX and DOPS are now standard in many postgraduate medical education programmes.(85,95,96) We know that trainees differ in their performance in different clinical situations due to differences in experience, training, professional interest, and personalities. We know that clinical performance is case-specific, context specific and multi-dimensional, encompassing much more than a unitary performance capability. Most encounters between the doctor and patient require the doctor to integrate and perform at least 10 separate component capabilities.(93) The reliability of WPBAs may be influenced by the amount of "contextual noise" that an assessor experiences when trying to assess from their other concurrent roles in the clinical environment. Assessing trainees in uncontrolled clinical environments, having teams rather than individuals responsible for performance, differing expectations of raters, differing accuracy of rater tools, as well as cognitive and social factors, also influence the reliability and generalizability of WPBAs.(93)

3.4.1 Supervision

Implicit and critical in WPBA and portfolio learning is appropriate supervision and coaching.(97) For direct observations to take place in a valuable and reliable way, with supervisors developing the skills to provide accurate formative feedback, dedicated supervisor training around clearly defined roles and expectations is needed.(14,16,98) The characteristics of measurement instruments account for only 8% or less of the variance in performance ratings. In terms of improving the quality of assessment, more is to be gained by focusing on the assessors than the instruments they are using.(99) Raters appear to view the assessment of clinical competence in just one or two dimensions, often just making the judgement on whether it is present or not. This suggests that rating instruments should be kept short, composed of no more than 10 specific items plus a global item. This is sufficient when the assessment goal is simply to determine pass or fail.(100) Furthermore, supervisors become better at discriminating between scores or calibrating the meaning of different scores through familiarity with the assessment tools. This involves extensive use and experience

with many ratings over years. This experience enables programme managers and supervisors to easily and quickly identify outliers. By using the same rating instrument and procedure multiple times over years, clinical supervisors have more to gain in improving the quality of assessment by developing a sense of normative performance, than by "refining" the assessment tool itself.(93)

The clinical teacher or supervisor finds him or herself in a very complex environment with up to 12 different roles to engage with. They may even move between these roles within a single patient encounter.(101,102) Figure 3.4 illustrates these 12 roles.(102)

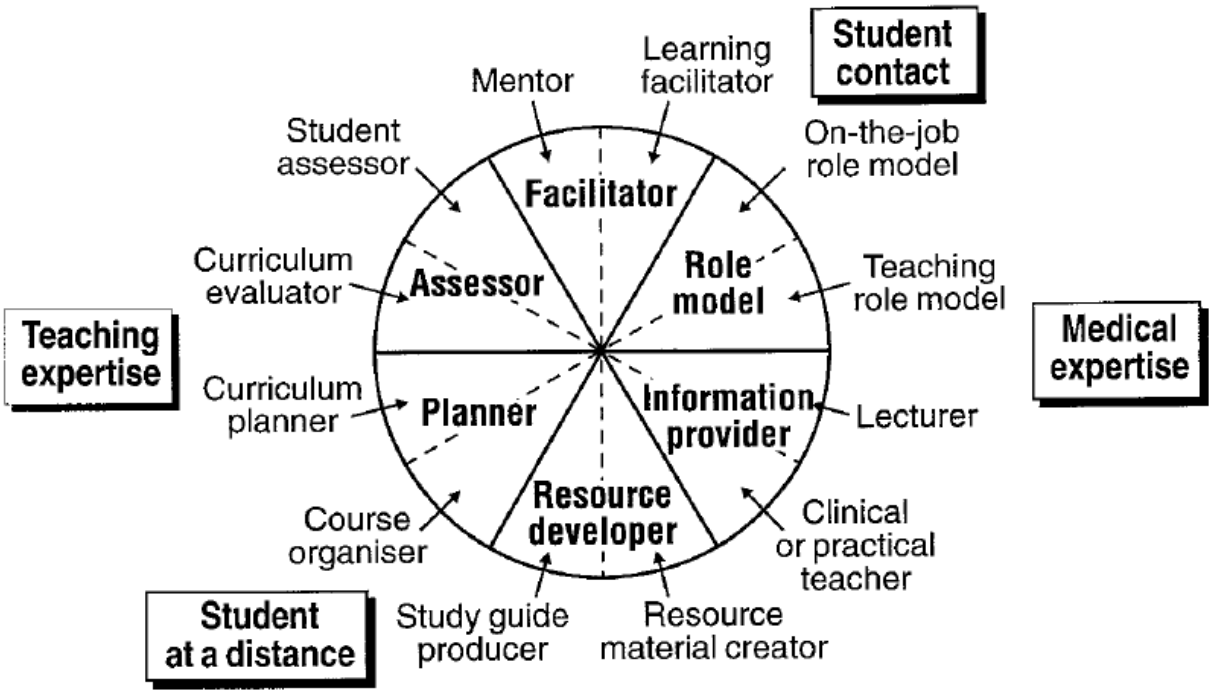

Figure 3.4: The 12 roles of the clinical teacher (supervisor).(102)

Since the word 'doctor' means 'to teach', clinicians have always had a dual role in medicine, to provide patient care and to teach.(103,104) While most doctors are mostly adequately prepared for their clinical roles, very few are trained for their teaching roles.(105,106) It has been well established that supervisors tend to focus on what they know best, namely the role of the medical expert, raising concerns with both programme managers and supervisors about how to teach and assess the other competencies, for example the identified non-cognitive

related ones such as communication skills and professionalism.(107) Non-cognitive attributes have been widely explored, for example in selecting medical students for admission to medical schools or in defining the expectations for a 'good doctor' from the health services and consumers' perspectives.(108-111) The term "non-cognitive" has been used in the literature to identify 'personal' (as opposed to 'academic') attributes, which are also recognised as important components of competent practice. Other authors use synonyms such as humanistic or behavioural attributes, which may include attributes such as advocacy, collegiality and collaboration, cultural sensitivity, empathy, ethics, honesty and integrity, responsibility, reliability, or self-assessment.(110) Faculty development and emulation of role models may be ways to focus on developing these roles.(83,112,113) This may also be one reason why, in the early stages of training, when the medical expert role is more dominant, trainees need and should receive more clinical supervision. Clinical supervision tends to reduce in later training years, as trainees become more experienced while supervision in the other areas of development may become more prominent.(114) Pololi in the USA describes a faculty development model which successfully integrates lifelong learning skills, mastery of learner-centred teaching, and the use of self-awareness and relationship formation in teaching and learning.(115,116) Ramani and co-workers in the USA published an excellent guide on twelve tips for developing effective mentors.(101,117) Supervision is not a skill that develops spontaneously, and is best supported in a framework that is integrated in the workplace. Kilminster and her group from the UK and Australia developed such a framework for effective supervision, shown in Table 3.4.(118)

Table 3.4: Framework for effective supervision.(118)

1. Effective supervision should be offered in context; supervisors must be aware of local postgraduate training bodies' and institutions' requirements
2. Direct supervision with trainee and supervisor working together and observing each other positively affects patient outcome and trainee development
3. Constructive feedback is essential and should be frequent
4. Supervision should be structured and there should be regular timetabled meetings. The content of supervision meetings should be agreed and learning objectives determined at the beginning of the supervisory relationship. Supervision contracts can be useful tools and should include detail regarding frequency, duration and content of supervision; appraisal and assessment; learning objectives and any specific requirements
5. Supervision should include clinical management; teaching and research; management and administration; pastoral care; interpersonal skills; personal development; reflection
6. The quality of the supervisory relationship strongly affects the effectiveness of supervision. Specific aspects include continuity over time in the supervisory relationship, that the supervisees control the product of supervision (there is some suggestion that supervision is only effective when this is the case) and that there is some reflection by both participants. The relationship is partly influenced by the supervisor's commitment to teaching as well as the attitudes and commitment of supervisor and trainee
7. Training for supervisors needs to include some of the following: understanding teaching; assessment; counselling skills; appraisal; feedback; careers advice; interpersonal skills.

3.4.2 Portfolios

Keeping a portfolio as part of WPBA has been introduced in many countries in the Western world in the last 20 years, including the Netherlands, Belgium, the UK, the USA, Denmark, and Australia.(119-127) As a postgraduate educational tool it is a fairly recent intervention, having only been introduced in the foundation programmes in the UK and internship training in Belgium from 2004 and in postgraduate family medicine training in South Africa since 2010.(119,128,129) In the Netherlands, trainees are expected to reflect on their learning against their goals, and gather evidence about their personal development in a portfolio.(83) Two key concepts which the portfolio medium forges are those of direct supervision and reflective thinking. In the Dutch programme the trainee and supervisor meet at least 3-

monthly for a formal progress assessment based on the portfolio.(83) There are two dimensions to this assessment:

- A global assessment of the development of the trainee on the various CanMEDS roles (via written reflections on developments in each of the roles), and
- A more detailed assessment of proficiency on specific EPAs and themes (argued via evidence in the portfolio, e.g. statements of awarded responsibility (STAR)), given by the local supervisor.(130)

The British WPBA process has a strong summative focus, and is one of three components of the Member of the Royal College of General Practitioners (MRCGP) exam. The trainee's e-portfolio is expected to show evidence of proficiency in 12 competency areas over 3 years, and progress is documented via a 6-monthly meeting with an educational supervisor.(131) There are ongoing attempts to improve the feasibility, acceptability, and validity of the e-portfolio, with a new updated version being introduced in August 2013, as well as extending the training period for general practitioners from three to four years.(132,133) The trainee's e-portfolio is replaced by the revalidation e-portfolio once the doctor is practicing independently. Belgium has an inter-university postgraduate family medicine training portfolio, while each Flemish university has its own internship portfolio, with the Antwerp portfolio structured around three dimensions:(119)

- Eleven competencies adapted from the 3-circle model of Harden (48),
- The required level of competency as defined by Miller's pyramid (21), and
- The content of the portfolio (for example case reports, self-reflections and presentations).

The purpose of the portfolio can vary from coaching and learning with self-reflections and learning plans (a more developmental portfolio), to more of a focus on assessment processes that evaluate the trainee's acquisition of certain competencies (a more assessment of competence portfolio), or include a combination of both.(26,126) The Belgium internship portfolio is described as a mixed portfolio, focussing primarily on assessment with a secondary coaching and developmental objective, not unlike the South African family medicine postgraduate portfolio.(119,128)

The risk of focussing on scoring many activities and neglecting formative narrative feedback is well recognized.(94) However, this has been one way of getting registrars to become aware of and more engaged with their learning, their trainers, and also their patients, not unlike Virginia Apgar observed when she developed the Apgar score to reduce neonatal mortality. While there was a focus on 'scoring the baby', the real benefit was 'looking at the baby'.(134) Similarly the scoring required as part of the portfolio ('scoring the registrar's learning') may have the real benefit of making learner centred training a more conscious aspect of clinical care ('looking at the registrar's learning').(135-137)

The meaningfulness and validity of assessments via observations in a non-standardised procedure is largely determined by how serious assessors take assessment and the time spent on assessment.(138) A review of the utility of WPBA compared several assessment methods, and found portfolios quite time intensive and expensive compared to other methods in terms of feasibility, needing between 15 and 24 hours per year to complete.(77,139,140) In terms of formative assessments, portfolios were found to be beneficial in terms of helping doctors with continuous professional development, achieving learning objectives, initiating a change in behaviour, and become more reflective.(77) However, work on foundation programme doctors showed that trainees and trainers still need to be convinced of the utility of portfolios, with the perception that it is an extra burden with low educational value.(129)

There is growing evidence that the trainee portfolio need not be a bulky detailed file, but could be a leaner document with a more global assessment structure.(141,142) Michels in Antwerp has shown that the portfolio can be a reliable tool for WPBA while also being practical and feasible.(143) She showed that by reducing the portfolio contents to 13 tasks (99 hours), a single-rater reliability coefficient of 0.8 can be maintained. While the risk of losing validity increases as the number of assessed task are decreased, using a competency-based blueprint, clear guidelines for assessment, and experienced assessors all help to alleviate this.(143) Paramount for reliable and valid assessment is sampling sufficiently across all the expected competencies, by different assessors, in different clinical contexts.(78) Shumway and Harden developed an AMEE guide (no 25) in which they describe the various assessment tools that are available to assess the required range of learning outcomes.(49) We need to develop our national assessment structure to allow the various components, including written assessments, OSCEs, standardized patients, observations, portfolios, and peer and

self-assessment to complement each other in the most feasible and robust way to assess the performance of the emerging family physician.

3.5 Conclusion

This chapter described the development of postgraduate medical education during the last 100 years, and particularly the shift to competency-based medical education and workplace-based assessment in the last few decades. The portfolio of learning is a very new introduction into this changing environment of patient-centred health care and learner-centred training. The development and initial evaluation of a South African portfolio of learning for family medicine postgraduate training is the subject of this thesis. The next chapter contains four articles that explain how the portfolio was developed, what the experiences of users have been in using the new portfolio, and finally how we assessed the reliability of the portfolio.

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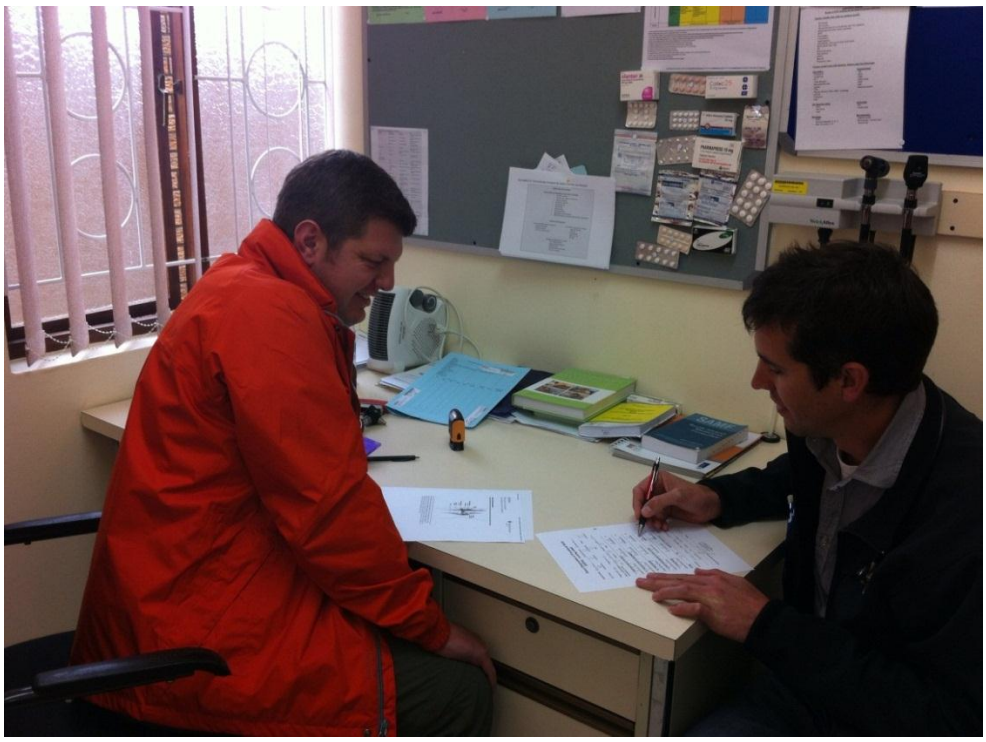
Registrar in consultation with a patient while supervisor completes a mini-CEX assessment.



Supervisor giving immediate feedback to the registrar after the patient consultation.

"The fact that a faculty member says, 'I can't join you for tomorrow's meeting – I am a portfolio examiner, should bring pride to the speaker and respect from the listener."

From M.Friedman Ben David et al. AMEE Medical Education Guide No.24: Portfolios as a method of student assessment. In Medical Teacher Vol. 23, No.6, 2001.

Chapter 4

This chapter contains the four articles as follows:

4.1 Article 1: Development of a portfolio of learning for postgraduate family medicine training in South Africa: a Delphi study. (Published)

4.2 Article 2: The national portfolio of learning for postgraduate family medicine training in South Africa: A descriptive study of acceptability, educational impact, and usefulness for assessment. (Published)

4.3 Article 3: The national portfolio of learning for postgraduate family medicine training in South Africa: Experiences of registrars and supervisors in clinical practice. (Accepted for publication)

4.4 Article 4: Reliability testing of a portfolio assessment tool for postgraduate family medicine training in South Africa. (Accepted for publication)

4.1 Article 1: Development of a portfolio of learning for postgraduate family medicine training in South Africa: a Delphi study

This article was published in BMC Family Practice as follows:

Jenkins et al. BMC Family Practice 2012, 13:11
And can be found at http://www.biomedcentral.com/1471-2296/13/11

Small changes have been made to the article, as suggested by the examiners of the dissertation, without altering the methods or results.

I presented this research at the 15th Ottawa/AMEE (Association of Medical Education in Europe) Conference in Kuala Lumpur, Malaysia, in March 2012.

Development of a portfolio of learning for postgraduate family medicine training in South Africa: a Delphi study

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Abstract

Background

Within the 52 health districts in South Africa, the family physician is seen as the clinical leader within a multi-professional district health team. Family physicians must be competent to meet 90% of the health needs of the communities in their districts. The eight university departments of Family Medicine have identified five unit standards, broken down into 85 training outcomes, for postgraduate training. The family medicine registrar must prove at the end of training that all the required training outcomes have been attained. District health managers must be assured that the family physician is competent to deliver the expected service. The Colleges of Medicine of South Africa (CMSA) require a portfolio to be submitted as part of the uniform assessment of all registrars applying to write the national fellowship examinations. This study aimed to achieve a consensus on the contents and principles of the first national portfolio for use in family medicine training in South Africa.

Methods

A workshop held at the WONCA Africa Regional Conference in 2009 explored the purpose and broad contents of the portfolio. The 85 training outcomes, ideas from the WONCA workshop, the literature, and existing portfolios in the various universities were used to develop a questionnaire that was tested for content validity by a panel of 31 experts in family medicine in South Africa, via the Delphi technique in four rounds. Eighty five content items (national learning outcomes) and 27 principles were tested. Consensus was defined as 70% agreement. For those items that the panel thought should be included, they were also asked how to provide evidence for the specific item in the portfolio, and how to assess that evidence.

Results

Consensus was reached on 61 of the 85 national learning outcomes. The panel recommended that 50 be assessed by the portfolio and 11 should not be. No consensus could be reached on

the remaining 24 outcomes and these were also omitted from the portfolio. The panel recommended that various types of evidence be included in the portfolio. The panel supported 26 of the 27 principles, but could not reach consensus on whether the portfolio should reflect on the relationship between the supervisor and registrar.

Conclusion

A portfolio was developed and distributed to the eight departments of Family Medicine in South Africa, and the CMSA, to be further tested in implementation.

Background

The National Health Act of South Africa (Act 61 of 2003) identifies the District Health System as the context for 90% of all state health delivery. [1]Within each of the 52 health districts in the country, the family physician is recognized as the person who is primarily responsible for clinical governance. The family physician is seen as the clinical leader of a multi-professional district health team (including nurses, doctors, allied health professions, pharmacists, radiographers, home based careers, and managers). It is expected that family physicians will be competent to meet 90% of the health needs of the communities in their designated districts. The family medicine registrar should be able to prove, at the end of his/her training that all the required training outcomes have been attained. District health managers must be assured that the family physician is competent to deliver the expected service.

The Academy of Family Physicians in South Africa has identified five national unit standards for Family Medicine training [2]. For each unit standard specific training outcomes were identified for the discipline. [2]These training outcomes were revised and updated in 2010. From each of the training outcomes in unit standard two a list of 214 core clinical skills and a number of elective clinical skills were also identified as what is expected from a family physician. [3,4]

The five national unit standards for Family Medicine training in South Africa:

1 Effectively manage him/herself, his/her team and his/her practice, in any sector, with visionary leadership and self-awareness, in order to ensure the provision of high-

quality, evidence-based care

2 Evaluate and manage patients with both undifferentiated and more specific problems cost-effectively according to the bio-psycho-social approach

3 Facilitate the health and quality of life of the family and community

4 Facilitate the learning of others regarding the discipline of family medicine, primary health care, and other health-related matters

5 Conduct all aspects of health care in an ethical and professional manner

Family Medicine was recognized as a specialty in 2007 and all eight departments in the country have established postgraduate training programmes. The departments have various ways of assessing postgraduate outcomes, which include oral examination, written papers and objective structured clinical examinations, simulated consultations and research assignments. These assessments focus on the registrars' knowledge, decision-making skills, communication skills, professional values and practical skills. However the outcomes are often assessed in a deconstructed manner under artificial examination conditions, which does not sufficiently appreciate the complexity of medical practice, where the doctor need to integrate the patient, clinical findings, the context, and him/herself, among many factors. There exists a need to assess competency of family medicine registrars in a more integrated way, looking at their various skills in the context of the workplace (real world). It is clear that some competencies can only be fully assessed in clinical practice. [5]

The Colleges of Medicine of South Africa, including the College of Family Physicians, are developing unitary exit examinations for specialist training. Every postgraduate student presenting for the national examination now has to produce a portfolio of learning. [6,7] This portfolio forms part of the summative assessment of the college fellowship examinations.

This development is in line with international interest on in-service assessments, workplace-based competencies, and the use of portfolios in the arts, architecture, teaching and health. [8-13] A learning portfolio that is correctly used can reflect a detailed picture of the registrar's experience and learning in clinical practice over a period of time. [14] The use of portfolios has been shown to be practical and reliable in assessment of undergraduate medical education [15,16] Apart from use in assessment, it can also function as a reflective journal, a personal development plan, and a skills map. It should stimulate reflective thinking and foster ongoing learning. [17] The possible content and types of evidence for a postgraduate portfolio have

been described in many countries.[18][19] Thistlethwaite explored the reasons, merits and nature of portfolios in medical education, emphasizing the difference between logbooks (which is a list of required activities or skills to be ticked off) and portfolios (which require evidence that learning has taken place). [19]

In contrast with conventional forms of assessment, which test what registrars know (e.g. multiple choice questions) or what they can show in a simulated environment (e.g. OSCE), the portfolio should provide evidence of whether they can actually perform a skill or competency in a more realistic context (district health system, primary health care), on a more continuous basis (day-to-day clinical practice), finally improving health care in the communities served. [20]

The context of learning and the role of a mentor significantly impacts on the learning of a registrar. As opposed to the deconstructed psychometrically-based assessment of learning, a portfolio correctly completed and assessed within the context of everyday work, with an appropriate mentor, increases the validity of learning. [5]

Life-long learning in the uncontrolled workplace context, with a commitment to continuously reflect on practice, needs a new way of thinking and of assessing such learning. [21-23]

Reflection is a key concept in portfolio learning. [24] Becoming a reflective practitioner requires a huge mind shift in the family medicine registrar and the mentor. [23] The rewards include a greater understanding of self and situations, which will inform future action.

The Association of Medical Education in Europe (AMEE) has raised some critical factors regarding the use of a learning portfolio. [25] These include the need for clear goals, combining summative and formative assessment methods, the importance of a mentor, prioritizing time, and allowing flexibility.

A collaborative workshop held at the WONCA Sub-Saharan Africa Regional Conference in 2009 started the process of designing a national portfolio. The workshop was used to generate and prioritize ideas from the participants that related to the contents and principles of the portfolio. This study aimed to take these ideas forward and to achieve consensus on the content and principles for designing the first national portfolio of learning for family medicine postgraduate training in South Africa.

Methods

Study design

The Delphi technique was chosen because this is an ideal method to reach consensus, in this case on the contents and principles of the portfolio. "The Delphi technique is a method of collecting expert opinion on a particular research question. It is based on the premise that pooled intelligence enhances individual judgement and captures the collective opinion of a group of experts without being physically assembled. The conventional Delphi uses a series of questionnaires to generate expert opinion in an anonymous fashion and takes place over a series of rounds." [26] This study involved 4 rounds of questionnaires to an expert panel over a period of one year.

Participant selection

Ninety three experts in family medicine were invited to join the panel from the following three categories:

A. Supervisors who were responsible for training family medicine registrars
B. Family physicians, including those in academia, who were participating in or managing family medicine training programmes
C. Senior family medicine registrars or recently qualified family physicians

Invitations were also intended to produce a reasonably even representation across all eight universities.

Participants were identified through the heads of the eight departments of family medicine. Out of the 93 people approached 31 gave consent and agreed to participate in the expert panel as shown in Table 1. For every round, the questionnaire was sent to all 31 participants.

Table 1: Participants in the Delphi expert panel

	Stellen-bosch	Cape Town	Natal	Witwat-ersrand	Pretoria	Limpopo	Free State	Walter Sisulu	Total
Asked	15	14	12	12	8	12	11	9	93
Consented									
Category	2	1	1	3	2	1	4	1	15

A									
Category B	1	2	1	2	1	1	2	0	10
Category C	2	0	3	0	0	0	1	0	6
Total	5	3	5	5	3	2	7	1	31

Before the Delphi process began consensus was defined as 70% or more of the group agreeing on an answer and items on which consensus were achieved were removed from subsequent rounds.

Round 1

The initial questionnaire (see additional file1), developed by the principal author, with modifications by the two other authors, asked about the content of the portfolio. Questions were based on the national training outcomes for family medicine as well as the contents of various existing portfolios or logbooks used by individual departments, and ideas generated by the WONCA workshop. The panel was asked to rate each of the 85 content items in the draft portfolio as follows:

A: "must be included for assessment in the portfolio",
B: "should be left out ~ can be assessed better in another way", or
C: "would be good to include, but not sure how to assess".

For those items that they thought should be included panel members were asked to respond to the following open questions with a written response:

1. How to provide evidence for the specific item in the portfolio (e.g. direct observation and assessment by supervisor, written assignment)
2. How to assess the evidence provided (e.g. Likert scale, grade, global rating)

Questions on 27 key principles were derived from the WONCA workshop and the literature. The panel was asked to comment on whether they agreed or disagreed with the principles pertaining to the learning portfolio. If they disagreed, they were asked to comment on why they would reject this principle. They were also asked to add any other principles that they thought should be included.

In each round respondents were also asked to give qualitative feedback on the questions, to suggest new questions or to modify existing ones.

Twenty nine participants returned a completed questionnaire from round 1.

Round 2

Items on which there were no consensus, and new items, were presented to the panel in round 2, together with the results and anonymous feedback from the panel's opinion from round 1. During round 2 the participants were asked to select one of three options:

A. "Should primarily be assessed by portfolio."
B. "Should primarily be assessed by other means."
C. "Needs rephrasing. Please rephrase it as you would see it."

Twenty seven participants returned a completed questionnaire from round 2.

Round 3

The panel was given anonymous feedback on the voting from round 2. The 16 items where participants did not reach consensus in round 2, were rephrased and the panel asked to vote whether each item should be primarily assessed in the portfolio or primarily be assessed by other means.

Twenty three participants returned a questionnaire from round 3. Consensus was reached on 8 items, and no consensus was reached on 8 items.

During this time the family medicine departments revised the national training outcomes. This resulted in a change of wording or combination of some of the items tested in the previous 3 Delphi rounds, resulting in 29 new or revised outcomes. It was decided to ask the panel whether these outcomes (items) should be included for assessment in the portfolio or not in a 4th Delphi round.

Round 4

Twenty three participants returned a questionnaire from round 4. Consensus was reached on 13 of the 29 items. No final consensus could be reached on the remaining 16 items and it was

decided that this would be interpreted as a lack of sufficient support to include these in the portfolio.

Results

Learning outcomes

Overall the panel recommended that 50 of the 85 national learning outcomes should be assessed by the portfolio and 11 should not be. No consensus could be reached on the remaining 24 outcomes and these were also omitted from the portfolio.

Learning outcomes to be assessed in the portfolio (50)

Effectively manage him/herself, his/her team and his/her practice, in any sector, with visionary leadership and self-awareness, in order to ensure the provision of high-quality, evidence-based care.

1. Addressing his/ her personal learning needs continually by assessing needs and participating in an appropriate programme of learning.
2. Demonstrating growth and learning in response to identified needs
3. Demonstrating willingness to seek help when necessary
4. Describing activities to enhance self-growth and development
5. Demonstrating ability to develop his/her own capacity
6. Planning, implementing and maintaining information- and record-keeping systems.
7. Demonstrating the ability to plan and conduct a practice audit
8. Implementing ongoing quality improvement activities
9. Critically reviewing research articles and applying the evidence in practice
10. Demonstrating the implementation of research and literature review findings in the management of problems in practice by, for instance, developing protocols for the practice
11. Adapting and implementing appropriate local, national and international clinical guidelines
12. Engaging in monitoring and evaluation to ensure high quality care
13. Implementing rational prescribing and diagnostic testing

14. Communicating and collaborating effectively with members of the health care team and peers

Evaluate and manage patients with both undifferentiated and more specific problems cost-effectively according to the bio-psycho-social approach

15. Taking a relevant history in a patient-centred manner, including exploration of the patient's illness experiences and context.
16. Performing a relevant and accurate examination
17. Performing appropriate special investigations where indicated, based on current evidence and balancing risks, benefits and costs
18. Formulating a bio-psycho-social assessment of the patient's problems, informed, amongst others, by clinical judgment, epidemiological principles and the context
19. Communicating effectively with patients to inform them of the diagnosis or assessment and to seek consensus on a management plan
20. Establishing priorities for management, based on the patient's perspective, medical urgency and context
21. Formulating a cost-effective management plan including follow-up arrangements and re-evaluation
22. Formulating a management plan for patients with family-orientated or other social problems, making appropriate use of family and other social and community supports and resources.
23. Appling technology cost-effectively and in a manner that balances the needs of the individual patient and the greater good of the community.
24. Incorporating disease prevention and health promotion.
25. Effectively managing concurrent, multiple and complex clinical issues, both acute and chronic, often in a context of uncertainty.
26. Demonstrating a patient centred approach to management using collaborative decision making
27. Including the family in management and care of patients whenever appropriate
28. Demonstrates a commitment to building continuity of care and on-going relationships with patients as well as an understanding of the chronic care model
29. Demonstrates the ability to provide preventive care, using primary, secondary, and

tertiary prevention as appropriate, and to promote wellness

30. Demonstrates ability to provide holistic palliative & terminal care
31. Recognising and managing discord in relationships impacting on health, using appropriate tools e.g. genograms, ecomaps where necessary to identify potential problems
32. Collaborating and consulting with other health professionals
33. Co-ordinating the care of patients with multiple care providers
34. Demonstrating appropriate record keeping
35. Performing effectively and safely the technical and surgical skills necessary for functioning as a generalist.

Facilitate the health and quality of life of the family & community.

36. Knowing the resources available in the community and being able to co-ordinate and integrate team efforts.
37. Considering the family in assessment and engaging the family in management at an appropriate level
38. Providing family- and community-oriented care to patients
39. Conducting home visits when necessary
40. Demonstrating an understanding of the concept of and an ability to work in a "community"
41. Demonstrating the ability to identify community health problems and make a 'community diagnosis'
42. Ensuring co-ordination of care and that the holistic needs of a patient are being addressed at any level of care

Facilitate the learning of others regarding the discipline of family medicine, primary health care, and other health-related matters.

Demonstrating the role of the family physician as a teacher, mentor or supervisor by:

43. Describing relevant principles of adult education and learning theory
44. Conducting effective learning conversations in the clinical setting (clinical mentoring)
45. Using educational technology effectively

46. Making an effective educational presentation

Conduct all aspects of health care in an ethical and professional manner.

47. Demonstrate an awareness of the legal and ethical responsibilities in the provision of care to individuals and populations by:
    Identifying and defining an ethical dilemma using ethical concepts
48. Applying a problem solving approach in which the law, ethical principles and theories, medical information, societal and institutional norms and personal value system are reflected
49. Formulating possible solutions to the ethical dilemma
50. Implementing these solutions in order to provide health care in an ethical, compassionate and responsible manner that reflects respect for the human rights of patients and colleagues

Learning outcomes not to be assessed in the portfolio (11)

1. Working effectively as a member of the district health care team, in any sector
2. Demonstrating the ability to contribute to the management of a facility, sub-district and professional practice.
3. Demonstrating the ability to manage and motivate personnel
4. Demonstrating leadership skills within the context of a team
5. Involving others and planning an integrated approach to addressing problems identified in a community
6. Influencing attitudes in a community towards safer health practices
7. Working together with patients in resolving issues relating to public or private organisations which impact on patients' well-being
8. Speaking on behalf of patients and communities when required
9. Demonstrates professional values in relationship to society: e.g. strives for equity in health care delivery, strives for quality in health care delivery, stands up for human rights of patients and colleagues
10. Demonstrates professional values in interpersonal relationships: e.g. deals courteously

with patients, colleagues and the public, having regard for cultural issues and individual dignity

11. Demonstrates professional values in personal behavior: e.g. delivers health care of a consistent high standard irrespective of his/ her own perceptions or prejudices, and the background (with respect to gender, ethnicity, religion or sexual orientation) of his/her patient

Learning outcomes without consensus – also excluded from the portfolio (24)

1. Demonstrating responsible and efficient methods of self-management and self-care
2. Describing and applying the applicable laws with respect to employment practices, labour relations, accounting and running a dispensing practice
3. Interpreting basic financial statements, understanding and applying principles of budgeting, health economics, tax management and principles of financial planning
4. Planning viable health services in a systematic and rational way, incorporating the appropriate use of resources, including human and material resources.
5. Demonstrating an understanding of the principles of the district health system, in the context of the national health system.
6. Facilitating risk management processes
7. Facilitating the development and implementation of a strategic plan
8. Dealing with conflict (with peers, staff and / or patients)
9. Demonstrating sound clinical reasoning at every point in the consultation
10. Counselling patients with regard to a variety of distressing situations such as dreaded diseases and loss, and the need to make difficult decisions.
11. Referring patients to practitioners who are more appropriately qualified than he/she is to manage certain conditions.
12. Demonstrates the ability to make a functional assessment of a patient with impairment or disability and enable their rehabilitation
13. Demonstrates an understanding of the emotional and physical aspects of pregnancy, birth, childhood, adolescence, young adulthood, adulthood and aging
14. Demonstrating an awareness of socio-economic and environmental determinants of ill health and the limits of the biomedical approach to addressing these
15. Demonstrating surveillance skills and an understanding of the processes and procedures

for monitoring the health of a community

16. Demonstrating the ability to engage in appropriate community-based research
17. Supporting patients and communities in standing up for their health rights
18. Using research findings to inform health interventions and advocacy
19. Promoting inter-sectoral interventions that improve the health of a community
20. Assessing the learning needs of others and planning educational activities
21. Facilitating small group learning
22. Eliciting course evaluation and feedback from participants or students
23. Applying the principles of student assessment
24. Applying evidence to the content and methods of teaching

Assessment methods

Most panel members recommended a number of assessment methods for the various outcomes, with many outcomes possibly to be assessed by more than one method. The panel recommended that the following types of evidence and assessments be included in the portfolio:

- A learning plan and reflection on progress at the end of each rotation or twice per year.
- An evaluation of performance by the supervisor at the end of each rotation or twice per year.
- Written assignments, for example to assess the outcome "Demonstrate an awareness of the legal and ethical responsibilities in the provision of care to individuals and populations by identifying and defining an ethical dilemma using ethical concepts."
- Reports of health service meetings that were personally attended and that dealt with clinical governance, such as mortality and morbidity meetings, patient safety, or monitoring and evaluation meetings.
- Multisource feedback evaluations of the registrar's performance, for example to assess the outcome "Work with people in the health care team to create an optimal working climate by communicating and collaborating effectively with members of the health care team and peers."
- Direct observation, feedback and evaluation by the supervisor, for example to assess the outcome "Evaluate a patient according to the bio-psycho social approach by taking a relevant

history in a patient-centred manner, including exploration of the patient's illness experiences and context".

- A logbook of competency to perform clinical skills and procedures.
- Feedback forms from training or educational activities performed by the registrar.

Principles relating to the use of the portfolio

The panel supported 26 of the 27 principles, but could not reach consensus on whether the portfolio should reflect on the relationship between the supervisor and registrar. The panel felt the portfolio would implicitly provide information on the relationship, but that it did not have to explicitly document this.

Portfolio characteristics:

1. A portfolio summary will form part of the CMSA Part 1 examination.
2. The summary is supported by a comprehensive portfolio, not submitted, but regularly updated and formatively engaged with by the registrar and supervisor.
3. It demonstrates reflective learning, going beyond a logbook of activities.
4. It illustrates competency as a family physician to the CMSA and the South African employment market.
5. It is a stimulating, engaging, life-long learning journey, teaching the registrar to become a reflective practitioner.
6. It should change clinical practice, improve care for people in communities, and develop the doctor into a mentor.
7. It must be simple, user-friendly, striving towards less paperwork.
8. The format aims towards an electronic database, with a hard copy back-up.
9. It should eventually be web-based, with the registrar and supervisor having secure access.
10. There should be prompts, with flexibility, e.g. weekly reflections, monthly critical incident reports, supervisor meetings, and 3-monthly learning plans.

Supervisor-registrar relationship:

11. Implicitly linked to the portfolio is the close working and learning relationship between the registrars and their supervisors.
12. Meeting with the registrar every 2 to 4 weeks is a realistic expectation from the supervisor.
13. The registrar is surrounded by a "supervisor team" of peers, family physicians, other specialists, managers, nurses, allied health professionals, patients, and community.
14. While it is implicit that training is ongoing and part of working, 6 hours a week of dedicated time must be set aside for more focussed teaching, research and completion of the portfolio.
15. Honesty between supervisors and registrars is important, including the ability to say that progress is not as expected, and how to improve it.
16. Supervisors should be accredited as competent according to set criteria.
17. The portfolio includes space for the registrar to give feedback on the supervision process.

Assessment issues:

18. Regular recorded meetings with the supervisor are used to set a learning agenda and evaluate progress so that poor competency is detected early.
19. The portfolio contributes significantly towards the CMSA examination mark.
20. Competencies are graded on a Likert-type scale, often with a global score, with recommendations, allowing registrars to improve on low score areas.
21. The portfolio allows for entries by different supervisors, as well as a number of entries by the same supervisor, to increase reliability.
22. The portfolio encourages feedback and reports not only from doctors, but also from nurses, allied health professionals, managers, and patients.
23. An indication of progress should be recorded at the end of each rotation, as well as the end of each year.
24. This progress report is done by the registrar.
25. There should also be an overall report of progress by the supervisor.
26. This report should include a form of Likert scale to grade the overall progress, and qualitative, honest feedback and recommendations for specific areas.

Discussion

Key findings

This was the first attempt to develop a learning portfolio at a national level. The importance of the portfolio as a form of assessment is reflected in the finding that 50 (59%) of the national outcomes were assigned to the portfolio as the preferred method of assessment. The panel also affirmed 26 (96%) of the suggested principles which were derived from the WONCA workshop and literature.

The 35 learning outcomes which were left to other ways of assessment, or where no consensus were obtained, probably illustrate that some of the outcomes are very difficult to assess, and may not even be assessed. Many responders had a rather maximalist idea of everything that can (and therefore should) be accessed through the portfolio. Some comments from the experts included, “Important, but difficult to assess.”, and “Should be captured and be part of the portfolio, but should not be assessed.” Some of these outcomes relate to:

Management of a facility, sub-district and professional practice.
Team work
Personnel motivation
Dealing with conflict (with peers, staff and/or patients)
Leadership skills
Having an integrated approach to community issues
Influencing attitudes in a community towards safer health practices
Clinical reasoning at every point in the consultation
Counselling patients for dreaded diseases and loss, and the need to make difficult decisions
Referring patients
Make a functional assessment of a patient with a disability and enable their rehabilitation
Understanding developmental aspects from pregnancy through to aging

The assessments of the identified outcomes in the portfolio will form part of the assessments methods used in the examinations of the CMSA and family medicine departments, including OSCEs, MCQs, MEQs, simulated or real consultations, orals, and the research assignment, which will assess many of the outcomes not captured in the portfolio.

A major concern was that the portfolio could become an unwelcome burden on supervisors and registrars. Principle 7 related to this: "It must be simple, user-friendly, striving towards less paperwork." This is well recognised across the world, where the recommendation is clearly to make the portfolio "lean and mean", rather than thick and comprehensive. [25,27] The portfolio should capture a sample of what took place that is sufficient to provide evidence of learning and not record every possible activity. [25,27] It will be important to simplify the portfolio, and not try to assess everything that can be assessed by way of the portfolio.

It was noted that there is already a large amount of formal learning and teaching taking place by way of the various university training programmes. Where these assignments and assessments are relevant to the portfolio, they can simply be summarised or included in the portfolio without the need for duplication. More significantly, perhaps, is the large volume of learning at the bed-side or in the consultation room, which often goes unnoticed in the daily work. It will be a challenge for registrars to notice and maximise the potential for learning in these moments of uncertainty and to embrace conversations that enhance their learning as well as solve their immediate clinical problems. [23,24,28] Another challenge will be to routinely record these learning moments in a manner not unlike journaling, or keeping a diary. [24] It is as we write our thoughts down that we start to understand and believe in what we do. This allows for correction, improvement, and growth. [29]

Strengths and weaknesses of this study

The Delphi method enabled a broadly representative panel from across the country to be included and ensured participation of the key stakeholders in the development of the portfolio. It should be noted however that participation was higher from four of the eight universities. Also, participants from Category C (senior family medicine registrars or recently qualified family physicians) were underrepresented. This is understandable given the recent introduction of the specialty.

The revision of the national learning outcomes coincided with round 3 of the Delphi process and had to be accommodated in a 4th round. This could potentially have negatively affected the Delphi process, however the revised national outcomes were broadly similar in content and meaning to the ones tested in Delphi rounds 1–3. It was possible to identify the few truly new concepts and these were easily taken up in round 4, without losing the flow and validity

of the Delphi process. While the Delphi method was most appropriate for this study, it is acknowledged that the validity of the results are dependent on how the expert team is constructed, who actively participated in the process and the agreed level of consensus. For example if we had required a lower or a higher level of consensus then the results would have been different. The criteria for selection of the panel and the expertise was appropriate for the question asked, but again a different response might have been obtained with a different panel or if other categories of people were included, such as policymakers or district managers. The participation of those that consented to the study was high and the lowest response rate was 74% in the final rounds. It also became clear that many panel members had different understandings of commonly used terms in the questionnaires such as supervisor, mentor, logbook, portfolio, and that this may have influenced their opinion and weakened the Delphi process. These were partly addressed through the feedback from panel members, and subsequent to the Delphi process whilst running workshops at the universities on the use of the portfolio, reflective learning, and supervision.

Implications and recommendations

Following the Delphi process the findings of the study were presented to the eight heads of family medicine in a 1-day workshop. They were also part of the experts who participated in the Delphi rounds. This allowed the heads to make sense of and take ownership of the findings. It also allowed a more practical discussion of how these findings should be taken forward. One major issue was the exact frequency and type of assessment for each item in the portfolio, which were elicited by way of open questions in the Delphi. The frequency of assessment for all the learning outcomes was kept to a minimum, appreciating the huge clinical workload of registrars in South African district hospitals, after hours calls, pressure to complete their research assignments, and allowing time for themselves and their families. The thinking was that the registrar and supervisor should be encouraged to make fewer, but more authentic assessments. The workshop also made a final decision on the type of assessment to be used when more than one option was recommended in the findings.

Mostly they decided that registrars should document evidence of learning for a particular training outcome once or twice during the year, or at the beginning and end of clinical rotations. Registrars could be selective in what was included in the portfolio as evidence of learning.

There were only two instances where they suggested that the frequency of assessment should be higher. Ten direct observations per year of patient interactions (including consultations, procedures, and teaching {patients, colleagues, or community} events) were required as well as a minimum of two hours per month of more formal educational meetings with their supervisor. This makes sense, as it is self-evident that the doctor-patient interaction/consultation is a core element in the discipline of family medicine and that eight to ten assessments increases validity.[30] The educational meetings between the registrar and the supervisor are also a critical part of the registrar's learning.[30]

Only one or sometimes two assessment methods (tools) were recommended per item and examples of such tools were included in the portfolio guide. Of course registrars and supervisors are free to use other tools, but again, the aim was simplicity and a degree of national uniformity. For the same reasons there was agreement to have a combination of a global rating and/or a simple Likert scale for most learning events.

Following this workshop a national postgraduate Learning Portfolio (Addendum A) and Portfolio Guide (Addendum B) for Family Medicine training in South Africa was distributed to all eight medical schools and the College of Family Physicians.[7] The eight departmental heads and the CMSA have agreed to facilitate the implementation of the national portfolio in their postgraduate training programmes.

Training in the use of the portfolio, with a focus on learning, reflection, and supervision, has been undertaken with registrars and supervisors in a number of universities.

The portfolio will be further refined, and tested with a sample of family medicine registrars from a number of medical schools in South Africa. Qualitative feedback (questionnaires and semi-structured interviews) on the use of the portfolio will be obtained from registrars, family physicians, other supervisors and managers in terms of the tool's educational impact, acceptability, and perceived usefulness for assessment purposes. A final portfolio assessment tool that will satisfy the requirements of the CMSA will then be devised. Each university's training programme would then adapt the national portfolio to dovetail with their local formative and summative assessment needs, whilst retaining the CMSA requirements.

Conclusion

This was the first attempt to reach consensus on the development of a national portfolio for family medicine training in South Africa. Consensus was reached on 50 items to include, and 26 principles relating to the portfolio. A draft national portfolio and portfolio guide have been developed and distributed to all the medical schools in the country. Further revision and testing with registrars in training is underway, with the aim to deliver a final portfolio in the following year.

Competing interests

The authors declare no competing interests and no funding was sourced for this research.

Authors' contributions

LJ designed the study, conducted the Delphi rounds and gathered the data, with imputs and supervision from BM and AD. LJ and BM carried out the analysis of the data. LJ drafted the paper and all authors contributed equally to the discussion and conclusion. All authors read and approved the final paper.

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Additional files

Additional_file_1 as PDF

Additional file1: Delphi Round 1 Questionnaire

Additional_file_2 as PDF

Additional file2: Portfolio version 1

Additional_file_3 as PDF

Additional file3: Portfolio Guide version 1

4.2 Article 2: The national portfolio for postgraduate family medicine training in South Africa: a descriptive study of acceptability, educational impact, and usefulness for assessment.

The following article was published in BMC Medical Education as follows:

Jenkins L, Mash B, Derese A. The national portfolio for postgraduate family medicine training in South Africa: a descriptive study of acceptability, educational impact, and usefulness for assessment. BMC medical education 2013;13(1):101.

I presented this research at the WONCA African Regional Conference at Victoria Falls in Zimbabwe in 2012, and at the Stellenbosch University Annual Research Day in August 2013.

The national portfolio for postgraduate family medicine training in South Africa: A descriptive study of acceptability, educational impact, and usefulness for assessment

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Abstract

Background

Since 2007 a portfolio of learning has become a requirement for assessment of postgraduate family medicine training by the Colleges of Medicine of South Africa. A uniform portfolio of learning has been developed and content validity established among the eight postgraduate programmes. The aim of this study was to investigate the portfolio's acceptability, educational impact, and perceived usefulness for assessment of competence.

Methods

Two structured questionnaires of 35 closed and open-ended questions were delivered to 53 family physician supervisors and 48 registrars who had used the portfolio. Categorical and nominal/ordinal data were analysed using simple descriptive statistics. The open-ended questions were analysed with ATLAS.ti software.

Results

Half of registrars did not find the portfolio clear, practical or feasible. Workshops on portfolio use, learning, and supervision were supported, and brief dedicated time daily for reflection and writing. Most supervisors felt the portfolio reflected an accurate picture of learning, but just over half of registrars agreed. While the portfolio helped with reflection on learning, participants were less convinced about how it helped them plan further learning. Supervisors graded most rotations, suggesting understanding the summative aspect, while only 61% of registrars reflected on rotations, suggesting the formative aspects are not yet optimally utilised. Poor feedback, the need for protected academic time, and pressure of service delivery impacting negatively on learning.

Conclusion

This first introduction of a national portfolio for postgraduate training in family medicine in South Africa faces challenges similar to those in other countries. Acceptability of the portfolio relates to a clear purpose and guide, flexible format with tools available in the workplace, and appreciating the changing educational environment from university-based to national assessments. The role of the supervisor in direct observations of the registrar and dedicated educational meetings, giving feedback and support, cannot be overemphasized.

Background

Worldwide educational thinking and assessment of health professionals have moved towards a focus on competence in real world situations. [1-4] Public accountability has created a focus on outcomes, with an emphasis on abilities of the professional, de-emphasizing time-based training and promoting greater learner-centeredness. [5] Competencies in context, or entrustable professional activities, are an integration of the competencies that allow a doctor to perform the expected professional activities within a specialty. [6,7] Learning and being assessed in the workplace is underpinned by adult learning theory, which is essentially experiential, with Kolb's learning cycle describing how a learner develops by observing experience, reflecting on that experience, planning the application of this learning, and implementing these plans such that a new experience is created. [8-10] Assumed in this process is supervisor observation of trainees with opportunities for feedback to improve performance. This has been very inadequate, with first year trainees in internal medicine not being observed more than once by a faculty member in a patient encounter involving history taking and a physical examination. [11] Among 1057 counseling sessions involving primary care physicians and surgeons, only 9% of encounters met basic criteria for effective informed decision making. [12] Other studies have shown that physicians fail to elicit over half of patient complaints and that many of the public's complaints about physicians relate to communication problems. [13]

Workplace-based assessment (WPBA) of clinical competence, directly observing trainees at work, has been recognised as a powerful means of changing learner behaviour, with evidence existing for its reliability and validity. [14-17] The shift in the focus of assessment has relevance for the design of high stakes assessment and for formative assessment. [18] Factors that enhance or impede the efficacy of WPBA include the provision of feedback to the

learner and the involvement of faculty in providing training to assessors. [14] Tips for improved observations include that we create a culture that values direct observations, have role models, faculty development, feedback, action planning, observe multiple times, and embed observations within usual patient care. [19] Other facilitators and barriers to implementing WPBA include translating the national curriculum to the local context, designing the curriculum with the needs of the primary users in mind, aligning the benefits directly with the outcomes of health care processes, such as patient safety, and having clear goals, time frames, and monitoring of results in place. [3] WPBA of postgraduate doctors in training is further influenced by the clinical context, patient complexity, passive versus proactive learner attitudes, supervisor involvement and evaluator versus coach attitude, informal versus formal learning processes, working versus learning agenda, and work-orientated versus training-orientated institutional culture. [20-22]

We are still growing in our understanding of how to effectively evaluate clinical competence. [23] We need to stay open to conceptualizations of practice and identity formation, move beyond simply teaching supervisors how to use assessment tools and attempt to understand cognitive barriers, appreciating the value of feedback as a means of engaging trainees in assessment and professional development. [23] How professionals think in the workplace has been described as reflection-in-action and reflection-on-action, as part of an epistemology of practice. [24] A constructivist, social-psychological perspective has been proposed for the "messy" clinical realities in the "swampy lowland" of everyday patient care. [24,25] Learning as a process of controlling, changing or shaping behaviour was influenced by the field of humanistic psychology, which focused on personal development, self-initiated learning, evaluation by the learner, and personal meaning. [26-28] Learning has become not a task to be engaged with or a separate activity, but a way of being in the world, in contrast with critical theory, which is more concerned with the outcomes of learning, namely social change. [29-31] This tension between individual learning and society's expectations is seen in clinical training programmes, where the learner (registrar) focuses on personal growth and meaningful learning, while health service managers and the public are interested in better health outcomes and service delivery.

From this new understanding of how learning takes place in the workplace, a growing body of evidence supports the role of a learning portfolio in both formative and summative assessments of competency in postgraduate training. [32] Many factors have been identified

that influence the successful introduction of portfolios. [33] The purpose must be clear and aligned with the design of its content and structure. For example if it is more formative then it may be designed as a reflective journal, but if it is more summative then it may be designed as a collection of learning events. The changing learning environment, from lecturing to coaching and self-direction, in which the portfolio is used, plays a big role in its success. [33] The portfolio per se does not add any value to learning and assessment – it is only useful or valid to the extent that learners engage with it. [34] Experience with a learning portfolio in the clinical workplace suggest that trainees maintained a low view of its educational value, with barriers of a heavy workload, uncertain usability, and not getting feedback through their portfolios, while positive trainee attitude significantly correlated with greater perceived educational benefits. [35] With supervisors continuing to rely on feedback from clinical colleagues rather than portfolio evidence to monitor trainee development, trainees may battle to experience educational gains and disengage with the portfolio. [35] If feedback, particularly textual multisource feedback, is implemented well, there is evidence that it leads to a perceived positive effect on practice. [36,37]

In South Africa (SA), learning portfolios have been used in postgraduate teaching in palliative medicine and undergraduate internal medicine education. [38,39] The submission of a portfolio of learning has now become a requirement for assessment of training by the Colleges of Medicine of South Africa (CMSA). In order to sit the Fellowship of the College of Family Physicians of South Africa, or FCFP(SA) examination, which is the national exit examination for postgraduate family medicine training, an acceptable portfolio, graded annually by each university, over 3 years, is required. A uniform national portfolio of learning has been developed, content validity has been established among the eight family medicine training programmes, and implemented with registrars in all eight departments of family medicine. [40,41] Workshops on reflective learning, portfolio completion, and supervision have been held at all the medical schools. The portfolio is not seen as the only or ultimate assessment method for training, but has become an increasing valuable tool assisting with the evaluation of clinical competence.

The setting of this study was the eight medical schools in six of the nine provinces in South Africa, each having a division or department of family medicine, with a 4-year postgraduate training programme that leads to a Master of Medicine (MMed) degree. This involves registrars working and learning in training complexes that include district and regional

hospitals as well as primary care health centres and clinics. In the clinical setting registrars are supervised by family physicians as well as other specialists at the regional hospitals. Each training complex is linked to an academic programme run by one of the university medical schools. Ten clinical domains are covered, including mental health, general adult medicine, child health, women's health, HIV/AIDS and infectious diseases, ear/nose/throat/eyes/skin, general surgery, emergencies, anaesthetics, and orthopaedics. Important principles and competencies are also addressed, including consultation and communication skills, ethics, professionalism and human rights, evidence-based practice, family-orientated care, personal and human growth and development, community-orientated care, chronic care, health promotion and disease prevention, management and administration, teaching, education and research. [42]

The national portfolio consists of a lever arch file with dividers between the ten sections, with some electronic evidence or tools, made up of a the following items: An introduction to the portfolio, explaining the formative and summative purpose of the portfolio; a summary of the national learning outcomes for the discipline to be met in the portfolio[43]; personal learning plans for every clinical rotation, reflections on these rotations, with supervisor feedback and a summative assessment by the supervisor for every rotation; a record of various individual and group educational meetings with supervisors or peers, to include at least 24 hours per year[44]; at least ten direct observations by various supervisors, with feedback and summative assessments, with tools provided in the form of mini-CEX, observation of consultations or direct observation of procedural skills (DOPS) or a teaching event; various assignments with a summative grade that are required by the CMSA or the local university programme, including on ethics, community care, family care, teaching, communication, palliative care, and some elective assignments; a logbook with 216 nationally agreed skills that must be completed over four years[45], with guidance on the number and level of competency of procedures; and finally an assessment summary that collates individual summative assessment grades in the portfolio into a grade out of 100, with the program manager adding a global mark, particularly assessing the quality of reflections in the portfolio.[46] The contents of the family medicine portfolio is as follows:

1. Introduction to your portfolio
2. Learning outcomes

3. Learning plans, reflections on rotations and supervisor's assessments
4. Educational meetings with the supervisor
5. Observations of the registrar by the supervisor
6. Written assignments
7. Logbook of clinical skills
8. Emergency medicine certificate(s)
9. Others courses, workshops, conferences
10. End of year assessment

The aim of this study was to establish national registrar and supervisor portfolio engagement, especially whether users found the portfolio acceptable and practical to complete, useful for learning, and useful for summative assessment purposes.

Methods

Study design

The study was a descriptive survey of registrars and their supervisors who had used the portfolio during the previous year. The study was carried out in compliance with the Helsinki Declaration and approved by the Health Research Ethics Committee of the University of Stellenbosch, with Ethics reference number N09/10/258.

Study population

The study participants were selected from across South Africa according to the following categories of expertise:

- Programme managers of the eight MMed programmes
- Family physicians responsible for supervision and training of family medicine registrars
- Family medicine registrars who had used the new national portfolio

The 104 registrars and 96 supervisors from the 8 postgraduate programmes in SA who were using the national portfolio were all invited to participate. This was done by personally contacting every university's programme manager, explaining the study, and requesting the

names and contact details of all supervisors and registrars who were using the portfolio. These were all invited by e-mail to participate.

Data collection

Two structured questionnaires were developed, one for the family physician supervisors and one for the registrars. Construction of the questionnaires was guided by the literature. [33,34,47-50] The key sections in the questionnaires included: Participant demographics, understanding the purpose and reasons for completing the portfolio, whether or not the portfolio guide was read, extent of input into the portfolio, learning activities observed and feedback given, entry of written assignments, the clarity, feasibility, size and reasonability of the portfolio, how to improve the use of the portfolio, learning environment issues relating to work-training balance and secure academic time, educational meetings and the role of supervisors, and how to assess the portfolio. The question format was statements to be scored on a five point Likert scale, ranging from "strongly disagree" to "strongly agree", or offering distinct categories (e.g. 1–2 weekly, 4 weekly, >8 weekly). After every block of questions, room was left open for comments. The questions were delivered using the internet-based software SurveyMonkey®, after piloting and revision.

Data analysis

Data was analysed with the help of the Centre for Statistical Consultation at Stellenbosch University. Categorical and nominal/ordinal data were analysed using simple descriptive statistics. The answers "strongly agree" and "agree" were added up to one score "agree". Pearson Chi-square was used to determine statistical significant differences between variables, defined as significant for a p-value < 0.05.

The responses to the open-ended questions were collated into a word document and analysed with ATLAS.ti version 6.2.27 software.

Results

A total of 48 registrars and 53 supervisors responded (response rate of 50.5%), distributed across seven of the eight universities in the country. Of the 53 supervisors, 60% were male and 40% female; and of the 48 registrars, 71% were male and 29% female. The mean age of the supervisors was 47.2 years (SD 11.50), and the mean age of the registrars was 35.0 years

(SD 5.15). Eight registrars (19.0%) were in their first year of academic training, 18 (43.0%) in their second year, 12 (28.6%) in their third year, and 4 (9.5%) in their fourth year of training.

How practical and acceptable is the portfolio?

Most supervisors felt that the portfolio was practical and feasible to complete, while only half of the registrars agreed with this (Table 1).

Table 1: Supervisors' (n=23) and registrars' (n=26) views of the portfolio

	Supervisors Agree (%)	**Registrars Agree** (%)	**p-value**
I read the guide and portfolio together	23 (100.0)	20(76.9)	0.01
Instructions in portfolio were clear	20(86.9)	14(53.8)	0.01
Portfolio was practical and feasible to complete	20(86.9)	13(50.0)	0.006
What was required in portfolio was reasonable	19(82.6)	18(69.2)	0.28
Portfolio reflects accurate picture of learning	16(69.5)	14(53.8)	0.26

Overall engagement with the portfolio was lower than expected, particularly with the learning plans, logbook, written assignments and direct observations (Figure 1). In terms of reflections and reports on clinical rotations, 19 (82.6%) supervisors contributed a report and a grade, and only 16 (61.5%) registrars recorded their reflections on these rotations. Engagement with the new portfolio may have increased over time, as one registrar commented:

"*Initially I was quite reluctant to use the portfolio as it just seemed like another thing to do in an already full rotation. However, the more I have used it, the more I have appreciated its worth.*"

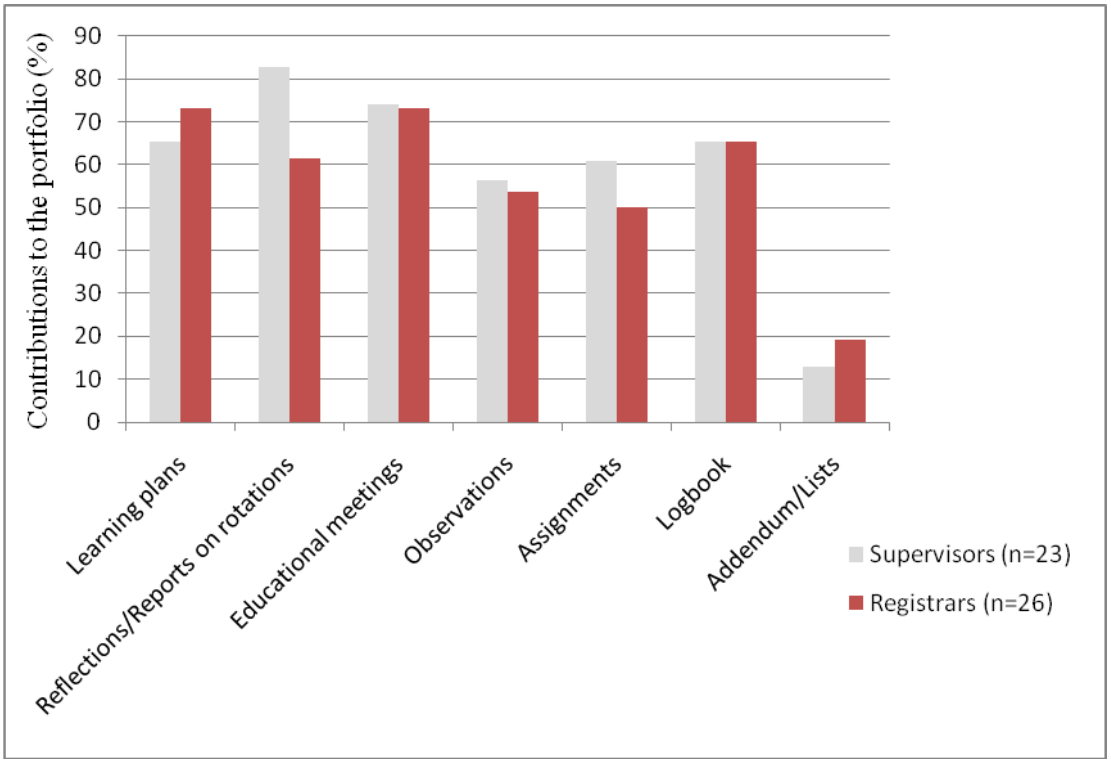

Figure 1: Contributions to the registrar portfolio by supervisors and registrars

The commonest observation was of the consultation (n=33, 67.3%), followed by registrar's teaching activities (n=28, 57.1%), and clinical procedures (n=25, 51%). Direct observation was used by all the supervisors, while only 4 (17.4%) supervisors and 5 (19.2%) registrars used video and 1 (4.3%) supervisor used audiotape for indirect observation. The assignments that registrars most frequently completed were on clinical competence (71.4%), evidence-based medicine (65.3%) and ethical reasoning (57.1%); followed by family orientated primary care (49.9%) and community orientated primary care (26.5%). The frequency with which registrars included these various types of assignments in their portfolio ranged from 12.2% to 51.0%.

Both groups agreed that the pressure of service delivery made training and portfolio completion difficult, as captured in the following quote:

"*We are already overwhelmed by the workload we face every day and putting that responsibility on our shoulders again will mean bending to breaking point*."

Only 25 (51.0%) of registrars and supervisors combined thought that the portfolio helped to ensure clinical training took place during service delivery and 39 (79.6%) thought that the pressure of service delivery made completion of the portfolio difficult.

Understanding the portfolio

While most of the supervisors felt that the instructions in the portfolio were clear, only about half of the registrars agreed with this (Table 1). All the supervisors, but only 76.9% of the registrars read the portfolio with the portfolio guide (Table 1). Fifteen (65.2%) supervisors said their registrars understood how to use the portfolio, while 14 (53.8%) registrars thought their family physician supervisors understood how to use the portfolio. While 12 (54.5%) supervisors thought that family physicians and other specialist supervisors understood how to use the portfolio, 22 (91.7%) registrars thought that non-family physician supervisors did not adequately understand how to use the portfolio. Only 21(42.8%) supervisors and registrars had attended a workshop on how to use the portfolio in the current year, of which 90.0% found the workshop useful. Responses to the open questions frequently asked for more guidance in using the portfolio.

Time and format

Considering secure academic time for portfolio completion, 37 (75.5%) supervisors and registrars agreed that 1–3 hours per week was sufficient. Some felt it was labour intensive and expected too much from the registrar and supervisor. Forty one (83.6%) were happy with the A4 size. Registrars suggested that the portfolio would be more practical if examples of what was required and a checklist of the essential items were included, with more regular deadlines to check progress, and a better layout of the contents. There was support for having the various tools and forms that could be included made more available, preferably electronically (e.g. internet). There was agreement that reflections should be captured as they happened. Registrars were more in favour of a brief daily dedicated time for this, using written notes in a journal or laptop, rather than an audio-recorder. Registrars liked the idea of a daily time for writing and reflection, including weekly dedicated time to update their portfolios. More regular interaction with the supervisor and other registrars specifically on the portfolio was supported, as well as motivating other specialists to be more supportive of their portfolios.

Ownership

Table 2 shows the respondents' views on who takes ownership of the portfolio and what motivates them to complete it. Overall the registrars found it more useful in enabling reflection on learning than the supervisors' believed was the case (p=0.03). Supervisors were more inclined to believe it was completed because it was a university regulation. While all agreed that registrars had to take responsibility for completing the portfolio, the registrars wanted the supervisors to take more responsibility:

"*With regards to the learning events, ultimately it is my responsibility to enter it, but if the supervising family physician is not often available or approachable, it is difficult to negotiate*."

Table 2: Ownership and motivation to use the portfolio

	Supervisors agree n=23 (%)	**Registrars agree n=26** (%)	**p-value**
They only complete the portfolio because it is a requirement of the university	21 (91.3)	20 (76.9)	0.17
They complete the portfolio because it helps them reflect on what they have learnt	10 (43.5)	19 (73.1)	0.03
They complete the portfolio because it makes their learning needs clearer	12 (52.2)	15 (57.7)	0.70
They usually only work on the portfolio when there is a university deadline	17 (73.9)	14 (53.8)	0.15
The supervisor should take responsibility for ensuring that the registrar's learning events are observed and captured in the portfolio	7 (30.4)	16 (61.5)	0.03
The registrar should take responsibility for ensuring that his/her learning events are observed and captured in the portfolio	22 (95.7)	21 (80.8)	0.11

What is the perceived educational impact of the portfolio?

Respondents were asked about the perceived educational impact in terms of the four stages of Kolb's learning cycle. [10] There was strongest support for the portfolio's ability to help registrars observe (43, 87.8%) and reflect on their experience in a way that made learning explicit (42, 85.7%). There was slightly less support for its ability to plan future changes in clinical practice (36, 73.5%) and actually implement them (33, 67.3%). Interestingly, while 16 (69.6%) supervisors thought that registrars were reluctant to record mistakes or negative experiences in their portfolio, only 11 (42.3%) registrars agreed. The majority, 35 (71.4%), reported that the portfolio also helped to integrate learning from theory, i.e. journal articles or textbooks, with clinical practice.

Educational meetings

Table 3 combines the responses of registrars and supervisors to give a picture of how frequently and what types of educational meetings took place. Educational meetings were required for completion of several sections of the portfolio. It is encouraging that 86% reported 1–2 weekly meetings with someone who could facilitate their learning. Meetings with a family physician took place less often and with their specific supervisor the least of all. There was no significant difference in the frequency of educational meetings between working in a regional or district hospital. Thirty four (69.4%) supervisors and registrars agreed that meetings were planned, while the same number reported that ad hoc meetings also occurred. While most meetings were taking place as expected, of note is that the setting of a learning agenda never took place in 14.3% of participants, and direct observations of clinical skills infrequently in 30.6%, and never in 12.3% of participants. The discussion of personal problems featured quite prominently, happening daily to monthly for 59.2% of participants.

Table 3: Frequency and types of educational meetings [**N=49**]

	1-2weekly n (%)	**4 weekly n** (%)	**≥ 8 weekly n** (%)
An educational meeting between the registrar and someone who can facilitate their learning happens	42 (85.7)	4 (8.2)	3 (6.1)

A face-to-face meeting between the registrar and supervisor happens on average	31 (63.2)	8 (16.3)	10 (20.5)
If the registrar(s) work in a regional hospital how often do they meet with a family physician?	34 (69.4)	9 (18.3)	6 (12.2)
If the registrars work in the district, how often on average do they meet with a family physician?	37 (75.5)	6 (12.2)	6 (12.2)
	Daily to weekly	**2-4 Weekly**	**≥ 8-Weekly**
Setting a learning agenda	4 (8.2)	14 (28.6)	24 (48.9)
Intermittent evaluation of progress	2 (4.1)	22 (45)	23 (46.9)
Observation or demonstration of communication/procedural skills	13 (26.5)	15 (30.6)	15 (30.6)
Discussion of patients/cases	22 (44.9)	19 (38.7)	5 (10.2)
Critical reflection or appraisal of scientific literature	13 (26.5)	24 (48.9)	10 (20.4)
Academic programme/research issues	10 (20.4)	28 (57.1)	6 (12.3)
Personal problems	10 (20.4)	19 (38.8)	8 (16.3)

Feedback

Feedback to the registrars regarding their learning and progress was perceived by both groups, but especially the registrars (88.5% vs. 52.2%, p=0.005), to be very inadequate. As expected most feedback was received from family physicians and other specialists. The registrars reported less feedback from family physicians and other specialists and more from other registrars, medical officers, patients, or nurses, than the supervisors thought. Both groups reported little feedback from managers. Communication happened most often in one-to-one meetings (22, 84.6%) and group meetings (22, 84.6%), less via e-mail (16, 61.5%), and very seldom via the internet (7, 26.9%).

How useful is the portfolio for assessment?

Table 4 shows the respondents' views on how the portfolio should be assessed. In terms of summative assessment of the portfolio, 11 (47.8%) supervisors and 14 (53.8%) registrars said the portfolio should be graded at the end of rotations, while 9 (39.1%) supervisors and 7 (26.9%) registrars said it should be graded once a year, and 3 (13.0%) supervisors and 5 (19.2%) registrars said twice a year. All the respondents agreed that all the sections in the portfolio should be assessed, but the registrars felt less strongly about including the acquired number of entries for specific items, e.g. number of observations.

Table 4: Agreement on sections that should contribute to the assessment of the portfolio

	Supervisors n=23 (%)	**Registrars n=26** (%)	**P-value**
Achieving the goals in the learning plan	22 (95.6)	23 (88.4)	0.36
Achieving the required number of entries for specific items e.g. number of observations	20 (86.9)	15 (57.7)	0.02
Evidence of improvement during the year e.g. improvement in rating of skills	21 (91.3)	20 (76.9)	0.17
Evidence of critical reflection on one's experience, growth and development e.g. reflections on rotations	23 (100.0)	23 (88.4)	0.09
Assessments by the supervisor e.g. at the end of rotations	23 (100.0)	24 (92.3)	0.17
Assessments given for specific items in the portfolio during the year e.g. assignments included in the portfolio	20 (86.9)	23 (88.4)	0.87
The logbook satisfactorily completed	22 (95.6)	22 (84.6)	0.20
The overall presentation and layout	17 (73.9)	19 (73.1)	0.95

"*The number* (*ten*) *of observed consultations during the year is extremely difficult to achieve. Often one is working in specialized departments whose consultants do not value spending their time watching you consult with a patient, and the primary health care facilities are too busy to take time for those consultations*."

There was some uncertainty with the logbook as a tool used for assessment, with comments such as this:

"*I find the logbook confusing to complete. I am unsure whether it is supposed to be a tool for directly observed procedures or just a general self-reporting tool. It also does not have enough space to keep adding as you learn and grow.*"

Discussion

How acceptable and feasible is the portfolio?

Guide and purpose

Almost a quarter of registrars had not read the guide to the portfolio and approximately half did not find the portfolio clear, practical or feasible. Supervisors had a more positive perspective, but non-family medicine supervisors were perceived to have little understanding of the portfolio requirements. The reasons for this may include that people had not studied the guide sufficiently, that the guide was not clear enough, or that people simply felt overwhelmed. It could also indicate a mismatch between their understanding of learning and the actual learning environment within which the portfolio was embedded. It is well described that a condition for success of portfolio learning is that it should be carefully embedded in an overall guidance system. [34,51] There needs to be clarity in the minds of the registrars and the supervisors about the goals (or purpose) of the portfolio. [33] The portfolio included a formative feedback component to the registrar, a summative graded component to the local training programme and achievement of an acceptable standard for entry to the national college examinations. The portfolio has been introduced in the context of changing from university-based examinations towards national college-based examinations, which may have complicated the acceptance of the portfolio. [33] As the college exam relieves the local training programmes of the need to conduct their own final summative evaluation, the portfolio may be given more weight and importance in the local setting. The usefulness of workshops on the use of the portfolio was evident and indicated a need for on-going engagement of registrars and supervisors on how to learn, reflect, supervise and assess in the workplace, and document this in the portfolio. Consequently, extensive workshops with all staff have been conducted on portfolio learning in all eight medical schools in the country. The portfolio guide is no longer a separate document, but has been incorporated as an introduction into the portfolio, with a short explanation around process, content and assessment for every section.

Time and format

There was strong agreement to have a brief dedicated time every day to reflect and write in their portfolios. It is important to capture reflections as they happen. The use of a journal or a

diary, or an electronic tablet or laptop was strongly supported. This, together with the support for more regular meetings between the registrars and supervisors to discuss their portfolios, with protected weekly academic time, is imperative if formative feedback, and by implication, also summative assessment in the workplace, is to happen in a meaningful and valid sense. [51] Both supervisors and registrars agreed that the current pressure of service delivery makes training and portfolio completion difficult. Ultimately an electronic portfolio will be ideal, but has its own challenges. [52] In the meantime, the structure of the paper-based portfolio has being revised to incorporate the suggestions from this study.

Educational impact: How did the portfolio help the registrar to learn?

While most of the supervisors felt that the portfolio reflected an accurate picture of learning, just over half of the registrars agreed with this. In contrast, most registrars reported that they completed the portfolio because it helped them reflect on what they have learnt, while less than half of the supervisors thought this was the case. Comparing with the four stages of Kolb's learning cycle the impact of the portfolio was perceived to gradually decrease from observing and reflecting on their clinical experience, and to clarify through abstract conceptualization what they have learnt from that experience, to planning improvement and implementing change in clinical practice. [9,10] The impact of the portfolio on planning improvement correlates with the observation that learning plans were recorded in just over 70% of cases.

Educational meetings

Educational meetings between registrars and supervisors provide the opportunity for a range of different types of learning conversations. [44] While most participants reported that this happened 1–2 weekly, which is encouraging, these learning conversations were only being captured in the portfolio in just over 70% of cases, making it difficult to know how much learning took place and how to assess it. The frequent discussion of personal problems is perhaps not unusual, and points to the importance of a clinical supervisor who is concerned for the growth of the whole person. [53,54] Working in a harsh environment with competing expectations and threat of burnout makes the support and understanding of the supervisor critical not only to registrar learning, but also to resilience in the situation. [55,56] This may be related to registrar drop out. It also relates to the kind of personal growth in terms of one's whole life, purpose and meaning that is happening at this stage of the lifecycle as people also

try to make sense of who they are and where they are going. The importance of this may be more than we think, and is probably more pronounced in more developing countries with high disease burdens and low staffing ratios.

Supervision and feedback

While all agreed that ownership of the portfolio rested with the registrars, the registrars wanted the supervisors to take more responsibility around supervision, educational meetings, and giving feedback. It is important that the portfolio of learning belongs to the registrar, and that the registrar has the full support of a supervisor. [49] A clinical supervisor knows the registrar personally and should be able to evaluate authenticity and depth of portfolio contributions. [52] The supervisor needs to support the registrar's learning by helping to extract the maximum benefit from what occurs. [57] Feedback was perceived by both groups, but especially the registrars, to be very inadequate, with less feedback from family physicians and other specialists and more from another registrar, medical officer, patient, or a nurse, than the supervisors thought. These latter groups are under recognised for their contributions, and could be incorporated more formally into the portfolio. [58] A wider variety of useful learning conversations could be included beyond the usual individual meetings with a supervisor, such as brief "corridor conversations", mutual mentoring (self-help pairs or small groups of registrars), telephone mentoring (particularly if supervisor and registrar are working in different sites), and group-based mentoring. [49] Supervisors need tremendous support and structure to be able to supervise as is expected from them. [59] Training in skills of listening and giving feedback, awareness of self and others, peer support, being recognized and rewarded, protected time, and assessment are all important. [59] As most supervisors are not employed by the university their ability to perform these training and teaching roles relies on collaboration with the Department of Health and a commitment from them to enable and support these roles. [42]

How useful was the portfolio for the assessment of the registrar?

Reflections and clinical rotations

While the supervisors graded most of the rotations, suggesting that they understood the summative aspect, the registrars reflected on their rotations in only 61% of cases, suggesting that the formative aspects of the portfolio are not yet utilised as expected. This is not

surprising, considering the low levels of feedback reported, the need for more protected academic time indicated, and both groups indicating the pressure of service delivery. Previously identified factors for successful implementation of a portfolio include clearly communicated goals and procedures, integration with curriculum and assessment, flexible structure, support through mentoring, and combining formative and summative assessment. [34] Our results show that we are on a learning curve applicable to all these factors. We need to be comfortable with the 'implementation dip', which can take a few years, before portfolios become accepted, during which time listening to people's doubts and adapting is necessary. [52,60]

Observations

Both the supervisors and registrars agreed that all the sections in the portfolio should be assessed, but the registrars felt less strongly about including ten direct observations of their competencies. This may have been because of the difficulties in finding a suitable observer. We know that assessment of competence is highly dependent on context and content, and to achieve reliable assessment we need a large sample (typically 8–10) across the curriculum. [61,62] The portfolio has been developed to include observations of a number of different skills, observed by different supervisors, in different settings, to increase the reliability and validity of the assessment. [62]

Assignments

Assignments, particularly those relating to clinical competence, evidence-based medicine and ethical issues were entered into the portfolio in 51.0% or less of cases. Typically, assignments are done as part of the academic programme and may not be fully integrated with clinical training and supervision. For more valid assessments, these assignments need to move from the "high, hard ground" closer to the "swampy lowlands" and to be engaged with more fully by the supervisor in the clinical context. [24] As validity relies on authenticity and integration of competencies in a complex environment, it is precisely this integration of theory, learning and practice that the portfolio aims to encourage and capture. [62]

Recommendations

Moving towards service-based learning and workplace-based assessment relating to the outcomes for family medicine training in South Africa [43,63], this study provides some evidence that the portfolio can work, provided some conditions are met, particularly:

1. Having a clear purpose and guideline for the portfolio.
2. Having the portfolio tools available in a feasible and flexible format, to facilitate entries and assessments, slowly moving from paper-based to an electronic format.
3. Building ownership of the portfolio by the registrar.
4. Creating realistic expectations about the time investment involved, securing perhaps 20 minutes daily for portfolio entries, and weekly or 2-weekly 30–60 minutes for learning conversations and feedback with the supervisor.
5. Investing in competent trainers through recognition, training workshops, secure academic time, and feedback from registrars and training programmes.
6. Embedding the portfolio in everyday practice, with the registrar taking advantage of both planned and opportunistic learning.
7. Supporting the registrar in each part of the learning cycle.
8. Developing resilience through attention to personal growth and development.
9. Developing an assessment tool that includes all sections of the portfolio and which provides reliable feedback on the progress of the registrar and acceptability of the portfolio for entry to the national exam.
10. Maintaining a strong formative focus at the level of the local training programme.
11. Allowing time for the portfolio to find its place in the workplace and to be accepted by registrars and supervisors.
12. Future work should include exploring an electronic portfolio with access via mobile technology.

Limitations

The number of study participants was relatively small, with 50% non-responders. From telephonic and e-mail inquiries to supervisor and registrar non-responders, the main reason given was lack of time to complete the rather long online questionnaire. No specific pattern or bias could be detected in the non-responders. The national postgraduate portfolio of learning is a recent introduction in family medicine in South Africa. Hence the registrars that

participated in the study were predominantly from the first and second years of specialisation (62%). It was interesting to note the predominant male response rate. This is not explained, but noted. Only seven out of eight medical schools participated, which might have skewed the results. However the medical school that did not participate is similar to the other medical schools, and had just started to implement a learning portfolio. It is unlikely that their inclusion would have changed the results significantly. About equal numbers of registrars and supervisors contributed. The registrars and supervisors were not paired, mostly because supervisors and registrars tend to rotate, which means we could not directly compare the opinions of a registrar with those of his/her concurrent supervisor.

Conclusion

The introduction of a national portfolio of learning for postgraduate training in family medicine in South Africa faces challenges similar to those reported from high income countries. [32-34] The acceptability of the portfolio relates to a clear purpose and guide, a flexible format with tools available in the workplace, and appreciating the changing educational environment from university-based assessment to national College-based assessment into which the portfolio is being introduced. The role of an available supervisor in direct observations of the registrar and dedicated educational meetings, giving feedback and support, cannot be overemphasized. This is a particular challenge in low-resource countries like South Africa, and may well apply to similar countries. Summative and formative assessment via the portfolio is a realistic expectation.

Competing interest

The authors declare that they have no competing interests.

Authors' contributions

All three authors contributed to the planning and design of the questionnaire. LJ collected the data and analysed the results. All three authors contributed to the writing of the article. All authors have read and approved the final manuscript.

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4.3 Article 3: The national portfolio of learning for postgraduate family medicine training in South Africa: Experiences of registrars and supervisors in clinical practice

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The national portfolio of learning for postgraduate family medicine training in South Africa: experiences of registrars and supervisors in clinical practice

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Abstract

Background

In South Africa the submission of a portfolio of learning has become a national requirement for assessment of family medicine training. A national portfolio has been developed, validated and implemented. The aim of this study was to explore registrars' and supervisors'

experience regarding the portfolio's educational impact, acceptability, and perceived usefulness for assessment of competence.

Methods

Semi-structured interviews were conducted with 17 purposively selected registrars and supervisors from all eight South African training programmes.

Results

The portfolio primarily had an educational impact through making explicit the expectations of registrars and supervisors in the workplace. This impact was tempered by a lack of engagement in the process by registrars and supervisors who also lacked essential skills in reflection, feedback and assessment. The acceptability of the portfolio was limited by service delivery demands, incongruence between the clinical context and educational requirements, design of the logbook and easy availability of the associated tools. The use of the portfolio for formative assessment was strongly supported and appreciated, but was not always happening and in some cases registrars had even organised peer assessment. Respondents were unclear as to how the portfolio would be used for summative assessment.

Conclusions

The learning portfolio had a significant educational impact in shaping work-place based supervision and training and providing formative assessment. Its acceptability and usefulness as a learning tool should increase over time as supervisors and registrars become more competent in its use. There is a need to clarify how it will be used in summative assessment.

Keywords

Portfolio, Family medicine, Postgraduate, Adult learning, Work-based, Supervision, Service pressure

Background

South Africa has seen major advances in healthcare to address its quadruple burden of disease; namely HIV and tuberculosis; non-communicable chronic diseases; injury and violence; and maternal, neonatal and child health.[1] The national plan for re-engineering

primary health care (PHC) emphasizes the central role of the family physician as a clinical leader in the district health team. The planned national health insurance scheme needs a massive scaling up of the numbers of doctors.[2,3] South Africa was short of 80 000 health care professionals in 2008.[4] The challenge of training and keeping sufficient numbers of competent doctors in all 52 health districts is influenced by multiple factors, including career choices, job satisfaction, career advancement, work conditions, and educational opportunities.[4,5] The importance of social accountability requires that education and training of health professionals must be aligned with the health needs of the country.[6] The national human resource policy aims for 900 family physicians by 2020, which will require a doubling of the number of registrars in training from 2014.[7]

National training outcomes and a single national exit examination have been developed for family medicine.[8-10] Registrars enter a 4-year programme at one of the eight university departments, attached to a clinical complex consisting of PHC facilities, a district hospital, and a regional hospital. Eligibility for the exit examination of the national College of Family Physicians, to qualify as a consultant family physician, requires completion of three years of supervised clinical training in a registrar post in one of these complexes and submission of a portfolio of learning with satisfactory evidence of learning. Figure 1 illustrates the various competencies expected from the family physician.[11]

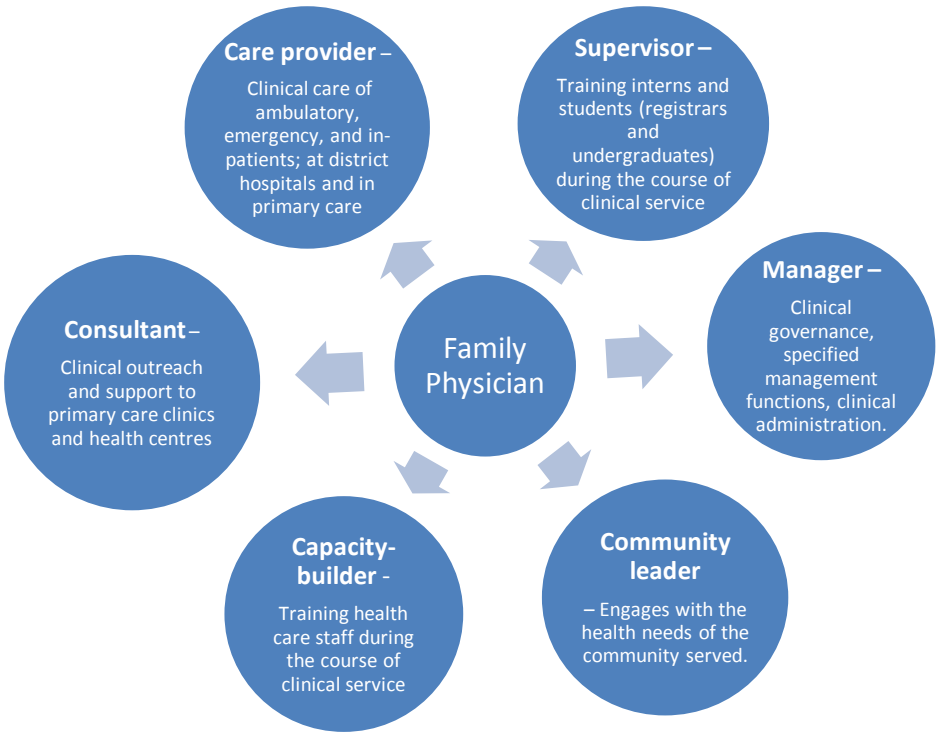

Figure 1: The competencies expected of a South African family physician.[11]

While workplace-based assessment (WPBA) has been discussed in educational policy in South Africa for the last 20 years, most postgraduate programmes still examine their registrars away from the PHC and district context, usually in simulated environments at the university.[12,13] Worldwide, the growing interest in quality improvement and increasing demands for social accountability have shifted the focus of assessment from the university to the work place.[14-16] WPBA typically involves the use of tools for direct observation of patient encounters or procedures, 360-degrees peer review, and significant event analysis.[14,17]

Portfolio-based learning as part of registrar's WPBA encapsulates many aspects of competency-based assessment and has been introduced in many countries and disciplines in the last 20 years.[18] We can define the portfolio as "a collection of material made by a professional that records and reflects on key events and processes in that professional's career".[19] Many purposes for keeping a portfolio exist, which must be made explicit to both the registrars and their supervisors.[18,20] Depending on the purpose, the portfolio's content could range from a logbook-type enumeration of skills performed to a personal journal with evidence of deep reflection. It could be for personal or professional development, for curriculum requirements or to satisfy external agencies, such as the College of Family Physicians.

The portfolio needs to go beyond being just a collection of achievements and demonstrate reflective understanding of how and why these achievements contributed to personal and professional growth. In other words, reflective learning, as part of lifelong learning, embedded in everyday professional practice, is an integral part of the portfolio.[21,22] Attaining this deeper level of reflection on learning is not supported by the pedagogic framework of teacher-centred (as opposed to learner-centred) education people grew up with, or by the service delivery workload which squeezes out time to reflect in- or on-action.[23] The process of reflection itself requires engagement in critical self-awareness, with skills needed in mindful practice.[24,25] Therefore the creation of an ideal portfolio constitutes a shift in one's educational paradigm, which must be achieved in addition to understanding the portfolio requirements. For this type of learning to happen as part of the process of keeping a portfolio, the registrar needs support from a skilled supervisor, who understands reflective learning.[18]

Since the 1970s adult learning, or andragogy, introduced the concepts of self-directed learning, accumulated experience as a resource for learning, and problem-based, real world learning.[26] Experiential learning describes how registrars learn from having a particular experience, reflecting on that experience, developing abstract conceptualisations and then testing these in a new situation.[27] Facilitating such experiential learning should be an extension of everyday life, and as valid as other forms of learning.[18] This form of deep learning, as opposed to lecture style didactic surface learning, assumes intrinsically motivated registrars, actively involved in their own learning, exploring their thinking in learning conversations with supervisors and others.[28-30]

The competencies expected of family medicine registrars in South Africa are contained in the five national unit standards for the discipline as follows: [10]

1. Effectively manage him/herself, his/her team and his/her practice, in any sector, with visionary leadership and self-awareness, in order to ensure the provision of high-quality, evidence-based care
2. Evaluate and manage patients with both undifferentiated and more specific problems cost-effectively according to the bio-psycho-social approach
3. Facilitate the health and quality of life of the family and community
4. Facilitate the learning of others regarding the discipline of family medicine, primary health care, and other health-related matters
5. Conduct all aspects of health care in an ethical and professional manner

The portfolio is a tool to facilitate learning and attainment of these outcomes in the clinical context. Typically, a reflection on a patient encounter, significant event analysis or a direct observation of a patient encounter by the trainer will raise multiple complex issues. Issues may relate to clinical care, the health system, relationships, teamwork, personal growth or ethics. All of these dimensions could be captured in the portfolio. Although portfolio ownership rests with the registrar, learning through experience, reflection, and discussion can only take place effectively with adequate support and focussed time.[31] This applies to both formative and summative assessment and emphasises the importance of training clinical supervisors, and giving them feedback from registrars.[32-35] Registrars must be coached in reflective practice and this must be embedded within their training. This asks for a shift from supervision, where the registrar is being watched, to training, where the concept of

journeying together is stronger, to eventually mentoring, where both trainer and registrar reflect on their own journeys. While flexibility is part of the strength of the portfolio, a basic structure is important for review and assessment of the content.[18] Consequently, the South African portfolio contains in its basic structure the following sections: [36]

1. Introduction and purpose of the portfolio
2. Learning outcomes expected
3. Learning plans, reflections on rotations and supervisor reports
4. Educational meetings
5. Direct observations of consultations, procedures, and teaching events
6. Written assignments
7. Logbook
8. Emergency medicine training certification
9. Additional courses and conferences
10. Final assessment

Pre-printed tools to assist the registrars and supervisors and space to give feedback or grade the registrar are also incorporated into the portfolio. While the summative assessment of the portfolio will always contain subjectivity, the use of a portfolio assessment tool, with grades for every section, and a final overall grade for the portfolio, serves three functions:

1. The portfolio grade can count towards the university's assessment of clinical family medicine in the Masters programme.
2. A satisfactory completed portfolio over three years is mandatory for the national College exit examinations.
3. It encourages the registrars to regularly reflect on and document their learning, prompts the learning process, and through changed behaviour leads to better patient care, and a habit of lifelong learning and reflection.

The portfolio was recently introduced at a national level in South Africa, and still fits like "new shoes" which must be worn in.[37,38] While much has been written on using portfolios in postgraduate training and assessment, the practical use of portfolios, particularly in South Africa, is still not well understood. The aim of this study was to explore the views of

registrars and supervisors regarding the portfolio's educational impact, acceptability, and perceived usefulness for assessment of competence.

Methods

Study design

This was a prospective, descriptive study, using qualitative semi-structured interviews with key informants.

Ethical considerations

The study was carried out in compliance with the Helsinki Declaration and approved by the Health Research Ethics Committee of the University of Stellenbosch, with reference number N09/10/258.

Setting

The eight medical schools in South Africa each have a postgraduate family medicine training programme, offered at a Master's level (MMed), over 4 years. Various combinations of clinical rotations exist in PHC, district hospitals, and specialist departments in regional hospitals. The registrars work under direct supervision of either family physician consultants or specialists in the regional hospitals. Supervisors and most programme managers also do clinical work. With the recognition of the specialty of Family Medicine in 2007, the College of Family Physicians has introduced a unitary exit examination for family medicine training in the country. A satisfactory portfolio of learning over three years is required for their Fellowship of the College of Family Physicians [FCFP (SA)]. National consensus was reached in 2010 on the content and construct validity of the portfolio and a draft national portfolio implemented.[38] After a national survey to obtain feedback on the portfolio it was further refined and the final portfolio is now the standard in all eight programmes.[36,39]

Researchers' relationship to the topic

Taking a reflexive stance, we need to give a brief explanation of how the researchers are positioned contextually in relation to this research.[40] The first author (LJ) has been working in clinical practice for 20 years. He is a family physician supervisor of registrars in training

and the training complex co-ordinator for the George training complex under Stellenbosch University. He is therefore immersed in the everyday issues of clinical work, training, learning, and assessment of registrars. The second author (BM) is currently the Head of the Division of Family Medicine and Primary Care at Stellenbosch University and is responsible for the final approval of portfolios for entry to the FCFP (SA) national exam. He previously developed the postgraduate training programme at Stellenbosch University and the previous logbook, aspects of which were incorporated into the portfolio. He has a strong background in qualitative research and has published extensively in this area.[41-45] Until recently he was a full time family physician working and teaching in clinical practice in South Africa. The third author (AD), from Belgium, brings an external European perspective to the study and helped to make explicit the differences between clinical learning and assessment in the South African context versus the European context. He has extensive experience in using portfolios in the workplace and is an academic and practicing family physician. He is also familiar with the local context through his involvement over several years in a project to develop family medicine education in South Africa that was funded by the Flanders Interuniversity Council.[46,47] This is the third article, in a series looking at the development of the family medicine learning portfolio in South Africa, by all three authors.

Study population and sampling

Nine registrars and eight supervisors from all eight universities were purposively sampled as key informants because of their experience with using the new portfolio during the previous year (see Table 1). The first and second authors are well acquainted with all eight university programme managers. We asked the programme managers to recommend registrars and supervisors who were using the portfolio regularly and who would be willing to give an in-depth account of their experience. Participants were then approached according to these recommendations.

Table 1 Study participants

	University	Registrar	Family physician supervisor
1	Cape Town	1	1
2	Stellenbosch	2	1
3	Free State	1	1
4	Pretoria	1	1
5	Witwatersrand	1	1
6	Limpopo	1	1
7	Natal	1	1
8	Eastern Cape	1	1

Data collection

Telephonic in-depth interviews lasting 30-60 minutes were conducted by the principal investigator. We used an interview guide (see supplementary files) to conduct the interviews and the topics to be explored were selected from the literature review and our own previous survey of registrars' and supervisors' experiences.[39] The interviews were digitally recorded and the interviewer made field notes during the interviews. The opening question was, "How are you experiencing the portfolio in your context?" In line with the study objectives the three main issues that were explored included how the portfolio contributed to learning, how its practical use could be improved, and how it could be used in assessment of competence. From these, the purpose of the portfolio, experience of its use in clinical learning, balance of work and learning, personal development, formative versus summative assessment, supervisor meetings, practicalities of secure academic time, use of portfolio tools, and ways of ensuring regular entries and progress, were discussed.

Data analysis

We used ATLAS.ti version 6.2.27 software and the 'framework analysis' approach described by Ritchie and Spencer.[48] 'Framework analysis' is an analytical process which involves five distinct yet highly interconnected stages. These stages are: familiarization; identifying a thematic index; coding; charting; mapping and interpretation. Familiarisation with the data involved reading the transcripts in their entirety several times and checking against the audio tapes, as well as reading the field notes taken during the interviews. During this process codes began to emerge and led to the development of a thematic index. The thematic index was deductively structured according to the objectives of the study, but the codes within this structure emerged inductively from the data. Following this all the transcripts were coded according to the thematic index. The fourth stage created charts that collated together all the data on each of the three objectives. Data for supervisors and registrars was charted separately. These charts were then used for interpretation of the data in terms of the range and strength of different viewpoints and possible associations between them.[48-50]

Respondent validation was enabled by giving feedback on the provisional analysis to registrars and supervisors in subsequent workshops, which involved groups of between 30 and 40 registrars

and supervisors at all eight universities. During these workshops participants had the opportunity to confirm, clarify or modify the interpretation of the results. Furthermore we also presented our work to the heads of departments and programme managers, some of whom are supervisors themselves, at the eight universities.

Results

The results are presented according to the three objectives for the study that explored the portfolio's educational impact, acceptability and use in assessment.

Educational impact

Portfolio as a learning tool

The portfolio was seen as a useful tool to capture how the registrar learns, thinks and practices. However, it not only captured the registrar's learning, but through its requirements ensured that there was more attention given to the registrar's learning in the workplace and thus became a tool that stimulated supervision and educational activities. It required them to draw up a learning plan, organize, and audit their own learning. The need for regular meetings and engagement with their supervisor was explicit from the beginning, when the registrar drew up his or her learning plan, as well as during subsequent reviews of progress:

"…So the registrar gets to a rotation, and then they are supposed to do the learning plan. That I think is incredibly useful, because they put what they know about the topic, what they want to learn, and how they're going to learn it. Then I meet with them again at the middle of the rotation, and when we look at the learning plan, which they often haven't actually done, but often they have and discussed it with the site facilitator, then we look at the reflection…" (Supervisor)

In terms of facilitating the registrar's learning the portfolio required a certain amount of time committed to educational meetings and examples of case discussions or significant event analysis were often mentioned. These were not just captured in the portfolio, but provided the impetus for these discussions with their supervisors:

"We discuss some of the patients that come out of the portfolio, or the situations that comes from it…it becomes part of the afternoon's discussion, because these are difficult patients, difficult scenarios. So that's why sometimes the portfolio translates into a learning tool, which I don't think is just documentation and evidence type tool, but also actually a learning tool." (Supervisor)

"It becomes a learning tool, making learning (and work) easier, for example discussing difficult patient scenarios in an educational meeting." (Supervisor)

Registrars' personal engagement with their learning

The extent to which the portfolio portrayed a comprehensive picture of the registrar's development was related to how much the registrar took ownership of and engaged with their portfolio:

"*The portfolio is not "another project" to be handed in. Ownership sits with the registrar. It is their learning journey, their journal to keep. It should not be in the possession of faculty. It should show how the registrar is learning and developing to become the person he or she wants to be." (Supervisor)*

For registrars to really capture their learning in the portfolio respondents highlighted the need to be more organised in setting aside time to complete the portfolio, as well as the need for greater awareness of when their clinical experience was part of their learning, the ability to reflect on this experience and conceptualise what they had learnt:

"…A mental note, yes. I do make lots of mental notes. We are supposed to submit our portfolios at the end of the month. It's not up to date, because… I don't know, I can't blame anyone for that. I think it's just me meaning to do that, and then you're just tired and you forget. Then later on, maybe when it's going to be your mid-block assessment, the mid-block, then you quickly write it up, and remember what you meant to write there. So I don't think that one is a problem with the portfolio more than just me not being organised and on top of it…" (Registrar)

"…the people learn an incredible amount. When you talk to them you can hear this very clearly, you know it, but they don't catch it" (Supervisor)

"Actually we are almost testing something else. It is almost something more than the portfolio. It is a person's discipline and planning skills…" (Supervisor)

With the portfolio concept, and even adult learning, still in its infancy, registrars and supervisors simply were not aware of or experienced with reflective thinking and writing. Although reflection was happening, it was almost unconscious, and very seldom documented:

"I battle to get a reflection from them, in the portfolio. Where we do get a reflection, is during the learning conversation, but otherwise, I battle to get anything meaningful from them, that is documented in the portfolio. When you talk to (the registrars), you realize that they have actually reflected on this, but it is not structured, and they have not even realized that they have been reflecting…" (Supervisor)

Registrars were reluctant to document their learning needs, making it difficult to compare subsequent portfolio entries with previous ones, in order to get a picture of their development. This reluctance may have stemmed from a sense that one should not reveal any weaknesses, deficiencies or mistakes in one's portfolio and should only include evidence of competency rather than learning. The impression was that the portfolio was another project or task to hand in, rather than a learning tool:

"…then he said now he needs to rewrite this. Then I said no, you should not rewrite this. This is the proof of what we learnt together today, and if you hand this in like this, anyone looking at this will see there was a thorough discussion, writing and learning took place. He went and rewrote it, everything he learnt, on a clean sheet of paper, and this is not really what we want, I think…" (Supervisor)

While some registrars were negative about the portfolio, many more were positive. They felt that the portfolio made visible the translation of theory into practice, simply by writing down their reflective thinking.

"…yes, and the Calgary-Cambridge communication model, what is great is that I can ask someone in the clinic to quickly sit in and listen…just take this marking sheet in the portfolio and just give me a score, or even just a global score, of what you think of my consultation skills. Or

you can record your own consultations, which are what I have done a few times now, and then go over them again at home and rate myself in the portfolio…" (Registrar)

Supervisor engagement

Participants reported that there were too few family physician supervisors for the number of registrars. Most supervisors were not in joint staff positions (appointed to both university and department of health) and therefore battled to prioritise their training role and to balance their service delivery and training responsibilities. Many supervisors did not have the skills to facilitate reflection, give useful feedback, or adequately assess registrars. There was a need expressed among registrars to have better role models, to have regular supervisory meetings, and to receive more feedback:

"...It would have been nice to actually train under them, under family physicians who will actually apply the management that is expected of us in an everyday, on an everyday basis to patients that you have. But we don't have models…"(Registrar)

"...so it was literally a month where it was quite a struggle to see a consultant, let alone to now get them to sit down and listen to you tell them about a patient…" (Registrar)

While supervisors other than family physicians are often not engaging the registrars, a few were providing opportunities to observe and record registrar learning. A rotation like surgery became meaningful with a good supervisor:

"...I'm enjoying surgery now because I'm with someone who really enjoys teaching, and even if you belong to his team, he doesn't mind if you want to learn other skills. So, I suppose it depends on who you are with…" (Registrar)

The portfolio was acting as a catalyst to *"...force a meeting with the supervisor…".* This was due to the requirement for reports from the supervisor, their signatures to verify entries and recording of direct observations. Registrars found the need for signatures negative. While ownership of learning and portfolio completion rests with the registrar, a theme of shared accountability with the supervisor emerged. This clearly indicated that unless the supervisor was held accountable for

their role as clinical trainer in terms of regular direct observations and educational meetings, the culture of prioritising service delivery continued to overshadow learning.

Acceptability

Overwhelming service demands

A major theme was that clinical service continually overwhelmed efforts to organize learning, reflection and writing. There was also a mismatch between the educational outcomes, which reflected a more ideal reality that we should strive towards, and the actual reality of overworked health workers struggling to survive in a tough environment. When working in the regional hospital the registrar might also be providing services that do not have relevance to their training as a family physician:

"…we do tough work here and survival. A lot of the time they're in survival mode, and I think that's why Kleinman, Arthur Kleinman, he said the worst people to learn from are registrars because they're in survival mode…" (Supervisor)

"…It's all about service, it's all about the number of patients you've seen, and filling in of forms and things like that. For instance, we are being taught assessment, we are being taught the principles of medicine, ethics and that kind of thing. We are being taught things that we are unable to actually execute when you are expected to see 40 patients, and as inexperienced as I am. So I wouldn't be able to spend the time as I am expected to spend with a patient and in that small space of time, I must have done all those things and seen 40 patients…"(Registrar)

"…It depends on the department you are in. In theory it works because you are able to get there and say these are the outcomes, these are the things that you need when you are there. But you don't find the same enthusiasm in all the departments, if you know what I mean. What happens is that in some departments you are seen as another workforce. As long as the department is run. As long as you do the ward work, as long as you are in theatre, that kind of thing. Do you understand what I mean? Even if your needs are not really met…" (Registrar)

In terms of secure academic time, many programme managers had created regular opportunities for the registrar and supervisor to meet and discuss the registrar's learning. Typically an

afternoon was set aside every 2 weeks for case-based discussions, critical incident reviews, or review of an article:

"we have now always on the second Tuesday afternoon created a session, or an opportunity, a routine, that the registrar and his supervisor can meet for an hour to discuss the learning process, to talk about learning, and I think this is meaningful" (Supervisor)

Stressful work-learn dichotomy

The dichotomy between working and learning created particular stress. Sometimes the modules and tasks required by the academic programme were incongruent with the registrar's clinical context and experience. This was particularly true when registrars were rotating through a regional hospital department that did not share the context of family medicine practice. In this situation they became almost "lost" in that clinical specialty, and tended to lose regular contact with their family physician supervisor or overall coordinator. Sometimes the concurrent requirements of the academic programme were not incorporated into their personal learning plans for the workplace environment:

"…but the clinical modules that we're busy with, we don't necessarily come home and study that every day. We kind of come home and have to do online stuff if you've got an assignment due this week…" (Registrar)

"the consultation module was really very nice…you learn so much more about how to communicate with a patient, how to exchange information…I can really say that I apply it much more in my day to day working environment. Ethics was also great to do (as a module), because I had no idea about ethics. But it feels to me that it was something I had to do because it was not part of my learning plan. I think this is where it will stay…" (Registrar)

Logbook limitations

The logbook, which documented competency in a list of clinical skills, was perceived as very limited, in need of revision and conversion to an electronic format. Some respondents wanted more detail on the number of times a skill was performed. Registrars were not always sure how much of the assessment of their competency in clinical skills was a self-assessment or an

assessment by their supervisor, and how this related to the few skills that were directly observed and scored in another section of the portfolio. There was also confusion as to how the logbook documented the development of skills over time as opposed to confirming that competency had been achieved. There was a sense that the logbook reflected the minimum required, and could be expanded, even with a view to continuing into one's future career:

"…The log book is actually incredibly limited, but I say that's just the core. Write down everything that you actually do, and when you go to a job and you say I've got a special interest in anaesthetics, show them all the more complicated anaesthetic procedures you've done…" (Supervisor)

Having learning tools at hand

While participants were agreeable with the current paper-based portfolio, there was a call for more electronic tools to support it and ultimately an electronic portfolio. People did not read the guide to the portfolio, or felt it was not clear, and asked that it be made more user-friendly. Organization of the portfolio was also viewed as important. Most agreed that observed consultations were important, but difficult to do. Capturing assessment of procedural skills, having case-based discussions, and capturing significant event analysis were all experienced as difficult to achieve. Some suggestions to overcome the difficulty of capturing learning in the workplace included having the learning tools daily at hand, regularly updating the portfolios, preferably electronically, and a central coordinator who collates portfolio entries monthly and warns the registrars early when they fall behind. If the portfolios were completed as expected, it would give valuable feedback to the service and the programme and may eventually influence the learning environment constructively:

"…it may even be, in the long run, a formative process to the other specialities. ..Exactly, exactly. You know, and we did have feedback saying gee, that really made me think of something different. That really did help, that really was helpful. So obs and gynae, I think, have been quite good with that…." (Registrar)

Assessment

Participants expressed uncertainty as to how the portfolio contents would be summatively assessed. Respondents felt that most summative assessment was focusing on completeness of the portfolio, while the next step would be to look at the quality of the portfolio entries.

"…it is also valid that you just submit your work. This is already a big step, because it provides evidence for what has been done. But the next step is to decide on the quality of that evidence…" (Supervisor)

Regular meetings between the registrar and the supervisor were essential to assess learning and provide formative feedback:

"…it gives us a chance to touch base both with me and the site coordinator or the specialist. So it's like three people looking at where we're going. What's the current situation and what's happening."(Supervisor)

While there was strong support for an end-of-rotation summative assessment, a mid-rotation formative assessment with the supervisor, to look at progress, was also valued:

"So that's the mid-block assessment, and then I ask the supervisors to do an observed - no, what's it called - a continual assessment. Often they haven't done one up till then, but then that gives them a chance to give the registrar feedback." (Supervisor)

"And then you might make any changes to the plan, and then at the end of the block I see them again, and then we do an exam using the observed consultation, one or two consultations. Psychiatry we only do one, but it's 45 minutes, and another continuous assessment from the consultants." (Supervisor)

The value of this interaction with and involvement of the supervisor, who sees how the registrar performs and confirms it with a score and feedback in the portfolio, cannot be overemphasized:

"…The one I have had was quite helpful because it kind of forces you to look at how you were before you came to the department and how far you have come, and what more do you still have

to learn. So in paediatrics for me it was very helpful, very, very helpful. I think generally it is the few who take time to do it…" (Registrar)

With the shortage of family physicians and other identified supervisors in the country, some registrars had taken more ownership of their learning, and initiated peer assessment:

"We have planned to actually try and do it amongst ourselves, because we know what is expected. We know what's expected of us in terms of holistic approach to a patient, ...so you actually just know about them during the exam, your end of block exam. It then ends up being something that you fake for them…Like if I'm on first call for instance, that is what we've decided on doing. If I am first call and I'm free and I can come to the clinic, so we mark each other. So there it's the same mark sheet that is used for our exams, and then we just randomly pick a patient and then I will be the examiner and then my other colleague is my examiner as well. So that's a habit, because at the usual clinics where we are, you don't even get all these assessments. I don't know, it's the old ways that everyone is doing, and no one is supervising you…" (Registrar)

The tension between summative and formative assessment was well recognized by most participants. Considering the purpose of the portfolio, they felt that we need to develop summative assessment indicators that assess the formative aspects captured in the registrar's portfolio of learning.

Discussion

Educational impact

Registrars found the portfolio useful to plan and organize their learning. While the portfolio at this stage is mostly a collection of learning activities, its educational impact could be enhanced through increasing the registrar's awareness of learning opportunities and their ability to reflect on these experiences. The portfolio has made the challenges of introducing competency-based adult learning more visible and made explicit the need for a supportive learning climate within the clinical environment.[37,51] Critical to prioritizing learning within the pressurized clinical service was a shared accountability between the registrar and the supervisor, with registrars

taking responsibility for their own learning and supervisors providing regular feedback. The need for direct observations and case-based discussions in educational meetings made regular registrar-supervisor meetings obligatory. There was a clear need for supervisors to improve their mentoring skills and for registrars to fully embrace adult learning. Service pressure made it difficult to reflect on work and document learning. Nevertheless, this demanding clinical context in which the portfolio of learning is embedded is very rich in terms of experience and can provide fertile soil from which the habit of lifelong learning can grow.[23] This worldwide challenge is exacerbated in low and middle income countries where human resources are scarcer and workload is very high. Training programmes in this context need to anticipate this and make plans to overcome this challenge to the use of portfolios.[52-54]

A review of the educational impact of portfolios concluded that "improved student-tutor relationships" was one of the main benefits, together with increased self-awareness and engagement in reflection.[55] Introducing the portfolio may be an intervention that stimulates a shift in supervisory style from directing to guiding and from counting to reflecting. It may in fact help to create the very learning environment that it is meant to be documenting, becoming itself an agent of change. This educational relationship between the registrar and supervisor within the context of a community of practice is perhaps the most vital and difficult area to navigate.[56] Worldwide, but particularly in low and middle income countries such as South Africa, there are too few effective supervisors who understand their role as trainers and clinical role models and who are recognized and rewarded accordingly. Good doctors do not necessarily have skills in teaching, giving feedback, or assessment.[33] Teaching registrars involves vulnerability, relationship, honesty, trust and kindness.[33] Incentives to encourage and reward mentors could include that mentors are kept "in the know" with developments in medicine and medical teaching, build better relationships with registrars, receive feedback themselves, and meet potential future family physician colleagues.[35]

Within our culture of service delivery, clinicians have an established culture of documenting their clinical reasoning in patient notes. What is also needed is a culture of professional development in which clinicians capture their learning in a clear, concise, continuous way possibly using a portfolio.[23,35,56,57] It was evident that self-management skills that build reflection and develop resilience are much needed for both registrars and supervisors.[23,58,59]

Acceptability

The paper-based portfolio was accepted, albeit with a call for more electronic tools that are compatible with mobile devices, and eventually an electronic portfolio, similar to examples from more developed countries.[35,60,61] Completing a logbook in the portfolio created a particular conflict between the traditional counting of procedures performed and the need to reflect on and learn from one's performance. Personal organization of learning, self-management and a discipline of regularly updating the portfolio were strongly supported.[18] Observed consultations and procedures were important, but difficult to do in the workplace.[52,62] Suggestions to make this easier included having learning tools daily at hand, regular portfolio updates, and a central coordinator who collates portfolio entries monthly and gives feedback. Regular face-to-face meetings between registrars and supervisors ensure authenticity of learning with supervisors' signatures, the absence of which is a disadvantage in pure e-portfolio systems.[35]

Assessment

While assessment at this stage focusses on completeness, for example the number of direct observations and educational meetings, the next step is to assess the quality of learning.

There was strong support for both an end-of-rotation summative and a mid-rotation formative assessment. The shortage of supervisors has led some registrars to initiate peer-assessment. Within family medicine, as the discipline has become more established, there has been a shift to train and assess more in the district hospitals and PHC, with less exposure to regional hospital departments.[4,11] Such a shift requires that a culture of training and assessment is initiated, valued and nurtured by both the district health services and universities.

Current forms of assessment encourage registrars to demonstrate their competence, whereas valuable learning is often based on mistakes, errors, problems and less than perfect outcomes.[63,64] Demonstrating learning also requires evidence of a shift in competency over time from a less than adequate starting point. This has implications for how the summative assessment of the portfolio is constructed. Summative assessment of the portfolio should focus on whether these formative activities have taken place adequately. The supervisor and registrar are

best able to determine the quality of learning and progress as documented in the portfolio, while the programme co-ordinator is best able to determine the completeness of all that is required. We can think of this as assessment-in and assessment-on the portfolio, not unlike reflection-in and reflection-on action.[23]

Registrars and supervisors spoke of a 'work-learn' dichotomy whereby they struggled to integrate the theory of best practice in terms of the consultation, ethics or evidence-based medicine into everyday work. Part of the challenges of work-based assessment is integrating course assignments with work assessment, assessing how doctors actually practice.[65,66] As assessment drives learning, a grade and formative feedback provide measurement and meaning to work-based learning, encouraging the registrar to develop into a family physician.[67] Indirectly a good portfolio also provides assessment and feedback on the training programme itself in the local context and can be valuable to the programme manager.

Although the use of portfolios for work-based assessment is becoming best practice internationally it needs to be tailored to the contextual realities of low resourced settings where it may be seen as an additional burden for registrars already on the edge of burnout or depression.[68-70] Unlike tertiary health centres, the district health services are not used to the demands of speciality training in South Africa. The portfolio requirements make visible the expectations on registrars and supervisors and brings into focus the need to integrate cultures of service and learning rather than allowing them to be perceived as if they are in opposition.[4,6]

Limitations

This study sought to understand the experiences and opinions of registrars and supervisors who had used the portfolio in South Africa. We purposefully recruited appropriate participants who would give rich information from across South Africa to get a broad perspective of experience, representing all postgraduate programmes in the country. This meant that because of travelling distances of up to 1400 kilometres we decided on telephonic interviews. We acknowledge that telephonic interviews may have limitations compared to face-to-face interviews, for example periods of silent reflection could be more acceptable in face-to-face interviews. However, because the author was familiar with the context of the training programmes and many of the key people, he was able to engage the respondents easily and encourage them to elaborate on their

answers. The interviews also lasted between 30-60 minutes, which was deemed sufficient for thorough exploration of the key topics. The results of the study as with all qualitative research cannot be easily generalised to other populations and the readers will need to decide what findings are transferable to their own context.

Recommendations

The following recommendations can be made from the findings:

1. Continue with the national portfolio as an acceptable tool to support work-based learning and assessment.
2. Advocate for a culture of clinical training in the health districts, recognizing the co-benefits of service delivery and clinical learning.
3. Develop registrars' and supervisors' self-awareness and ability to reflect on and learn from their clinical experience in a structured way that can be documented.
4. Develop electronic tools and move towards an e-portfolio.
5. Focus on developing the capacity of supervisors to support adult learning in the work place and to formally recognise their role as trainer or mentor.
6. Allow time for new educational practice to be integrated into the work-place with a shift from traditional pedagogy to adult learning.
7. Develop an approach to summative assessment of the portfolio. A portfolio assessment tool will be described and evaluated in a future study.

Conclusions

The portfolio primarily had an educational impact through making explicit the expectations of registrars and supervisors in the workplace. This impact was tempered by a lack of engagement in the process by registrars and supervisors who also lacked essential skills in reflection, feedback and assessment. The acceptability of the portfolio was limited by service delivery demands, incongruence between the clinical context and educational requirements, design of the logbook and easy availability of the associated tools. Its acceptability and usefulness as a learning tool should increase over time as supervisors and registrars become more competent in its use. The use of the portfolio for formative assessment was strongly supported and appreciated, but

was not always happening and in some cases registrars had even organised peer assessment. There is a need to clarify how it will be used in summative assessment.

Competing interest

The authors declare that they have no competing interest.

Authors' contribution

All authors contributed to the planning and design of the study. LJ conducted the interviews. All authors analysed the results and contributed equally to the final writing of the article.

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4.4 Article 4: Reliability testing of a portfolio assessment tool for postgraduate family medicine training in South Africa

The following article was accepted for publication by the African Journal of Primary Health Care and Family Medicine, on 31 August 2013.

I presented the preliminary results to the Heads of Departments of Family Medicine during the examiners' meeting of the College of Medicine of South Africa in October 2012. I also facilitated a discussion on the final results at a meeting of the Education and Training Committee of the South African Academy of Family Physicians in September 2013. Feedback from these meetings served to continuously develop a common understanding of using and assessing the portfolio of learning among all the medical schools.

Reliability testing of a portfolio assessment tool for postgraduate family medicine training in South Africa

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Abstract

Background: Competency-based education and the validity and reliability of workplace-based assessment of postgraduate trainees have received increasing attention worldwide. Family medicine was recognised as a speciality in South Africa six years ago and a satisfactory portfolio of learning is a prerequisite to sit the national exit exam. A massive scaling up of the number of family physicians is needed in order to meet the health needs of the country.

Aim: The aim of this study was to develop a reliable, robust and feasible portfolio assessment tool (PAT) for South Africa.

Methods: Six raters each rated nine portfolios from the Stellenbosch University programme, using the PAT, to test for inter-rater reliability. This rating was repeated three months later to determine test–retest reliability. Following initial analysis and feedback the PAT was modified and the inter-rater reliability again assessed on nine new portfolios. An acceptable intra-class correlation was considered to be $\geq$0.80.

Results: The total score was found to be reliable, with a coefficient of 0.92. For test–retest reliability, the difference in mean total score was 1.7%, which was not statistically significant. Amongst the subsections, only assessment of the educational meetings and the logbook showed reliability coefficients >0.80.

Conclusion: This was the first attempt to develop a reliable, robust and feasible national portfolio assessment tool to assess postgraduate family medicine training in the South African context. The tool was reliable for the total score, but the low reliability of several sections in the PAT helped us to develop 12 recommendations regarding the use of the portfolio, the design of the PAT and the training of raters.

Introduction

In 2009 the World Health Assembly resolved that it is necessary to train and retain adequate numbers of health workers with an appropriate skill mix, including family physicians (FPs), in order to respond effectively to people's health needs at the primary care level.[1] This resolution was endorsed at the Primafamed conference in 2012 where family physicians and educators from 20 countries agreed that the family physician in Africa needs to be trained within an inter-professional primary healthcare (PHC) team and at the district hospital.[2] Training of FPs for Africa has important differences from North America and Europe, with recent work on the

principles of family medicine in Africa showing that in 70% of African settings the FP is required to perform clinical procedures and operations at the district hospital.[3,4] At the same time, there is a growing realisation that in order to make a difference FPs must be active in PHC teams and support the development of community-orientated primary care.[5] In South Africa, the Department of Health aims for 900 trained FPs over the next 10 years who can work within the district health system.[6] If FPs are to provide adequate support for the PHC teams then even more FPs will be required as it is estimated that the country needs 7000 such teams. Therefore, in order to address the burden of disease in South Africa, a huge scaling up of family medicine training is being envisaged, which has relevance for appropriate postgraduate assessment.[6]

In South Africa, family medicine was recognised as a specialty in 2007 and new training programmes were aligned with a nationally-agreed set of learning outcomes.[7] The learning outcomes were based on the competencies expected of a family physician in South Africa.[8] Competency-based programmes in medical education are now a worldwide trend, aiming to meet such pre-defined training outcomes.[9–14] Postgraduate students (registrars) are assessed by a unitary exit exam for postgraduate family medicine training, overseen by the Colleges of Medicine of South Africa. To improve the validity of postgraduate assessment, workplace-based assessment (WPBA) of registrars was implemented. A national learning portfolio was developed in order to capture this WPBA through a consensus process involving all eight universities in the country.[15] This process established the content and construct validity of the portfolio. The new learning portfolio was then implemented at all universities in 2010. Registrars must show evidence of satisfactory performance, captured in this portfolio of learning over a three-year period and in an accredited training post, in order to enter the final national exit exam. Satisfactory performance is assessed and scored iteratively throughout the year by clinical supervisors utilising the WPBA tools included in the portfolio, as well as at the end of each year by the Head of Department or programme manager at each of the universities.

Portfolios of learning are being used to accumulate summative and formative assessments of performance in the workplace in many healthcare training programmes.[12,16–20] In the United Kingdom, portfolios were introduced more than 20 years ago to assist in WPBA of healthcare training.[21,22] A systematic review of the educational effects of portfolios on undergraduate medical, nursing and allied health education has shown improvements in knowledge and

understanding, particularly with regard to integrating theory with practice, an increased self-awareness, engagement in reflection and improved student–mentor relationships as the main benefits of portfolio use.[22] In other European countries, such as Belgium and the Netherlands, portfolios have been used in undergraduate and postgraduate WPBA, including high stakes judgements, for more than 10 years.[16,23] Some universities follow an administrative process to insist on portfolio completeness, followed by an overall global rating of the contents by an assessor.[24] Other universities have a programmatic structured scoring system of the portfolio contents by the direct supervisor, an overall supervisor and, if there is a dispute, an assessment panel.[25]

The utility of WPBA in postgraduate education, particularly its validity, reliability and feasibility, has shown mixed results. WPBA tools such as the mini Clinical Evaluation Exercise (mini-CEX) and Direct Observation of Procedural Skills (DOPS) have become standard in many postgraduate medical education programmes.[20,26,27] A recent study looking at the composite reliability of a WPBA toolbox for postgraduate medical education in a portfolio showed that a minimum of seven mini-CEXs, eight DOPS and one multi-source feedback (MSF) was sufficient to yield reliable results.[28] Other studies have shown mini-CEX reliability with eight to 10 assessors and DOPS reliability with two to three assessors and two cases.[20,29–31] However, mini-CEX and DOPS assessments have been shown to be vulnerable to inter-rater differences.[32–35]

In view of the robustness necessary for a high stakes assessment, in this case eligibility to sit the national exit exam, we drafted a uniform portfolio assessment tool (PAT) in liaison with the eight heads of family medicine departments in the country and piloted this in the field at Stellenbosch University over a one-year period (See Addendum). The aim of this study was to establish the inter-rater reliability and test–retest reliability of the PAT. The primary objective was to establish the reliability of the total score. The secondary objective was to evaluate the reliability of the assessment of the various portfolio subsections. We also wanted to get feedback as to how to improve the assessment of the portfolios, in order to improve the feasibility and reliability of the PAT.

Methods

Study design

This was a quantitative study that compared agreement between raters. Qualitative feedback from the raters was also collected in order to help interpret the results and make recommendations with regard to improving the feasibility and reliability. The study was conducted according to the Helsinki Declaration for research and approved by Stellenbosch University's Health Research Ethics Committee (Ref no. N09/10/258).

Setting

The training programme at Stellenbosch University (one of the eight South African university programmes) was the setting for this study. The training programme placed registrars at one of four different training complexes. One training complex was in the metropolitan area of Cape Town and the other three were rural training complexes centred around Paarl, Worcester and George in the Western Cape. Training complexes allowed registrars to rotate between primary care facilities, district hospitals and regional/tertiary hospitals. In the district health services they worked under the supervision of a family physician and at regional/tertiary hospitals under other specialists. They worked in the complex for four years and during this time completed eight on-line modules on family medicine principles, 10 clinical family medicine domains and a research assignment.[36] The modules focus on key family medicine principles such as the consultation, evidence-based medicine, community-orientated primary care, family-orientated primary care, ethics, leadership and governance. The clinical domains include adult health, women's health, child health, surgery, orthopaedics, anaesthetics, ear-nose-and-throat/eyes/dermatology, infectious diseases, mental health and emergency medicine.

The learning portfolio[7]

The postgraduate portfolio of learning starts with an introductory section that outlines the purpose of the portfolio and includes a guide to the registrars on how to build their individual portfolios. This section is followed by a section that shows which of the national outcomes are assessed in the portfolio. As the registrars meet with their supervisors, they need to ensure they have a learning plan for every clinical rotation or exposure, which is graded by the supervisor. This is followed at the end of that rotation with a supervisor report, which includes a grading

score and formative feedback. An absent learning plan or supervisor report signifies an unaccounted training gap and thus an incomplete portfolio. Various types of educational meetings are counted and noted, with a minimum requirement of 24 hours per year.[37] A minimum of 10 supervisor observations of consultations, procedures and teaching events is expected per year. These observations are graded with the help of tools such as the mini-CEX and DOPS.

Whilst every university has its own requirements for written assignments, a blueprinting exercise by the College of Family Physicians agreed on a number of topics that should always be assessed by written assignments and included in the portfolio; for example, an assignment on evidence-based medicine, community-orientated primary care and family-orientated primary care must be included. The expected skills to be captured in the logbook were agreed upon nationally and should all be covered and assessed over the four-year training period. These include 168 core skills that the registrar should be able to perform independently and 43 skills that should be performed under supervision (grey shading in the portfolio) during their training.[8] The portfolio also has a requirement for a certificate in cardio-pulmonary resuscitation and then allows for more personal or unique entries with additional evidence of learning. At the start of every section, a summary table of the scores for that section is completed and kept updated by the registrar, to help the registrar to monitor progress and to allow for easier calculations of the aggregated scores at the end of the year. The last section shows the PAT, allowing the registrars to see how the portfolio is assessed.

The portfolio assessment tool

We wanted to develop a feasible and reliable PAT that would allow assessment of the registrar portfolio at the end of each training year, repeated over three years, prior to application to sit the national exam in the fourth year. As most sections in the portfolio already included individual assessments with grades, the PAT was designed to aggregate these grades at the end of the year and, together with a global score by the programme manager or Head of Department, to also calculate a total score out of 100 (See Addendum). Feedback on which sections of the portfolio should be included for summative assessment was requested from registrars, supervisors and programme managers in a national survey.[38] From this feedback a core group of experts designed the PAT to score each of these sections and added a final global assessment for the whole

portfolio. The draft PAT was also discussed with the eight heads of family medicine departments in the country.

Table 1 shows how the six assessment components in the PAT correlated with the sections in the portfolio, adding up to 90/100. Assessment usually involved checking whether the section had been completed and extracting any scores that had already been given. Where there were multiple scores, for example, one for each learning plan, these were added or averaged, as appropriate, to give a final score for that section. Instructions on how to do this for each section were included in the PAT. The global score, making up the last 10/100 marks, assessed evidence of learning, the quality of reflections on each rotation or exposure and overall organisation of the portfolio. For the global rating, a 5-point Likert scale was developed. Instructions to the raters were given verbally during a PAT training session and supplemented with a brief written explanation in the PAT.

Table 1: A summary of the components of the portfolio assessment tool

Sections in the portfolio	**Score or grading**	**Description**	**Minimum needed**
Learning plans	/10	Rating of the written learning plan by the supervisor	6-monthly; or 1 for every rotation
Rotational reports	/10	Rating of the registrar's performance by the supervisor	6-monthly; or 1 for every rotation
Educational meetings	/20	Rating of the number of hours accumulated and the range of different types of educational interactions	24 hours, 5 different types of interaction as specified in the portfolio
Observations by supervisors	/10	Rating of the registrar performing a variety of different competencies such as a consultation, procedure or teaching event	10 observations, 1 must be a teaching event
Assignments	/10	Grades obtained for written	2–3 assignments per year

		assignments	
Logbook	/30	Rating of competency to perform clinical skills by the supervisor (A = theory only; B = have seen; C = can do under supervision; D = can do independently)	168 skills over 4 years must achieve a D rating. 43 skills over 4 years must achieve at least a C rating
Global rating	/10	Rating of the overall evidence of learning, quality of reflection and organisation of the portfolio	
Total grade	/100		

Sampling

Nine portfolios and six raters were accepted as sufficient to reveal a significant difference in grading between the raters, with 78% power to detect a 4% difference in the total score.[28] Each rater was considered the unit of measurement, in other words, we compared raters, and not portfolios. We wanted to establish the inter-rater reliability between different raters, as well as the test–retest reliability of the same raters. Six raters were selected purposively and consented to participate in the study. The six raters comprised the head of department, the postgraduate programme manager and four senior clinical trainers attached to the postgraduate programme, spread out over 500 kilometres in two training complexes. They were selected on the basis of their involvement with postgraduate training as clinical trainers or faculty members, their familiarity with the portfolio and their prior involvement with assessment of family medicine registrars. All nine first-year registrar portfolios available from 2011 were selected.

Data collection

After a group training session for the raters, wherein a brief explanation of the PAT and a pilot study with two portfolios was given, each rater graded a copy of all nine portfolios in May 2012. The raters then graded a fresh copy of the same portfolios again in August 2012. Following initial analysis and feedback from the raters the PAT was modified and inter-rater reliability again assessed on nine new first- and second-year portfolios from 2012, in February 2013. The only modification of the PAT involved the global rating where we attempted to give clearer definitions

of how reflections should be assessed for each point on the Likert scale by incorporating concepts from a published assessment model for reflections.[4139]

Qualitative feedback from the raters was requested and collected by e-mail and verbal discussions. The comments were documented, collated and, if necessary, clarified with the raters. Where common issues emerged, these were considered in the subsequent modification of the PAT. These comments also helped to interpret some of the quantitative results.

Analysis

There were three sets of analysis:

1. Inter-rater reliability testing of the PAT – comparing reliability between the six raters who each rated all nine portfolios.
2. Test–retest reliability of the PAT – comparing reliability between the initial assessments of the six raters using the PAT, as well as a follow-up assessment of the same six raters using the PAT again on the same nine portfolios.
3. Inter-rater reliability testing of the modified PAT – comparing reliability between the same six raters, each using the modified PAT to assess a different set of nine portfolios.

Inter-rater reliability was calculated using a dependant *t*-test that determined agreement between the different scores for each rater. An intra-class correlation coefficient (ICC) was calculated so as to test for consistency of assessment between raters for each section of the PAT as well as the final total score. An acceptable ICC was considered to be 0.80 or higher.

Test–retest reliability was calculated using a dependant *t*-test on the average score for each section of the PAT as well as on the average total score for each rater at baseline and three months later, given the assumptions that reliability would indicate either no differences between the test–retest scores or that the differences would be less than 4%, as explained in the sampling section. A reliable test would not be significantly different and would therefore have a *p*-value >0.05. Spearman's correlation was also calculated between the baseline and three-month scores and a good correlation would be significant with $p < 0.05$.

Results

Inter-rater reliability

Table 2 illustrates the initial assessments in May 2012. A reliability coefficient >0.80 was achieved for four of the sections in the PAT, but not for the total score. Assessing the logbook, giving a global rating and the total score had particularly low reliability coefficients. Possible reasons for this from raters' comments included:

- Not all the registrars completed their logbooks in the same way, as some used the 'A' to 'D' system to rate their competency, whilst others used numbers; logbook entries were scattered all over the portfolios and were not always grouped together; and the grey shading that indicated the 43 skills which only required a C rating was not visible, causing confusion amongst the raters.
- The global rating elicited a very specific discussion amongst the raters. It became clear that the assessment of reflections was not easy, with difficulty in differentiating between the five categories on the Likert scale.

The reliability of the total score was consequently influenced, with a low ICC of 0.58. This was particularly as a result of the low agreement on the logbook, which made up 30% of the total score.

Table 2: Inter-rater reliability testing in May 2012

PAT sections	**Overall ICC consistency**	**95% CI**
Learning plans (/10)	0.93	0.85–0.98
Rotation reports (/10)	0.83	0.65–0.95
Educational meetings (/20)	0.87	0.71–0.96
Observations (/10)	0.78	0.56–0.93
Assignments (/10)	0.82	0.64–0.95
Logbook (/30)	0.33	0.08–0.70
Global rating (/10)	0.51	0.24–0.82
Total score (/100)	0.58	0.31–0.85

Notes: PAT, portfolio assessment tool; ICC, intra-class correlation coefficient; CI, confidence interval

Test–retest reliability

Looking at the total score (/100) for the portfolio, the mean score in May was 64.2 and in August was 65.6, with a difference of 1.7%, which was not statistically significant. Table 3 illustrates that only one component, educational meetings, was rated significantly differently between May and August. The assessment of the educational meetings had two variables – firstly, the type of interaction (e.g. case discussion, setting learning agenda, indirect observation and feedback, intermittent evaluation, evidence-based practice) and secondly, the total number of hours accumulated over the year. Most registrars easily met the yearly minimum requirement of 24 hours (2 hours/month). The actual differences in the mean scores for educational meetings were small (12/20 and 13/20).

Table 3: Test–retest reliability results

Modified PAT sections	**Mean 1 (May)**	**Std Dev**	**Mean 2 (Aug)**	**Std Dev**	**Difference**	**Confidence –95%**	**Confidence +95%**	***p*-value**
Learning plans (/10)	7.66	0.36	7.75	0.35	–0.08	-–0.35	0.19	0.48
Rotation reports (/10)	7.96	0.19	7.97	0.26	–0.00	–0.34	0.32	0.95
Educational meetings (/20)	12.10	0.49	13.03	0.65	–0.92	–1.57	-0.28	0.01
Observations (/10)	4.57	0.98	4.30	0.57	0.27	–0.57	1.12	0.44
Assignments (/10)	1.76	0.52	2.20	1.46	–0.43	–2.03	1.15	0.51
Logbook (/30)	23.05	1.39	23.54	1.70	–0.49	–2.71	1.73	0.59

Global rating (/10)	7.14	0.80	6.72	1.12	0.42	–0.09	0.94	0.09
Total score (/100)	64.23	2.82	65.53	3.10	–1.29	-–4.30	1.70	0.31

Notes: PAT, portfolio assessment tool

Inter-rater reliability with the modified portfolio assessment tool

The two sections of concern were the calculation of the logbook score and the global rating. The grading of the different skills in the logbook (168 at grade D and 43 at grade C) was improved in the modified PAT. Table 4 illustrates the inter-rater reliability of assessments with the modified PAT in February 2013. The total score for the PAT was now found to be reliable, with a coefficient of 0.92. Overall only educational meetings, the logbook and the total score showed reliability coefficients >0.80. Sub-analysis of the four components with low reliability coefficients indicated that one rater differed significantly from the others in the assessment of assignments, whilst more than one rater differed significantly from the others in their assessment of learning plans, rotation reports, observations and the global rating. Three factors that influenced these results were identified immediately as follows:

- For learning plans. the PAT instructions are clear, but the raters did not follow them consistently.
- For rotation reports. one registrar joined mid-year in August 2012 and therefore only required one report. Some raters did not take cognisance of this and inappropriately penalised the registrar for a missing report. The portfolio did not make this clear and thus needs to be amended to make the time from entry to the programme clearer.
- A factor causing inconsistency in calculating the mean scores for observations could have been that some portfolios had more than the minimum of 10 observations documented. Some raters graded the first 10, others the best 10, whilst yet others used all of the observations. Again, clearer PAT instructions are needed.

Table 4: The inter-rater reliability of assessments with the original and modified portfolio assessment tool

Modified PAT sections	ICC consistency 2012	ICC consistency 2013	95% CI 2013
Learning plans (/10)	0.93	0.40	0.14–0.75
Rotation reports (/10)	0.83	0.26	0.04–0.65
Educational meetings (/20)	0.87	0.89	0.75–0.97
Observations (/10)	0.78	0.21	0.00–0.60
Assignments (/10)	0.82	0.76	0.54–0.93
Logbook (/30)	0.33	0.91	0.81–0.98
Global rating (/10)	0.51	0.48	0.21–0.80
Total score (/100)	0.58	0.92	0.81–0.98

Notes: PAT, portfolio assessment tool; ICC, intra-class correlation coefficient; CI, confidence interval

Discussion

The final version of the PAT demonstrated a reliable total score for the assessment of the portfolio. This was largely because the components which contributed the most to the final score also demonstrated good inter-rater reliability. This pattern is similar to work from Europe on internship portfolios, where inter-rater reliability coefficients for 15 tasks ranged from 0.58 to 0.79, with a reliability coefficient of 0.89 for the instrument as a whole (95% CI = 0.83–0.93).[24]

Nevertheless the variability in the reliability coefficients forced a serious review of three areas – the rating process, the PAT itself and the way in which the portfolio was completed. Inter-rater reliability coefficients >0.80 were achieved for four of the sections in the PAT during initial rating and for three of the sections during the subsequent rating nine months later. There was a training session with the raters prior to the initial rating in May 2012, but this was not repeated for the subsequent rating in February 2013. The drop in inter-rater consistency between the two rounds could be explained in part by this, showing the necessity of a training session prior to using the PAT, together with clearer instructions in the PAT. It is recognised that assessors often rely on assumed discriminators of performance levels, for example the difference between borderline and satisfactory and therefore need specific training in assessment processes in order to enhance reliability.[29,30,34,40] We know that the tools are only as good as the raters using them.[41]

This is particularly true as postgraduate portfolio assessment is a very recent introduction in our programme, as well as in most of South Africa. Evidence exists that in some countries inter-rater reliability coefficients showed improvement over an eight-year period, as raters developed experience and registrars and supervisors developed clarity on expectations.[24] We attempted to maintain maximum feasibility of the end of year assessment process in the PAT, which meant that most of the assessments have already been done and captured during the course of the year (adding validity) and that six of the seven assessment tasks in the PAT were really more of an administrative collation or calculation based on existing scores.

The process of assessing the portfolios of registrars and testing the reliability of the PAT has given feedback on the training programme itself. At this stage we have opted for an approach of grading all the learning activities entered into the portfolio. This is a dilemma, as the risk exists that people will construct their portfolios to obtain the marks, rather than as a genuine reflection of their experience and learning. For example, in drawing up a learning plan, the goal should not be to obtain a good score, but to have a valid and practical plan for learning, as discussed between the registrar and supervisor.[42] However, without the prompt for a score, these plans are often not drawn up or not captured and registrar–supervisor meetings may be neglected. Also, more attention is needed to make the registrars and supervisors aware of the need to match their learning plans and end-of-rotation assessments with the national training outcomes, as detailed in the introduction to the portfolio and the section containing the expected national outcomes.

Rating and doing direct observations are a recent introduction to our training programmes and many registrars and supervisors find this difficult to accomplish, as noted in several other international studies.[14,43–45] The benefits are well recognised, including more valid assessment, better personal development and better patient care.[46,47] The challenges include large workloads, lack of supervisors working close to the registrars, personal fears of taking risks and simply the change management principles of introducing something new.[42,43] The poor scores for assignments via the PAT can be attributed to the fact that the various assignments had been scored and the grades collected by the university via another process and the registrars did not see these as being part of their portfolios. This dilemma has subsequently been corrected, including challenging the strong mindset that assignments are separate from everyday clinical work.

In rating the logbook entries many registrars scored well, even in their first year of training. This would imply either prior appropriate learning, or good training in that registrar year, or perhaps an optimistic tendency in assessment by themselves and their supervisors.[48] The 30% contribution to the total portfolio score (Table 1) is indicative of the emphasis placed in the training of family physicians on clinical skills, which has been recognised as being essential in the African context.[3,4] Ideally, the logbook entries should be captured in one rubric over four years, showing development and the completeness of meeting expected learning outcomes.

Limitations and strengths

Although the study had a small sample size, we had sufficient power to detect a 4% difference in the inter-rater and test–retest reliability scores of the total grades. For improved reliability assessment of the various portfolio subsections, we would need a larger sample of portfolios, which will become available as more registrars are using them. The total mark for the portfolio is considered as one of the entry criteria for the final national examination, for which we were able to show good reliability. The wide confidence intervals in the inter-rater reliability testing results are explained in part by the small number of portfolios assessed. The low ICC scores for the different sections of the portfolio were not too surprising, considering the short track record of registrars and supervisors using the portfolio and the small number of scores per section in the analysis, but it has helped us to identify areas that are clearly in need of improvement.

Recommendations

In discussion with the raters, a number of suggestions were made with regard to improving the reliability of the various sections, particularly in relation to:

1. Use of the portfolio:
    a. Have an annual training workshop for registrars and supervisors, to ensure we enhance fidelity to the portfolio requirements and forms of assessment.
    b. Ensure the registrars describe how far they are from initial registration when they submit the portfolio, as some people join mid-year.
    c. Ensure the continuous rating of learning activities by the clinical supervisors and entry of these in the correct places in the portfolio to make the aggregation of scores easier at the end of the year.

   d. Review the scoring of some of the tools in the portfolio (some of this has already been done, e.g. streamlining all grades to scores out of 10).
   e. Capture the iterative ratings throughout the year electronically, allowing a more streamlined administrative function and giving more continuous feedback to the registrars.
2. The design of the PAT:
   a. Make the instructions clearer, for example, to calculate the grades of the 10 best observations.
   b. Have uniformity with decimals and rounding, for example, the number of hours spent in educational meetings.
   c. Review the global rating section, for example, to assess the quality of reflections and organisation of the portfolio in two separate Likert scales.
3. Training of raters:
   a. Have an annual rater training workshop, focusing on reliable use of the PAT, particularly for new raters.
   b. Develop a video clip explaining the use of the PAT that can remind raters prior to their occasional use of the tool.
4. Use of the PAT for national exam purposes:
   a. Can be recommended as the total score reliability coefficient was 0.92.
   b. With the above recommendations, a repeat reliability study with a larger sample of portfolios in a year will help toward improving and monitoring the reliability of the ratings of the different portfolio subsections.

Conclusion

The aim of this study was to evaluate the reliability of a portfolio assessment tool and to improve its feasibility and reliability in assessment of the family medicine postgraduate portfolio of learning. Whilst the overall reliability coefficient of 0.92 for the total score supports its use as a tool to evaluate the portfolio, the poorer reliability of various subsections in the tool has prompted 12 recommendations for the portfolio itself, the tool and the raters.

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Competing interests

The authors declare that they have no financial or personal relationship(s) which may have inappropriately influenced them in writing this paper.

Authors' contributions

All three authors developed the study protocol. L.J. (University of Stellenbosch; George Hospital)) and B.M. (University of Stellenbosch) developed the PAT, L.J. collected and analysed the data and all three authors contributed equally to the interpretation and writing up of the article.

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Journal Club meeting of registrars and supervisors.

Registrar reflecting and writing.

"The unreflected life is not worth living for a human being."

Socrates (450-399 BC)

"To reflect is to look back over what has been done so as to extract the net meanings which are the capital stock of intelligent dealing with further experiences. It is the heart of intellectual organization and of the disciplined mind."

Dewey (1938)

Chapter 5: Conclusion and Recommendations

5.1 Introduction

At the start of this chapter I return to the original aim and objectives in order to come full circle and present a final conclusion on each of them. The aim of this study was to develop a valid, practical and reliable portfolio that could be used to help assess the competency of family medicine registrars in the South African context. The four key objectives were to:

1. Develop and validate a portfolio for assessment of competency for family medicine registrars in the South African context.
2. Implement the portfolio as a summative and formative assessment tool nationally through the CMSA for all family medicine postgraduate registrars.
3. Evaluate the acceptability, educational impact, and usefulness for assessment of the portfolio.
4. Develop and evaluate the reliability of a portfolio assessment tool to standardise portfolio assessment for the CMSA.

During the doctoral study I have developed the first national portfolio of learning for postgraduate family medicine training in South Africa. According to the author's knowledge, this is also the first such portfolio for postgraduate family medicine training in Africa, and it may therefore also be useful to those developing educational tools for postgraduate family medicine elsewhere on the African continent. This is in line with international recommendations which propose that a country or region adopt a core set of assessment tools to be used across all programmes in that country or region, rather than multiple tools in multiple programmes.(1) The portfolio was developed through a broad consultation process with all medical schools in the

country. The process followed a constructivist approach, taking cognisance of the context and what is feasible and practical, while at the same time striving for a valid and reliable tool, to help deliver competent family physicians to the South African health environment.(2) The major strength of this study has been the participatory nature of the research, with collaboration between all eight departments of family medicine. Registrars, supervisors, and programme managers all contributed and influenced the process over 4 years. This has resulted in both new propositional knowledge as reported in this thesis as well as the actual implementation of the portfolio within the eight departments and the College of Family Physicians. This research project has therefore also resulted in the formation of practical and experiential knowledge throughout the discipline of family medicine via the training workshops and the actual implementation of the portfolio countrywide. I will now briefly address how the study concluded on each of the objectives listed above.

5.2 Development and validation of the portfolio

From the literature and feedback from experts in the country we developed a portfolio and established its content and construct validity as described in the first publication.(3) The importance of the portfolio as a form of assessment was reflected in the finding that 50 (59%) of the 85 national learning outcomes were assigned to the portfolio as the preferred method of assessment.(4) The Delphi panel members in that study also affirmed 26 (96%) of the suggested principles regarding the construction of the portfolio, which were derived from the WONCA workshop in 2009 and the literature.

The South African portfolio for postgraduate family medicine training is now well established and consists of 50 specific learning outcomes that the trainee should achieve over three years, evidence of personal development (learning plans and reflections) and a number of assessment tools.(5) See Table 5.1.

Table 5.1: Structure of the South African portfolio for family medicine

Section1: Introduction to your portfolio
Section2: Learning outcomes (50 competencies)
Section3: Learning plans, reflections on rotations and supervisor's assessments
Section4: Educational meetings with the supervisor
Section5: Observations of the registrar by the supervisor
Section6: Written assignments
Section7: Logbook of clinical skills
Section8: Emergency medicine certificate(s)
Section9: Others courses, workshops, conferences
Section10: End of year assessment

A collaborative workshop, mainly with participants from sub-Saharan Africa at the WONCA Sub-Saharan Africa Regional Conference in 2009, initiated the process of developing the contents and principles for the construct of a national South African portfolio. After content and construct validity for the national portfolio were researched, a workshop with the eight heads of family medicine in the country (who are also part of the CMSA) was conducted in 2010, before the portfolio was implemented nationally.(3)

While fewer, but more authentic assessments were generally agreed upon, there were two exceptions, namely ten direct observations per year of patient interactions and a minimum of two hours per month of educational meetings with their supervisor.(6) While registrars and supervisors are free to use any tools, for the sake of simplicity and a degree of national uniformity one or sometimes two assessment tools were recommended per section, with examples of such tools included in the final portfolio. There was agreement to have a combination of a global rating and / or a simple Likert scale for most learning events.

5.3 Implementation of the portfolio

Following the workshop with the eight departmental heads in 2010 a national postgraduate portfolio and separate portfolio guide was distributed to all eight medical schools and the College of Family Physicians, who all agreed to facilitate the implementation of the national portfolio in their postgraduate training programmes (See Addendum A and B). The portfolio was implemented nationally with all new registrars. I facilitated workshops with local registrars, supervisors and programme managers at all eight university family medicine departments to help with the process of implementation and acceptance.

5.4 Evaluation of its acceptability, educational impact and usefulness for assessment

The acceptability, educational impact and usefulness for assessment were evaluated with a sample of family medicine registrars and supervisors from all eight medical schools in South Africa, as described in the second publication.(7) Qualitative feedback from semi-structured interviews with registrars and supervisors, who had used the portfolio in all eight medical schools, also informed the development of the portfolio in terms of its utility, as described in the third publication.

After this national survey and qualitative feedback from semi-structured interviews, the portfolio was further refined and the final portfolio, available on the CMSA website, is now the standard for postgraduate family medicine training in the country.(5) The portfolio guide is no longer a separate document, but has been incorporated as an introduction into the portfolio, with a short explanation of the process, content and assessment for every section (See Addendum C). Each university's training programme may adapt the national portfolio to dovetail with their local formative and summative assessment needs, whilst retaining the basic structure for the CMSA requirements. At the University of Stellenbosch the portfolio assessment now contributes 70% of the Clinical Family Medicine module mark at the end of each year, emphasizing the importance of valid and authentic assessment in the workplace as captured in the portfolio. Further training workshops with registrars and supervisors on the use of the portfolio, issues of supervision, direct observations, giving feedback, and assessments have been conducted at all eight medical schools

in the country during 2012 and 2013. The findings of the research were discussed with the registrars and supervisors, many of whom were also participants in the research, and allowed them to give further feedback during these workshops. This feedback was therefore also a form of respondent validation for the interpretation of the qualitative findings and could be triangulated with the picture that emerged from both the survey and interviews. For example, while we recommended in the first article that registrars should record regular meetings with their supervisors, we know the setting of a learning agenda never took place in 14% of participants, and direct observations of clinical skills infrequently in 31%, and never in 12% of participants. While the study participants in the Delphi study on development of the portfolio could not reach consensus on the principle of whether the portfolio should reflect on the relationship between the registrar and the supervisor, they did agree that the need for this close working and learning relationship was implicit in the portfolio. Reassuringly, an educational meeting between the supervisor and the registrar is taking place every 2-4 weeks in 75% of cases (article 2).(7) However, some of the other recommendations, for example that six hours per week be protected for more formal academic time has not been realised as hoped, with most portfolio users settling for one to three hours per week (article 2). Other recommendations, for example developing a portfolio assessment tool, has been addressed in the next section, while recommendations around developing an e-portfolio and increasing the contribution of the portfolio grade towards the CMSA exams are ongoing developments.

5.5 Development of a reliable portfolio assessment tool

Following this we needed to agree on a reliable and feasible way to assess the portfolios across all eight postgraduate programmes. There was a strong summative assessment focus in the portfolio, not least because universities are serious about providing competent doctors to address the massive health challenges in the country. Assessments are done iteratively during the course of the year by various clinical trainers who are consultant family physicians or consultants from other clinical disciplines, during educational meetings to develop learning plans, as part of end of rotation reviews, direct observations of consultations, procedures or teaching events, and on various written assignments. These are all entered into the portfolio. A simple and feasible portfolio assessment tool (PAT) was developed and the inter-rater and test-retest reliability was

evaluated in the programme at Stellenbosch University. The tool was designed to allow aggregation of grades accumulated in the portfolio throughout the year as well as a global score by the programme manager at the end of the year (See Addendum D). After the initial results we modified the last section of the PAT, which is the global assessment score, to differentiate more clearly between the categories on the Likert scale (See Addendum E). While I recognise that this tool is still developmental and has only been tested in one of the nine provinces in the country, preliminary results showed a reliable total score for the modified PAT, with a reliability coefficient of 0.92. This is similar to work in Belgium on internship portfolios, where a reliability coefficient of 0.89 was achieved for the instrument as a whole (95% CI = 0.83-0.93).(8) While the overall reliability for the total score supports its use as a tool to evaluate the portfolio, the poorer reliability of various sub-sections in the tool has prompted several recommendations for the portfolio itself, the tool and the raters, as described in the fourth publication. This is the first national portfolio assessment tool developed for family medicine in an effort to create more uniformity in our assessment system in the country. A final portfolio assessment tool that will satisfy the requirements of the various university family medicine departments and the CMSA will now be presented to the CMSA. The Education and Training Committee (ETC) of the South African Academy of Family Physicians (SAAFP), who is responsible for the coordination of postgraduate training processes in the country, has also been briefed on the portfolio and PAT, and has accepted it with a commitment to facilitate its ongoing implementation.

5.6 Future development of the portfolio

We acknowledge that the South African portfolio used in postgraduate family medicine training is a very recent introduction, with the portfolio still fitting like “new shoes”, a metaphor that was described by Spandel 16 years ago:(9)

‘introducing portfolios is just like buying shoes: the best choice depends on purpose and a really good fit happens over time, with lots of use and the right give and take by the user’. (p. 573)

The portfolio needs time to be ‘worn in’ while we learn from using it in our various contexts, although this may initially be painful, over time it should become more and more rewarding.(10)

To use another analogy, the portfolio almost sails like a boat, with the registrar and supervisor in it, on the ocean of people with complex and changing health and social issues, being pushed by changing currents that are shifting postgraduate education from lecture-style pedagogic teaching to learner centred adult life-long learning, tertiary hospital-based to district hospital/clinic-based, and university-based assessments to national college-based examinations. A diagrammatic conceptual framework of how the portfolio fits into this overall complex system is proposed in Figure 5.1. Some of the key messages in this picture are: the central place of patient care in registrar learning; the need for close supervision and maintaining continuity from the university to the district hospital/PHC clinic and to the community; while keeping the national learning outcomes and district health system in mind.

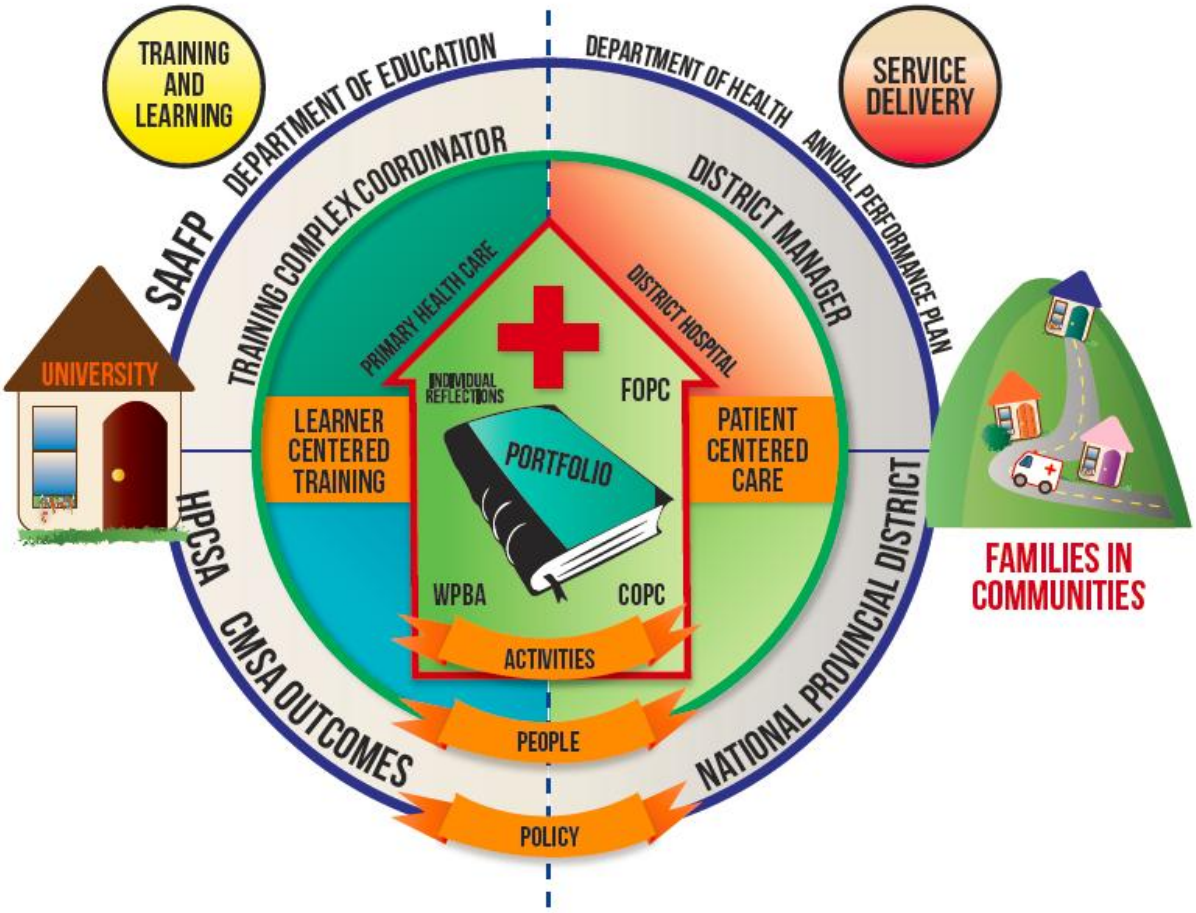

Figure 5.1: A conceptual framework for the place of the portfolio in the complex system of the healthcare and medical education environment

[SAAFP: South African Academy of Family Physicians; HPCSA: Health Professions Council of South Africa; CMSA: Colleges of Medicine of South Africa; WPBA: Workplace-based assessment; FOPC: Family oriented primary care; COPC: Community oriented primary care.]

5.7 Implications and recommendations

Eight implications or recommendations are made for the South African family medicine community, and also, because of its pioneering nature in developing countries, to postgraduate family medicine training programmes on the African continent. See Table 5.2.

Table 5.2: Recommendations for portfolio use in WPBA

1. Continue with the national portfolio as an acceptable tool to support work-based learning and assessment.
2. Have annual registrar and supervisor workshops on portfolio learning.
3. Consider alternative ways of helping registrars reflect and document their learning.
4. Establish a culture of clinical training in the health districts and advocate for a recognition of the co-benefits of service delivery and clinical learning.
5. Keep the paper-based portfolio very practical, adding appropriate electronic tools.
6. Help registrars and supervisors to develop resilience in the workplace.
7. Clinical supervisors need to be taught how to teach.
8. Incorporate the PAT into the formal assessment requirements that lead to the specialist qualification in family medicine, emphasizing the utility of global assessments by trained and experienced clinical assessors.

1. **Continue with the national portfolio as an acceptable tool to support work-based learning and assessment.**

The basic portfolio structure, with a number of tools, is now standardised for the country and available electronically on the internet.(5) To support implementation, I also wrote a chapter on how to use the portfolio for the 2nd edition of the South African Family Practice Manual (in print), in order to assist registrars and supervisors. A count of the number of trainee-supervisor encounters required in the portfolio each year amounts to about 30 such encounters and still excludes the skills needed to be assessed in the logbook. While the count itself does not necessarily speak to reliability or validity, as these would depend on the quality of the interactions, whether feedback is given and how the assessors understand the assessment tools, it does suggest that a reasonable number of assessment opportunities are created throughout the year. The challenge is to make the most use of them, triangulating them with other assessment methods, rather than creating yet more opportunities or more tools, and to ensure that all these assessment events form part of an overall approach to assessment.(11-13)

Ongoing review is necessary to ensure that the most feasible and valid assessment tools are incorporated. The logbook causes particular confusion among registrars and supervisors, because they are not sure whether this is part of their direct observations, or simply a tick list, or how they should show development in their clinical skills. Some found a particular conflict between their assumption that they should be counting the number of times each skill or procedure was performed and the portfolio's emphasis on just rating competence and reflecting on the implications for learning. Some items in the logbook need revisiting, to be removed, while others may need to be added. For example since the consensus process in 2006 that agreed on the list of national core clinical skills for family medicine training, amniocentesis has fallen into disfavour with the emergence of the HIV epidemic.(14) In other sections, additional tools could be added, for example the Chart Stimulated Recall (CSR) tool to facilitate educational meetings.(15) This tool was developed from a patient-centred care perspective and with the CanMEDS roles in mind, helping to teach patient-centred care within the CanMEDS competencies framework. It is useful as both a structured teaching tool, an assessment of learning needs, and in providing a structure for giving feedback to registrars.(15) However, it seems clear from the international literature that the current insufficiencies in assessment of performance "have more to do with the

conceptualization of the process than with the lack of tools to enact it".(16) The authors of the Future of Medical Education in Canada Postgraduate (FMEC PG) Project (16) highlighted three key issues that should be kept in mind as we develop the portfolio further, namely:

"1. At the largest level, the community would do well to be cautious in assuming that the right list of separate competencies will be a sufficient operational definition of what it is to be a physician. As we move forward toward a comprehensive and coherent assessment strategy, we might do well to stay open to other conceptualizations of physician development (such as "conceptualization of practice", which considers how we assess competencies as an integrated whole, also described as meta-competencies, as opposed to assessing individual competencies) and the implications of these for evaluating preparedness for practice in the field. The authors also emphasize the concept of "identity formation". We need to take cognisance of the fact that as registrars enter the postgraduate training programme, they have a certain sense of self-knowledge, self-awareness, and confidence, usually with quite high expectations. However, as time goes by, this 'identity' is tempered and changed, as they try to balance work, family life, and learning, into a new identity.(17) The Carnegie Foundation for the Advancement of Teaching elaborated on this concept by recommending paying attention to instruction of ethics, symbols of professionalism (such as pledges and 'white coat' ceremonies), the hidden curriculum, feedback and reflective opportunities, relationships with faculty and collaborative learning environments.(18)

2. In addressing the weaknesses of the current in-training evaluation model, the community would do well to move beyond faculty development strategies that teach supervisors how to use the tools, and address the administrative, professional, and cognitive barriers that impede supervisors' ability to formally codify and document their expert assessments of their trainees.

3. In addressing the mandate of our assessment programs to offer meaningful feedback to trainees, the community would do well to find mechanisms to engage residents in the assessment process such that they are able to appreciate and incorporate corrective feedback into their professional development."

Other reviews looking at the impact of WPBA have shown that multisource feedback can enhance performance, although individual factors, the context, and supervision had a profound influence, while no evidence exists that other assessment tools like the mini-CEX, direct observation of procedural skills, and case-based discussion lead to better performance.(19)

2. Have annual registrar and supervisor workshops on portfolio learning.

Approximately half of the registrars did not find the portfolio clear, practical or feasible. Only 65% of supervisors thought that registrars understood how to use the portfolio, while just over half (53%) of registrars said supervisors understood and also just over half of supervisors (54%) thought that family physician and other specialist supervisors understood how to use the portfolio. Only 42% of supervisors and registrars attended a workshop on how to use the portfolio in the current year, of which 90% found it useful.(7) Like the supervisors, registrars supported workshops on portfolio use, reflective learning, and supervision. An annual introduction at the beginning of the year should explain the purpose and place of the portfolio and the roles of the registrar and the supervisor, preferably by an enthusiastic registrar from the previous year.(20) While most supervisors felt the portfolio reflected an accurate picture of learning, just over half of registrars agreed. Supervisors graded most rotations, suggesting an understanding of the summative aspect, while only 61% of registrars reflected on rotations, suggesting the formative aspects were not yet optimally utilised. Although registrars found the portfolio useful to plan, organize and reflect on their learning, at this stage it is mostly a collection of learning activities. Its educational impact could be enhanced by a shift to demonstrate learning through increased self-awareness and reflection.(21-23) Poor feedback, lack of protected academic time, and service delivery pressure all made it difficult to reflect on work and document learning.(24) Training workshops where supervisors and registrars of each university programme get together in their complexes for a day at the beginning of every academic year to address these issues, particularly how to develop a learning plan, how to reflect on learning, how to be resilient, self-management skills, direct observations and giving feedback, would help the users of the portfolio to develop appropriately. This is the actual intention, and could even prevent the trap of Goodheart's Law, which teaches us to avoid making the measure (the portfolio) the target, as opposed to the quality of the process it is measuring.(25) A number of such workshops have been conducted at various universities, with very positive feedback. Training of users in competency-based assessment and use of electronic tools have all been advocated before.(1,26) Group interaction allows for role play around drawing up learning plans, direct observations and giving feedback. Having previous users also give authentic and hopefully constructive input in these workshops will also help give momentum to new portfolio users.(20)

In fact, using these workshops as learning opportunities could even open up new ways of looking at assessment, maybe moving away from a focus on individual performance and towards viewing assessment as a social construct, where performance is made visible in the interaction between two or more individuals or groups, not unlike clinical teamwork.(27) Assessment could be done by peers in the group or the clinical supervisor.

3. **Consider alternative ways of helping registrars reflect and document their learning.**

Half of our registrars disagreed that the portfolio reflected an accurate picture of their learning. They found the portfolio helped them to reflect, but were often not sure how to use these reflections to plan further learning. Only 61% of registrars actually reflected on their clinical rotations. Although reflective learning is a metacognitive process of understanding self and various situations better and informing future actions during every day human survival, it usually needs the facilitation and feedback of a mentor to be made visible.(21) Registrars and supervisors all have different learning styles and prefer to learn through various so-called intelligences, which are outlined below.(28,29) The current 'net-centric' generation uses the Web to create their own self-paced, customized, on-demand learning path which includes multiple forms of interactive, social, and self-publishing media tools.(30) It has been shown that undergraduate medical students often have low engagement with reflective learning because it does not match their learning preferences. Studies looking at how the so-called "Net Generation" of medical students learn explored the various ''intelligences'' that people have, noticing an individual preference for a particular intelligence when performing a task.(28,31,32) The seven proposed intelligences are:

- Linguistic—capacity for understanding the meanings of words and functions of language
- Logical-mathematical—capacity for seeing logical and/or numerical patterns
- Musical—capacity to appreciate rhythm and musical expressiveness
- Bodily-kinaesthetic—capacity for movement and activity
- Visual-spatial—capacity to perceive the world accurately
- Interpersonal—capacity to respond to the emotions and actions of others
- Intrapersonal—capacity to access one's own feelings and to identify personal strengths and weaknesses

Sanders found the main learning preferences to be bodily-kinaesthetic and interpersonal, while students with the highest scores in their written reflective learning assessment had linguistic and interpersonal learning preferences.(28) One suggested way of capturing reflective learning in the "Net Generation" with their learning preferences of group-based technological and multimedia projects could be digital storytelling, combining photos and sound, created and edited by individuals or groups, using cameras and computers, as opposed to textual writing.(33) Local work from South Africa supports these findings, where the narratives of photo-story reports from students were used to show evidence of learning.(34)

4. **Establish a culture of clinical training in the health districts and advocate for a recognition of the co-benefits of service delivery and clinical learning.**

We found that the portfolio has made the challenges of introducing competency-based adult learning more visible and made explicit the need for a supportive learning climate within the clinical environment.(35-37) Schön described how the demanding clinical context in which the portfolio of learning is embedded provides the soil from which lifelong learning grows.(22) Although the use of portfolios for work-based assessment is becoming best practice internationally it needs to be tailored to the contextual realities of low resourced settings where it may be seen as an additional burden for registrars already on the edge of burnout or depression.(24,38,39) Unlike tertiary hospitals, the district health services are not used to the demands of speciality training in South Africa. We need to integrate cultures of service and learning rather than allowing them to be perceived as in opposition.(40,41) For example, as all health workers typically need quarterly personal development plans, with performance reviews, so the registrars need 4-6 monthly learning plans, with supervisor reviews. As it is increasingly expected from senior doctors to be involved in quality improvement cycles and evidence-based medicine, so is the expectation from the registrars' portfolios. Just like teaching juniors is an expectation from senior doctors, likewise the registrars need to show evidence of teaching competencies in their portfolios. Both the performance plans of health workers and portfolios of registrars should keep the local health indicators in mind, with a view of improving them.

Clinical learning environments are complex and uncertain places where doctors have the double task of professional training and caring for patients.(42) Within our culture of service delivery,

clinicians have a clear system of documenting their clinical reasoning in patient notes. What is also needed is a culture of professional development in which clinicians capture their learning in a clear, concise, continuous way, possibly using a portfolio.(22,26,43,44) Figure 5.2 provides a visual analogy of the registrar reflecting on learning while being observed by a supervisor, and making notes in the portfolio. At the same time, the registrar is observing the patient and captures his/her thinking in the patient notes, which is often audited by the line manager.

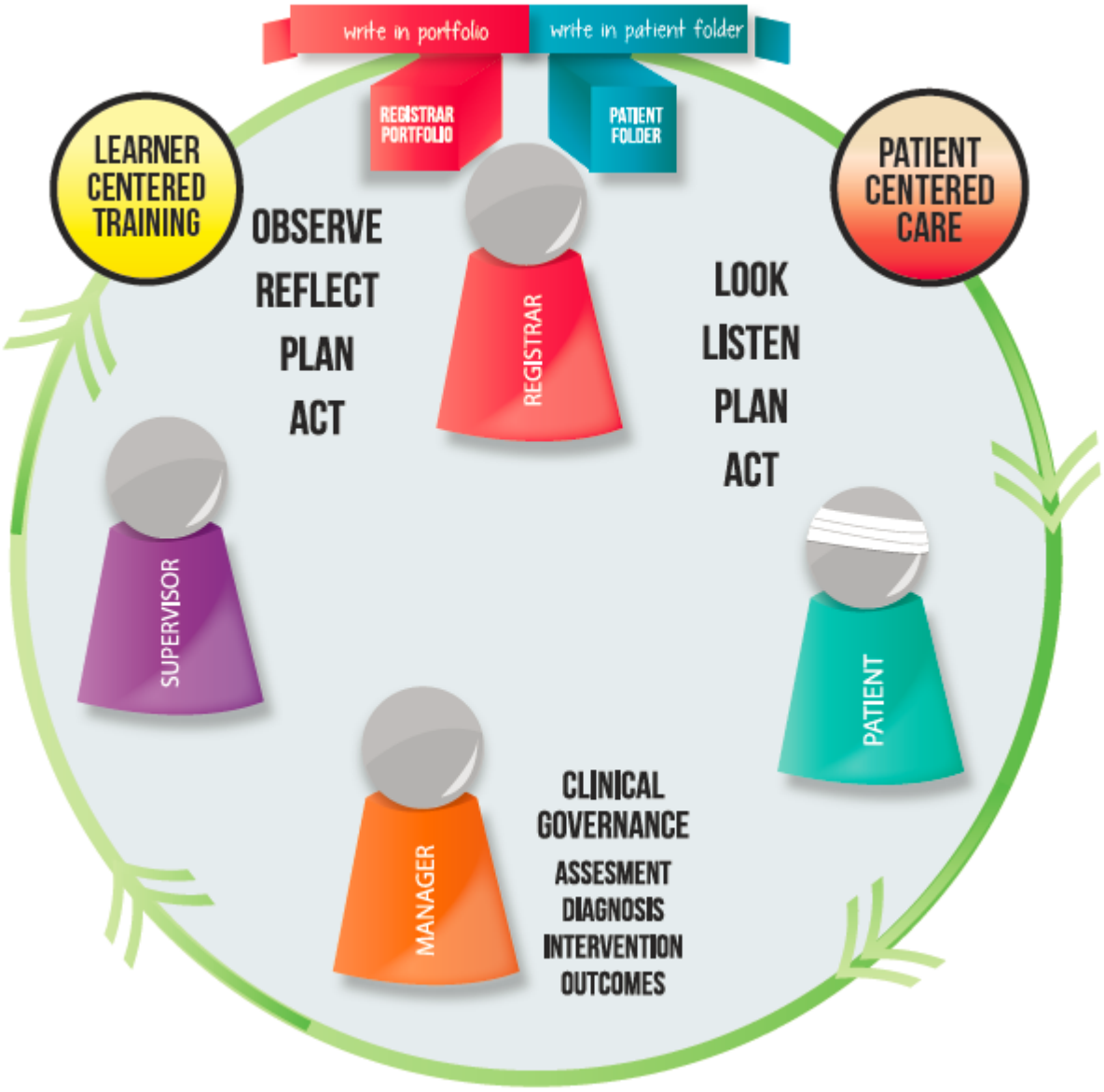

Figure 5.2: Analogy between registrar portfolio and patient clinical notes

5. Keep the paper-based portfolio very practical, adding appropriate electronic tools

The paper-based portfolio is accepted for now, with a call for more electronic tools that are compatible with mobile devices, and eventually an electronic portfolio, similar to examples from more developed countries.(26,45,46) Tools must be available in hard copy in the workplace, as well as electronically on laptops, desktops, and mobile devices. An electronic portfolio may be the eventual product, however South Africa is still a developing country, with recent surveys showing only about 15.8% of the population having broadband access to the internet.(47) Many district hospitals and most PHC clinics do not have internet access or reliable computers. It is significant that work done on learning preferences of district doctors in the Western Cape Province in South Africa ranked internet-based learning the lowest of their options.(48) So the solution for the ideal portfolio design is probably not simply having an internet-based portfolio, but rather tailoring some of the tools within the portfolio towards an electronic platform such as having the mini-CEX or DOPS forms on mobile devices, or using smart phone applications like "Whatsapp" to support small group learning. With the emergence of mobile devices now outnumbering fixed landline internet access by 8 to 1, there is growing potential to utilise many of the portfolio tools on a mobile device. Some of the benefits of electronic portfolios have been well recognized, such as flexibility, accessibility, increased registrar and supervisor motivation, easy sharing of contents with others, e-mailing of cases and giving or receiving feedback between supervisors and registrars.(10,37,49-51) However, some of these same authors also made the point that such an e-portfolio needs to be carefully embedded in an overall system with clear guidelines for successful e-portfolio tutoring.(26,37,52) Tutoring in electronic portfolios can actually be more time consuming than face to face meetings.(53) It is also true that regular face-to-face meetings between registrars and supervisors ensure authenticity of learning with supervisor signatures, the absence of which is a disadvantage in pure e-portfolio systems.(26) Some university programmes, like the University of the Free State and the University of the Witwatersrand have begun to collate portfolio entries electronically on the Blackboard platform. Progress with the portfolio can then be evaluated and shared monthly among registrars and supervisors, hereby creating some peer accountability. The University of Stellenbosch are also using some portfolio assessment tools, like the mini-CEX, on mobile devices to directly assess the registrar in the workplace and then e-mailing these completed forms to the registrar and the programme manager.

Personal organization of learning, self-management and a discipline of regularly updating the portfolio were strongly supported.(54) Dedicated times for the registrar and the supervisor to meet are imperative. Registrars and supervisors felt that between 1-3 hours per week were sufficient to capture reflections and learning. However, this should be part of a local structure, with training embedded as part of the organizational culture in such a way that it is predictable, reliable, and meaningful.

Observed consultations and procedures were seen as important, but, as others have also noted, are sometimes difficult to achieve in the workplace.(1,55) Suggestions to make this easier included having learning tools daily at hand, regular portfolio updates, and a central coordinator who collates portfolio entries monthly. We need to find a balance between pressure and support, allowing sufficient time for experiential learning between portfolio entries, while also ensuring completion of the portfolio is addressed at monthly meetings.(26) Developing or finding video clips, which demonstrate the use of direct observations, how to complete the portfolio, or how to receive feedback are all useful to support the registrar. Time is needed for registrars, supervisors and service managers to shift in their thinking from a traditional pedagogy to a modern andragogy, or adult learning in practice.(22,43,56,57) The integration of the portfolio into clinical training and practice and into the way supervisors perform assessment happens over time with increasing commitment and reliability.(58)

6. Help registrars and supervisors to develop resilience in the workplace.

Registrars and supervisors frequently felt overwhelmed by service pressures, and often felt unable to recognize learning opportunities, or capture learning events in their portfolios. A clear need for self-management, resilience-building, and awareness of strengths and weaknesses emerged.(22,59,60) Looking at first year residence trainees in Toronto, in-depth interviews revealed that registrars' well-being varied according to levels of support from their supervisor and colleagues, number of learning opportunities, and work demands.(61) The authors suggested that the well-being of registrars may be improved by programme interventions that facilitate better team and supervisor support, maintain optimal service to learning ratios, establish effective fatigue and risk management systems, offer wellness support services and integrate skills based

resiliency training into the curriculum.(61) Studies looking at the challenges experienced by registrars during their training, such as long working hours, sleep deprivation, high levels of responsibility, financial debt and career planning contribute not only to stress and burnout, but also leads to a higher prevalence of depression and anxiety than in the general population.(62-66) In one study 76% of internal medicine residents met the criteria for burnout, and compared with non–burnt-out registrars, burnt-out ones were significantly more likely to provide suboptimal patient care.(67) A confidential survey conducted by the Australian Medical Association Council of Doctors in Training investigated the health and wellbeing of junior doctors and reported burnout in 69% and compassion fatigue in 54% of doctors. Coping strategies included spending time with family and friends and doing exercise.(68) These figures are similar to South African statistics where local studies in Cape Town amongst primary care doctors found 76% were suffering from burnout and 30% from depression.(39,69) The responses from registrars in this PhD also revealed a high frequency of discussing personal problems during their educational meetings, indicating the need for compassionate and skilled supervisors to deal with the whole person.(68,69) Consequently, at the National Family Practitioners' Conference in 2013 and at the University of Stellenbosch we have offered Building Resilience workshops for registrars and mentors, facilitated by an expert on this topic.(60) These workshops focussed on three domains: The core domain, consisting of the constructs 'Grounding and Connecting' and 'Understanding and Accepting Self', related to the inner core of the person; the second, or internal domain, consisting of three constructs - 'Controlling and Choosing Thoughts, Feelings and Attitude', reframed one's approach to adversity; and the third domain being that of the external world, made up of two constructs which refer to dealing with the actual adversity and interactions with people in the environment via 'Action Focus' and 'Giving and Accepting Support'.(60)

7. Clinical supervisors need to be taught how to teach.

Registrars frequently reported inadequate supervision and feedback and asked for a more collaborative approach to their learning. There was a clear need for supervisors to improve their mentoring skills and for registrars to fully embrace adult learning, needing support in each part of the learning cycle.(57,72,73) This is echoed in the literature, with many models and tips to develop mentoring.(24,50,74-79) The usefulness of workshops on the use of the portfolio was

evident and indicated a need for on-going engagement of supervisors on how to teach, reflect, supervise and assess in the workplace, and document their feedback in the portfolio.

There needs to be a clinical collaborative partnership, or shared accountability, between the registrar and the supervisor to prioritize learning within the pressurized clinical service, with registrars taking responsibility for their own learning and supervisors providing regular feedback. There exists strong evidence that the most important mechanism for enhancing this supervisor-registrar engagement is the presence of a trusted and engaged supervisor who has a longstanding professional relationship with the registrar, understanding both the registrar's learning needs and his/her own perception of how to achieve these. It is in this context that feedback becomes a highly personal process within a trusting relationship.(16) While we know from our Delphi study that there was not consensus on how the relationship between the supervisor and registrar should be reflected in the portfolio, it is recognized that herein lies a challenge, and the introduction of the portfolio may enhance this relationship, or certainly accentuate the absence thereof, which has implications for adult learning and reflective practice.

The need for direct observations and case-based discussions in educational meetings provided an obligatory basis for regular registrar-supervisor meetings. The supervisors in South Africa face the same pressures as the registrars, with issues of burnout and resilience as outlined in the previous section.(39) Most supervisors found attending a workshop on portfolio learning very useful. A specific focus is needed to recognize, develop, and reward clinical trainers. This should take place in the context where these clinicians are working, with an integrated service, training and assessment approach.(41) A 2012 conference in South Africa with experts from South Africa, Canada and Australia looked at issues of training, supervision and assessment and produced recommendations that are relevant for South Africa and other low or middle income countries (LMICs).(80) The two principles they emphasized were that rural clinical leadership, both academic and non-academic, is essential to developing and expanding rural training programmes and improving care in LMICs; and leadership can be learnt and should be taught.(80) The eight habits of effective clinical teachers are summarised in Table 5.3.(71)

Table 5.3: The eight habits of effective clinical teachers (Reilly 2007) (71)

	Strategic goals	Educational challenges	Clinical challenges	Inconvenient truths
Think out loud	Show learner the process, not merely the outcome, of expert reasoning	Articulate, in real time, pivotal steps when making clinical decisions	Missteps inevitable	Requires humility
Activate the learner	Promote learner's initiative and autonomy	Know when to stand back versus when to assert clinical authority	Patient safety always the top priority	Needs democratic leadership skills
Listen smart	Efficiently assess validity of learner's presentation	Know what to listen for	Assess patient before assessing learner	Requires mastery of patient's clinical details (teachers as perpetual interns)
Keep it simple	Exemplify concise communication and rule-based decisionmaking	Use reductive general principles to illuminate clinical complexity	Each patient is unique; some don't follow the rules	Easier said than done

Table 1: **Teaching habits of effective clinical teachers—TALK the talk**

	Strategic goals	Educational challenges	Clinical challenges	Inconvenient truths
Wear gloves	Promote hands-on doctoring	Role-model unfashionable skills (physical exam) and countercultural behaviour (nurses' work)	Continuing refinement of clinical acumen to complement advances in science and technology	Bedside care undervalued and inadequately rewarded
Adapt, enthusiastically	Embrace clinical uncertainty as a valuable learning opportunity	Role-model aplomb and savoir faire when unexpected clinical events occur	Changing one's mind; admitting error; lack of evidence for many clinical dilemmas	Managing clinical uncertainty highly stressful yet poorly taught; burn-out an occupational hazard
Link learning to caring	Show, and expect of learners, empathy and responsibility for each patient	Role-model professionalism and patient-centredness	Understand the patient's illness as well as their disease	Medical consumerism (care as a commodity) undermines medical professionalism
Kindle kindness	Establish generosity (not politeness) as the standard for all clinical interactions	Give encouragement (hope) to learners even when giving critical feedback	Treat the disease as your enemy but the patient as your friend	Unknown whether simple human kindness is teachable

Table 2: **Teaching habits of effective clinical teachers—WALK the walk**

Likewise, Ramani and colleagues provide 12 tips for effective mentoring and Hauer and Holmboe elaborate on faculty development and 12 tips for direct observations by supervisors.(55,76,81) The AMEE Guide no.27 deals directly with effective medical education and clinical supervision.(82) The transition period during which the qualifying registrar becomes a consultant and supervisor signifies an intense learning curve, not unlike the transitions between different rotations or health facilities for the registrars. Kilminster proposes that in order to understand the process of transition as a period of learning, rather than as transferring to a new post, that transitions should be recognised as critically intense learning periods (CILPs). The extent to which the learning cultures at clinics, wards and institutional levels recognise transitions as CILPs contributes to or inhibits the performance of new doctors.(83) Certainly the South African Department of Health, and some universities, such as Stellenbosch University, have recognized the need to develop the leadership skills of supervisors, and have begun to offer structured training in this regard.

8. **Incorporate the PAT into the assessment programme that leads to the specialist qualification in family medicine, emphasizing the utility of global assessments by trained and experienced clinical assessors in the PAT.**

We developed a portfolio assessment tool (PAT) to help us assess each portfolio in the university programme and also in the country in a more standard and reliable way. While the overall grade in the PAT gave a reliability coefficient of 0.92, we could not demonstrate reliability with the assessments of the various sections in the portfolios. Some of the reasons include the small discrimination scale in some of the sections (for example many sections are only scored out of ten), unclear instructions for raters, and variability in the way some registrars constructed their portfolios. Assessment of our portfolio at this stage focusses predominantly on completeness, for example the number of learning plans, direct observations and educational meetings. The challenge remains how to focus more on assessment of the quality of learning. There are examples in the literature on developing tools to assess portfolios, for example the Portfolio Analysis Scoring Inventory in the Netherlands, consisting of 15 items, which found inter-rater agreements ranging from 0.46 to 0.87, with the strongest predictor of variance being the quality of reflection.(84) Another tool, the Validity Inventory for Portfolio Assessment (VIP-A) tool developed for medical interns at the Universities of Antwerp, Maastricht, and Utrecht established validity for 25 key competencies assessed in the portfolio.(85) While developing stricter tools for assessment may improve reliability, the risk is a potential loss of authenticity and credibility. One study used five qualitative strategies to achieve credibility and dependability of assessment, namely triangulation, prolonged engagement, member checking, audit trail and dependability audit.(86) Supervisors read portfolios at least twice during the year, providing feedback and guidance (prolonged engagement). Their recommendation for the end-of-year grade was discussed with the trainee (member checking) and submitted to a member of the portfolio committee. Information from different sources was combined (triangulation). Portfolios which caused persistent disagreement were submitted to the portfolio assessment committee, quality assurance procedures with external auditors were used (dependability audit) and the assessment process was documented (audit trail). Looking at 233 portfolios, they found disagreement among trainees and mentors on 7 (3%) portfolios, 9 portfolios were submitted to the full committee, and the final decision on 29 (12%) portfolios differed from the supervisor's recommendation.(86)

A study on the training of registrars in general practice in the UK (85) investigated the reliability and feasibility of six tools for WPBA and found the following: Multi-source feedback from colleagues and patient feedback on consultations were the two methods most likely to offer a reliable and feasible opinion of workplace performance. Reliability co-efficiencies of 0.8 were attainable with 41 patient feedback questionnaires and six clinical and/or five non-clinical colleagues per doctor when assessed on two occasions. For the other four methods tested, namely criterion audit, referral letters, significant event analysis, and video analysis of consultations, 10 or more different assessment encounters were required per registrar in order to achieve a reliable assessment.(87) These findings are in agreement with what has been found in other studies. A literature review on instruments for WPBA found that most of the 18 different tools described in 39 articles (before January 2009) were predominantly formative.(88) The authors found acceptable reliability with assessment of 10 clinical encounters. The validity of most instruments (except the mini-CEX) was not investigated, and assessor training was very sparse.(88) There seems to be general agreement that at least ten assessment encounters allows for acceptable reliability.

The South African family medicine portfolio includes formative feedback components to the registrar, summative graded components to the local training programme and achievement of an acceptable standard for entry to the national college examinations. We found strong support for both an end-of-rotation summative and a mid-rotation formative assessment. As the discipline of family medicine becomes more established there is a shift to train and assess more in the district hospitals and PHC, with less exposure to regional hospital clinical departments.(41,89) Such a shift requires that a culture of training and especially assessment is initiated, valued and nurtured by both the services and universities. At present the portfolio forms part of an assessment system that combines WPBA via the portfolio with other forms of assessment within each university programme (e.g. written assignments and multiple choice tests) and the national exit examination from the CMSA (multiple choice questions, modified essay questions, critical appraisal, clinical cases and OSCE). The portfolio has been introduced in the context of changing from university-based final examinations towards national college-based final examinations, which may have complicated the process.(90) As the college examination relieves the local training programmes of the need to conduct their own final summative evaluation, the portfolio may be given more weight and importance in the local setting. At present a satisfactory portfolio, as assessed by the

PAT, is required for entry to the College examination. However the College of Family Physician examiners have also debated whether the assessment of the portfolio should not contribute towards the final examination score as well. Currently the CMSA are not willing to sanction this and the College of Family Physicians have experimented with having one of the OSCE stations focus on a discussion of the portfolio, which must therefore be brought to the examination. As the portfolio gains credibility and given the number of learning outcomes that it assesses, it should become more important in the final exit examination in future.

As we know that performance assessments are subject to assessor subjectivity and particularly case-specificity, there has been a move towards sampling multiple encounters across patients, contexts, assessment formats (e.g. OSCEs and mini-CEXs) and raters.(91,92) This principle has been incorporated into our portfolio. However, apart from some tools that have established reliability, like the mini-CEX, there exists a general dissatisfaction or even suspicion of the reliability of many WPBA tools.(93,94)

While we should continue to look at improving the reliability, feasibility and validity of our WPBA tools, an aspect that has not received sufficient attention, certainly in our portfolio implementation, is the cognitive characteristics of raters. Using the language of Donabedian we can argue that for example the mini-CEX is useful to assess performance at a structural level, or what can be described as the stable characteristics of the trainee, while it becomes more difficult to assess performance at the process level.(95,96) Structural assessment looks at a broader competency that requires the integration of several skills at the process level. Tick sheets of scoring and adding processes, for example ‘shaking hands’ and ‘making eye contact’, in order to assess an outcome, which could be ‘establishing rapport’ in this example, or assessing a structural attribute like ‘interpersonal skills’, are not usually part of the mind map of raters.(97) Crossley argues that performance is more complex than the sum of its parts and that subjective judgements about outcome-level performance or structure-level attributes might result in at least as good if not better inter-rater agreement and better performance discrimination than assessment of the component processes.(97) The literature demonstrates exactly this, where the global rating scale in OSCE items provided more reliable scores than the actual items.(98) Three surgeons each observing one case discriminated among trainees with a reliability of 0.76 based on the sum of their checklists and a reliability of 0.82 based on their simple unstructured outcome judgement at

the end of the operation.(99) Similarly, three raters assessing 10 letters in an outpatient department discriminated among trainees with a reliability of 0.72 based on the sum of their checklists, but with a reliability of 0.74 based on their outcome (global) judgements.(100) It seems that an experienced and trained clinician rater develops a kind of "instrumental impressionism" whereby the rater makes a global judgement, dependant on the (merged) details in the instrument, on behaviour in context, with greater agreement and discrimination than a measure of the sum of the component behaviours.(97) It has been argued that any method, including those less structured or standardised, could have utility depending on how it is used, with an argument for more methods that rely on qualitative information and hence require professional judgement.(101) A study done in 1980 showed that more experienced and more cognitively complex raters were less susceptible to halo effects and preferred rating tools that provided them with real-world relevant anchors (such as 'this is how I would like to receive a referral letter') as opposed to minimal descriptors (such as 'satisfactory' or 'poor').(102) The authors concluded that we should not focus on the format of the rating tools or forms, but understand and utilize the cognitive schemata of the raters.(102) Maybe this is exactly the next challenge for our South African portfolio for family medicine training. We need to identify experienced family physician supervisors (trainers) and train them in WPBA and use of the portfolio. Then we also need to continually review our portfolio performance tools and instead of adding more tools, rather allow for global ratings, based on construct-specific criteria that make sense to clinicians, as opposed to educational language that may even demotivate clinician assessors.

A review of the reliability of the portfolio assessment in a year or two, when the portfolio is more established and raters have accustomed themselves to its assessment will provide valuable feedback for improvements around feasibility and increased validity.

Finally we need to ensure a safe learning climate in the clinical environment, making for example direct observations and captured learning conversations part of normal clinical practice, incorporated into an overall assessment programme.

Concluding thoughts

The portfolio of learning has entered the lives of registrars and supervisors as an educational tool in the complex working environment of clinical practice. The health team serving a local community in a health sub-district constitutes a distinct community of practice. (43) Here the duality between the reification of postgraduate learning (adult learning), objectified in the portfolio, and participation by the registrars in everyday practice takes on meaning. (43) Reification ("to make into a thing") shapes our experience. Wenger describes how having a tool to assess an activity changes the nature of that activity.(43) In other words, there is an interplay, or relationship, between the learning climate and working environment, and the one informs the other.

The registrar, and for that matter, the supervisor, is being immersed into a new social structure, or discourse – that of (academic) family medicine. Gee explains the notion of discourse as follows, "… a socially accepted association among ways of using language, of thinking, feeling, believing, valuing, and of acting that can be used to identify oneself as a member of a socially meaningful group or 'social network' or to signal (that one is playing) a socially meaningful role".(103) The challenge is to form a strong identity as family medicine and family physicians, while at the same time develop into an integrated member of the local 'community of practice', being the local health team.

Our modern epistemology of practice of experiential, learner-centred learning is influenced by cognitive constructivist and social constructivist theories. Cognitive constructivists tend to draw insight from Piaget, focusing on individual constructions of knowledge discovered in interaction with the environment, while social constructivists tend to rely more on Vygotsky and view learning as connection with and appropriation from the sociocultural context within which we are all immersed.(104) The registrar is concerned with learning and improving as an individual, while also caring for patients. The portfolio as an aid to capture learning is making these 'tensions' visible -. the registrar developing as an individual, yet part of a community of practice, and developing as a family physician, yet part of a larger health team. This was apparent in the first article where we could not get consensus on issues such as teamwork and community advocacy.

I set out to develop a portfolio of learning for postgraduate family medicine education in South Africa. The reasons were that we needed a standardised way to document and assess evidence of registrar learning in the workplace, as required by the College of Family Physicians of South Africa. The research design I embarked on included four different approaches, including a Delphi process, a survey, in-depth interviews, and a quantitative study. This strengthened the validity and reliability of the process of developing the portfolio, especially as it allowed participation and collaboration with a wide range of key stake holders in family medicine education in the country. The development of the portfolio has brought to the surface many issues previously less visible in the training programmes, including supervision and feedback, the clinical environment, cognitive barriers in supervisors and registrars, understanding adult learning and reflective practice, and how to reliably evaluate the portfolio. While we finally settled with the portfolio as it now stands, we recognize from our own experience as well as from colleagues in other countries that this work is not static but evolving all the time, gradually moving towards more valid ways of workplace-based assessments and portfolio designs.

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Addendums

Addendum A	The initial portfolio of learning
Addendum B	The portfolio guide
Addendum C	The final portfolio of learning
Addendum D	The initial portfolio assessment tool
Addendum E	The modified portfolio assessment tool

Addendum A: The initial portfolio of learning

2011
PORTFOLIO OF LEARNING

Fellowship

of the

College of Family Physicians of South Africa

FCFP(SA)

AND

Master of Medicine in Family Medicine
Stellenbosch University

MMed (Fam Med)

PORTFOLIO OF LEARNING

CONTENTS

SECTION 1

PURPOSE OF THE PORTFOLIO

What is the Portfolio?

Your portfolio provides evidence of learning in the workplace during your time as a registrar in family medicine. It allows you to demonstrate that you have met the outcomes of the training programme. Many of these outcomes are best assessed in the portfolio.

Guide to the Portfolio

You and your supervisor should have been provided with a guide to creating your portfolio, which will assist both yourself and your supervisor with its development. If you do not have the guide please ask your supervisor to provide it and read through the guide yourself.

The learning portfolio for Family Medicine training in South Africa has been developed through an extensive process of consultation and consensus between all eight Family Medicine academic departments in the country. In terms of national training outcomes for Family Medicine, 5 unit standards have been agreed upon. Within these 5 unit standards there are 85 more specific training outcomes. The portfolio does not intend to reflect training and learning in all of these, as some outcomes will be assessed through other means. The 50 outcomes that must be reflected in the portfolio are summarised in a grid below and should be constantly referred to and kept in mind as you work and learn in daily practice.

Purpose of the portfolio

1. To stimulate you to think consciously and objectively about your own training. This is known as *reflective learning*, and is its primary purpose.
2. To document the scope and depth of your training experiences.
3. To provide a record of your progress and personal development as training proceeds.
4. To provide an objective basis for discussion with your supervisors about work performance, objectives, and immediate and future educational needs.
5. To provide documented evidence for the CMSA of the quality and intensity of the training that you have undergone, as a requirement to sit the Part I exam for the FCFP.

The portfolio is not just a logbook of signed procedures undertaken or witnessed. It should contain your written reflections and systematic documentation of your learning

experience. It includes opportunities for you to reflect, to explore, to form opinions, and to identify your own strengths and weaknesses. It allows you to follow your own progress; not only with regard to the training programme, but also in terms of learning goals you have set for yourself. In this way the portfolio provides an opportunity to record and document the subjective aspects of training.

Objectives

The objectives of your portfolio are to:

- develop a structured learning plan
- identify goals and actions required to achieve them
- record progress in achieving those goals
- document personal strengths
- identify areas needing improvement

Who looks at the Portfolio of Learning?

1. **Registrars**. You should interact regularly with your portfolio to ensure it documents your learning on a continuous basis and stimulates you to reflect on your experiences.
2. **Supervisors**. You should meet on a regular basis with your supervisor to develop and reflect on your learning plans, to be observed and reflect on your clinical practice and to have a variety of educational meetings. All these activities should be documented in your portfolio. Your supervisor should also review progress with the portfolio during intermittent evaluations of your progress. In this way the portfolio allows a structuring of the supervision process.
3. **CMSA**. The CMSA requires evidence that learning has taken place as part of a structured programme, in order to sit Part I of the FCFP exam. The portfolio is an essential piece of evidence for this.

This portfolio is a cumulative record of your personal learning, goals, needs, strategies and activities throughout your training programme. The sections in the portfolio are not exhaustive, but rather an indication of the minimum that you should be doing. You will learn a great deal more than what is written on these pages.

The portfolio does not aim to assess or capture all the competencies needed to be a family physician, nor is it the only way of assessing you. Some competencies or skills will also be tested or validated via other means, e.g. orals, OSCEs, Multiple Choice Questions, assignments and written papers in formal exams.

The portfolio should not become a big additional burden on you and the supervisor. In many instances you can include reports from meetings that you attend as part of your work (e.g. M&M meetings) or assignments that you have done as part of the academic programme for the university(e.g. reflective .writing, assignments, patient studies,

clinical audits and community projects). These should not be repeated, but should simply be incorporated into the portfolio.

The emphasis is on the *process* of completing the portfolio (in a way that encourages *reflection*), and "the learning journey" rather than "something else that must be done and handed in for marks." Be creative, for example you can include photos of a community project, or letters written as the patient advocate, etc.

Portfolio Completion Criteria

The Portfolio should always be used in conjunction with the ***Regulations and Syllabus for admission to the Fellowship of the College of Family Physicians of South Africa FCFP(SA)***, as may be amended from time to time. See http://www.collegemedsa.ac.za/Documents%5Cdoc_191.pdf (17 pages)

- Entries must at all times be **legible** and, where indicated, supported by the required **signatories** (Supervisors and Heads of Departments and their contact details). Add pages to each Section as necessary. Ensure that your name appears on every page. It is **strongly advised** that you keep an electronic backup copy of all entries, as well as a printed copy, in case of computer failure or theft.
- Each rotation will need to be verified by the relevant Head of Department or Supervisor, including the relevant sections in your logbook (procedures and clinical skills done).
- You must submit your completed portfolio **at the end of every year** during years 1-3 of your training programme to the head of department, for assessment purposes. In your 4th year of training, you should have a comprehensive portfolio, with cumulative evidence of learning that has been assessed every year by the university department, and will be part of the admission requirements for the CMSA exams.
- The final portfolio must reach your university head of department ***at least 3 (three) months*** prior to the commencement of the FCFP(SA) Part I Examination, in order for the head to submit a report, which will be sent to the Academic Registrar of the CMSA. Failure to submit the portfolio on time will result in the candidate not being invited to the examination.
- A **Declaration** must be signed by the registrar before submitting the final portfolio at the end of 3 completed years of training to the CMSA.

SECTION 2

NATIONAL UNIT STANDARDS and EXPECTED LEARNING OUTCOMES TO BE ASSESSED IN THE PORTFOLIO

It is important to keep the national training outcomes for Family Medicine in mind while you develop your portfolio. The 5 national Family Medicine Training Unit Standards are broken down into a number of outcomes, of which 50 will be reflected on and assessed in the portfolio. These should help you to develop your personal learning plans.

To remind you and your supervisor to plan appropriately, it is suggested that you mark off what you have completed in the portfolio in the checklist column. This will ensure inclusion of all the outcomes in the portfolio over time.

OUTCOMES TO BE ASSESSED IN PORTFOLIO (50)	Recommended assessment methods	Suggested frequency of assessment	Checklist
UNIT STANDARD 1 Effectively manage him/herself, his/her team and his/her practice, in any sector, with visionary leadership and self-awareness, in order to ensure the provision of high-quality, evidence-based care.			
Manage him/herself optimally by: 1. Addressing his/ her personal learning needs continually by assessing needs and participating in an appropriate programme of learning.	Learning Plan, signed by supervisor (Section 3)	2X/year	
2. Demonstrating growth and learning in response to identified needs			
3. Demonstrating willingness to seek help when necessary			
4. Describing activities to enhance self-growth and development			
5. Demonstrating ability to develop his/her own capacity			
Manage resources and processes effectively by: 1. Planning, implementing and maintaining information- and record-keeping systems.	Continuous assessment form (Section 4)	End of rotations or 2X/year	
Describe, evaluate and manage health care systems by: 1. Demonstrating the ability to plan and conduct a practice audit	Written assignment (Year 2 in Chronic	Once during programme	
2. Implementing ongoing quality improvement activities			

	Disorders module)		
Facilitate clinical governance by: 1. Critically reviewing research articles and applying the evidence in practice	Written assignments (Year 1 in EBM module)	Once during programme	
2. Demonstrating the implementation of research and literature review findings in the management of problems in practice by, for instance, developing protocols for the practice			
3. Adapting and implementing appropriate local, national and international clinical guidelines			
4. Engaging in monitoring and evaluation to ensure high quality care	Report/minutes of M&E meeting in your facility	Yearly	
5. Implementing rational prescribing and diagnostic testing	Continuous assessment form (Section 4)	End of rotations or 2X/year	
Work with people in the health care team to create an optimal working climate by. 1. Communicating and collaborating effectively with members of the health care team and peers	Multi-source feedback (Year 3 Management module), or Continuous assessment form (Section 4)	Yearly	
UNIT STANDARD 2 Evaluate and manage patients with both undifferentiated and more specific problems cost-effectively according to the bio-psycho-social approach			
Evaluate a patient according to the bio-psycho social approach by: 1. Taking a relevant history in a patient-centred manner, including exploration of the patient's illness experiences and context.	Observation by supervisor. (Additionally, written assignment s can be added from Year 1 in the Consultation module)	10 Observation s / year	
2. Performing a relevant and accurate examination			
3. Performing appropriate special investigations where indicated, based on current evidence and balancing risks, benefits and costs			
4. Formulating a bio-psycho-social assessment of the patient's problems, informed, amongst others, by clinical judgment, epidemiological principles and the context			
Formulate and execute, in consultation with the patient, a mutually acceptable, cost-effective management plan, evaluating and adjusting elements of the plan as necessary by: 1. Communicating effectively with patients to inform them of the diagnosis or assessment and to seek consensus			

on a management plan 2. Establishing priorities for management, based on the patient's perspective, medical urgency and context 3. Formulating a cost-effective management plan including follow-up arrangements and re-evaluation 4. Formulating a management plan for patients with family-orientated or other social problems, making appropriate use of family and other social and community supports and resources. 5. Appling technology cost -effectively and in a manner that balances the needs of the individual patient and the greater good of the community. 6. Incorporating disease prevention and health promotion. 7. Effectively managing concurrent, multiple and complex clinical issues, both acute and chronic, often in a context of uncertainty. 8. Demonstrating a patient centred approach to management using collaborative decision making 9. Including the family in management and care of patients whenever appropriate 10. Demonstrates a commitment to building continuity of care and on-going relationships with patients as well as an understanding of the chronic care model 11. Demonstrates the ability to provide preventive care, using primary, secondary, and tertiary prevention as appropriate, and to promote wellness 12. Demonstrates the ability to provide holistic palliative and terminal care			
13. Recognising and managing discord in relationships impacting on health, using appropriate tools e.g. genograms, ecomaps where necessary to identify potential problems	Written assignment. (Year 3 FOPC module)	Once during programme	
14. Collaborating and consulting with other health professionals as appropriate 15. Co-ordinating the care of patients with multiple care providers 16. Demonstrating appropriate record keeping	Continuous assessment form (Section 4)	End of rotations or 2x/year	
17. Performing effectively and safely the technical and surgical skills necessary for functioning as a generalist.	Logbook (Section 8)	Beginning and end of each rotation or 2x/year	
UNIT STANDARD 3 Facilitate the health and quality of life of the family and community.			
Integrate and co-ordinate the preventive, promotive, curative, rehabilitative and palliative care of the <u>individual</u> in the context of the family and the community by: 1. Knowing the resources available in the community and being able to co-ordinate and integrate team efforts. 2. Considering the family in assessment and engaging the family in management at an appropriate level	Written assignment (Year 2 in COPC module)	Once during programme	

3. Providing family- and community-oriented care to patients			
4. Conducting home visits when necessary			
Identify and address problems influencing the health and quality of life of the <u>community</u> in which the family physician works, by: 1. Demonstrating an understanding of the concept of and an ability to work in a "community"			
2. Demonstrating the ability to identify community health problems and make a 'community diagnosis'			
Be an advocate for individuals and communities to ensure informed decision making on health matters based on evidence by: 1. Ensuring co-ordination of care and that the holistic needs of a patient are being addressed at any level of care			
UNIT STANDARD 4 Facilitate the learning of others regarding the discipline of family medicine, primary health care, and other health-related matters			
Demonstrate the role of the family physician as a teacher, mentor or supervisor by: 1. Describing relevant principles of adult education and learning theory	Feedback from people who were taught, or Observation by supervisor, or Written assignment (Year 3 Teach and Learn module)	Yearly	
2. Conducting effective learning conversations in the clinical setting (clinical mentoring)			
3. Using educational technology effectively			
4. Making an effective educational presentation			
UNIT STANDARD 5 Conduct all aspects of health care in an ethical and professional manner			
Demonstrate an awareness of the legal and ethical responsibilities in the provision of care to individuals and populations by: 1. Identifying and defining an ethical dilemma using ethical concepts	Written ethics assignment (Year 1 Ethics module)	Once during programme	
2. Applying a problem solving approach in which the law, ethical principles and theories, medical information, societal and institutional norms and personal value system are reflected			
3. Formulating possible solutions to the ethical dilemma			
4. Implementing these solutions in order to provide health care in an ethical, compassionate and responsible manner that reflects respect for the human rights of patients and colleagues			

SECTION 3

LEARNING PLAN

The meetings with your supervisor to develop and reflect on your Learning Plans need to be documented at least 6-monthly, or at the beginning and end of every rotation. This section must be completed with your Logbook at hand. See the section in the guide on how to develop your learning plan. You should document your learning plan below and ensure your supervisor has assessed and signed it.
(Remember to make copies of the next 2 pages for new learning plans.)

Period: from ……..…….. to ……...……

Clinical Rotation: ……

A. Learning Objectives:

Relevant prior learning for this clinical rotation:

Learning needs/objectives:

Planned activities to meet these objectives:

Timelines, Support and Resources required to meet these objectives:

Evaluation (how will you know if these objectives have been met, suggested tools):

Registrar:_____. Signature:_____ Date:_____

B. Supervisor Comments

C. Supervisor Assessment (ringed)

Excellent Satisfactory Poor Unacceptable

D. Date of next meeting to review progress / rotation

.....

Supervisor……Signature……Date……

SECTION 4

REFLECTION ON ROTATION

(Please make copies and add to your portfolio for each rotation or x2/year)

Name of rotation: _____

Rotation starting _____ and ending_____

Name of health facility: _____

Type of health facility (please circle):
PHC District hospital Regional hospital L3 Hospital Other (e.g. TB / Psychiatry)

Clinical area(s) covered in this rotation (please tick all that apply):

Adult medicine	☐	Infectious Diseases (HIV/TB)	☐
Obs & Gynae	☐	Surgery	☐
Paediatrics	☐	Orthopaedics	☐
Anaesthetics	☐	Emergencies	☐
ENT	☐	Eyes	☐
Dermatology	☐	Psychiatry	☐
Other (specify)	☐		

Provide a brief **description** of your duties, patient profile and patient numbers personally managed in this rotation.

Reflect on your **experience** as a registrar working in this facility/department during this rotation, what worked well and what could be improved?

Reflect on your **learning** during this rotation. What has been learnt? What remains to be learnt? (Refer to the Learning Objectives in your Learning Plan.)

Registrar _____ (Signature) Supervisor:_____ (Print name) (Signature) Date: _____	Leave days:

CONTINUOUS ASSESSMENT BY SUPERVISOR

(To be completed by supervisor and discussed with registrar)

Marking scale: 9–10 = excellent; 7–8 = above average; 5–6 = average/satisfactory; 3-4 = below average/unsatisfactory; 1–2 = very weak; N/A = not applicable or don't know

	Score 1 – 10
KNOWLEDGE	
• Clinical medicine	
SKILLS	
• Clinical record-keeping: case-notes, letters, summaries	
• Rational prescribing and use of medication	
• Rational use of diagnostic tests and resources	
• Co-ordination of patient care with multiple providers	
PROFESSIONAL VALUES AND ATTITUDES	
• Approach to ethical and medico-legal issues	
• Punctuality, time keeping and reliability	
• Relationship with other team members	
• Leadership abilities	
• Collaboration or consulting with other health professionals	
OVERALL ASSESSMENT	
• Global rating	

Comments from supervisor:

Supervisor's name: _____Signature:_____Date:_____

SECTION 5

RECORD OF EDUCATIONAL MEETINGS WITH SUPERVISOR

The portfolio at the end of each year should demonstrate engagement with all of the activities below and a minimum of 2-hours formal tuition per month / 24-hours for the year. However, the aim should be to show engagement above the minimum standard.

Use the letters below to record the general focus of the meeting and then describe what was done. The meeting could focus on one of the following learning conversations:

A: Setting a learning agenda (at the beginning and end of a rotation or every 6-months): Reflection on the registrars experience to date, expectations or progress and planning of learning activities and goals for the next period.

B: Intermittent evaluation: For the registrar and trainer to check progress, review the portfolio, discuss any difficulties in their relationship or the organization that impede learning or service delivery, make new plans. Feedback can also be given and received on the programme or registrars performance.

C: Clinical / communication skills: Observation/audio/video-review of communication, consultation or procedural skills and feedback with role-play or simulation. Other clinical skills might also be demonstrated.

D: Case discussions: Reflect on your actual patients through the use of record review, presentation of problem patients or clinical tutorials on specific topics. Reflect on difficult consultations, emotions or ethical dilemmas that arise from your clinical practice or setting.

E: Evidence based practice: Reflect on and critically appraise current journals and original research.

F: Other: For example co-ordination of on-line learning tasks with the on-site professional experience and service priorities i.e. topic for the quality improvement cycle

Please also refer to the section in the guide on educational meetings.

Date	Group or individual meeting	Code letter from list of learning opportunities	Duration (hrs)	Description of content covered / activities / topics	Signature of supervisor
1/1/2011	Group	A	1	Learning plan for rotation in anaesthetics	Example

Date	Group or individual meeting	Code letter from list of learning opportunities	Duration (hrs)	Description of content covered / activities / topics	Signature of supervisor

Date	Group or individual meeting	Code letter from list of learning opportunities	Duration (hrs)	Description of content covered / activities / topics	Signature of supervisor

SECTION 6

OBSERVATIONS OF THE REGISTRAR

This section must include **at least ten (10) observations** of the registrar, during the course of each year. These must include observations of consultations, procedures done, and teaching activities.

A number of Assessment Methods and Tools are available to help with direct or indirect observation. Please see the Portfolio Guide for more information and examples.

SECTION 7

ASSIGNMENTS

Written assignments may be used to provide evidence of learning in any of the following areas (see also the table on outcomes and assessment methods in section 3). Please include any of the following assignments together with their assessment in your portfolio. By the end of the 4 years you should have assignments in all of the following categories. These assignments are usually integrated into the requirements of your academic programme and can just be copied and included in your portfolio:

1. Clinical competence (e.g. patient studies that demonstrate diagnostic reasoning, bio-psycho-social approach)
2. Family-orientated Primary Care
3. Ethical reasoning and medico-legal issues
4. Community-orientated Primary Care
5. Clinical governance
    a. Evidence-based Medicine (e.g.critical appraisal of a journal article, searching for evidence, use of guidelines)
    b. Quality improvement cycle / audit
    c. Significant event analysis (SEA)
    d. Morbidity and mortality meeting reports
    e. Monitoring and evaluation meeting reports

SECTION 8

Logbook

The following tables list the clinical skills that should be acquired or consolidated during the 4-year registrar training in Family Medicine. The list is intended to guide you and your supervisor on what core practical experience and skills training to focus on. **The supervisor** should evaluate your competency **at the beginning and end of the rotation or at least every 6-months (i.e. February and August)**.

It is assumed that while learning these specific skills you will also be exposed to an appropriate spectrum of patients and will be supervised in the relevant clinical assessment, decision making and management.

The skills should be **rated** according to the following definitions from A to D. The rating should be entered in the tables below. If you have not been exposed to a particular clinical area at all during the year or rotation then leave the column blank.

You should also give an approximate **indication of the numbers of a certain procedure done (< 5, 5-10, or >10)**

A: Only Theory:

Only theoretical knowledge regarding the skill's principles, indications, contraindications, performance and complications.

B: Seen or have had demonstrated:

Have theoretical knowledge regarding the skill and have seen or observed the skill demonstrated by someone else

C: Apply/Perform:

Have theoretical knowledge regarding the skill and have performed the skill in question under supervision, at least several times.

D: Routine/Independent:

Have the theoretical knowledge regarding the skill and are competent to perform the skill independently.

Adult medicine

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess

Adult health - general	Femoral vein puncture			
	Lumbar puncture			
	Arterial sampling radial artery			
	Blood culture technique			
	Injections - intra-dermal, subcutaneous, intra-muscular, deep intramuscular, sub-conjunctival,			
Adults-Abdomen	Interpret the AXR in an adult			
	Proctoscopy			
Adults-Chest	ECG - set-up, record and interpret 12 lead ECG			
	Interpret CXR			
	Pleural tap			
	Measure PEF			
	Nebulise a patient			
	Use inhalers and spacers			
	Exercise stress test			
	Perform and interpret office spirometry			
	Pleural biopsy			

Obstetrics and Gynaecology

Clinical topic	**Clinical skills – aim is D for unshaded skills and C for shaded skills**	**Numbers done (<5, 5-10, >10)**	**Grade the registrar 1st assess,2nd assess**	
Antenatal care	Antenatal growth chart			
	Assess foetal movement / wellbeing			
	Clinical pelvimetry			

	Obstetric ultrasound			
	Amniocentesis			
Intra-partum care	Examine progress during labour and use partogram			
	Apply and interpret CTG			
	Assess foetal wellbeing during labour			
	Normal vaginal delivery			
	Assisted vaginal delivery / vacuum extraction / forceps			
	Caesarean section (including ability to do sub-total hysterectomy)			
	Episiotomy and suturing			
	Repair of 3rd degree tear			
	Evacuation of uterus			
	Manual removal of placenta			
	External cephalic version			
Newborn / Post-partum care	Resuscitate a newborn			
	Umbilical vein catheterization			
	Assess gestational age at birth			
	Kangaroo mother care			
	Phototherapy			
	Well newborn check			
Women's health	Microscopy of vaginal discharge (wet mount, KOH)			
	Endometrial biopsy/sampling			
	Dilatation and Curettage			

	Drainage of Bartholin's abscess / cyst			
	Tubal ligation			
	FNAB of breast lump			
	Insertion of IUCD			
	Papanicolau (cervical) smears			
	Culdocentesis			
	Hormone implants			
	Laparotomy for ectopic pregnancy			
	TOP (if no religious/ethical objections)			
Clinical governance	MOU support, the perinatal audit meetings and PPIP programme, the training and audits of the basic antenatal care and perinatal education programmes and intrapartum audits			

Paediatrics

Clinical topic	**Clinical skills – aim is D for unshaded skills and C for shaded skills**	**Numbers done (<5, 5-10, >10)**	**Grade the registrar 1st assess,2nd assess**	
Child	Assess growth and classify malnutrition			
	Assess child abuse (sexual/non-sexual) Assess child abuse (sexual/non-sexual)			
	Capillary blood sampling - finger, heel			
	CXR in a child			
	Developmental assessment			

	How to do and interpret Tine test and Mantoux tests			
	Intra-osseous line			
	IV access in a child			
	Lumbar puncture			
	Suprapubic bladder puncture			
	Venepuncture - upper limb, extn jugular vein			

Anaesthetics

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Anaesthetics	Ring block			
	Administer oxygen			
	Check Boyle's machine			
	Control airway – mask and ambu bag			
	General anaesthetic			
	Inhalation induction			
	Intravenous induction			
	Intubate & ventilate patient			
	Ketamine anesthesia			

	Monitor patient during anaesthetic			
	Recover patient in recovery room			
	Reverse muscle relaxation (mix drugs)			
	Set airflows – Magill, Circle, T-piece			
	Spinal anaesthetic			
	Sterilize your equipment			
	Bier's block			
	Brachial block			
	Conscious sedation – basic			
	Epidural			

Surgery

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Adult health - general	Wound care and dressings			
	Lymph node excision biopsy			
Adults-Abdomen	I&D of perianal haematoma			
	Proctoscopy			
	Appendicectomy			
	Interpret barium swallows			
Adults-Urology	Penile block			
	Reduce a paraphimosis			
	Circumcision			

	Drain hydrocoele			
	Insert a urinary and suprapubic catheter			
	Hydrocoelectomy			
	Interpret IVP for renal colic			
	Vasectomy			
	Orchidectomy and anchoring of torted testis			
Skin	Skin graft			
Emergency	Debride wounds or burns			
	I&D abscesses			
	Laparotomy for initial damage control in stabbed abdomen			

Orthopaedics

Clinical topic	**Clinical skills – aim is D for unshaded skills and C for shaded skills**	**Numbers done (<5, 5-10, >10)**	**Grade the registrar 1st assess,2nd assess**	
Orthopaedics	Measure shortening of the legs			
	Aspirate and inject the knee			
	Inject tennis elbow / golfers elbow			
	Inject the shoulder (ACJ, subacromial, GHJ)			
	Inject trochanteric bursitis			
	Interpret x-rays of joints			
	Apply finger and hand splints			

	Apply POP (upper and lower limbs)			
	Closed reductions (hand, forearm,tib-fib)			
	Set up traction (skeletal and skin)			
	Reduce elbow dislocation			
	Reduce hip dislocation			
	Reduce shoulder dislocation			
	Reduce radial head dislocation			
	Excise a ganglion			
	Inject carpal tunnel syndrome			
	Inject de Quervains tenosynovitis			
	Amputations-fingers/toes and lower limb			
	Apply club foot POP			
	Debridement of open fractures			
	Fasciotomy			

Emergencies

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Emergency	CPR adult advanced support			

	CPR child advanced support			
	Choking			
	Primary survey			
	Intubate and manage airway			
	Cricothyroidotomy			
	Give oxygen			
	Insert chest drain			
	Relieve tension pneumothorax			
	IV cutdown			
	Secondary survey			
	Measure the GCS			
	Insert NGT			
	Interpret x-rays in trauma			
	Immoblise spine			
	Transport critically ill			
	Remove a splinter, fish-hook			
	Suture lacerations			
	Give a blood transfusion			
	Gastric lavage			
	Manage snake bite			
	Administer rabies prophylaxis			

	Selecting emergency equipment for doctors bag or emergency tray			
	Calculate % burnt			
	Certifying patient under mental health care act			
	Relieve cardiac tamponade			
	Peritoneal lavage			
	Suturing lip with tissue loss from human bite			
	Tracheostomy			

Communication

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Consultation	Patient-centred consultation (all ages)			
	Holistic (3-stage) assessment and management			
	Motivate behaviour change			
	Break bad news			
	Counselling skills for HIV, TOP, after rape			
	Assess and consult couples, families			
	Conduct a family conference			
	Mini mental examination			

	Support / consult with PHC nurse			
	Use genogram and ecomap			
	Use problem-orientated medical record			
	Develop and use flowcharts for chronic care			
	Cope with language barriers			

ENT, Eyes, Skin and Miscellaneous

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
ENT	Remove a foreign body from the ear			
	Remove a foreign body from the nose Syringe, dry swab an ear			
	Take a throat swab			
	Manage epistaxis (cautery, packing)			
	Assess hearing loss			
	Suture a pinna, lobe			
	Drain a peritonsillar abscess			
	Tonsillectomy / adenoidectomy			
	Reduce a fractured nose			
	Interpret audiogram			
Skin	Skin patch testing			

	Excise sebaceous cyst (other lumps-bumps)			
	Skin biopsy (punch and fusiform), skin scrapes			
	Wide Needle Aspiration Biopsy lymph node in HIV			
	Cryotherapy/cauterization			
	Phenol ablation of ingrown toenail			
	Inject keloids			
Admin	Work assessment and DG forms			
	Making appropriate referrals and letters			
	Completing sick certificates			
	Completing death certificates			
	Manage a clinic for chronic care (e.g. HIV, diabetes)			
Forensic	Completing J88			
	Assess, manage and document sexual assault			
	Assess, manage and document drunken driving			
	Assess, manage and document interpersonal violence			
Palliative care	Counselling of dying patient			
	Hypodermoclysis (subcutaneous infusion)			

	Set up a syringe driver			
Eyes	Fundoscopy (diabetes, hypertension), visual fields, visual acuity			
	Instill drops or apply ointment			
	Remove a foreign body in the eye, eversion of eyelid			
	I&D a chalazion			
	Suture an eyelid			
	Test for squint			
	Washout of eye (chemical burns)			
	Subconjunctival injections			
	Use a Schiotz tonometer			

Date completed:	
Comments on the registrar's competency or professionalism	
Name of supervisor	Signature supervisor
Signature registrar	

Date completed:	
Comments on the registrar's competency or professionalism	
Name of supervisor	Signature supervisor

Signature registrar

Date completed:	
Comments on the registrar's competency or professionalism	
Name of supervisor	Signature supervisor
Signature registrar	

Date completed:	
Comments on the registrar's competency or professionalism	
Name of supervisor	Signature supervisor
Signature registrar	

SECTION 9 (optional)

Addendum / Lists

CUMULATIVE RECORD OF ROTATIONS / ATTACHMENTS

Start and End Dates of Rotation	No. of Months	Type of exposure / rotation

POST-GRADUATE LECTURES, MEETINGS, WORKSHOPS, SEMINARS, SYMPOSIA, CONGRESSES

Attendance at, or own presentations, at post-graduate meetings, lectures, workshops, symposia or congresses relevant to Family Medicine

(Attach *Certificates of Attendance* if applicable)

Date	**Duration (hrs)**	**Presenter** (Self/other)	**Topic**	**Event**

CERTIFICATES of Courses relating to Family Medicine

(Copies of Certificates *must* be attached)

COURSE	INSTITUTION	DATE	COURSE DIRECTOR

ANY OTHER LEARNING EXPERIENCE RELEVANT TO FAMILY MEDICINE, that has not been captured, e.g. journal article publications:

SECTION 10

End of Year Assessment of Portfolio

Year 1

The portfolio is: Poor Barely adequate Average Good Excellent

Organization: Good Could be better Disorganized

Content: Good evidence of learning? Poor evidence of Learning?

Recommendations:

_____

Signed:_____

HOD name:_____

Date:_____

Year 2

The portfolio is: Poor Barely adequate Average Good Excellent

Organization: Good Could be better Disorganized

Content: Good evidence of learning? Poor evidence of Learning?

Recommendations:

_____

Signed:_____

HOD name:_____

Date:_____

Year 3

The portfolio is: Poor Barely adequate Average Good Excellent

Organization: Good Could be better Disorganized

Content: Good evidence of learning? Poor evidence of Learning?

Recommendations:

_____

Signed:_____

HOD name:_____

Date:_____

Final

The portfolio is: Poor Barely adequate Average Good Excellent

Organization: Good Could be better Disorganized

Content: Good evidence of learning? Poor evidence of Learning?

Recommendations:

_____

Signed:_____

HOD name:_____

Date:_____

Addendum B: The Portfolio Guide

Guide to the
PORTFOLIO OF LEARNING
2011

Towards the Fellowship of the College of Family Physicians of South Africa

FCFP(SA)

AND

Master of Medicine in Family Medicine
Stellenbosch University

MMed (Fam Med)

Dear Supervisor and Registrar,
Please take some time to study the *Guide to the Portfolio of Learning*, which should help you to complete a useful, reliable and valid learning portfolio.
As a supervisor, you have a commitment to one or more registrars for the period under your supervision. During this time, please plan to meet regularly with your registrars to discuss their learning and development. A Colleges of Medicine of South Africa (CMSA) workshop on assessment during November 2010 indicated 2 key issues:

- Transfer of theoretical knowledge into clinical practice is a big challenge.
- Registrars want and need feedback on their clinical practice in order to learn.

The portfolio should be the vehicle that facilitates these learning conversations or educational meetings. However, the workshop also highlighted the importance of the *people* using the portfolio (and various assessment tools). The portfolio per se is a tool, and its quality is determined by the quality of the supervision, the feedback, the context of learning, and the input from the registrar. The portfolio must not be a (thick) paper exercise, but rather a (lean) way of showing key evidence of learning; indicating continuous reflection on clinical practice and regular interaction between registrars and supervisors.
From 2013 onwards all registrars in South Africa will need to sit a single exit exam offered by the CMSA. One requirement for entrance to the Part 1 exam will be an acceptable portfolio of learning. This implies that all new registrars starting in 2011 must start to develop such a portfolio. Therefore in 2011 all the Divisions / Departments of Family Medicine in South Africa have incorporated the learning portfolio into their assessment of training in the MMed (Family Medicine) programme. Students outside South Africa are also expected to complete the same portfolio for their final examination at Stellenbosch University.
The portfolio will be assessed by the academic head of department at the relevant university at the end of every year, for 3 years, as part of a summative assessment process (year mark). A recommendation (satisfactory / not satisfactory) will be given to the CMSA in the registrar's 4th year of training, 3 months prior to applying for the Part I examination, as a pre-requisite to sit the FCFP/MMed examination.
During a national Delphi consensus process, with experts and supervisors in Family Medicine in 2010, consensus was reached on 50 out of 85 learning outcomes which will be assessed by the Learning Portfolio. Simultaneously with this, there was a process to revise the national learning outcomes, which were previously reviewed in 2004. The Delphi process also asked panel members which assessment methods and tools would be the most appropriate to use in the portfolio. A 3-hour focus group discussion between the 8 national Family Medicine Head of Departments during late 2010 verified and clarified the new national outcomes, as well as agreeing on the final assessment methods as suggested by the Delphi panel members.

A large margin of flexibility and local adaptability for each university is accepted, while the general template of the portfolio, including the agreed upon national training outcomes, are standardised for South Africa as a whole.

National learning outcomes to be assessed in the portfolio

Please look at the summary of the 50 national learning outcomes in section 2 of the Portfolio. To remind the registrar and supervisor of what has been covered and what still needs to be done and to plan appropriately, it is suggested that the registrar marks off what has been completed using the blocks in the “checklist” column.

Preparing a Learning Plan

The registrar must meet with their local supervisor at the beginning and end of every rotation, or every 6 months (twice a year) if you are not working in formal rotations (for example at a district hospital for the whole year), to develop, document and review your learning plan. You must list the learning objectives you have set for yourself for the duration of that rotation or 6-month period. These could be updated as your rotation progresses.

On completion of the rotation, you must reflect on the progress you made in meeting your objectives, and identify areas in which further learning is needed.

Note that this is not an assessment by the supervisor of the registrar’s work during the rotation. It is an exploration of the registrar’s ***insight*** into the learning appropriate to that rotation and the extent to which it has been achieved.
The Learning Plan includes the following objectives:

- Identification of prior learning
- Identification of current learning needs (objectives)
- Planning of activities to meet these needs
- Timelines and support required to enable these activities to take place
- How learning will be evaluated (with the suggested tools)

The learner needs to be able to adjust their learning plan with each rotation and as they progress in the programme as a whole in order to develop the skill of lifelong learning and personal growth. Learning is best when it is learner-centred and very individual!
You need to keep in mind:

1. The National training outcomes for Family Medicine in SA.
2. Your University’s MMed curriculum and its outcomes.
3. Your personal learning needs.
4. The focus of your planned rotations on the health service platform.

For example when you develop your learning plan you may need to simultaneously consider what you will be doing in your academic programme (e.g. modules, assignments), what practical experience you will be receiving in your clinical setting (e.g. your rotations) and what your personal learning needs are. Ultimately all of this must contribute towards achieving the outcomes of the programme and your own personal growth.

Assessment Methods and Tools

Different assessment methods and tools are available in the literature and used by different Departments of Family Medicine. The most commonly used methods and tools are summarized below, and some examples are given. The portfolio allows for various tools to be used (and shared) by different medical schools.
Make copies of these tools from the guide and keep it with you in the workplace, for immediate use when the opportunity arises.
The 'bottom line' for whatever method or tool is used is that it provides clear evidence of learning for one of the expected outcomes. Your university will already have a number of assessment tools in place to monitor your development as a registrar. Make use of whatever relevant methods or tools you have in your programme and add them to your portfolio. Whenever possible therefore you should use existing assessment methods and tools in order to complete your portfolio. For example, if you are doing a relevant written assignment (e.g. COPC project, patient study, practice audit) as part of your academic programme, you should include this, together with the assessment scores you received, in your portfolio.

Written assignments:

Written assignments may be used to provide evidence of learning in any of the following areas (see also the table on outcomes and assessment methods in the portfolio):

6. Clinical competence (e.g. patient studies that demonstrate diagnostic reasoning, bio-psycho-social approach)
7. Family-orientated Primary Care
8. Ethical reasoning and medico-legal issues
9. Community-orientated Primary Care
10. Clinical governance
    a. Evidence-based Medicine (e.g. critical appraisal of a journal article, searching for evidence, use of guidelines)
    b. Quality improvement cycle / audit
    c. Significant event analysis (SEA)
    d. Morbidity and mortality meetings
    e. Monitoring and evaluation meetings

One written assignment may show evidence of learning for more than one outcome. The registrar will do well to take note of this in his/her reflections, and indicate this overlap.

Observation by supervisor:

The immediate or overall supervisor must directly or indirectly (by use of audio or video tapes) observe the registrar during patient consultations, teaching events (where the registrar teaches or trains others), and when performing procedural or clinical skills. The following tools, which are also shown below, are useful here:

1. Mini-Clinical Evaluation Exercise (Mini-CEX) tool
2. Observed consultation and Clinical Question Analysis (CQA) tool
3. Communication skills observation tool
4. Significant event analysis
5. Case-based Discussion Notes Sheet

To optimise registrar-supervisor interaction and efficient use of educational time together, one tool could assess learning in a number of different outcomes.

Multi-source feedback

To assess ability to work in a team (as team member or leader) the following tools are useful:

1. 360 degrees questionnaire
2. Peer review

Log book review

Every university programme has its own registrar logbook. The logbook is just one assessment method within the portfolio. It primarily captures the number of clinical skills performed and the competence achieved.
A list of clinical skills that should be assessed in the logbook is included in the portfolio and based on the agreed national list of clinical skills for Family Medicine.

How should the registrar be assessed via these assessment tools?

Every item that is entered into the portfolio should be assessed in some way or another, by a supervisor or a lecturer in the academic programme. This will assist the end-of-year overall assessment of the portfolio by the head of department.
The general recommendation by the national panel of experts and supervisors is to use one of two grading methods:

- A Global Rating (e.g. not satisfactory / needs improvement / satisfactory) for the item

- A specific Grade (e.g. percentage).

Many university academic programmes already give a mark for various assignments, which should just be captured in the portfolio, without the need for repeat assessment.

Educational meetings

A useful resource was published in the SA Family Practice Journal in 2010 which describes various learning conversations. The abstract and reference is:
Mash R, Goedhuys J, D'Argent F. Enhancing the educational interaction in family medicine registrar training in the clinical context SA Fam Pract 2010;52(1):51-54:
"The relationship between registrar and trainer functions best when the trainer consciously facilitates the registrar's learning and considers all their interactions as educational opportunities. The trainer's role is more that of an educational guide and less that of an authoritarian expert. Both the registrar and the trainer should be aware of their own learning styles and how these may be complementary or contradictory. A variety of conversations with different purposes should be structured and planned and not left to chance and a number of methods for observing and collecting the registrar's clinical experience should be developed and used regularly. Further attention needs to be paid to the development of useful, reliable and valid portfolios."

During the programme the registrar should meet individually with their immediate supervisor and as a group of local registrars. These meetings can be alternated weekly (i.e. one week with your supervisor one-on-one and the next week as a

group) and be recorded in the portfolio. The meetings could focus on one of the following learning conversations:

A: Setting a learning agenda (at the beginning and end of a rotation or every 6-months): Reflection on the registrars experience to date, expectations or progress and planning of learning activities and goals for the next period.

B: Intermittent evaluation: For the registrar and trainer to check progress, review the portfolio, discuss any difficulties in their relationship or the organization that impede learning or service delivery, make new plans. Feedback can also be given and received on the programme or registrars performance.

C: Clinical / communication / procedural skills: Observation/audio/video-review of clinical, communication or procedural skills and feedback.

D: Case discussions: Reflect on your actual patients through the use of record review, presentation of problem patients or clinical tutorials on specific topics. Reflect on difficult consultations, emotions or ethical dilemmas that arise from your clinical practice or setting.

E: Evidence based practice: Reflect on and critically appraise current journals and original research.

F: Other: For example co-ordination of on-line learning tasks with the on-site professional experience and service priorities i.e. topic for the quality improvement cycle.

The portfolio at the end of the year should demonstrate engagement with all of the above learning conversations and a minimum of 2-hours of educational meetings per month / 24-hours for the year. This is a minimum standard and in normal circumstances the portfolio should show engagement well above this.

Useful references and resources:

1. Instruments for Workplace-based Assessment (WBA): Follow link from: www.fdg.unimaas.nl/educ/cees/sa
2. Govaerts MJB, Van der Vleuten CPM, et at. Broadening Perspectives on Clinical Performance Assessment: Rethinking the nature of In-training Assessment. Advances in Health Sciences Education 2007; 12:239-260
3. Couper I, Mash B. Obtaining consensus on core clinical skills for training in family medicine SA Fam Pract 2008;50(6):69-73
4. Mash R, Goedhuys J, D'Argent F. Enhancing the educational interaction in family medicine registrar training in the clinical context SA Fam Pract 2010;52(1):51-54

The following section gives specific examples of the tools mentioned above from various university departments.

COMMUNICATION SKILLS OBSERVATION TOOL

Registrar name……. Supervisor …….

Checklist score Each of the items below is an important skill in the consultation and should be rated separately. Rating should be at the performance expected from a family physician.	Shown	Partially shown / not sure	Not shown
Initiating the session			
Makes appropriate greeting / introduction and demonstrates interest and respect Greets patient, obtains name, introduces self, attends to physical comfort of patient, shows interest and respect, establishes initial rapport.			
Identifies and confirms the patient's problem list or issues Gives an opportunity for the patient to list all their issues or problems before exploring the initial problem "So headache, fever - anything else you'd like to talk about?". Summarises and confirms the list with the patient.			
Gathering information			
Encourages patient's contribution / story By use of open as well as closed questions, attentive listening, facilitation skills and summarization and responding to cues. As opposed to cutting off the patient, use of only closed questions in an interrogatory style.			
Makes an attempt to understand the patient's perspective Elicits spontaneously and acknowledges the patient's perspective or uses specific questions– beliefs, concerns, expectations, and feelings.			
Thinks family, and obtains relevant family, social and occupational information Elicits relevant information about the patient's household, family, occupation, and environment.			
Obtains sufficient information to ensure no serious condition is likely to be missed Elicits enough clinical information to establish a working diagnosis and ensure no serious condition is likely to be missed.			
Explanation and planning			
Appears to make a clinically appropriate working diagnosis The apparent diagnosis is clinically appropriate according to the subjective and objective evidence. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			
There is a clear explanation of the diagnosis and management plan The explanation is well organized, in small chunks, avoids jargon, where appropriate makes use of visual methods, leaflets, repetition, signposting.			
Gives patient an opportunity to ask for other information and / or seeks to confirm patient's understanding The patient is asked if they would like other information and / or their understanding is checked by reverse summarizing or opportunity to clarify			
The explanation takes account of and relates to the patient's perspective The explanation connects, responds to or takes into account the patient's beliefs, concerns and expectations			
Involves the patient where appropriate in decision making The patient is offered insight into doctor's thought processes, suggestions, options and invited to participate in decision making through use of choice, expression of preferences or ideas. The doctor does not just give orders, directives or instructions of what must be done.			
Chooses an appropriate management plan The management plan is based on scientifically sound evidence and is appropriate for the diagnosis. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			

Closure			
Closes consultation successfully in the time available Brings the consultation to a conclusion rather than running out of time. Deals with any remaining issues from the patient.			
Provides appropriate safety netting for the patient Shows evidence of having considered how certain they are of the diagnosis, what might go wrong with the treatment, how they will know if things do not go well, side effects occur or more serious sequelae develop. Shows this in an appropriate plan of safety netting with the patient.			
Additional skills – for merit These will not be applicable to all consultations, but will depend on the content of the specific consultation			
Establishes therapeutic rapport / relationship in a patient with a mental or psychosocial problem Shows evidence of basic counseling skills used in a mature and integrated way that offers supportive therapy to the patient: such as empathy, attentive listening, summarizing, unconditional positive regard, facilitative responses.			
Breaks bad news appropriately Shows evidence of structured approach to breaking bad news that includes skills such as: setting the scene by summarizing or discovering where things have reached to date and check patients understanding; warn patient that difficult information is coming; give information clearly, directly and honestly; be sensitive to the emotional reaction from the patient by giving space for it, encourage expression of feelings; allow patient to ask their own questions, express concerns and elicit the type and amount of information they want, make a supportive plan.			
Shows skills in brief motivational interviewing Shows evidence of brief motivational interviewing skills such as: setting an agenda, explores readiness to change, chooses skills appropriate to the patients readiness to change (elicit-provide-elicit, decision balance sheet, brainstorming), rolls with resistance.			
Overall global rating Consider your overall impression of the consultation, including the doctor-patient relationship and the structure and flow of the session. **Select ONE of the boxes opposite:**	**At the level of a family physician**	**Not sure / borderline**	**Definitely not at the level of a family physician**

CLINICAL QUESTION ANALYSIS

This sheet should be with you during your practice and act as a guide to ask questions in a moment of reflection alone after the patient consultation. It can also be used to reflect on other challenges or situations that arise in clinical practice. The supervisor signs after discussing your notes here.

a. The Situation and/or Patient Actually Met Needs (PAN) at time of consultation

.....

.....

.....

b. The Situational Difficulty and/or Patient Unmet Need (PUN) (on Reflection)

.....

.....

.....

c. MY Problem, difficulty, questions or observations (including my emotional reactions on reflection)

.....

.....

.....

d. MY (Doctor) Educational Need (DEN) (Which aspects of this encounter or situation do I need to find out more about to improve?)

.....

.....

.....

e. How did I close the learning loop i.e. what did I do in my practice differently or implement what I learnt?

.....

.....

.....

Registrar……Signature……Date……..
.....

OBSERVED CONSULTATION

The Supervisor can use the Clinical Question Analysis Tool together with the Observed Consultation (OC) below. The Registrar should fill in the Clinical Question Analysis Tool after discussing the consultation with their supervisor. The Supervisor can also review later on how the learning loop was closed, i.e. what was learnt from the Doctors Educational Need and how practice changed.

Notes:

- Initially, while registrars are in training, detailed remediation should take place during the consultation; student should also be asked for his/her hypothesis after taking the history. As students progress, this intervention should decrease, until the consultation is purely observed, unless the patient's welfare is endangered.
- No intervention should take place during formal (summative) assessment.
- During formal summative assessment, registrars may need help to focus on specific issues in patients with complex problems, where time has been limited.
- Time management is an important skill, but registrars can be assessed out of what was appropriately completed, where there are clear reasons why the consultation could not be finished within the time allowed; assessors may intervene 1 minute before the end, or afterwards, to ask for the registrar's assessment and plan.

OBSERVED CONSULTATION ASSESSMENT (USE WITH Clinical Question Analysis)

Element	Details	Rating*	Comments
Facilitation	• Establishes rapport • Communicates well (verbally/non-verbally) • Responds to cues (verbal/non-verbal) • Active, attentive listening • Behaviour towards and relationship with patient • Uses appropriate language		
Clinical reasoning	**S:** • Takes a focused history, based on clinical reasoning • History taking apparently based on clear hypotheses • Appropriate, specific questions		
	O: • Examines patient correctly and appropriately, apparently directed by hypotheses • Demonstrates good clinical skills • Performs appropriate side-room tests		
	A_3: • Does a comprehensive bio-psycho-social assessment • Evidence of considering all important possibilities (hypotheses) • Bases assessment on findings (S&O) and clinical knowledge		
	P_4: • Carries out all 4 tasks of the consultation as appropriate. • Appropriate investigations/referral considered • Plan is rational (based on S, O, A_3). • Plan is comprehensive (investigations, observation, therapy/ medication, counselling, referral/ follow-up).		
Collaboration	• Explains and discusses findings (positive and negative). • Involves patient in decision making. • Negotiates plan with patient.		
Integration	• Logical, orderly process throughout consultation • Appropriate management of time, within time constraints • Patient centred approach • Record keeping		
TOTAL	**Global score based on the above (rounded off to 5%)**	**/100**	
Critical factors	Student should fail if demonstrates unethical or unprofessional behaviour, dangerous practice, or clinical incompetence.		**PASS / BORDERLINE / FAIL**

Registrar:	**Name of Supervisor:**	**Signature:**

***Rating scale: E = Excellent (>75%); G = Good (60-75%); S = Satisfactory (50-59%); B = Borderline Fail (40-49%); F = Fail (<40%)**

MINI CLINICAL EVALUATION EXERCISE TOOL (MINI-CEX)

TEMPLATE FOR SKILLS ASSESSMENT

1. PREPARATION OF PATIENT

- Introduces self (if not already known)
- Puts patient at ease
- Explains the procedure to patient

- Explains indications, contraindications, risks and benefits of the procedure as applicable
- Appropriately answers any question(s) the patient might have
- Assures the patient that his/her comfort during the procedure is your priority
- Gets patient's consent

2. PREPARATION FOR PROCEDURE

- Uses appropriate safety measures
- Maintains sterility as required
- Prepares correct anaesthesia/analgesia
- Appropriate choice of needed material or instrument(s)
- Appropriate choice of needed drugs

3. PROCEDURE

- Places patient in correct position for the procedure
- Accurately and comprehensively performs the procedure
- Explains step by step what is being done
- Does not unnecessary hurt the patient
- Critical steps are not omitted

4. AFTER CARE

- Admits patient for observation if needed
- Arranges follow-up of patient
- Refers the patient when indicated
- Educates the patient about the condition
- Provides and/or prescribes analgesia, dressings, other appropriate management Provides preventive measures

5. TEAM WORK

- Works collegially with nursing or medical colleagues in performing the procedure
- Gives appropriate instructions to nursing staff involved
- Ensures proper hand over of patient for ongoing care if required

MINI CLINICAL EVALUATION EXERCISE - SKILLS

SUPERVISOR:_____DATE:_____REGISTRAR: _____

SETTING: Ambulatory ☐ In-patient ☐ EC/Casualty ☐
Other: _____

Patient age: _____ Patient sex: _____ New ☐ Follow-up ☐
SKILL PERFORMED: _____
Complexity of skill:
Low ☐ Medium ☐ High ☐

---

1. PREPARATION OF PATIENT:

1 2 3 4 / 5 6 7 / 8 9 10
UNSATISFACTORY SATISFACTORY EXEMPLARY

---

2. PREPARATION OF EQUIPMENT:

1 2 3 4 / 5 6 7 / 8 9 10
UNSATISFACTORY SATISFACTORY EXEMPLARY

---

3. PROCEDURE:

1 2 3 4 / 5 6 7 / 8 9 10
UNSATISFACTORY SATISFACTORY EXEMPLARY

---

4. AFTER CARE:

1 2 3 4 / 5 6 7 / 8 9 10
UNSATISFACTORY SATISFACTORY EXEMPLARY

---

5. TEAM WORK:

1 2 3 4 / 5 6 7 / 8 9 10
UNSATISFACTORY SATISFACTORY EXEMPLARY

TOTAL **/50**

Comments:
.....

.....

.....

Supervisor…….....……Signature…....……
……Date…….....

SIGNIFICANT EVENT ANALYSIS

Description of occurrence Date
What was managed well?
What did not go well i.e. briefly the identified problem?
Fishbone (put what you see as causes to this problem as the bones to the arrow pointing to the identified problem) 
Identification of main learning needs
Important points from discussion
Conclusion of reflection

How could this have been better managed?		
Suggestions, recommendations		
Actions	By whom	When

Registrar.....Supervisor……Signature……
……Date……....

Addendum C: The final (current) portfolio of learning

2013
PORTFOLIO OF LEARNING

Fellowship

of the

College of Family Physicians of South Africa

FCFP(SA)

AND

Master of Medicine in Family Medicine
Stellenbosch University

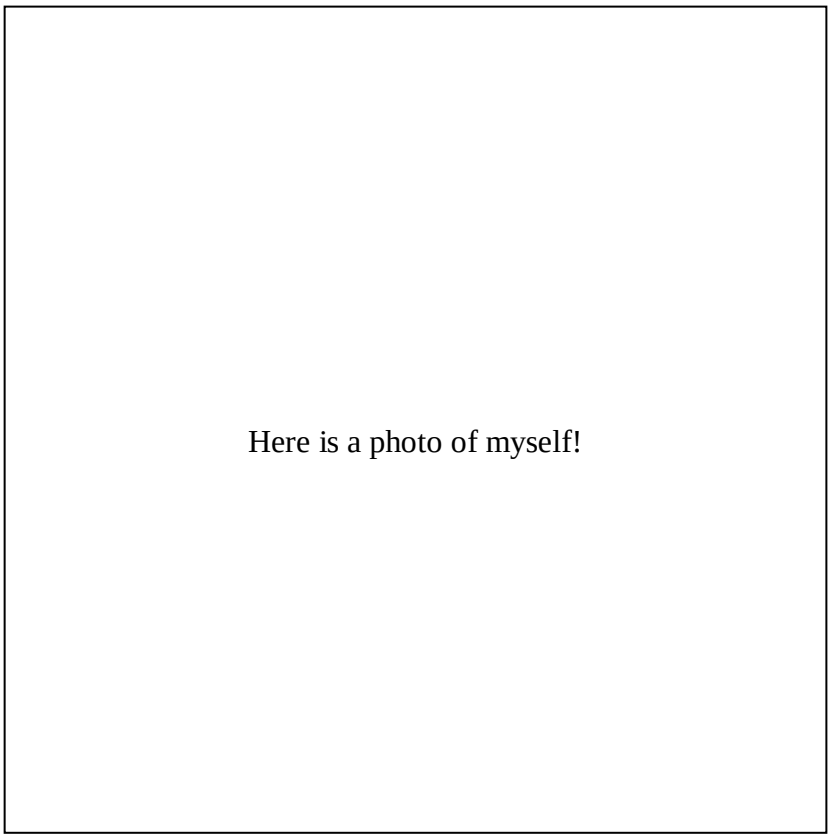
MMed (Fam Med)

This portfolio of learning belongs to:

……(name and surname printed)

My university student number is……

My HPCSA registrar number is …….



I work in the following district(s), and health facilities:……
……
……
……
……
……
……

PORTFOLIO OF LEARNING

CONTENTS

SECTION 1

Introduction to your portfolio

For every year of your registrarship you will be issued with a hardcover “glossy” file containing all the ingredients to get you started with your portfolio of learning for that year. See it as a toolbox with learning tools to help you shape the specialist family physician you are creating. Keep it organized and updated, ready for use all the time. This file has a specific colour for every year, has specific sections with dividers, and is personalized for your learning. At the start of most sections, there is a small table where you must keep a tally of the contents of that section. These are the summary sheets you will have to photocopy at the end of each year and together with section 10 send to the program manager for final assessment, to decide whether your portfolio of learning is acceptable or not. You will need to bring your portfolio along to the contact session at the university early in the new year, for the head of department or program manager to give a global assessment, and to discuss any concerns with you.
Together, these 4 files form your portfolio of learning, giving evidence to yourself, your supervisors, the complex coordinator, the program manager, the head of department, and the College of Medicine of SA that your learning has been adequate and you are eligible to sit the CMSA examinations.

Your portfolio remains your property. Your university HOD will submit a recommendation and assessment mark to the CMSA, and not your whole portfolio. The College of Family Physicians (CFP) of the CMSA will ask for some portfolios to be submitted, to validate and audit some registrars’ performance in the exams.

Purpose of your portfolio

In a nutshell, your portfolio serves 2 purposes: Internally, it is part of Clinical Family Medicine, with a formative component (learning between you and your supervisors) and a summative component (towards your year mark). Externally, an acceptable portfolio gives you access to the FCFP exams of the CMSA.

Your portfolio provides evidence of learning in the workplace during your time as a registrar in family medicine. It allows you to demonstrate that you have met the outcomes of the training programme. Many of these outcomes are best assessed in the portfolio.

This portfolio document is also available on the CMSA website, as a Word document, with a separate guide document, which will assist both yourself and your supervisor with its development.

The learning portfolio for Family Medicine training in South Africa has been developed through an extensive process of consultation and consensus between all eight Family Medicine academic departments in the country. In terms of national training outcomes for Family Medicine, 5 unit standards have been agreed upon. Within these 5 unit standards there are 85 more specific training outcomes. The portfolio does not intend to reflect training and learning in all of these, as some outcomes will be assessed through other means. The 50 outcomes that must be reflected in the portfolio are summarised in section 2 and should be constantly referred to and kept in mind as you work and learn in daily practice.

Your portfolio should help you to:

6. Think consciously and objectively about your own training. This is known as *reflective learning*, and is its primary purpose.
7. Document the scope and depth of your training experiences.
8. Provide a record of your progress and personal development as training proceeds.
9. Provide an objective basis for discussion with your supervisors about work performance, objectives, and immediate and future educational needs.
10. Provide documented evidence for the CMSA of the quality and intensity of the training that you have undergone, as a requirement to sit the Part I exam for the FCFP.

The portfolio is not just a logbook of signed procedures undertaken or witnessed. It should contain your written reflections and systematic documentation of your learning experience. It includes opportunities for you to reflect, to explore, to form opinions, and to identify your own strengths and weaknesses. It allows you to follow your own progress; not only with regard to the training programme, but also in terms of learning goals you have set for yourself. In this way the portfolio provides an opportunity to record and document the subjective aspects of training.

The objectives of your portfolio are to:

- develop a structured learning plan
- identify goals and actions required to achieve them
- record progress in achieving those goals
- document personal strengths
- identify areas needing improvement

Who looks at your Portfolio of Learning?

4. **Registrars**. You should interact regularly with your portfolio to ensure it documents your learning on a continuous basis and stimulates you to reflect on your experiences.
5. **Supervisors**. You should meet on a regular basis with your supervisor to develop and reflect on your learning plans, to be observed and reflect on your clinical practice and to have a variety of educational meetings. All these activities should be documented in your portfolio. Your supervisor should also review progress with the portfolio during intermittent evaluations of your

progress. In this way the portfolio allows a structuring of the supervision process.

6. **CMSA**. The CMSA requires evidence that learning has taken place as part of a structured programme, in order to sit Part I of the FCFP exam. The portfolio is an essential piece of evidence for this.

This portfolio is a cumulative record of your personal learning, goals, needs, strategies and activities throughout your training programme. The sections in the portfolio are not exhaustive, but rather an indication of the minimum that you should be doing. You will learn a great deal more than what is written on these pages.

The portfolio does not aim to assess or capture all the competencies needed to be a family physician, nor is it the only way of assessing you. Some competencies or skills will also be tested or validated via other means, e.g. orals, OSCEs, Multiple Choice Questions, assignments and written papers in formal exams.

The portfolio should not become a big additional burden on you and the supervisor. In many instances you can include reports from meetings that you attend as part of your work (e.g. M&M meetings) or assignments that you have done as part of the academic programme for the university(e.g. reflective .writing, assignments, patient studies, clinical audits and community projects). These should not be repeated, but should simply be incorporated into the portfolio.

The emphasis is on the *process* of completing the portfolio (in a way that encourages *reflection*), and "the learning journey" rather than "something else that must be done and handed in for marks." Be creative, for example you can include photos of a community project, or letters written as the patient advocate, etc.

Portfolio Completion Criteria

The Portfolio should always be used in conjunction with the ***Regulations and Syllabus for admission to the Fellowship of the College of Family Physicians of South Africa FCFP(SA)***, as may be amended from time to time. See http://www.collegemedsa.ac.za/Documents%5Cdoc_191.pdf (17 pages)

- Entries must at all times be **legible** and, where indicated, supported by the required **signatories** of yourself and your supervisors, and your assessment **scores**. Add pages to each Section as necessary. It is strongly advised that you keep a **backup copy** of all entries (electronic or printed) in case of computer failure or theft.
- Each rotation will need to be verified by the relevant clinical Head of department or Supervisor, including the relevant sections in your logbook (procedures and clinical skills done).
- You must submit the scores in your completed portfolio **at the end of every year** during years 1-3 of your training programme to the university head of department, and bring your portfolio to the contact session at the start of every new year, for assessment purposes. In your 4th year of training, you should have a comprehensive portfolio, with cumulative evidence of learning that has been

assessed every year by the university department, and will be part of the admission requirements for the CMSA exams.

- The final portfolio must reach your university head of department ***at least 3 (three) months*** prior to the commencement of the FCFP(SA) Part I Examination, in order for the head to submit a report, which will be sent to the Academic Registrar of the CMSA. Failure to submit the portfolio on time will result in the candidate not being invited to the examination.
- A **Declaration** must be signed by the registrar before submitting the final portfolio at the end of 3 completed years of training to the CMSA.

A note to supervisors

As a supervisor, you have a commitment to one or more registrars for the period under your supervision. During this time, please plan to meet regularly with your registrars to discuss their learning and development. A Colleges of Medicine of South Africa (CMSA) workshop on assessment during November 2010 indicated 2 key issues:

- Transfer of theoretical knowledge into clinical practice is a big challenge.
- Registrars want and need feedback on their clinical practice in order to learn.

The portfolio should be the vehicle that facilitates these learning conversations or educational meetings. However, the workshop also highlighted the importance of the *people* using the portfolio (and various assessment tools). The portfolio per se is a tool, and its quality is determined by the quality of the supervision, the feedback, the context of learning, and the input from the registrar. The portfolio must not be a (thick) paper exercise, but rather a (lean) way of showing key evidence of learning; indicating continuous reflection on clinical practice and regular interaction between registrars and supervisors.
From 2013 onwards all registrars in South Africa will need to sit a single exit exam offered by the CMSA. One requirement for entrance to the Part 1 exam will be an acceptable portfolio of learning. This implies that all new registrars starting in 2012 must start to develop such a portfolio. Therefore in 2012 all the Divisions / Departments of Family Medicine in South Africa have incorporated the learning portfolio into their assessment of training in the MMed (Family Medicine) programme. Students outside South Africa are also expected to complete the same portfolio for their final examination at Stellenbosch University.
The portfolio will be assessed by the academic head of department and/or program manager at the relevant university at the end of every year, for 3 years, as part of a summative assessment process (year mark). A recommendation (satisfactory / not satisfactory) will be given to the CMSA in the registrar's 4th year of training, 3 months prior to applying for the Part I examination, as a pre-requisite to sit the FCFP/MMed examination.

A large margin of flexibility and local adaptability for each university is accepted, while the general template of the portfolio, including the agreed upon national training outcomes, are standardised for South Africa as a whole.

National unit standards and expected learning outcomes to be assessed in the portfolio

During a national Delphi consensus process in 2010, with experts and supervisors in Family Medicine, consensus was reached on 50 of 85 learning outcomes which will be assessed by the Learning Portfolio. Simultaneously with this, there was a process to revise the national learning outcomes, which were previously reviewed in 2004. The Delphi process also asked panel members which assessment methods and tools would be the most appropriate to use in the portfolio. A focus group discussion between the 8 national Family Medicine Head of Departments during late 2010 verified and clarified the new national outcomes, as well as agreeing on the final assessment methods as suggested by the Delphi panel members.

It is important to keep the national training outcomes for Family Medicine in mind while you develop your portfolio. The 5 national Family Medicine Training Unit Standards are broken down into a number of outcomes, of which 50 will be reflected on and assessed in your portfolio. These should help you to develop your personal learning plans.

Preparing a Learning Plan

You must meet with your local supervisor at the beginning and end of every rotation, or every 6 months (twice a year) if you are not working in formal rotations (for example at a district hospital for the whole year), to develop, document and review your learning plan. With your logbook at hand, list the learning objectives you have set for yourself for the duration of that rotation or 6-month period. These should be updated as your rotation progresses.

On completion of the rotation, you must reflect on the progress you made in meeting your objectives, and identify areas in which further learning is needed.
Some tools are useful to help you reflect, e.g. the Case-based Discussion and Clinical Question Analysis tools.

Note that this is not an assessment by the supervisor of the registrar's work during the rotation. It is an exploration of the registrar's ***insight*** into the learning appropriate to that rotation and the extent to which it has been achieved.
The Learning Plan includes the following objectives:

- Identification of prior learning
- Identification of current learning needs (objectives)
- Planning of activities to meet these needs
- Timelines and support required to enable these activities to take place
- How learning will be evaluated (with the suggested tools)

You need to be able to adjust your learning plan with each rotation and as you progress in the programme as a whole in order to develop the skill of lifelong learning and personal growth. Learning is best when it is learner-centered and very individual! You need to keep in mind:

5. The National training outcomes for Family Medicine in SA.
6. Your University's MMed curriculum and its outcomes.
7. Your personal learning needs.
8. The relation of your planned rotations with the health service platform.

For example when you develop your learning plan you may need to simultaneously consider what you will be doing in your academic programme (e.g. modules, assignments), what practical experience you will be receiving in your clinical setting (e.g. your rotations), what your personal learning needs are, and what the health issues in the local community are. Ultimately all of this must contribute towards achieving the outcomes of the programme, your own personal growth, and improving the health of people in families in the local community.

Please ensure that your supervisor has assessed and signed every learning plan.

Assessment Methods and Tools

Different assessment methods and tools are available in the literature and used by different Departments of Family Medicine. The portfolio allows for various tools to be used (and shared) by different medical schools.
The 'bottom line' for whatever method or tool is used is that it should provide clear evidence of learning for one of the expected outcomes. Your university will already have a number of assessment tools in place to monitor your development as a registrar. Make use of whatever relevant methods or tools you have in your programme and add them to your portfolio. For example, if you are doing a relevant written assignment (e.g. COPC project, patient study, practice audit) as part of your academic programme, you should include this, **together with the assessment scores** you received, in your portfolio.
Empty copies of the most commonly used tools are included in your portfolio.

Keep some of these copies with you in the workplace, for immediate use when the opportunity arises.

Written assignments

Written assignments may be used to provide evidence of learning in any of the following areas (see also the table in Section 2 on outcomes and assessment methods):

11. Clinical competence (e.g. patient studies that demonstrate diagnostic reasoning, bio-psycho-social approach)
12. Family-orientated Primary Care
13. Ethical reasoning and medico-legal issues
14. Community-orientated Primary Care
15. Clinical governance
    a. Evidence-based Medicine (e.g. critical appraisal of a journal article, searching for evidence, use of guidelines)
    b. Quality improvement cycle / audit

c. Significant event analysis (SEA)
d. Morbidity and mortality meetings
e. Monitoring and evaluation meetings

16. Teaching and Learning

One written assignment may show evidence of learning for more than one outcome. You will do well to take note of this in your reflections, and indicate this overlap.

Observation by supervisor

The immediate or overall supervisor must directly or indirectly (by use of audio or video tapes) observe the registrar during patient consultations, teaching events (where the registrar teaches or trains others), and when performing procedural or clinical skills. The following tools are useful here:

6. Mini-Clinical Evaluation Exercise (Mini-CEX) (for the consultation)
7. Communication skills observation tool
8. Direct observation of procedural skills (DOPS) (for procedures)

To optimise registrar-supervisor interaction and efficient use of educational time together, one tool could assess learning in a number of different outcomes.

Multi-source feedback

To assess ability to work in a team (as team member or leader) the following tools are useful:

3. 360 degrees questionnaire
4. Peer review

Log book

Every university programme has its own registrar logbook. The logbook is just one assessment method within the portfolio. It primarily captures the number of clinical skills performed and the competence achieved.
A list of clinical skills that should be assessed in the logbook is included in the portfolio and based on the agreed national list of clinical skills for Family Medicine. Don't feel confined to the different clinical areas in the logbook, but 'indulge' your logbook and add your skills where-ever you pick them up in the appropriate areas in your logbook. Be honest with yourself, and force your supervisor to score you correctly, as a lower score provides opportunity for learning and improvement. If you score very well in a skill, to the point of competence to perform the skill independently (D), you need not revisit this skill again, and should be teaching others.

How should the registrar be assessed via these assessment tools?

Every item that is entered into your portfolio should be assessed in some way or another, by a supervisor or a lecturer in the academic programme. This will assist the

end-of-year overall assessment of the portfolio by the head of department or program manager.

The general recommendation by the national panel of experts and supervisors is to use one of two grading methods:

- A Global Rating (e.g. not satisfactory / needs improvement / satisfactory) for the item
- A specific Grade (e.g. percentage).

Many university academic programmes already give a mark for various assignments, which should just be captured in the portfolio, without the need for repeat assessment.

Educational meetings

A useful resource was published in the SA Family Practice Journal during 2010 which describes various learning conversations.
The abstract and reference is:
Mash R, Goedhuys J, D'Argent F. Enhancing the educational interaction in family medicine registrar training in the clinical context SA Fam Pract 2010;52(1):51-54:

"The relationship between registrar and trainer functions best when the trainer consciously facilitates the registrar's learning and considers all their interactions as educational opportunities. The trainer's role is more that of an educational guide and less that of an authoritarian expert. Both the registrar and the trainer should be aware of their own learning styles and how these may be complementary or contradictory. A variety of conversations with different purposes should be structured and planned and not left to chance and a number of methods for observing and collecting the registrar's clinical experience should be developed and used regularly. Further attention needs to be paid to the development of useful, reliable and valid portfolios."

Do you know your own learning style?

During the programme you should meet individually with your immediate supervisor and as a group of local registrars. These meetings can be alternated 1-2 weekly (i.e. one week with your supervisor one-on-one and the next week as a group) and be recorded in your portfolio. The meetings should focus on one of the following learning conversations:

A: Setting a learning agenda (at the beginning and end of a rotation or every 6-months): Reflection on the registrars experience to date, expectations or progress and planning of learning activities and goals for the next period.

B: Intermittent evaluation: For the registrar and trainer to check progress, review the portfolio, discuss any difficulties in their relationship or the organization that impede learning or service delivery, make new plans. Feedback can also be given and received on the programme or registrars performance.

C: Clinical / communication / procedural skills: Observation/audio/video-review of clinical, communication or procedural skills and feedback.

D: Case discussions: Reflect on your actual patients through the use of record review, presentation of problem patients or clinical tutorials on specific topics. Reflect on difficult consultations, emotions or ethical dilemmas that arise from your clinical practice or setting.

E: Evidence based practice: Reflect on and critically appraise current journals and original research.

F: Other: For example co-ordination of on-line learning tasks with the on-site professional experience and service priorities i.e. topic for the quality improvement cycle.

Your portfolio at the end of the year should demonstrate engagement with all of the above learning conversations and a minimum of 2-hours of educational meetings per month / 24-hours for the year. This is a minimum standard and in normal circumstances your portfolio should show engagement well above this.

Some tools help to facilitate some of these meetings, for example:

1. Significant event analysis tool
2. Case-based discussions tool

Useful references and resources

5. Instruments for Workplace-based Assessment (WBA): Follow link from: www.fdg.unimaas.nl/educ/cees/sa

6. Govaerts MJB, Van der Vleuten CPM, et at. Broadening Perspectives on Clinical Performance Assessment: Rethinking the nature of In-training Assessment. Advances in Health Sciences Education 2007; 12:239-260

7. Couper I, Mash B. Obtaining consensus on core clinical skills for training in family medicine SA Fam Pract 2008;50(6):69-73

8. Mash R, Goedhuys J, D'Argent F. Enhancing the educational interaction in family medicine registrar training in the clinical context SA Fam Pract 2010;52(1):51-54

Divider:

Learning Outcomes

SECTION 2

National Unit Standards and Expected Learning Outcomes to be Assessed in the Portfolio

Look at the summary of the 50 national learning outcomes in this section of your portfolio. To remind you and your supervisor of what has been covered and what still needs to be done and to plan appropriately, it is suggested that you mark off what you have completed using the blocks in the "checklist" column. This will ensure inclusion of all the outcomes in the portfolio over time.

OUTCOMES TO BE ASSESSED IN PORTFOLIO (50)	Recommended assessment methods	Suggested frequency of assessment	Checklist
UNIT STANDARD 1 Effectively manage him/herself, his/her team and his/her practice, in any sector, with visionary leadership and self-awareness, in order to ensure the provision of high-quality, evidence-based care.			
Manage him/herself optimally by: 6. Addressing his/ her personal learning needs continually by assessing needs and participating in an appropriate programme of learning.	Learning Plan, signed by supervisor (Section 3)	2X/year	
7. Demonstrating growth and learning in response to identified needs			
8. Demonstrating willingness to seek help when necessary			
9. Describing activities to enhance self-growth and development			
10. Demonstrating ability to develop his/her own capacity			
Manage resources and processes effectively by: 2. Planning, implementing and maintaining information- and record-keeping systems.	Continuous assessment form (Section 4)	End of rotations or 2X/year	
Describe, evaluate and manage health care systems by: 3. Demonstrating the ability to plan and conduct a practice audit	Written assignment (Year 2 in Chronic Disorders module)	Once during programme	
4. Implementing ongoing quality improvement activities			
Facilitate clinical governance by: 6. Critically reviewing research articles and applying the evidence in practice	Written assignments (Year 1 in EBM module)	Once during programme	
7. Demonstrating the implementation of research and literature review findings in the management of			

problems in practice by, for instance, developing protocols for the practice			
8. Adapting and implementing appropriate local, national and international clinical guidelines			
9. Engaging in monitoring and evaluation to ensure high quality care	Report/minutes of M&E meeting in your facility	Yearly	
10. Implementing rational prescribing and diagnostic testing	Continuous assessment form (Section 4)	End of rotations or 2X/year	
Work with people in the health care team to create an optimal working climate by. 2. Communicating and collaborating effectively with members of the health care team and peers	Multi-source feedback (Year 3 Management module), or Continuous assessment form (Section 4)	Yearly	
UNIT STANDARD 2 Evaluate and manage patients with both undifferentiated and more specific problems cost-effectively according to the bio-psycho-social approach			
Evaluate a patient according to the bio-psycho social approach by: 5. Taking a relevant history in a patient-centred manner, including exploration of the patient's illness experiences and context.	Observation by supervisor. (Additionally, written assignment s can be added from Year 1 in the Consultation module)	10 Observation s / year	
6. Performing a relevant and accurate examination			
7. Performing appropriate special investigations where indicated, based on current evidence and balancing risks, benefits and costs			
8. Formulating a bio-psycho-social assessment of the patient's problems, informed, amongst others, by clinical judgment, epidemiological principles and the context			
Formulate and execute, in consultation with the patient, a mutually acceptable, cost-effective management plan, evaluating and adjusting elements of the plan as necessary by: 18. Communicating effectively with patients to inform them of the diagnosis or assessment and to seek consensus on a management plan			
19. Establishing priorities for management, based on the patient's perspective, medical urgency and context			
20. Formulating a cost-effective management plan including follow-up arrangements and re-evaluation			
21. Formulating a management plan for patients with family-orientated or other social problems, making appropriate use of family and other social and community supports and resources.			
22. Appling technology cost -effectively and in a manner that balances the needs of the individual patient and the greater good of the community.			
23. Incorporating disease prevention and health promotion.			

24. Effectively managing concurrent, multiple and complex clinical issues, both acute and chronic, often in a context of uncertainty.			
25. Demonstrating a patient centred approach to management using collaborative decision making			
26. Including the family in management and care of patients whenever appropriate			
27. Demonstrates a commitment to building continuity of care and on-going relationships with patients as well as an understanding of the chronic care model			
28. Demonstrates the ability to provide preventive care, using primary, secondary, and tertiary prevention as appropriate, and to promote wellness			
29. Demonstrates the ability to provide holistic palliative and terminal care			
30. Recognising and managing discord in relationships impacting on health, using appropriate tools e.g. genograms, ecomaps where necessary to identify potential problems	Written assignment. (Year 3 FOPC module)	Once during programme	
31. Collaborating and consulting with other health professionals as appropriate	Continuous assessment form (Section 4)	End of rotations or 2x/year	
32. Co-ordinating the care of patients with multiple care providers			
33. Demonstrating appropriate record keeping			
34. Performing effectively and safely the technical and surgical skills necessary for functioning as a generalist.	Logbook (Section 8)	Beginning and end of each rotation or 2x/year	
UNIT STANDARD 3 Facilitate the health and quality of life of the family and community.			
Integrate and co-ordinate the preventive, promotive, curative, rehabilitative and palliative care of the <u>individual</u> in the context of the family and the community by: 5. Knowing the resources available in the community and being able to co-ordinate and integrate team efforts.	Written assignment (Year 2 in COPC module)	Once during programme	
6. Considering the family in assessment and engaging the family in management at an appropriate level			
7. Providing family- and community-oriented care to patients			
8. Conducting home visits when necessary			
Identify and address problems influencing the health and quality of life of the <u>community</u> in which the family physician works, by: 3. Demonstrating an understanding of the concept of and an ability to work in a "community"			
4. Demonstrating the ability to identify community health problems and make a 'community diagnosis'			
Be an advocate for individuals and communities to ensure informed decision making on health matters based on evidence by: 2. Ensuring co-ordination of care and that the holistic needs of a patient are being addressed at any level of care			
UNIT STANDARD 4 Facilitate the learning of others regarding the discipline of family medicine, primary health care, and			

other health-related matters			
Demonstrate the role of the family physician as a teacher, mentor or supervisor by: 5. Describing relevant principles of adult education and learning theory	Feedback from people who were taught, or Observation by supervisor, or Written assignment (Year 3 Teach and Learn module)	Yearly	
6. Conducting effective learning conversations in the clinical setting (clinical mentoring)			
7. Using educational technology effectively			
8. Making an effective educational presentation			
UNIT STANDARD 5 Conduct all aspects of health care in an ethical and professional manner			
Demonstrate an awareness of the legal and ethical responsibilities in the provision of care to individuals and populations by: 5. Identifying and defining an ethical dilemma using ethical concepts	Written ethics assignment (Year 1 Ethics module)	Once during programme	
6. Applying a problem solving approach in which the law, ethical principles and theories, medical information, societal and institutional norms and personal value system are reflected			
7. Formulating possible solutions to the ethical dilemma			
8. Implementing these solutions in order to provide health care in an ethical, compassionate and responsible manner that reflects respect for the human rights of patients and colleagues			

Divider: Learning Plans and Clinical Rotations

SECTION 3

Learning Plans and Clinical Rotations

CUMULATIVE RECORD OF ROTATIONS / ATTACHMENTS

Start Date of Rotation	End Date of Rotation	No. of Months	Facility	Clinical Dept / Type of exposure / rotation

Summary of supervisor(s) assessments of learning plans and clinical rotations:

First learning plan score		Second learning plan score		Third learning plan score		FINAL AVERAGE (../10):

First rotation report score		Second rotation report score		Third rotation report score		FINAL AVERAGE (../10):

Remember to keep your logbook up to date!

LEARNING PLAN 1

Period: from ……..…… to ……...……..……

Clinical Rotation: ……

E. Learning Objectives:

Relevant prior learning for this clinical rotation:

Learning needs/objectives:

Planned activities to meet these objectives:

Timelines, Support and Resources required to meet these objectives:

Evaluation (how will you know if these objectives have been met, suggested tools):

Registrar:_____.Signature:_____ Date:_____

F. Supervisor Feedback

G. Supervisor Assessment (ringed)

Excellent(10/10) Satisfactory(6/10) Poor(2/10) Unacceptable (0/10)

H. Date of next meeting to review progress / rotation

.....

Supervisor……Signature……Date……

REFLECTION ON ROTATION 1

Name of rotation: _____

Rotation starting _____ and ending_____

Name of health facility: _____

Type of health facility (please circle):
PHC District hospital Regional hospital L3 Hospital Other (e.g. TB / Psychiatry)
Clinical area(s) covered in this rotation (please tick all that apply):

Adult medicine	☐	Infectious Diseases (HIV/TB)	☐
Obs & Gynae	☐	Surgery	☐
Paediatrics	☐	Orthopaedics	☐
Anaesthetics	☐	Emergencies	☐
ENT	☐	Eyes	☐
Dermatology	☐	Psychiatry	☐
Other (specify)	☐		

Provide a brief **description** of your duties, patient profile and patient numbers personally managed in this rotation.

Reflect on your **experience** as a registrar working in this facility/department during this rotation, what worked well and what could be improved?

Reflect on your **learning** during this rotation. What has been learnt? What remains to be learnt? (Refer to the Learning Objectives in your Learning Plan.)

Registrar _____ (Signature) Date: _____	Leave days:

CONTINUOUS ASSESSMENT DURING ROTATION BY SUPERVISOR

(To be completed by supervisor and discussed with registrar)

Marking scale: 9–10 = excellent; 7–8 = above average; 5–6 = average/satisfactory; 3-4 = below average/unsatisfactory; 1–2 = very weak; N/A = not applicable or don't know

	Score 1 – 10
KNOWLEDGE	
• Clinical medicine	
SKILLS	
• Clinical record-keeping: case-notes, letters, summaries	
• Rational prescribing and use of medication	
• Rational use of diagnostic tests and resources	
• Co-ordination of patient care with multiple providers	
PROFESSIONAL VALUES AND ATTITUDES	
• Approach to ethical and medico-legal issues	
• Punctuality, time keeping and reliability	
• Relationship with other team members	
• Leadership abilities	
• Collaboration or consulting with other health professionals	
OVERALL ASSESSMENT	
• Global rating (Give score for rotation ……/10)	/10

Feedback from supervisor:

Supervisor's name: _____

Signature:_____Date:_____

LEARNING PLAN 2

Period: from ……..…… to ……...……..……

Clinical Rotation: …….

A. Learning Objectives:

Relevant prior learning for this clinical rotation:

Learning needs/objectives:

Planned activities to meet these objectives:

Timelines, Support and Resources required to meet these objectives:

Evaluation (how will you know if these objectives have been met, suggested tools):

Registrar:_____.Signature:_____ Date:_____

B. Supervisor Feedback

C. Supervisor Assessment (ringed)

Excellent(10/10) Satisfactory(6/10) Poor(2/10) Unacceptable (0/10)

D. Date of next meeting to review progress / rotation

.....

Supervisor……Signature……Date……

REFLECTION ON ROTATION 2

Name of rotation: _____

Rotation starting _____ and ending_____

Name of health facility: _____

Type of health facility (please circle):
PHC District hospital Regional hospital L3 Hospital Other (e.g. TB / Psychiatry)
Clinical area(s) covered in this rotation (please tick all that apply):

Adult medicine	☐	Infectious Diseases (HIV/TB)	☐
Obs & Gynae	☐	Surgery	☐
Paediatrics	☐	Orthopaedics	☐
Anaesthetics	☐	Emergencies	☐
ENT	☐	Eyes	☐
Dermatology	☐	Psychiatry	☐
Other (specify)	☐		

Provide a brief **description** of your duties, patient profile and patient numbers personally managed in this rotation.

Reflect on your **experience** as a registrar working in this facility/department during this rotation, what worked well and what could be improved?

Reflect on your **learning** during this rotation. What has been learnt? What remains to be learnt? (Refer to the Learning Objectives in your Learning Plan.)

Registrar _____ (Signature) Date: _____	Leave days:

CONTINUOUS ASSESSMENT DURING ROTATION BY SUPERVISOR

(To be completed by supervisor and discussed with registrar)

Marking scale: 9–10 = excellent; 7–8 = above average; 5–6 = average/satisfactory; 3-4 = below average/unsatisfactory; 1–2 = very weak; N/A = not applicable or don't know

	Score 1 – 10
KNOWLEDGE	
• Clinical medicine	
SKILLS	
• Clinical record-keeping: case-notes, letters, summaries	
• Rational prescribing and use of medication	
• Rational use of diagnostic tests and resources	
• Co-ordination of patient care with multiple providers	
PROFESSIONAL VALUES AND ATTITUDES	
• Approach to ethical and medico-legal issues	
• Punctuality, time keeping and reliability	
• Relationship with other team members	
• Leadership abilities	
• Collaboration or consulting with other health professionals	
OVERALL ASSESSMENT	
• Global rating (Give score for rotation ……/10)	/10

Feedback from supervisor:

Supervisor's name: _____

Signature:_____Date:_____

LEARNING PLAN 3

Period: from ……..…… to ……...……

Clinical Rotation: ……

A. Learning Objectives:

Relevant prior learning for this clinical rotation:

Learning needs/objectives:

Planned activities to meet these objectives:

Timelines, Support and Resources required to meet these objectives:

Evaluation (how will you know if these objectives have been met, suggested tools):

Registrar:_____.Signature:_____ Date:_____

B. Supervisor Feedback

C. Supervisor Assessment (ringed)

Excellent(10/10) Satisfactory(6/10) Poor(2/10) Unacceptable (0/10)

D. Date of next meeting to review progress / rotation

.....

Supervisor……Signature……Date……

REFLECTION ON ROTATION 3

Name of rotation: _____

Rotation starting _____ and ending_____

Name of health facility: _____

Type of health facility (please circle):
PHC District hospital Regional hospital L3 Hospital Other (e.g. TB / Psychiatry)
Clinical area(s) covered in this rotation (please tick all that apply):

Adult medicine	☐	Infectious Diseases (HIV/TB)	☐
Obs & Gynae	☐	Surgery	☐
Paediatrics	☐	Orthopaedics	☐
Anaesthetics	☐	Emergencies	☐
ENT	☐	Eyes	☐
Dermatology	☐	Psychiatry	☐
Other (specify)	☐		

Provide a brief **description** of your duties, patient profile and patient numbers personally managed in this rotation.

Reflect on your **experience** as a registrar working in this facility/department during this rotation, what worked well and what could be improved?

Reflect on your **learning** during this rotation. What has been learnt? What remains to be learnt? (Refer to the Learning Objectives in your Learning Plan.)

Registrar _____ (Signature) Date: _____	Leave days:

CONTINUOUS ASSESSMENT DURING ROTATION BY SUPERVISOR

(To be completed by supervisor and discussed with registrar)

Marking scale: 9–10 = excellent; 7–8 = above average; 5–6 = average/satisfactory; 3-4 = below average/unsatisfactory; 1–2 = very weak; N/A = not applicable or don't know

	Score 1 – 10
KNOWLEDGE	
• Clinical medicine	
SKILLS	
• Clinical record-keeping: case-notes, letters, summaries	
• Rational prescribing and use of medication	
• Rational use of diagnostic tests and resources	
• Co-ordination of patient care with multiple providers	
PROFESSIONAL VALUES AND ATTITUDES	
• Approach to ethical and medico-legal issues	
• Punctuality, time keeping and reliability	
• Relationship with other team members	
• Leadership abilities	
• Collaboration or consulting with other health professionals	
OVERALL ASSESSMENT	
• Global rating (Give score for rotation ……/10)	/10

Feedback from supervisor:

Supervisor's name: _____

Signature:_____Date:_____

Divider: Educational Meetings

SECTION 4

RECORD OF EDUCATIONAL MEETINGS WITH SUPERVISOR

Your portfolio at the end of each year should demonstrate engagement with all of the activities below and a minimum of 2-hours formal tuition per month / 24-hours for the year. However, the aim should be to show engagement above the minimum standard.

Use the letters below to record the general focus of the meeting and then describe what was done. The meeting could focus on one of the following learning conversations:

A: Setting a learning agenda (at the beginning and end of a rotation or every 6-months): Reflection on the registrars experience to date, expectations or progress and planning of learning activities and goals for the next period.

B: Intermittent evaluation: For the registrar and trainer to check progress, review the portfolio, discuss any difficulties in their relationship or the organization that impede learning or service delivery, make new plans. Feedback can also be given and received on the programme or registrars performance.

C: Clinical / communication skills: Observation/audio/video-review of communication, consultation or procedural skills and feedback with role-play or simulation. Other clinical skills might also be demonstrated.

D: Case discussions: Reflect on your actual patients through the use of record review, presentation of problem patients or clinical tutorials on specific topics. Reflect on difficult consultations, emotions or ethical dilemmas that arise from your clinical practice or setting.

E: Evidence based practice: Reflect on and critically appraise current journals and original research.

F: Other: For example co-ordination of on-line learning tasks with the on-site professional experience and service priorities i.e. topic for the quality improvement cycle

Date	Group or individual meeting	Code letter from list of learning opportunities	Duration (hrs)	Description of content covered / activities / topics	Signature of supervisor
1/1/2011	*Group*	*A*	*1*	*Learning plan for rotation in anaesthetics*	*Example*

Date	Group or individual meeting	Code letter from list of learning opportunities	Duration (hrs)	Description of content covered / activities / topics	Signature of supervisor

Some tools to facilitate your educational meetings are included here:

1. Case-based Discussion (CbD)
2. Clinical Question Analysis (PAN-PUN-DEN)
3. Significant Event Analysis (SEA)

Case-based Discussion Notes Sheet – to help supervisors and registrars*

***Tick* those questions you'd like to ask;**
add any others not on this sheet but specific to the case under discussion
Stick to the 'there and then'; don't go into the future (i.e. no "what if" questions)

Competence	Proposed Questions	Evidence Obtained
Practising holistically *(physical, psychological, socio-economic and cultural dimensions; patient's feelings and thoughts)*	☐ What do you think was the patient's agenda (her I.C.E.)? How did you elicit this? Why present now? ☐ What effect did the symptoms have on her work, family and other parts of her life? *(illness vs. disease)* ☐ How did the symptoms affect her psychosocially? What phrase(s) did you use? ☐ What prior knowledge of the patient did you have which affected the outcome of your consultation(s)? ☐ Did you identify any ongoing problems which might have affected this particular complaint? ☐ How did you establish the patient's point of view? What consultation skills did you use to do this? Other Qs	**Note:** In general, when asking the registrar to present the case, ask them to also say: 1. what **issues** they felt the case **raised** 2. what **issues** they felt **needed resolving** 3. what bits they found **challenging/difficult** **This will help you focus your questions.** ☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Data gathering and interpretation *(gathering and using data for clinical judgement, the choice of examination and investigations and their interpretation)*	☐ Ask about the specifics of the case and diagnoses eg what biological features of depression did she show? How long did she have it for? etc ☐ What bits of information did you find helpful in this case? Why? How did you phrase that? ☐What other information did you use to help formulate your diagnosis/decision? ☐ Did you refer to any previous investigations to help you? What were they? ☐ What skills did you use to obtain the history? ☐ What examination did you make? ☐ I see from the notes that there is no reference to examining her "chest"; Do you think this might have been helpful? In what way? ☐ Had you gathered any further information about this case from others? ☐ Was there any other information you would have liked? How would that have helped you? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Making diagnoses & decisions *(conscious, structured approach to decision-making)*	*DIAGNOSIS* ☐ What were you particularly worried about in this case? ☐ How did you come to your final diagnosis? Remind me which bits of the history and examination were instrumental in this? ☐ Did you use any tools or guidelines to help you? *TREATMENT* ☐ What were your options? Which did you choose? Why this one? Convince me that you made the right choice. ☐ Did you consider any evidence in your final choice? Tell me about it? ☐ How did the patient feel about your choice of treatment? Did this influence your final decision? ☐ Did you consider the implications of your decision for the relatives/doctor/practice/society? Tell me more about how they might feel? How did this influence your final decision? ☐ Did you use any framework or model to help justify your decision? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Clinical Management *(recognition and management of common medical conditions)*	☐ What made you prescribe xxx? How did you come to choosing that? What does the evidence say about it? ☐ Had you thought of any other options at the time? What were they? Tell me about some of the pros and cons of these options so I can get an idea of why you went for what you did. Do you know the evidence behind any of these? What were your main priorities here? ☐ Why did you do those investigations? What were you looking for?	

	☐ Why did you make that referral? What worried you that led to that referral? Did you speak to them? What were you hoping the referral might achieve? What did you actually put in the referral letter? ☐ Did you put into place any follow up/review? How long? Why do you want to see her again? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Managing medical complexity *(beyond managing straight-forward problems, eg managing co-morbidity, uncertainty & risk, approach to health rather than just illness)*	☐ How did you generally FEEL about this case? ☐ Do you think the patient kind of pushed you into investigation/referral/treatment with abx? How do you feel about this? What have you learned from this case? ☐ What did you do to alter her help seeking behaviour? ☐ Was there a difference of agendas? How did you tackle this? (eg demanding patient, difficult angry patient, overbearing heartsinks etc). Tell me exactly how you managed to merge agendas. ☐ What made this case particularly difficult? How did you resolve that? ☐ Were there any ongoing problems that added to the complexity of this case? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Primary care admin and IMT *(effective recordkeeping and online info to aid patient care)*	☐ Look at the registrar's electronic recording of information. Do you think it was satisfactory? Ask what the registrar thinks on reflection- "Do you think what you have documented is adequate?" Any important negatives left out? The patient's narrative? Concise yet thorough? ☐ Did you use any online information to help you? What? How? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Working with colleagues and in teams *(working effectively; sharing information with colleagues)*	☐ Did you involve anyone else in this case? Why? How did they help? ☐ Did you involve any other organisations in this case? For what purpose? ☐ How did you ensure you had effective communication with others involved in this particular case? ☐ If many people/organisations are involved in the case, ask: "What do you see as your role considering loads of people are involved in this case?" Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Community orientation *(management of health and social care of local community)*	☐ Did you think about the implications of your treatment/investigations/referral on the individual patient and on society? Tell me more…OR Is there a potential for harm in the way you approached this case? OR Can you see any ethical dilemmas in this particular case? OR Had you any ethical considerations when dealing with this case? Tell me more. ☐ Had you any thoughts at the time about the cost of treatment/investigation/referral? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Maintaining an ethical approach to practice *(ethical practise, integrity, respect for diversity)*	☐ What ethical principles did you use to inform your choice of treatment? ☐ How did you ensure the patient had an informed choice when it came to management? What are patients' rights? How did this influence your handling of the case? ☐ Sick Notes – individual vs. society thing. Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Fitness to practise *(awareness own performance, conduct or health, or of others; action taken to protect patients)*	☐ Excluding the serious stuff eg What alarm features did you enquire about?; How did you carry out a suicidal risk assessment?; How did you know her headaches are not a result of a brain tumour?; How did you exclude a brain tumour? ☐ Safety Netting – How did you close the consultation? Did you advise on when to come back? What did you say? ☐Are there any other responsibilities you have to patients in general? How do they apply to this case? How did you make sure you observed them? Why are they important? ☐ Did you use a chaperone? ☐ Did you wear a glove before taking blood/doing a PV/PR/giving the injection? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd

* *Developed by Dr. Ramesh Mehay, Programme Director Bradford VTS (Dec 2006)*

Case-based Discussion Notes Sheet – to help supervisors and registrars*

***Tick* those questions you'd like to ask;**
add any others not on this sheet but specific to the case under discussion
Stick to the 'there and then'; don't go into the future (i.e. no "what if" questions)

Competence	Proposed Questions	Evidence Obtained
Practising holistically *(physical, psychological, socio-economic and cultural dimensions; patient's feelings and thoughts)*	☐ What do you think was the patient's agenda (her I.C.E.)? How did you elicit this? Why present now? ☐ What effect did the symptoms have on her work, family and other parts of her life? *(illness vs. disease)* ☐ How did the symptoms affect her psychosocially? What phrase(s) did you use? ☐ What prior knowledge of the patient did you have which affected the outcome of your consultation(s)? ☐ Did you identify any ongoing problems which might have affected this particular complaint? ☐ How did you establish the patient's point of view? What consultation skills did you use to do this? Other Qs	**Note:** In general, when asking the registrar to present the case, ask them to also say: 1. what **issues** they felt the case **raised** 2. what **issues** they felt **needed resolving** 3. what bits they found **challenging/difficult** **This will help you focus your questions.** ☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Data gathering and interpretation *(gathering and using data for clinical judgement, the choice of examination and investigations and their interpretation)*	☐ Ask about the specifics of the case and diagnoses eg what biological features of depression did she show? How long did she have it for? etc ☐ What bits of information did you find helpful in this case? Why? How did you phrase that? ☐What other information did you use to help formulate your diagnosis/decision? ☐ Did you refer to any previous investigations to help you? What were they? ☐ What skills did you use to obtain the history? ☐ What examination did you make? ☐ I see from the notes that there is no reference to examining her "chest"; Do you think this might have been helpful? In what way? ☐ Had you gathered any further information about this case from others? ☐ Was there any other information you would have liked? How would that have helped you? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Making diagnoses & decisions *(conscious, structured approach to decision-making)*	*DIAGNOSIS* ☐ What were you particularly worried about in this case? ☐ How did you come to your final diagnosis? Remind me which bits of the history and examination were instrumental in this? ☐ Did you use any tools or guidelines to help you? *TREATMENT* ☐ What were your options? Which did you choose? Why this one? Convince me that you made the right choice. ☐ Did you consider any evidence in your final choice? Tell me about it? ☐ How did the patient feel about your choice of treatment? Did this influence your final decision? ☐ Did you consider the implications of your decision for the relatives/doctor/practice/society? Tell me more about how they might feel? How did this influence your final decision? ☐ Did you use any framework or model to help justify your decision? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
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	☐ Why did you make that referral? What worried you that led to that referral? Did you speak to them? What were you hoping the referral might achieve? What did you actually put in the referral letter? ☐ Did you put into place any follow up/review? How long? Why do you want to see her again? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Managing medical complexity *(beyond managing straight-forward problems, eg managing co-morbidity, uncertainty & risk, approach to health rather than just illness)*	☐ How did you generally FEEL about this case? ☐ Do you think the patient kind of pushed you into investigation/referral/treatment with abx? How do you feel about this? What have you learned from this case? ☐ What did you do to alter her help seeking behaviour? ☐ Was there a difference of agendas? How did you tackle this? (eg demanding patient, difficult angry patient, overbearing heartsinks etc). Tell me exactly how you managed to merge agendas. ☐ What made this case particularly difficult? How did you resolve that? ☐ Were there any ongoing problems that added to the complexity of this case? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
Primary care admin and IMT *(effective recordkeeping and online info to aid patient care)*	☐ Look at the registrar's electronic recording of information. Do you think it was satisfactory? Ask what the registrar thinks on reflection- "Do you think what you have documented is adequate?" Any important negatives left out? The patient's narrative? Concise yet thorough? ☐ Did you use any online information to help you? What? How? Other Qs	☐ Needs develpmt. ☐ Comptnt ☐ ExclInt ☐ Not assessd
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* *Developed by Dr. Ramesh Mehay, Programme Director Bradford VTS (Dec 2006)*

Clinical Question Analysis

This sheet should be with you during your practice and act as a guide to ask questions in a moment of reflection alone after the patient consultation. It can also be used to reflect on other challenges or situations that arise in clinical practice.

a. The Situation and/or Patient Actually Met Needs (PAN) at time of consultation

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.....

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b. The Situational Difficulty and/or Patient Unmet Need (PUN) (on Reflection)

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c. MY Problem, difficulty, questions or observations (including my emotional reactions on reflection)

.....

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.....

d. MY (Doctor) Educational Need (DEN) (Which aspects of this encounter or situation do I need to find out more about to improve?)

.....

.....

.....

e. How did I close the learning loop i.e. what did I do in my practice differently or implement what I learnt?

.....

.....

.....

Registrar……Signature……Date…….....

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.....

.....

.....

e. How did I close the learning loop i.e. what did I do in my practice differently or implement what I learnt?

.....

.....

.....

Registrar……Signature……Date…….....

Significant Event Analysis (could also be a Morbidity and Mortality [M&M] discussion)

Description of occurrence	Date
What was managed well?	
What did not go well i.e. briefly the identified problem?	

Fishbone (put what you see as causes to this problem as the bones to the arrow pointing to the identified problem)

Identification of main learning needs

Actions	By whom	When

Registrar..... Signature ……

Supervisor……. Signature ……..

Significant Event Analysis (could also be a Morbidity and Mortality [M&M] discussion)

Description of occurrence	Date
What was managed well?	
What did not go well i.e. briefly the identified problem?	

Fishbone (put what you see as causes to this problem as the bones to the arrow pointing to the identified problem)

Identification of main learning needs

Actions	By whom	When

Registrar..... Signature ……

Supervisor……. Signature ……..

Divider: Observations of Performance

SECTION 5

OBSERVATIONS OF THE REGISTRAR

This section must include **at least ten (10) observations** of yourself by your supervisor(s), during the course of each year. These must include observations of consultations, procedures done, and teaching activities.

A number of Assessment Tools are available to help with direct or indirect observation. Copies are included here, for you to use in everyday practice:

1. Communication skills observation tool {5 copies}
2. Mini-CEX (for consultations) {10 copies}
3. DOPS (for procedures) {5 copies}
4. Teaching/presentation assessment tool {2 copies}

Tip: Be very opportunistic, asking your supervisor to observe you whenever you recognize a moment of 'quietness', perhaps first thing in the morning, or a specific day of the week. Keep some of these assessment tools with you.

Notes:

- Initially, while registrars are in training, detailed remediation should take place during the consultation. The registrar should also be asked for his/her hypothesis after taking the history. As he/she progresses, this intervention should decrease, until the consultation is purely observed, unless the patient's welfare is endangered.
- No intervention should take place during formal (summative) assessment.
- During formal summative assessment, registrars may need help to focus on specific issues in patients with complex problems, where time has been limited.
- Time management is an important skill, but registrars can be assessed out of what was appropriately completed, where there are clear reasons why the consultation could not be finished within the time allowed; assessors may intervene 1 minute before the end, or afterwards, to ask for the registrar's assessment and plan.

Observations (each scored …../10)	1	2	3	4	5	6	7	8	9	10 Teach	FINAL AVERAGE (……./10)

COMMUNICATION SKILLS OBSERVATION TOOL

Registrar name…… Supervisor ……Date……

Checklist score Each of the items below is an important skill in the consultation and should be rated separately. Rating should be at the performance expected from a family physician.	**Shown (2 points)**	**Partially shown / not sure (1 point)**	**Not shown (zero points)**
Initiating the session			
Makes appropriate greeting / introduction and demonstrates interest and respect Greets patient, obtains name, introduces self, attends to physical comfort of patient, shows interest and respect, establishes initial rapport.			
Identifies and confirms the patient's problem list or issues Gives an opportunity for the patient to list all their issues or problems before exploring the initial problem "So headache, fever - anything else you'd like to talk about?". Summarises and confirms the list with the patient.			
Gathering information			
Encourages patient's contribution / story By use of open as well as closed questions, attentive listening, facilitation skills and summarization and responding to cues. As opposed to cutting off the patient, use of only closed questions in an interrogatory style.			
Makes an attempt to understand the patient's perspective Elicits spontaneously and acknowledges the patient's perspective or uses specific questions– beliefs, concerns, expectations, and feelings.			
Thinks family, and obtains relevant family, social and occupational information Elicits relevant information about the patient's household, family, occupation, and environment.			
Obtains sufficient information to ensure no serious condition is likely to be missed Elicits enough clinical information to establish a working diagnosis and ensure no serious condition is likely to be missed.			
Explanation and planning			
Appears to make a clinically appropriate working diagnosis The apparent diagnosis is clinically appropriate according to the subjective and objective evidence. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			
There is a clear explanation of the diagnosis and management plan The explanation is well organized, in small chunks, avoids jargon, where appropriate makes use of visual methods, leaflets, repetition, signposting.			
Gives patient an opportunity to ask for other information and / or seeks to confirm patient's understanding The patient is asked if they would like other information and / or their understanding is checked by reverse summarizing or opportunity to clarify			
The explanation takes account of and relates to the patient's perspective The explanation connects, responds to or takes into account the patient's beliefs, concerns and expectations			
Involves the patient where appropriate in decision making The patient is offered insight into doctor's thought processes, suggestions, options and invited to participate in decision making through use of choice, expression of preferences or ideas. The doctor does not just give orders, directives or instructions of what must be done.			

Chooses an appropriate management plan The management plan is based on scientifically sound evidence and is appropriate for the diagnosis. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			
Closure			
Closes consultation successfully in the time available Brings the consultation to a conclusion rather than running out of time. Deals with any remaining issues from the patient.			
Provides appropriate safety netting for the patient Shows evidence of having considered how certain they are of the diagnosis, what might go wrong with the treatment, how they will know if things do not go well, side effects occur or more serious sequelae develop. Shows this in an appropriate plan of safety netting with the patient.			
Additional skills – for merit These will not be applicable to all consultations, but will depend on the content of the specific consultation			
Establishes therapeutic rapport / relationship in a patient with a mental or psychosocial problem Shows evidence of basic counseling skills used in a mature and integrated way that offers supportive therapy to the patient: such as empathy, attentive listening, summarizing, unconditional positive regard, facilitative responses.			
Breaks bad news appropriately Shows evidence of structured approach to breaking bad news that includes skills such as: setting the scene by summarizing or discovering where things have reached to date and check patients understanding; warn patient that difficult information is coming; give information clearly, directly and honestly; be sensitive to the emotional reaction from the patient by giving space for it, encourage expression of feelings; allow patient to ask their own questions, express concerns and elicit the type and amount of information they want, make a supportive plan.			
Shows skills in brief motivational interviewing Shows evidence of brief motivational interviewing skills such as: setting an agenda, explores readiness to change, chooses skills appropriate to the patients readiness to change (elicit-provide-elicit, decision balance sheet, brainstorming), rolls with resistance.			
Total Score out of 30 (maximum = 30)			**…/30**
Above Total Score divided by 3			**…/10**

COMMUNICATION SKILLS OBSERVATION TOOL

Registrar name…… Supervisor ……Date……

Checklist score Each of the items below is an important skill in the consultation and should be rated separately. Rating should be at the performance expected from a family physician.	Shown (2 points)	Partially shown / not sure (1 point)	Not shown (zero points)
Initiating the session			
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Gathering information			
Encourages patient's contribution / story By use of open as well as closed questions, attentive listening, facilitation skills and summarization and responding to cues. As opposed to cutting off the patient, use of only closed questions in an interrogatory style.			
Makes an attempt to understand the patient's perspective Elicits spontaneously and acknowledges the patient's perspective or uses specific questions– beliefs, concerns, expectations, and feelings.			
Thinks family, and obtains relevant family, social and occupational information Elicits relevant information about the patient's household, family, occupation, and environment.			
Obtains sufficient information to ensure no serious condition is likely to be missed Elicits enough clinical information to establish a working diagnosis and ensure no serious condition is likely to be missed.			
Explanation and planning			
Appears to make a clinically appropriate working diagnosis The apparent diagnosis is clinically appropriate according to the subjective and objective evidence. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			
There is a clear explanation of the diagnosis and management plan The explanation is well organized, in small chunks, avoids jargon, where appropriate makes use of visual methods, leaflets, repetition, signposting.			
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Closes consultation successfully in the time available Brings the consultation to a conclusion rather than running out of time. Deals with any remaining issues from the patient.			
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Additional skills – for merit These will not be applicable to all consultations, but will depend on the content of the specific consultation			
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Total Score out of 30 (maximum = 30)			**…/30**
Above Total Score divided by 3			**…/10**

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Gathering information			
Encourages patient's contribution / story By use of open as well as closed questions, attentive listening, facilitation skills and summarization and responding to cues. As opposed to cutting off the patient, use of only closed questions in an interrogatory style.			
Makes an attempt to understand the patient's perspective Elicits spontaneously and acknowledges the patient's perspective or uses specific questions– beliefs, concerns, expectations, and feelings.			
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Involves the patient where appropriate in decision making The patient is offered insight into doctor's thought processes, suggestions, options and invited to participate in decision making through use of choice, expression of preferences or ideas. The doctor does not just give orders, directives or instructions of what must be done.			

Chooses an appropriate management plan The management plan is based on scientifically sound evidence and is appropriate for the diagnosis. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			
Closure			
Closes consultation successfully in the time available Brings the consultation to a conclusion rather than running out of time. Deals with any remaining issues from the patient.			
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Establishes therapeutic rapport / relationship in a patient with a mental or psychosocial problem Shows evidence of basic counseling skills used in a mature and integrated way that offers supportive therapy to the patient: such as empathy, attentive listening, summarizing, unconditional positive regard, facilitative responses.			
Breaks bad news appropriately Shows evidence of structured approach to breaking bad news that includes skills such as: setting the scene by summarizing or discovering where things have reached to date and check patients understanding; warn patient that difficult information is coming; give information clearly, directly and honestly; be sensitive to the emotional reaction from the patient by giving space for it, encourage expression of feelings; allow patient to ask their own questions, express concerns and elicit the type and amount of information they want, make a supportive plan.			
Shows skills in brief motivational interviewing Shows evidence of brief motivational interviewing skills such as: setting an agenda, explores readiness to change, chooses skills appropriate to the patients readiness to change (elicit-provide-elicit, decision balance sheet, brainstorming), rolls with resistance.			
Total Score out of 30 (maximum = 30)			**…/30**
Above Total Score divided by 3			**…/10**

COMMUNICATION SKILLS OBSERVATION TOOL

Registrar name…… Supervisor ……Date……

Checklist score Each of the items below is an important skill in the consultation and should be rated separately. Rating should be at the performance expected from a family physician.	**Shown (2 points)**	**Partially shown / not sure (1 point)**	**Not shown (zero points)**
Initiating the session			
Makes appropriate greeting / introduction and demonstrates interest and respect Greets patient, obtains name, introduces self, attends to physical comfort of patient, shows interest and respect, establishes initial rapport.			
Identifies and confirms the patient's problem list or issues Gives an opportunity for the patient to list all their issues or problems before exploring the initial problem "So headache, fever - anything else you'd like to talk about?". Summarises and confirms the list with the patient.			
Gathering information			
Encourages patient's contribution / story By use of open as well as closed questions, attentive listening, facilitation skills and summarization and responding to cues. As opposed to cutting off the patient, use of only closed questions in an interrogatory style.			
Makes an attempt to understand the patient's perspective Elicits spontaneously and acknowledges the patient's perspective or uses specific questions– beliefs, concerns, expectations, and feelings.			
Thinks family, and obtains relevant family, social and occupational information Elicits relevant information about the patient's household, family, occupation, and environment.			
Obtains sufficient information to ensure no serious condition is likely to be missed Elicits enough clinical information to establish a working diagnosis and ensure no serious condition is likely to be missed.			
Explanation and planning			
Appears to make a clinically appropriate working diagnosis The apparent diagnosis is clinically appropriate according to the subjective and objective evidence. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			
There is a clear explanation of the diagnosis and management plan The explanation is well organized, in small chunks, avoids jargon, where appropriate makes use of visual methods, leaflets, repetition, signposting.			
Gives patient an opportunity to ask for other information and / or seeks to confirm patient's understanding The patient is asked if they would like other information and / or their understanding is checked by reverse summarizing or opportunity to clarify			
The explanation takes account of and relates to the patient's perspective The explanation connects, responds to or takes into account the patient's beliefs, concerns and expectations			
Involves the patient where appropriate in decision making The patient is offered insight into doctor's thought processes, suggestions, options and invited to participate in decision making through use of choice, expression of preferences or ideas. The doctor does not just give orders, directives or instructions of what must be done.			

Chooses an appropriate management plan The management plan is based on scientifically sound evidence and is appropriate for the diagnosis. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			
Closure			
Closes consultation successfully in the time available Brings the consultation to a conclusion rather than running out of time. Deals with any remaining issues from the patient.			
Provides appropriate safety netting for the patient Shows evidence of having considered how certain they are of the diagnosis, what might go wrong with the treatment, how they will know if things do not go well, side effects occur or more serious sequelae develop. Shows this in an appropriate plan of safety netting with the patient.			
Additional skills – for merit These will not be applicable to all consultations, but will depend on the content of the specific consultation			
Establishes therapeutic rapport / relationship in a patient with a mental or psychosocial problem Shows evidence of basic counseling skills used in a mature and integrated way that offers supportive therapy to the patient: such as empathy, attentive listening, summarizing, unconditional positive regard, facilitative responses.			
Breaks bad news appropriately Shows evidence of structured approach to breaking bad news that includes skills such as: setting the scene by summarizing or discovering where things have reached to date and check patients understanding; warn patient that difficult information is coming; give information clearly, directly and honestly; be sensitive to the emotional reaction from the patient by giving space for it, encourage expression of feelings; allow patient to ask their own questions, express concerns and elicit the type and amount of information they want, make a supportive plan.			
Shows skills in brief motivational interviewing Shows evidence of brief motivational interviewing skills such as: setting an agenda, explores readiness to change, chooses skills appropriate to the patients readiness to change (elicit-provide-elicit, decision balance sheet, brainstorming), rolls with resistance.			
Total Score out of 30 (maximum = 30)			**…/30**
Above Total Score divided by 3			**…/10**

COMMUNICATION SKILLS OBSERVATION TOOL

Registrar name…… Supervisor ……Date……

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Chooses an appropriate management plan The management plan is based on scientifically sound evidence and is appropriate for the diagnosis. If necessary the notes in the patients folder can be reviewed later to establish what the doctor was thinking.			
Closure			
Closes consultation successfully in the time available Brings the consultation to a conclusion rather than running out of time. Deals with any remaining issues from the patient.			
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Total Score out of 30 (maximum = 30)			**…/30**
Above Total Score divided by 3			**…/10**

Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

Patient Problem/Dx: _____

Setting: O Ambulatory O In-patient O ED O Other _____

Patient: Age: _____ Sex: _____ O New O Follow-up

Complexity: O Low O Moderate O High

Focus: O Data Gathering O Diagnosis O Therapy O Counseling

1. Medical Interviewing Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

2. Physical Examination Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

3. Humanistic Qualities/Professionalism

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

4. Clinical Judgment (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

5. Counseling Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

6. Organization/Efficiency (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

7. Overall Clinical Competence (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments:

_____

_____

_____

_____ _____

Resident Signature Evaluator Signature

DESCRIPTORS OF COMPETENCIES DEMONSTRATED DURING THE MINI-CEX

Medical Interviewing Skills: Facilitates patient's telling of story; effectively uses questions/directions to obtain accurate, adequate information needed; responds appropriately to affect, non-verbal cues.

Physical Examination Skills: Follows efficient, logical sequence; balances screening/diagnostic steps for problem; informs patient; sensitive to patient's comfort, modesty.

Humanistic Qualities/Professionalism: Shows respect, compassion, empathy, establishes trust; attends to patient's needs of comfort, modesty, confidentiality, information.

Clinical Judgment: Selectively orders/performs appropriate diagnostic studies, considers risks, benefits.

Counseling Skills: Explains rationale for test/treatment, obtains patient's consent, educates/counsels regarding management.

Organization/Efficiency: Prioritizes; is timely; succinct.

Overall Clinical Competence: Demonstrates judgment, synthesis, caring, effectiveness, efficiency.

Note 1: Reprinted with permission from the American Board of Internal Medicine, www.abim.org.
Note 2: Discussed in: Norcini JJ, Blank LL, Arnold GK, Kimball HR. The mini-CEX (Clinical Evaluation Exercise): a preliminary investigation. Ann Intern Med 1995;123:795-9.

Total score by your supervisor ...../81
Total score divided by 8.1 ...../10

Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

Patient Problem/Dx: _____

Setting: O Ambulatory O In-patient O ED O Other _____

Patient: Age: _____ Sex: _____ O New O Follow-up

Complexity: O Low O Moderate O High

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1. Medical Interviewing Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

2. Physical Examination Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

3. Humanistic Qualities/Professionalism

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

4. Clinical Judgment (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

5. Counseling Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

6. Organization/Efficiency (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

7. **Overall Clinical Competence** (O Not Observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments:

_____

_____

_____

_____ _____

Resident Signature Evaluator Signature

DESCRIPTORS OF COMPETENCIES DEMONSTRATED DURING THE MINI-CEX

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Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

Patient Problem/Dx: _____

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1 2 3	4 5 6	7 8 9
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UNSATISFACTORY	SATISFACTORY	SUPERIOR

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1 2 3	4 5 6	7 8 9
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1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

6. Organization/Efficiency (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

7. **Overall Clinical Competence** (O Not Observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments:

_____

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_____ _____

Resident Signature Evaluator Signature

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Total score by your supervisor ...../81
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Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

Patient Problem/Dx: _____

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1 2 3	4 5 6	7 8 9
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1 2 3	4 5 6	7 8 9
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1 2 3	4 5 6	7 8 9
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4. Clinical Judgment (O Not Observed)

1 2 3	4 5 6	7 8 9
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5. Counseling Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

6. Organization/Efficiency (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

7. **Overall Clinical Competence** (O Not Observed)		
1 2 3	4 5 6	7 8 9
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Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments:

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Resident Signature Evaluator Signature

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Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

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UNSATISFACTORY	SATISFACTORY	SUPERIOR

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Resident: _____ O R-1 O R-2 O R-3

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UNSATISFACTORY	SATISFACTORY	SUPERIOR

4. Clinical Judgment (O Not Observed)

1 2 3	4 5 6	7 8 9
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UNSATISFACTORY	SATISFACTORY	SUPERIOR

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Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

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Comments:

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Resident Signature Evaluator Signature

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Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

Patient Problem/Dx: _____

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Patient: Age: _____ Sex: _____ O New O Follow-up

Complexity: O Low O Moderate O High

Focus: O Data Gathering O Diagnosis O Therapy O Counseling

1. Medical Interviewing Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

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UNSATISFACTORY	SATISFACTORY	SUPERIOR

6. Organization/Efficiency (O Not Observed)

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UNSATISFACTORY	SATISFACTORY	SUPERIOR

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Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments:

_____

_____

_____

_____ _____

Resident Signature Evaluator Signature

DESCRIPTORS OF COMPETENCIES DEMONSTRATED DURING THE MINI-CEX

Medical Interviewing Skills: Facilitates patient's telling of story; effectively uses questions/directions to obtain accurate, adequate information needed; responds appropriately to affect, non-verbal cues.

Physical Examination Skills: Follows efficient, logical sequence; balances screening/diagnostic steps for problem; informs patient; sensitive to patient's comfort, modesty.

Humanistic Qualities/Professionalism: Shows respect, compassion, empathy, establishes trust; attends to patient's needs of comfort, modesty, confidentiality, information.

Clinical Judgment: Selectively orders/performs appropriate diagnostic studies, considers risks, benefits.

Counseling Skills: Explains rationale for test/treatment, obtains patient's consent, educates/counsels regarding management.

Organization/Efficiency: Prioritizes; is timely; succinct.

Overall Clinical Competence: Demonstrates judgment, synthesis, caring, effectiveness, efficiency.

Note 1: Reprinted with permission from the American Board of Internal Medicine, www.abim.org.
Note 2: Discussed in: Norcini JJ, Blank LL, Arnold GK, Kimball HR. The mini-CEX (Clinical Evaluation Exercise): a preliminary investigation. Ann Intern Med 1995;123:795-9.

Total score by your supervisor ...../81
Total score divided by 8.1 ...../10

Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

Patient Problem/Dx: _____

Setting: O Ambulatory O In-patient O ED O Other _____

Patient: Age: _____ Sex: _____ O New O Follow-up

Complexity: O Low O Moderate O High

Focus: O Data Gathering O Diagnosis O Therapy O Counseling

1. Medical Interviewing Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

2. Physical Examination Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

3. Humanistic Qualities/Professionalism

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

4. Clinical Judgment (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

5. Counseling Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

6. Organization/Efficiency (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

7. **Overall Clinical Competence** (O Not Observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments:

_____

_____

_____

_____ _____

Resident Signature Evaluator Signature

DESCRIPTORS OF COMPETENCIES DEMONSTRATED DURING THE MINI-CEX

Medical Interviewing Skills: Facilitates patient's telling of story; effectively uses questions/directions to obtain accurate, adequate information needed; responds appropriately to affect, non-verbal cues.

Physical Examination Skills: Follows efficient, logical sequence; balances screening/diagnostic steps for problem; informs patient; sensitive to patient's comfort, modesty.

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Total score by your supervisor ...../81
Total score divided by 8.1 ...../10

Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

Patient Problem/Dx: _____

Setting: O Ambulatory O In-patient O ED O Other _____

Patient: Age: _____ Sex: _____ O New O Follow-up

Complexity: O Low O Moderate O High

Focus: O Data Gathering O Diagnosis O Therapy O Counseling

1. Medical Interviewing Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

2. Physical Examination Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

3. Humanistic Qualities/Professionalism

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

4. Clinical Judgment (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

5. Counseling Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

6. Organization/Efficiency (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

7. **Overall Clinical Competence** (O Not Observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments:

_____

_____

_____

_____ _____

Resident Signature Evaluator Signature

DESCRIPTORS OF COMPETENCIES DEMONSTRATED DURING THE MINI-CEX

Medical Interviewing Skills: Facilitates patient's telling of story; effectively uses questions/directions to obtain accurate, adequate information needed; responds appropriately to affect, non-verbal cues.

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Total score by your supervisor ...../81
Total score divided by 8.1 ...../10

Mini-Clinical Evaluation Exercise (CEX)

Evaluator: _____ **Date:**_____

Resident: _____ O R-1 O R-2 O R-3

Patient Problem/Dx: _____

Setting: O Ambulatory O In-patient O ED O Other _____

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Complexity: O Low O Moderate O High

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1. Medical Interviewing Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
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4. Clinical Judgment (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

5. Counseling Skills (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

6. Organization/Efficiency (O Not Observed)

1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

7. **Overall Clinical Competence** (O Not Observed)		
1 2 3	4 5 6	7 8 9
UNSATISFACTORY	SATISFACTORY	SUPERIOR

Mini-CEX Time: **Observing_____Mins** **Providing Feedback: _____Mins**

Evaluator Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Resident Satisfaction with Mini-CEX

LOW 1 2 3 4 5 6 7 8 9 HIGH

Comments:

_____

_____

_____

_____ _____

Resident Signature Evaluator Signature

DESCRIPTORS OF COMPETENCIES DEMONSTRATED DURING THE MINI-CEX

Medical Interviewing Skills: Facilitates patient's telling of story; effectively uses questions/directions to obtain accurate, adequate information needed; responds appropriately to affect, non-verbal cues.

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Total score by your supervisor ...../81
Total score divided by 8.1 ...../10

Direct Observation of Procedural Skills TOOL (DOPS)

TEMPLATE FOR PROCEDURAL SKILLS ASSESSMENT

1. PREPARATION OF PATIENT

- Introduces self (if not already known)
- Puts patient at ease
- Explains the procedure to patient
- Explains indications, contraindications, risks and benefits of the procedure as applicable
- Appropriately answers any question(s) the patient might have
- Assures the patient that his/her comfort during the procedure is your priority
- Gets patient's consent

2. PREPARATION FOR PROCEDURE

- Uses appropriate safety measures
- Maintains sterility as required
- Prepares correct anaesthesia/analgesia
- Appropriate choice of needed material or instrument(s)
- Appropriate choice of needed drugs

3. PROCEDURE

- Places patient in correct position for the procedure
- Accurately and comprehensively performs the procedure
- Explains step by step what is being done
- Does not unnecessary hurt the patient
- Critical steps are not omitted

4. POST-PROCEDURE

- Admits patient for observation if needed
- Arranges follow-up of patient
- Refers the patient when indicated
- Educates the patient about the condition
- Provides and/or prescribes analgesia, dressings, other appropriate management Provides preventive measures

5. TEAM WORK

- Works collegially with nursing or medical colleagues in performing the procedure
- Gives appropriate instructions to nursing staff involved
- Ensures proper hand over of patient for ongoing care if required

Direct Observation of Procedural Skills (DOPS) – scoring sheet

REGISTRAR:_____ SUPERVISOR:_____

SETTING: ☐ Ambulatory ☐ In-patient ☐ EC/Casualty Other: _____

Patient age: _____ Patient sex: _____ ☐ New ☐ Follow-up

SKILL PERFORMED: _____

Complexity of skill: Low ☐ Medium ☐ High ☐

---

1. PREPARATION OF PATIENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

6. PREPARATION OF EQUIPMENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

7. PROCEDURE:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

8. POST-PROCEDURE (AFTER CARE):

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

9. TEAM WORK:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

TOTAL /50 Divide by 5: Final score /10

Feedback:

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Supervisor signature…….....……Date…….....

Direct Observation of Procedural Skills TOOL (DOPS)

TEMPLATE FOR PROCEDURAL SKILLS ASSESSMENT

1. PREPARATION OF PATIENT

- Introduces self (if not already known)
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5. TEAM WORK

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- Gives appropriate instructions to nursing staff involved
- Ensures proper hand over of patient for ongoing care if required

Direct Observation of Procedural Skills (DOPS) – scoring sheet

REGISTRAR:_____ SUPERVISOR:_____

SETTING: ☐ Ambulatory ☐ In-patient ☐ EC/Casualty Other: _____

Patient age: _____ Patient sex: _____ ☐ New ☐ Follow-up

SKILL PERFORMED: _____

Complexity of skill: Low ☐ Medium ☐ High ☐

---

1. PREPARATION OF PATIENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

10. PREPARATION OF EQUIPMENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

11. PROCEDURE:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

12. POST-PROCEDURE (AFTER CARE):

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

13. TEAM WORK:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

TOTAL /50 Divide by 5: Final score /10

Feedback:

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Supervisor signature…….....……Date…….....

Direct Observation of Procedural Skills TOOL (DOPS)

TEMPLATE FOR PROCEDURAL SKILLS ASSESSMENT

1. PREPARATION OF PATIENT

- Introduces self (if not already known)
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- Gives appropriate instructions to nursing staff involved
- Ensures proper hand over of patient for ongoing care if required

Direct Observation of Procedural Skills (DOPS) – scoring sheet

REGISTRAR:_____ SUPERVISOR:_____

SETTING: ☐ Ambulatory ☐ In-patient ☐ EC/Casualty Other: _____

Patient age: _____ Patient sex: _____ ☐ New ☐ Follow-up

SKILL PERFORMED: _____

Complexity of skill: Low ☐ Medium ☐ High ☐

---

1. PREPARATION OF PATIENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

14. PREPARATION OF EQUIPMENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

15. PROCEDURE:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

16. POST-PROCEDURE (AFTER CARE):

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

17. TEAM WORK:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

TOTAL /50 Divide by 5: Final score /10

Feedback:

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Supervisor signature…….....……Date…….....

Direct Observation of Procedural Skills TOOL (DOPS)

TEMPLATE FOR PROCEDURAL SKILLS ASSESSMENT

1. PREPARATION OF PATIENT

- Introduces self (if not already known)
- Puts patient at ease
- Explains the procedure to patient
- Explains indications, contraindications, risks and benefits of the procedure as applicable
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- Assures the patient that his/her comfort during the procedure is your priority
- Gets patient's consent

2. PREPARATION FOR PROCEDURE

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- Maintains sterility as required
- Prepares correct anaesthesia/analgesia
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- Appropriate choice of needed drugs

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- Accurately and comprehensively performs the procedure
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- Arranges follow-up of patient
- Refers the patient when indicated
- Educates the patient about the condition
- Provides and/or prescribes analgesia, dressings, other appropriate management Provides preventive measures

5. TEAM WORK

- Works collegially with nursing or medical colleagues in performing the procedure
- Gives appropriate instructions to nursing staff involved
- Ensures proper hand over of patient for ongoing care if required

Direct Observation of Procedural Skills (DOPS) – scoring sheet

REGISTRAR:_____ SUPERVISOR:_____

SETTING: ☐ Ambulatory ☐ In-patient ☐ EC/Casualty Other: _____

Patient age: _____ Patient sex: _____ ☐ New ☐ Follow-up

SKILL PERFORMED: _____

Complexity of skill: Low ☐ Medium ☐ High ☐

---

1. PREPARATION OF PATIENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

18. PREPARATION OF EQUIPMENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

19. PROCEDURE:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

20. POST-PROCEDURE (AFTER CARE):

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

21. TEAM WORK:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

TOTAL /50 Divide by 5: Final score /10

Feedback:

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.....

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Supervisor signature……Date…….....

Direct Observation of Procedural Skills TOOL (DOPS)

TEMPLATE FOR PROCEDURAL SKILLS ASSESSMENT

1. PREPARATION OF PATIENT

- Introduces self (if not already known)
- Puts patient at ease
- Explains the procedure to patient
- Explains indications, contraindications, risks and benefits of the procedure as applicable
- Appropriately answers any question(s) the patient might have
- Assures the patient that his/her comfort during the procedure is your priority
- Gets patient's consent

2. PREPARATION FOR PROCEDURE

- Uses appropriate safety measures
- Maintains sterility as required
- Prepares correct anaesthesia/analgesia
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- Provides and/or prescribes analgesia, dressings, other appropriate management Provides preventive measures

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- Ensures proper hand over of patient for ongoing care if required

Direct Observation of Procedural Skills (DOPS) – scoring sheet

REGISTRAR:_____ SUPERVISOR:_____

SETTING: ☐ Ambulatory ☐ In-patient ☐ EC/Casualty Other: _____

Patient age: _____ Patient sex: _____ ☐ New ☐ Follow-up

SKILL PERFORMED: _____

Complexity of skill: Low ☐ Medium ☐ High ☐

---

1. PREPARATION OF PATIENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

22. PREPARATION OF EQUIPMENT:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

23. PROCEDURE:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

24. POST-PROCEDURE (AFTER CARE):

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

---

25. TEAM WORK:

1 2 3 4 / 5 6 7 / 8 9 10

UNSATISFACTORY SATISFACTORY EXEMPLARY

TOTAL /50 Divide by 5: Final score /10

Feedback:

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.....

Supervisor signature…….....……Date…….....

Marking Sheet for MMed(FamMeds) Presentation Skills

Presentation: Structure and organization, formulation, time management, preparation

1-4	5-7	8-10	Mark	Weight	Final
Disorganised, unprepared, fails to complete in time available – unable to demonstrate structure and organization	Finishes on time, mostly organized, structured – maintains good organization throughout most of the consultation	Well organized, equal division of time between sections, content logically connected, good preparation evident – maintains excellent structure and organization		20	

Teaching aids: Readability, functionality, use of media, use effectively

1-4	5-7	8-10	Mark	Weight	Final
Slides have too much information, small fonts, fumble with aids, not able to use the computer, poor coherence	Good layout of slides, uses media with reasonable confidence, deals with hiccups, summarises key messages well	Slides readable, no more than 5 – 7 bullets, no more than 7 words per line, appropriate use of graphics, enhances and complements the verbal presentation		20	

Non-Verbal: posture, positioning, hand movements, nerves, clothing, mannerisms, eye contact

1-4	5-7	8-10	Mark	Weight	Final
Stands with back to audience, inappropriately dressed, fidgets, excessive hand movement, poor eye contact – poor display of non-verbal com	Appears comfortable, uses appropriate hand movements, contains nerves, good eye contact with audience – maintains good non-verbal com	Confident, uses appropriate non-verbal communication, engages with audience – develops and sustains excellent non-verbal communication throughout presentation		20	

Verbal: Accent, volume, speed, enthusiasm, pronunciation

1-4	5-7	8-10	Mark	Weight	Final
Speaks inaudibly, too fast, boring, too loud or too soft – audience loses interest, is unable to understand the content	Speaks at appropriate level, uses language correctly – audience is able to understand all the content	Varies speech, displays enthusiasm for work – audience understands the content and is engaged / stimulated		15	

Rapport with audience: Handling of questions, respectful, engaging

1-4	5-7	8-10	Mark	Weight	Final
Does not build and/or loses rapport with the audience, becomes defensive or aggressive on questions	Develops good rapport with the audience, genuine attempt to understand and appropriately respond to questions	Develops and sustains above average rapport throughout, engages with audience, responds to questions on a higher cognitive level, works with critique not against		15	

Content of presentation

1-4	5-7	8-10	Mark	Weight	Final
Poorly defined aims, poor methodology, unclear results, lack of insight and interpretation, inappropriate and unsubstantiated responses to questions	Clear aims, reasonable methodology, clear results, reasonable interpretation, defends findings appropriately	Scope of research more than expected, makes significant contribution to the discipline, innovative methods, high level of interpretation and responses to questions		10	

The presentation will be marked using the following marking schedule
1-4 - Below standard for a family physician, fail
5-7 - Family physician standard, pass
8-10 - Above standard, exceptional, possible distinction

TOTAL MARK: ……....out of 100 divide by 10 FINALMARK……./10

REGISTRAR NAME:……..……SUPERVISOR:…….……..

FEEDBACK:

……

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……

……

Marking Sheet for MMed(FamMeds) Presentation Skills

Presentation: Structure and organization, formulation, time management, preparation

1-4	5-7	8-10	Mark	Weight	Final
Disorganised, unprepared, fails to complete in time available – unable to demonstrate structure and organization	Finishes on time, mostly organized, structured – maintains good organization throughout most of the consultation	Well organized, equal division of time between sections, content logically connected, good preparation evident – maintains excellent structure and organization		20	

Teaching aids: Readability, functionality, use of media, use effectively

1-4	5-7	8-10	Mark	Weight	Final
Slides have too much information, small fonts, fumble with aids, not able to use the computer, poor coherence	Good layout of slides, uses media with reasonable confidence, deals with hiccups, summarises key messages well	Slides readable, no more than 5 – 7 bullets, no more than 7 words per line, appropriate use of graphics, enhances and complements the verbal presentation		20	

Non-Verbal: posture, positioning, hand movements, nerves, clothing, mannerisms, eye contact

1-4	5-7	8-10	Mark	Weight	Final
Stands with back to audience, inappropriately dressed, fidgets, excessive hand movement, poor eye contact – poor display of non-verbal com	Appears comfortable, uses appropriate hand movements, contains nerves, good eye contact with audience – maintains good non-verbal com	Confident, uses appropriate non-verbal communication, engages with audience – develops and sustains excellent non-verbal communication throughout presentation		20	

Verbal: Accent, volume, speed, enthusiasm, pronunciation

1-4	5-7	8-10	Mark	Weight	Final
Speaks inaudibly, too fast, boring, too loud or too soft – audience loses interest, is unable to understand the content	Speaks at appropriate level, uses language correctly – audience is able to understand all the content	Varies speech, displays enthusiasm for work – audience understands the content and is engaged / stimulated		15	

Rapport with audience: Handling of questions, respectful, engaging

1-4	5-7	8-10	Mark	Weight	Final
Does not build and/or loses rapport with the audience, becomes defensive or aggressive on questions	Develops good rapport with the audience, genuine attempt to understand and appropriately respond to questions	Develops and sustains above average rapport throughout, engages with audience, responds to questions on a higher cognitive level, works with critique not against		15	

Content of presentation

1-4	5-7	8-10	Mark	Weight	Final
Poorly defined aims, poor methodology, unclear results, lack of insight and interpretation, inappropriate and unsubstantiated responses to questions	Clear aims, reasonable methodology, clear results, reasonable interpretation, defends findings appropriately	Scope of research more than expected, makes significant contribution to the discipline, innovative methods, high level of interpretation and responses to questions		10	

The presentation will be marked using the following marking schedule
1-4 - Below standard for a family physician, fail
5-7 - Family physician standard, pass
8-10 - Above standard, exceptional, possible distinction

TOTAL MARK: …….....out of 100 divide by 10 FINALMARK……./10

REGISTRAR NAME:……..……SUPERVISOR:……..……..

FEEDBACK:

……

……

……

……

……

Divider:

Written

Assignments

SECTION 6

WRITTEN ASSIGNMENTS

Your written assignments provide evidence of learning in any of the areas below (see also the table on outcomes and assessment methods in section 2).

You need to include any of the following assignments together with their assessment scores in your portfolio. By the end of the 4 years you should have completed assignments in all of the following categories. These assignments are usually integrated into the requirements of your academic programme and can just be copied and included in your portfolio:

1. Clinical competence (e.g. patient studies that demonstrate diagnostic reasoning, bio-psycho-social approach)
2. Family-orientated Primary Care
3. Ethical reasoning and medico-legal issues
4. Community-orientated Primary Care
5. Clinical governance
    a. Evidence-based Medicine (e.g.critical appraisal of a journal article, searching for evidence, use of guidelines)
    b. Quality improvement cycle / audit
    c. Significant event analysis (SEA)
    d. Morbidity and mortality meeting reports
    e. Monitoring and evaluation meeting reports
6. Teaching and Learning

Please adjust every individual assignment score to a total out of 10, and add the score to the table below. The scores for the year are then added and divided to give a final average out of 10.

Year 1	Ethics and medico-legal*	Evidence based medicine*	Clinical patient study (optional)	FINAL AVERAGE (…../10)
Year 2	Quality improvement*	Community orientated primary care*	Additional (optional)	FINAL AVERAGE (…../10)
Year 3	Family orientated primary care*	Teaching and learning	Additional (optional)	FINAL AVERAGE (…../10)
Year 4	Elective assignment	Elective assignment	Additional (optional)	FINAL AVERAGE (…../10)

*Required by CMSA

Divider:

Logbook

SECTION 7

Logbook

The following tables list the clinical skills that should be acquired or consolidated during your 4-year registrar training in Family Medicine. The list is intended to guide you and your supervisor on what core practical experience and skills training to focus on. **Your supervisor** should evaluate your competency, with your learning plan and rotation assessment, **at the beginning and end of the rotation or at least every 6-months (i.e. February and August)**.

It is assumed that while learning these specific skills you will also be exposed to an appropriate spectrum of patients and will be supervised in the relevant clinical assessment, decision making and management.

The skills should be **rated** according to the following definitions from A to D. The rating should be entered in the tables below. If you have not been exposed to a particular clinical area at all during the year or rotation then leave the column blank.

You should also give an approximate **indication of the numbers of a certain procedure done (< 5, 5-10, or >10)**

A: Only Theory:

Only theoretical knowledge regarding the skill's principles, indications, contraindications, performance and complications.

B: Seen or have had demonstrated:

Have theoretical knowledge regarding the skill and have seen or observed the skill demonstrated by someone else

C: Apply/Perform:

Have theoretical knowledge regarding the skill and have performed the skill in question under supervision, at least several times.

D: Routine/Independent:

Have the theoretical knowledge regarding the skill and are competent to perform the skill independently.

Adult medicine

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Adult health - general	Femoral vein puncture			
	Lumbar puncture			
	Arterial sampling radial artery			
	Blood culture technique			
	Injections - intra-dermal, subcutaneous, intra-muscular, deep intramuscular, sub-conjunctival,			
Adults-Abdomen	Interpret the AXR in an adult			
	Proctoscopy			
Adults-Chest	ECG - set-up, record and interpret 12 lead ECG			
	Interpret CXR			
	Pleural tap			
	Measure PEF			
	Nebulise a patient			
	Use inhalers and spacers			
	Exercise stress test			
	Perform and interpret office spirometry			
	Pleural biopsy			

Obstetrics and Gynaecology

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Antenatal care	Antenatal growth chart			
	Assess foetal movement / wellbeing			
	Clinical pelvimetry			
	Obstetric ultrasound			
	Amniocentesis			
Intra-partum care	Examine progress during labour and use partogram			
	Apply and interpret CTG			
	Assess foetal wellbeing during labour			
	Normal vaginal delivery			
	Assisted vaginal delivery / vacuum extraction / forceps			
	Caesarean section (including ability to do sub-total hysterectomy)			
	Episiotomy and suturing			
	Repair of 3rd degree tear			
	Evacuation of uterus			
	Manual removal of placenta			
	External cephalic version			
Newborn / Post-partum care	Resuscitate a newborn			
	Umbilical vein catheterization			

	Assess gestational age at birth			
	Kangaroo mother care			
	Phototherapy			
	Well newborn check			
Women's health	Microscopy of vaginal discharge (wet mount, KOH)			
	Endometrial biopsy/sampling			
	Dilatation and Curettage			
	Drainage of Bartholin's abscess / cyst			
	Tubal ligation			
	FNAB of breast lump			
	Insertion of IUCD			
	Papanicolau (cervical) smears			
	Culdocentesis			
	Hormone implants			
	Laparotomy for ectopic pregnancy			
	TOP (if no religious/ethical objections)			
Clinical governance	MOU support, the perinatal audit meetings and PPIP programme, the training and audits of the basic antenatal care and perinatal education programmes and intrapartum audits			

Paediatrics

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Child	Assess growth and classify malnutrition			
	Assess child abuse (sexual/non-sexual) Assess child abuse (sexual/non-sexual)			
	Capillary blood sampling - finger, heel			
	CXR in a child			
	Developmental assessment			
	How to do and interpret Tine test and Mantoux tests			
	Intra-osseous line			
	IV access in a child			
	Lumbar puncture			
	Suprapubic bladder puncture			
	Venepuncture - upper limb, extn jugular vein			

Anaesthetics

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Anaesthetics	Ring block			
	Administer oxygen			
	Check Boyle's machine			
	Control airway – mask and ambu bag			
	General anaesthetic			
	Inhalation induction			
	Intravenous induction			
	Intubate & ventilate patient			
	Ketamine anesthesia			
	Monitor patient during anaesthetic			
	Recover patient in recovery room			
	Reverse muscle relaxation (mix drugs)			
	Set airflows – Magill, Circle, T-piece			
	Spinal anaesthetic			
	Sterilize your equipment			
	Bier's block			
	Brachial block			
	Conscious sedation – basic			
	Epidural			

Surgery

Clinical topic	Clinical skills – aim is D for unshaded skills and C	Numbers done (<5,	Grade the registrar 1st assess,2nd

	for shaded skills	5-10, >10)	assess	
Adult health - general	Wound care and dressings			
	Lymph node excision biopsy			
Adults-Abdomen	I&D of perianal haematoma			
	Proctoscopy			
	Appendicectomy			
	Interpret barium swallows			
Adults-Urology	Penile block			
	Reduce a paraphimosis			
	Circumcision			
	Drain hydrocoele			
	Insert a urinary and suprapubic catheter			
	Hydrocoelectomy			
	Interpret IVP for renal colic			
	Vasectomy			
	Orchidectomy and anchoring of torted testis			
Skin	Skin graft			
Emergency	Debride wounds or burns			
	I&D abscesses			
	Laparotomy for initial damage control in stabbed abdomen			

Orthopaedics

Clinical topic	Clinical skills – aim is D	Numbers	Grade the registrar

	for unshaded skills and C for shaded skills	done (<5, 5-10, >10)	1st assess,2nd assess	
Orthopaedics	Measure shortening of the legs			
	Aspirate and inject the knee			
	Inject tennis elbow / golfers elbow			
	Inject the shoulder (ACJ, subacromial, GHJ)			
	Inject trochanteric bursitis			
	Interpret x-rays of joints			
	Apply finger and hand splints			
	Apply POP (upper and lower limbs)			
	Closed reductions (hand, forearm,tib-fib)			
	Set up traction (skeletal and skin)			
	Reduce elbow dislocation			
	Reduce hip dislocation			
	Reduce shoulder dislocation			
	Reduce radial head dislocation			
	Excise a ganglion			
	Inject carpal tunnel syndrome			

	Inject de Quervains tenosynovitis			
	Amputations-fingers/toes and lower limb			
	Apply club foot POP			
	Debridement of open fractures			
	Fasciotomy			

Emergencies

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Emergency	CPR adult advanced support			
	CPR child advanced support			
	Choking			
	Primary survey			
	Intubate and manage airway			
	Cricothyroidotomy			
	Give oxygen			
	Insert chest drain			
	Relieve tension pneumothorax			
	IV cutdown			
	Secondary survey			

	Measure the GCS			
	Insert NGT			
	Interpret x-rays in trauma			
	Immoblise spine			
	Transport critically ill			
	Remove a splinter, fish-hook			
	Suture lacerations			
	Give a blood transfusion			
	Gastric lavage			
	Manage snake bite			
	Administer rabies prophylaxis			
	Selecting emergency equipment for doctors bag or emergency tray			
	Calculate % burnt			
	Certifying patient under mental health care act			
	Relieve cardiac tamponade			
	Peritoneal lavage			
	Suturing lip with tissue loss from human bite			
	Tracheostomy			

Communication

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
Consultation	Patient-centred consultation (all ages)			
	Holistic (3-stage) assessment and management			
	Motivate behaviour change			
	Break bad news			
	Counselling skills for HIV, TOP, after rape			
	Assess and consult couples, families			
	Conduct a family conference			
	Mini mental examination			
	Support / consult with PHC nurse			
	Use genogram and ecomap			
	Use problem-orientated medical record			
	Develop and use flowcharts for chronic care			
	Cope with language barriers			

ENT, Eyes, Skin and Miscellaneous

Clinical topic	Clinical skills – aim is D for unshaded skills and C for shaded skills	Numbers done (<5, 5-10, >10)	Grade the registrar 1st assess,2nd assess	
ENT	Remove a foreign body from the ear			
	Remove a foreign body from the nose Syringe, dry swab an ear			
	Take a throat swab			
	Manage epistaxis (cautery, packing)			
	Assess hearing loss			
	Suture a pinna, lobe			
	Drain a peritonsillar abscess			
	Tonsillectomy / adenoidectomy			
	Reduce a fractured nose			
	Interpret audiogram			
Skin	Skin patch testing			
	Excise sebaceous cyst (other lumps-bumps)			
	Skin biopsy (punch and fusiform), skin scrapes			
	Wide Needle Aspiration Biopsy lymph node in HIV			
	Cryotherapy/cauterization			
	Phenol ablation of ingrown toenail			
	Inject keloids			
Admin	Work assessment and DG forms			
	Making appropriate referrals and letters			
	Completing sick certificates			

	Completing death certificates			
	Manage a clinic for chronic care (e.g. HIV, diabetes)			
Forensic	Completing J88			
	Assess, manage and document sexual assault			
	Assess, manage and document drunken driving			
	Assess, manage and document interpersonal violence			
Palliative care	Counselling of dying patient			
	Hypodermoclysis (subcutaneous infusion)			
	Set up a syringe driver			
Eyes	Fundoscopy (diabetes, hypertension), visual fields, visual acuity			
	Instill drops or apply ointment			
	Remove a foreign body in the eye, eversion of eyelid			
	I&D a chalazion			
	Suture an eyelid			
	Test for squint			
	Washout of eye (chemical burns)			
	Subconjunctival injections			
	Use a Schiotz tonometer			

Declaration of completion of logbook

Date completed:	
Comments on the registrar's competency or professionalism	
Name of supervisor	Signature supervisor
Signature registrar	

Date completed:	
Comments on the registrar's competency or professionalism	
Name of supervisor	Signature supervisor
Signature registrar	

Date completed:	
Comments on the registrar's competency or professionalism	
Name of supervisor	Signature supervisor
Signature registrar	

Divider:

Emergency

Medicine

SECTION 8

Certificates of Training in Emergency Medicine

Evidence of competency in emergency medicine is a requirement to sit the FCFP (SA) examinations of the CMSA.

Please insert your proof of competency in this section. These will include various ATLS, ACLS, PALS, AMLS, DipPEC, or other courses.

Divider:

Courses,

Congresses,

Workshops

SECTION 9

POST-GRADUATE LECTURES, MEETINGS, WORKSHOPS, SEMINARS, SYMPOSIA, CONGRESSES

Attendance at, or own presentations, at post-graduate meetings, lectures, workshops, symposia or congresses relevant to Family Medicine

(Attach *Certificates of Attendance* if applicable)

Date	**Duration (hrs)**	**Presenter** (Self/other)	**Topic**	**Event**

CERTIFICATES of Courses relating to Family Medicine

(Copies of Certificates *must* be attached)

COURSE	INSTITUTION	DATE	COURSE DIRECTOR

ANY OTHER LEARNING EXPERIENCE RELEVANT TO FAMILY MEDICINE, that has not been captured, e.g. journal article publications:

Divider:

Annual Assessment

SECTION 10

Standard National Family Medicine Postgraduate Portfolio Assessment Tool (PAT): Annual assessment

Three satisfactory annual portfolio scores (≥60%) are needed for verification to the CMSA that the candidate is ready for the Part 1 Exam in 4th year. The annual score will also be used by the University for its own assessment purposes. All PAT scoring can be completed by a competent administrative person as the information is already in the portfolio, assuming the HOD/Program manager has completed section 10.

1. A learning plan (section 3) for each rotation undertaken and a minimum of 2 per year. Missing learning plans should be scored as zero. If at least 2 learning plans, but one is not scored, take the average score of those scored. The learning plan is assessed in the portfolio as Excellent =10, Satisfactory =6, Poor =2, Unacceptable = 0. Final score out of 10. Take the average of the scores for each learning plan as the score for the year.

Learning plans	First learning plan score	Second learning plan score	Third learning plan score	FINAL AVERAGE (…...../10):

2. Report/Reflection on Rotations (Section 3)**: Portfolio cannot be seen as acceptable overall if a report is missing**. In the portfolio there is a global assessment out of 10 that can be used as an overall score for the rotation. Take the average of the scores for each rotation as the score for the year.

Supervisor report	First report score	Second report score	Third report score	FINAL AVERAGE (…...../10):

3. Add up the number of hours recorded for educational meetings (section 4) and divide the total by 4 to give a score for the year. The max score possible is 10. In addition give 2 points for each type of meeting, if it appears at least once in the portfolio (A, B, C, D, E, F) to a max of 10. Add the two scores together to give a final score for the year out of 20.

Educational Meetings	Score for hours (Total hours/4)=	2 Points per category A-F	A, B, C, D, E, F Score for categories =	TOTAL (…./20):

4. Calculate the average score for the 10 required observations (section 5). Each observation should already have been scored out of 10. Missing (number less than 10) observations should be counted as zero. At least one must be a scored teaching activity.

Observations (each scored …../10	1	2	3	4	5	6	7	8	9	10 (Teach)	FINAL AVERAGE (……./10)

5. Course assignments (already assessed in course out of 100%). **At least one assignment is required from each of the 5 key areas by the end of 3 years.** There should be at least one new assignment per year. An average score is calculated for all of the assignments at the end of each year. The final average score should be reduced to a score out of 10 and not 100. If an assignment marked with * is absent, score =0 for that assignment.

Year 1	Ethics and medico-legal*	Evidence based medicine*	Clinical patient study (optional)	FINAL AVERAGE (…../10)
Year 2	Quality improvement*	Community orientated primary care*	Additional (optional)	FINAL AVERAGE (…../10)
Year 3	Family orientated primary care*	Teaching and learning	Additional (optional)	FINAL AVERAGE (…../10)
Year 4	Elective assignment	Elective assignment	Additional (optional)	FINAL AVERAGE (…../10)

*Required by CMSA

6. Logbook (section 7): Look at the skills in the **unshaded** blocks and add up the total number of "D"ratings. To give a score out of 20 divide the total number by 8 for a 4th year registrar, 6 for a 3rd year registrar, 4 for a 2nd year registrar and 2 for a 1st year registrar. Give the score to the nearest whole number and to a maximum of 20. {Please confirm on the electronic copy of the portfolio logbook which blocks are shaded or not. Photocopies are not always clear.}
   Look at the skills in the **shaded** blocks and add up the total number of both "D" or "C" ratings. To give a score out of 10 divide the total number by 4 for a 4th year registrar, 3 for a 3rd year registrar, 2 for a 2nd year registrar. Do not divide for a 1st year registrar. Give the score to the nearest whole number and to a maximum of 10. Add the two scores together to give a final score out of 30.

Score for unshaded skill blocks (…./20)		Score for shaded skill blocks (…../10)		SUM OF TWO SCORES (……/30):

7. Section 10: The Program Manager will make a global rating of the portfolio (Also using the reflections on learning in section 3, and a Likert scale.)

SCORE SELECTED (……../10):

1-2 Poor	3-4 Barely adequate	5-6 Average	7-8 Good	9-10 Excellent
Reflections on rotations[1]:				
Experiences or clinical activities are described (What happened?).	Essential aspects identified~ thoughts, feelings and contextual factors described (Self-awareness).	Critical analysis: Why and How questions and searching for answers. Awareness of frame of ref.).	Conclusions drawn ~ new perspectives formulated.	Translation of new perspectives into new behaviour (concrete learning goals and plans for future actions described).
Feedback:				
Almost non-existent. Doubt about registrar's competencies. May need to repeat a rotation.	Suggests a borderline registrar.	Indicate no problems. Performance is ok, but no praise.	Engaging registrar, exceeding expectations, contributing more than expected, standing out.	Exceptional registrar, whom the supervisor would employ.
Organization of portfolio:				
Portfolio reads detached from real work/learning	Complete, but some areas are disorganised, not	Complete and organised in a systematic way. It	Complete and comprehensive and clear. It is a model	The registrar engaged the portfolio from

experience. Filled in mostly later in the year. Disjointed, disorganised, or incomplete.	showing clearly how learning happened over the course of the year.	reads congruent with experience, filled in throughout the academic year.	example, above expectations.	early on in the year, consistently and systematically added items, including additional evidence like e.g. photos, videos, patient reports.

*[1]Koole et al. BMC Medical Education 2011, 11:104

Year_____

The portfolio is: Poor Barely adequate Average Good Excellent

Portfolio Assessment Tool (PAT) Score ...../100

Recommendations:

_____

_

Signed:_____

HOD name:_____Date:_____

Addendum D: The initial portfolio assessment tool

SECTION 10

Standard National Family Medicine Postgraduate Portfolio Assessment Tool (PAT): Annual assessment

Three satisfactory annual portfolio scores (≥60%) are needed for verification to the CMSA that the candidate is ready for the Part 1 Exam in 4th year. The annual score can also be used by the University for its own assessment purposes. All PAT scoring can be completed by a competent administrative person as the information is already in the portfolio, assuming the HOD/Program manager has completed section 10.

1. A learning plan (section 3) for each rotation undertaken and a minimum of 2 per year. Missing learning plans should be scored as zero. If at least 2 learning plans, but one is not scored, take the average score of those scored. The learning plan is assessed in the portfolio as Excellent =10, Satisfactory =6, Poor =2, Unacceptable = 0. Final score out of 10. Take the average of the scores for each learning plan as the score for the year.

Learning plans	First learning plan score	Second learning plan score	Third learning plan score	FINAL AVERAGE (…..../10):

2. Report/Reflection on Rotations (Section 3)**: Portfolio cannot be seen as acceptable overall if a report is missing**. In the portfolio there is a global assessment out of 10 that can be used as an overall score for the rotation. Take the average of the scores for each rotation as the score for the year.

Supervisor report	First report score	Second report score	Third report score	FINAL AVERAGE (…..../10):

3. Add up the number of hours recorded for educational meetings (section 4) and divide the total by 4 to give a score for the year. The max score possible is 10. In addition give 2 points for each type of meeting, if it appears at least once in the portfolio (A, B, C, D, E, F) to a max of 10. Add the two scores together to give a final score for the year out of 20.

Educational Meetings	Score for hours (Total hours/4)=	2 Points per category A-F	A, B, C, D, E, F Score for categories =	TOTAL (…./20):

4. Calculate the average score for the 10 required observations (section 5). Each observation should already have been scored out of 10. Missing (number less than 10) observations should be counted as zero. At least one must be a teaching activity. {Score the teaching activity with the score sheet used at the MMed final exams.}

Observations (each scored …../10	1	2	3	4	5	6	7	8	9	10 (Teach)	FINAL AVERAGE (……./10)

5. Course assignments (already assessed in course out of 100%). **At least one assignment is required from each of the 5 key areas by the end of 3 years.** There should be at least one new assignment per year. An average score is calculated for all of the assignments at the end of each year. The final average score should be reduced to a score out of 10 and not 100. If an assignment marked with * is absent, score =0 for that assignment.

Year 1	Ethics and medico-legal*	Evidence based medicine*	Clinical patient study (optional)	FINAL AVERAGE (…../10)
Year 2	Quality improvement*	Community orientated primary care*	Additional (optional)	FINAL AVERAGE (…../10)
Year 3	Family orientated primary care*	Teaching and learning	Additional (optional)	FINAL AVERAGE (…../10)
Year 4	Elective assignment	Elective assignment	Additional (optional)	FINAL AVERAGE (…../10)

*Required by CMSA

6. Logbook (section 7): Look at the skills in the **unshaded** blocks and add up the total number of "D"ratings. To give a score out of 20 divide the total number by 8 for a 4th year registrar, 6 for a 3rd year registrar, 4 for a 2nd year registrar and 2 for a 1st year registrar. Give the score to the nearest whole number and to a maximum of 20. {Please confirm on the electronic copy of the portfolio logbook which blocks are shaded or not. Photocopies are not always clear.}
   Look at the skills in the **shaded** blocks and add up the total number of both "D" or "C" ratings. To give a score out of 10 divide the total number by 4 for a 4th year registrar, 3 for a 3rd year registrar, 2 for a 2nd year registrar. Do not divide for a 1st year registrar. Give the score to the nearest whole number and to a maximum of 10. Add the two scores together to give a final score out of 30.

Score for unshaded skill blocks (…./20)		Score for shaded skill blocks (…../10)		SUM OF TWO SCORES (……/30):

7. Section 10: The Program Manager will make a global rating of the portfolio (Also using the reflections on learning in section 3, and a Likert scale.)

SCORE SELECTED (…...../10):

1-2 Poor	3-4 Barely adequate	5-6 Average	7-8 Good	9-10 Excellent

Reflections on rotations are absent, with little indication of how or what the registrar learnt. Feedback almost non-existent. Doubt about the registrar's competencies. May need to repeat a rotation. Organization: The portfolio reads detached from real work/learning experience. It is filled in mostly later in the year. It is disjointed, disorganised, or incomplete.	Reflections on rotations are generic, not showing deep learning. Feedback suggests a borderline registrar. Organization: The portfolio is complete, but some areas are disorganised, not showing clearly how learning happened over the course of the year.	Reflections on rotations show some indication of deep learning. Feedback indicate no problems, performance is ok, but no praise. Organization: The portfolio is complete and organised in a systematic way. It reads congruent with experience, filled in throughout the academic year.	Reflections on rotations show insight into learning needs, showing how these were met. Feedback indicates engaging registrar, exceeding expectations, contributing more than expected, standing out. Organization: The portfolio is complete and comprehensive and clear. It is a model example, above expectations.	Reflections on rotations show clear development of the registrar, as seen from the progression over the year. Reflect at a deep level of honesty about strengths and weaknesses, with clear ways to learn from these. Feedback shows an exceptional registrar, whom the supervisor would employ. Organization: The registrar engaged the portfolio from early on in the year, and consistently and systematically added items, including additional evidence like e.g. photos.

Year_____

The portfolio is: Poor Barely adequate Average Good Excellent

Portfolio Assessment Tool (PAT) Score ……../100

Recommendations:

_____
_

Signed:_____

HOD name:_____

Date:_____

Addendum E: The modified portfolio assessment tool

SECTION 10

Standard National Family Medicine Postgraduate Portfolio Assessment Tool (PAT): Annual assessment

Three satisfactory annual portfolio scores (≥60%) are needed for verification to the CMSA that the candidate is ready for the Part 1 Exam in 4th year. The annual score will also be used by the University for its own assessment purposes. All PAT scoring can be completed by a competent administrative person as the information is already in the portfolio, assuming the HOD/Program manager has completed section 10.

1. A learning plan (section 3) for each rotation undertaken and a minimum of 2 per year. Missing learning plans should be scored as zero. If at least 2 learning plans, but one is not scored, take the average score of those scored. The learning plan is assessed in the portfolio as Excellent =10, Satisfactory =6, Poor =2, Unacceptable = 0. Final score out of 10. Take the average of the scores for each learning plan as the score for the year.

Learning plans	First learning plan score	Second learning plan score	Third learning plan score	FINAL AVERAGE (…...../10):

2. Report/Reflection on Rotations (Section 3)**: Portfolio cannot be seen as acceptable overall if a report is missing**. In the portfolio there is a global assessment out of 10 that can be used as an overall score for the rotation. Take the average of the scores for each rotation as the score for the year.

Supervisor report	First report score	Second report score	Third report score	FINAL AVERAGE (…...../10):

3. Add up the number of hours recorded for educational meetings (section 4) and divide the total by 4 to give a score for the year. The max score possible is 10. In addition give 2 points for each type of meeting, if it appears at least once in the portfolio (A, B, C, D, E, F) to a max of 10. Add the two scores together to give a final score for the year out of 20.

Educational Meetings	Score for hours (Total hours/4)=	2 Points per category A-F	A, B, C, D, E, F Score for categories =	TOTAL (…./20):

4. Calculate the average score for the 10 required observations (section 5). Each observation should already have been scored out of 10. Missing (number less than 10) observations should be counted as zero. At least one must be a scored teaching activity.

Observations (each scored …../10	1	2	3	4	5	6	7	8	9	10 (Teach)	FINAL AVERAGE (……./10)

5. Course assignments (already assessed in course out of 100%). **At least one assignment is required from each of the 5 key areas by the end of 3 years.** There should be at least one new assignment per year. An average score is calculated for all of the assignments at the end of each year. The final average score should be reduced to a score out of 10 and not 100. If an assignment marked with * is absent, score =0 for that assignment.

Year 1	Ethics and medico-legal*	Evidence based medicine*	Clinical patient study (optional)	FINAL AVERAGE (…../10)
Year 2	Quality improvement*	Community orientated primary care*	Additional (optional)	FINAL AVERAGE (…../10)
Year 3	Family orientated primary care*	Teaching and learning	Additional (optional)	FINAL AVERAGE (…../10)
Year 4	Elective assignment	Elective assignment	Additional (optional)	FINAL AVERAGE (…../10)

*Required by CMSA

6. Logbook (section 7): Look at the skills in the **unshaded** blocks and add up the total number of "D"ratings. To give a score out of 20 divide the total number by 8 for a 4th year registrar, 6 for a 3rd year registrar, 4 for a 2nd year registrar and 2 for a 1st year registrar. Give the score to the nearest whole number and to a maximum of 20. {Please confirm on the electronic copy of the portfolio logbook which blocks are shaded or not. Photocopies are not always clear.}
   Look at the skills in the **shaded** blocks and add up the total number of both "D" or "C" ratings. To give a score out of 10 divide the total number by 4 for a 4th year registrar, 3 for a 3rd year registrar, 2 for a 2nd year registrar. Do not divide for a 1st year registrar. Give the score to the nearest whole number and to a maximum of 10. Add the two scores together to give a final score out of 30.

Score for unshaded skill blocks (…./20)		Score for shaded skill blocks (…../10)		SUM OF TWO SCORES (……/30):

7. Section 10: The Program Manager will make a global rating of the portfolio (Also using the reflections on learning in section 3, and a Likert scale.)

SCORE SELECTED (……../10):

1-2 Poor	3-4 Barely adequate	5-6 Average	7-8 Good	9-10 Excellent
Reflections on rotations[1]:				
Experiences or clinical activities are described (What happened?).	Essential aspects identified~ thoughts, feelings and contextual factors described (Self-awareness).	Critical analysis: Why and How questions and searching for answers. Awareness of frame of ref.).	Conclusions drawn ~ new perspectives formulated.	Translation of new perspectives into new behaviour (concrete learning goals and plans for future actions described).
Feedback:				
Almost non-existent. Doubt about registrar's competencies. May need to repeat a rotation.	Suggests a borderline registrar.	Indicate no problems. Performance is ok, but no praise.	Engaging registrar, exceeding expectations, contributing more than expected, standing out.	Exceptional registrar, whom the supervisor would employ.
Organization of portfolio:				
Portfolio reads detached from real work/learning	Complete, but some areas are disorganised, not	Complete and organised in a systematic way. It	Complete and comprehensive and clear. It is a model	The registrar engaged the portfolio from

experience. Filled in mostly later in the year. Disjointed, disorganised, or incomplete.	showing clearly how learning happened over the course of the year.	reads congruent with experience, filled in throughout the academic year.	example, above expectations.	early on in the year, consistently and systematically added items, including additional evidence like e.g. photos, videos, patient reports.

*[1]Koole et al. BMC Medical Education 2011, 11:104

Year_____

The portfolio is: Poor Barely adequate Average Good Excellent

Portfolio Assessment Tool (PAT) Score ...../100

Recommendations:

_____

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Signed:_____

HOD name:_____Date:_____

The end