Factors influencing specialist outreach and support services to rural populations in the Eden and Central Karoo districts of the Western Cape – a Delphi study

By

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Declaration

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Introduction

Access to health care, like childhood survival, often depends on where one lives[1]. The infant mortality rate in rural South Africa (SA) is 52.6 per 1000 births, compared to 32.6 per 1000 births in urban areas[2]. Furthermore, three of the four districts in SA with the highest HIV prevalence are rural[3]. These being two commonly used health indicators, it is clear that rural populations have significantly poorer health outcomes than their urban counterparts.

About half the world's population live outside major urban centres, where health services and specialist medical services are concentrated.[4] Rural SA are home to 43.6% of the population, but are served by only 12% of doctors and 19% of nurses[2]. Of the 1200 medical students graduating in the country annually, only about 35 work in rural areas in the long term[2]. There are 30 generalists and 30 specialists/100 000 people in urban areas, compared to an average of 13 generalists and two specialists/100 000 people in rural areas[5]. The question arises whether the poorer access to particularly specialist services is a contributing factor towards poorer outcomes.

Specialist outreach to rural communities is one way of improving access to care[1]. In the Eden and Central-Karoo districts of the Western Cape of SA there are one level 2 (regional) hospital and ten level 1 (district) hospitals. All clinical disciplines reach out, with varying frequencies. On average, the four main district hospitals receive 17 specialist outreach visits per month; while the smaller district hospitals receive three specialist visits per month (Appendix 1). A typical outreach visit includes a problem ward round, outpatient session, theatre list for some surgical disciplines and formal/informal educational sessions.

In principle, stakeholders agree that specialist outreach and support (O&S) to rural populations is necessary, as it improves access to specialized health care services[6]. In practise however, there are factors that influence whether or not O&S reaches its goals. This in turn affects the sustainability of O&S projects. Understanding these factors would aid recommendations for a suitable model for O&S.

Literature review

O&S to rural hospitals is an important solution to increase access to specialist services for rural communities. It improves access, effectiveness, and relationships between the different levels of health care[7]. It reduces cost and pressure on hospitals, and works towards community based care[7].

Shifted outpatient styles of outreach focus only on service delivery, and improve access, but does not impact on health outcomes[7]. A multifaceted outreach service that focuses on capacity building as

well as service delivery improves outcomes and efficiency, while reducing use of inpatient services[7]. For the purpose of this study O&S will refer to a multifaceted outreach service. Capacity building includes the transfer of knowledge and skills, as well as developing and maintaining co-dependant support systems between district and regional health care systems.

O&S reduces cost to the patient by 19%, and reduces time wasted by the patient[7]. It increases attendance of booked appointments, patient satisfaction, and leads to more guideline consistent care. It is unclear whether outreach reduces radiology and laboratory costs, but it reduces outpatient treatment modalities and admissions for inpatient treatment[7].

Although it is unclear whether O&S is more or less costly, a multifaceted outreach intervention was shown to be 7.4% more cost-effective than usual care when health outcomes are considered[7].

Most research on specialist outreach has been done in urban settings using the shifted outpatients' model, where the benefits were little[7]. There is little available research for the effect of specialist outreach to rural communities, where the greater benefit is expected[7].

Specialists' opinion towards outreach differs, some criticizing inefficient use of scarce specialist resources, others praising its effectiveness[7]. Many health care providers fail to appreciate that health care is delivered within a mutually dependant system. Specialists are dependent on a functional primary care service to protect them from inappropriate problems and to provide a step-down facility in order to allow them to meet their objectives. Developing and strengthening primary care services is a critical step in securing accessible specialist services. A close relationship between components of the health system and a well-functioning referral system, with clear referral criteria is the key to achieving equity in access to appropriate levels of care. There also needs to be a shift from movement of patients to the movement of capacity and resources within the health system[1].

Outreach that is sustainable, properly organized, relevant to local needs and has an adequate specialist base can integrate and support secondary and primary health care, thus benefitting rural communities[7]. Poorly planned and conducted outreach can draw resources away from primary health care[7, 8].

In the Western Cape the primary objective of outreach is to ensure that patient care is of the highest quality within the available resources[6]. Responsibilities of visiting specialists in SA include:

- Ward rounds
- Outpatient clinics
- Surgical procedures
- Morbidity and Mortality meetings and other measures to evaluate quality of care
- Educational meetings
- Development of guidelines and protocols with in-service training on these[6, 9, 10].

Other responsibilities that can be included are professional/personal and managerial support.[1, 9, 10]

O&S services in rural SA should focus on empowerment and relationship building with local doctors, rather than service delivery. It should be regular, sustainable and linked to continual professional development .[11]

Commonly encountered problems by specialists are poor planning, rapid turnover of district hospital staff, unavailability of essential equipment or drugs and inadequate preparation of patients for surgery. Resistance to change and limited teaching opportunities due to work pressure or indifference are also problematic.[11]

As the district hospital work has to continue despite the specialist visit, O&S can create tension between service and teaching needs. Specialists sometimes are unaware of this disruption and have unreasonable demands.[11]

It has been recommended that outreaching specialists should have the correct attitude and be able to adapt to rural conditions, without compromising essentials[11]. The same specialist should visit a specific hospital on a regular basis. Teaching should focus on common conditions. Protocols for managing these conditions should be established in consultation with the district hospital management. Surgeons should consider the peri-operative limitations in rural hospitals and confine surgery to what local doctors can be taught to do. Furthermore, a dedicated district hospital doctor should coordinate the local practicalities and follow-up of patients seen. The rural hospital also needs to rearrange its schedule and staff for the day of outreach.[11]

There is little research on the attitudes of stakeholders in the Western Cape towards specialist outreach and support. The aim of this study was to better understand the factors associated with the success or failure of specialist outreach and support services to rural populations in the Western Cape. The objectives included reaching consensus between outreaching specialists and reaching consensus between rural district hospital doctors on the major factors influencing O&S services, and to make recommendations for the provision of O&S services to rural populations.

Methodology

Study design

The Delphi method was used to obtain consensus[12]. Specialists and district hospital doctors and nurses were asked separately to give their opinion on the major factors influencing O&S.

Setting

The Eden and Central Karoo districts (see Figure 1) cover an area of 61573 km^2 with an estimated population of 569536[13]. It is serviced by one regional hospital in George, and ten district hospitals of varying sizes. All the hospitals are accessible by tar road; the furthest from George being Murraysburg provincial hospital at 327 km. Appendix 1 summarizes the access and referral pathways in the two districts.

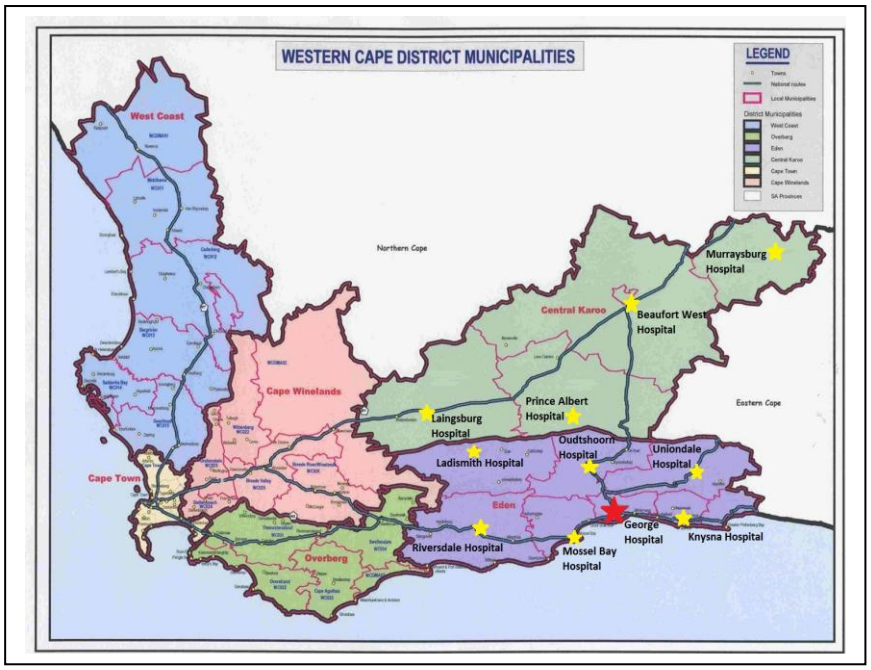

Figure1 – Map of Eden and Central Karoo districts of the Western Cape

Study population and sampling

All state specialists and specialized medical officers currently and previously involved in O&S in the two districts were invited to participate, comprising the specialist panel. Specialized medical officers refer to career medical officers in a specific department who are trusted by their heads of departments to conduct O&S visits. All hospital medical managers, clinical managers, senior doctors and senior nurses involved in O&S at Mossel Bay, Oudtshoorn, Knysna, Riversdale, Ladysmith, Beaufort West and Prince Albert district hospitals were invited to participate, comprising the district hospital panel. Panels bigger than 30 have not been shown to improve results[12]. Informed consent was obtained from all study participants.

Only O&S from level two to level one was evaluated. Outreach activities from level three to level two, and by non-medical personnel, and by private sessional specialists were excluded.

Data collection

The questionnaires (see appendix 2A to 3C) were developed from the literature and input from local and national experts, including members of the local O&S service, district health care management and academics with a special interest in O&S. Experts were consulted via telephonic interviews or email on the major factors influencing O&S services. An anonymous parallel three stage Delphi process was followed to obtain consensus. Data was collected by sending and retrieving questionnaires via email or fax. Consensus was defined as 70 % of panel members agreeing on a statement. Statements regarding O&S were made and the panel members were asked to respond to

these using a Likert scale, with the options: Agree strongly, Agree, Disagree and Disagree strongly. A neutral middle option was excluded to force panel members to choose either a positive or negative option. Panel members were also given the option to comment on each statement, and give qualitative feedback regarding other issues affecting O&S that were not covered by the statements. Statements where consensus was reached were removed from subsequent rounds.

Analysis

Nominal and ordinal data was converted into simple descriptive statistics, in consultation with the University of Stellenbosch's Centre for Statistical Consultation.

Study approval and Reporting

Ethics approval was granted by the Human Research: Ethics Committee of the University of Stellenbosch (Ref. No: S11/11/023). Permission was granted by the Research committee of the Western Cape, and district hospital management.

A report of the results will be presented to the two panels and district health and regional hospital management, with a proposed model for O&S.

Results

Twenty eight experts were invited in the specialist panel, and 31 in the district hospital panel. The distribution of the experts between the different specialist departments and district hospitals, as well as the response rates for each round, are shown in Table 1.

Table 1 - Panel composition and response rates

Specialist Departments	**Number currently involved in O&S**	**Number invited**	**Round 1 response**	**Round 2 response**	**Round 3 response**
Anaesthetics	2	2	1	1	1
Family Medicine	3	3	3	1	3
General Surgery	3	4	1	1	1
Internal Medicine	4	4	4	4	4
Obstetrics and Gynaecology	3	3	3	3	3
Ophthalmology	3	2	0	0	0
Orthopaedic Surgery	3	3	3	3	3
Paediatrics	4	4	2	2	3
Psychiatry	2	3	2	2	2
Total	**27**	**28**	**19 (67.9%)**	**17 (60.7%)**	**20 (71.4%)**

District Hospitals	Number invited	Round 1 response	Round 2 response	Round 3 response
Beaufort West	3	1	1	1
Knysna	5	5	4	5
Ladysmith	3	3	3	3
Mossel Bay	7	5	5	6
Oudtshoorn	6	4	2	5
Prince Albert	3	2	1	2
Riversdale	4	2	2	1
Total	**31**	**22 (71.0%)**	**18 (58.1%)**	**23(74.2%)**

Round I

Fifty six and 50 statements were evaluated by the specialist panel and district hospital panel respectively. Consensus was reached on eight statements in the specialist panel, and on six statements in the district hospital panel. These statements were removed from subsequent rounds. Panel members had the opportunity to comment on the statements or to suggest additional issues that needed to be explored. The remaining statements where consensus were not reached, as well as new/modified statements, were transferred to round two.

Round II

The specialist panel evaluated 54 statements during round two. These included the statements from round one where consensus was not reached, as well as four new statements that were based on comments during round one, and three confusing statements that were modified/expanded to five new statements. Consensus was reached on 29 of these statements during round two.

The district hospital panel evaluated 49 statements during round two. These included the statements from round two where consensus were not reached, as well as two new statements that were based on comments during round one, and three confusing statements that were modified/expanded to five new statements. Consensus was reached on 33 of these statements during round two.

Round III

During round three the options on the Likert scale were reduced to only ‘Agree’ and ‘Disagree’. The remaining 25 statements in the specialist panel were evaluated, and consensus was reached on 18 statements. In the district hospital panel 15 statements were evaluated and consensus was reached on five statements.

In total consensus was reached on 55 of the 62 statements in the specialist panel and on 44 of the 54 statements in the district hospital panel. (See Table 2)

Table 2 - Statements where consensus was reached (The hyphens indicate where a statement was not presented to a panel, and the statements in bold were deemed key findings)

	Specialists	District Hospitals
There is enough regional hospital management support for O&S	Agree	
There is enough district hospital management support for O&S	Agree	
The planned O&S for the week/month is discussed with all the involved staff in the specialist department	Agree	-
The planned O&S for the week/month is discussed with all the involved staff at the district hospital	-	**Disagree**
Inefficient travel arrangements (like transport, meals, accommodation) are barriers to O&S that happen frequently	Disagree	-
Travel arrangements (transport, meals and accommodation) are the responsibility of the district hospital	-	Disagree
O&S visits can be scheduled better to disrupt district hospital less	**Agree**	
If O&S visits are cancelled, it is with sufficient warning	-	Disagree
Both the specialist and district hospital should reflect on O&S encounters in a regular written report	Agree	
O&S clinics are overbooked	Disagree	-
Overbooking can be overcome by appropriate referrals and work up	Agree	-
Overbooked clinics are due to the number of patients needing specialist care	-	Agree
There is a need for more O&S visits	-	Agree
Appropriate patients are seen during O&S	Agree	-
Patients seen are over investigated prior to O&S	Disagree	-
O&S leads to fewer referrals to the regional hospital	Agree	Strongly agree
A call the day before a O&S visit to inform of the number of booked patients would be helpful	Agree	-
Patients must be discussed with the specific specialist at booking of the patient	**Agree**	
Preferred method	Email	Telephone
O&S can be more useful with more e-mail/Skype/cell phone/teleconferencing	Agree	
O&S leads to more efficient patient care	Strongly agree	
Patients seen on O&S get the same standard of care as at the specialist's base hospital	Agree	
There are enough district hospital doctors to make O&S work	**Disagree**	
There are enough specialists to make O&S work	-	Agree
Smaller hospitals generally find it more difficult to live up to the specialist's expectations.	Disagree	-
Sessional specialists should also be involved in O&S	Agree	
Allied health professionals like specialist nurses, sonographers etc. should also be involved in O&S	Agree	

	Specialists	District Hospitals
The main focus of O&S **currently is** service delivery.	Agree	-
The main focus of O&S should be capacity building.	**Agree**	
A district hospital doctor is present during most consultations	Disagree	-
Better scheduling of the day's work can allow a district hospital doctor to be present during most consultations	-	Agree
A district hospital doctor present during consultation will improve O&S	**Strongly agree**	
Doctors working in outlying primary health care clinics should also attend O&S sessions, regardless of the logistical challenges.	Agree	-
Logistical support and capacity building should be equally important reasons to have a district hospital doctor present during consultations	Agree	
It is essential for surgical specialities to do surgery while on O&S	Agree	
Surgery done should be aimed towards what district hospital doctors can be taught to do safely	Agree	
Anaesthetic and postoperative care are always considered prior to booking patients for surgery	Agree	
Patients for surgery are properly prepared	Agree	-
The necessary equipment is available for surgery	Agree	-
Patients should only be booked for theatre after discussion with the surgeon or being seen by the surgeon	Agree	-
Most of the expected investigations are available at district hospital level	Agree	-
Medication prescribed by specialists are generally available at the district hospital	Agree	
A ward round seeing problem patients as well as random patients will be more helpful than seeing only problem patients	Agree	
Protocols for the management of common conditions are available	Agree	
The above protocols are helpful	-	Agree
Patients seen during O&S are generally sorted out sooner	Agree	-
Specialists regularly attend morbidity and mortality meetings at district hospital	Disagree	
The morbidity and mortality meetings influence quality of care	Agree	
A specific specialist should be connected to a specific district hospital	**Agree**	
Most specialists have the correct personality for O&S (ie. attitude, motivation, adaptability)	Agree	-
Exchange between district hospital doctors and regional hospital doctors for one/two weeks will aid understanding of each other's context, etc.	Strongly agree	Agree
A district wide clinical day once or twice a year, for regional and district doctors to interact, will be good to share clinical and operational experiences	Agree	
O&S leads to easier referral up and down the referral chain due to better relationships	Strongly agree	Agree
Constructive feedback on the quality of all referrals to specialist care will be helpful	**Agree**	**Strongly agree**

	Specialists	District Hospitals
Mentoring district hospital doctors in professional issues are part of O&S	**Agree**	
There is a dedicated educational session during O&S	Agree	
These sessions are well attended	Agree	-
Educational sessions are relevant to district hospitals	-	Agree
Topics for educational sessions are known well in advance	Disagree	
District hospital doctors are generally open to advise and change	Agree	-
District hospital doctors are generally committed to O&S Outreaching specialists are generally committed to O&S	Disagree -	- Agree
District hospital doctors have unrealistic expectations of O&S Specialists have unrealistic expectations of O&S	Agree -	- Disagree
The success of O&S is context/site specific.	Agree	-
O&S is satisfying	**Agree**	

No consensus was reached on seven statements in the specialist panel, and ten statements in the district hospital panel. (See Table 3).

Table 3 - Statements where consensus were not reached

Specialists	District Hospitals
The main focus of O&S **currently is** capacity building	The main focus of O&S **currently is** capacity building
The main focus of O&S **should be** service delivery	The main focus of O&S **should be** service delivery
-	The main focus of O&S **currently is** service delivery
There is a dedicated liaison doctor at the district hospital to coordinate the O&S visit	**There is a dedicated liaison doctor at the district hospital to coordinate the O&S visit**
-	District hospital have a long-term roster of O&S dates
The referral letters are adequate if no district hospital doctor is present	Referral letters from regional hospitals to district hospitals are generally adequate
-	It is almost impossible for doctors working in outlying primary health care clinics to attend O&S sessions
Protocols are generally followed	Patients are referred according to the protocols without problems
-	Most specialists have the correct personality for O&S (ie. attitude, motivation, adaptability)
-	If O&S visits are cancelled, patients are accommodated by an extra visit or during the next O&S
There are enough specialists at regional hospital to make O&S work	-
Patients seen during O&S are not worked up appropriately	-

Discussion

The key findings (highlighted in Table 2 and 3 in bold) can roughly be grouped together in the following groups, and are interconnected to a greater or lesser degree, as shown in Figure 2:

1. Relationships
2. Communication
3. Planning
4. Service vs. Capacity building tension
5. Efficiency

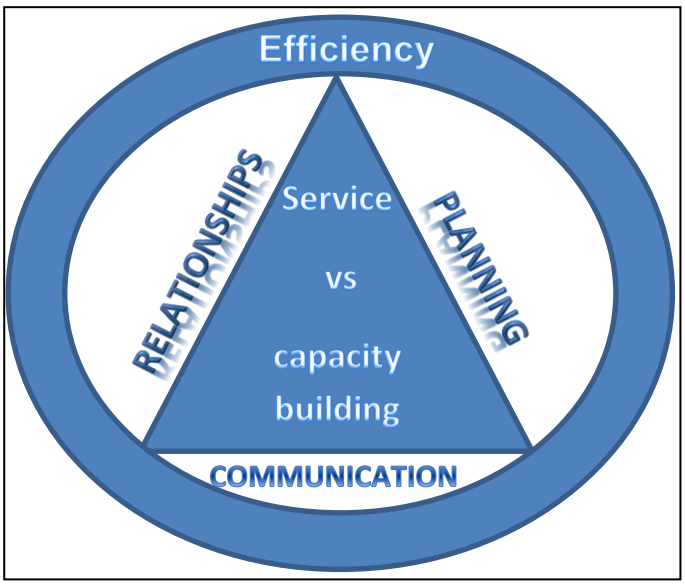

Figure 2 – Interconnection of key findings

Relationships and communication are central themes in O&S programmes[1]. Comments from the questionnaires that summarise this well are: “It’s all about relationships,” and “Communication is the key”.

Although O&S is part of the job description of regional specialists[6], it only works in an efficient way if the relational (and emotional) component of this service is recognized and prioritized. O&S generally improves relationships, but O&S that is not properly planned can draw resources away from primary health care[7] and could lead to intense frustration for the specialists or the district hospital staff. Specialists and district hospital staff should be equal partners in this relationship. It appears that specialists are generally committed to O&S and are actively involved. The commitment of the district hospital staff towards O&S is however questioned by the specialist group. Without building mutually beneficial and co-dependant relationships, O&S programmes are bound to fail, paradoxically making specialist care more inaccessible for rural patients. Suggested ways, where consensus were reached by both panels, that could encourage relationships and communication are through constructive feedback on referrals, mutual reporting on outreach, mentoring by specialists, and a combined clinical day for specialists and district doctors once or twice a year.

Communication can improve efficiency of O&S in various ways. Both groups agreed that patients should be discussed with the outreaching specialist when making an appointment for a patient[10]. Having a specific specialist visiting a specific district hospital makes this a lot easier[11]. The specialists prefer the discussion to be email based, while the district hospital group prefers it to be telephone based. The reasons mentioned for email based discussions are to keep medico-legal records and to limit interruptions during consultations. Email based discussions naturally involves the use of technology that is not always available (e.g. an internet connection or smart phone), however fax-to-email is a relatively simple solution for this problem. The reasons mentioned for telephonic discussions include it being easier, quicker, and it limits delayed/non responders. These discussions serve many purposes. Many of the patients can be managed without the specialist even seeing the patient. It also leads to fewer inappropriate referrals or ”dumping” and to more appropriate workup of

patients, which leads to less overbooked O&S clinics. It also serves as a learning opportunity, and should be seen as part of capacity building. (See appendix 4 of a typical e-mail consultation as an example). Patients consulted this way are ensured longitudinal care by the involved doctors, while the district hospital doctor are given the opportunity to develop capacity and the specialist is given logistical support by the district hospital doctor.

There was consensus that O&S is context or site specific. Comments from the participants suggest that the same district hospital might have different O&S experiences, depending on the specific specialist or speciality. An exciting prospect is the apparent openness to exchange doctors between district and regional hospitals for a week or two at a time. This will serve a dual purpose of aiding understanding of each other's context, as well as giving the doctors the opportunity to learn from each other. This will involve careful planning by midlevel and senior members of staff from both teams.

While the focus of O&S currently seems to be service delivery, it seems that most participants agree that capacity building should rather be the focus[11]. Many participants commented that the focus should be 50% service delivery and 50% capacity building. If the O&S programme in the Eden and Central Karoo districts could make the shift form a service delivery/shifted outpatients model to a multifaceted/capacity building model, the health outcomes of the patients in these rural districts could hopefully improve, as suggested in the literature[7.]

Capacity building should not only be limited to traditional lectures, but should be expanded to include bedside teaching, case based discussions, the teaching of procedural skills and mentorship in professional issues[9,10] . In order to do this, there need to be a district hospital doctor present for most of the visit. Both panels agreed that a district hospital doctor present during consultations will improve O&S. A reason often mentioned for the inability to do this, is the other responsibilities that the district hospital doctors have outside of the O&S visits, and the disruption that the O&S visit causes to the routine functioning of the district hospital[11]. One of the participants summarized the counterargument well: "O&S should be part of the basic core function of a district hospital and therefore cannot be seen as a disruption." One should be cognisant of the fact that O&S causes disruption in the regional hospital as well. Both panels agreed that the district hospital doctor presence could be improved by better scheduling of O&S visits as well as better planning of the day's work at the district hospital[11].

An alarming fact is that the district hospitals agreed that the planned O&S visits for the week or month is not discussed with the staff involved. This could be due to the fact that there might not be a dedicated liaison doctor at the district hospital to coordinate the visit. With improved planning/communication, this could be improved. If there is a long-term programme available of O&S visits and this is adhered to, the workload could be shifted to free up doctors on those days[11]. O&S visits should preferably be confined to one specialist per hospital per day, to avoid overwhelming the capacity of the district hospital. Human resources or the lack thereof, is another reason often mentioned for the lack of district hospital doctor presence. It seems as if there are not enough district hospital doctors to make O&S work properly. While it was mentioned in the district hospital group that smaller district hospitals often find it more difficult to meet the specialist's expectations, the specialists remarked that some smaller hospitals often perform the best. As it is unlikely that district hospitals will

receive extra posts to make O&S work, the old cliché of working smarter instead of harder seems to ring true in this instance.

Recommendations

The success of the O&S programme is dependent on a model that is acceptable to both the outreaching specialists and the hosting district hospital. These two groups should agree on an appropriate model that is well planned, communicated to all involved staff, and adhered to. If O&S visits are seen as a basic function of a district hospital and not as a disruption/intrusion, the perceived attitudes towards commitment might change for the better. It is therefore recommended that:

1. The main focus of O&S should be capacity building.
2. Both the specialists' and district hospitals' service commitments and constraints should be respected in the scheduling of O&S visits.
3. A long term roster for O&S should be distributed to all involved staff.
4. The O&S for the week/month should be discussed with all involved staff in the specialist department and district hospital by a dedicated person.
5. A specific specialist should be linked to a specific district hospital for an agreed period.
6. Patients should be discussed with the specific specialist prior to making an appointment – preferably via email, unless urgent, logistically impossible or agreed beforehand.
7. Specialists should respond promptly to these discussions.
8. O&S visits should be limited to one specialist per district hospital per day.
9. The district hospital workload should be managed to enable doctors to present their patients.
10. Logistical support and capacity building should be equally important reasons for district hospital doctor presence.
11. Professional relationship building and mentorship should form an integral part of the O&S visit.

Issues that could be explored in future are:

1. Seeing random inpatients as well as problem patients.
2. Exchange programmes between the district and regional hospitals.
3. Constructive feedback from all referrals to the regional hospital.
4. Involving sessional specialists and allied health professionals in O&S.

Limitations

This study was conducted in the Western Cape, which has the highest number of doctors per capita in SA.[14] Human resources influence the way in which outreach and support happens, and provinces with fewer doctors might struggle to implement the above recommendations.

Due to the relatively small pool of experts available, numerous participants from the different specialist departments and district hospitals were invited. Cross contamination of ideas were therefore possible, due to close working relationships.

Not all statements were examined by both groups. Statements where the one group directly evaluated an issue regarding the other group were not necessarily evaluated by the latter.

Conclusion

Providing O&S to rural populations remains an integral part of improving access to specialist care for rural populations. A multifaceted style of outreach remains the most effective way of providing O&S services. Due to the complex interpersonal and interprofessional dynamics between the involved parties, it is likely that there will always be the potential for conflict. With good communication, constructive feedback and improved planning relationships and efficiency may improve, which might lead to a more sustainable and mutually beneficial O&S system.

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