HEALTHCARE DELIVERY

The value of internal medicine outreach in rural KwaZulu-Natal, South Africa

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Doc Caldwell, BSc(Med), MB ChB, FCP (SA), FRCP (Lond), spent more than 25 years in private practice as a specialist physician in Pietermaritzburg, South Africa, and then took up a post at Grey's Hospital as outreach physician for internal medicine. The outreach contract has come to an end, but he has a part-time position with the School of Clinical Medicine, University of KwaZulu-Natal (UKZN), as undergraduate liaison between Pietermaritzburg and Durban. Bernhard Gaede, MB BCh, MMed (Fam Med), PhD, was recently appointed Head of the Department of Family Medicine at UKZN. Prior to this he was Director of the Centre for Rural Health at UKZN for 4 years after working for more than a decade at Emmaus Hospital in the Drakensberg. His areas of interest and research have included the healthcare system, community-level care (including home-based care and traditional medicine), human rights and medical anthropology. Recent interests include education of health professionals and establishment of a decentralised teaching platform. Colleen Aldous, PhD, is Academic Leader for Research at the School of Clinical Medicine at UKZN. She is a medical scientist with a PhD in science education and is involved in postgraduate research mentorship across several medical disciplines including surgery, orthopaedics, dermatology, paediatrics, ophthalmology, general medicine and psychology. Her own research interest is human genetics.

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Background. Sustainable multifaceted outreach is crucial when equity between specialist services available to different sections of South Africa (SA)'s population is addressed. The healthcare disadvantage for rural compared with urban populations is exemplified in KwaZulu-Natal (KZN). Outreach to rural hospitals has reduced the need for patients to undergo journeys to regional or tertiary hospitals for specialist care.

Objectives. Multifaceted outreach visits to seven district hospitals in western KZN by a specialist in the Pietermaritzburg Department of Internal Medicine were analysed for the period 2013 - 2014.

Methods. Church of Scotland, Vryheid, Dundee, Charles Johnson Memorial, Rietvlei, Estcourt and Greytown hospitals were visited. During each visit, data were collected on data collection forms, including patient numbers, gender and age, whether out- or inpatient, whether referred, and diagnostic categories.
IN PRACTICE

Results. During 113 visits, of 1,377 contacts made, 631 were outpatients and 746 were inpatients. Females formed the majority overall, but for inpatients males outnumbered females. The majority of patients were aged >40 years, but over half of inpatients seen were aged ≤40 years. A modest 15% of patients seen were referred to hospitals with specialist services. Overall, cardiovascular disease, predominantly among outpatients, was the biggest diagnostic category. Infectious diseases followed, primarily among inpatients, and then general medicine. No other category reached 10%.

Conclusions. The analysis showed differences between diagnostic categories, especially when outpatients and inpatients were separated out. Referral patterns, age-distribution and gender distinctions were made. The value of a good database was confirmed. The multifaceted outreach may have suggested useful outcomes as well as output. The vulnerability vs sustainability of outreach programmes was emphasised.
Within categories, 68/404 cardiovascular disease patients seen (17%) were referred, whereas only 4% of both infectious diseases patients (11/305) and general medicine patients (9/256) were referred. With OP dominance, cardiovascular disease referrals were 15%, and higher at 23% for IP-dominated referrals.

Diagnostic categories
Cardiovascular diseases was the biggest diagnostic category, with 404/1 377 (29%) patients. Infectious diseases patients followed with 305/1 377 (22%), then general medicine with 256/1 377 (19%). No other category reached 10% (Table 2).

There was a striking difference between diagnostic categories for OP v. IP dominance. Cardiovascular diseases represented 52% (315/609 patients seen) for the former, with only 9% (56/604) for the latter. In contrast, infectious diseases represented 38% for IP dominance (231/604), and only 5% (30/609) for OP dominance. General medicine provided 17% for OP-dominated and 20% for IP-dominated visits, and again the other diagnostic categories remained below 10% irrespective of OP or IP dominance.

Fig. 1 shows the comparison between the three major diagnostic categories for IPs, OPs and all patients.

Discussion
The outreach service to the hospitals under consideration was multifaceted in that it included interventions such as liaison with medical staff and teaching meetings as well as patient contact. Even on OP-dominated visits, the booked OP session required the presence and participation of medical officers employed at that hospital, and was therefore not simply a specialist OP clinic held in a peripheral hospital. The question is whether such specialist outreach was sustainable and of value to the recipient hospital.

Although female medical wards in KZN district hospitals regularly appear more fully occupied than male wards, gender predominance elsewhere in Africa is variable. In this study, where the overall predominance in the wards and OP clinic was female, the opposite was noted for the IP-dominated group. However, this may be an artificial representation depending on the preparedness of a particular ward for the outreach visit. For example, at one of the hospitals (111:73 male/female), the male medical ward was usually better prepared for the visit, and the male
tuberculosis (TB) ward invariably added five or six patients per visit. At another, there were invariably additional patients in the male surgical ward with medical problems that were discussed. The gender pattern was therefore more likely to reflect the referral choice of the on-site doctors rather than the burden of disease or the population distribution in rural areas, for IPs at least.

With regard to age range, the data confirmed that IPs included a large proportion of young patients, <40 years old, with many under 25, because of communicable diseases. In contrast, a booked OP clinic which largely excluded communicable disease reflected the prominence of degenerative diseases and a preponderance of a population aged >40 years. Again, however, the bookings were determined by the local doctors and did not necessarily reflect the population distribution of diseases.

The pattern of referrals illustrated primarily that outreach facilitated the referral of patients to further specialist-level care. Overall, 15% of all patients seen were recommended for such referral. The variation in referral pattern between OP- and IP-dominant or diagnostic groups was small, ranging from 12% to 17%. There was also indication that it was only this minority of patients that was referred, so that the majority continued to be managed at the base hospital, with advice given as to further appropriate treatment.

This was of relevance to cardiology, since there was a preponderance of patients with cardiovascular disease seen, particularly in the OP setting. Only 17% of such patients required subspecialist referral, whereas without the outreach service many more of these patients might have been referred, resulting in overcrowding of the cardiology clinic at the receiving hospital. Therefore, even if only half of the patients seen by the outreach physician had otherwise been referred directly to cardiology, the outreach visit would have saved more than 40% of such referrals. Future studies to assess the outcomes of patients referred for further regional or tertiary care will be important in measuring the contribution of a competent specialist opinion towards overall patient care and health system functioning.

With regard to diagnostic categories, the data collection sheets used on each hospital visit were detailed enough to afford easy categorisation of patients according to subspeciality. The criterion used was to which subspecialty a patient would belong if referral were required. An option might arise where more than one such subspecialty was involved; here, the dominant symptoms might prevail, or such a patient could be categorised into the general medicine group. A subspecialty that may have received slight over-representation was cardiology, where less specific symptoms and signs, such as palpitations and hypertension, could result in allocation to the cardiovascular diseases category.

The results confirmed that there was a different patient population in a booked OP setting compared with those IPs seen as part of a ‘problem’ ward round. As expected, more than a third of the latter fell into the infectious diseases category, where HIV disease and TB predominated. Many other patients in the ward would also belong to the same category; the outreach physician was only seeing those perceived to be presenting management problems. The booked OP clinics, however, were probably little different from unselected medical OP clinics around the world: the gender pattern was therefore more likely to reflect the referral choice of the on-site doctors rather than the burden of disease or the population distribution in rural areas, for IPs at least.

The data collected did not quantify the outcomes of changes in behaviour by the recipient doctors or by the visiting consultant in response to the input. While this is an important component of a multifaceted outreach service (beyond offering a specialist service at a different location), it is much harder to measure and requires further investigation.

This study, like other SA studies, has attempted to show that multifaceted outreach may be beneficial for recipient hospitals, their patients and their personnel. In KZN, a province that has a transport agreement between its Department of Health and the AMS, such specialist outreach would be at its most productive when conducted by as many disciplines as possible, in all its health areas, as part of routine health systems functioning.

However, outreach programmes are fragile. For example, if the transport contract in KZN were not to be renewed, the service might collapse. Studies have emphasised the need for sustainability of multifaceted outreach programmes in order for them to remain effective in the long term. Regular visits with meticulous data recording and subsequent analysis may be an important contribution to such sustainability.

Conclusion

The study provided interesting comparisons between diagnostic categories, both overall and when OPs and IPs were separated out. Insight was obtained into referral patterns, and age-distribution and gender distinctions were also made. The value of a comprehensive and carefully maintained database was confirmed. As a result of internal medicine outreach, many rural patients received a specialist opinion and referrals were either facilitated or obviated, suggesting useful outcomes for these patients. Further investigations with follow-up on individual patient progress and referrals are required to understand the patient flows and outcomes more comprehensively.

The role of multifaceted outreach in increasing the access to specialist healthcare by impoverished rural populations and the ability to sustain such programmes is emphasised.


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