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Community/Hospital Indicators in South African Public Sector Mental Health Services

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Abstract

Background: The need to balance resources between community and hospital-based mental health services in the post-deinstitutionalisation era has been well-documented. However, few indicators have been developed to monitor the relationship between community and hospital services, in either developed or developing countries. There is a particular need for such indicators in the South African context, with its history of inequitable services based in custodial institutions under apartheid, and a new policy that proposes the development of more equitable community-based care. Indicators are needed to measure the distribution of resources and the relative utilisation of community and hospital-based services during the reform process. These indicators are potentially useful for assessing the implementation of policy objectives over time.

Aims of the Study: To develop and document community/hospital indicators in public sector mental health services in South Africa.

Methods: A questionnaire was distributed to provincial mental health coordinators requesting numbers of full-time equivalent (FTE) staff who provide mental health care at all service levels, annual patient admissions to hospitals and annual patient attendances at ambulatory care facilities. The information was supplemented by consultations with mental health coordinators in each of the 9 provinces. Population data were obtained from preliminary findings of the 1996 census. The community/hospital indicator measuring staff distribution was defined as the ratio of staff employed in community settings to all staff, expressed as a percentage. The community/hospital indicator measuring patient service utilisation was defined as the ratio of the annual ambulatory care attendance rate per 100 000 population to the sum of this rate and the annual hospital admission rate per 100 000 population, expressed as a percentage.

Results: Of psychiatric public sector staff, 25% are located in community settings in South Africa (provincial range: 11-70%). If hospital outpatient services are included in the definition of ''hospital'', this figure is reduced to 17% (provincial range: 3-56%). In terms of service utilisation, 66% of patient contacts with mental health services occur through ambulatory care services in South Africa (provincial range: 44-93%).

Discussion: Community/hospital staff distribution indicates an overemphasis on centralised hospital-based care in most provinces and inadequate hospital care in certain provinces. Patterns of patient service utilisation indicate an over-reliance on central hospital-based services and substantial unmet need. The findings draw attention to problems in information systems for mental health care in South Africa.

Implications for Health Policies: The community/hospital indicators developed for this study form a useful measure for assessing the implementation of mental health policy over time. For the South African context, the community/hospital indicators are a measure of the extent of resource redistribution from hospital to community services and changing patterns of service utilisation over time. Currently, patterns of resource distribution and service utilisation are inconsistent with government policy.

Implications for Further Research: Further research is needed into the development of mental health information systems, refining service indicators and improving methodologies for assessing the implementation of mental health policies in service delivery.

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Introduction

The need to balance resources between community and hospital-based services in the post-deinstitutionalisation era has been well-documented.[1-5] Indeed, many studies have demonstrated the essential interdependence of hospital and community services.[6-8] Hospital beds cannot simply be reduced as a panacea for an appropriate balance in mental health care when there is significant unmet need for services in the community.[9] Patients with severe psychiatric conditions (SPC) make use of both hospital and community services. In settings where downscaling of psychiatric institutions has not been matched with the development of community services, patients are frequently readmitted to hospitals in what has been called a ''revolving door'' pattern of care, because services are not able to provide them with adequate care in the community.[10-11]

In spite of these findings, few indicators have been developed to monitor the relationship between community and hospital services, in either developed or developing

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countries. Several authors have highlighted the difficulty of measuring the relative need for community and hospital services,[12] and the cost of each.[13] Difficulties include problems of definition, measuring the outcome benefits of hospital versus community services, and the many variables involved in costing, particularly in the long term.

Nevertheless, it is possible to develop indicators which measure the relationship between community and hospital services. First, indicators can be found which measure the relative *utilisation* of hospital and community services by service users or patients. Second, input indicators, such as those which measure human resources, provide some information on the *resources* available for community and hospital-based care. The advantages of these community/hospital indicators are twofold: (i) they can be used to document the progress of deinstitutionalisation or the development of community services over *time*; (ii) community/hospital indicators can be compared across *regions*, providing a summary of the relative emphasis a regional service places on hospital or community services. These indicators would therefore provide useful measures for understanding the relationship between community and hospital-based care and monitoring service development.

This is particularly important in post-apartheid South Africa, which has inherited a fragmented, under-resourced and inequitable public sector mental health service.[14] In the past, mental health care has been heavily reliant on chronic custodial treatment in large centralised institutions.[15] Those mental health resources which did exist tended to be concentrated in urban areas[16] and follow patterns delineated by the racial segregation and inequities of apartheid.[17] In 1997, new mental health policy was introduced, which emphasised the downscaling of chronic custodial institutions and the development of community-based mental health care.[18] In this context, it is particularly important to provide a review of current mental health services and the relative distribution between community and hospital-based care. This could form a baseline against which future studies could be conducted to assess the implementation of the new mental health policy.

This cross-sectional survey reports the first set of community/hospital indicators in public sector mental health care in South Africa.

Methods

A questionnaire was distributed to provincial mental health coordinators requesting information on numbers of psychiatric staff in all levels of public sector health care, psychiatric patient attendances at all ambulatory care services and admissions to all mental health inpatient facilities during 1997. The information from the questionnaire was supplemented by face-to-face consultations with mental health coordinators during two-day workshops in each of the 9 provinces. In addition to gathering missing information from the questionnaires, the workshops provided informal qualitative data regarding provincial mental health services. The workshops were also used to consult with a range of stakeholders about norms and standards for the care of people with severe psychiatric conditions in South Africa. The provincial mental health coordinators are mental health professionals with a range of qualifications, and include psychiatric nurses, psychiatrists, medical doctors and clinical psychologists.

Consultation with provincial services revealed some disagreement among provincial services over the definitions of the terms ''hospital'' and ''community''.[19] There was consensus around two issues. First, that hospital services include all inpatient psychiatric facilities (i.e., beds with professional staff on duty for 24 hours per day) found in secondary (district) general hospitals, tertiary general hospitals and specialist psychiatric institutions. Second, that community services include all psychiatric residential care outside of hospital settings (such as group homes, staffed hostels and staffed care homes) as well as services offered at primary health care (PHC) level (such as clinics and community health centres (CHCs)).

However, there were two bodies of opinion concerning whether community services should include outpatient services (OPD) offered at hospitals such as secondary general hospitals, tertiary general hospitals, and specialist psychiatric institutions. In this study we have not attempted to resolve this debate but have employed two definitions of hospital and community services, in an attempt to accommodate both points of view. In Definition 1, outpatient services at hospitals are included as community services. Proponents of this definition argue that this definition is consistent with one of the uses of a community/hospital indicator, namely to monitor the progress of deinstitutionalisation. If hospital outpatient services were not included in community services, the argument ran, the shift from the treatment of patients in inpatient psychiatric facilities to outpatient settings (whether in hospital or not) would not be measured. In Definition 2, outpatient services at hospitals are not included as community services, but rather as hospital services. Supporters of this definition point out that it is unusual for community services to include hospital facilities of any kind, and that OPD staff are usually included on hospital establishments.

There is little precedent for what measures could be used to monitor the relationship between community and hospital services. Two key components are staff, as input indicators and patient utilisation as process indicators.[20-22] The following formulae were developed to measure these relationships.

The indicator measuring *staff distribution* is defined as the ratio of staff employed in community settings to all staff, expressed as a percentage:

$$\text{community/hospital indicator (staff)} = \frac{\text{No. of community staff} \times 100}{\text{No. of comm. staff + no. of hospital staff}}$$

Public sector mental health staff include general nurses, who may provide some mental health care as part of an integrated service; psychiatric nurses; psychiatric social workers; occupational therapists; occupational therapy assistants; clinical psychologists; medical doctors and psychiatrists. In

South African mental health services, some staff are likely to work in both community and hospital settings. This problem was addressed by using the concept of ''Full-time equivalent'' (FTE) staff in the questionnaire. For example, if a psychiatrist spent 25% of his/her time in community settings and 75% of his/her time in hospital settings, then s/he was a 0.25 FTE community psychiatrist and a 0.75 FTE hospital psychiatrist. However, whether the questionnaire was completed accurately using this method cannot be controlled, and this needs to be noted as a limitation of the study.

The indicator measuring *patient service utilisation* is defined as the ratio of the annual ambulatory care attendance rate per 100 000 population to the sum of this rate and the annual hospital admission rate per 100 000 population, expressed as a percentage:

$$\text{community/hospital ratio (patients)} = \frac{\text{ambulatory care attendance rate} \times 100}{\text{ambulatory care attendance rate} + \text{admission rate}}$$

The expression of these relationships as a percentage was thought to be more readily understandable by service planners and providers.

Results

The results indicate that 25% of psychiatric public sector staff are located in community settings in South Africa (**Table 1**). If hospital outpatient services are included in the definition of ''hospital'', this figure is reduced to 17%. There is wide variability between provinces. In most provinces, the majority of staff remain in hospital settings, with the Eastern Cape and KwaZulu-Natal reporting that as little as 3% and 5% of staff are located in community settings, respectively. There are exceptions to this trend, for example North West province, where as many as 70% of staff are located in community settings.

In certain provinces, such as the Eastern Cape and KwaZulu-Natal, there is a large discrepancy between the ratio for Definition 1 and that for Definition 2. In the Eastern Cape, for example, the ratio drops from 18% to 3% when staff from hospital OPDs are defined as rendering a hospital rather than community-based service.

In terms of service utilisation, the results indicate that 66% of patient contacts with mental health services occur through ambulatory care services in South Africa (**Table 2**). This means that approximately one third (34%) of patient contact with services takes the form of hospital admissions. In some provinces, such as KwaZulu-Natal (44%) there appear to be more hospital admissions than outpatient attendances per year. In remote rural provinces, such as the Northern Cape, the vast majority (93%) of patient service contacts occur through ambulatory care services.

Apart from the outlying figures for Northern Cape (93%) and KwaZulu-Natal (44%), most provinces fall within a relatively limited range of 60-78%. However, there is considerable variability between provinces for each numerator and denominator. For example, the annual ambulatory attendance rate ranges from 101 per 100 000 in KwaZulu-Natal to 458 in the Western Cape, and the annual hospital admission rate from 33 per 100 000 in the Northern Cape to 300 in the Western Cape.

Discussion

On a general level, the results indicate that public sector mental health staff in South Africa tend to be concentrated in hospital settings. Contrary to current mental health policy, which emphasises the development of community-based services,[18] staffing distribution appears to still labour under the legacy of hospital-based care.

There are exceptions to this general trend. The relatively high community/hospital indicators for staff in Mpumalanga (55%) and North West (70%) support the evidence reported elsewhere that hospital services are severely underdeveloped in these provinces.[19,23,24] While there is a general trend internationally towards deinstitutionalisation, there is evidence that the success of this process hinges on an optimum balance between community services and a core of appropriate and well-functioning hospital services.[25-27] The high community/hospital ratios in these two provinces indicate that the balance is not favourable for a successful deinstitutionalisation programme and that the priority lies with the development of appropriate hospital facilities.

The large discrepancies between Definition 1 and 2 in certain provinces reveal some of the resource distribution problems in these services. In provinces with relatively well-developed hospital services such as the Eastern Cape and KwaZulu-Natal, there appears to be a tendency to retain staff in hospital establishments. Thus ''community'' staff, in terms of Definition 1, are often still retained within hospital establishments. These hospital establishments tend to be urban and central. This reflects a tendency for mental health services in these provinces to cater largely for the needs of the urban inpatient population rather than the rural ambulatory population.

These patterns point to the need for improved parity in the distribution of services between hospital and community-based care. While some provinces, particularly Mpumalanga and North West, urgently need to develop basic inpatient care, others such as the Western Cape, Eastern Cape and KwaZulu-Natal need to involve their hospital-based staff in the support and training of staff in the community, particularly at PHC level. PHC staff in rural areas are especially in need of such support and training. This would increase the number of patients who could be managed at PHC level, thus reducing the proportion that are referred for admission to central psychiatric institutions.

The findings for patient service utilisation clearly show that the emphasis remains on hospital-based forms of treatment in South African mental health services. Once again, this runs contrary to current policy that emphasises the development of community-based mental health services. It also runs contrary to *prima facie* assumptions about the nature of admissions and outpatient contacts. Hospital admissions are generally longer in duration than outpatient contacts and more expensive. One

Table 1. Community/Hospital Indicators* for Staff in South African Mental Health Services.

Province	Number of staff			Number of staff		
	Community: Hosp. OPD plus Clinics plus CHCs	Hospital: Inpatients only	Ratio 1 (%)**	Community: Clinics plus CHCs	Hospital: Inpatients plus Hospital OPDs	Ratio 2 (%)**
Gauteng	293	1585	16	207	1671	11
Limpopo	564	741	43	457	848	35
Mpumalanga	164	134	55	129	169	43
North West	301	131	70	241	191	56
Free State	36	288	11	28	296	9
Northern Cape	14	28	34	13	29	31
Eastern Cape	155	704	18	22	837	3
Western Cape	185	832	18	79	938	8
KwaZulu-Natal	163	1051	13	66	1148	5
Total ***	1876	5494	25	1242	6127	17

Note: * Indicators are calculated as community ÷ (community + hospital), and expressed as a percentage.
** Ratio 1 is based on Definition 1 of community and hospital services, and Ratio 2 is based on Definition 2. See text for definitions and discussions of Definition 1 and Definition 2.
*** Total national community/hospital ratios are reported, not means for the provinces, because of the uneven weighting of the denominator population per province.

Table 2. Community/Hospital Indicators for Patients in South African Mental Health Services.

Province	Community Annual ambulatory care patient attendances per 100 000 population	Hospital Annual hospital admission rate per 100 000 population	Indicator* (%)
Gauteng	411	227	64
Limpopo	172	100	63
Mpumalanga	238	87	73
North-West	226	87	72
Free State	160	70	70
N. Cape	454	33	93
E. Cape	448	123	78
W. Cape	458	300	60
KZN	101	131	44
Total	296	150	66

Note: * Indicator is defined as Community, (Community + Hospital), expressed as a percentage.
** Total national community/hospital ratios are reported, not means for the provinces, because of the uneven weighting of the denominator population per province.

might therefore logically assume that numbers of outpatient contacts would generally far outnumber hospital admissions. Current patterns of mental health care appear to demonstrate the opposite in many provinces, and reflect South Africa's legacy of institutionally based care.

An exception is the high community/hospital ratio for Northern Cape (93%), which reflects low admission rates and high ambulatory attendance rates.[28] This is consistent with qualitative observations during the provincial workshops of a rural province with a low population density and a large central psychiatric institution that is difficult to reach for much of the population.

From qualitative observations of the data and personal communication from the provincial coordinator concerned, the low community/hospital ratio for KwaZulu-Natal (44%) reflects low response rates from regional health managers in providing ambulatory service data on psychiatric patient attendances.

Apart from the outlying figures for Northern Cape and KwaZulu-Natal, the community/hospital ratios for patient service utilisation in most provinces fall within a relatively limited range of 60-78%. This indicates that among most provinces there is a general trend of low outpatient attendance rates corresponding with low admission rates. This is in spite of wide variability between these provinces in admission rates and attendance rates. For example, for these provinces, the annual ambulatory attendance rate ranges from 160 per 100 000 in the Free State to 458 in the Western Cape, and the annual hospital admission rate from 70 per 100 000 in the Free State to 300 in the Western Cape.

This pattern indicates that for most provinces, low hospital service utilisation frequently corresponds with low community service utilisation. If patients are not detected in community services, they tend to be admitted less frequently, and less frequent admissions lead to less frequent community-based contacts. Conversely, as patients are detected in community services, they are admitted more readily, and as they are admitted more readily, they are referred back to community and OPD services. Low levels of service utilisation may also be due to the extensive use of traditional healers and other alternative services by people with mental disorders in South Africa.

The correspondence of low hospital and community service utilisation is clearly demonstrated in Limpopo, Mpumalanga, North West, Free State, and KwaZulu-Natal. These provinces all report admission rates and ambulatory care attendance rates which both fall below the national rates. In these provinces there is therefore low utilisation of both hospital and community services, relative to other provinces. This seems to indicate a pattern of substantial unmet need in these provinces. The pattern of unmet need for mental health services is confirmed elsewhere in the South African literature,[14] in international studies[29] and in qualitative reports during the provincial consultations.

Apart from the community/hospital ratios, the ambulatory care attendance rate itself seems extremely low, relative to other estimates of utilisation rates in South Africa[30] and internationally.[3] In guidelines for PHC services, Rispel *et al.*[30] estimate service utilisation rates for coverage of ''chronic psychiatry'' with a minimum of 0.04 and full coverage of 0.16. Converting the low and high attendance rates for KwaZulu-Natal and the Western Cape to service utilisation rates, yields figures of 0.012 and 0.055 respectively. The Western Cape's high utilisation rate is comparable to the figure of 0.04 for minimum coverage of ''chronic psychiatry'', but well below the full coverage figure of 0.16. The lowest figure for KwaZulu-Natal appears to bare little relation to even the minimum coverage estimate. All these utilisation rates are substantially below the WHO's utilisation estimates of 0.44.[3]

The low ambulatory care attendance rate can be attributed at least partially to low detection in community services; inadequate information systems for monitoring patients who do use mental health services; and an overemphasis on hospital-based treatment.

It is also important to note the limitations of the data received from the provinces. Questionnaires were completed by all provinces. However, there was variability between provinces in the quality of data provided. It is difficult to estimate the extent of missing data, as a study of this nature had not previously been undertaken. What is clear is that there was no systematic bias across all provinces, as some provinces, notably Gauteng, produced good quality data for both community and hospital-based services. A case could be made that community-based staff and service utilisation were under-reported in those provinces where data was of poor quality (notably KwaZulu-Natal), as the information systems in hospital services are likely to be more reliable. Information systems have not yet been developed in most provinces to measure community-based mental health activities, particularly at primary care level. However, this does not necessarily mean that community-based services exist and that the community/hospital ratios reported here are an under-representation of community-based mental health care. Because of the lack of data, and the lack of previous studies it is difficult to draw clear conclusions. However, the limitations of the data quality need to be noted.

Conclusions

The findings of this study indicate problems in human resource distribution, with certain provinces providing inadequate hospital care, and others continuing to retain the focus of care in centralised hospitals. Generally the trend appears to remain one in which staff are located in hospital-based services. This is contrary to current policy. Similarly, service utilisation patterns indicate a strong emphasis on hospital-based care, in spite of current policy that emphasises the need to develop community-based mental health care. There is also evidence of substantial unmet need in some provinces, and problems with information gathering in the provision of ambulatory care. Patterns of community/hospital staff distribution and service utilisation by patients are likely to change with planned downscaling of institutions,[18] rationalisation, increased detection of patients and development of information systems. Community/hospital indicators, as described in this study, provide a useful indicator for monitoring patterns of service development over time, while highlighting resource and distribution problems between provinces. There is a need to continue to monitor the relationship between hospital and community-based services during planned service changes.

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