Rapid assessment of two primary health clinics: Are we ready for National Health Insurance?

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Background. Healthcare service delivery remains a challenge in most primary healthcare (PHC) facilities across South Africa (SA). In addition, the healthcare system continues to have high and rising costs, with widening gaps in quality, equity and access. The National Department of Health (NDoH) launched the National Health Insurance (NHI) pilot programme in 2012 as the solution to the current ailing health system. The NDoH's strategy is to improve all PHC facilities to meet the standards of an 'ideal clinic' (IC) in order to improve access to quality health services.
Objectives. To assess the challenges experienced by two NHI pilot clinics in the provision of healthcare.
Methods. A descriptive cross-sectional study was done in a province in SA, at two NHI pilot clinics. Data were collected using structured questionnaires that used the component elements of the IC model framework. Data were captured in Excel, and analysed using Stata 13 software.
Results. Forty-six clinical and administrative staff participated in the study. The majority (84%, *n*=38) of participants were female. Clinic A had not been designated as an IC. There was no statistically significant difference ($p>0.05$) between the two clinics in their global self-scoring regarding service provision. Human resources and medicine supply shortages were reported as challenges affecting service provision. All (100%, *n*=22) clinic A participants reported not having a doctor, while 82% (*n*=18) reported not having a pharmacist. Clinic B had IC status, and all the participants (100%, *n*=24) confirmed the availability of the doctor, while 88% (*n*=21) reported the availability of a pharmacist. The clinics reported a range of 5 - 180 minutes of patient waiting time after triaging; however, there was no statistically significant difference found in the patient waiting times between the two clinics ($p=0.96$).
Conclusion. Both clinics are NHI pilot clinics, yet there are reported disparities regarding the equity of resources, which could affect effective service provision. Both clinics should have been operating at a similar standard under the NHI pilot programme.

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The South African (SA) healthcare system is noted for reports of poor service provision in public facilities. It also has high and rising healthcare costs with gaps in quality, equity and access.[1] According to the World Health Organization, there are no universal models for good service delivery, but there are some well-established requirements.[2] Effective service provision requires skilled staff working with the right medicines and equipment, and with adequate financing.[2]

The public sector spending on healthcare in SA comprises less than half of the country's total health expenditure, while the sector provides services to 68% of the population who cannot afford private healthcare or insurance, spending about ZAR1 900 per person per year in the process.[3] Sixteen percent of the population rely on the public sector for hospital care, but use the private sector for primary care services, paying out of pocket.[3] Another 16% of the population are insured, and use private doctors and hospitals, a sector that employs ~70% of all doctors.[3] It is within this context of high patient numbers, relative underfunding and poor resources that finding ways to improve quality, reduce waste, improve service provision and ensure value in the public sector becomes critical.[3]

The National Department of Health (NDoH) launched the National Health Insurance (NHI) pilot programme in 2012 as one potential solution to the current ailing health system. The second phase of the programme is currently underway in selected districts. Improving access and affordability in the public sector does not necessarily improve the efficiency and quality of the services provided; however, identifying opportunities to improve service provision using existing resources could ultimately improve the health outcomes of the population.[4]

The NHI pilot projects are aimed at re-engineering the primary healthcare (PHC) system and improving the publically funded PHC clinics according to the model of an 'ideal clinic' (IC). An IC is described as a clinic with good infrastructure, adequate staff, adequate medicines and supplies, good administrative processes and adequate bulk supplies, and that uses applicable clinical policies, protocols and guidelines, as well as having

partner and stakeholder support, to ensure the provision of quality healthcare services.[4] The IC programme is an initiative of the NDoH that provides a path to systematically improving and correcting deficiencies in the public PHC clinics in preparation for the NHI environment.[5] The central and key focus of the IC is integrated clinical services management, which is a health system-strengthening model that builds on the strength of other programmes, such as those for HIV and TB, in order to deliver an integrated healthcare service to patients with common chronic and acute diseases, or who are referred by preventative services.[5] In order to obtain IC status, a facility must score a minimum of 100% for elements weighted as 'vital', 70% for elements weighted as 'essential' and 64% for elements weighted as 'important'.[5] A facility can therefore achieve a high average score (70 – 99%), but still fail to obtain IC status.[5]

Fiscal crises in advanced economies and overextended governments in low- and middle-income economies make the delivery of quality healthcare a concern, as acquiring additional financial resources from internal or external sources is unlikely.[6] It is therefore key that the use of the currently available resources is monitored.[7]

This study explored the challenges regarding service provision inputs experienced in two NHI pilot clinics.

Methods

Study design, setting and sampling

A descriptive cross-sectional study was done. The study took place at two sites: a township (clinic A) and a suburban clinic (clinic B), both in the same district. No sampling frame was used to select the clinics. Clinic A was not designated as an IC, while clinic B was. The clinics were similar in patient load, as the daily patient head count was reported as ranging between 150 and 300 in both clinics. All staff members who met the inclusion criterion (familiarity with the clinic's operational information) were invited to participate in the study. Patients, cleaners and security personnel were therefore excluded from participating in the study. The minimum sample size was calculated for a 5% margin of error and 95% confidence interval and an estimated 80% response rate. Clinic A had 40 staff members and clinic B had 38 staff members who met the inclusion criterion. Therefore the minimum sample size needed for clinic A was 36 and 35 for clinic B.

Table 1. Demographic profile of participants (*N*=46)

Variable	*n* (%)
Clinic	
A	22 (47.8)
B	24 (52.2)
Gender	
Female	39 (84.7)
Male	7 (15.3)

Table 2. Participant clinic self-scoring results*

Clinic	Average, *n* (%)	Good, *n* (%)	Excellent, *n* (%)	Total responses, *n*
Clinic A	6 (27)	10 (46)	6 (27)	22
Clinic B	3 (13)	8 (35)	12 (27)	23
Total	9 (20)	18 (40)	18 (40)	45

*Pearson χ^2=3.2016, Fisher's exact p=0.234.

Data collection, capture and analysis

A self-developed structured questionnaire, with 6 open-ended and 20 closed-ended questions, was used to collect data. The questionnaire was based on the elements of the IC framework, and included only those components that addressed service provision inputs. A pilot study to check the questionnaire for clarity was done among 15 final-year student nurses who work in similar PHC clinics in the same district. The questionnaire addressed participants' knowledge of the following: administration; patient service organisation; clinical service provision; management of patient appointments; patient waiting time, medicines and supplies; technology; and human resources. Data were collected on separate days for each clinic. All questionnaires were completed in the absence of the researcher. A dedicated sealed slot box was placed at the clinic manager's office for the collection of the completed questionnaires.

Data were captured and coded in Excel (Microsoft, USA). Categorical data such as gender were coded. Descriptive data were grouped into administration, patient service organisation, clinical service provision, management of patient appointments, patient waiting time, medicines and supplies, technology and human resources. Descriptive statistical analyses such as means and standard deviations (SDs) were performed using Stata (StataCorp, USA) version 13 software. Frequencies and percentages were calculated to demonstrate how the data were distributed, and Student's *t*-tests were used to compare the clinics.

Ethics

Ethical clearance was obtained from the Faculty of Health Sciences Research Ethics Committee of the University of Pretoria (ref. no. 382/2018). Letters of permission to conduct the study in both clinics were granted by the clinic managers. Ethical approval from the district health management and national health research database was granted before commencing. All prospective participants received a consent form and information leaflet about the study, and those who wished to participate signed a consent form prior to completing the questionnaire.

Table 3. Patient management factors

Factor	No, *n* (%)	Yes, *n* (%)	Not sure, *n* (%)	Total, *n* (%)
Triage system (*n*=43)				
Clinic A	0	11 (55)	9 (45)	20 (100)
Clinic B	2 (9)	21 (91)	0	23 (100)
Total	2 (5)	32 (74)	9 (21)	43 (100)
Patient facilitator or queue marshal (*n*=45)				
Clinic A	1 (5)	18 (85)	2 (10)	21 (100)
Clinic B	1 (4)	23 (96)	0	24 (100)
Total	2 (5)	41 (91)	2 (4)	45 (100)

Results

Seventy-one questionnaires were distributed in both clinics, and 46 were returned (65% response rate). A total of 24 staff members at clinic A participated in the study, and these included 10 nurses, 9 administrators and 1 counselling and testing staff member. Clinic B had 22 staff members, who included 9 nurses, 2 pharmacy assistants, 5 administrators and 5 counselling and testing staff members who took part in the study. The remaining participants did not disclose their job designations. The mean (SD) age of the participants was 39 (11.24) years. The majority (84%, *n*=38) of participants were female (Table 1).

Participants rated their clinics using the standard IC global self-scoring scales, and rated their clinic services as excellent. There was no statistical significant difference in the global scores between the two clinics ($p>0.05$) (Table 2).

Participants from both clinic A and clinic B reported having triaging systems in place to assist with patient movement within the clinic (Table 3). The majority (79%, *n*=19) of the staff from clinic B reported that their clinic uses both scheduled appointments and walk-in systems for patients (Table 4).

All of clinic A's participants reported that there was no doctor in the clinic, and most reported not having a pharmacist either. All of clinic B's participants confirmed the availability of a doctor, but most (88%, *n*=21) thought that there was no pharmacist at the clinic. Medicine supply shortages were reported by the majority of participants in both clinics (Table 5).

The majority of participants in both clinics reported having computers in the clinic. However, the majority of clinic B's participants (54%, *n*=13) reported that no computer training had been offered to administrators. Despite being an IC, most of clinic B's participants (70%, *n*=16) reported that the clinic does not have a patient appointment reminder system. Both clinics reported having a backup system for the storage of patients' data (Table 6).

Clinic B's participants (88%, *n*=21) indicated that their clinic uses the IC framework to monitor progress towards maintaining their IC status, and to improve performance where necessary. Both clinics reported a minimum of 5 minutes to maximum 3 hours patient waiting time between triaging and consultation. Patient waiting times were not significantly different between the two clinics (Table 7).

Table 4. Appointment type (*N*=44)

Clinic	Walk-in only, *n* (%)	Scheduled appointments only, *n* (%)	Both systems, *n* (%)	Total, *n* (%)
Clinic A	0 (0)	10 (50)	10 (50)	20 (100)
Clinic B	2 (8)	3 (13)	19 (79)	24 (100)
Total	2 (5)	13 (30)	29 (66)	44 (100)

Table 5. Essential human resources and medicines supplies

Factor	No, *n* (%)	Yes, *n* (%)	Not sure, *n* (%)	Total, *n* (%)
Doctor availability				
Clinic A	22 (100)	0 (0)	-	22
Clinic B	0.00	24 (100)	-	24
Total	22 (100)	24 (100)	-	46
Pharmacist availability				
Clinic A	18 (82)	4 (18)	-	22
Clinic B	3 (12)	21 (88)	-	24
Total	21 (100)	25 (100)	-	46
Medicines shortages				
Clinic A	0	18 (90)	2 (10)	20
Clinic B	4 (17)	19 (83)	0 (0)	23
Total	4 (9)	37 (86)	2 (10)	43

Discussion

This study did a rapid assessment of the challenges of healthcare service provision experienced in two PHC clinics. The demographic profile of the participants was largely female, and is typical of those who work at the PHC level. Participants in both clinics rated their clinics as offering excellent services to patients.

Both clinics reported having a system for scheduling patients, a triaging system and a queue marshal in place. Studies have emphasised that the effective utilisation of triaging can enhance the flow of PHC patients, and direct them immediately to the appropriate healthcare professional.[8,9] The use of a triage system in PHC facilities could be expected to decrease waiting times,[9] but this advantage was not clear in this study, as the maximum waiting time in both clinics was 180 minutes despite the triaging system, the queue marshals and the booking system.

This could prove problematic, as Motloba *et al.*[10] report that the intention of the patient to revisit or refer family to a health facility is profoundly influenced by waiting times.

Table 6. Technology-related factors

Factor	No, *n* (%)	Yes, *n* (%)	Not sure, *n* (%)	Total, *n* (%)
Computers in clinic				
Clinic A	0 (0)	17 (85)	3 (15)	20
Clinic B	1 (4)	22 (92)	1 (4)	24
Total	1 (2)	39 (89)	4 (9)	44
Computer training for administrators				
Clinic A	2 (10)	15 (71)	4 (19)	21
Clinic B	13 (54)	8 (33)	3 (13)	24
Total	15 (33)	23 (51)	7 (16)	45
Backup system or data storage (*n*=45)				
Clinic A	0 (0)	17 (77)	5 (23)	22
Clinic B	8 (35)	15 (65)	0	23
Total	8 (18)	32 (71)	5 (11)	45
Patient appointment reminder system				
Clinic A	3 (14)	16 (73)	3 (14)	22
Clinic B	16 (70)	5 (22)	2 (8)	23
Total	19 (42)	21 (47)	5 (11)	45

Table 7. Mean waiting times (min)

Clinic Name	Observations	Mean (SD)	95% CI
Clinic A	18	74.7 (77.1)	3.1 - 36.4
Clinic B	20	75.8 (65.6)	6.4 - 45.1

t=0.0444, p=0.09648

Clinic A's participants reported not having a doctor in the clinic, and the majority were of the opinion that they also did not have a pharmacist. Clinic B, with IC status, appeared to have both a doctor and a pharmacist, but it is not clear whether these categories of staff were actually available. Consistency of staff affects efficiency, and so this uncertainty is a matter for concern.[11]

Participants in both clinics reported having computers available. Although there is technology in place, only just over half of all the administrators surveyed had received computer training, and barely one-third of clinic B administrators. This reported overall low proportion of training is a concern, as technology without appropriate skills to use it is a barrier to providing effective healthcare service.[7] The proposed NHI will require the use of electronic health records to develop the efficiency metrics needed to improve service delivery.[6] The low proportion of trained staff could prove to be a substantive barrier in the long term. This low level of computer training is not what was expected for clinic B, as this clinic is an IC. Another factor noted for clinic B is that the majority of participants thought that there was no patient appointment reminder or notification system in place. This finding suggests that some participants may not be aware of the administrative processes that take place. As an IC clinic, it was expected that this clinic would make use of such a basic patient management tool. In contrast, Clinic A, which is not an IC, reported having a patient appointment reminder system. Clinic B reported using the IC framework to monitor their performance and progress, and this is evident as the clinic still had IC status for 2017/18.[5]

Economic challenges, strict budget allocations and funding shortfalls may have an impact on the effectiveness of service provision at public PHC services.[12] These challenges may affect the amount of human resources employed, supplies and infrastructure as a whole.[12] The current economic climate affects the entire health system, and restricts budget allocations. As a result, healthcare institutions restrict human resources recruitment in order to reduce expenditure. The availability of pharmacists in both clinics was not entirely clear. One reason might be that pharmacy assistants, rather than pharmacists, were employed, and participants may have been unsure how to indicate this when completing the questionnaires. The 2017 'Stop stockouts' report[13] found that only 22% of facilities across the SA provinces had pharmacists, while 44% had pharmacy assistants, and so it is more likely that pharmacy assistants were employed.[13]

Both clinics are NHI pilot clinics, and could therefore be expected to have similar status in terms of available resources; however, this was not the case. The disparities between the two could be due to one clinic being a local authority clinic (clinic B), while the other is a provincial Department of Health clinic. Another possible explanation is that it is as a result of clinic A not yet being a qualified IC, and further information is needed to understand the reasons why this should be the case.

Human resources are one of the three principal health system inputs, the other two being physical capital and consumables, such as medicine supplies and medical equipment.[14] Human resources for health can be defined as the various kinds of clinical and non-clinical staff responsible for public and individual health intervention.[14] Physical capital is essential for human resources in terms of maintaining an appropriate mix between the different types of caregivers, to ensure the system's efficiency and success.[15] If there are shortages of professional healthcare staff in PHC clinics, this could ultimately compromise the overall efficiency and quality of healthcare services. Previous studies conducted in sub-Saharan Africa have found that in SA, the number of doctors in PHC made up only 7% of the number required.[16] This general deficit might explain the lack of a doctor in one of the clinics, but it was still unexpected in an NHI pilot clinic.

Medicine supply shortages threaten healthcare efficiency and the health of the public by creating barriers to optimal care.[1] Shortages of essential medicines have been reported from high-, middle- and low-income countries, owing to their high costs.[17] The WHO framework includes access to essential medicines.[2] This study found that these two clinics face medicine stock-outs despite their NHI pilot status. The supply shortages are unlikely to be a new phenomenon, as the 'Stop Stockouts' survey reported that 16% of facilities had experienced HIV or TB medicine stock-out in a 3-month period.[13] In Mozambique, essential medicines used for chronic conditions and those conditions requiring lifelong treatment were found to be more prone to stock-outs than those used for acute conditions.[18] Results from household surveys in southern Africa provided estimates that approximately 20% of patient visits to public health facilities end with patients unable to receive medicines due to stock-outs.[17]

Study limitations

The study did not include patients, who are the intended beneficiaries of the NHI programme and could have provided their perspective on possible challenges experienced during their clinic visits. The study sample was small owing to the small staff complement and the fact that the response rate was lower than expected (65%). This lower response rate limits generalisability of the findings. Including additional NHI pilot clinics for comparison might have provided a broader view of what other staff members consider as the challenges affecting service provision. Although the data collection tool incorporated components of the IC framework, it did not explore each component in depth, owing to the limitation of the number of questions that participants could feasibly complete. As a result, this limited the results of the study.

Conclusions

This study highlights the challenges affecting service provision within two NHI pilot clinics: shortages of essential human resources; a lack of computer skills development; and medicine stock-outs. The success of the proposed NHI requires that PHC clinics ensure a new culture of organisational efficiency.[26] Part of that organisational culture is ensuring that the basics are available for use. Until that is done, the proposed NHI is unlikely to meet its mandate.

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