Strengthening the measurement of quality of care

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There is growing recognition that access to healthcare facilities is unlikely to improve health outcomes if the quality of the care provided at these facilities is inadequate. The emerging consensus on the importance of quality of health care is reflected in proposed policy reforms in South Africa, as well as in increased measurement of quality at primary health care facilities.

Through focus on clinical quality and client satisfaction, we provide a critique of current approaches used to measure quality. We argue that the measurement of quality will be strengthened by complementing current approaches with alternatives such as standardised clients and vignettes. Other alternative approaches that are also considered include health worker knowledge tests, direct observation and asking clients about the clinical dimensions of client-provider interaction. The presented alternative measures can help to overcome biases inherent in current approaches and assist in establishing a better understanding of the state of clinical quality in primary health care facilities.

More public debate is needed on meaningful, affordable and robust approaches to quality measurement. We recommend that such debates should consider and discuss the affordability, feasibility, reliability, credibility and relevance of current and alternative approaches.
Introduction

There is growing recognition that access to health facilities is unlikely to improve health outcomes if the quality of care at these facilities is inadequate.1 Increasingly, it has become clear in South Africa that reliable access to affordable public health care providers is no longer a serious constraint,2 yet health outcomes remain disappointing, with a high burden of disease3 and too many preventable deaths.4,5 South Africa’s under-performance is often attributed to the country’s high HIV burden6 and the inequitable health system,6,7 but new studies are pointing towards poor quality of care and missed opportunities at healthcare facility level as contributing factors.8,9

In South Africa, the move towards increased emphasis on quality has been reflected in recent reforms, including the National Health Insurance (NHI) plan. The White Paper on universal health coverage acknowledges concerns about the quality of care provided in the public sector and makes clear the intention to invest in quality improvement.10 Similarly, the National Development Plan identifies “quality health care for all” as a key priority for the country.11

Directly related to the overarching policy context for quality improvement is the imperative to strengthen quality measurement in South Africa.9 This is clear from a number of important policy initiatives and processes including the establishment of the Office of Health Standards Compliance (OHSC).14 The OHSC was tasked with the development of a set of National Core Standards (NCS) against which to measure and monitor the quality of care provided, with the aim of supporting the improvement of quality of care in health facilities.15 By 2011, the NCS were finalised and implementation of the standards by the OHSC had commenced.15

More recently, the Ideal Clinic Initiative was launched; it aims to provide detailed, tangible benchmarks16 for how the National Department of Health wants clinics to function and what it means to be a well-functioning clinic.16 According to the National Health Council directive, the aim is for all clinics to achieve Ideal Clinic status by April 2018.17

The renewed focus on quality also links to increasing emphasis on how monitoring and evaluation systems can reliably identify under-performing facilities or clinics that need more support.15 These policy shifts are overdue and have created a window of opportunity to debate how the elusive concept of ‘quality’ should be understood within health care and to experiment with how we can best approximate and measure it. The definition and measurement of quality is at the heart of policy debates on how we can make the health system function better to ensure that clients are respected and that avoidable mistakes and the associated negative outcomes such as injuries and deaths are reduced or eliminated altogether.

This chapter aims to contribute to the on-going discussion on how to improve the quality of care in South Africa. We critically analyse current quality measurement tools in the South African public sector, suggest alternative quality measurement tools, and make recommendations for improved quality measurement.

What does ‘quality of health care’ mean?

A significant challenge in researching the measurement of quality of health care is the lack of conceptual clarity. Indeed, as Buttell and colleagues note if “a group of healthcare professionals is asked what quality means, there may be as many definitions as people in the room”.18

In this chapter we employ the widely used definition of the Institute of Medicine (IOM), which defined quality as

the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.19

For the purposes of this chapter we selected two specific dimensions of quality, namely clinical quality and client satisfaction to examine in more depth. Clinical quality is expected to increase the likelihood of desired health outcomes.20,21 Client satisfaction can be a useful construct and measure due to its linkages to client responsiveness and client-centric care, but there is little reason to anticipate a strong correlation with clinical quality or health outcomes. However, client satisfaction is important in its own right because satisfaction serves as a mediating variable for health-seeking behaviour and adherence to treatment,22 which is expected to link to health outcomes at a population or sub-population level.

Current approaches to measuring client satisfaction and clinical quality in the public health sector

There have been few attempts at measuring clinical quality in the public sector, presumably because of the complexities of ensuring access to an unbiased and comprehensive account of the client-provider contact without distorting the interaction. Both the core standards, used by the OHSC to assess the performance of health care facilities, and the quality indicators of the Ideal Clinic Initiative, focus mainly on structural measures of quality of care, namely the nature and availability of physical, administrative and managerial infrastructure at health care facilities.23 These measures do not explicitly measure clinical quality of delivered services. While, for example, the Ideal Clinical Initiative includes client safety (clinical governance and clinical care) as one of its 10 domains,16 this is measured by focusing on the existence and availability of these protocols to staff, rather than measuring the actual implementation of these protocols.24

Data on some health outcomes are routinely collected at facility level through the District Health Information System (DHIS).25 However, these health outcomes are often too complex to interpret meaningfully without information on the underlying health needs and burden of disease of the facility’s clients.13 Additionally, outcomes tend to reflect both client factors such as early health-seeking behaviour or adherence to treatment, and provider factors such as correct diagnosis, explaining the risks of the disease and guiding the client to make the correct treatment choice. Without additional survey work, analysts and researchers cannot isolate the clinical quality-of-care component. Research that investigates the clinical quality of care in for example maternal health26 therefore supplements the analysis of individual-level health records25 with additional survey work, but such work is relatively rare.

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a Although the focus here is on quality measurement, the goal of measuring quality is to enable quality improvement, as is the case in most of the international literature.12,16

b The dashboard includes 212 elements, categorised into 10 components and 32 subcomponents.
The available measures of client satisfaction are usually generated via client-satisfaction surveys. The government’s Programme of Action serves as a recent and prominent example of the use of client-satisfaction surveys in the public health sector. The popularity of client-satisfaction surveys may be attributable to the allure of collapsing a complicated, opaque and multi-faceted health system experience into a simple indicator, and its intuitive alignment with a client-centred and client-responsive approach. In health services, the popularity of client-satisfaction or client-experience surveys may be further promoted by the absence of affordable, reliable and simple alternative indicators of facility-level clinical quality or health outputs and outcomes. However, there are several problems with the use of client-satisfaction surveys as a measure of quality of care:

- **Opacity and complexity of the concept of satisfaction:** Client satisfaction ratings are influenced by the personal preferences of the client, the client’s expectations, and the health care received. Disregard for the complexities of the concept has been described as the “single greatest flaw” in client satisfaction research.

- **Fallibility of self-reported information:** The respondent’s responsiveness to perceived social norms and time pressure can compromise the reliability of self-reported information, yet few studies critically consider these concerns.

- **Positivity bias:** The statistical distribution of client-satisfaction survey scores tends to be negatively skewed and overly positive, which could be attributed to the perceived social desirability of positive and optimistic responses.

- **Lack of a population perspective:** Non-response to surveys is often systemic, but poorly documented. It is important to note that client surveys do not provide a population perspective, but represent an optimistic picture of the general public outlook because such surveys exclude individuals who are not utilising the provider’s services.

- **Poor diagnostic tool:** Low client satisfaction may signal that a specific facility is experiencing problems, but it cannot diagnose the underlying causes of reported disappointing client experiences.

- **Weak link to health outcomes:** Client satisfaction can make a difference in terms of health-seeking behaviour. However, while client satisfaction is a necessary condition for improved health outcomes, it is not a sufficient condition. Consequently, it is not surprising that there is a lack of evidence showing significant impact of client satisfaction on health outcomes.

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**The limitations of client-satisfaction surveys**

To illustrate the limitations of client-satisfaction surveys, we examined them in more detail using analysis from the nationally representative South African General Household Surveys of 2009 and 2010. We present an argument in this section that it is plausible that these surveys may overestimate the client satisfaction of health services amongst the poor.

Our analysis showed that there is little sensitivity in the client-satisfaction scores, with close to 80% of urban public clinic clients indicating that they were either very satisfied or somewhat satisfied with the service they had received. These high satisfaction levels were reported despite 40% of this group of urban public clinic users admitting that there were problems when asked more specific questions about rude staff, drug stock-outs or long waiting times.

It is useful to make a distinction here between satisfaction reports and satisfaction ratings. Satisfaction reports consider specific and often more tangible elements of providers and health care (e.g. waiting times), while satisfaction ratings capture a personal evaluation of care that is not verifiable or observable by a third party. A satisfaction rating is more subjective, with a larger component that could be reflective of the respondent rather than the health care service. Consequently, this measure would also be more amenable to social conditioning and social desirability. This could explain the high overall satisfaction ratings we found in the General Household Surveys amidst unfavourable satisfaction reports highlighting several serious complaints about providers and the care received.

Satisfaction is a complicated concept including clinical dimensions, personal preferences and individual expectations. This is further complicated by individuals’ adjusting their expectations to match their past experiences and their circumstances. For example, clients who are accustomed to long waiting times may rate their evaluation of service differently to those who have an expectation of shorter waiting times.

Differences in expectations will therefore be reflected in clients’ interpretation and response to the subjective questions in surveys, and an identical health visit may be rated differently depending on the expectations of individual respondents. Expectations may also vary between social groups and socio-economic levels.

To illustrate this point, we analysed the health visit-satisfaction questions in the General Household Surveys of 2009 and 2010. Our analysis showed that among urban public clinic users, those in the lowest-income quintiles were less likely to report long waiting times and rude nursing staff or to express their dissatisfaction with the services they had received. Figure 1 shows the satisfaction scores after public clinic visits by per-capita expenditure group. The results suggest that the poorest 40% of public clinic visitors felt more satisfied with the care received than visitors in quintiles 3 and 4. This is contrary to intuition – it is plausible that the kink in the line graph may be generated by two counteracting relationships. The first possible relationship is between wealth and service quality: it is possible that more affluent clients actually received better health services or care when accessing public clinics. The second possible relationship is between wealth and expectations: it is possible that...
more affluent clients had higher service expectations than poorer clients, who may have been more accepting of the status quo.

**Figure 1:** Satisfaction scores after public clinic visits, by per capita expenditure group

![Graph showing satisfaction scores after public clinic visits, by per capita expenditure group.](image)


**Alternative approaches to the measurement of client satisfaction and clinical quality**

As a response to the critique of current approaches to the measurement of clinical quality and client satisfaction, we discuss alternative approaches, drawing on both established but rarely used approaches, as well as innovative approaches in the emergent academic literature.

**Measuring client satisfaction**

**Anchoring vignettes**

Anchoring vignettes describe a hypothetical person’s experience of the health system. Survey respondents are asked to rate the health system’s responsiveness (or health system experience) relative to the particular hypothetical person for a specific health system domain. Client-experience surveys can be enhanced by collecting subjective assessments of the services received, and by using more objective indicators such as vignettes to compensate for biases described earlier. Including vignettes in client-experience surveys can be a useful tool to evaluate socio-economic status (SES) differences in client satisfaction and experience across sub-groups.

Given that all persons in a survey sample are given the same hypothetical scenario to evaluate, this means the quality and condition of the hypothetical health system in the vignette is constant across individuals and sub-groups. Reporting bias can then be estimated by analysing the way that sub-groups rate the health system experiences of the hypothetical individuals in anchoring vignettes. Using various statistical techniques, anchoring vignettes are used to create a comparable scale, making sub-group analysis and comparison more viable. Respondents’ ratings reflect their view on how the person in the hypothetical vignette was treated. Using this tool, we can establish whether a specific sub-group is systematically more or less likely to overestimate or underestimate the quality of the health system’s responsiveness.69

Vignettes have been used to control for reporting bias in self-reported measures in various areas of research, including self-assessed health, economic status,50-54 economic status,50-54 and clinical practices.56

Despite the growing popularity of vignettes as a tool, there still remains scope for academic and formal evaluation of the tool’s ability to correct for reporting bias. Use of vignettes involves several stringent assumptions, which are rarely tested.57 Furthermore, vignette collection can be an onerous and data-heavy process. As a result, vignettes are often only included in surveys for a portion or sub-set of respondents53 in order to prevent survey fatigue.

**The strengths of vignettes in correcting for reporting bias**

We explored the 2008 World Health Organization’s Study on Global Ageing and Adult Health (SAGE) data for South Africa to provide evidence on how vignettes can be used to correct for reporting bias. The SAGE data contains a set of questions asking respondents who interacted with the health system about the manner and environment in which they were treated during the interaction with the system (health system responsiveness or experience).59 This innovative section of the survey allows for a separation of the client’s reported experience of the health system from his or her expectations of the system.49 This separation is accomplished in two ways: firstly, by focusing on relatively objective dimensions of client experience, such as waiting time and cleanliness and, secondly, through the use of anchoring vignettes.49

One drawback of the WHO SAGE data set is that it is a nationally representative household survey only including South Africans aged 50 years and older. The data were collected as part of a multi-country study, with the goal of studying aging populations in low- to middle-income countries. It is currently the only publicly available and reliable South African data set containing client-experience vignettes and we therefore used it here although the data are slightly dated.

Figure 2 shows the difference between self-reported client experience prior to and after controlling for reporting bias. The figure shows the percentage of clients in wealth quintile 1 (the poorest quintile) reporting moderate, poor or very poor (i.e. not good) service during their interaction with the health system, compared with clients in quintile 5 (the richest quintile). The graph shows that persons in wealth quintile 1 reported experiencing better service in terms of waiting times, privacy and cleanliness of the health system than persons in wealth quintile 5 (the richest quintile) before controlling for reporting bias (the grey bars). Once we controlled for differences in reporting bias using anchoring vignettes (the blue bars), the disparities in reported experience became positive and more pronounced: in all domains the poor (quintile 1) reported experiencing worse service than the rich (quintile 5). This confirms previous findings in the literature showing that when client-experience surveys take client responses at face value (i.e. without adjustments via anchoring vignettes) they lead to an overly positive assessment of the health-provider experience, especially among the poor and vulnerable. While we have chosen to illustrate the potential distortions in response using SES, such distortions are not limited to this sub-group.

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59 Quintile 5 forms the reference group. All responses of quintile 1 have to be interpreted relative to quintile 5.
Figure 2: Percentage of respondents in wealth quintile 1 reporting moderate to very poor outpatient health care services experiences

Source: Authors’ calculations using World Health Organization data.\textsuperscript{8,58} 

Measurement of clinical quality

Standardised or simulated client approach

A standardised (simulated) client or patient (SP) measurement approach involves the use of an actor or a community member who presents to a nurse or doctor with a set of typical symptoms that should predictably map to a set of probes, a diagnosis and treatment or next steps.\textsuperscript{1,64,65} The health situation portrayed by the actor/community member/field worker is referred to as a ‘standardised client’. This ‘client’ undertakes to present to different health providers with exactly the same opening statement, set of symptoms and life story to enable detection in variation of the quality of health providers. The SPs generally complete a survey upon exit from the provider situation to capture data on the clinical experience and questions asked by the provider.

Comparing the clinical treatment received by SPs with clinical best practices and policy protocols enables researchers to test clinical quality at facility level across a sample of SPs. While this approach is expensive, various studies have shown that it provides reliable results that do not necessarily correlate with alternative facility measures such as user satisfaction or clinical knowledge.\textsuperscript{67–69} A recent study using a sample of TB SPs in India validated quality of the data collected by showing high reliability of recall among the SPs upon exiting health care facilities. The study found only a small difference between data collected through exit interviews with the SPs (relying on memory), and data collected through voice recordings of the interactions between SPs and providers.\textsuperscript{65}

The SP method allows for the measurement of a unique and important dimension of health care. While the method is used mainly to ascertain clinical and/or process quality, it can also be used to measure staff attitudes, client responsiveness and discrimination or prejudice. This is done through the detection of variation in clinical quality across clients.

Ethics can be a major concern in SP studies. The main ethical concerns include both the risks of discovery and/or possible health risks to the SP [e.g. invasive medical procedures, unclean instruments such as thermometers], and also ethical problems concerning concealment and dishonesty towards health care workers.\textsuperscript{67} The risks to the SP can, however, be minimised by not only training and preparation, but also by deliberately picking health test cases that do not involve intrusive procedures.\textsuperscript{67} Studies that use these measurement approaches will require a waiver of informed consent at the point of interaction between the standardised client and the health care provider. However, this can be compensated for by obtaining the consent of providers a while before the standardised client arrives at their facility. Obtaining the cooperation and buy-in of providers before the study commences is one way of compensating for lack of informed consent at the point of interaction with the SP.\textsuperscript{68} This type of concealed research is referred to as ‘covert’ research and is ethically allowable if it is integral to the nature of the research question and if the research question is deemed important enough from a societal perspective.\textsuperscript{69}

The time burden on scarce nursing staff is always a concern, but a SP does not necessarily present a greater time burden than surveys that require interviews with nursing staff. Furthermore, it is generally only ethically advisable to conduct this type of research at primary health care (PHC) level. Gathering data through SPs at secondary or tertiary levels of care will potentially consume critical and life saving resources.

It has been proposed that SPs should be used in the training of South African health students\textsuperscript{70,71} as is done internationally. Currently this method is not widely used in South Africa to evaluate the quality of PHC. We were able to find only one South African study that utilised
Clinical knowledge tests

Clinical or medical vignettes can be used to measure the knowledge of frontline health care workers. Clinical vignettes use a hypothetical medical scenario involving a hypothetical client presenting with certain symptoms. To simulate an actual client interaction, the interviewer poses as the hypothetical client and the clinician is invited to proceed as she normally would, asking questions on illness history or conducting required examinations. The interviewer provides standard predetermined responses for all questions and examinations. A recorder (or second interviewer) notes the observation and provides supplementary information as required if the interviewer or test client is unable to provide additional information in response to the questions by the health care worker. The provided responses are evaluated relative to clinical best practice (protocol). Studies using clinical vignettes have been done in countries like India and Tanzania.

This process measure avoids the potential bias of client-satisfaction or experience surveys by focusing on a more objective process measure. Depending on the assessment of the health care worker’s knowledge and adherence to protocols as measured through the clinical vignette, the measure potentially also provides clear guidance on remedial action. It is, however, important to note that data collected through clinical vignettes represent a best case or upper bound scenario as the medical vignettes only measure knowledge or ‘competence’ and not actual effort.

It is useful to compare data collected from the application of health worker knowledge vignettes with data collected through a SP process. The difference between knowledge (as measured by clinical vignettes) and implementation of this knowledge (as measured through SPs) is referred to as the ‘know-do gap’. In a recent study using a sample of TB SPs in India, a large know-do gap was found in the sample of 69 providers. While 73% took the correct clinical action when presented with a potential TB client (i.e. ordering a chest radiograph or sputum test) during the vignette, only 10% did so during the real SP interactions.

Direct observation

An alternative to clinical vignettes is direct observation of health staff. With direct observation an interviewer will spend long periods of time directly observing and noting a health care worker’s interaction with clients. Detailed notes will have to be made about actual time spent with clients, all questions asked by clients, physical examinations and the prescribed course of action. Data collected through direct observation of health care workers are likely to reflect the Hawthorne effect, with health care workers adjusting their behaviour because they know that they are being observed. A further drawback with direct observation is that there may be a selection effect in terms of the type of clients examined. There is a possibility that only clients with a limited set of health conditions will present for care. This means that the observer may not be able to build a full picture of the health care worker’s competency across a number of health areas or cases. However, knowledge or clinical vignettes combined with direct observation, provides a way to ensure a more balanced case-load mix when assessing the competence of providers.

Including questions on clinical dimensions of client-provider interaction

Client-experience surveys can also be enhanced by including specific questions on symptoms experienced when care was sought, actual services received as well as the specific nature of the interaction with the health care worker (nurse or doctor). Questions can, for example, be asked about whether an HIV test was offered, whether the client’s weight and blood pressure were measured and communicated, and whether any questions were asked about medical history. A drawback of the type of data collection is that it is likely to suffer from recall bias. It is thus important that respondents be interviewed as soon as they leave health care facilities and not at a later stage. Depending on the way the question is phrased, it may also evoke social desirability bias in the respondent’s answer. Consequently, careful thought has to be given to the phrasing of the question.

Questions like these have already been incorporated into some surveys exploring care-seeking behaviour in South Africa (such as antenatal care attendance and care for a cough or possible TB symptoms). A study on the timing of the initiation of antenatal care attendance in inner-city Johannesburg found low levels of compliance with some service components that are considered antenatal care best practice in the public sector. Only 67.2% of those who attended antenatal care (n=198) reported having been informed of pregnancy danger signs, while only 59.6% reported having all routine health checks included in the survey done at the first screening visit. In a sample of Western Cape adults (n=403) who reported coughing for two or more weeks and who reported seeking help for their cough at public PHC facilities, TB testing protocol adherence was found to be weak by frontline staff. Only 68.7% of adults reported being offered a sputum test, despite the protocol within all PHC facilities requiring sputum testing for a cough with a duration of two or more weeks.

Discussion and conclusion

This chapter set out to critique current approaches to measuring clinical quality and client satisfaction in the public sector, against the backdrop of planned public-sector reform and efforts to improve quality measurement in PHC. It also outlined a number of alternatives that can complement existing methods. All of the methods outlined in this chapter can become part of an overall toolkit to measure quality of care and to triangulate between different measurement methodologies. The chapter highlights three sets of criteria to consider when making decisions about how to measure quality:
➢ **Relevance:** When considering quality indicators, it is vital to also examine linkages to health outcomes to ensure that the cost and effort of gathering and validating the data yields the expected returns in terms of improvements in health outcomes.

➢ **Reliability and credibility:** Monitoring, validation and triangulation of quality indicators is crucial to ensure credibility. Greater transparency and more independent analysis of such indicators will also help to validate and improve these quality indicators. Where government employees help to document and capture health outcomes and quality data, such responsibilities should be clearly defined and should be prominent in their performance assessments. This assures oversight and monitoring of the reliability of such data capturing.

➢ **Affordability and feasibility:** In a resource-constrained setting, the cost and time invested in gathering data will be an important consideration. The costs and value of quality indicators will have to be balanced. While SP studies are relatively expensive, the approach is unique because it allows researchers a very detailed and reliable account of the patient-provider interaction. Including vignettes into client-satisfaction surveys increases the length and therefore cost of such surveys. However, implementation can be made more feasible by including these measures for only a sub-set of the sample.

Measurement of quality, and ultimately the improvement of quality, is pivotal for ensuring that the planned health-system reforms are effective in promoting health, ensuring client safety and saving lives. It is therefore crucial that we promote continued critical reflection and debate on how to best measure quality in the public sector.
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