Baseline measures of Primary Health Care Team Functioning and overall Primary Health Care performance at Du Noon Community Health Centre

Research paper for M Med Family Medicine

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Abstract:

Background: The importance of effective team work for improving quality of care has been demonstrated consistently in research. We conducted a baseline measure of team effectiveness and a baseline measure of primary health care performance.

Aim: To improve Primary health care team effectiveness and ultimately the quality and user experience of primary care at Du Noon Community Health Centre. (CHC)

Setting: Du Noon CHC in the southern/western substructure of the Cape Town Metro district services.

Methods: A cross sectional study using a combination of Nominal Group Technique (NGT) method and a questionnaire survey to assess PHC team effectiveness and to obtain baseline measure for Primary Health Care (PHC) organisation and performance.

Results: Data from 20 providers from the primary health care team showed that the PHC team members perceived their team as a well-functioning team (70% agreement on the 7 items of the PHC team assessment tool, incorporated in the ZA PCAT. The NGT method reveals that communication and leadership are the main challenges to effective team functioning, The NGT also provides ideas on how to deal with these challenges.

Data from 110 users and 12 providers using the ZA PCAT: 18.2% of users rated first contact-access as acceptable to good; 47,3% rated ongoing care as acceptable to good. The remaining subdomains of the ZA PCAT were rated as acceptable to good by at least 65% of the users.

33% of the providers (doctors and clinical nurse practitioners) rated first contact-access as acceptable to good; 25% rated ongoing care as acceptable to good, the remaining subdomains of the ZA PCAT were rated as acceptable to good by at least 50% of providers.

First contact-access received the lowest acceptable to good score (18.2%) and comprehensiveness (service available) received the highest score (88.2%) from the users. For the providers the lowest acceptable to good score was for ongoing care (25%) and the highest acceptable to good score was for primary health care team (100%). The total primary scores are good (above 60%) for both users and providers but moderately higher for the providers.

Conclusions: How teams perceive their effectiveness can motivate them to generate ideas for improvement. There were discrepancies between ZA PCAT (PHC team functioning) results and the NGT method results. The ZA PCAT (8 pre-existing domains) baseline results show a contrast between providers' and users' perceptions of the PHC system at Du Noon consistent with the finding of the Western Cape ZA PCAT study. We encourage Du Noon CHC to use these results to improve the user experience of primary health care services there.

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DECLARATION

I SHAPI MUKIAPINI hereby declare that the work on which this dissertation is based is my original work (except where acknowledges indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university.

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Date: 03 nov.2016

INTRODUCTION AND BACKGROUND

Primary care is considered the backbone of the health system worldwide. In 1994, the Institute of Medicine (IOM), based on its first definition of 1978, redefined Primary Care as the provision of integrated, accessible health care services by clinicians who are accountable for addressing a large majority of personal healthcare needs, developing a sustained partnership with patients and practicing in the context of family and community[1].

The performance of the health system has been a major concern of policy makers for years. Over the past 25 years many countries have introduced health sector reforms with the explicit aim of improving performance. There is now an extensive literature on health reform, internationally and locally; current debates include how best to measure performance so that the impact of reforms can be assessed [2,3].

Many studies in Africa have indicated the need for primary healthcare reform, not merely to transform the health system, but also to ensure a better life for all [4]. These reforms include change in financing, privatisation, decentralisation,integration of services delivery, improvement of efficiency, equity and effectiveness of the health sector in general[4].

The advent of Family Medicine (FM) as a specialist clinical discipline in health care in Africa has highlighted the need for deeper reforms in the health system[5]. The Primafamed Network (a network of Academic Family Medicine departments in sub-Saharan Africa) during its fifth annual conference held at Victoria Falls, Zimbabwe, where participants from 20 countries convened, agreed on Primary Health Care (PHC) reforms in sub-Saharan Africa in line with the World Health Assembly resolutions, which included, "to train and retrain adequate numbers of health workers with appropriate skill-mix, including primary care nurses, midwives, allied health professionals and family physicians, able to work in a multidisciplinary context, in cooperation with non-professional community health worker, in order to respond effectively to the people's health needs"[6].

In South Africa particularly, specific legislative and policy reforms in the health sector include[7]:

- The re-engineering of PHC with the necessary strengthening of the district health system; greater emphasis on the delivery of community-based services; and a focus on the social determinants of health
- The implementation of a national health insurance (NHI) as a financing mechanism to promote universal coverage
- A renewed focus on quality assurance and improvement.

Multidisciplinary teamwork has been advocated in numerous reports, policy documents, and studies globally, as a way to provide high quality and efficient health and social care to a population[8]**.** The best and most cost-effective outcomes for patients and clients are achieved when professionals work together and generate innovation to ensure progress in practice and

service as stated by Borill, Carletta, Carter et al., in their report on the effectiveness of health care teams in the national health service in the UK.[8]

A well-functioning PHC team is essential for a more patient-centred, coordinated and effective healthcare delivery system[9]. Assessing PHC team functioning is therefore important in order to improve team effectiveness. Primary care has evolved over the years from a solo practitioner model where one practitioner provides care to the patient, to a team model where more than one category of health worker is involved in the care of a patient[10]. With the advent of new technology and the availability of a wide range of information to the health care provider and the patient, not only has it become more difficult for one clinician to provide care in isolation but it is also potentially harmful[10.]

LITERATURE REVIEW

The concept of a Health Care Team was initially implemented at the beginning of the 20th century to coordinate work. Teams are now an integral feature of health care delivery in primary care as well as acute and long-term care settings.[11].

Cohen and Bailey defined team : a collection of individuals who are interdependent in their tasks, who see themselves and who are seen by other as an intact social entity embedded in one or more large social systems and who manage their relationship across organisational boundaries [12]. Teams are also defined and classified according to the attributes such as task type, team duration, purpose, interdependence, and autonomy.[12]

Many studies have established the core principles and values of effective team functioning in primary care as well the health care process in general. High-functioning teams are characterized by members who hold shared goals and shared knowledge, and who demonstrate high-quality communication that is timely, frequent, accurate and focused on problem solving[13]. Cromp et al. in their study on barriers and facilitators of team based care identified that meeting with structured agendas promote high quality communication, explicit standardized roles, clarified expectations and made roles more transparent to all members.[14]

Mitchell et al. in their work in 2013 on core principles and values of effective team-based health care, identified five personal values that characterize the most effective member of high-functioning teams in health care: Honesty, Creativity, Humility, Curiosity, Discipline. They

also identified five principles that characterize a high functioning team: Shared goals, clear roles, mutual trust, effective communication and measurable process and outcomes[9].

In summary, effective communication, shared gaol and good coordination, appear to be the corner stone of a high functioning multidisciplinary care team. The composition of a team depends on the context, therefore each team is unique but all teams aim at providing the best care to patients.

The implementation of health care team in the early 20th century has increased the need to assess the functioning or effectiveness of health care teams [11]. As more organisations implement team work, it is becoming increasingly important to measure team functioning (effectiveness). One reason for this is the likelihood that the more effectively a team functions, the more benefits they are likely to realise from the work team structure such as a well-coordinated primary care system[15].

Measuring primary health care team functioning:

Sundstrom (1999) defined team functioning (effectiveness)**: "**the extent to which a work team meets the performance expectations of key counterparts-managers, customers, and others-while continuing to meet members' expectations of work with the team"[15]**.**

Instruments such as the Care Process Self-evaluation Tool (DCPSET), the Practice Team Environment Check list (PEC), Palliative Assessment Tool (PACA), the Organisational Leadership Assessment (OLA), the Team Survey have been used by researchers worldwide to study team effectiveness according to the type of team being assessed.

In the United Kingdom a Health Care Team Effectiveness Project was commissioned by the Department of Health aiming to determine whether and how multidisciplinary team working contributes to quality, efficiency and innovation in health care in the NHS [16]

Ellershaw in his study, The Effectiveness of a Hospital palliative care Team, used PACA and found that a hospital palliative care team is effective at improving symptoms control, facilitate understanding of the diagnosis and prognosis and contributes to the appropriate placement of patients.[17]

Schraagen and colleagues used observers to directly observe team performance and to code the non-routine event in their study: Assessing and improving *team work in cardiac surgery*. This

method had certain limitations such as the capture of observational data, by necessity subjective and observer-dependent, meaning that many events could be missed.[18]

Mash et al. in their South African study on managing organisational change and practice teams used a structured questionnaire to assess the effectiveness of two primary health care teams in one primary care facility in the Western Cape. Each team comprised two doctors and two nurse practitioners. The study found that the perception of team effectiveness differed between the two teams. Factors included differences in team resilience, leadership style and communication.[19]

Lurie, Schultz and Lamanna, after reviewing different tools used to assess team functioning, found that the tools available at that time, were very resource intensive and thus could not be frequently administered. Instead, they adapted the validated 29-item Practice Environment Check List (PEC), demonstrating that just 5 items were sufficient to yield reliable estimates of team effectiveness – i.e. using a brief teamwork-assessment instrument, A Reliable Five-Question Survey – derived from the original PEC[20]

The re-engineering of PHC is one of the major reform initiatives underway in the South African public health sector[7]. It promotes the role of the primary healthcare team as a way of delivering care to the community. The PHC team therefore has an important role to play in achieving the goals of PHC re-engineering in SA. The effectiveness of the team will be a key element. However, PHC team functioning (effectiveness) has to date, not been audited in public sector primary care in Cape Town. The literature review did not reveal any local or national studies assessing PHC team effectiveness.

The Western Cape Primary Care Assessment Tool (PCAT) study, which assessed primary care organisations and performance in the Western Cape Province, South Africa (2013)[21] used the adapted and cross-culturally validated ZA Primary Care Assessment Tool. The ZA PCAT is the South African version of the original PCAT expanded (E) version (vs short (S) version) developed in the United States of America (USA). The ZA PCAT validation method and process resulted in the PHC Team as a new domain[21]. The baseline study[22] found that the PHC team functioning domain scores were generally good in the thirteen Primary Care Facilities (PFCs) studied, but were of limited value as these scores only determined the presence or absence of key PHC team members. Such information can easily be obtained from the PCF managers or staff establishment records. The PHC team domain questions (items) do not assess

Team Functioning – surely a more useful measure as argued by the authors of the ZA PCAT validation paper[11]; a team functioning domain was therefore added to ZA PCAT by the ZA PCAT authors. They achieved this by inserting an existing validated team functioning instrument to measure team effectiveness (A Reliable Five-Question Survey)[20].

As this study was conducted at Du Noon Community Health Centre (CHC) a PCF with flagship status in the Cape Town metro district and province, the results will be more likely to be used by other similar primary care facilities in the metro, accounting for our motivation to conduct this study at Du Noon CHC. The study used the ZA PCAT with the PHC Team functioning domain added to the existing nine primary care domains. This was done to obtain a baseline measure of overall Primary Care performance at Du Noon CHC as well as of the Primary Care Team Functioning – for the first time in a PCF in the Western Cape. The study therefore extends the Western Cape Primary Care Assessment Tool baseline study to Du Noon CHC. The aim of the study was to measure PHC team functioning at Du Noon in order to assist the CHC management to identify gaps in team performance and encourage development and implementation of appropriate interventions – should they be necessary – to improve team functioning and consequently, improve outcomes.

Local Context

Du Noon CHC has within the past two years moved from two previous locations to a very new facility while continuing to serve the same community. Du Noon CHC has almost doubled its staff strength, including the service of a family physician (FP) for clinical governance, expanding its services to include many new capacities such as social work, occupational therapy (OT), physiotherapy, dentistry, nutrition (dietician) as well as psychiatry and including the service of a psychologist and maternity care.

Du Noon CHC contains the biggest and most modernised trauma unit of the CHCs in the Cape Town metro district. For the first time a CHC trauma unit will be working directly in conjunction with a secondary hospital (New Somerset Hospital) where doctors will have to rotate. Specific doctors will be employed and allocated expressly to the trauma unit, undertaking shift work.

Du Noon CHC has increased its capacity for service delivery to more patients on a daily basis in the new facility with an average number of 300 patients seen daily, 80% of whom are chronic health cases.

Du Noon CHC serves a diverse community in term of culture, race, nationality and incomes.

Patients with lower income status usually reside in area such as Du Noon Township, Joe Slovo Township and farms while patients with higher or who are in the middle income range tend to reside in areas such as Parklands and Tableview, which all are part of the Du Noon CHC catchment area.

The new facility is located in an industrial area away from the residential area which could pose certain challenges for patients with regard to accessibility.

The overall purpose of this study therefore was to improve PHC team effectiveness and ultimately, the quality and user experience of Primary Health Care at Du Noon CHC

Study Objectives:

1. Audit PHC team functioning at Du Noon CHC using a validated team functioning measure.

2. Obtain a baseline measure of PHC organisation and performance using the ZA PCAT

3. Obtain consensus on the top five barriers to better team functioning and top five interventions to improve team functioning as identified by providers at Du Noon CHC

4. Describe the demographic and socioeconomic profiles of Du Noon primary care facility users.

RESEARCH METHODS

Study Site

Du Noon CHC in the Southern/West Substructure of the Cape Town Metro District Health Services (MDHS) and as detailed in the Local Context section, above.

Study Design

A cross-sectional, descriptive study using two PHC audit instruments: (a) A reliable Five-Question Survey to assess PHC team functioning and (b) the cross-culturally validated ZA PCAT to obtain baseline measures for PHC organisation and performance at Du Noon CHC. The PHC team measure is contained in the ZA PCAT.

Instruments and Methods

1. **PHC team functioning measure** (A Reliable Five–Question Survey[20]) is a validated tool to assess team effectiveness as mentioned in the literature review**.** A group of researchers led by Dr G. Bresick in the Division of Family Medicine, University of Cape Town, adapted Lurie's Five-question Survey by adding 2 questions from the original 25-question tool making it a 7-question tool to suit the South African context - as presented in Table 1.

Table 1. Seven-question tool adapted from Lurie's Five-question instrument

Primary Care Team Functioning items
1. This team encourages everyone to share ideas.
2. Leadership in this team creates an environment where things can be accomplished.
3. People in this team have the information that they need to do their jobs well.
4. When people in this team experience a problem, they make a serious effort to figure out what's really going on.
5. Everyone in the team feels able to act on the team vision.
6. Working in this team is stressful (original PEC item re-inserted by ZA PCAT study team).
7. The team appear to let setbacks and problems stop its change effort (original PEC item re- inserted by ZA PCAT study team).

2. **ZA PCAT**: the cross-culturally validated primary care assessment tool for use in South Africa. As in the main ZA PCAT study referred to in the introduction, this study will survey all 3 key PHC stakeholders using the ZA PCAT (FE – Facility Manager Expanded) for PCF managers; ZA PCAT (AE – Adult Expanded) for PCF adult users; and ZA PCAT (PE – Provider Expanded) for Providers (doctors and clinical nurses practitioners). The ZA PCAT measures primary care performance on the following nine domains (see table 2)[21].

Table 2. ZA PCAT (Adapted)

DOMAINS	SUBDOMAINS
1. First Contact	
2. Ongoing Care	
3. Coordination	**3.1. General**
	3.2. Information system
4. Comprehensiveness	**4.1. Services available**
	4.2. Services provided
5. Family-Centred	
6. Community-Orientated Care	
7. Culturally Competent Care	
8. Primary Care Team	
9. Primary Care Team Functioning (effectiveness) : (this is the new added Primary Health Care domain)	

The PHC team effectiveness domain items are for the managers and clinicians alone; i.e. in the FE and PE only, as the users are not part of the PHC team.(see appendix)

The method used is that of the Western Cape ZA PCAT baseline audit study[21, 22] .

3. Nominal group technique (NGT) method

The nominal group technique (NGT) was developed in 1968 by Delbecq and Van de Ven. Its main purpose is to generate and rank ideas and it has also been used for consensus development [23]. The NGT method was used to obtain consensus among the Du Noon managers and clinicians on the main factors, that in their view, determine PHC team functioning at Du Noon CHC; and possible interventions to improve team functioning. The factors and interventions (items) were identified by the managers and clinicians using the NGT stepped process described below. Twelve consenting participants were invited to attend a 90 minute NGT group session at a convenient time.

The NGT group process described below was conducted by the investigators to generate and obtain consensus on items in response to the following 2 questions:

1. What are the main challenges to effective team functioning at Du Noon CHC?
2. How can team effectiveness be strengthened/ improved at Du Noon CHC?

Study Population

1. Users:

Users who had attended Du Noon CHC for at least three previous visits and were 18 years and older.

2. Providers:

All Doctors and Clinical Nurse Practitioners (CNPs) working as permanent staff at Du Noon CHC were invited into the study (N=12) i.e. excluding interns, community service doctors and locum practitioners.

3. Managers:

The Du Noon facility manager and all operational managers working fulltime at Du Noon CHC were invited to participate in the study (1 General Facility Manager and 4 HODs).

Sampling Methods

The ZA PCAT, FE and PE also containing the PHC Team functioning domain to be administered to all consenting clinicians and managers as above (permanently employed clinicians and managers at Du Noon CHC were included in the sample) (N=17).

For the Primary Health Care Team's effectiveness audit, it was decided that it be extended to other categories of Du Noon CHC personnel such as the pharmacists, social workers, physiotherapists, dieticians and clerks too. One to two representative were selected from these additional departments in order to increase the representivity of the primary healthcare team sample.

The users' (patients) sample size was calculated (as for the main study), using a systematic sampling method. This method follows the original Western Cape Primary Care Assessment Tool (PCAT) study (2013) which was based on primary care measures derived from a previous PCAT study (2011) with an estimated mean total primary care score of between two PCFs of 2.5 and 2.9 respectively, with a standard deviation of 0.8. The minimum sample size required per PCF was 85 (α= 0.05 and a power=90%). The total number of users that were interviewed in the 13 PCFs in the original study was 1432. The PCF with the smallest and largest sample size was 97 and 123 users, respectively[22].

User selection:

This study aimed to interview 21 users per day – for 3 trained fieldworkers an average of 7 users per interviewer per day for a period of a week. An average of 7 users per interviewer was based on the original study which showed it to be a reasonable daily number to ensure good quality interviews within resource constraints.

An average number of 300 users are seen daily at Du Noon CHC, 80% of them on an appointment basis. On each study day, folders (users) were selected systematically (every n^{th} folder) from the booked and un-scheduled users' streams following the order of admission. Folders for users with appointment were retrieved by the clerk (80%: +- 240 folders) and placed to a dedicated room (club room) usually on the previous day. Users without appointments (20%: +- 60 folders) are admitted by the clerk at a dedicated window where either a new folder is made or an existing folder is retrieved. These folders are then taken by the clerk to another dedicated room (Preparation room).

Selection was carried out from these two rooms to include both booked and un-booked users. Every fifteenth (15^{th}) folder was systematically selected from the pile of booked users (240: 15= 16) and every tenth ($10^{th)}$ folder from the un-scheduled users (60: 10 = 6) using the inclusion and exclusion criteria until the designated number was reached for the day. In cases where a user did not meet eligibility criteria or did not consent, the next file was selected and so on.

The interview for the users was conducted by fieldworkers with experience in the public health surveys. They were furthermore trained during a two-day training workshop using the ZA PCAT training manual adapted from the original USA PCAT manual. The two-day interviewer training included special attention to confidentiality, data collection and management as well as general interpersonal communication skills and those that apply specifically to ZA PCAT data collection. Training included roleplayed interviews with trained investigators and supervised practice interviews at Du Noon CHC prior to actual data collection. The lead researcher had previously been trained at a similar workshop.

Data Collection

1. Practitioners and managers: the expanded versions of the ZA PCAT for facility managers (FE) and the expanded version for practitioners (PE) were used. These were individually

completed by agreement at a staff meeting of 45 minutes, with the investigators present to respond to any queries which may have arisen during the process. Each participant completed the questionnaire individually without discussion between colleagues; questions for clarification were addressed by the investigators.

2. Users: user interviews were conducted by three fieldworkers specifically trained to administer the ZA PCAT AE (adult expanded version) . All the fieldworkers had previous fieldwork experience in health surveys. One had considerable experience with ZA PCAT data collection, quality control and fieldworker training, having been involved in the Cape Town Metro 2011 study and the Western Cape PCAT 2013 study. All were fluent in at least in two of the three major languages spoken in the Western Cape (English, Xhosa and Afrikaans).

The three fieldworkers were directly supervised by an experienced research assistant. Every study day started with a brief meeting where the process for the day was explained and tasks were allocated to them.

The interviewer approached the systematically selected user at the two designated rooms as described in the sampling method section (club room and preparation room) and the consenting user was taken to a pre-identified space in the CHC for the interview. Every effort was made not to delay the user receiving his/her care at the clinic on that specific day.

The interviewer's quality check was performed immediately by the supervisor after each interview before proceeding to the next interview.

Nominal group technique (NGT) method

The NGT process was facilitated by two (2) researchers (co-investigators) from the Division of Family Medicine at the University of Cape Town. The overview of the study, aim of the NGT exercise and the NGT process was briefly explained to the group by the principal investigator (Step 1) followed by the presentation of the questions (Step 2) as per Appendix 1. The NGT was held at Du Noon CHC and ninety (90) minutes were allocated to the NGT group session to allow participants to return to their work stations. Twelve permanent staff members of Du Noon CHC were purposively selected to participate in the NGT to ensure all departments were represented: 2 doctors, 2 clinical nurse practitioners (CNP), 1 professional nurse, 2 midwives, 1 pharmacist, 1 clerk, 1 physiotherapist, 1 social worker, 1 dietician. It has been

established that nine (9) to twelve (12) participants are an acceptable number for a well-structured and manageable NGT process[24].

Questions:

1. What are the main challenges to effective team functioning at Du Noon CHC?

2. How can team effectiveness be strengthened/improved at Du Noon CHC?

Participants were given time to think and generate items in response to question 1 (NGT step 3: silence phase). Twenty four items were generated in the round robin phase (NGT step 4: item generation phase) and 16 items were retained after the clarification phases (NGT step 5: Item clarification phase). This was done by merging identical and / or grouping similar items as one item. During the prioritisation phase (NGT step 6) each participant ranked the top five items most important to him/her on paper without discussion – one being the most important and five being the least important. During the final voting phase (NGT step 7) each participant marked their ranked choices on the flipchart (on which the 20 items had been listed and clarified during Steps 4 and 5) themselves by going round the group; followed by counting and summing the number of votes for each item to determine the top five items in order of importance identified by the voting process.

2/ Due to the time constraints, the second question was modified and directed specifically at the top priority as follows: What can be done to improve poor communication at Du Noon CHC in order to strengthen/improve team effectiveness at Du Noon CHC?

All participants were enthusiastically involved. By show of hands and managed by the supervisor, they gave their suggestions. The process lasted until there were no more suggestions from the participants. The suggestions were recorded directly onto the flipchart; identical items were recorded just once to avoid repetition. The NGT process ended with a short debriefing session. The results were briefly presented to the group followed by short discussion and feedback from participants on the NGT process.

Data Analysis

Data analysis followed the method used in the main study (Western Cape PCAT study 2013), so that the Du Noon ZA PCAT study results could be compared with the original study results[22] The method of data scoring, analysis and formulation of the results follows the steps in the

PCAT manuals for the 3 versions: expanded user, practitioner and manager PCAT (AE, PE and FE respectively). These were obtained from the Johns Hopkins Primary Care Policy Center. Data from each of the 3 informant groups were separately analysed. The PCAT Likert-type responses and analysis are identical for the user, practitioner and manager questionnaires. Responses are scored on a 1 to 4 scale, with 1 indicating "definitely not", 2 indicating "probably not", 3 indicating "probably", 4 indicating "definitely". A fifth, "not sure/don't remember" response option is scored as 2 (except for the comprehensiveness services domain where "not sure/don't remember" is scored as 0).

Due to the small number of managers (FE) at the CHC, data from the managers was not analysed separately.

The PCAT methodology calculates the score for each subdomain by summing the scores of the items in that subdomain (after reverse coding of items, where required by the data analysis method) divided by the number of items to produce a mean score.[22] Data were entered into Epidata, cleaned and exported to Stata version 12.0 for statistical analysis. The internal consistency of the scores for users was examined using Cronbach's alpha coefficient. The Shapiro-Wilk test indicated that the PCAT scores were not normally distributed; hence, as done in the original study, we constructed a binary variable. A score ≥ 3 is considered to be 'acceptable to good performance' and a score < 3 as poor 'inadequate to poor performance'. For all analyses, a p-value of less than 0.05 and a 95% confidence interval that did not span unity, were considered the thresholds of statistical significance.

The new domain (PHC team functioning) uses the same PCAT Likert-type responses, but was administered only to practitioners (PE) and facility managers (FE) and therefore cannot be compared with users' results. They were separately analysed and summarised on a different graphic.

During the NGT process, 16 items were generated after clarification in response to question number one. All 16 items were scored during the final voting. Items were rated 1-5 according to level of priority by each participant. To sum the votes, a numerical value is given to each as follows: 1=5, 2=4, 3=3, 4=1, 5=1. The scores for each item were then summed to obtain the top ranked followed by the second and so on until the 5^{th} rank.

As noted above, due to time constraints the second question was rephrased to address the top-ranked item identified as the main challenge to team effectiveness at Du Noon (**What can be**

done to improve poor communication at Du Noon CHC in order to strengthen/ improve team effectiveness at Du Noon CHC?). The list of solutions generated were recorded on the flip chart, but not ranked.

RESULTS

1. Section 1: Primary Health Care Team effectiveness results

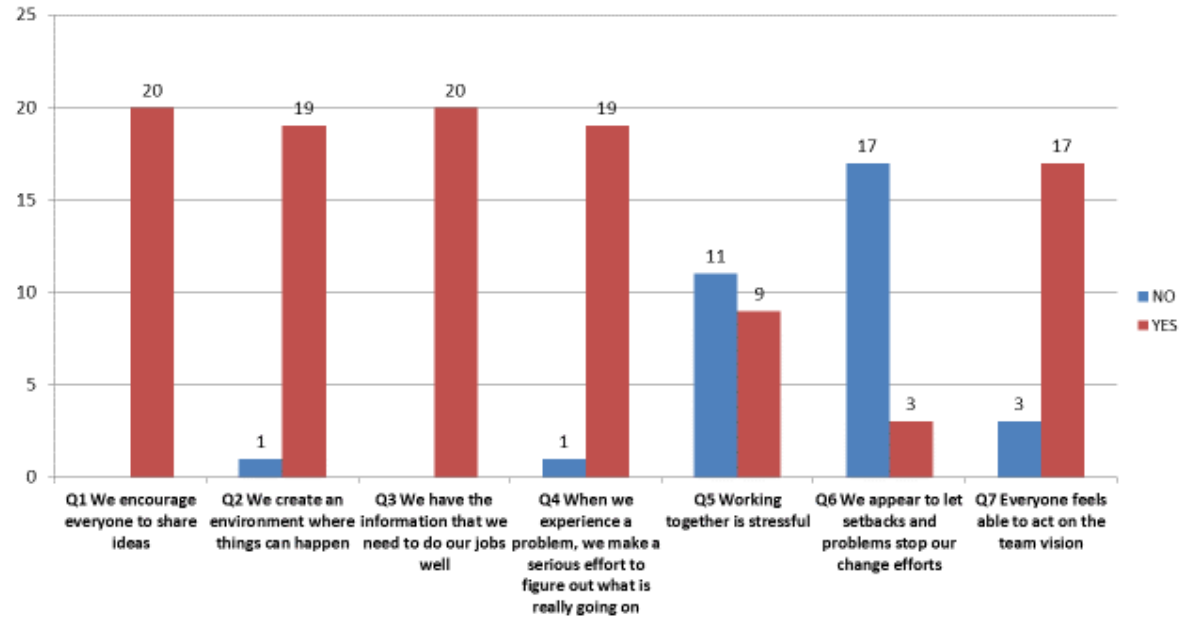
A. Adapted Seven-question Survey Tool.

Twenty providers completed the section of the questionnaire related to the Primary Health Care team's effectiveness (12 clinicians and 8 providers from other departments as described in the method section).

Figure 1 represents the number of providers who agreed or disagreed with each of the 7 items in the PHC team effectiveness domain.

Forty-five (45%) of providers agreed with the statement (Q5) *that working together is stressful* vs 55% who disagreed. *Working together is stressful* (Q5) was the only item with high disparity amongst respondents.

We encourage everyone to share ideas (Q1) and we have the information that we need to do our jobs well (Q3) were the two items with 100% agreement. Over 80% of the providers agreed with the remaining items.



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449 Figure 1. Proportion of providers in agreement or disagreement per item

450 **B. Nominal group technique (NGT) results**

451 Table 3 represents the final voting (Step 7) in response to question No.1 **(*What are the main***
452 ***challenges to effective team functioning at Du noon CHC?*)**. Regarding the main challenges
453 to effective team functioning at Du Noon CHC, poor communication within the team emerged
454 by consensus as the top item with the top score of 50 points. During Step 5 of the NGT process
455 (clarification phase) items 3 and 5 (Table 4) should have been merged. This was done during
456 the analysis resulting in Management-leadership obtaining a combined 49 points, i.e. regarded
457 as equally important.

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Table 3. Final voting score of providers who participated in the NGT, in connection with question No. 1

ITEMS	VOTES	RANKED CHOICES	CODING	SCORES
1/Poor Communication Within Team	**10**	**1,1,1,1,1,1,1,1,1,1**	**1=5, 2=4, 3=3, 4=2, 5=1**	**50**
2/Lack of Skills and Information	**11**	**(1,1)=10, (3,3)=6 (2,2,2,2,2,2,2)=24 (4)=2**		**42**
3/Management/Leadership not Understanding the Clinical Management to Inform Process and Shortage of Staff Overlooked	**8**	**(1,1,1,1)=20 (2,2)=8, (3)=3 (5)=1**		**32**
4/Lack of Respect of Opinion of Team Members; No Platform on a Larger Scale to Discuss Issues and Share Ideas	**7**	**(2,2)=8, (3,3,3)=9 (4,4)=4**		**21**
5/ Management do not Always Understand the Floor Process, Lack of Flexibility by Management, Management Overriding Process in Place.	**7**	**(1)=5, (2)=4 (3,3)=6, (5,5,)=2**		**17**

Table 4 lists items generated by the group in response to the question No.2 **(*What can be done to improve poor communication at Du noon CHC in order to strengthen/improve team effectiveness at Du Noon CHC?)***. As noted above, due to time constraints, the NGT process

for the second question was stopped at Step 5 – i.e. following the item clarification stage – so that staff could return to work. Steps 6 –7 were therefore omitted.

Table 4: NGT (Responses to question No.2) clarified list (i.e. Step 5 in Appendix 1)

1.Talk directly to colleagues when referring a complex case (patient)
2. Change attitude of team member
3. Standardise, put in writing communication around new process
4. Engage team in changes, get team together to agree to the changes
5. Respecting of team member's opinion
6. Inform all staff about changes timeously, effective use of notice board
7. Management to undergo training in order to change their mind-set about team leader
8.Team building
9. Understand diversity in the team (cultural, skills)
10. Meeting times: meeting to be scheduled when most people are free
11. Meeting new staff regularly (buddy-system)

2. Section 2: ZA PCAT Results (excluding PHC Team effectiveness)

One hundred and ten (110) users were interviewed using the ZA PCAT (AE) (acceptance rate 100%). All 110 questionnaires were analysed; 76% (84) of users were female and 23,6% (26) male. Seventy (70) patients' ages ranged from 18-39 (63,6%); 29 patients' ages ranged from 40-54 (26,3%) and 11 patients were aged 55+ (10%). The length of user association with the clinic was not longer than 17 months.

All permanently employed clinicians (doctors and clinical nurse practitioners) were invited into the study; 12 completed the ZA PCAT (PE) (acceptance rate 100%). All managers permanently employed at Du Noon CHC (5) were invited into the study (Facility Manager; Clinical

Manager; 3 HODs); 4 completed the ZA PCAT (FE) (acceptance rate 80%). Due to the small sample their data were not analysed, as mentioned earlier.

Table 5 summarises the age and gender distribution of users.

Table 5 Age and gender distribution among users

Demographic variable	**N (%)**
1 Gender:	
Male	**26 (23.6)**
Female	**84 (76.3)**
2.Age-group	
18-39	**70 (63.6)**
40-29	**29 (26.3)**
55+	**11 (10)**

Table 6 and Figure 2 summarise and compare the user and provider percentage (proportion) ratings of acceptable to good performance, by domain. The results were dichotomised to follow the same method used in the main study [22] so that findings could be easily compared. Eighteen point two percent (18.2%) of users rated first contact-access (primary care provider serves as the usual entry point into the health care system for each new need for health services, except in the case of serious emergencies)[25], as acceptable to good; 47,3% of users rated ongoing care (which refers to the use of regular source of care over time, regardless of the presence or absence of disease or injury)[25] as acceptable to good. The remaining subdomains were rated as acceptable to good by at least 65% of the users.

33% of the providers (doctors and clinical nurse practitioners) rated first contact-access as acceptable to good; 25% rated ongoing care as acceptable to good, while the remaining subdomains were rated as acceptable to good by at least 50% of providers.

First contact-access received the lowest acceptable to good score (18.2%) whereas comprehensiveness (services available) received the highest score (88.2%) from the users. For the providers the lowest acceptable to good score was for ongoing care (25%) while the highest acceptable to good score was for the primary health care team (100%). The total primary scores are good (above 60%) for both patients and providers but slightly higher for the providers.

Table 6: Proportion of users and providers who rated performance as "acceptable to good" by domain (i.e. scoring 3 or more)

	Users	**Providers**
SUB-DOMAINS	**%**	**%**
First Contact-Access(C)	18.2	33.3
Ongoing Care (D)	47.3	25.0
Co-Ordination (E)	82.4	50.0
Co-Ordination (Information Systems)(F)	85.5	66.7
Comprehensiveness(Services Available)(G)	88.2	100.0
Comprehensiveness (Services Provided)(H)	73.6	66.7
Family-Centredness (I)	68.2	58.3
Community Orientation(J)	46.4	75.0
Culturally Competent(K)	87.3	66.7
Primary Health Care Team(P)	92.7	100.0
TOTAL PRIMARY CARE SCORE	64.6	75.0

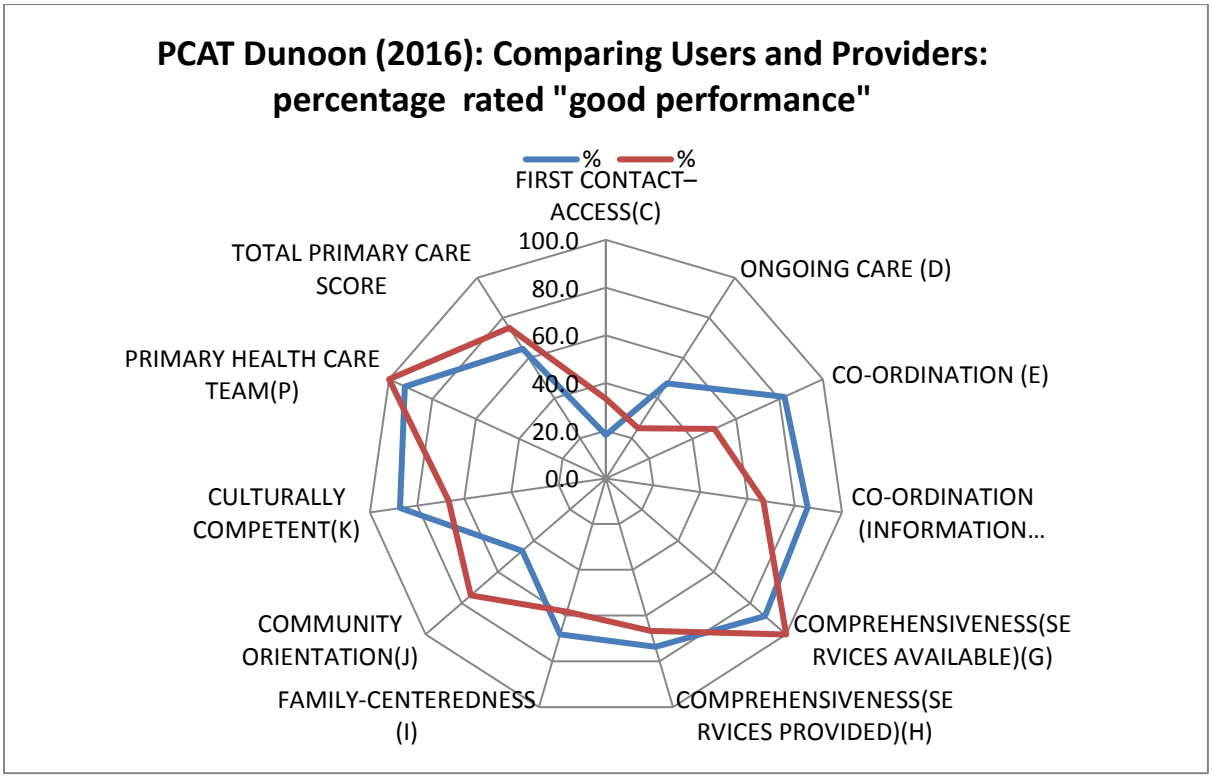

Figure 2: Graphic representation of Table 6

Discussion

1. User demographic profile

The demographic findings (Table 5) indicate that Du Noon CHC serves largely female users (73.3%). This is consistent with other CHC-based studies in the Cape Town Metro, including the Western Cape PCAT 2013 study[22,26]. The smaller proportion of patients aged ≥55years (Table 5) reflects the fact that Du Noon and surrounding areas have a much younger population than an area such as Gugulethu where a study done indicates that 40% of the patients attending the local Gugulethu CHC were >55years of age.[26] In contrast to Gugulethu, a long-established community, Du Noon is a younger, more recently established community. For the same reason the majority of users (63.6%) ranged between 18-39 years. This can also be explained by the increased prevalence of chronic diseases such as hypertension and type 2 diabetes among younger people as well as the high prevalence of HIV/AIDS among young adults which in turn increases the number of visits per patient to the primary care facility. The HIV/AIDS prevalence of 14.50% among those aged 15-49 years in 2002 increased to 16.59% by 2015 in the same age group[27], emphasising the need to focus on the prevention of chronic lifestyle diseases among young adults.

2. PHC team effectiveness

The team effectiveness subdomain (added to the ZA PCAT since the original Western Cape primary care PCAT audit in 2013) was used for the first time in this study. Over 70% of respondents (just staff) rated the PHC team at Du Noon CHC as effective (Cohen's kappa, k ≥0.70). Nevertheless, the NGT method process identified insufficient communication and leadership as major factors determining team effectiveness at Du Noon CHC – an apparent discrepancy between the two sets of results; i.e. the findings of the ZA PCAT and the NGT methods. The high consensus rating on communication is consistent with studies pointing to communication as a key factor in high functioning PHC teams.[9,10,14,28]. It is possible, however, that the discrepancy could have resulted from some providers having based their responses to the team effectiveness items in the ZA PCAT on their sub-team's functioning (e.g. trauma unit, dentistry, pharmacy etc.) rather than overall multidisciplinary team functioning. My experience as a practitioner in PHC facilities over the years is that team effectiveness in the sub-team is often perceived as good when compared with that of the multidisciplinary team. Alexander et al., found that individuals who operate in more heterogeneous, larger teams have lower perceptions of team functioning.[29]

Communication: Effective communication within the PHC team is a key element necessary for integrated care.[30] During the NGT method Step 8 (debriefing and discussion), Du Noon CHC staff emphasised the need for regular staff meetings where issues can be discussed, and that these meetings should be scheduled at a time where the majority of staff are able to attend. This is consistent with a UK study, which showed that PHC team members spend relatively little time in team meetings and therefore have less opportunity for exchange of information on individual patients across the disciplines[30]. Recent studies of team functioning suggest teams are most effective if all members actively engage in discussion to set the team goals and methods. Good cross-disciplinary communication has a measurable, positive impact on the proper functioning of the PHC team.[30] During Step 8, Du Noon staff also emphasised that respect for team members' opinions, members' attitudes, consideration of cultural diversity and introduction of new staff members to the whole team can potentially enhance communication within the team.

Leadership: as noted above, the NGT process revealed that a well-functioning team needs to be led by a team leader and that all teams need support from leadership to succeed [31]. In a

557 systematic review by Gliggot, her findings reveal that effective leadership is a key factor for
558 effective team work[32].

559 Good leadership comprises multiple characteristics such as flexibility, recognition and
560 appreciation of work done by the team and knowledge of conditions that encourage effective
561 functioning of different types of teams in particular settings[31]. Knowledge of patient flow
562 through the CHC (from the entrance of the building to consulting room); some knowledge on
563 management of certain medical conditions and flexibility are some of the characteristics of
564 good leadership that were emphasised as necessary in this context, by the Du Noon CHC staff
565 (Table 3, items 3 and 5). These characteristics are likely to promote strong leadership and better
566 team effectiveness, resulting in better healthcare outcomes in the Du Noon context.

567 These characteristics are in line with findings in the literature regarding team leadership[31,32,33].
568 Michelle Howard reported that leadership in PHC contributes to team work by unifying
569 differences in a team and providing support for innovation[33]. Taplin et al.(2013) recommended
570 that the team leader should help teams map their work and clarify roles to improve
571 functioning[31]. This supports the need for attention to the floor process identified by Du Noon
572 CHC providers. A team leader should positively influence the culture, composition and size of
573 her/his team – all of which positively affect team outcomes. A team leader should also involve
574 team members in decisions that affect the team, which in turn improves loyalty, cooperation
575 and retention [31].

576 Discussion during the NGT process revealed that facility manager roles and responsibilities are
577 at times in conflict with those of clinicians; e.g. the manager may prefer to admit all the patients
578 who present at the CHC for healthcare, regardless of staff shortages on a specific day, whereas
579 providers will be more preoccupied by the number of patients to be seen – i.e. their clinical
580 workload. Another issue mentioned by the respondents is that managers frequently move staff
581 from one post (e.g. from the preparation room) to another (e.g. the TB room) in order to palliate
582 a shortage of staff in the latter area, irrespective of the workload in the former. Although
583 managers have direct responsibilities to the district, province and user community, as leaders
584 they should also consider providers' concerns when making decisions; for instance, by
585 obtaining personnel from an outside source, such as a locum, to reduce the impact of a shortage
586 of staff in a specific area.

Du Noon CHC staff perceived their team as a well-functioning team in the ZA PCAT audit whereas the NGT process revealed that they feel strongly that communication has to be improved and that a leadership mind-set shift is needed for better PHC team effectiveness at Du Noon.

3. Measures of PHC performance other than team effectiveness

Total primary care score: 64% of Du Noon CHC users rated their primary care as acceptable to good (total primary care score) and 75% of providers (doctors and CNPs) rated it acceptable to good. Providers have a better understanding of the PHC service and knowledge of available resources and may therefore incorrectly assume that primary care is good. Being providers of care may also make them more optimistic about their work. Users may not be aware of all the services offered at the CHC or might feel unhappy about the service received. Users as the beneficiaries of primary care are in a better position to evaluate the level of care that they receive. Further research is necessary to identify reasons for the gaps between providers and users in order that interventions directed at improving performance can be implemented.

First contact access and ongoing care: subdomains were scored as acceptable to good by less than 50% of both patients and providers and are therefore a matter of concern.

First contact care: refers to primary care providers as the usual entry point into the health care system for each new need for health care, other than emergency care.[25] During the report-back meeting Du Noon staff suggested that the poor rating could be attributed to staff shortages (e.g. clinicians) resulting in some patients with new health care needs not being seen on the day they present at the facility, but being given an appointment for a later date instead.

Ongoing care: includes continuity of care and refers to the use of a regular source of care over time, regardless of the presence or absence of the disease or injury [25]. The aim is to build a long-term relationship between patient and provider to enhance mutual trust. Less than 50% of both patients and providers (47% and 25% respectively) rated this subdomain as acceptable to good, compared to the Western Cape ZA PCAT study (2013) where over 50% of patients and providers rated the subdomain as acceptable to good. Our finding reflects more closely the findings of two unpublished audits of continuity of care conducted in other CHCs in Cape Town – referred to in the ZA PCAT 2013 paper[22]. These studies reported poor continuity of care where continuity was defined as seeing the same clinician for at least 2/3 of the

consultations. Our finding of 25% (providers) approximates the finding in one of the studies, which reported continuity of care with 21.4% of patients.

During the report-back meeting, Du Noon CHC staff felt that the way the process of care is designed and structured in the CHC makes it difficult for patients to be seen by the same clinicians at each visit. Although Du Noon users have the opportunity to make regular use of the CHC for their care, as mentioned above, the shortage of staff may be the biggest factor driving poor continuity of care.

Staff shortages remain a significant challenge for the delivery of care in the primary care facilities. The health authority should give attention to addressing this as poor continuity results in fragmented care and poor outcomes.[34]

Community-orientated primary care: refers to care that is delivered in the context of the community, the most important aspect of community-orientated primary care (COPC) being the care of people presenting themselves to the primary health care facility as well as the care of those not attending the facility. Less than 50% of patients rated this subdomain as acceptable to good, whereas 75% of providers rated this subdomain as acceptable to good. During the feedback report meeting, clinicians at Du Noon CHC suggested that this low score assigned by patients could be due to inadequate information regarding the services available to the community which are provided and coordinated by the CHC (e.g. home-based care for TB and HIV/AIDS treatment etc.). Access to information regarding services available in the community should be improved through the health committee and also through the service of the health promoter in the facility e.g. by regular announcements and posters in the waiting areas.

The remaining subdomains (excluding PHC team effectiveness not assessed by patients), i.e. **coordination of care**, **comprehensiveness**, **family centeredness**, **cultural competence**, and **primary care team** (availability), were scored as acceptable to good by over 60% of providers and patients.

Coordination of care: refers to the availability of information about previous health care and services used and the recognition that such information is important for current care.[25]

Family-centred care: recognises that the family is a major participant in patient assessment and care.[35] Research on families and health demonstrates the powerful influence of the family on health and illness and the benefits of family-based interventions.[35]

Culturally competent care: refers to care that honours and respects the beliefs, interpersonal styles, attitudes and behaviours of patients in the context of their families and communities.[35]

Although the total primary care scores for users and providers were 64.6% and 75% respectively, the overall findings indicate room for improvement to better the user experience of primary care.

Limitations and strengths

The sample regarding the users was done over a period of one week, which may not represent the user experience during other weeks of the year, given changing operational and seasonal effects. However, the Western Cape ZA PCAT study used the same tool and method spread over a number of months and demonstrated similar findings, suggesting that the sampling was representative of the Du Noon CHC's user population. Another limitation was that respondents' assessments were based on their experience of care and practice over the time of their association with Du Noon CHC; inaccurate or incomplete recall of past experiences can affect such responses. Due to the insufficient number of managers at Du Noon CHC for an adequate sample, data regarding managers (ZA PCAT FE) were not analysed.

Time constraint was also another limitation during the NGT process, as all the phases couldn't be completed for the second question.

A strength of this study may be the use of the NGT method to enable Du Noon PHC team members themselves to determine and achieve consensus on the main items influencing team functioning. It also enabled team members to generate responses (individually) to improve team effectiveness based on their own experience and observations of their work environment and team climate. Although the structured NGT method necessarily permits minimal discussion, the content of the discussion during item clarification phase (Step 5) and after the NGT session was completed, indicated that the ZA PCAT audit of team effectiveness did not convey the full picture. The results have the potential to improve effectiveness if jointly implemented with management.

Ethical considerations

This research is a sub-study of the 2012 Western Cape PCAT study approved by the HREC (HREC: 445/2012), Health science Faculty of UCT. This study was approved by the HREC (HREC: 861/2015), Health science Faculty of UCT and by the Western Cape department of health (RP033). This study complies with the Helsinki Declaration.

CONCLUSIONS AND RECOMMENDATIONS

This is the first known CHC-based study measuring PHC team effectiveness in the Metro District of Cape Town. It assessed primary care team effectiveness using a validated tool incorporated into the ZA PCAT. The results indicate how a PHC team perceives its effectiveness and how, using the NGT method, it can reach consensus on factors affecting its functioning (effectiveness) as well as generate and achieve consensus on possible interventions to address these. It is hoped that the use of the NGT method in this case will increase the likelihood of change efforts made by the team.

The discrepancy between the ZA PCAT measure of PHC team effectiveness and the NGT results could be attributed to respondents misunderstanding the team effectiveness domain questions. Communication and leadership nevertheless emerged as major challenges to team effectiveness during the NGT process; team leaders (managers) need to be aware of their role in shaping teams. The findings point to a need for training CHC managers with a focus on building strong leadership that rewards team performance.

Although we know little about what will actually improve team functioning in this context, we hope these results will be of use to Du Noon CHC staff as a guide to future practice; to improve users' experience of primary care and contribute to improving team effectiveness at similar CHCs in the Cape Town Metro and other health districts in the Western Cape Province and beyond.

As suggested by a Du Noon CHC staff member during the reportback meeting, we recommend that more NGT or similar sessions be held to discuss the issues raised and generate items to improve team effectiveness.

The study findings regarding the other ZA PCAT domain measures are similar to those of the Western Cape ZA PCAT study. The contrast between user and provider perceptions of PHC

performance and the poor performance on first contact-access as rated by both users and providers are key findings. These data add to the original ZA PCAT study database.

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REFERENCES

1. Institute of Medicine, *Defining Primary Care, An Interim report.* Washington, D.C: The National Academies Press 1994.

2. Tandon A, Murray C.JL, Lauer JA, Evans DB. Measuring overall health performance for 191 countries. Geneva ,Switzerland. World Health Organisation, 2000 (Global Program on Evidence for Health Policy, Discussion Paper No. 30).

3. Collin C, Green A, Hunter D. Health sector reform and the interpretation of policy context. *Health Policy* 1999; 47 (1): 69-83.

4. Jumare F, Ogujiuba K, Stiegler N. Health sector reforms: Implication for maternal and child healthcare in South Africa, *Mediterranean Journal of Social Sciences* 2013, (4) 6.

5. De Maeseneer J, Flinkenflogel M. Primary Health Care in Africa: Do family physicians fit in? *British Journal of General Practice* 2010 (60): 286-292.

6. Primafamed-network, Victoria Falls Vision of the Primafamed-network 2012 (cited 2012 Nov. 23). Available from: http://www.the-networktufh.org/february-2013. [accessed 26th September 2016]

7. Schaay N, Sanders D, Kruger V. Overview of health sector reforms in South Africa, report. DFID Human Development Resource Centre 2011. 283292/Dr Available from: www.hlsp.org [accessed on 19th September 2016]

8. Borill C. S, Carletta J, Carter A.J, Dawson J.F, Garrod S., Rees A, Richards A, Shapiro D, West M.A. The effectiveness of health care teams in the National Health Service. London; Aston University; University of Glasgow; University of Leeds; 2002.

9. Mitchell P, Wynia M, Golden R, McNellis B, Okun S, Webb E, et al. 2012. *Core Principles & Values of Effective Team-Based Health Care*. Discussion Paper, Institute of Medicine, October 2012, Washington, DC. Available from: www.iom.edu/tbc. [Assessed 27th January 2017]

10. Bodenheimer T, Ghorob A, Willard-Grace R, Grumbach. The 10 building blocks of high-performing primary care. *Annals of Family Medicine* 2014;12(2):166-171.

11. Lemieux-Charles L., McGuire W.L. What do we know about health care team effectiveness? A review of the literature, *Medical Care Research and Review*, June 2006; 63(3) 263-300.

12. Cohen, S. G, Bailey D.R. What makes teams work: Group effectiveness research from the shop floor to the executive suite, *Journal of Management* June,1997 23:239-290.

13. Gittell J.H, Godfrey M, Thistlethwaite. Interprofessional collaborative practice and relational coordination: Improving health care through relationships. *Journal of Inter-professional Care*, 2013, (27): 210-213.

14. Cromp D, Hsu C, Coleman K, Fishman P, Paul A, Liss DE, et al. Barriers and facilitators to team-based care in the context of primary care team transformation. *Journal of Ambulatory Care Management*, 2015; 38 (2): 125-133.

15. Sundstrom, E.D. *Supporting work team effectiveness: Best management practices for fostering high performance*. San Francisco: Jossey-bass Publishers, 1999.

16. Contandrioppoulos D, Brousselle A, Dubois C.A, Perroux M, Beaulieu M.D, Brault K, D'Amour D, Sansgter-Gormley E, A process-based framework to guide nurse practitioners integration into primary health teams: Results from a logic analysis. *BMC Health Serv RES*. 2015 (15).78.

17. Ellershaw J.E, Peat S.J, Boys L.C. Assessing the effectiveness of hospital palliative care team. *Palliative Medicine*, April 1995, 9(2) 145-152

18. Schraagen J.M, Schouten T, Smit M, Van Der Beek D, Hass F, Van De Ven J, Barach P. Assessing and improving teamwork in cardiac surgery. *BMJ Quality and Safety Health Care* 2010, 19(6)

19. Mash BJ, Mayer P, Conradie H, Orayn A, Kuiper M, Marais J. How to Manage Organisational Change and Create Practice Teams: Experiences of a South African Primary Care Health Centre. *Education for Health* 2008,21:132

20. Lurie S.J, Schultz S.H, Lamanna G. Assessing teamwork: A reliable five-question survey, *Ms Family Medicine*, 2011 (43).10.

21.Bresick G, Sayed A, Le Grange C, Bhagwan S, Manga C. Adaptation and cross-cultural validation of the United States Primary Care Assessment Tool (Expanded version) For use in South Africa, *African Journal of Primary Care and Family Medicine* 2015; 7(1):Art.#783

22. Bresick G, Sayed A, Le Grange C, Bhabwan S, Manga C. Western Cape Primary Care Assessment Tool (PCAT) study: Measuring primary care organization and performance in the Western Cape Province, South Africa (2013).*African Journal of Primary Health Care and Family Medicine* 2016;8(1),a 1057.

23. Van de Ven AH, Delbecq A.L. The nominal group as a research instrument for exploratory health studies. *Am J Public Health* 1972; 62 337-42.

24. Jones J., Hunter D. Consensus methods for medical and health services research. *British Medical Journal* 1995, 311: 376-80.

25. Johns Hopkins Primary Care Policy Center, Primary Care assessment tool, *J. Fam Pract.* 2001, 50(2):161.

26. Isaacs AA, Manga N, Le Grange C, Hellenberg DA, Titus V, Sayed R. A snapshot of non-communicable disease profiles and their prescription costs at ten primary healthcare facilities in the western half of the Cape Town Metropole. *South African Family Practice* .2015;57(3):137-193.

27. Statistics South Africa: Statistic Release P0302, Mid-year population estimates.2015.Pretoria

28. Mclnness S, Peters K, Bonney A, Halcombe E. An integrative review of facilitators and barriers influencing collaboration and teamwork between general practitioners and nurses working in general practice. *Journal of Advanced Nursing* 2015 ;71(9):1973-85

29. Alexander JA, Lichtenstein R, Jinnet K, D'Aunno TA, Villman E. The effects of treatment team diversity and size on assessment of team functioning. *Hospital and Health Services Administration*. 1996, 41(1): 37-53.

30. Carleta J. Communication and effectiveness in primary health care teams, 2001 Available from:Homepages.inf.ed.ac.uk/jeanc/DIRC-paper.pdf [accessed 20th October 2016]

31. Taplin S. H, Foster M. K, , Shortell S.M. Organisational leadership for building effective health care teams, *Annals of Family Medicine*. 2013; 11(3).

32. Leggat S.G. Effective healthcare teams require effective team members: Defining teamwork competencies, *BMC Health Services Research*, 2007, **7**:17

33. Howard M, Self-reported teamwork in family health team practice in Ontario, organisational and predictors of team climate, *Canadian Family Physician* May 2011 (5); 185-191.

34. Haggerty J, Reid R, Freeman G, Starfield B, Adair C, Mckendry R. Continuity of care: A multidisciplinary review. *British Medical Journal.* 2003,327: 1219-1221.

35. McDaniel S.H, Campbell L. Hepworth J, Lorenz Alan. *Family-Orientated Primary Care*, Library of Congress, Cataloging-in-Publication Data, 2nd edition. USA