COMMUNITY LIFE CENTRES AS A PRIMARY CARE MODEL IN SOUTH AFRICA

EVALUATION IN GAUTENG PROVINCE – DIEPSLOOT

KIT Royal Tropical Institute

Philips Foundation

KIT Royal Tropical Institute

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ABBREVIATIONS

ANC	Antenatal care
ART	Antiretroviral therapy
BCG	Bacillus Calmette-Guérin
BOD	Burden of Disease
CCC	Comprehensive Care Clinic
CHC	Community Health Committees
CHV	Community Health Volunteer
CLC	Community Life Center
CSO	Civil Society Organization
CWC	Child Welfare Clinic
DAC	Development Assistance Committee
DTP	Diphtheria Tetanus Polio
DHS	Demographic Health Survey
DHIS2	District Health Information System 2
EMR	Electronic Medical Record
EPI	Expanded Programme on Immunization
FGD	Focus Group Discussion
HCT	HIV counselling and testing
HRH	Human Resources for Health
IDI	In depth interview
KII	Key informant interview
FBO	Faith Based Organization
FGD	Focus Group Discussion
FP	Family Planning
KIT	KIT Royal Tropical Institute
KII	Key Informant Interview
LMIC	Low- and middle-income country
M&E	Monitoring and evaluation
MoH	Ministry of Health
MOM	Mobile Obstetrics Monitoring
NHIF	National Hospital Insurance Fund
NHIS	National Health Insurance Scheme
NGO	Non-Governmental Organization
OEDC	Organization for Economic Co-Operation and Development
OPD	Outpatient department
QA	Quality Assurance
SBA	Skilled Birth Attendant
SCI	Service Coverage Index
TB	Tuberculosis
ToC	Theory of Change
UHC	Universal Health Coverage
UNFPA	United Nations Population Fund
VCT	Voluntary Counseling and Testing

EXECUTIVE SUMMARY

BACKGROUND

Philips has been deploying Community Life Centres (CLCs) in various sub-Saharan African countries since 2014. These CLCs are primary care approach aiming to contribute to Universal Health Coverage (UHC) by increasing quality of care and effective coverage of services, strengthening management and support functions and promoting community engagement. KIT Royal Tropical Institute (KIT) has been asked by Philips Foundation to conduct an independent mixed-method evaluation to generate evidence regarding the effects of CLCs on access, utilization and quality of primary care services in Kenya and South Africa (SA). In May 2015, Philips launched a mobile "Health clinics on wheels" and in August 2017 a mini-CLC was inaugurated in Diepsloot in collaboration with Rhiza Babuyile Foundation, the Gauteng Department of Health (DoH) and other corporate partners. Since 2019, the "Health clinics on wheels" and the mini-CLC have been located in the same compound in Diepsloot and are part of our evaluation. The evaluated CLC in SA is run by Rhiza Babuyile, and as such part of the private not-for-profit sector. The overall key findings and lessons learned of this evaluation aims to contribute to the effective delivery and scale up of CLCs taking into account contextual differences and requirements. This SA country report presents the main findings of the independent evaluation of the mini-CLC in Diepsloot, SA.

STUDY OBJECTIVES

1. To assess the relevance of the services offered through the CLCs.
2. To assess healthcare seeking behaviours (barriers, preferences, and responsiveness to needs) within the catchment population of selected CLCs.
3. To assess trends in healthcare utilisation using selected tracer conditions in the CLCs emphasizing reproductive, maternal, neonatal and child health services, and including both services provided at the facility as well as outreach activities initiated from the facility.
4. To evaluate perceived and realized quality of healthcare provided to the population in the CLCs.
5. To assess the appropriateness of support and management functions of the CLCs.
6. To explore the overall outcomes of the CLCs and draw lessons about the contribution of the CLCs to the elements listed in objectives 1-5.

The discussion around the CLCs as an innovative model of primary care delivery and a reflection to make even better use of its potential benefits is opportune and strategic. In the last few years, several reports have been published on the challenges around quality of care in low- and middle-income countries (LMICs). [1]–[3] In all these discussion and global policy forums, the importance of primary healthcare has been reconfirmed and primary healthcare has been called the centrepiece for the achievement of the Sustainable Development Goals and UHC. [4]

MIXED-METHOD APPROACH

We conducted a mixed method study in which qualitative and quantitative methods were combined during the design, data collection and analyses. A control facility (Diepsloot South Clinic) was selected to explore the plausibility of a causative link between the CLC-specific interventions and outcomes measured. To get insights about

awareness of, preferences for, and barriers to seeking primary care offered at the CLC, 31 in-depth interviews (IDIs) with (young) women of reproductive age and (young) men were conducted. To explore views on the relevance of the CLC and the service offered, the quality of care, the management of the CLCs and community participation, 23 key informant interviews (KIIs) were held with identified key stakeholders. For further contextualization of the findings and the realist analysis to be presented with the synthesis report of the South Africa and Kenya reports two expert interviews were done.

To explore healthcare seeking behaviours regarding primary care in the catchment population of the CLCs, four focus group discussions (FGDs) were conducted. We interviewed a total of 274 clients (in the CLC and the control facility) directly after their consultation (client exit interviews) to explore their experience in receiving care relating to professionalism, comfort, respect and perceived quality of care. Furthermore, consultation observations were conducted to allow for better assessment of the process dimensions of quality: whether the care delivery during consultation was matching the standards set nationally or internationally with regard to evidence-based practice as well as the relational aspects of the interactions. To provide additional context to care delivery in each facility, we collected information on the structural components of quality of care including the types of materials and supplies available, the quality of the infrastructure as well as the presence of official guidelines and their utilisation by staff.

SCOPE, KEY FINDINGS, AND RECOMMENDATIONS

This report primarily concerns the findings and the recommendations based on the evaluation of the mini-CLC in Diepsloot, SA. These are summarized below and organized following the specific evaluation objectives. The final synthesis report will cover the findings and discussion of the two evaluations from Kenya and SA, as well as the literature review on primary care delivery models in LMICs and will include a discussion on the opportunities of this primary care delivery model, and a revised Theory of Change. A roadmap containing priority issues and our views on the CLC of the future will be part of the synthesis report.

The mini-CLC in Diepsloot is in transition to a full CLC. There is a strong linkage and embedding of the mini-CLC with the SA (local) government public health services. The CLC distinguishing features are to a limited extent present in the mini-CLC and therefore not different from any other primary care facility that offers the services the mini-CLC offers. The mini-CLC and especially the attitudes and technical quality of the CLC received lots of appreciation, and there are definite signs of an attraction to the services they provide. The NGO status of the mini-CLC provides additional benefits through other activities Rhiza Babuyile is developing in the community. The specific Philips technology interventions were less present (e.g., backpacks, electronic medical record system (EMR)) and maybe less needed (e.g. ultrasound), but the co-creation and implementation of the CLC by a SA-based NGO while also offering social and economic support looks promising for the future of the CLC in the South African context.

Key Findings	Recommendations
Relevance of services provided through CLC (Objective 1)	
• In terms of a co-creation process, a baseline assessment of the health needs of the catchment population, no punctual and precise formal process could be identified. As an initiating international non-governmental organization (INGO), Rhiza Babuyile was already actively involved in the Diepsloot community with educational activities, and early child development activities. In the course of these activities within this community, a need for healthcare related activities was identified, for which contacts were established with health authorities and Philips. • Another dimension of the co-creation process are the linkages of the primary care delivery with broader social efforts, like business hub; opportunities for small shops to benefit from lighting, electricity and safety within the compound; child day-care activities; etc.: these are discussed below under outcomes, and more specifically under non-health outcomes. • Ongoing contacts between the CLC and other NGOs, churches and social workers in the area were reported; it was less clear to what extent these contacts were specifically aiming at an ongoing dialogue on health needs and expectations in this regard.	• In the original CLC concept, a process of co-creation was identified as an important and defining element of the approach. We think that both formal and informal mechanisms for a continuous dialogue with communities, community representatives, and other stakeholders remains an important element of primary care delivery, in order to monitor and identify evolving health needs, explore opportunities for broader health promotion, as well as perceptions on the service delivery. In order for such commitments not to remain too vague, this co-creation and dialogue element could be made slightly more concrete and explicit, taking the South African primary healthcare approach into account.[5]

- The services provided at the CLC focus on family planning, antenatal care and child welfare consultations including vaccinations which all correspond to priority health needs. For other services, including HIV, TB, and chronic non-communicable diseases (diabetes, hypertension and cardiovascular problems) only initial screening is done, after which patients are referred to one of the public services. It should be noted that the current mini-CLC will be replaced by a full primary health centre – CLC, for which a place has already been identified; this future CLC will provide a more comprehensive primary care package comparable to the Diepsloot South clinic (the control facility).
- Some health problems seem to receive less attention than what might be expected from the burden of disease (BOD): this is in particular true for HIV, non-communicable diseases, mental health problems, and violence related problems.
- Contacts with county health authorities are regular; this includes formal processes of monthly reporting on activities, and supervision; so the CLC is fully aligned with policies and guidelines from health authorities. The CLC (nor was the control facility) is not (yet) integrated in the Ideal Clinic Realisation and Maintenance (ICRM) program with its Office of Health Standards Compliance (OHSC), that will be the base for the accreditation mechanism under the projected National Health Insurance (NHI).

- The current mini-CLC is projected to evolve to a comprehensive CLC, at a new location, close to the current one. In the process of installation of this new CLC. It will be appropriate to try to comply with the standards for the “Ideal Clinic” [6] , as this will be the future standard for primary care facilities in South Africa. And it will be the basis for accreditation and eligibility for reimbursements under the National Health Insurance, that is being developed in parallel [7], [8].

- CHWs play an important role as an interface between community and primary care facilities, and they constitute an important focus in the primary healthcare strategy of South Africa [5], [8]. In its CLC concept, Philips has important tools and training elements to improve this outreach and community link to service provision. The CLC in Diepsloot has no dedicated CHW program that could benefit from this Philips specificity, although they link up with networks of CHWs from other partners.

- Philips and Rhiza Babuyile should align with existing policies on the role of community health workers, while at the same time profiling the CLC with the ‘Tooling, training and tracking’ component of its approach. This can be done in collaboration with the partners that currently accompany the CHWs and outreach activities in the area.

Key Findings	Recommendations
Effectiveness: Access, Utilization trends and Quality of Care (Objectives 2,3,4)	
• Effective coverage relates to needs, utilization/coverage and quality of care: findings on the three components are summarized below: • Needs: the mini-CLC does not provide a comprehensive package of primary care services, as has already been elaborated above. • Utilization: CLC specific data for services provided was not available in digitized format: as data are reported through the sub district and the control facility (Diepsloot South clinic), the relative contribution to these services nor their trend could be ascertained although staff and some other KII respondents mention the increase of attendance since the CLC was opened. • Quality of care: health workers attitudes at CLC perceived as much better compared to control facility. Particularly for undocumented migrants, the CLC appears to have great appeal. Adolescents (in FGDs) also mention their preference for the CLC for their specific sexual and reproductive health needs. Very poor people may find the modest fees an obstacle for access. • In terms of structural quality elements, the CLC is well appreciated for its infrastructure (except for being limited in space), and equipment. Complaints about missing equipment are sometimes related to unfamiliarity with the type of equipment a primary care facility should have. This is for instance the case when people refer to a lack of X-ray, or colposcopy equipment (this would depend on the South African policy for cervical cancer screening). According to the head nurse of the CLC, they currently have no ultrasound; following South African (public) guidelines, only certain referral level centres should have ultrasound: this would apply to community health centres open 24/7, and also do deliveries.	• Negotiate with sub district authorities to appear as a separate reporting facility in the DHIS-2. And in connection to that, define more or less the geographical area of the sub-district that will serve as the catchment area of the CLC. The CLC model, and in particular the mini-CLC adaptation of it, demonstrates great potential for bolstering primary care utilization in hard-to-reach communities. It will be vitally important to single out CLC data and report CLC utilization metrics directly to the DHIS2 in order to measure progress in the area. • Given the strategic importance of certain equipment - from the commercial perspective of Philips company- like ultrasound or EMR, it may be important to envisage the inclusion of such technologies once the mini-CLC is upgraded to a full CLC, to the extent that this is compatible with the PHC policy on Ideal Clinics; or that such technological innovations are included on an experimental/pilot base, in consultation with health authorities.

- Technical quality of services scored well, but not very different from the control facility. It should be noted that the two facilities are not very well comparable, given the difference in scope of activities, and therefore workload.
- Given the generally positive appreciation of the CLC by most respondents, we may assume that it certainly contributes to effective coverage and UHC in the area where the CLC is implemented. The perspectives (after the transition to a full CLC) will be even better, as the service package will then conform better to a full primary care package.

Key Findings	Recommendations
Appropriateness of Support & Management functions of the CLC (Objective 5)	
• In relation to human resources supervision and training, supply systems, reporting and accountability procedures and system, and mechanisms for social accountability, the CLC generally follows government policies and guidelines, and does not differentiate itself from the (public) control facility. The CLC appears to have well organized management arrangements, with a motivated team of staff members. The only critics some respondents had was in relation to privacy because of the limited space. • We have no information whether staff has more favourable salary and secondary labour conditions compared to a public facility. • In terms of supply for essential drugs, the CLC gets its supplies from the DoH, like the Diepsloot South clinic. Clients report that there are less drug stock outs at the CLC; it is possible that this is related to their patient load and patient mix; on the other hand, the CLC has the means to do additional acquisition of drugs outside the allotment they get through the DoH.	

- Water supply system, electricity & lighting, and waste disposal arrangements, together with infrastructure refurbishments make a very positive contribution to the image and reputation of the CLC. Lighting also contributes to the security of the premises, thereby favouring access also in the evening and night. The container and van currently offer limited workspace, another reason why the upgrade to a full CLC is highly recommendable.
- The CLC currently does not have a comprehensive EMR system. Mobile Obstetrics Monitoring (MOM) a cloud based software has been used for maternal monitoring. The back-end development team from Philips can access CLC aggregated data. CLC shared MOM data which is compilation of CLC Hanipark and the mini-CLC. The MOM software was terminated in February 2021. It was a demo version provided to the facility for free for a defined period. Note: information received after primary field data collection was completed.

- An EMR (and the same applies to MOM) can be one of the components to profile a Philips CLC, and it can offer important advantages as an innovative technology to improve primary care delivery, both in terms of facility management and individual patient management. In order to fully benefit from its advantages (for both facility management and reporting; as well as individual patient management and follow-up), it would be preferable to introduce it on a regional or district level, and not in isolated facilities, because of the interrelations and (counter)referrals between different levels in a health system. The MOM is an example of an EMR with a more limited scope (maternal monitoring); in this case, it would also make sense when it is applied more system (region, district) wide, and not in an isolated CLC, where no deliveries take place, but only ANC.

- Lacking information on national and county budgets, as well as precise investment and operational costs of Philips funded components, we were not able to assess the comparative costs of running a CLC compared to a control facility. Besides, the current CLC is not clearly comparable to the control facility, given the more limited scope of the service package, and partly because of that, the lower patient load.

- Finances need to be monitored in all future CLCs and income and expenses need to be described in great detail, comparing it to public facilities as well as to private-for-profit clinics. Marketing of the CLC concept will in the end depend on comparative value for money information.

Key Findings	Recommendations
Overall Outcomes & Sustainability (Objective 6)	
• It is plausible that CLC has contributed to effective coverage of the essential services that it is focusing on, although we cannot quantify the exact contribution of the CLC to the utilization of services, as they report through the public facility of Diepsloot South. The service package is currently not as comprehensive as the one of the control facility or compared to what is generally expected from a primary care facility. In terms of quality of care, the attitudes of staff and perceived quality, and most structural elements, the CLC scores better than the control facility. On the technical quality we could not make firm conclusions on the basis of this study. This way, the triad 'Needs served – Utilization of essential services – Quality of care' shows a diverse picture, but with a perspective of the mini-CLC in time transitioning to a comprehensive CLC, the balance can be appreciated as positive.	• Philips should take care that they define and adhere to their minimum set of "essential" or "distinguishing" features of the CLCs. When it 'just' financially supports a neat infrastructure with appropriate equipment, it may not be very different from any other newly opened primary care facility. Typical features, that are at the same time Philips specific, like backpack tools for CHWs, ultrasound, EMR, etc. should help in profiling the CLC as well as strong partnerships with organisations that deliver empowerment and life skills and contribute to the financial sustainability of the CLC. Hardware components in terms of equipment should then be accompanied by appropriate guidance, training, maintenance, and follow-up of such innovations. In order to sustain the existence of CLCs Philips – given its market position in the healthcare field – need strong alliances with investing partners whether governments, NGOs or private not for profit entities.
• Responsiveness to needs and overall satisfaction of services at the CLCs was high: across users as well as stakeholders, the CLCs gain a lot of trust and reputation, and are known for the friendly attitude of staff. Particularly for (undocumented) migrants, the CLC is a preferred choice, and the same seems to apply to adolescents, who consider the CLC as more friendly to their specific needs (e.g., family planning, sexual and reproductive health issues).	

- Financial protection (protection from high costs related to use of healthcare services, while at the same time suffering from loss of income due to illness in a context where most of the population is working in the informal sector) is an important goal for health systems. Where the public facility of Diepsloot South offers services free of charge, the CLC charges modest fees that may nevertheless constitute a constraint to poor people. However, distances in Johannesburg can be quite big, and having an accessible health service nearby may reduce transport costs; besides, the CLC currently has less problems of drug stock outs, so although people pay fees, they are less referred to private pharmacies to buy drugs.
- The mini-CLC seems to attract currently more people from the better-off social groups, seen from the larger proportion of clients who have an insurance plan.

- Philips and Rhiza Babuyile need to follow the current health reforms in South Africa closely and comply with the standards of the Ideal Clinics, that will be a requirement for reimbursements under the National Health Insurance that the National policy foresees. This would then also improve the affordability for the poorer groups in society.

- The non-health components of the CLC concept – business hub; early child development activities; electricity, lighting and water supply beyond the healthcare facility itself – were not part of the explicit scope of this study. We therefore cannot state to what extent these elements contributed to improved living conditions for the people living nearby the CLC compounds. In general, places where several services and 'markets' are concentrated geographically, can play an important role in making a healthcare facility better known and accessible (called 'approachability' in the Levesque framework).
- The extent to which Rhiza Babuyile subsidizes health activities through other non-health activities is unknown to us.

- From the expert interviews with Rhiza Babuyile it became clear that the focus on skills building, business development, product sales for livelihood makes that the target population get more control over their lives. To what extent these not directly health related activities increase the average living conditions and socio-economic level of the entire target population of the CLC allowing them to pay the modest fees for the health services, should not be overestimated: such benefits would probably only accrue to a small group of beneficiaries. However, it is possible that some of these non-health activities may generate income by the organizing NGO, that can be used to cross-subsidize CLC access for poor groups unable to pay for services. This mechanism can be explored further to see how and to what extent it can contribute to the sustainability of the CLC model.

INTRODUCTION

Advances towards UHC have been slow in most countries in Africa.[9] The underfunding of primary care systems has been identified as one of the challenges that sub-Saharan countries face to achieve UHC. The quality of care reported in primary care facilities is lower than in secondary care facilities, and primary care facilities often lack basic infrastructure, staff or commodities like essential drugs, water or electricity.[2] New technologies and models to deliver primary care are changing the way healthcare is offered, utilised, and managed, paving the way to UHC. Since 2014, Philips has been deploying CLCs in a number of sub-Saharan countries, amongst which South Africa. These CLCs are examples of primary care service delivery models aiming to contribute to UHC by increasing quality of care and effective coverage of services, strengthening management and support functions and promoting community engagement [10]. At present there has not been a systematic evaluation on the effect of the CLC model on the delivery, quality and access to primary care.

Philips Foundation commissioned KIT Royal Tropical Institute (KIT) to evaluate the effect of Community Life Centres on access, utilisation and quality of primary care services in Kenya and South Africa. For this evaluation, a combination of quantitative and qualitative research methods was used. The evaluation proposal was developed by KIT and approved by the Research Ethics Committee of KIT (May 23, 2019), Philips Internal Committee for Biomedical Experiments (August 30, 2019) and Human Research Ethics committee of University of Witwatersrand Johannesburg (March 12th, 2020). Philips Research Africa reviewed and approved the protocol. A local research team was subcontracted to perform the primary data collection.

The current report is based on the data collected in early February 2020 and November-December 2020 in South Africa. Data collection was interrupted due to the COVID-19 pandemic. Primary data collection consisted of facility-level client exit interviews; focus group discussions; in-depth interviews with (young) women and men of reproductive age, and with key stakeholders; client-provider consultation observations; and facility observations in Diepsloot Township (Gauteng province) in the northeast part of the Johannesburg metropolitan area. Secondary analysis of District Health Information System 2 (DHIS2) data was also done. Information obtained through these various data collection methods provided an abundance of information and, to the extent possible, these findings have been triangulated.

After the chapters on objectives and purpose and methods of the study, the main findings of the assessment are presented along the five objectives: relevance, health seeking behaviour, utilisation trends, quality of care and management. Each of these chapters start with a box summarising the key findings followed to then answer the main evaluation questions of the respective specific research objective in greater depth. Where feasible, the results of the assessment are described while answering the pre-defined evaluation questions. In these boxes the reader is informed where and what we triangulated. Following these findings, the last chapter includes the discussion, recommendations and conclusions. This document also contains annexes and references.

OBJECTIVES, EVALUATION QUESTIONS, SCOPE

OBJECTIVES

The general objective of this study was to generate evidence regarding the effects of the CLC on access, utilization and quality of primary care services in South Africa. Specific objectives were:

1. To assess the relevance of the services offered through the CLCs.
2. To assess healthcare seeking behaviours (barriers, preferences, and responsiveness to needs) within the catchment population of the selected CLC.
3. To assess trends in healthcare utilisation using selected tracer conditions emphasizing reproductive, maternal, neonatal and child health services, and including both services provided at the facility as well as outreach activities initiated from the facility.
4. To evaluate perceived and realized quality of healthcare provided to the population in the CLCs.
5. To assess the appropriateness of support and management functions of the CLCs.
6. To explore overall outcomes of the CLCs and draw lessons about the contribution of the CLCs to the elements listed in the specific objectives 1-5.

The evaluation framework presented below (Table 1) summarizes the key evaluation questions which guided this study, their linkage with the study objectives and the organization of main findings in each chapter. The evaluation questions are categorized following the generic Organization for Economic Co-Operation and Development (OEDC)/Development Assistance Committee (DAC) evaluation criteria.[11]

Table 1 Theoretical framework including research objectives, key evaluation questions and report chapters

RESEARCH OBJECTIVES	KEY EVALUATION QUESTIONS	REPORT CHAPTERS
Relevance		
1. To assess the relevance of the services offered through the CLCs.	To what extent are the objectives and approaches of the CLC intervention aligned with national policies and strategies, and to the national burden of disease? To what extent do the CLC outreach activities target specific vulnerable population groups (women of reproductive age, children and the poorest)? How does the CLC concept promote stakeholder engagement in the delivery of primary healthcare services?	'Findings: Relevance of the services offered' 'Findings: Relevance of the services offered' and 'Findings: Appropriateness of support and management functions'
Effectiveness		
2. To assess healthcare seeking behaviours (barriers, preferences, and responsiveness to needs) within the catchment population of selected CLCs.	To what extent is the population aware of the services provided at the CLC? To what extent are the services provided at the CLC acceptable to the populations served? Can people easily use the CLC in terms of geographical access, accommodation, and affordability? Do the CLCs have sufficient resources available to offer a normal, quality package of primary services?	'Findings: Healthcare seeking behaviour'
3. To assess trends in healthcare utilisation using selected tracer conditions in the CLCs emphasizing reproductive, maternal, neonatal and child health services, and including both services provided at the facility as well as outreach activities initiated from the facility.	Are essential services used by the population? What are the trends in utilization of CLC services?	'Findings: Utilization trends'
4. To evaluate perceived and realized quality of healthcare provided to the population in the CLCs.	Is the quality of services appropriate?	'Findings: Quality of Care'

Efficiency		
5. To assess the appropriateness of support and management functions of the CLCs.	What are the costs of providing services and support functions?*	*
	Is management of the CLC appropriately functioning? How is efficiency of management processes and procedures?	'Findings: Management'
Impact		
6. To explore the overall outcomes of the CLCs and draw lessons about the contribution of the CLCs to the elements listed in the specific objectives 1-5.	What is the impact of the CLC on the effective coverage of healthcare? How satisfied are people with the services that the CLC provides? What is the impact of the CLC on the protecting the population against catastrophic costs? What is the 'value for money' for the CLC concept and approach?* What is the impact of CLC on community living conditions?	'Overall outcomes, Discussion and Conclusion'
Sustainability		
	To what extent is the concept and approach of the CLC sustainable (financially, organizationally, capacity wise)?	'Overall outcomes, Discussion and Conclusion'

*Not enough data available to respond to the question due to the absence of facility level financial reports and not part of topic guide in the qualitative interviews.

SCOPE OF THE EVALUATION

In the international literature, as well as in relation to the Philips CLC model, two terms are often used interchangeably: primary care and primary healthcare. While primary healthcare mostly refers to a broader approach towards health policy and service delivery based on a set of core principles defined in the Alma Ata declaration—equity and social justice, health promotion in connection to inter-sectoral approaches, universality of access to services, and community participation—primary care is more seen as a subset of this broader concept [12], having the following five key characteristics [13]:

1. Close to client, first point of contact with the health system, in between informal care given in families and communities, and hospital care
2. Offering a comprehensive and integrated package of services
3. Continuity of care across the life cycle of a person
4. Coordination point for care across different levels of care, including social services
5. Community participation.

In developed countries, the term primary care is used most, with a wide diversity of approaches, from offering mostly curative care by family doctors, to services that also cover population-based preventive interventions. [14] In developing countries, the term primary healthcare is generally used, most often with the same orientation towards primary care as described above, but with more ambiguity, sometimes restricted to community-based healthcare, and in other settings more broadly including all services in the district, including the district hospital. [5] [8]

In this evaluation, our focus is on the CLCs offering primary care services, according to the five-key characteristics described above, and including their coordinating role with community-based workers and volunteers.

In the Philips brochure describing the CLC platform (see Box 1) or what we will further refer to as CLC, the physical setting where primary care services are offered are described as a space for social and economic activities for the surrounding communities, with a water supply; waste disposal provisions; and solar installations that power the devices, light the facility and offer security lighting at night. In some places, early child care facilities and a business hub offering workspace and business training on demand also serve this broader 'community development' purpose [10] However, these activities are not a prime focus in the current evaluation.

Finally, the study focused on outcomes of the CLC instead of impact and consequently is not considered an impact evaluation. A further discussion on outcomes and impacts is included in discussion and recommendation.

BOX 1 THE (ORIGINAL) CLC CONCEPT [10]

The (original) concept of the CLC Theory or underlying assumption of the different CLCs as implemented by Philips in collaboration with the county or district. Philips is emphasizing the drive for affordable and effective healthcare delivery is fuelling a shift from fee- to value-based care – a system that aims to expand access to care and improve patient outcomes at lower cost. It is believed that technology is foundational to value-based care, whether it be an informatics infrastructure that allows us to actually measure value by systematically tracking outcomes and costs, or telehealth platforms that bring care closer to the patient, wherever they reside.

This theory is translated in the CLC concept. It offers a community driven holistic approach to improving primary and community care. The aim is to collaborate to improve community and primary health across Africa, by extending new or existing health facilities into social and economic community hubs, using exciting innovative and sustainable programs, technologies, and services. This is done in four ways

1. Providing a health and safe environment.
2. Tooling training and tracking: connecting community and primary care with other levels of care and capacity strengthening and outreach is an integral part of the so called CLC platform
3. Sustainability is a crucial factor in the Philips CLC program, and this includes two key elements; a. Operational sustainability b. Financial sustainability which includes enabling social and economic activities which can potentially provide local revenue streams.
4. Collaboration: developing an ecosystem of collaborations. Originally Philips added small new technologies to the existing service but at the co-creation table it became clear that there was a need for a more holistic approach or better parallel innovation of services, water and sanitation and electricity. The basic idea is also that no entity can do this alone; a co-creation process is needed between governments, counties or provinces and health authorities and the private sector and or other partners like international and or national government organisations.

METHODOLOGY

MIXED-METHODS APPROACH

This formative programme evaluation follows a mixed methods, cross-sectional design, combining various quantitative and qualitative research methods in one phase. Qualitative and quantitative data were first analysed separately and then compared and combined for the overall analysis and distillation of key findings and conclusions (Figure 1). A counter-factual facility (hereafter referred to as control facility) was selected to explore the plausibility of a causative link between CLC-specific interventions and outcomes measured. The control facility was selected by District Health Authorities guided by the following criteria: located in Gauteng Province, Diepsloot Township, facility type [16] and level similar to the CLC (not open on a 24/7 basis), services provided with similar staffing level in terms of number and qualification/categories of staff.

Figure 1 Overview of all methods that are part of the assessment

CLCs AND STUDY AREAS

The evaluation study was conducted in Diepsloot Township, Gauteng Province where Philips established a primary health clinic on wheels and a mini-CLC.

Diepsloot Township is a very densely populated township with about 450,000 inhabitants in the north of Johannesburg, with only two government clinics. Philips established a “Health Clinic on Wheels” here, a mobile clinic in collaboration with Rhiza Babuyile, the Gauteng DoH and other corporate partners in May 2015. The mobile clinic is divided into two parts: a maternal and childcare section and a dental care section. The mobile clinic is equipped with innovative VISIQ ultrasound, Colposcope for Cervical Cancer Screening and Patient monitors to triage the patients with build in Exchange Webs Service protocols. The main goal of the mobile clinic is to provide

1. At the moment of the fieldwork, no ultrasound was available; and checking this information later confirmed that in June 2021, this equipment is not available. It is possible that initially, the mobile clinic has been equipped with this VISIQ ultrasound equipment. In principle, ultrasound is not a standard and required equipment in a clinic that does not offer 24/7 services including delivery care in South Africa.

primary health (ANC, vaccinations, healthy baby clinic and growth monitoring), family planning, HIV counselling and dental care services (preventive dental care, no extraction or fillings) thereby contributing to address the issues of teenage pregnancy and HIV/AIDS.

A mini-CLC was established in Diepsloot in August 2017. Philips South Africa and Rhiza Babuyile collaborated to offer solar power (for a clean and reliable energy supply), efficient and durable indoor and outdoor LED-lighting (enabling extended opening hours and providing a safe playground and football field for the community), healthcare equipment (to enable patient monitoring, diagnosis, and triage), and refrigeration (for storage of medicines - mostly vaccines). In addition to providing healthcare equipment at the facility, Philips has also supplied the outreach kit. The mini-CLC includes a single container providing ANC, vaccinations (health baby clinic and growth monitoring), family planning. The staff is provided by Rhiza Babuyile and to be sustainable, service fees are incurred to patients (e.g. 50 ZAR for 'vaccinations', 150 ZAR per ANC, 100 ZAR for FP consultation). Supplies are provided by the DoH and there are no community health workers/volunteers doing outreach activities. Since 2019, the mobile clinic and the mini-CLC are located at the same area. In the report the terms 'mini-CLC' and 'CLC' are used interchangeably.

Diepsloot South Clinic (Figure 2) was selected as the best match for CLC-Diepsloot by DoH authorities based on its location, catchment area, facility level and type [16], services provided, and staffing qualifications and numbers. While the two clinics match on several criteria, it should be noted that Diepsloot South Clinic is a public healthcare facility while CLC-Diepsloot is a private clinic. Services rendered at both facilities are more or less the same. Both facilities offer ANC, immunization, family planning and comprehensive care services. The only notable difference was for dental services which were only provided at the CLC while at the counter-factual, services had been terminated. This only came out after the sampling process had been done. For comprehensive care, we later established that such services at the CLC were limited to initial screening yet at the control facility they were comprehensive to include preventive and curative initiatives (e.g., diabetes, hypertension, HIV treatment).

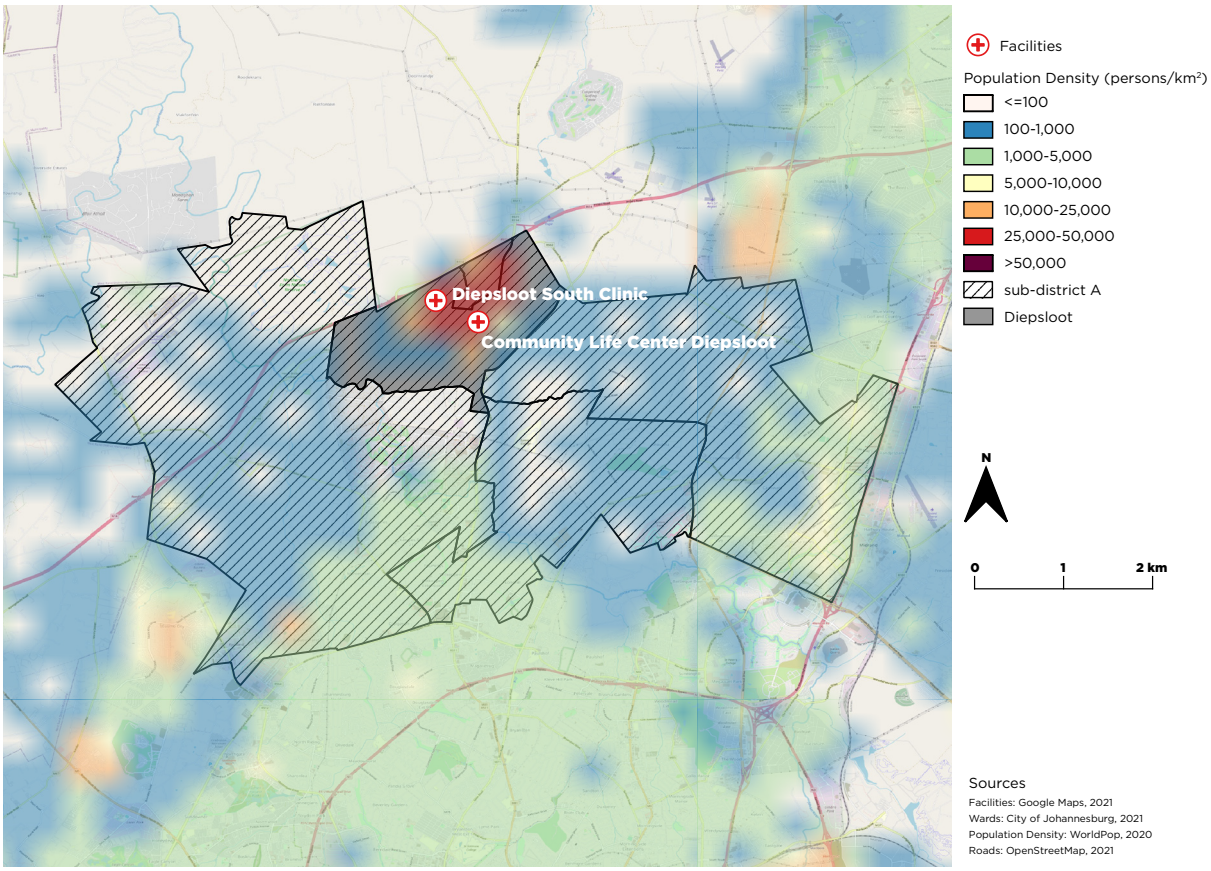

Figure 2 CLC-Diepsloot and Control Facility, Diepsloot Township, Johannesburg, South Africa

INDICATORS AND THEMES EXPLORED

To operationalise the study objectives, a research table (Annex 1a) was developed that provides an overview of the themes explored, variables measured, methods used and the various respondents/participants solicited. The themes and variables are based on the conceptual framework used (Levesque model), an international literature review, previous relevant assignments, a CLC evaluability report conducted by London School of Hygiene & Tropical medicine [17] as well as inputs from Philips Research Africa during the kick-off meeting (Nairobi, February 2019).

DETAILED DESCRIPTION OF METHODS EMPLOYED FOR THIS ASSESSMENT

DESK REVIEW

The aim of the literature study was to gain better understanding of the primary care delivery arrangements in South Africa and Kenya (similar evaluation done in Kenya). The scope of the review went beyond South Africa and Kenya, to look at primary care delivery arrangements in LMICs and in health systems more in general, as the role of primary (health) care delivery, and the need for its strengthening has been reaffirmed as a core strategy to UHC and the SDGs [4, 12], and this international discussion is highly relevant and opportune to contextualize the CLC model.

For the literature review, the following sub-questions have been examined:

- How is primary care defined and how does it relate to other levels of healthcare?
- Which health services are offered at primary care level and which drugs, medicines and technologies are used to deliver these?
- How many people are served by primary care facilities (i.e., size of catchment area)?
- How and by whom are health services at primary care level paid for?
- What are the organisational features of primary care facilities, including human resources commonly employed and staff mix, management, and accountability mechanisms?

For the search, government websites were first explored, using terms such as national health strategy, national health plan, national health development plan and health system in search engines. Subsequently, peer-reviewed literature was searched using the same key words in PubMed and Google Scholar. In this South Africa report, the literature review has more specifically been used to contextualize the functioning and performance of the CLCs, and their counterfactuals, within the South Africa health system and its policies.

SECONDARY DATA ANALYSIS

The objective of the DHIS2 analyses was to assess trends in healthcare utilization at the facility, sub-district, and district level using selected tracer conditions, emphasizing reproductive, maternal, and neonatal and child health services. Initially the aim was to contextualise the trends in service utilisation seen at the CLC and control and compare them to the wider local context in order to understand if service utilisation at the CLC was different from its surrounding (non-CLC) facilities.

Measurement of primary care utilization was guided by tracer indicators pre-defined by the World Health Organization (WHO) and World Bank (WB) to monitor progress toward UHC. The 16 WHO-WB indicators span the dimensions of reproductive, maternal, newborn, and child health (RMNCH), infectious diseases, no communicable diseases, and service capacity and access [18].

Facility- and district-level data for Gauteng Province primary care utilization was extracted from the South Africa District Health Information System 2 (DHIS2). CLC-

Diepsloot did not upload data to the DHIS2 but rather submitted utilization reports to the control facility, Diepsloot South Clinic, so control facility data is reflective of both control facility and CLC values. Extracted data included monthly count or coverage data for RMNCH, infectious diseases, and service utilization indicators spanning from January 2010 to September 2019. Twelve indicators were extracted from the DHIS2 and assessed for inclusion based on similarity to the WHO-WB UHC indicators, actual services provided by the CLC, and relevance to the research question. The DHIS2 indicators which did not exactly match WHO-WB indicators but still provided insight into primary care utilization were included in the analysis as proxy indicators. For example, the DHIS2 provided a measure for antenatal care (ANC) in the form of first ANC Visit Coverage (ANC1), whereas the WHO-WB indicator is specific to the fourth ANC Visit Coverage (ANC4). In this case, ANC1 was included in the analysis as a proxy indicator for monitoring reproductive, maternal, newborn, and child health trends. Annex 3 details the 12 specific tracer indicators extracted from DHIS2, their relation to WHO-WB indicators, and rationale for inclusion or exclusion from the analysis.

The final indicators selected for primary evaluation all fell under the dimension of RMNCH: first antenatal visit coverage (ANC1), third dose coverage of combined diphtheria, tetanus, acellular pertussis, inactivated polio vaccine, haemophilus influenza type b, and hepatitis B (DTaP-IPV-Hib-HBV, also referred to as pentavalent vaccine) (DTP3), Bacillus Calmette Guerin dose coverage (BCG), first measles dose under 1 year coverage (MEA1), and full immunization under 1 year coverage (EPI). Under South Africa's expanded program on immunization, full immunization under 1 year includes four doses of polio vaccine, BCG vaccine, two doses of rotavirus vaccine, three doses of Pentavalent DTaP-IPV-Hib-HBV, three doses of hepatitis B vaccine, three doses of pneumococcal conjugate vaccine, and one dose of measles vaccine [19].

CLIENT EXIT INTERVIEWS

The post-consultation questionnaire, or client exit interview (CEI), was used to assess the experience in receiving care directly after consultation, relating to professionalism, comfort, respect, and perceived quality of care received by the patient. Users were approached prior to their consultation to ensure a sufficient number of respondents. Data was collected on the perceived experience of the facility users for preventive and curative services. Preventive services were defined as family planning, antenatal care and child welfare clinic, and curative services as the comprehensive care clinic and outpatient department. A total of 273 questionnaires were collected, 151 at the CLC and 122 at the control facility. The CEIs were programmed and administered using OpenDataKit (ODK) software.

QUALITATIVE INTERVIEWS

Thirty one (31) in-depth interviews (IDIs) (19 at the CLC and 12 at Diepsloot South Clinic) were conducted in Diepsloot with (young) women of reproductive age (15-19 and 20-49 years) and (young) men, including users of the CLCs and users of the control facility, to get in-depth insights about preferences and barriers when seeking primary care as well as knowledge and awareness about the range of primary care services offered at the CLCs.

Twenty three (23) key informant interviews (KIIs) (14 control; 9 CLC) were held with identified key stakeholders. KIIs with facility staff, facility management, county health authorities, and community representatives served to explore the views on the relevance of the CLCs and the services offered, the quality of care, the management of the CLCs and community participation.

Four (4) focus group discussions (FGDs) were conducted (two control; two CLC) with (young) women of reproductive age to explore healthcare seeking behaviours regarding primary care in the catchment population of the different CLCs. Special focus was placed on exploring changes on healthcare seeking behaviour since the opening of the CLC, as well as on use of health services, quality of the services and functionality of community health volunteers.

Table 2 provides a detailed overview of all the qualitative interviewed and focus group discussions conducted.

Table 2. Overview of qualitative interviews and focus group discussions

CLC DIEPSLOOT	DIEPSLOOT SOUTH CLINIC
19 IDIs Adult Women 20-49 (15) Decision makers (4)	**12 IDIs** Young women 15-19 (3) Adult Women 20-49 (5) Young men 15-19 (2) Decision makers (2)
9 KIIs Facility staff (4) Community Representatives (1) Health Authority (1 Representatives from Rhiza Babuyile (2)*	**14 KIIs** Facility staff (4) CHW(3)** Health authorities (1) Religious leaders (1) Community Representatives (2)*** NGO Representatives (1)*** Women's Organization Representatives (2)***
2 FGDs Young women 15-19 (1) Adult women 20-49 (1)	**2 FGDs** Young women 15-19 (1) Adult women 20-49 (1)

** Representatives from Rhiza Babuyile were purposely selected on the basis of having adequate knowledge of the functions of CLC*
*** There are no CHWs at the CLC, although other collaborating partners do provide them to CLC, efforts to interview them were unsuccessful*
**** Selected participants for the CLC did not have adequate information on CLC hence their interviews did not provide sufficient information useful for analysis*

The uneven distribution of participants reflects more on services provided at each facility and in addition to having adequate knowledge of the facility.

Other demographics (adolescents, men) at CLC could not be sampled for in-depth interviews during time of data collection as they could not be found. We attributed this

to the services mostly rendered at the CLC are ANC, family planning and immunization and they attract a specific category of users i.e. women of reproductive health age. We however had very few men and adolescents met during fieldwork at the CLC and efforts to successfully interview them were unsuccessful owing to interview time duration. Although the time for interviews were short these participants were seemingly in hurry which would have compromised the whole purpose of an in-depth interview. Young women 15-19 are largely seeking family planning services at the CLC and because the CLC is a fee paying institution the proportion coming is lower. We presume that financial costs are a likely barrier as most of them within that age group are still dependent on parental or guardian's financial support. Also, most of them are of school going age and were likely to be at school during the time of the interviews. At the control facility, data collection was during the COVID-19 pandemic where schools were closed hence we could find them unlike at the CLC where interviews were done before the COVID-19 pandemic.

For further contextualization of the findings and the realist analysis to be presented with the synthesis report of the South Africa and Kenya reports two expert interviews were done.

IDIs, KIIs and FGDs were done face-to-face by the local research teams except for the Health Authority (control) done through Zoom.

FACILITY AND CONSULTATION OBSERVATIONS

The facility observation tool collected mainly structural information on the components of realised quality of care, including general service domains (human resources, facility infrastructure, availability of basic amenities, basic equipment, standard precautions for infection prevention, diagnostic capacity and availability of essential medicines). Structure and infrastructure were assessed based on a standard list of items (see Table 3).

Consultation observations allowed better assessment of the process dimension of quality: whether the care delivery during consultation was matching the standards set nationally or internationally with regard to evidence-based practice as well as the relational aspects of the interactions. Consultation observations were planned per type of consultation with a minimum of six consultations per type. The types of consultations included: under 5 child clinic, chronic conditions consultations, family planning, and antenatal care. Common to all types of consultations were rapport-building indicators to be filled in by the observer based on the provider's behaviour toward the user. The CLC and control had eight observations per consultation type and respectively 36 and 32 observations for rapport building.

Table 3. Facility observation: Overview of availability of staff and services provided.

STAFF/SERVICES	CLC	DIEPSLOOT SOUTH CLINIC
HUMAN RESOURCES		
Operations Manager/Sister in Charge*	1	1
Assistant operations manager*	1	1
Nurses	4	7
Nurse - dental	1	0
Dental therapist	1	
Counsellor HIV – Counselling and Testing (HCT)	1	0***
Data Clerk/Admin assistant	1	1
CHWs		4
Cleaner	1	1
Security guard	1	4
FACILITY INFRASTRUCTURE		
Rooms/units	1 mini container, 3 mobile trucks	12 rooms/units (5 consultation rooms, 1 emergency room)
General consultation	Mini-container	0
Dental services	Mobile truck 1, 1 bed	0
Administration and clerical functions	Rhiza Babuyile office/open plan space	1
Operation Manager Office	Rhiza Babuyile office/open plan space	1
Assistant operations manager's office	Some space in truck	1
ANC services provision	Mobile truck 2, 1 bed	1
Family planning services provision	Mobile truck 2	1
Chronic disease management	Mini-container	1
Immunization programme	Mobile truck 3, 1 bed	1
HIV testing	Mobile truck 3, 1 bed	0 *****
Emergency care and general consultation	Mini-container	1
Medicines storage	Mobile truck, Rhiza Babuyile	1
Toilets	1 @ Rhiza Babuyile Business Hub	3
BASIC AMENITIES		
Main & secondary source of electricity	Solar power/Generator	Thermal/Generator
Water source	Tap water from tank	Tap water from tank
Room with auditory and visual privacy available?	Visual privacy only	3
Toilet type	Flush toilet	Flush toilet
Functional phone available to call outside	Yes**	Yes**
Functional short wave radio	No	Yes
Access to computer with e-mail and internet	Yes	Yes
AVAILABILITY OF BASIC EQUIPMENT		
Sampled basic equipment (n=24) excluding dental care (n=19)	42% (10/24) / 26%(5/19)****	71% (17/24) / 89% (17/19)
Clinic Records available	100% (4/4)	100%(4/4)
Health education instruction available	0% (0/3)	0% (0/3)
Standard precaution for infection prevention	100% observed	100% observed (11/11)
DIAGNOSTIC CAPACITY		
Offer diagnostic tests (n=11)	64% (7/11)	64% 100% (7/11)
National protocols and/or job aids available	Yes, ANC, FP, <5 clinic	Yes, ANC, FP, <5 clinic

*** Facility does not offer 24 hr emergency services; patients are referred to nearby facility OR Tambo Clinic which is open 24 hours*

**** Voluntary counselling and testing services at the control facility are provided by an NGO (Aurum Institute). They have their own tents which are not part of the clinic building. Tracking of defaulters is done by another NGO (Right to Care). They also have their tents which are not part of the clinic*

***** Due to limited scope of the mini-CLC not all basic equipment as collected by tool is considered relevant for the services provided*

****** Testing services at Diepsloot South Clinic are provided by service providers such as Aurum Institute, Right to Care which are independent NGOs. The clinic is only initiating anti-retro viral therapy for patients following referrals from these NGOs.*

DATA ANALYSES

All of the qualitative interviews and FGDs were transcribed and translated into English. A thematic analysis was done using a predefined coding framework based on the research table (Annex 1a) and evaluation questions (Annex 1b) of the study.

For the client exit interviews, descriptive and frequency analyses were conducted to assess client characteristics and accessibility. Indicators were used to report client satisfaction and defined as the average level of satisfaction. The indicators used were:

- Behaviour of health professionals, composed of three questions regarding the friendliness of the staff, friendliness of the provider and the perceived ability to discuss problems regarding the health issue
- Infrastructure, consisting of three questions regarding how convenient it was to travel to the facility, the cleanliness of the facility and the privacy the clients had during consultation
- Services, composed of 8 questions regarding the trust in the provider's skills, the amount of explanation, the quality of advice, the procedure or treatment, the availability of services, the costs of services, the time spent during consultation and the waiting time
- Satisfaction with the overall visit based on one single question
- Total satisfaction score indicator, being the average level of satisfaction on all 15 questions.

The difference in satisfaction levels between the CLCs and their counterfactuals were assessed using a one-way ANOVA analysis or Kruskal-Wallis test. Factors known to influence satisfaction were controlled for using multiple regression. Analyses were performed using STATA release 15.

The analysis from the above described components and the facility and consultation observations was assessed in total by a multidisciplinary team for triangulation and to draw conclusions on the CLC model's ability to improve primary care service delivery. In this process the literature review served to contextualize findings.

QUALITY ASSURANCE

The study preparation and implementation was guided by our internally developed, externally- and internationally-validated good epidemiological practice guidelines referred to as the BRIDGE statement: bridging research integrity and global health epidemiology statement [20]. Prior to implementation of field work a quality assurance plan was developed following a practical tool for quality assurance in epidemiology: KIT Open Quality Approach [21].

The data collection process was conducted by a local research team supervised by a local consultant. Prior to data collection a four-day training was conducted in Johannesburg facilitated by the local consultant and the KIT investigators (February 2020). The training was intense ensure the field team had the required competence

and skills in partaking the data collection process. Shortly before fieldwork commenced, a two-day piloting phase in both quantitative and qualitative teams was done to check if fieldworkers had fully grasped important aspects from the training session. Upon fieldwork resumption following the corona virus outbreak impasse, another two-day session for the qualitative team was undertaken by local consultant with support from the KIT Team (November 2020). This was largely meant to ensure that fieldworkers still had the competencies to participate in the data collection process. In the midst of data collection, a refresher training was also held to address some of the concerns observed during quality control checks. This was also led by the local consultant in collaboration with the KIT Team.

ETHICAL CONSIDERATIONS

Ethical approval was provided by the Research Ethics of KIT Royal Tropical Institute (REC) (S-100, May 23, 2019), the Internal Committee Biomedical Experiments (ICBE) of Philips Company (ICBE-2-32453, 2013-0167), August 30, 2019/November 10th, 2020 – (revision work plan due to COVID-19 pandemic and including COVID-19 related questions) and the Human Research Ethics Committee (Medical) from the University of Witwatersrand, Johannesburg (M190931, 14th January 2020). The study was conducted following the ethical considerations of the protocol.

Informed consent was asked of all respondents and participants of the study who were informed that they could refuse to answer questions and could stop the participation at any time without any repercussions. Data collection was done in safe and comfortable environments. Only the research team had access to the data and identifiers were removed from the transcripts. The research team included male and female research assistants who spoke the language of the study area where necessary. Prior to data collection, the research team was trained on ethical issues to ensure that guidance on ethical conduct was clearly understood and implemented.

FINDINGS: RELEVANCE OF THE SERVICES OFFERED

The assessment of the relevance of the services offered through the CLC is based on an analysis of: whether services respond to the most common health problems of the targeted populations (that means: the local burden of disease), whether they respond to their perceived health needs, whether they are aligned with national policies and guidelines, and the mechanisms in place to reach out to different, and particularly vulnerable, population groups (e.g., those living in the most remote areas).

KEY FINDINGS

- The mini-CLC provides antenatal and postnatal care, family planning and immunization of children. No deliveries are done at the CLC. The CLC differentiates itself from the control facility in terms of dental care, which is only done at the CLC. For chronic diseases, such as HIV/AIDS, TB and cancer, only initial assessment or screening/testing was done. Thereafter, patients are referred to other clinics for appropriate treatment and follow-up. The mini-CLC in its current setup offers a narrower primary care package than the control facility; it should be remembered that a more comprehensive CLC has been planned and will in time substitute the mini-CLC.
- The DoH provides protocols to which clinics in Diepsloot have a legal commitment. These concern awareness campaigns made in collaboration with NGOs and respond to a particular need of the community. This is evaluated and monitored by the DoH.
- The CLC meets with health authorities on quarterly and ad-hoc basis for checks on quality of service and inspections.
- The CLC makes use of multiple methods when attempting to reach specific population groups. These include community outreach activities by the CLC staff and services of the CHWs. While the CLC maintains contacts with CHWs who are active in the area, these are not specifically linked to the CLC in terms of training, follow-up or guidance.
- CHWs have different roles and tasks to fulfil. A few of these are: diagnosing, supporting the sick, tracking people's medication, home visits, giving out condoms, educating people, cleaning, cooking.
- CLC works together closely with schools, crèches and churches in the catchment area in doing outreach activities to identify which people are vulnerable. These activities are regarded as effective by some participants more than others.
- CLC is often preferred by hard to reach populations (migrant groups), because they do not have to deal with regulations on registration like the government clinics. Despite the fees charged, for them (migrants) the CLC constitutes a preferred option between a public facility and the often much more expensive private clinics in the area.

DOES THE CLC RESPOND TO THE NEEDS OF THE TARGETED POPULATIONS?

The study results indicate that, in general terms, the services provided at the CLC and the control facility responded to the national burden of disease and the perceived health needs by the population. The service package at the CLC in relation to chronic health issues was reported by the facility staff as well as the head of the facility as more limited to initial screening and referral to other facilities. Treatment for chronic health problems was not provided. At the control facility, a more comprehensive package was being offered and included treatment services. There are specific departments for chronic conditions such as HIV/AIDS and TB as well as for non-communicable diseases such as diabetes and high blood pressure.

> "At a more basic level, these services are being provided here by the mobile clinic. If not, there are other primary healthcare providers such as Diepsloot South or Tambo clinic. They provide a more compressive package than us." (KII, Facility Head, CLC Diepsloot)

HIV/AIDS and sexually transmitted diseases represent the largest share of the national burden of disease in South Africa in terms of disability-adjusted life years (IHME) [22]. While both the CLC and the control facility both provided HIV testing services, HIV treatment was only provided at the control facility. TB, maternal and neonatal disorders, and diabetes were other main contributors to the burden of disease in South Africa to which the CLC and the control facility responded.
When asked about the common health problems in the catchment areas study participants referred to HIV/AIDS, TB, abortion, diabetes, teen pregnancy, obesity, substance abuse and high blood pressure. HIV/AIDS also reported by the majority of the participants as one of the main health problem, particularly for young people, in the areas by the majority of the study participants. According to a health authority, an increase in non-communicable health issues was seen over the last years. A church leader stated that most problems they encountered were related to malnutrition. Other common health problems mentioned by a health authority representative were mental health issues, such as schizophrenia and dementia. In the words of an interviewed health authority:

> "Mental illness has been on the rise as most of the patients fall between the cracks in the health system. Dementia and schizophrenia are the most common." (KII, Health authority, CLC Diepsloot)

Antenatal and postnatal care, family planning, immunization and testing for chronic diseases (such as HIV/AIDS and TB) provided by the CLC and the control facility responded to part of the perceived health needs identified by the study participants. The main difference between the CLC and the control facility was that treatment for chronic diseases such as HIV/AIDS, TB, cancer and high blood pressure was not provided at the CLC. The CLC provided testing for these health issues, but positively diagnosed patients were referred to other clinics. According to a community representative, the referring system of the CLC was well organized and fast.

Another difference between the clinics was found in dental care services, which were only provided at the CLC.

The qualitative data of the study does not provide in-depth insights about what the mechanisms are to assess and monitor the specific needs and priorities of the population in the catchment area of the CLC and the control facility. When asked about a needs assessment conducted for the establishment of the CLC most participants did not know about it. Only a CLC facility representative explained that that initially, a local action committee largely compromised of community members started to reach out to key stakeholders, including Rhiza Babuyile, for technical assistance, to build a collective approach to community issues such as HIV/AIDS. From these discussions, the priority of service provision, with the idea of a mobile clinic, was agreed. Funders were approached, and once Philips was onboard, other relevant partners were again invited for a stakeholders' meeting, which led to the deployment of mobile trucks in the community.

FACILITY RESPONSES TO COVID-19 PANDEMIC

Both facilities responded in various and similar ways after the initial COVID-19 case was diagnosed in March 2020. This entailed the testing of symptomatic cases, providing mass education and conducting outreach campaigns. Facility staff at the CLC and control facilities mentioned that education and outreach campaigns were done in collaboration and partnership with other partners such as local authorities, service providers etc. as explained by the Facility Head below:

> "We have done a lot besides the testing of patients for COVID-19. We also did campaigns around the community in order to educate people about COVID-19." (KII, Facility Head, Control)

There were also reports from some of the FGD participants that COVID-19 materials such as masks and hand sanitizers were also being issued for free to the community at the control facility. This was not mentioned by participants interviewed at the CLC.

IS THE CLC INTERVENTION ALIGNED WITH NATIONAL POLICIES AND STRATEGIES?

The study shows that the objectives and approaches of the CLC interventions were aligned with national policies and strategies. The DoH provided clear protocols which all health centres were legally committed to follow, including both the CLC and the control facility. These protocols included national guidelines about awareness campaigns and community outreach activities. All KIIs confirmed that guidelines were followed by the CLC, as well as by the control facility. According to the CLC Facility Head, this was done under supervision and with help of the DoH. These actions were sometimes done in collaboration with NGOs, in which case, regulations were still followed. The CLC staff indicated that they met with representatives of the DoH on a quarterly basis, but also on an ad-hoc basis to check on the quality of service and to perform inspections. In the control facility, these meetings were reported as 'regularly'.

Both the approaches of the CLC and the control facility were thus reported to be well aligned with national policies and strategies.

> "Indeed, there are standard guidelines in terms of for instance awareness campaigns. A problem is identified and then plans of actions are drawn to that. Thereafter we look at resources we have and involvement of relevant stakeholders. We then implement such actions and monitor progress. At each stage we always feedback and draw lessons for future implementation." (KII, Health Authority, CLC Diepsloot)

Neither the CLC nor the Diepsloot facility are currently in line with Ideal Clinic Standards [6], [23].

MAIN COVID-19 POLICIES IN SOUTH AFRICA

The South African government declared a state of emergency in March 2020 following the corona virus outbreak and instituted several legislative guidelines to be followed in both public and private spaces. We found these safety guidelines were being implemented similarly both the mini-CLC and the control facility and in alignment with government regulations. These included the mandatory wearing of masks for health workers and patients, regular sanitizing and disinfecting of facilities, as well encouraging social distancing and this was confirmed by several KIs such as community representatives, facility staff and religious leaders at both facilities. Additionally, both facilities are offering testing services, although some differences were observed. Several in-depth interview participants reported the establishment of a designated COVID-19 testing station at the control facility which was non-existent for the CLC. As a consequence of the COVID-19 regulations, a restriction on attendance has been imposed at the control facility which sees only 50% of the patients normally serviced being admitted inside the clinic.

HOW DOES THE CLC REACH SPECIFIC POPULATION GROUPS?

Both the CLC and control facility aimed to reach specific population groups through staff community outreach activities and CHW services.

Most of the key informants, such as community and NGO representatives as well as the health authority, showered praise on the CLC for improving health access to key populations in the catchment area, such as undocumented migrants who face challenges in accessing health services in government-run clinics. The argument put forward is that at the CLC there are no specific requirements in terms of documentation required to access health services, and this was supported by CLC staff who asserted that at the CLC, a patient could access health services without an identity document or passport as long as they can pay. This was also confirmed by the same CLC staff, who explained that it is common to attend to patients without any form of documentation.

"You know 80% of our patients are foreigners from countries such as Malawi, Zimbabwe, Mozambique. Whether they have documents or not, we still able to provide them with medical assistance they want." (KII, Facility staff, CLC)

At the control facility contrasting information surfaced among users and some of the key informants to fully ascertain whether documentation was required prior to health access and practised similarly in other government clinics. Some of the staff at the control facility pointed out that health services were provided to all users irrespective of whether they had documents or not. This was strongly disputed by some of the NGO and community representatives as well users, particularly (women 20-49). In one of the focus groups, one participant shared the following:

"One of my tenants is from Zimbabwe, when she was ill we took her to the clinic, and they said they want a South African ID or passport. She didn't have them, and the nurse told us they need the documents before she can be assisted. We were sent back home even though she was seriously ill." (FGD, Women 20-49, Control)

The Health Authority acknowledged that a South African identity document was required at the control facility to enable patient tracking and this was interpreted incorrectly by the community resulting in unintended results such as identify rental or theft.

In respect to user subgroups such as adolescents, different views were expressed. Most adolescents, perceive the CLC as more 'adolescent-friendly" when accessing important sexual and reproductive health services such as family planning services. Staff attitude was highlighted as important factor in that adolescents feel welcome and accepted and are, therefore, able to share their health concerns without fear. For the control facility, adolescents felt that the facility was not fully meeting their specific needs. This was attributed to several reasons such as the attitudes and beliefs of service providers and their professional conduct, all of which had a significant impact on service provision. As stated by one of FGD participant, these reasons may create a potential health seeking barrier:

"When you go to the clinic for family planning, the nurses start looking at you and sometimes say that you are too young to use family planning pills. They want to know my partner's name and the last time we had sexual intercourse. Instead of assisting you, they are busy interrogating. It's those things that make us not go there." (FGD, adolescent girls 15-19, Control)

Where CHWs often play an important role at the interface between community and primary care facility, the CLC does not have CHWs directly linked to them that they train, supervise and guide, but instead they link up with CHWs from other NGOs and churches in the area. However, the CLC did maintain contacts with CHWs who are active in the area and CHWs did refer people to the CLC. According to almost all participants, CHWs were an important way of reaching specific population groups. CHWs were seen as the link between the clinic and the community, and they have

a wide range of roles and tasks to fulfil. A few of the tasks mentioned by men and women in interviews and FGDs, were diagnosing, supporting the sick, tracking people's medication, home visits, giving out condoms, educating people, cleaning, cooking.

The functionality of community health workers during the COVID-19 pandemic was reportedly compromised in both facilities. Several key informants such as facility staff, community representatives all lamented the hostile reception from the community due to the stigma associated with the virus. In some instances, CHWs were chased from households and unable to execute their normal duties such as home visits.

Participants stated that the CLC works closely with schools, crèches and churches in doing outreach activities to identify which people were vulnerable in the catchment area. Collaboration with NGOs and social workers was also common when engaging in community campaigns. A nurse stated that they would go to the crèches to reach young children, to the schools to reach older ones. The findings around the fruitfulness of these activities were, however, conflicting. A dental therapist stated that these school visits did not improve the reach of the clinic. A health authority representative stated that the activities are beneficial as they reached populations that would otherwise be missed by the regular health system.

FINDINGS: HEALTHCARE SEEKING BEHAVIOUR

In this evaluation, healthcare-seeking behaviour describes the behaviour/factors influencing the action of seeking, accessing, adhering to, and utilizing preventive, curative, and rehabilitative care. Healthcare seeking behaviours start with individual healthcare needs; the perception of these needs by the individual; the decision to seek care; the process of accessing care; the actual use, and if needed, the continued use of services and adherence to treatment and advice; up to the outcomes, in the sense of improved health, and satisfaction with the services received. Healthcare seeking behaviour also influences the choice of where, how, when, and by whom to receive care. Finally, healthy behaviours such as diet, sexual habits, personal hygiene, physical activity, and risk inclination extend the concept to health-seeking behaviour.

To operationalize healthcare-seeking behaviours, we followed the Levesque framework [24], which distinguishes a set of supply factors (service and policy-related factors: approachability, acceptability, availability and accommodation, affordability, and appropriateness), and a set of demand factors (personal/patient and social/community factors: the ability to perceive, ability to seek, ability to reach, ability to pay, ability to engage), that influence each step of the healthcare-seeking behaviour, as described above. (see Annex 2 for detailed definitions). Healthcare-seeking behaviours were assessed using quantitative and qualitative methods, allowing for the triangulation of findings.

KEY FINDINGS

- Information about the CLC/control facility reaches the community in similar ways and through several sources, although word of mouth is the most common method of dissemination.
- There are notable differences in how staff attitude at the CLC and the control facility are perceived. For the CLC, the overall response is positive, with respondents finding them friendly, empathetic, respectful, non-judgemental and non-discriminatory.
- At the control facility most respondents were very unhappy with the staff, reporting them as being rude, disrespectful, judgemental, biased and discriminatory - presenting a potential health seeking behaviour barrier.
- CHWs have a wide range of responsibilities, although much of their work seemed to be centred on patient tracking, response to referrals and bringing back patients back within the health system. Their attitude was overall deemed positive and reportedly being friendly, polite, caring and non-judgemental. The mini-CLC links up with existing CHW networks, either from the district, or from NGOs or churches from the area; the CLC does not have a specific CHW program, through which they train, guide, supply or monitor the CHWs.
- User fees at the CLC were viewed as affordable even when an out-of-pocket system was used. The absence of a payment plan presented a potential challenge for CLC users. CLC users were on average more likely to have an insurance plan; indicating that they are probably among the better-off, as insurance in SA is currently mostly Voluntary (Private). The perception of affordability may be relative in comparison with other private clinics in an urban area.
- Most of the direct/indirect costs at both facilities are on transport and buying medication at pharmacies in cases of drug stockouts, though this was more frequent among control users.
- In relation to perceived costs, respondents at both facilities were unhappy that first time users for family planning services are required to bring their own pregnancy test kit. They felt this was overburdening them as this is an additional cost.

TO WHAT EXTENT IS THE POPULATION AWARE OF THE SERVICES PROVIDED AT THE CLC?

Respondents reported that there was increased health awareness and information in the community. Some of the key informants at the control facility (Facility staff, CHWs, church leaders) also echoed the same thoughts as those of the CLC staff pointing out that there was improved health information and knowledge in the community. Information on health services provided at the CLC and control facilities is widely disseminated among its users in similar ways. Most of the users in both facilities, especially women (20-49), community representatives and religious leaders reported that common sources of information are largely through referrals, information from facility staff, visible billboards and public notice platforms, and mass mobilization from political and religious leaders. Both facilities also use other forms of media such as the local radio station (Diepsloot Radio Station) and newspaper (Diepsloot News). Facility heads and some of the staff at both facilities confirmed that they use these platforms to discuss different health programs and issues taking advantage of the fact that they are freely available to the community. When disaggregating the different user subgroups, women (15-19) at the control facility indicated the use of social media platforms such as Facebook, WhatsApp as important sources of information that were, however, not mentioned by CLC users. With regard to references to services provided at the CLC, it was evident that CLC users who were satisfied with service provided were able to share their health experiences with others, creating awareness about the services provided. These reported health experiences were commonly positive while at the control facility they were most often negative.

> "I heard about the clinic from my neighbour and decided to visit the mobile clinic. I went there and was very happy with how they assist patients. Since then when I'm sick I always go to the mobile clinic." (IDI, Woman 20-49, CLC)

Substantiating on the above, CLC facility staff as well as relevant health authorities echoed the same sentiments, pointing out that the number of service users at the CLC has grown tremendously over the years as reflected in monthly statistics. The facility head explained that the number of patients receiving services at the facility had grown over the years, as shown below:

> "When we started, we were seeing an average of 20 patients per month. Now we are seeing close to 1,500 patients for different. So yeah, more people are coming to our clinic which is a good thing." (KII, Facility Head, CLC)

When the mini-CLC opened in 2016, some of the staff indicated they had mobile trucks which were going directly into the community to provide different services. The community representatives confirmed that they used to see the mobile trucks offering services such as antenatal, immunization and dental care. It did not become clear from the qualitative interviews when this initiative started and ended. However, it was mentioned that in 2021 the CLC is planning to conduct more outreach activities. Staff and users at the CLC reported that outreach campaigns were not being conducted. Some of the community leaders in both the CLC and control facility catchment areas

also indicated that they could use and exert their influence through platforms such as community meetings and WhatsApp groups to share information with the community on the different health services available. Generally, the community was aware of the two health service providers in relation to existence and services being offered. Word of mouth was then one of the most common methods through which information spread among different service users.

CLC users showed that they are aware of the most common services provided at the facility, with most of the in-depth interview participants coming for immunization and antenatal care and occasionally dental services. The facility head and some of the staff at the CLC explained that most of the patients seen are for these specific services. Not much was shared from the above-mentioned key informants in respect to other departments, such as comprehensive care. This is probably because comprehensive care services are limited to initial screening and referrals as highlighted by most of the staff. Services at the control facility seemed much more comprehensive as this was reported by the facility head, staff as well as the Health Authority. They claimed that most of the patients seen came for comprehensive care as there is a specific department for chronic conditions such as HIV/AIDS and TB. The facility head further noted that other departments which were equally busy were antenatal and immunization services.

TO WHAT EXTENT ARE THE SERVICES PROVIDED AT THE CLC ACCEPTABLE TO THE POPULATIONS SERVED?

The acceptability refers to the professional, cultural and social factors that make people accept (or not) the services provided; this may relate to the characteristics of the services provided or to characteristics of the provider (e.g. sex of provider; age of provider, particularly for deliveries, attitudes of providers, for instance towards adolescents, etc.) This concept has both a supply and a demand-side according to Levesque framework. The demand-side in Levesque is called 'ability to seek care' and includes cultural factors, gender, the autonomy of people to seek care, and general social values [24].

In relation to the perceived attitude of facility staff, huge differences were found in the two facilities. CLC staff attitudes were reported by most of the users, particularly women (20-49), as positive in terms of respect and communication skills: non-threatening, friendly and welcoming. As such, they felt comfortable and unconditionally accepted, making them free to share the specific health challenges being faced and trusting that they will get the relevant assistance they are looking for. Consequently, they preferred to return for medical care.

> "The nurses are very good; you don't see them shouting at people or treating them differently. They are friendly, always smiling, polite and caring. The attitude is good so you are not afraid of coming back again." (IDI, Women 20-49, CLC)

In contrast, participants at the control facility were generally very unhappy with most of the staff with the exception of a very few. Differentiated among age and sex, both women age groups were the most vocal ones in expressing their anger. Common issues raised were that most of the staff had a bad attitude, were judgmental, verbally abused patients, communicated poorly, and patients were not treated with respect. Furthermore, patients were concerned about issues such as labelling, discrimination and felt being stripped of their dignity, which may compromise health provider and service user relationship as well as the overall diagnostic process. From the vocal ones, some preferred to seek other health service providers even if they had to pay.

> "They don't communicate with patients respectfully but instead they shout at them and call them names. For instance, when you go to the chronic diseases department, they call patients with names such as TB, HIV. It is so embarrassing." (FGD participant, control)

There were similarities in how CHWs' attitudes were perceived by users as well as key informants, such as community leaders and religious leaders at both the CLC and control facility. Although the CLC did not have CHWs directly linked to the facility, they did collaborate with other service providers such as Diepsloot Methodist Church, Ma Africa Tikkun (local NGO), who had an active CHW program. CLC users, particularly women (20-49), reported that overall the CHWs working in the area were friendly and warm and had good communication skills.

> "Oh, those people are friendly and are not rude to the community. You can tell with the way they work that they are dedicated to helping people." (IDI, Woman 20-49, CLC)

Some of the key informants (facility staff, health authority and community representatives) also conceded the significant role the CHWs played at the CLC in terms of referrals as well as assistance with follow up to ensure that patients were not lost within the health system. Among the CLC users, young women (15-19), professed lack of knowledge and information on CHWs, yet women 20-49 and community representatives had reported that they were regularly active in the community. Unlike the CLC, the control facility did have a highly active CHW program, directly linked and working under the umbrella of the facility. With the active role they played, most of the participants (women 20-49), again highlighted overall positive attitudes in terms of interacting with the people, general treatment of the people etc. As such, they were generally accepted in the communities factoring that they were locals from the community and had a better understanding of the community.

CAN PEOPLE EASILY USE THE CLC IN TERMS OF GEOGRAPHICAL ACCESS, ACCOMMODATION AND AVAILABILITY?

AVAILABILITY AND ACCOMMODATION refers to the extent to which health services can be reached, used, and in what conditions. More specifically: availability constitutes the physical existence of health resources with sufficient capacity to produce services and refers not only to the infrastructure as such, but also geographical access such as distance, density, and transportation system, and to essential resources being available in the facility, and consequently, readiness for delivery of essential services at a certain quality level. As essential resources availability, including human resources for health, essential drugs, etc. are also structural components of quality of care, these elements are discussed under 'quality of care'.

ACCOMMODATION refers to characteristics such as opening hours, arrangements for appointments, physical access for disabled people.

AFFORDABILITY reflects the economic capacity for people to spend resources and time to use appropriate services. It results from direct prices of services and related expenses in addition to opportunity costs related to loss of income.
The demand side of availability/accommodation and affordability are called 'ability to reach' respectively 'ability to pay' [10]

ACCESSIBILITY

In terms of transport, in-depth interviews showed that most participants walked to the respective facilities as they were centrally located. For 78% of CLC clients interviewed (Annex "Accessibility of clients who visited CLC") and even 95% of control facility clients, the visited facility was the closest facility. In terms of opening hours, most CLC and control users were happy with the convenient working hours as both facilities open at 8:00 and close at 16:00. They highlighted that this was reasonable and rational. No differences were observed with respect to this based on the qualitative interviews but based on the CEIs, we observed that only 61% of control facility users considered the opening hours convenient compared to 96% of CLC users. CEIs also showed that inconvenient operating hours was the most common reason (29% of those who indicated the CLC was not the closest facility) to not visit the nearest facility. At the CLC, a further breakdown of the users revealed that some of the respondents either working or attending school were happy that there was flexibility in hours of opening. There were instances when the facility opened as early as 7:30am to cater for patients who had limited time owing to other commitments such as work, school or family. For the control facility, although they opened at the same time, participants were particular in that staff did not immediately commence service provision but instead "sat in offices catching up and gossiping". As a result, substantial time was lost, which frustrated patients.

"They open at 8:00 but they don't attend patients. They are busy gossiping and other stuff. Then they start serving patients around 9:00. Afterwards, they go for a tea break. When they go for lunch it takes forever. When they come back, they just cut the queues and we are sent back home. It is so painful." (FDG, participant, Control)

Other participants living far from the two health facilities could use public transport systems such as commuter omnibuses or other forms of transport such as their own vehicle or hire cars, which were generally affordable. Although this was an extra cost for them, the study participants stated that it was reasonable and easily available but challenging when community members engaged in service delivery and transport strikes. In such a scenario, patients were forced to resort to walking or to use of private forms of transport such as car hire.

AFFORDABILITY

Services at the CLC were provided at cost, and respondents were charged R50-R150 for children and adults respectively, and according to the services being sought: R50 for a vaccination, R100 for a family planning consultation, to R150 for an antenatal consultation This indicated that adults were charged slightly more for services than children. Nevertheless, most of the study participants claimed that the costs were generally affordable to most people as they cover consultation and medication. To cover these costs, respondents used the out-of-pocket system and it is widely affordable to a point whereby respondents devise ways to pay at the CLC. When interviewed, most of the CLC staff confirmed that the out-of-pocket system is employed (i.e., paying cash upfront prior to health services being rendered) and that medical aid options were not available.

"I go to the mobile clinic and I pay R150,00, even though I don't have money, I rather borrow then I will pay month end. It is much better." (IDI, Women 20-49, Diepsloot)

At the control facility, all services were provided for free as it was fully funded by the Gauteng Provincial Health Department. This related to consultation and medication, although some of the respondents explained that in some instances, they had to buy medication at pharmacies and drug stores as the control facility regularly experiences drug stockouts. This may explain why in the CEI 13% of control facility respondents said they were charged for their visit. Further exploration from the participants was also done in relation to direct and indirect expenses, which participants incurred as they reached health services. There were no noticeable differences in relation to evidence provided and similar trends were observed in these facilities. Most of the direct and indirect expenses largely revolved around transportation and occasionally on purchasing medicine. The transport costs concerned those living far from the facilities where they had to use local commuter omnibuses or private transport. The in-depth interview participants stated spending between R10 to R45 on average, which they deemed reasonable and affordable.

It is important to note that the coverage of health insurance (prepayment plan) was different between CLC users and control facility users. Forty-two per cent of the CLC clients and 18% control facility clients indicated in the CEI to be part of a prepayment plan, a statistically significant difference (Annex 4, Table 2)

> "In relation to perceived costs, huge concern arose from women coming for family planning for the first time across the two facilities, as they were obliged to buy own pregnancy test kits. And this thing of buying your own pregnancy test kit is unfair." (FGD participant, control)

It was uncertain during the data collection and analysis process whether this was a requirement in general or that health facilities developed their own regulations. As such, most participants in both facilities spoke strongly against the implementation of such practice, which they felt was an added cost and unreasonable.

HEALTH-SEEKING BEHAVIOURS DURING THE COVID-19 PANDEMIC

There were similarities in altered and shifting health-seeking behaviours in both facilities during the COVID-19 pandemic. Most of the key informants such as community representatives and religious leaders, spoke strongly on the impact being felt more at the control facility than the CLC. Some of the facility staff at both facilities explained that the lower number of patients, particularly during the infection peak, was due to people being scared to visit the facility for fear of being infected. This also meant there were delays in obtaining healthcare. At some point, both facilities were closed after some of the staff tested positive. The CLC Facility Head further noted that even after reopening number of service users was still low. The Health Authority for the control facility expressed concern about the increasing number of patients lost to follow-up, especially those on anti-retroviral treatment.

> "We are really worried as people were not coming to the clinic particularly those on ART treatment. I think they were scared to come. We also could not trace them or send community health workers to check. Sometimes they would come when they are in a bad situation and difficult to assist them." (KII, Health Authority, Control)

However, some of the users from utilizing either of the facilities believed that health-seeking behaviours had not changed. At the control facility, some users (women 20-49), shared that long queues are still common, which showed that people are still coming in large numbers. Some participants from the FGDs within the 15-19 age group explained that at the CLC, services being normally provided are still the same after the outbreak in March. As such, they did not see any differences in the overall health-seeking behaviours arguing that patients are nevertheless coming to the CLC.

FINDINGS: UTILIZATION TRENDS

KEY FINDINGS

- Due to the data reporting structure of the mini-CLC, via the control facility, facility-level trends in primary care utilization could not be distinguished between the mini-CLC and the control facility.
- As there is no CLC specific utilization data we cannot generate insights on the attractiveness of the mini-CLC and its contribution to service utilization within the catchment area of Diepsloot South clinic.
- It will be vitally important to single out CLC data and report CLC utilization metrics directly to the DHIS2 in order to measure its contribution to service coverage in the area.
- Antenatal care coverage increased both at the sub-district level in which the mini-CLC and control facility were located ($p < 0.001$) and the control facility (including CLC utilization data) ($p < 0.001$). Trends of ANC1 consistently show coverages exceeding 100%; therefore, it is likely that there is a systematic problem in reporting of these consultations impacting the quality of the available DHIS2 data.
- All service utilization coverages (DHIS2-data) decreased statistically significantly at Johannesburg district level.

Facility- and district-level data for Gauteng Province primary care utilization was extracted from the South Africa District Health Information System 2 (DHIS2) [26]. CLC-Diepsloot is not directly reporting data to DHIS2, as data is shared with the control facility Diepsloot South Clinic, which subsequently reports it to DHIS2. Due to the CLC data reporting structure via the control facility, facility-level trends in primary care utilization could not be distinguished between CLC-Diepsloot and Diepsloot South Clinic, therefore, both facilities were evaluated together.

Despite extensive efforts in collaboration with the CLC to obtain digitized facility-level utilization data for CLC-Diepsloot, this data was not available. Data extracted from the MOM software and shared with the evaluation team by Philips Research Africa (April 12th, 2021) was confirmed to consist of aggregated data of both Diepsloot CLC and Orange Farm CLC. Therefore, trend analyses are limited to data available in DHIS2.

ARE ESSENTIAL SERVICES USED BY THE POPULATION?

Measuring the utilisation of healthcare services allows an estimation of how many people in a catchment area actually access and use the services that are accessible and available. Looking at service utilisation of the CLC and of surrounding facilities in the same catchment area permits the coverage of services to be assessed, and the share of the CLC in that coverage, relative to other facilities. The lack of CLC-specific utilization data prevented such an analysis. Instead, trends (for services also provided at the CLC) can only be analysed at the provincial, district, and sub-district levels. For this, tracer indicators related to maternal, child, and reproductive care were primarily used. (Annex 3 DHIS2 indicators extracted) provides an overview of extracted DHIS2 indicators, in relation to WHO WB UHC Tracer indicators, and the rationale for exclusion in the trend analyses [27].

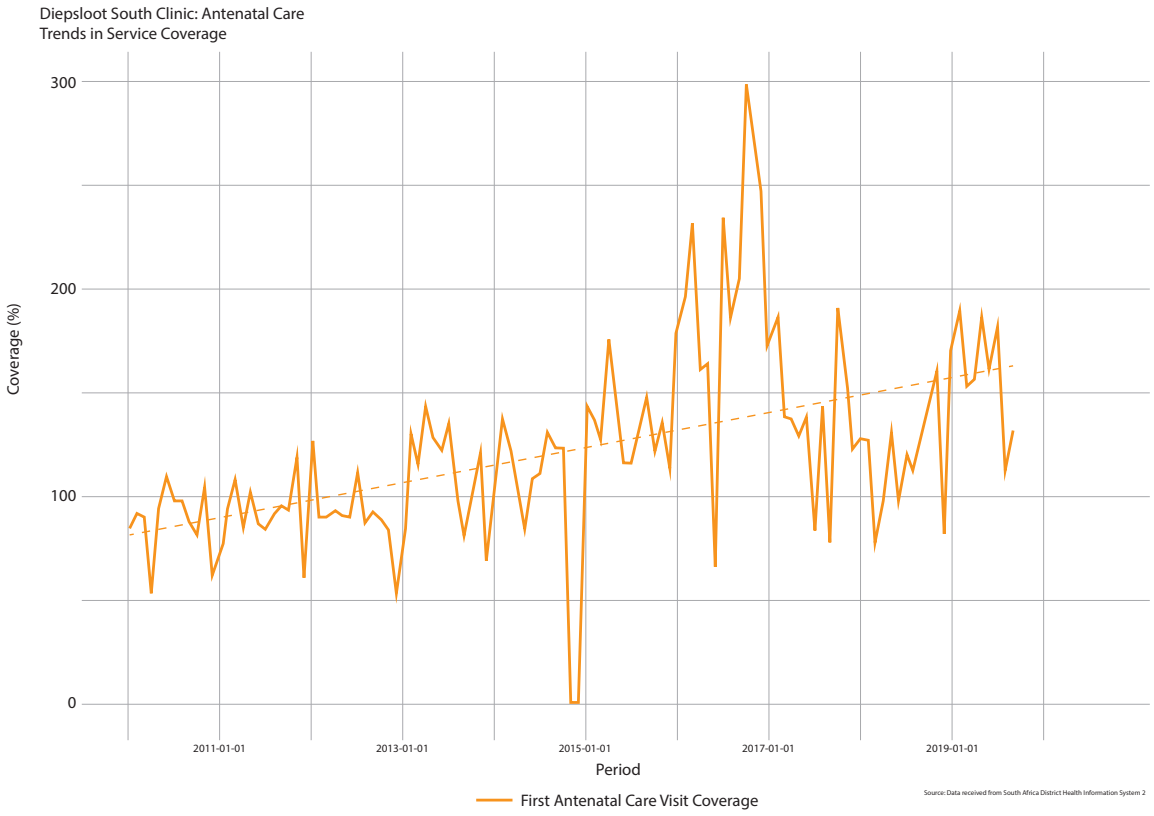

Figure 3 Diepsloot South Clinic utilization trend of First Antenatal Care Visit coverage*

* Diepsloot South Clinic refers to the catchment area within Johannesburg sub district A and includes all facilities that report through Diepsloot South Clinic, including the CLC.

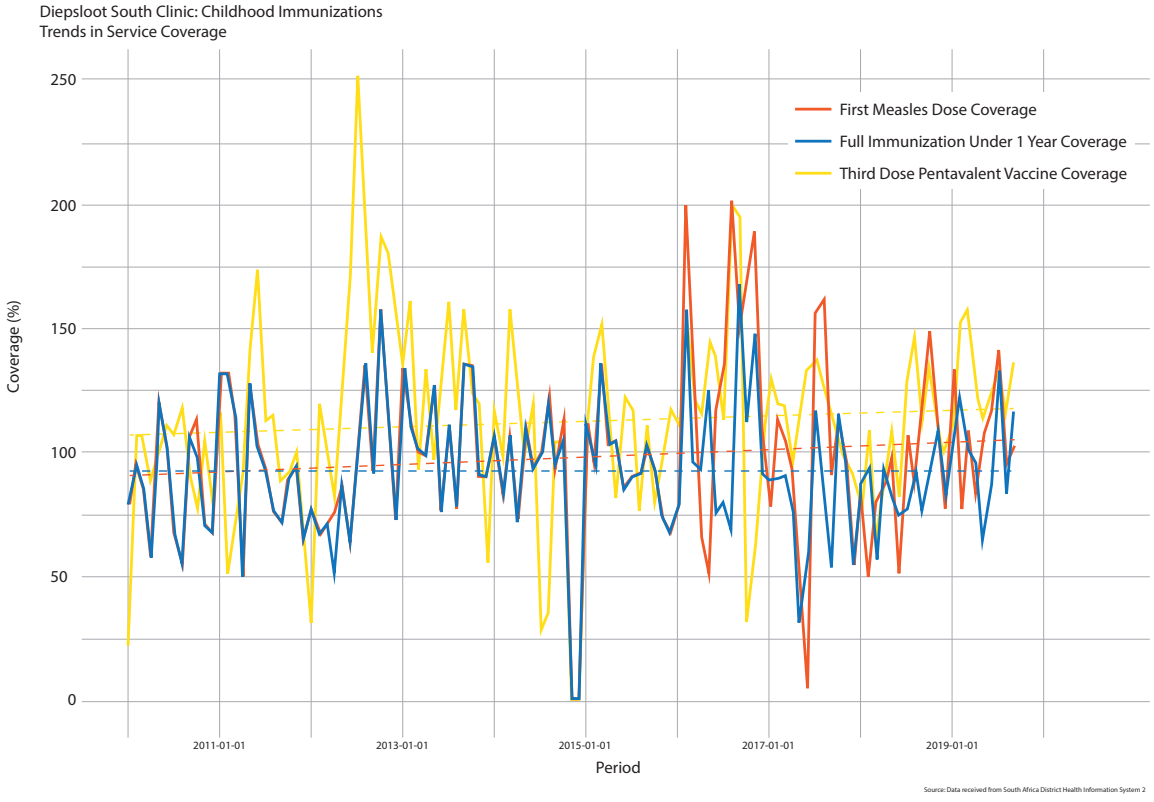

Figure 4 Diepsloot South Clinic utilization trend of tracer indicators (childhood immunization)*

A clear increasing trend was observed for first ANC visit coverage (p-value < 0.001) and a small increasing trend (not statistically significant) for first measles dose coverage (Figures 3, 4). Coverages around 110% for pentavalent vaccine coverage (3rd doses) and full immunization coverage are observed, although univariate linear regression tests for trend showed a statistically significant decrease in full immunization coverage (p = 0.001). Based on visual inspection of the graphs, a steep peak is observed in October 2016 for ANC1 (Figure 3). Although the CLC might be a contributing factor, there have been mobile trucks going directly into the community on a daily basis since 2016, we cannot conclude if this peak is an effect of the CLC. The origin of the monthly fluctuating coverage estimates (data points) are not entirely clear: they seem to go beyond chance fluctuations in the monthly number of consultations. The increasing trend, up to 150%, for the ANC1 needs further analysis from the (sub) district health authorities. There is likely a systematic problem in reporting (e.g., over-reporting) of these consultations that is impacting the quality of the available DHIS2 data.

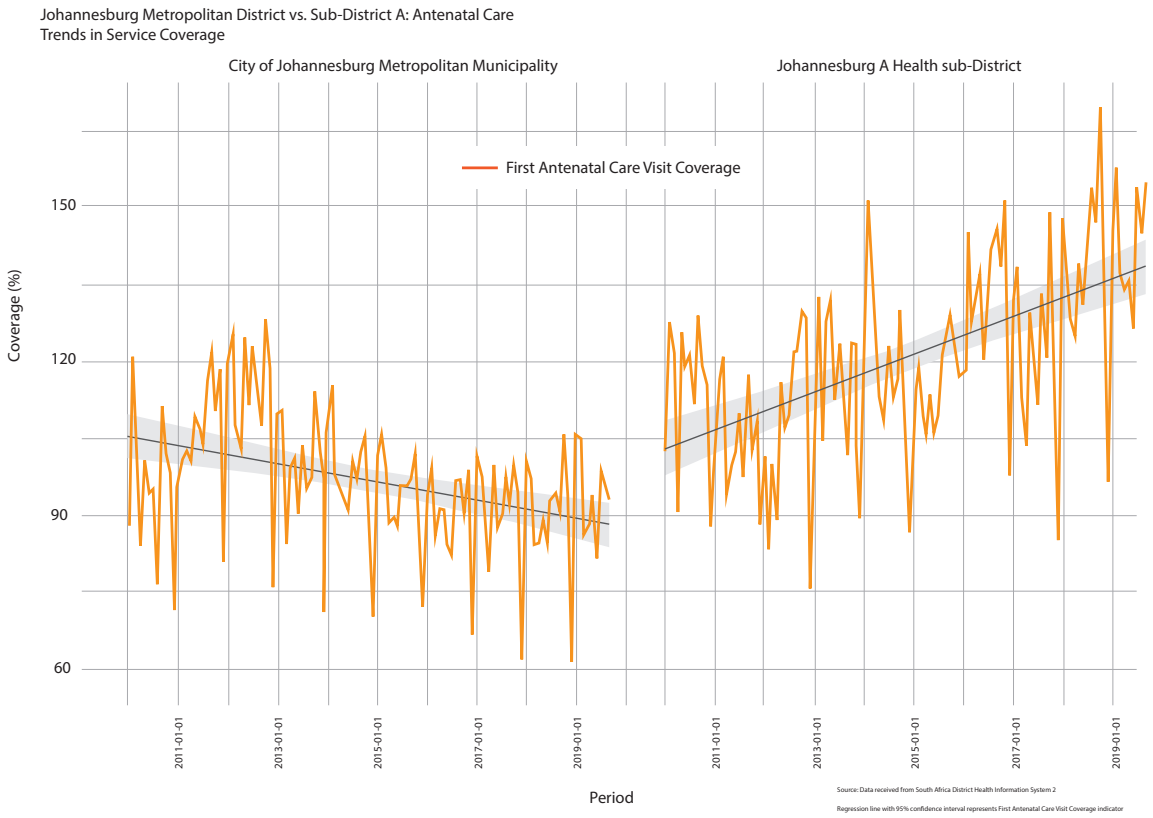

Figure 5 City of Johannesburg Metropolitan Municipality and Johannesburg A Health Sub-District (n=26 facilities including Diepsloot South Clinic) utilization trend of tracer indicators (childhood immunization)

Sub-district Johannesburg A, containing CLC and Diepsloot South Clinic, varied in RMNCH care utilization per indicator. Sub-district A had a high mean first antenatal care visit coverage generally maintained above 100%, and an increasing trend ($p < 0.05$) was observed from 2010 to 2019, generally above 100% for all ten years (Figure 5). It is unlikely that these high coverages can be explained by an underestimation of the catchment population as the other indicators (Figure 6) do not consistently show values exceeding 100%. Slight monthly variations can occur, as monthly instead of yearly coverages are presented, and visits to healthcare facilities are likely not evenly distributed over 12 months. In the absence of CLC-specific service data, conclusions on the CLC's impact on increasing ANC visits cannot be drawn. The study did not provide insights if the CLC is attracting women for ANC from neighbouring sub-districts; if this was the case, these visits might have been wrongly attributed to Sub-District A whereas, the women come from other sub-districts. Most CLC clients (97%) who participated in the CEI were from section Diepsloot and Riverside, which are both located in Johannesburg A Health Sub-District (Annex 4, Table 1).

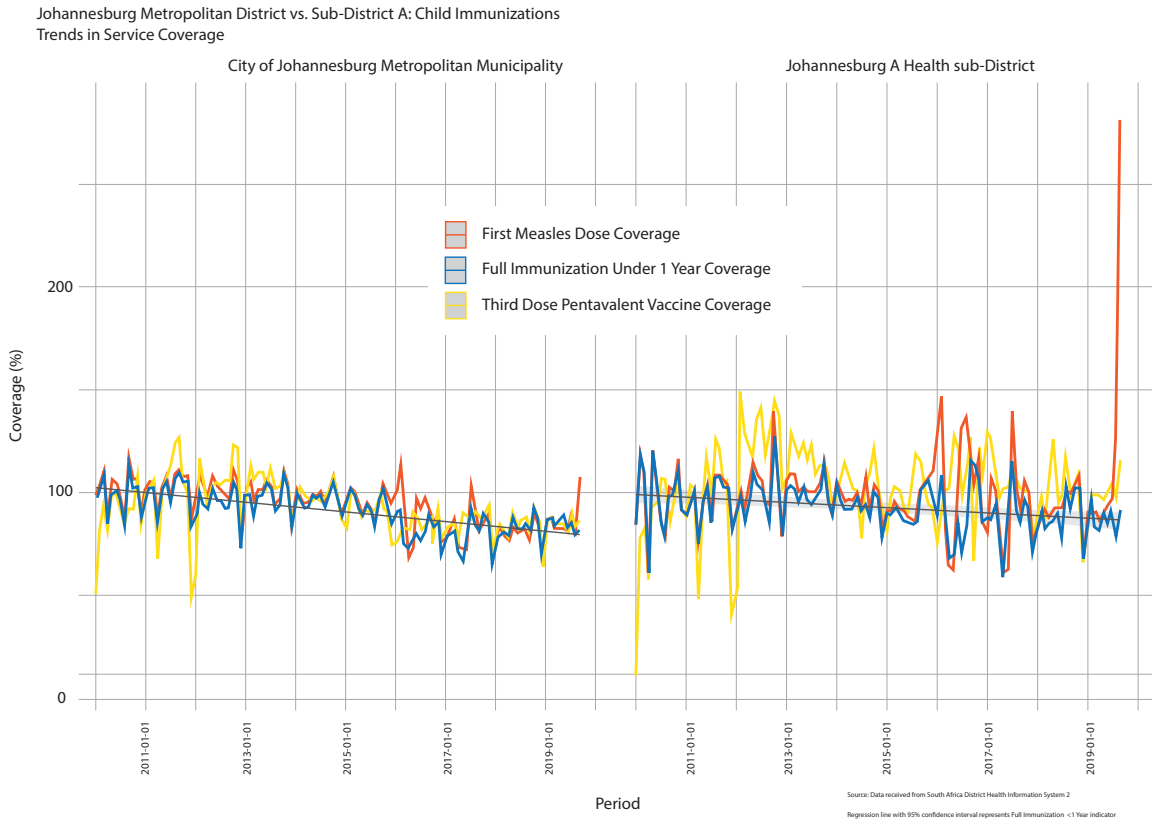

Figure 6 City of Johannesburg Metropolitan Municipality and Johannesburg A Health Sub-District (n=26 facilities including Diepsloot South Clinic) utilization trend of first antenatal care visit coverage.

The mean third dose of pentavalent vaccine coverage increased sharply between 2010-2012 in sub-district A and was maintained with monthly fluctuations at around 100%. Sub-district A's facilities' average first measles dose coverage was maintained at around 100% between 2010-2012; full immunization coverage was similar to measles coverage trends with a slight decrease towards the end of the decade (not statistically significant).

In the Johannesburg Metro district, a statistically significant decreasing trend was observed for all RMNCH indicators (Figure 5, 6). For all RMNCH utilization indicators assessed, the target is 100% coverage; therefore, coverages exceeding 100% should not necessarily be construed as better outcomes. Coverages above 100% were frequently detected for all indicators in this analysis, indicative of either incorrect estimates of population denominators or utilization of services by residents from outside of their respective catchment areas (visiting from neighbouring facilities or sub-districts). Denominators per catchment area were not provided as a baseline for comparison.

FINDINGS: QUALITY OF CARE

Quality of care is defined as the degree to which healthcare services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge. This section presents the main findings on the structural and process elements of quality of care. The assessment of the appropriateness of quality of care for these two dimensions (structural and process) is based on the triangulation of data on perceived and observed quality of care. Observed quality of care was assessed through client provider observations and facility observations. Perceived quality of care data was collected through qualitative interviews and client exit interviews.

Note: In the Levesque framework, quality of care is the last step, from utilisation of services to outcomes of service provision; the supply side is called 'appropriateness' of care, the demand side 'ability to engage' in this framework (Annex 2).

KEY FINDINGS

STRUCTURAL ELEMENTS

- Drug stockouts at the CLC were occasional, while at the control facility, they seemed to be regular. Drug procurement systems at the CLC were more efficient than at the control due to bureaucratic procedures. This was partly due to having a lower patient load as well as being more flexible in additional acquisition. Service users attributed this to the differences in fees.
- CLC equipment was perceived as state of art and most departments had the essentials with challenges being reported in dental department as shown by a lack of provision for dental services such as scaling. Concerns for the control facility revolved around a lack of equipment for initial cancer screening.
- There was a need for infrastructure expansion and additional human resources in both facilities to accommodate growing service user needs.
- It was unclear whether staff at both facilities receive appropriate training on a continuous basis.

PROCESS ELEMENTS

- There were no differences in the ways medicine is prescribed at both the CLC and control facility. They follow the required guidelines which are government stipulated.
- The findings indicated that a triaging system for patients is common practice at both facilities, with preference being given to patients in urgent need of care. Most participants stated that this was also done at the control facility, but some were not so sure.
- The findings illustrated that at both clinics service integration is duly implemented. For instance, symptomatic TB patients are tested for HIV/AIDS etc. The major variance noted is that service integration at the CLC is limited to initial screening for chronic diseases with no provision for treatment and follow-up services but rather referrals.
- The findings indicated that the CLC scores higher than the control facility on interpersonal aspects, such as confidentiality, trust and empathy.
- The findings showed that those attending the CLC found the waiting time more acceptable before and during consultation compared to those at the control facility.

IS THE QUALITY OF SERVICES APPROPRIATE?: STRUCTURAL ELEMENTS

> The structural elements include the availability of commodities, equipment, qualified staff, and standard guidelines as well as the appropriateness of the facility infrastructure and safety conditions.

Available qualitative data generated from both CLC and control facilities users illustrated differences regarding the availability of health commodities, with the former experiencing occasional shortages and the latter facing regular drug stockouts. Amongst the CLC users, most of the women 20-49, as well as community and NGO representatives reported that during healthcare visits, most commodities were available and they were rarely sent back home due to the non-availability of drugs. When that happened, they were duly informed of the days when the medicine would be available. Some of the CLC facility staff, including the Operations Manager, further noted that drug stock taking was done frequently and that liaison with the control facility was done when they were facing shortages. Although the CLC does get some of its drugs from the DoH through the Diepsloot South Clinic, other private sources are equally used as well. Not much information was obtained on what these sources are and how they are used.

> "Our people are hardly ever turned away because of lack of medication. If they do get turned away it's only a day or two and we give them contact information and also contact them to come back to come collect medication, but it doesn't happen often." (KII, Facility Staff, CLC)

Considering the above mentioned, CLC staff believed that they were minimizing drug shortages by developing efficient systems. Some of the participants (women 15-19) felt otherwise, arguing that the CLC was a fee-paying entity and, as such, having drug shortages was not cost effective which may have resulted in them seeing less patients. Note that the issue of patient load was highlighted several times by most of the facility staff at the control facility in that the clinic was always crowded. Even some of the users mentioned this issue repeatedly and argued that this could be due to services being rendered for free. In comparison with the CLC, different views arose among the interviewed study participants at the control facility in relation to drug shortages although the general consensus was that drug shortages was regularly experienced. Differentiated among user subgroups, women 20-49 and some of the key informants such as community representatives were quite outspoken and expressed anger given these regular experiences. During one of the FGD with control facility users, one participant explicitly stated that:

> "You are taking a risk by going to the clinic, there is no guarantee that they will have the drugs. Sometimes they send you back home after you have spent the whole day in the queue. Maybe they do so because we don't pay there." (FGD, Women 20-49, Control)

In such cases, patients were sent back home without getting the medical assistance they wanted, and there was no clarity from the staff as to when the drugs would be available. They were, therefore, forced to buy the drugs at pharmacies and drug stores at their own expense. However, some of the facility staff, including the head, gave a different view arguing that the clinic was overburdened by the ever-increasing proportion of health seekers. From their perspective, they were generally servicing more patients than were planned for and refuted claims that patients were regularly sent home due to drug shortages. Based on the CEI, there was no statistically significant difference in satisfaction score regarding availability of medicines (CLC clients average score 3.6, vs. 3.3 control clients, Annex 4, Table III), although the percentage of people being satisfied was statistically significantly higher among CLC clients (78%) compared to control facility clients (65%), (Annex 4, Table IV). Direct comparisons based on facility observations could not be made. Services provided differed between CLC and control and consequently influence the minimum list of essential drugs. Also, patients load differs, making quantitative data on drug availability is less interpretable.

Varied responses emerged from both CLC and the control facilities respondents concerning the availability of equipment and diagnostics, although the underlying theme was that most of the basic equipment was available. The facility observation showed that out of 19 basic amenities (excluding 5 dental-related equipment) at the CLC, 26% (5/19) of selected basic equipment was available, compared to 89% (17/19) at the control facility (Table 3). For example, measuring tapes, thermometers, stethoscopes, headlight sources, fetoscopes or Doppler equipment, refrigerators for vaccines or other health sensitive drugs, and sterilisation equipment were not available at the CLC, while at the control facility mainly dental-related equipment, fetoscopes or Doppler equipment were not available. At the CLC, the Facility Head indicated that the equipment received from Philips was state of art and available in other departments such as immunization and antenatal, while the dental one was experiencing challenges. It was, however, not explicitly clear which equipment was perceived as state of art. Some of the CLC users (women 20-49) only noted that the equipment is better at the CLC than at the control facility. CLC staff at the dental department and facility head explained that the equipment was inadequate, limiting services to tooth extractions. Other related services such as scaling, polishing and filling were considered essential by both users and relevant department staff, but were not yet being performed. The Facility Head was also particular about the unavailability of sonar equipment which is important for antenatal care services, and insufficient equipment for ENT (ear, nose, and throat) for general consultation. According to the Facility Head, for a facility of that size, they would need at least three of these machines, but they only had one, which was insufficient to fully meet their clinical needs. Some of the CLC users (women 20-49) highlighted the need for the CLC to have an ultrasound machine, but the CLC Head indicated otherwise. Whilst acknowledging that the ultrasound machine is a necessity at the CLC given that they are providing antenatal service, it is, however, not a requirement. As such, the CLC does not have an ultrasound machine.

For the control facility, different users gave diverging views. Women 20-49 reported that most of the equipment was not available such as X-ray and ultrasound machines,

while male respondents were of the view that most of the equipment was generally available. Like the CLC Head, the relevant Health Authority stated that it would be beneficial to have the ultrasound machine, but it is not a prerequisite for primary healthcare facilities unless they are offering maternity services. Some of the facility staff gave an indication that some of the equipment was available while others were either malfunctioning or unavailable completely. Conflicting information among the facility staff also arose regarding the availability of the ultrasound machine with one of them saying the clinic had one, while the other disputed, indicating there was no ultrasound machine. The Health Authority spoke very strongly on the equipment issue and cited the absence of some essentials such as haemoglobin strips and cancer screening examination equipment, which should normally be available in primary health clinics. The respondent added that primary health centres are useful for initial cancer screening procedures such as Pap smear, and anyone with abnormalities found would be referred to a district hospital for a colposcopy examination.

> "It is really sad what is happening at some of our clinics. Haemoglobin tests are supposed to be done at the clinic, but they don't have the testing kits. Now patients have to be referred to the nearest hospital and it's a problem because sometimes they don't have transport money." (KII, Health Authority, CLC)

Our findings show that although the relevant infrastructure was available at both facilities, it was rather insufficient for effective service delivery in terms of size and space. The CLC did have three mobile trucks and a mini container used for service delivery. The mobile trucks were for each specific department, be it dental or VCT counselling, while the mini container served for general consultation and some of the nurse's work stations (Table 3). There was no waiting room and patients had to sit either in front of or behind the mini container. For the CLC, participants' responses differed, some of them stated the infrastructure worked sufficiently, while others reported that there were still some challenges, especially when the weather was bad. Out of those feeling the infrastructure was sufficient, such as community representatives and services, they advanced the view that the overall location of the CLC centre was already constrained in size, and possible expansion would probably result in overcrowding. Some of the facility staff argued that although the infrastructure was generally relevant and appropriate, concerns were that the container was rather small. This was repeatedly raised by in-depth interviews with female participants. During the data collection process, the fieldwork team observed that when it was raining, patients were sometimes sheltered at the Rhiza Babuyile Business Hub which already had its regular users. Facility staff, more especially the head, contended that service expansion was not commensurate with infrastructure expansion. As such the current infrastructure might not have addressed the patient's needs fully. Some of the CLC staff reported that there were plans to move the CLC to a much bigger space, although no specific timeline was provided as to when would this happen. Similar observations were made at the control facility, and once again, most of the patients reported that the infrastructure did not fully meet their health needs. Complaints centred around size, given that it was always overcrowded. The need to expand the control facility clinic was reported multiple times during in-depth interviews by participants from diverse backgrounds.

"To be honest, the clinic is just too small. The waiting room is always full and some patients queue outside the clinic. Almost every department is overcrowded. Even the tents they put are not helping. I don't understand why they don't expand the clinic." (IDI, Women 20-49, Control)

Reports from users of both the control and CLC facilities showed some differences in terms of availability of staff with the correct skills. Some of the CLC users (women 20-49), facility heads, community reps, and health authority representatives described that most of the CLC staff was well qualified, skilled and trained. The quality of services at the CLC was reported to be exceptional and consistent. For the control facility, the facility head indicated that they have well-qualified staff, but users and community representatives felt that the quality of service at the CLC was due to an imbalance between the current human resources. However, based on the CEIs at both CLC and control facility comparable percentages of users (77% and 72% respectively) were satisfied with the quality of advice received during the consultation (Annex 4, Table IV). One participant further added the absence of a doctor permanently stationed at the clinic as a key issue. An important issue also repeated about both facilities was on staff shortages with a request to increase current manpower as illustrated by the CLC Facility Head below:

"Our team is well qualified; we give them additional training. We need additional manpower as our services are growing. We also need CHWs." (KII, Facility Head, CLC)

For the control facility, one of the facility staff expressed deep concern on staff shortages which ultimately increased workload and that the clinic was usually overcrowded.

"There are many complaints that we don't do our work, but what we can we do, we are short-staffed. We only have seven nurses, one pharmacist assistant. We are trying."(KII, Facility staff, Control)

It is not explicitly clear whether staff at either of the facilities received training and whether this was done on a continuous basis as participants from both facilities expressed different views. For the CLC, the facility head and some of the staff indicated they get regular training provided through the DoH or conducted at an in-service level. Such training is based on needs and gaps. No adequate information could be obtained on the frequency and scope of the training.

"Most of the trainings are done here through external service provider and facilitated by the human resources department. For other trainings, they are done jointly with staff from other clinics especially Diepsloot South Clinic. We do also receive trainings from the Department of Health." (KII, Facility Head, CLC)

For the control facility, one of the facility staff expressed deep concern on staff shortages which ultimately increased workload and that the clinic was usually However, some of the CLC staff particularly from the dental department disagreed, arguing that in their department they had not received any training and if training was

provided it was probably in other departments. The Assistant Facility Head shared similar views highlighting that since joining the CLC, no training had been provided. The relevant Health Authority as well as some of the CLC users, communicated not being sure of whether trainings were provided but assumed this was supposedly a general trend. Coming to the control facility, different views came from the facility staff: one group and CHWs stated they received in service training at times and the most recent one being on the corona virus while the other group reported not having participated in any training or refreshing courses. When probed, the facility head indicated that training was done regularly particularly on the management of patients with HIV as there was an NGO within the premises offering voluntary counselling and testing services.

In both facilities, similar arrangements were employed for ensure safety conditions that were deemed appropriate, available and relevant in line with the required legislative requirements. At the CLC, staff stated that several medical waste materials were regularly checked and monitored. It was unclear who collects the waste for disposal. Staff at the control facility shared the same views and alluded that relevant safety regulations were implemented and adhered to. The Health Authority added that there was an external contractor mandated to collect medical waste from all primary healthcare facilities in Diepsloot.

Basic patient management tools were found to be implemented similarly in the two facilities. Most of the facility staff at the CLC explained that basic amenities, patient registers, flow charts and treatment guidelines from the DoH on child immunization, pregnancy were available and visible in offices at the CLC. Regarding record keeping, there were systems in place to document the patient's demographic information, these were mainly paper-based and were completed by admin personnel. Like the CLC, the above-mentioned tools were available and visibly placed in each office. The record-keeping process followed an equally similar pattern. Patients have files opened on their initial visit, these files are stored after the diagnosis process and referenced on future visits. Although the CLC was using MOM software as an electronic medical recording system, it was challenging, as the system was always down. The use of MOM software was terminated in February 2021. During the presentation of this report, we received information that the MOM software installed at Diepsloot was a demo version that had been provided to the facility for free for a defined period that ended in February 2021. The report on lessons learned was not available for the KIT team at the time of finalizing this report. During fieldwork at the CLC, we could not obtain the full information on how this system was employed. The control facility is using a different EMR system, and the Health Authority also reported that it is not fully functional due to technical related challenges. In both facilities, the use of electronic medical recording systems is poor, owing to the different challenges experienced.

> "When a patient comes, our Admin person registers them and opens a file. When they have been assisted, they leave the files with the clerk. When they come back for the next time, we always use the same files." (KII, Facility Head, CLC)

Other key informants from both facilities, such as community representatives and religious leaders did not give adequate information on patient tools.

IS THE QUALITY OF SERVICES APPROPRIATE?: PROCESS ELEMENTS

The process elements include the prescription of medicines, emergencies screening, integration of services and waiting time for consultations.

Findings from in-depth interviews suggested that medicines were prescribed correctly at the CLC and the control facility. This was confirmed by participants, such as a community representative, a health authority representative, a dental therapist and a dental nurse. The health authority representative also stated that the staff at the CLC followed The Essential Drug List (EDL), which are guidelines from the DoH to primary health facilities on the dispensation of drugs.

The study showed that arrangements for screening emergencies were done according to standardized guidelines for primary healthcare facilities at both the CLC as well as the control facility. The CLC staff followed regulations that stated that patients had to be given priority based on how severe their health problems were and on other characteristics, such as age and disabilities. Nurses were mostly responsible for the screening of patients in the queue for those most in urgent need of medical assistance. Participants reported that this was common practice in most clinics, including the control facility, where patients with severe health issues did not have to wait in line to receive medical assistance. Some participants were aware of these regulations but were hesitant on whether these regulations were followed at the control facility.

> "We do the initial screening on things such weight, blood pressure etc. and if there are abnormalities we immediately attend to them. We also give priority to those who are terminally ill e.g. those who cannot walk, talk etc. to come straight into the consultation room without having to wait in the queue. This also applies to the old aged and other disadvantaged people." (KII, Rhiza, CLC Diepsloot)

The integration process was generally in line with several legislative requirements from the DoH which generally stipulates the need to address co-morbidity of diseases and is applicable to all health facilities. For instance, when a client comes to the CLC with TB symptoms, they would also be tested for HIV/AIDS and encouraged to use family planning services, according to a community representative. The same was reported for the control facility. A difference between the clinics was that patients could not be treated for any chronic diseases at the CLC. For such treatment, they were referred to other clinics. Therefore, the integration of services was more limited at the CLC because of limited follow up of patients and treatments for chronic diseases such as HIV/AIDS or TB. At the control facility, treatment for chronic diseases such as hypertension and high blood pressure which are prevalent among the older population is provided.

According to qualitative and quantitative data, findings showed that waiting times were longer for patients coming to the control facility than patients coming to the CLC. CLC clients were more satisfied with the waiting before consultation compared to clients of the control facility (score 3.7 vs 2.6). Among the 152 CLC clients, the waiting time was less than 30 minutes for 54% of the respondents compared to 4% of the 116 control facility clients. Seventy-two per cent of control facility clients reported waiting more than 1 hour compared to 16% of CLC clients (Annex 4, Table II). According to the facility staff, the long waiting hours were due to shortages in staff. According to patients, the waiting time could depend on the mood of the facility staff. The large majority of the CLC clients (89%) considered their waiting time reasonable compared to 34% of control clients). These findings were supported by the qualitative findings where most CLC participants (community and NGO representatives, a health authority and facility staff) indicated the waiting time to be relatively short.

Overall, CLC clients were slightly more satisfied with the behaviour of health professionals in the CLC compared to the control facility. The average score on the composite index reflecting the behaviour of staff (including separate scores on the friendliness of staff, friendliness of provider, and perceived ability to discuss problems regarding the health issues) was average 3.8 based on CLC clients compared to 3.3 control clients out of a maximum score of 5 (Figure 6), a statistically significant difference. This quantitative finding from the CEIs was supported by qualitative information. CLC users indicated an overall good attitude from the CLC staff. Most of the those who participated in the CEIs, in-depth interviews and FGDs, believed that they are confidential and that their privacy was ensured. The staff was also regarded as empathic, trustworthy and the participants felt comfortable.

A huge difference emerged in both facilities in relation to satisfaction levels with services, with the CLC scoring higher than the control facility. Key informants were once again crucial in providing valuable evidence, that was further substantiated by some in-depth interview participants. Community and NGO representatives reported that satisfaction levels at the CLC were higher because of key issues such as short waiting times, better attitudes from health workers, and the availability of medication, which was repeatedly mentioned by FGD participants. Disaggregated by the services provided, they pointed out the immunization and antenatal care were the most popular among users in terms of short waiting times. The CLC Head further noted that suggestion boxes were helpful to shed more light on the level of satisfaction.

> “Our patients are very happy with our services as shown by the suggestion boxes. We think almost 90% are happy” (FGD, Women 20-49, Control)

For the control facility, satisfaction levels from users were reportedly low by most of the key informants as well as the users with most concerns related to long waiting time, persistent drug shortages and bad attitude from the staff in almost all the departments. One other issue mentioned in one of the focus group discussions, was that even when they raised complaints through suggestion boxes, they did not see changes.

"Services at this clinic are of the worst quality. There are no drugs, they don't communicate with patients professionally. We only come here because we don't have money to go other facilities. We sometimes protest for change but nothing happens. I don't think they even read the suggestion boxes" (FGD participant, 15-19, Control)

However, most of the facility staff at the control facility gave different views to some of the key informants. One nurse reported that satisfaction levels from the users were generally high, in comparison with other government clinics in the same zonal areas, particularly in departments such as the chronic diseases department, as they do not experience drug shortages. She also explained that users were happy with the antenatal department due to the short waiting time and the support group where patients could share their health experiences. The Facility Head, and some staff, pointed out that satisfaction levels varied with some patients being happy and others not. They further argued that they were doing their best in terms of service provision and attributed challenges resulting in low satisfaction as being beyond their control.

"Some patients are happy with our services, whereas some are not happy. So we have patient's experience of care surveys yearly. Sampling is conducted on 100 patients and part of national care standards. We get the report of the survey each year and for the current year we are still waiting for the results. Last year, we got a rating of about 76% which is the best so far when you compare us with other clinics." (KII, Facility Head, Control)

The findings from in-depth interviews indicated that privacy was more ensured at the CLC in comparison to the control facility. Participants showed mixed reactions with regards to interpersonal aspects of the staff of the control facility. Some people regarded them as confidential, others believed their privacy was not kept. There were different sections and clinic cards for people with different diseases, which resulted in people knowing for what kind of problems patients were visiting the clinic. This endangered the confidentiality of patients. Such was not the case for the CLC clinic, where most participants believed their privacy was ensured. Only one participant expressed doubts on privacy, because staff members were also living in the area. Besides, since the mini-container where consultations take place is rather small, and other staff are moving in and out, some respondents felt their privacy was affected. Most participants expressed their trust in the skills of staff. One participant stated that she felt that the staff at the control facility was doing some guesswork when it came to treatment. These reports were supported by quantitative findings from CEIs. CLC clients rated their satisfaction (3.8) with 'trust in skills of the providers' slightly higher compared to control (3.4) (Annex 4, Table III); 83% of CLC compared to 70% at the control facility (Annex 4, Table IV). These findings were statistically significant. Based on 36 CLC consultation observations and 32 control facility observations, observed generic aspects of attitude, communication, and empathy skills showed good levels (average score 3.9 out of maximum 5) at the CLC and fair levels (average 3.4) at the control facility. In contradiction to findings from qualitative interviews, the CLC scored slightly lower on privacy-related issues based on consultation observations (2.7 compared to 3.1), but only 22% of CLC clients were dissatisfied with privacy during the consultation compared to 36% at the control facility (Annex 4, Table IV). Facility

observations showed that the control facility didn't have rooms with auditory or visual privacy. For the CLC, only visual privacy was ensured. Based on observations of technical aspects of quality care, the CLC scored excellent on the under 5 consultations (average 4.8), compared to 3.8 at the control facility. Overall technical aspects of chronic conditions showed a fair score (3.6 CLC, 2.6 control visit). Counselling on alcohol use and smoking habits, measuring waist circumference, cholesterol level and checking the urine for glucose was not consistently done at both the CLC and the control facility. These results indicate that the integration of services was limited in terms of non-consistent initial screening in both the CLC and control facility. While the technical aspects of family planning consultations were observed to be good (CLC average score 4.2; control average score 4.4), ANC consultations showed a lower score (CLC average 3.8, control average 4.3). At the CLC, it was observed that the nurse did not sufficiently explain the effects of unhealthy eating/poor nutrition habits during pregnancy (average score 2.8, 2.3 respectively) in at least half of the observations. Dental care consultations at the CLC scored high (average 5).

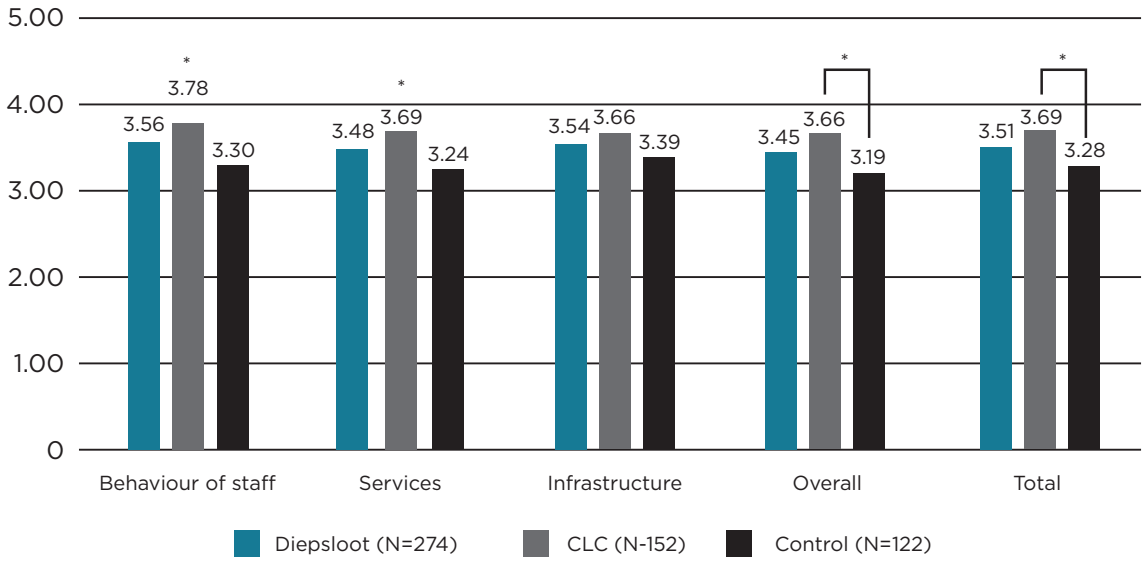

*Figure 7 The average level of satisfaction per indicator per HCF whereby the CLC and its respective counterfactual are compared. Statistical significance is indicated with a cross. *N=273*

COVID-19 pandemic: Quality of services

Huge gaps were seen between the CLC and the control facility in relation to the quality of services provided. For the control facility, the reports from service users, community representatives and religious leaders were that the quality of services had dropped significantly dropped and the prioritization of COVID-19 patients impacted the number of other patients who could be served. Some of the facility staff and community health workers complained of the increased workload, whereas they were already understaffed. The Facility Head mentioned low staff morale on a lack of adequate protective equipment which elevated their fear of infection. At the CLC, most of the users and community representatives reported no change in the quality of services provided generally except the focus of attention being placed on COVID-19 symptomatic cases.

FINDINGS: APPROPRIATENESS OF SUPPORT AND MANAGEMENT FUNCTIONS

KEY FINDINGS

- Both the CLC and the control facility worked together closely with the DoH in terms of reporting and receiving supervision.
- Both the CLC and the control facility clinic committees organize meetings to receive community feedback. The CLC strived to organize this four times a year. The control facility did so 'regularly'. Both clinics also made use of suggestion boxes.
- Information registered by the CLC was sent monthly to the control facility. After that, information was communicated at the district and provincial levels. This information was used for decision making at the facility management level for both the CLC and the control facility in terms of drug shortages and possible expansion of services. For the CLC, information was also used for setting targets and the priority of interventions.
- Collaboration with relevant stakeholders, such as NGOs, local authorities, ward councillors etc. was practised at both facilities.
- Findings showed that most participants stated that human resources for health (HRH) processes were done appropriately at the CLC by stating that staff was supervised, trained and assessed with the help of the DoH. At the control facility, challenges were found in HRH processes in terms of staff shortages.
- Referral practices seemed similarly well organized at both the CLC and the control facility. In emergencies, they called an ambulance. For non-emergencies, the staff informed the patients and wrote referral letters. After referring, the patients could give feedback and staff members also checked with the health service providers.

IS THE MANAGEMENT OF THE CLCs APPROPRIATELY FUNCTIONING?

Findings show that the status of the CLC in relation to ownership and management responsibilities is in the hands of Philips and Rhiza Babuyile. Participants were not exactly sure how these responsibilities were split between the two. The Facility Head stated that Philips Foundation was mostly involved as a funder and Rhiza Babuyile as the managerial partner. The health authority also confirmed this by saying that Rhiza Babuyile oversaw the day-to-day activities. There is no information on who pays CLC staff salaries although the assumption is that it is Rhiza Babuyile because the staff do fall under the Rhiza Babuyile preamble but a service level agreement exists between Rhiza Babuyile and the DoH. The exact contribution from Philips is not clear apart from the provision of infrastructure, however, we did not obtain information to shed more light in terms of maintenance thereof.

In terms of drug procurement, the CLC does receive a supply from the DoH and also has the capacity to outsource from private providers. Reporting to the DHIS2 system is done through Diepsloot South Clinic which is then aggregated at the district level. Other participants such as community representatives expressed uncertainty about the ownership and management responsibilities of the CLC.

For the control facility, responsibilities lay in the hands of the South African government, which is split between departments. The DoH is in charge of running the clinic and providing the budget, as confirmed by most participants. For both the CLC and the control facility, participants were unsure about the involvement of other stakeholders.

Both the CLC and control facility work together closely with the DoH. Interviews with a Rhiza employee, health authority and a community representative showed that accountability relations with the county authorities were hierarchical. According to a Rhiza Babuyile employee, the CLC reported to the DoH, which in turn provided supervision and mentorship. For the control facility, this process was bureaucratic; participants stated that the staff and CHWs reported to a supervisor, who reported to the zone supervisor until it reached the provincial level.

In terms of social accountability or community engagement, both the CLC and the control facility had clinic committees that organized meetings to get feedback from the community. The CLC strived to organize this four times a year and the control facility did so 'regularly', but the frequency was not stated. The clinic committee was made of different stakeholders such as political party members, community leaders, religious representatives and was appointed by community members. Their role was to work collectively with the clinic management in addressing the issues raised by the patients through the suggestion boxes. They meet with the facility management once a month and mostly discuss effective service delivery. Both clinics also had a suggestion box for complaints and suggestions that were regularly checked by the clinic committees.

> "The clinic management participates in various community meetings to get the community's feedback. In most cases, the community is invited for feedback meetings and give their views in terms of how services are being rendered. I know there is a suggestion box at the CLC where people can send their opinions anonymously. There is a committee which regularly checks for these and discusses with the management as well as other officials." (KII, Community Representative, CLC Diepsloot)

Information registered by the CLC was sent to the control facility on a monthly basis. After that, information was passed on to the district and provincial levels. A nurse stated that the control facility had a health information system that tracked data, which was sent to the district level and then the provincial level. This was confirmed by a health authority and community representative.

Information from monitoring and evaluation was used for decision making at the facility management level for both the CLC and the control facility in terms of information on drugs stocking and tracking which services needed expansion. The management of the CLC reported that most of the time the clinic received drugs from the Provincial Health Department. Findings showed that at the CLC information was also used for setting targets and priority of intervention. This was specifically mentioned by the CLC Head in that the data collected showed which services are being used the most e.g., antenatal and immunization. Subsequently they are able

to prioritize areas of intervention such awareness of immunization, health talks for immunization etc. It wasn't clear in the interviews which targets were set.

Collaboration with relevant stakeholders was practised at both facilities. For the CLC, the partner NGOs mentioned were Africa Matikkun and the Methodist Church. The Ward Councillors-are sort of political leaders, political party representatives. As for the control facility, the NGOs mentioned were the Aurum Institute and Right to Care, who are providing VCT services at the Clinic. Other related stakeholders are government departments such as education, social development, police, and home affairs. Both the CLC and the control facility had regular meetings with these stakeholders. According to a health authority, this meant the CLC organized meetings on quarterly and on an ad hoc basis. There was uncertainty about the frequency of these meetings at the control facility, as a ward councillor only mentioned 'regularly'.

Findings showed differences in terms of human resources processes between the CLC and the control facility in terms of performance and staff availability. At the CLC, most key informants stated in interviews that HRH processes were done appropriately by stating that staff was supervised, trained and assessed with help of the DoH. However, an NGO representative expressed doubts on staff fulfilment. A dental nurse was unsure about the process. At the control facility, there was a general consensus that challenges were found in HRH processes in terms of staff shortages.

> "Most of the key HRH functions are being fulfilled since it is a managerial task done at an operational level. Recruitment is done locally. Support and supervision are done by the DoH on an ongoing basis through things such as workshops etc." (KII, Health Authority, CLC)

Referral practices seemed similarly well organized at both the CLC and the control facility. This was confirmed in interviews with key informants such as a nurse, a community representative and a health authority. The CLC and the control facility mostly referred to the nearest clinics, with which they had formal agreements. For deliveries, women were usually referred to Tambo Clinic that has 24/7 opening hours. This applied to both the CLC and to the Diepsloot South clinic. Depending on the indication, patients could also be referred to the nearest hospital. In emergencies, they called ambulances from the nearest hospitals. For non-emergencies, the staff informed the patients and wrote referral letters. After referral, patients could give feedback and staff members also checked with the health service providers to find out where patients were referred to.

DISCUSSION AND CONCLUSIONS

This chapter synthesizes the findings from the earlier chapters. We have chosen to focus on issues we have determined are important for Philips to reflect upon in their further promotion of the CLC concept. We start with a short introduction on the defining elements of the CLC concept in general. We subsequently reflect on three observations (i) country context and health system level, (ii) facility level factors and (iii) perceived versus 'true' value of inputs and defining elements) relevant for the interpretation of outcomes and impacts. While the study objectives were developed focusing on the relevance, efficiency, effectiveness and sustainability of the CLC intervention as a primary care model, we have structured the discussion following outcomes and outputs according the most commonly and generally agreed generic framework for monitoring and evaluation at the health system level. The generic framework from International Health Partnership+ (IPH+) [28], which is also the framework for the Global Reference List of 100 Core Health Indicators including the health related SDGs [29] and the Primary Healthcare Performance Initiative (PHCPI) conceptual framework [30] (Annex 5). We will further discuss how the defining elements of the CLC are reflected in the case of the mini-CLC in Diepsloot, South Africa. The final sections present the strengths and weaknesses of the study, and some final conclusions. The main findings and recommendations are summarized in the executive summary and are, therefore, not repeated in this chapter.

From the CLC documentation, we learn that the CLC platform takes a "holistic approach to health" and (primary care) service delivery, meaning that it takes the living conditions of the people as an important starting point often called a social determinants of health approach. It is also "community driven", meaning that it aims to fully collaborate and build partnership with local stakeholders, that it is fully aligned with national health policies and that it has strong community links, particularly with community health volunteers. [10]

From our study and from CLC documentation the following can be considered "defining features" of the CLC-platform:

A. The co-creation process, with the partnerships and engagement with various stakeholders
B. Technical innovations & equipment
   - EMR
   - Ultrasound
   - Community volunteer backpacks, with various technological tools
   - Solar power, including lighting
   - Water supply technologies
C. Specific arrangements for human resources, including the CHVs training, other human resources management arrangements
D. Management arrangements and organizational practices, including referral systems; organization of workflows
E. Infrastructural investments
   - Waste management installations
   - Infrastructure (or its refurbishment or expansion) and furniture: fixed and mobile
F. Non-health (or development oriented) elements, like a business hub, Early Child Development (ECD) daycare, lighting and electricity for small businesses, etc.

REFLECTIONS ON INTERPRETATION OF OUTCOMES AND IMPACTS IN THIS EVALUATION

Many of the outcome and impact dimensions (whether looking at the IHP+ or PHCPI frameworks) apply to health systems as a whole, at the aggregate level, and not to one level of healthcare provision in isolation, let alone one single primary care institution. Conclusions on the outcomes and impacts for a particular model of primary care provision, such as the Diepsloot Mini-CLC is, therefore, difficult.

In particular, three observations need to be made when discussing outcomes and impacts:

Country context and health system level: Many of the influencing factors for outcomes and even more for impacts (note that in the PHCPI framework, these are called outputs and outcomes respectively) are beyond the control of the CLC platform.

Primary care centres operate in a country context, with socio-cultural and economic determinants that influence health status more than health services alone [31]. Additionally, primary care centres function in a local and national health system, again with factors like its overall financing level and arrangements (tax-based or insurance; and level of financing), its supply systems, staff availability and distribution; etc. Considering all these influencing factors, both at the society and health system levels, the CLC specific inputs may not be expected to have the largest influence on the (local) health system, or even at the facility level itself: Certainly not for health impacts, but even not that big at the outcomes level.

Facility level factors: this evaluation has looked at one particular type of CLC, in transition from a mini-CLC to a full PHC-CLC, with one public facility in its vicinity as a control facility. In such a small sample, other circumstantial factors are at play at the level of the primary care facility itself. For instance, the fact that the mini-CLC started with a focus on preventative services, whereas the control facility offers a broader range of services. One dynamic, inspiring, or friendly head of a centre or midwife can, for instance, make a difference in attendance rates; health services run by not-for-profit NGOs often have a different institutional culture in relation to staff management compared to public governmental health facilities. Another example is other stakeholders (NGOs, CSO, donors, etc.) that are involved in a district or in a primary care facility, of which some were particularly focusing on HIV treatment, which is not (yet) part of the service package in the CLC. Their interventions or efforts are another confounder in the performance of respective primary care facilities. HIV is still a huge problem in South Africa that on its own constitutes around 25% of the entire disease burden, and for the adult population more than 40%.

Therefore we should not focus too much on whether there were quantitative differences in attendance, quality, etc. between CLC and control facility. The interpretation of differences or trends becomes challenging and difficult when all the possible confounders are taken into account. We should be more concerned about

qualitative elements of how and why things worked differently or did not seem to work in the CLC as compared to the control facility.

A number of these context and facility level factors can be different when a CLC has a different ownership status: NGO/private-not-for-profit/private for profit; or under a different public-private arrangement, as is the case for the mini-CLC, whose management lies with Rhiza Babuyile. Although Diepsloot CLC has an NGO status (private not-for-profit), there are close relationships with the district DoH authorities, in reporting, supervision, supplies and adherence to national guidelines.
Perceived versus "true" value of inputs and defining elements: A final remark is that we should also be aware that the defining elements and technological innovations have or can have a perceived value, either from the perspective of service users, or from the staff engaged in activities; and a "true" value, in the sense of contributing directly to health outcomes and impacts, responsiveness, financial protection and efficiency or value for money. This observation does not really apply to Diepsloot CLC, as the typical technological innovations of the CLC concept (e.g. EMR, ultrasound, tooling of backpacks) were not available there.

SUMMARY OF FINDINGS ON OUTCOMES AND IMPACTS

Since 2010, South Africa has reconfirmed the primacy of primary healthcare (PHC) for the reform of its health system in the National PHC Re-engineering Strategy, and it goals and priorities for the health system follow the general perspective of the above framework [5] [8]. The strategy proposes a public network of comprehensive PHC clinics, for which standards have been developed (Ideal Clinic Manual) [6], [23]. These PHC centres are nurse-based clinics, supported at the district level by specialist teams particularly for RNMCH activities; school health services; and ward based PHC outreach teams, in which CHWs play an important role. [5], [32] Here we will present the impact of the mini-CLC according to their contribution to effective coverage.

CONTRIBUTION OF THE MINI-CLC TO THE EFFECTIVE COVERAGE OF SERVICES AND TO THE HEALTH STATUS OF THE PEOPLE SERVED.

The effective coverage of services is defined as the proportion of professionally defined needs (that are not the same as the perceived needs) that is satisfied or that actually receives the care needed with sufficient quality to be effective. As such, it is a concept that implies and relates to healthcare needs, use of services and quality of care, each one of which will be discussed in the following paragraphs.

Whereas the mini-CLC offers services that are clear health needs, it does not, at present, deliver a full, comprehensive package of primary care services, and it, therefore, does not respond to respond to all the health needs (the burden of diseases) in the area. This mini-CLC has, in fact, been recognized, given the intention to upgrade this CLC to a comprehensive primary healthcare CLC. Currently, because of its scope, the mini-CLC concentrates on preventative services, and for problems like HIV, TB or non-communicable diseases, it offers initial screening and refers patients to other

public facilities for treatment or follow-up. For dental care, it offers basic services, no fillings, extractions or the like. Mental health problems and emergency services for violence, including gender-based violence, have not been mentioned as an important focus of the CLC, whereas these problems pose a big problem in terms of the burden of disease in South African society, and certainly in Johannesburg. It is possible that people seek care from other providers for such problems, because the CLC does not offer emergency services on a 24/7 basis. One clear advantage of the CLC is that it seems to offer more easy access to the many migrants living in the area, who feel constrained in visiting public services where they have to identify. The clients of the CLC, appear to belong to the better-off, as compared to clients at Diepsloot South Clinic, a point that probably relates to the modest fees that are applied at the CLC, where services at the Diepsloot South Clinic are free. In summary, the needs that are addressed in the CLC are valid, but it does not (yet) cover all the needs that can be anticipated in the community.

As service utilization data for the mini-CLC are reported through Diepsloot South Clinic, we only have data for that last clinic, in which service provision of the CLC is integrated, or for the entire sub-district A, of which Diepsloot is part. These data show coverage estimates for childhood immunizations that are close to 100% in sub-district A. For first visit antenatal care, coverage is even beyond 100% in later years; often, such trends can be explained by a sub estimation of the denominator (the target or eligible population), but in that case, a similar pattern would be expected for other indicators. Without further analysis, we cannot rule out the possibility that there is a systematic reporting problem for antenatal consultations.

For the whole of Johannesburg, all RMNCH indicators show a decreasing trend, and in sub-district A this is also the case for children being completely vaccinated. The DHS of 2016 confirmed that there was at the time a substantial under coverage for childhood vaccinations in South Africa. [33]

In summary, service utilization data for preventative services in which the CLC is involved (antenatal care, childhood vaccinations) show excellent results, although there is a concern that certain groups are not fully covered in South Africa as a whole, a problem that may be more accentuated in Gauteng [33]. Unfortunately, the exact contribution of the CLC to this coverage cannot be analysed, as data are reported through and integrated in the DHIS2 data of Diepsloot South Clinic. Various respondents did note that there had been a “tremendous increase” in attendants over the years.

With regard to the quality of care, the interpersonal communication aspects of quality of care scored much better at the CLC than at the control facility. Waiting times were shorter at the CLC in comparison with the control facility, probably partly due to the lower patient load. The technical aspects of quality during consultation observations were good, with little difference between CLC and control facility. Although some equipment seemed to be lacking at the CLC, as compared to the control facility, equipment was appropriate for the scope of services provided at the mini-CLC. It is

clear that a facility does not need tools and equipment for services that it does not (yet) offer. Privacy was reported as less appreciated: due to the limited space in the container, some patients complained about disturbances by staff moving in and out of the consultation room.

The CLC undoubtedly contributes to effective coverage, for the services that it offers, but that the service package is perhaps narrower than that of a comprehensive primary care facility (Ideal Clinic in South Africa), at least in the current form of the mini-CLC. Quality, and particularly perceived quality, compares favourably to the control facility. As no specific service utilization for the CLC was available, the relative contribution of the CLC to effective coverage could not be quantified. In terms of vulnerable groups served, the CLC is better accepted by (often undocumented migrants, and the attitude of the service providers is appreciated.

Health promotion: Health promotion is understood here either as behaviour change activities in relation to health; or other activities having an influence on societal determinants of health, as far as the CLC has developed specific activities in these regards. The CLC does engage and participate in various health promotion activities such as outreach activities, campaigns, community mobilization initiatives with the intent to enhance service utilization.

Beyond outcomes in the sense of effective coverage, impacts look at health status impacts: this is measured in terms of mortality, morbidity, or summary measures of population health (e.g. DALY, Healthy Life Years, etc.). In the case of an evaluation of one single primary care facility and one with a limited package of primary care services, it cannot be expected that one would be able to measure such an impact. Health (status) is influenced by many factors, both healthcare and non-healthcare related, and even at the aggregate level of the entire health system, such a contribution is difficult to measure and needs sophisticated information systems on amenable and preventable mortality. Such methods have only recently been applied in LMICs. [34]

HOW SATISFIED ARE PEOPLE WITH CLC SERVICES AND HOW RESPONSIVE WERE THE CLCS TO PERCEIVED NEEDS OF THE POPULATION?

The CLC is particularly responsive to a number of specific needs such as family planning, antenatal care and child welfare needs. For other diseases, like TB or HIV, as well as cardiovascular diseases, it provides initial screening without treatment or follow-up. It should be borne in mind that HIV by itself represents still around 30% of the disease burden in South Africa and that non-communicable diseases (like diabetes, hypertension, stroke, etc.) are increasing in terms of their relative share of the burden of disease. In absolute terms, the burden of HIV is declining, and the same applies to non-communicable diseases, although to a much lesser extent. [22] Violence, including gender-based violence, is known to be an important problem in South Africa, and certainly, in Johannesburg but from exit interviews, this does not appear a particular focus of the CLC.

As mentioned above, the CLC seems to be especially attractive for the group of migrants, who feel less well received and sometimes even discriminated against in public facilities where they meet all kinds of administrative regulations. In FGDs, adolescents also indicate that the CLC is more receptive to their specific reproductive health needs than the control facility.

Staff attitudes at the CLC were perceived as much better than in the control facility across several areas. The staff of the CLC is generally considered empathetic, friendly and respectful. Clients were generally satisfied with the opening hours of the CLC, more than in the control facility. This may partly reflect the difference in caseload and case mix at the CLC. Clients stated that in emergencies, transport for referral was organized faster at the CLC than at the control facility.

FINANCIAL PROTECTION

At the CLC, people pay fees for services. Some clients may get (part) of their fees reimbursed from their insurance plans, but the CLC has no direct relation to and does not make claims directly with these insurance plans. Relatively more clients at the CLC had some sort of an insurance plan (42% against 18%), indicating that clients were generally slightly better-off, as insurance plans in South Africa are mostly voluntary private insurances. In any case, such insurance coverage did not have direct implications for fees at the CLC: clients always pay these fees at the CLC, whether they have insurance or not.

The level of fees at the CLC is modest compared to the many private clinics in the area and may be prohibitive for the very poor, who may prefer to use public services that are free at the point of access. The CEI show support for this hypothesis that CLC is not visited by the very poor using employment as a proxy indicator for socio-economic status: 37% of CLC clients interviewed was unemployed compared to 61% of interviewed clients at the control facility.

Rhiza Babuyile is developing several initiatives to empower the poor population and provide them with skills to increase their chances of labour engagement and employment. This concept of not only providing health but also social services may contribute to the appreciation of the CLC and the overall philosophy that is propagated by the CLC, Rhiza Babuyile and Philips. The feeling of belonging and being accepted as who you are might be strengthened by the visible and tangible underlying values and norms of the CLC project, although this evaluation has not specifically focused on this.

The CLC users felt that financial resources permitting, they would rather come to the CLC as they are guaranteed to have their health needs met. Otherwise, they would visit the control facility where services are provided for free, but there is a possibility they may not get the services they need. For example, at Diepsloot South, the problem of shortages of drugs was more frequent, and in such cases, patients are referred to pharmacies where they have to pay.

Another advantage of the CLC is that it offers a closer service: travel distances can be quite large in Johannesburg and travelling constitutes another expense that people weigh against the modest fees that they have to pay at the CLC. In the end, it remains a kind of trade-off between the availability of drugs, distance and transport costs, and modest fees paid.

The extent to which the problems in effective coverage of some services that were mentioned before can be attributed to affordability issues, or whether other so-called demand factors are at play, is a matter that needs further study.

DISCUSSION ON EACH OF THE CRITICAL/DEFINING ELEMENTS OF THE CLC

In this section we discuss the prominence of the CLC defining elements in the mini-CLC in Diepsloot.

THE CO-CREATION PROCESS, WITH THE PARTNERSHIPS AND ENGAGEMENT OF VARIOUS STAKEHOLDERS (A)

Diepsloot CLC is an example of a mini-CLC: it started as an initiative of a local NGO, Rhiza Babuyile, that was active in the area, particularly with educational programs for youth. They identified many health needs in this township with few public health services and contacted Philips, who provided financial support to set up a mobile clinic and started offering health services in the densely populated township of Diepsloot in 2015.

The CLC is well integrated and aligned within the public services of the DoH, through which they report and from where they receive guidelines, supervision, and a regular supply of drugs. Some 5 km from the current mini-CLC, a more complete CLC has been projected, but this initiative was not yet operational at the time of the evaluation (end 2020).

Another dimension of the co-creation process is the non-health-related activities organized in the vicinity or in the same compound as the CLC by Rhiza Babuyile. These activities constitute an important asset, which increase the visibility and attractiveness of the CLC and may potentially increase access. Whether the income-generating activities for selected target groups, like the ones offered at the business hub, contribute to the increased average income of the general population and, therefore, to the affordability of services and the sustainability of the CLC is disputable. It could be argued that the non-health-related activities generate income for the organizing Rhiza Babuyile, which subsequently not only subsidizes the CLC activities, but also pays the salaries of the staff.

TECHNICAL INNOVATIONS & EQUIPMENT: HARDWARE AND SOFTWARE (B)

There was a computer-based register, which was operated alongside a paper-based one. No advanced and comprehensive EMR system was in place used for both

registering activities (linked to DHIS2) and individual patient follow-up (electronic patient/family files). The MOM software was only used in a pilot study to monitor maternity care.

The CLC possesses the necessary equipment, furniture and tools to carry out the activities on which it is concentrating, but it has no ultrasound (echo). For dental care, it has the necessary equipment to provide basic hygiene services such as cleaning, but not what is needed to provide fillings or extractions.
While there was no CLC-specific program for CHWs, including a Philips specific outreach kit for backpacks, the CLC did link up with CHW networks from partner NGOs or churches. There was no clear difference between the CHW networks of the control facility and the ones linked to the CLC, both were equally well appreciated by respondents.

While we can say that the CLC has appropriate equipment and tools to deliver the services it provides, there is hardly any Philips specific innovative medical equipment for diagnosis, treatment and follow-up.

HUMAN RESOURCES ARRANGEMENTS, INCLUDING FOR CHVS (C)

Staff is employed through Rhiza Babuyile but also benefits from supervision and some training through the sub-district health office, like the control facility. Whether the better appreciation of staff attitudes at the mini-CLC is related to the different labour conditions, NGO culture, being employed by a not-for-profit organization, or whether this is also partly related to caseload and case mix at the mini-CLC, is hard to conclude. The CLC staff did receive positive reviews and scored higher from users in respect to attitude, and payment and secondary employment conditions may contribute to this but we have no hard evidence. At the control facility, most users expressed unhappiness with staff attitude. The mini-CLC of Diepsloot does not have its own dedicated CHW program, but it does connect to CHW networks in the area that are coordinated through other organizations and churches.

MANAGEMENT ARRANGEMENTS (D) AND INFRASTRUCTURAL INVESTMENTS (E)

The mini-CLC and especially the attitudes and technical quality of the CLC received lots of appreciation, and there are definite signs of an attraction to the services they provide.

The NGO status of the mini-CLC provides additional benefits through other activities Rhiza Babuyile is developing in the community. The extent to which these social and economic activities cross-subsidize the health activities of the CLC, and therefore the sustainability of the CLC is unknown to us. The CLC functions as a private-not-for-profit facility run by an NGO, with a clear public purpose. In terms of financial sustainability, the CLC charged moderate fees; it is unclear whether clients with voluntary health insurance could get reimbursed from their respective insurances. South Africa has in perspective a National Health Insurance (NHI) that is supposed

to contract in future with accredited providers at the primary and referral levels. [7] It will be important for the CLC to comply with the standards of an "Ideal Clinic" in order to get eligible for reimbursements or contracting by this NHI once it has been established. The fenced, proper and electrified premises give the CLC a nice, safe and attractive appearance; the containers and van that are the key infrastructures for service delivery are rather small, in some cases leading to complaints about lack of privacy during consultations, but on the whole, this infrastructural component has certainly contributed to the perceived quality and appeal to the CLC. All necessary equipment for a primary care facility is in order and functioning, although no Philips-specific equipment was available such as ultrasound imaging.

Within the mini-CLC Diepsloot premises, there is a business centre providing workplaces and training for small start-up businesses and an ECD daycare centre. The current mini-CLC is quite small and does not offer a comprehensive package of primary care, and it does not deliver the full range of typical CLC specific arrangements (e.g. related to equipment, CHW network, EMR), however, the social-economic life skills offered and dental care are maybe elements that especially fit the South African context.

HOW HAS THE CLC CHANGED THE COMMUNITY LIVING CONDITIONS?

INCREASING EMPLOYMENT

The CLC business model considers job creation as an important component. With unemployment being a major challenge in Diepsloot, the employment opportunities within the CLC can be considered a positive. Given the size of the CLC, staff employment at the CLC is, of course, modest, but nevertheless, a minimum contribution was acknowledged. Most key informants such as community and NGO representatives and religious leaders at the CLC highlighted that staff recruited and currently working at the facility were from Diepsloot and expressed satisfaction with the practice. The CLC Facility Head indicated that some of the staff at CLC had been employed from the community and are currently part of the existing CLC staff. There are plans to also recruit Community Health Workers who will be working under the CLC. It is assumed, though, that as the CLC transforms into a full-fledged one, more people will be employed.

The creation of jobs is also enhanced through the non-health-related activities, which are discussed below. The issue of the CLC impacting the livelihoods of the community through the provision of electricity and water in and around the compound was explored but is unclear probably due to the nature of the South African context. In Kenya, several key informants expressed appreciation for the improved access to electricity and water. It is important to acknowledge that access to electricity and water in South Africa is generally high in both rural and urban settings, with close to 80% of the population having access to both water and electricity. This is not a shortcoming but should be an advantage that the CLC can be flexible in its cultural and context-specific adaptation.

SOCIAL IMPACT: SKILLS DEVELOPMENT AND COMMUNITY LIVING CONDITIONS

CLC staff explained that the Rhiza Babuyile Centre (the Business Hub) in Diepsloot was growing since the establishment of the CLC, although there was insufficient evidence to draw an association. They further stated that the computer skills programme for youths has expanded. Also, other business skills are offered at the business hub that also provides working space to young people starting up small businesses.
The other issue which came up repeatedly among certain CLC staff, was related to skills development, although this was more of an indirect benefit. According to the CLC Head, Rhiza Babuyile ran an early childhood development program where practitioners received training to enable them to run their centres more efficiently. Awareness of the program had spread to patients visiting the CLC, and some of them had subsequently joined the program.

Social workers ('Bona Lesidi') provide support to women experiencing domestic violence, although they are more closely working with the control facility, they also get clients referred from the CLC.

From the expert interviews done for the extra realist analysis, the commitment of the CLC owner (Rhiza Babuyile), the active engagement of Philips, and the close collaboration with the Philips formal health system, may create an atmosphere and context in which health providers feel proud to work in the CLC, are regularly paid by Rhiza Babuyile, and show their social and technical expertise to clients.

EMERGING BUSINESS HUBS

The study acknowledged the CLC's business concept and tried to investigate and shed more light on the emerging business hubs. Some of the key informants (health authority, religious leaders, community representatives, and facility staff) alluded that indeed there is significant growth of smaller businesses within the CLC catchment area. Different service providers were noted such as transportation, food markets, tuck shops were said to be increasing presumably taking advantage of the CLC clients, which was not mentioned at the control facility. The assumption drawn could be related to the fact that the CLC is a fee-paying institution. The community representatives highlighted the growth of tuck-shops (commonly known as spaza shops in South Africa) mushrooming in the area which we also observed during fieldwork. The Facility Head cited a nearby mall, recently built about a kilometre away from the CLC, as an example of how business has been booming in the area. Like other Facility staff, she conceded that these smaller businesses wouldn't have grown so rapidly if the CLC was not there and expressed that these businesses were basically leveraging on CLC users. Other notable key informants shared different views in explaining business growth in the area. According to them, the migrant population in Diepsloot has grown tremendously over the years, particularly undocumented ones. This specific group has challenges in securing employment and often resort to establishing small business such as tuck shops as a means to survival. This resonates with also our observation in that most tuck-shops are foreign-owned.

During data collection, it was, however, not fully clear as to whether some of these businesses were either growing or established prior to the CLC opening. Nevertheless, a portion of the CLC staff believed these small businesses wouldn't have grown if the CLC wasn't there.

> Additionally, there is a lot of small business enterprises growing within the clinic's catchment area like food markets, transportation services etc. These people saw a business opportunity to cater for people coming to and from the clinic. (KII, Health Authority, Control)

In conclusion, it is difficult to establish whether and to what extent business growth in the CLC catchment area is directly linked to the CLC business model concept. While CLC staff were able to draw a correlation, the same could not be said of some of the key informants. The contrasting views thus make it challenging to draw a cause-effect relationship. However, when comparing these study outcomes to the outcomes of the Kenyan study of two CLCs, interesting conclusions can be drawn. They will be presented in the synthesis & realist analysis report.

STUDY STRENGTHS AND LIMITATIONS

STRENGTHS

The study design, which was a mixed-method one, allowed in greater detail triangulation of data. The Ethical Review process, although very lengthy and cumbersome, undertaken by the University of Witwatersrand Human Research Ethics Committee, was very rigorous and thereby enabling the research to be conducted in highly-guided ethical manner. The Wits Committee is a renowned institution, and to obtain ethical clearance signified the value of the project in generating useful scientific advances. There was tremendous support of the study project from the CLC and the control facility staff and health authorities, hence we managed to get their buy-in and support, allowing the data collection process to be done efficiently and effectively. A consultative session was held prior to fieldwork implementation in which they fully participated and also gave important contextual information to meet the research objectives. There was active participation and interest from other relevant stakeholders in the research project. They understood our aim thereby provided support during data collection. Additional information was obtained from them, which was handy to the analysis team. We were fortunate to have successfully recruited a fieldwork team who underwent very intense training, was dedicated to their work and had the relevant experience. As such, they understood the project's goal and ensured that the data collected was not only of high quality but also that it would be relevant to provide factual insights in the analysis process.

WEAKNESSES & LIMITATIONS

The study findings are based on one CLC and one control facility, with many local and contextual factors, making attribution to any particular intervention quite challenging.

Although the inclusion of Hanipark (Free State, Province) in the evaluation was considered after being mentioned during the kick-off meeting in February 2019, it was not included as it was not considered financially feasible within the existing donation agreement. The results may not be representative enough but rather selective of the specific context. A delay in the kick-off of the study due to ethical approval and the COVID-19 pandemic hampered the research process. Face to face interviews had to be stopped for a certain period of time. Subsequently, health-seeking behaviours were altered among some potential participants due to fear of contracting the virus. Even though data collection resumed at a later stage, it was largely restrictive and in adherence to the COVID-19 protocols. The study could have missed out on certain participants, whose participation could have influenced the study outcomes. We also faced lots of challenges in accessing the DHIS2 data, which was a long process riddled with bureaucratic procedures. When access was finally granted, it was discovered that the mini-CLC does not submit data to the DHIS2 system, but rather it was aggregated with that from the control facility. The absence of CLC specific data thus meant DHIS2 data was not as useful as anticipated. The control facility was appointed by the MoPH, although not fully comparable to the CLC, as the control facility was government run and had a more comprehensive package of care. Important information, particularly on the service level agreement between the mini-CLC and DoH, was unavailable and challenging to obtain. The availability of such information could have helped to answer some of the research questions, therefore, no adequate information could be obtained concerning the appropriateness of support and management functions.

CONCLUSIONS

The mini-CLC in Diepsloot is in transition to full CLC. There is a strong linkage and embedding of the mini-CLC with the SA (local) government public health services. The CLC distinguishing features are to a limited extent present in the mini-CLC and therefore not different from any other primary care facility that offers the services the mini-CLC offers. The mini-CLC and especially the attitudes and technical quality of the CLC received lots of appreciation, and there are definite signs of an attraction to the services they provide. However, we see it as a missed opportunity for profiling the typical CLC specific elements. The NGO status of the mini-CLC provides additional benefits through other activities Rhiza Babuyile is developing in the community. We assume that these social and economic activities cross-subsidize the health activities of the CLC, but to what extent we don't know. Salaries are paid by the NGO but no strong conclusions can be drawn about the sustainability of the financing of the CLC. While the specific Philips technology interventions were less present (e.g. backpacks, EMR) and may be less needed (e.g. ultrasound), the co-creation and implementation of the CLC by a South African based NGO gives hope for the future, as they are also offering social and economic support to the surrounding populations, and therefore have closer interactions with the community. The main findings and recommendations are summarized in the executive summary.

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ANNEXES

ANNEX 1A RESEARCH TABLE

General Objective: to generate evidence regarding the impact of CLC on access and utilization of primary care services in South Africa.

Specific Objectives	Issues	Methods	Respondents/ participants
1. To assess the relevance of the services offered through the CLCs.	Most common health problems in the county/catchment area of CLC (information on burden of disease). Services provided by whom (CLC, CHW), how (including stakeholder engagement) and how often? Equity (e.g., relevance of the services for specific population groups- women of reproductive age, children, and adolescents and the poorest) Services, tools, diagnostics, medicines provided and used by CLCs and CHW (including backpack) in agreement with policies and priorities for level three health facility? (See also the issue of overprovision under objective 4) Responsiveness to the needs, context, and priorities of the targeted populations How have the CLC specific needs assessment been conducted?	• Document review and re-analysis (Demographic health survey (DHS), Health Policies and Plans, local studies) • Key Informant Interviews (KIIs) • Focus Group Discussion (FGDs)	• KIIs: Health authorities, facility staff, community representatives • FGDs with (young) women living in the catchment area of the CLCs

2. To assess healthcare seeking behaviours (barriers, preferences, and responsiveness to needs) within the catchment population of selected CLCs.	Perceived health needs by community members Approachability of the CLCs for the local community Information given on CLC services provided, including outreach by CHWs Community awareness of CLCs Community trust in the CLCs Community experience with the services provided at CLCs/by CHW Acceptability of the CLCs and the services provided for the community • Community views on services that should be available • Perceived Gender/age/attitude of providers by clients • Community perception on the quality of services. • Preference for specific type of provider, in general and/or in relation to specific problems. • Reputation of the CLC Affordability of the services provided at the CLC for the population • Perceived cost of services. • Financial protection of population for catastrophic expenditure related to health seeking behaviour in the community • Fees, out of pocket payment (OOP), insurance arrangements, exemption policies, income/assets. • Direct costs, indirect costs. (in relation to income/assets) Geographic and administrative access to the CLCs • Location of the facility • Opening hours and appointment mechanisms. • Transport facilities • Peoples mobility to reach facility • Decision making on individuals to seek care	• Household Survey • IDIs • FGD • KIIs • Document review	• Household survey: Local community around CLC • IDIs with women and men of reproductive age (15-10 and 20-49 years), and household decision makers • FGDs with (young) women living in the catchment area of the CLCs • KII with facility staff and community representatives • CLC and counterfactual facility

3. To assess trends in healthcare utilization in the CLCs emphasizing reproductive, maternal, neonatal and child health services, and including both services provided at the facility as well as outreach activities initiated from the facility.	• Trends in utilization of tracer indicators for family planning (FP), antenatal care (ANC), reproductive, maternal, newborn and child health (RCMH), Comprehensive Care Unit (CCC), Outpatient Department (OPD) • Contribution to effective coverage of essential services • Reasons/services for first use of the CLC ('contact coverage') • Continuity of care ('adequate coverage') • Trends in utilization of the outreach activities and services provided by CHWs	• Facility level registries (extraction from monthly reports) • DHIS2 • Document review • Client exit interviews	• Client Exit Interviews with CLC clients and Counterfactual clients

4. To evaluate perceived and realized quality of healthcare provided to the population in the CLCs.	• Availability of medicines, equipment, supplies, • Available qualified staff • Type and formal training for staff • Adequacy of infrastructure (privacy, waiting room, sanitation facilities) • Availability of treatment/guidelines/ registers and alignment with national policies for level three facilities • Availability of registers and standard formats • Timeless and completeness of reporting • EMR services implementation and support • Arrangements and procedures in place to ensure patients safety • Underuse of effective care/Overuse of unnecessary care (Extent of overprovision of care in relation to equipment supplied at CLC level or for the CHW backpack; examples: ultrasound, X-ray, colposcope, oxygen saturation; common overprovision in terms of irrational use of medicines: INRUD indicators) • Timeliness of care: provisions of emergencies • Integration of care • Perceptions on the interpersonal aspects of care (empathic relationship, confidentiality, trust) • Client satisfaction with care provided	• Facility level observation using standardized tools • Facility level data collection using standardized tools • KII • Client Exit interviews • FGDs	• KII with facility staff, • Client Exit interviews with CLC clients and counterfactual • FGDs with (young) women living in the catchment area of the CLCs • KII with county health authorities (to cover timeliness and completeness of reporting)

5. To assess the appropriateness, of support and management functions of the CLCs.	• Facility management • Decision making processes • Use of data/M&E for decision making • Initiatives for continuous quality improvement • Upward and downward accountability (upward: reporting, coordination, and supervision through County Health management team; downward: health committees, or (in)formal contact with community representatives) • Support and supervision of health staff and CHW • Information management and learning • Regularity, completeness and use of HMIS and ERM • Referral practices • Coordinate and interact with community leaders, Non-Governmental Organizations (NGOs), Faith Based Organizations (FBOs), private providers, and other relevant stakeholders • Supply chain for medicines and commodities • Human resource management and performance meetings • Adequacy of infrastructure and maintenance of facility	• KIIs • Document/ Register review for referrals • FGD	• KIIs with facility staff, community representatives, county health authorities • FGDs with (young) women living in the catchment area of the CLCs • Counterfactual facility
6. To explore overall outcomes of the CLCs and draw lessons learned about the CLCs to the elements listed in the specific objectives 1-5	• Overall conclusion based on objective 1 to 6 including view on sustainability • Quality of care (realized quality and perceived quality) • Efficiency (value for money) • Utilization (effective coverage of essential health services) • Financial protection of the population for catastrophic costs (utilization) • Effects of the CLCs on social and economic life of the surrounding community. • Sustainability	• Realist evaluation • Framework	• KII Philips country office

ANNEX 1B KEY AND SPECIFIC EVALUATION QUESTIONS

Key evaluation questions	Specific evaluation questions
Relevance	
To what extent are the objectives and approach of the CLC responsive to the needs, context, and priorities of the targeted populations?	• What are mechanisms to assess and monitor specific needs and priorities of the community targeted population in the selected CLCs? • What specific needs of the community does the CLC address and what needs are not being addressed? • To what extent does service provision respond to the current burden of disease, and to the evolving needs in the light of demographic, epidemiological and nutritional transitions? • Does service provision respond to the perceived needs of the populations served?
To what extent are the objectives and approaches of the CLC intervention aligned with national policies and strategies?	• What synergies exist between the CLC concept and South Africa's strategic and policy directions to improve access to primary care services? • Is the CLC intervention in line with these policies and strategies? Are packages of services in agreement with these policies, and based on cost-effectiveness considerations? • Are approaches, tools, and interventions congruent with other (public) primary services in the same area of operation?
To what extent does the CLC outreach activities target specific population groups (women of reproductive age, children and the poorest)?	• What mechanisms exist at community level to ensure that specific population groups (e.g., children, woman, poor) are equally reached by the CHVs with backpacks? How is this monitored and by whom? • Are community outreach activities aligned with national policies? Are the backpacks (including tools, equipment, medicines & diagnostics) aligned with these policies?
How does the CLC concept promote stakeholder engagement in the delivery of primary healthcare services?	• What formal and informal contacts and procedures exist in relation to County health authorities; community leaders and representatives; users of services; Ministry of Health officials at national level; other relevant stakeholders?
Effectiveness	
To what extent is the population aware of the services provided at the CLC?	• How does the CLC inform the surrounding populations on the range of services it provides, including the outreach activities? • Are people in the community aware of the range of services provided through the CLC, including for outreach?
To what extent are the services provided at the CLC acceptable to the populations served?	• How do people, and specific sub-groups in the population, perceive the quality and cost of the services at the CLC? • What specific aspect of health service delivery within the CLC are people most proud of? • What specific services do people prefer at the CLC and for what services do they rather use other providers? • What distinguishes service provision at the CLC with other service providers

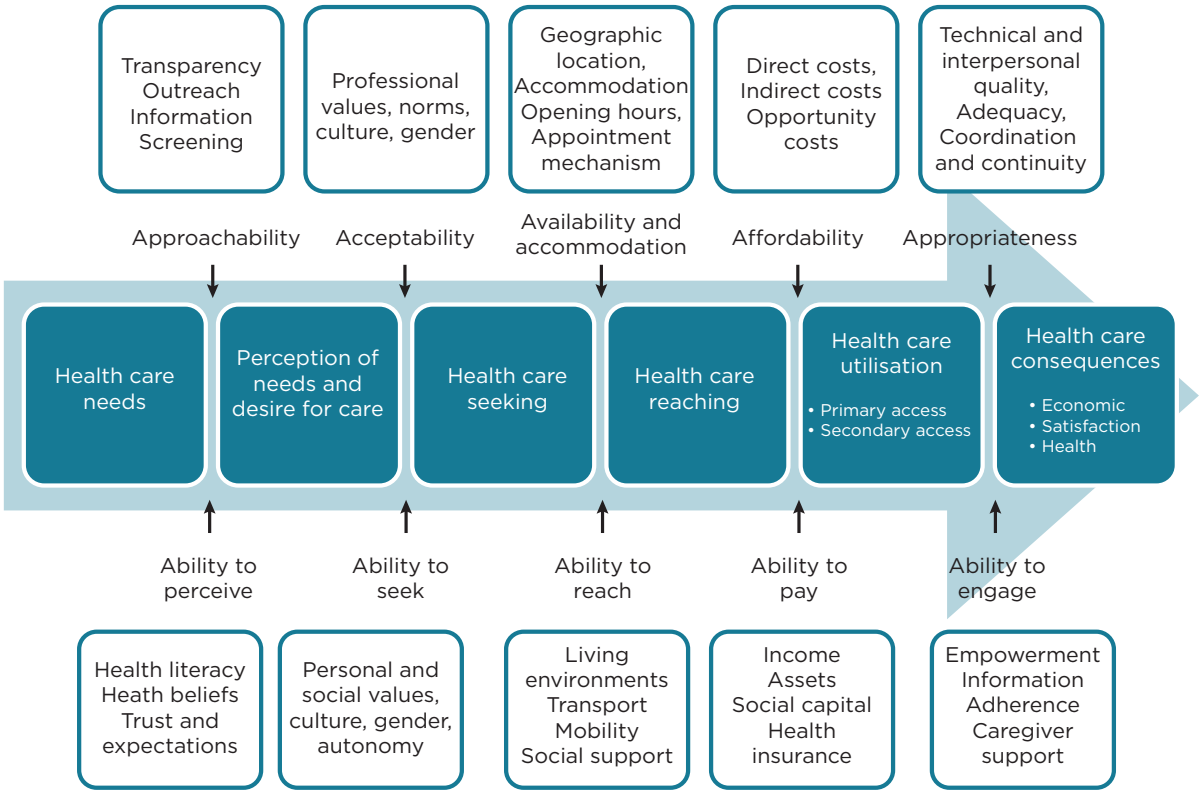
Can people easily use the CLC in terms of geographical access, accommodation and are services affordable?	• To what extent are the CLC services accessible in terms of distance, travel time and/or ease of accessing community based-provider or facility • Is public transport making the CLC accessible even for people who live not very close to the CLC? • What innovations has CLC introduced to address structural barriers to access to care within the community? • How does the CLC accommodate the population in terms of opening times and appointment arrangements? • Are services affordable to people; are there any prepayment arrangements existing; are there social support mechanisms offered for people who are unable to pay for services? • What do common services cost, also compared to alternative providers? What do people spend on indirect costs? Are there insurance plans?
Do the CLCs have sufficient resources available to offer a normal package of primary services?	• To what extent are essential health commodities available in sufficient quantities to cover the target population (e.g., drugs, vaccines) • To what extent are essential equipment and diagnostics available? • To what extent are human resources of correct skills mix available? • To what extent have facility staff and CHVs received training? And do they receive continuous training and supervision? • Is the infrastructure appropriate for the delivery of quality services? • Are (standard) treatment guidelines, flow charts, growth charts, partograms, registers and other appropriate tools and forms available for appropriate management of patients/clients? • Are safety conditions appropriate? (e.g., containers for disposal of needles, waste, etc.)
Are essential services used by the population?	• What is the output in terms of essential services provided, both as first use (ANC-1; DTP-1; BCG; SBA; OPD consultations) and in terms of continuity of care (ANC-4; DTP-3; TB cure rate; ART regularity; etc.); and what are the trends for the utilisation of these services over time? To what extent does the CLC impact *initial utilization* of services including determinants of this (e.g., affordability, accommodation, acceptability)? To what extent is *continuity of care* reached? • What are the services provided in outreach, and by CHVs? To what extent has the community outreach kit been used in diagnosis and triage patients, and referral to main healthcare network?
Is the quality of services appropriate?	For structural components: see questions under availability of resources *Process elements:* • Are treatments in agreement with evidence-based guidelines? • Are medicines prescribed rationally? (INRUD indicators) • Are there arrangements for screening of emergencies, so that they are attended immediately? • Are services integrated where appropriate and needed? ('One stop visit'; e.g., TB and HIV; missed opportunities for EPI; ANC and FP; ...) • Is the EMR system regularly updated and appropriately used? (Does it allow for appropriate follow-up of patients and clients?) • What is waiting time for OPD consultations, for FP, ANC...? • How do people perceive quality of care across number of variables? *Outcome elements:* See under outcomes and impact.

Efficiency	
What are the costs of providing services and support functions?*	• Are the outputs delivered as planned and according to the budget?* • What are the average costs for producing selected services, and for management/support processes?* – Services: delivery, ANC, OPD consultation, ... – Training & supervision of HRH and CHVs – Maintenance of infrastructure and equipment – Salaries and secondary benefits for staff, compared to counterfactual – Medicines and supplies • What do people pay for these services? What are the other sources of income for the CLC, also compared to the counterfactual facilities? How are deficits paid for?* • What are the costs of infrastructure set-up?*
Is management of the CLC appropriately functioning? How is efficiency of management processes and procedures?	• What is the status of the CLCs in relation to ownership, (co-)management responsibilities, financial responsibilities? Are these responsibilities and collaboration arrangements formalized in a formal agreement between the County authorities (representing MoH); communities; and Philips representatives? To what extent and how are other funders involved? • How are accountability relations with the County authorities organized? (financial, activities, ...) • Is information sent to the County regular and complete (M&E: DHIS2) • Is information from M&E used for decision making at the facility management level? (for decision making on individual patients/clients, see under quality of care) • How does management coordinate and interact with community leaders, Non-Governmental Organizations (NGOs), Faith Based Organizations (FBOs), private providers, and other relevant stakeholders? • Are HRH processes like recruitment, support, performance review, and supervision appropriately fulfilled? In relation to CLC staff, and also in relation to CHVs and other volunteers? • Is there any arrangement for social accountability or community engagement, and how is this organized? • To what extent and how has patient referral been formally organized?
Impact	
What is the impact of the CLC intervention on the effective coverage of healthcare?	• What is the contribution of the CLC to the effective coverage of selected interventions in the area that the CLC is serving? (EPI; SBA; ANC-4; TB; ART; ITN; overall OPD consultations; ...)
How satisfied are people with the services that the CLC provides?	• How satisfied are people generally, and in relation to specific services? • Is the CLC responsive to the needs and demands of people living in the area?
What is the impact of the CLC on financial protection of the population for catastrophic costs?	• Constraints people feel to visit and use CLC services; see health seeking behaviour.

What is the 'value for money' for the CLC concept and approach?*	• The 'value for money' impact will be discussed on the basis of information/questions mentioned under other headings. (What is the willingness to pay for services at the CLC? Perceived costs; efficiency of care and support processes; relative costs of services; etc.)* • How does the cost-effectiveness of the CLC compare across sites?*
What is the impact of CLC on community living conditions?	• How has the CLC affected the social and economic life of the community (e.g., security, waste, lighting for evening time social and economic activities)? • What are the mechanisms and causal pathways, that are likely to have contributed to the various impacts?
Sustainability	
To what extent is the concept and approach of the CLC sustainable (financially, organizationally, capacity wise, ...)?	• Discussion on the basis of information from the various sections above. • What are the barriers and facilitators for the delivery of primary healthcare services through the CLC concept? • How are the experience and lessons learnt from the implementation of the CLC concept influenced the local health policy and plans in relation to delivery of primary healthcare services?

*Not enough data to respond the question

ANNEX 2 LEVESQUE FRAMEWORK (24)AND DEFINITION OF TERMS (25)



Definitions of access dimensions based on Levesque et a.l

Supply-side dimensions of accessibility of services	Definitions	Demand-side abilities of patients to access services	Definitions
Approachability	Approachability of services relates to the fact that people facing healthcare needs can identify that some form of services exists, can be reached, and have an impact on their health.	Ability to perceive	Ability to perceive translates into the ability of people to identify their needs for care.
Acceptability	Acceptability of services relates to social and cultural factors determining the possibility for people to accept the aspects of a service.	Ability to seek	Ability to seek healthcare relates to factors that would determine expressing the intention to obtain healthcare.
Availability and accommodation	Availability and accommodation refers to the fact that health services (either the physical space or those working in healthcare roles) can be reached both physically and in a timely manner.	Ability to reach	Ability to reach healthcare relates to factors that would enable one person to physically reach service providers.
Affordability	Affordability reflects the economic capacity for people to spend resources and time to use appropriate services.	Ability to pay	Ability to pay for healthcare is described as the capacity to generate economic resources to pay for healthcare services without catastrophic expenditure of resources required for basic necessities.
Appropriateness	Appropriateness denotes the fit between services and clients' needs, its timeliness, the amount of care spent in assessing health problems and determining the correct treatment and the technical and interpersonal quality of the services provided.	Ability to engage	Ability to engage in healthcare relates to the participation and involvement of the client in decision-making and treatment decisions, which is in turn strongly determined by capacity and motivation to participate in care and commit to its completion.

ANNEX 3 DHIS2 INDICATORS EXTRACTED, THEIR RELATION TO WHO-WB UHC TRACER INDICATORS, AND RATIONALE FOR INCLUSION/EXCLUSION.

Dimension	Tracer Area	DHIS2 Indicator	Formula	Related WHO-WB UHC Tracer Indicator	Exact or Proxy to WHO-WB Tracer Indicator	Inclusion in analysis	Rationale for Exclusion
Reproductive, maternal, newborn, and child health (RMNCH)	Pregnancy and delivery care	Antenatal 1st visit coverage (ANC1)	(Total 1st antenatal visits) / (Estimated pregnant women ~10 weeks gestation)	ANC4	Proxy	Yes	-
		Delivery in facility rate	(Total deliveries in facility) / (Population estimated deliveries)	N/A	Proxy	No	No deliveries at CLC
		Total births in facility	Total live births + total still births in facility	N/A	Proxy	No	No deliveries at CLC
	Child immunization	DTaP-IPV-Hib-HBV 3rd dose coverage (DTP3)	(3rd dose DTaP-IPV-Hib-HBV) / (Population<1 year)	DTP3	Exact	Yes	-
		DTaP-IPV-Hib-HBV 3rd dose coverage (DTP3) (annualized)	(3rd dose DTaP-IPV-Hib-HBV) / (Population<1 year)	DTP3	Proxy	No	Annualized not defined
		BCG dose coverage	(BCG dose) / (Target population<1 year)	N/A	Proxy	No	BCG vaccine not administered regularly in primary care
		Measles 1st dose under 1 year coverage	(1st measles dose<1 year) / (Population<1 year)	N/A	Proxy	Yes	-
		Immunization under 1 year coverage	(Number children<1 year fully immunized) / (Population<1 year)	N/A	Proxy	Yes	-

Infectious Disease	HIV Treatment	ART client naïve start ART during month	Number of adults and children <15 initiated ART	People with HIV receiving ART (%)	Proxy	No	ART services not provided at CLC
		ART client remain on ART end of month	Number of adults and children <15 remaining on ART end of month	People with HIV receiving ART (%)	Proxy	No	ART services not provided at CLC
	Tuberculosis Treatment	DS-TB treatment start under 5 years rate	$\frac{\text{(TB clients<5 starting treatment)}}{\text{(TB symptomatic clients<5)}}$	TB effective treatment coverage (%)	Proxy	No	Poor facility-level completeness and no district-level data
Other	Service utilization	PHC utilization rate - total	$\frac{\text{(Sum of PHC visits)}}{\text{(Total population)}}$	N/A	Proxy	No	Optimal level undefined; small CLC

ANNEX 4 CLIENT EXIT INTERVIEW RESPONDENT CHARACTERISTICS

Table I Characteristics of clients who visited one of the two CLCs or its counterfactual in Diepsloot, South Africa

	Diepsloot (N=274)	Facility		P
		CLC (N=152)	Diepsloot South (N=122)	
Gender, female N (%)	254 (92.70)	147 (96.71)	107 (87.70)	0.022
Age, median (range)	28.5 (17 – 59)	28 (19 – 59)	30 (17 – 59)	0.022[1]
Section, N (%)				<0.001
Cosmo City	3 (1.09)	3 (1.97)	0 (0.00)	
Diepsloot	244 (89.05)	124 (81.58)	120 (98.36)	
Riverside	24 (8.76)	24 (15.79)	0 (0.00)	
Kempton Park	1 (0.37)	0 (0.00)	1 (0.82)	
Johannesburg	2 (0.73)	1 (0.66)	1 (0.82)	
Reason for visit, N (%) *				<0.001
Antenatal Care	102 (37.23)	72 (47.37)	30 (25.41)	
Comprehensive Care Clinic	57 (20.80)	23 (15.13)	34 (27.87)	
Dental Care	4 (1.46)	4 (2.63)	0 (0.00)	
Family Planning	64 (23.36)	33 (21.71)	31 (25.41)	
Outpatient Department	47 (17.22)	20 (13.25)	27 (22.13)	
Type of care, preventive N (%) *	166 (60.58)	105 (69.08)	61 (50.00)	0.001
Literacy, N (%)				0.217
Read and write	259 (94.87)	140 (92.72)	119 (97.54)	
Read only	9 (3.30)	7 (4.64)	2 (1.64)	
Illiterate	3 (1.10)	3 (1.99)	0 (0.00)	
Don't know	2 (0.73)	1 (0.66)	1 (0.82)	
Attended school, yes N (%)	269 (98.18)	150 (98.68)	119 (97.54)	0.482
Level of education, N (%)**				<0.001
Higher education	10 (3.73)	9 (6.04)	1 (0.84)	
Middle education	28 (10.45)	18 (12.08)	10 (8.40)	
Lower education	229 (85.45)	123 (81.88)	107 (89.92)	
Other	1 (0.37)	0 (0.00)	1 (0.84)	
Highest level of formal education, N (%)**				0.027
University	10 (3.73)	9 (6.04)	1 (0.84)	
College (middle level)	28 (10.45)	18 (12.08)	10 (8.40)	
Secondary	194 (72.39)	105 (70.47)	89 (74.79)	
Post primary/vocational	4 (1.49)	4 (2.68)	0 (0.00)	
Primary	31 (11.57)	13 (8.72)	18 (15.13)	
Informal	0 (0.00)	0 (0.00)	0 (0.00)	
Don't know	1 (0.37)	0 (0.00)	1 (0.84)	

Time spent on that level in years, median (range)**	5 (1-20)	4 (1 -20)	5 (1-20)	<0.001[1]
Main generating income activity head of household, N (%) **				0.005
Casual labourer	7 (2.56)	6 (3.97)	1 (0.82)	
Domestic work		28 (18.54)	18 (14.75)	
Formal private employment	46 (16.85)	25 (16.56)	13 (10.66)	
Formal public employment	38 (13.92)	18 (11.92)	5 (4.10)	
Formal self-employment	23 (8.42)	3 (1.99)	0 (0.00)	
Home duties	3 (1.10)	1 (0.66)	3 (2.46)	
Informal self-employment	4 (1.74)	7 (4.64)	4 (3.28)	
Other	11 (4.03)	7 (4.64)	4 (3.28)	
Unemployed	11 (4.03)	56 (37.09)	74 (60.66)	
	130 (47.62)			
Electronics***, yes N(%)**	227 (82.15)	133 (88.08)	94 (77.05)	0.015
Owns a luxurious item ****, yes N(%)**	269 (98.53)	148 (98.01)	121 (99.18)	0.425
Average spent on food per month (South African rand), median(range)**	1,000 (200-4,500)	1,000 (200-4,500)	1,000 (300-3,500)	0.249[1]
Average spent on transportation per month (South African rand), median (range)**	400 (0-2,500)	450 (0-2,000)	400 (0-2,000)	0.039[1]
Average spent on utilities/house per month (South African rand), median (range)**	350 (0-2,500)	300 (0-2,500)	375 (0-1,700)	0.755[1]
SES, high N(%)**	132 (48.18)	71 (46.71)	61 (50.00)	0.588

* Purposely sampled. ** N=273. *** Electronics: electricity, radio, television, telephone, computer, refrigerator. **** luxurious items: watch, mobile phone, bicycle, motorcycle or motor scooter, animal drawn cart, car or truck, boat.
[1]: Kruskal-Wallis H analysis
Abbreviations: CLC: community life centre; N: number; SD: standard deviation; %: percentage

Table II: Accessibility of clients who visited a CLC or a counter-factual in Diepsloot, South Africa

	Diepsloot (N=274)	Facility		P
		CLC (N=152)	Diepsloot South Clinic (N=122)	
Closets facility, yes N (%)	234 (85.40 %)	118 (77.63)	116 (95.08)	<0.001
Reason not visiting nearest facility, N (%)				0.142
Inconvenient operating hours	10 (25.00)	10 (29.41)	0 (0.00)	
Bad reputation	7 (17.50)	7 (20.59)	0 (0.00)	
Do not like personnel	3 (7.50)	3 (8.82)	0 (0.00)	
No medicines available	3 (7.50)	3 (8.82)	0 (0.00)	
It is more expensive	8 (20.00)	5 (14.71)	3 (50.00)	
Was referred to this facility	6 (15.00)	4 (11.76)	2 (33.33)	
Other	3 (7.50)	2 (5.88)	1 (16.67)	
Don't know	0 (0.00)	0 (0.00)	0 (0.00)	
Visited this facility before, yes, N (%)	247 (90.15)	126 (82.89)	121 (99.18)	<0.001
Convenient opening hours, yes N (%)	221 (80.66)	146 (96.05)	75 (61.48)	<0.001
Services available when needed, yes N (%)	252 (91.97)	145 (95.39)	107 (87.70)	0.066
Part of a prepayment plan, yes N (%)	86 (31.39)	64 (42.11)	22 (18.03)	<0.001
Charged any money for visit, yes N (%)	165 (60.58)	150 (98.68)	16 (13.11)	<0.001
Waiting time, N (%)				
<30 minutes	86 (31.39)	82 (53.96)	4 (3.28)	
30 – 60 minutes	76 (27.74)	46 (30.26)	38 (24.59)	
>60 minutes	112 (40.88)	24 (15.79)	88 (72.13)	
Considered waiting time reasonable, N (%)				<0.001
Yes	176 (64.23)	135 (88.82)	41 (33.61)	
Partially	11 (4.01)	7 (4.61)	4 (3.28)	
No	87 (31.75)	10 (6.58)	77 (63.11)	
Actual waiting time when clients considered their waiting time reasonable (N=326)				<0.001
>60 minutes	86 (49.86)	82 (61.74)	4 (9.76)	
30-60 minutes	71 (40.34)	44 (32.59)	27 (65.85)	
<30 minutes	19 (10.8680	9 (6.67)	10 (24.39)	
Actual waiting time when clients considered their waiting time not reasonable (N=127)				0.428
>30 minutes	0 (0.00)	0 (0.00)	0 (0.00)	
30-60 minutes	1 (9.09)	1 (14.29)	0 (0.00)	
<60 minutes	10 (90.91)	6 (85.71	4 (100.00)	

Abbreviations: CLC: community life centre; N: number; Chi2: chi-square value; p: p-value

Table III: Average (SD) level of satisfaction per indicator and question, per facility in Diepsloot, South Africa

	Diepsloot (N=274)	Facility		P	Cronbach's alpha[2]
		CLC (N=152)	Diepsloot South Clinic (N=122)		
Behaviour of the health staff	**3.56 (1.28)**	**3.78 (1.28)**	**3.30 (1.23)**	**0.002**	**0.948**
Friendly and respectful staff	3.56 (1.33)	3.80 (1.33)	3.26 (1.29)	<0.001	
Friendly and respectful provider	3.57 (1.34)	3.85 (1.32)	3.22 (1.29)	<0.001	
Ability to discuss health problems	3.58 (1.35)	3.70 (1.36)	3.43 (1.33)	0.101	
Services	**3.48 (1.19)**	**3.69 (1.20)**	**3.24 (1.13)**	**0.002**	**0.857**
Trust in skills of the provider	3.65 (1.35)	3.84 (1.28)	3.41 (1.40)	0.009	
Amount of explanation	3.57 (1.34)	3.64 (1.35)	3.50 (1.34)	0.399	
Quality of advice	3.57 (1.38)	3.64 (1.40)	3.48 (1.35)	0.313	
Procedure or treatment	3.58 (1.37)	3.72 (1.33)	3.41 (1.41)	0.059	
Availability of medicines	3.48 (1.41)	3.61 (1.34)	3.31 (1.48)	0.080	
Costs for services	3.32 (1.25)	3.56 (1.30)	3.04 (1.31)	<0.001	
Time spent during consultation	3.49 (1.34)	3.80 (1.25)	3.11 (1.37)	<0.001	
Waiting time before consultation	3.21 (1.40)	3.68 (1.31)	2.62 (1.27)	<0.001	
Infrastructure	**3.54 (1.17)**	**3.66 (1.17)**	**3.39 (1.16)**	**0.061**	**0.867**
Convenient to travel to the facility	3.54 (1.35)	3.63 (1.32)	3.43 (1.39)	0.247	
Cleanliness of the facility	3.56 (1.28)	3.72 (1.26)	3.35 (1.27)	0.017	
Privacy during consultation	3.52 (1.33)	3.63 (1.33)	3.39 (1.31)	0.137	
Overall visit	**3.45 (1.37)**	**3.66 (1.36)**	**3.19 (1.34)**	**0.004**	
Total score	**3.51 (1.18)**	**3.69 (1.20)**	**3.28 (1.11)**	**0.003**	**0.978**

*N=273. [1] Cronbach's alpha indicates the internal consistency between the individual questions an indicator is composed of
Abbreviations: SD: standard deviation; CLC: community life centre; N: number

Figure I Average level of satisfaction per indicator and question, per facility in Diepsloot, South Africa

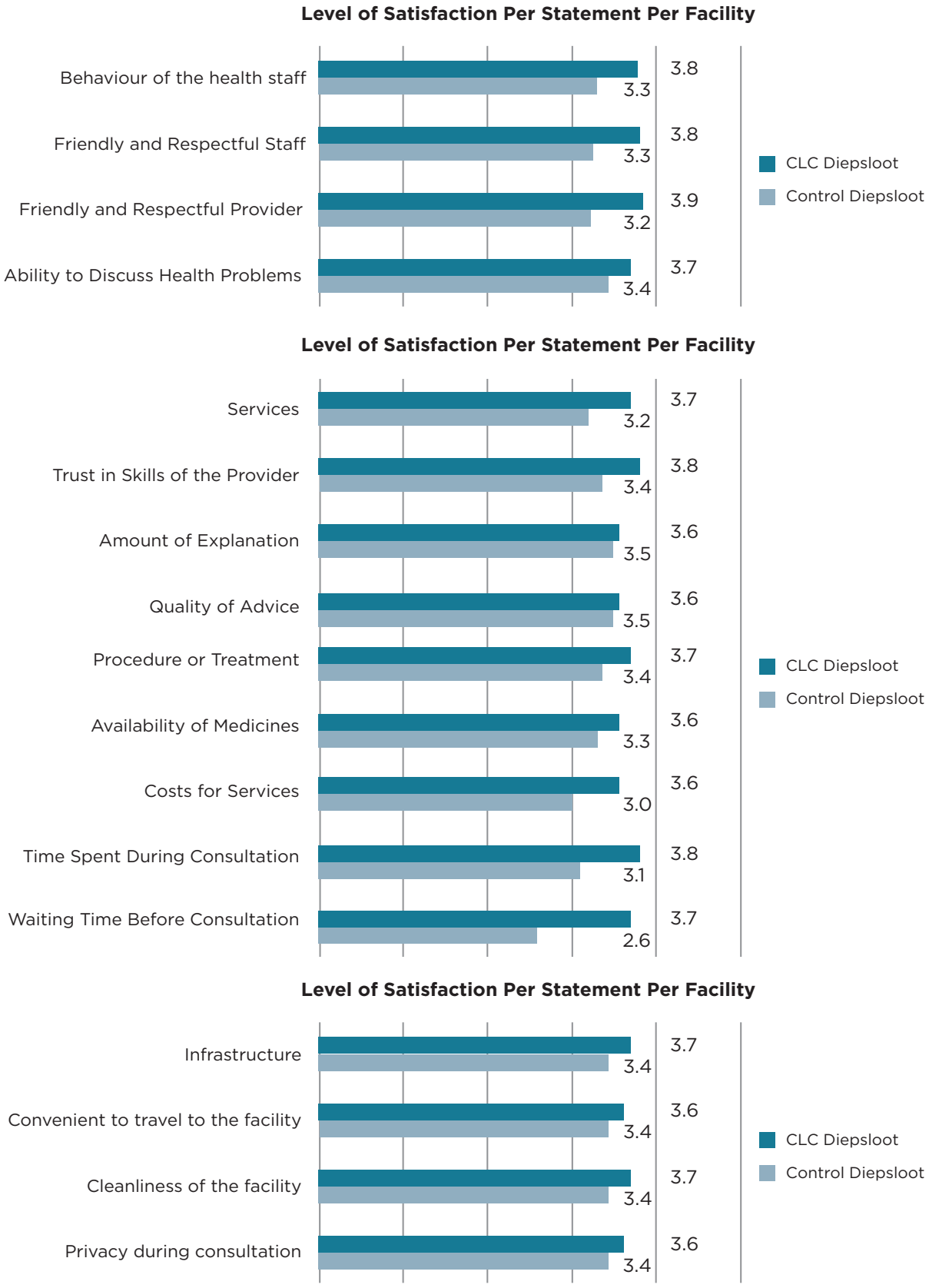


Table IV: Proportion of clients per satisfaction level per question and facility in Diepsloot, South Africa,

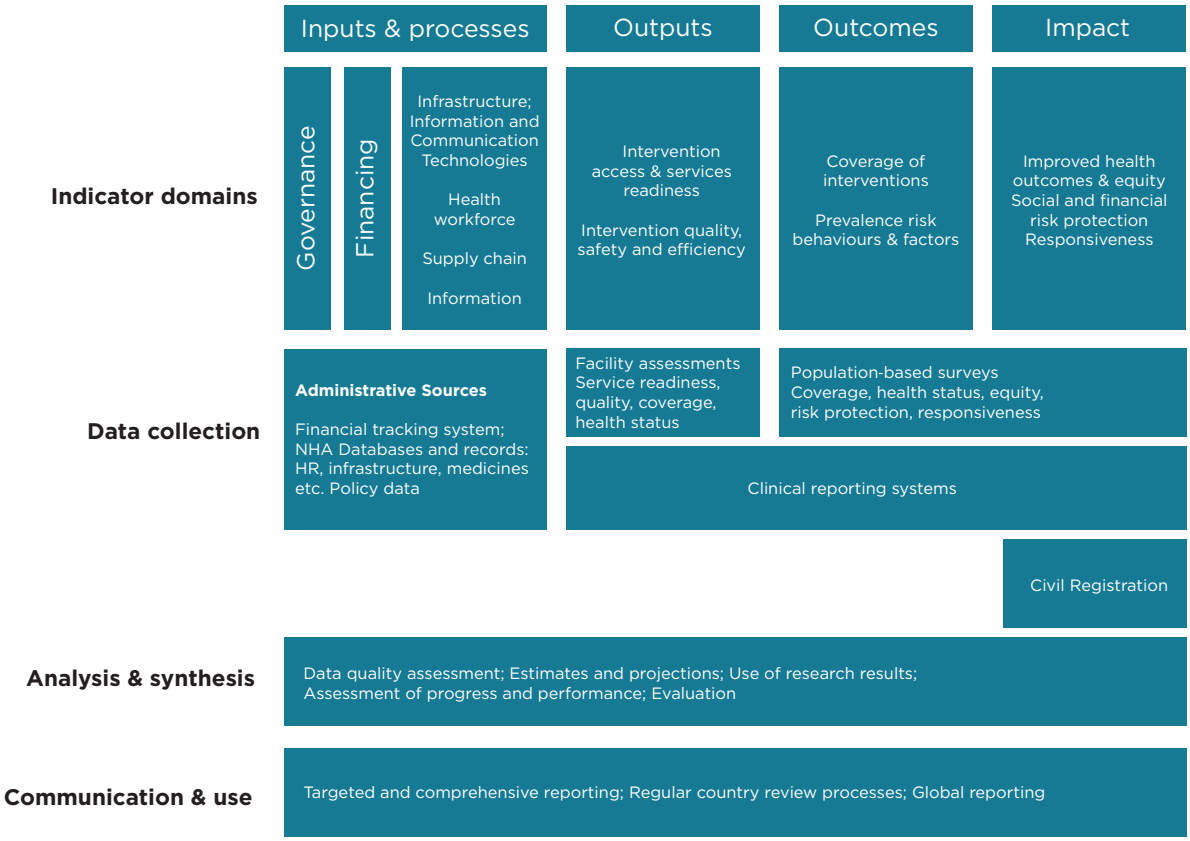
	Diepsloot (N=274)	Facility		P
		CLC (N=152)	Diepsloot South Clinic (N=122)	
Convenient to travel to the facility, N (%)				0.239
Dissatisfied	67 (24.54)	33 (21.71)	34 (27.87)	
No opinion	0 (0.00)	0 (0.00)	0 (0.00)	
Satisfied	207 (75.55)	119 (78.29)	88 (72.13)	
Cleanliness of the facility, N (%)				0.002
Dissatisfied	70 (25.55)	27 (17.76)	43 (35.25)	
No opinion	1 (0.36)	0 (0.00)	1 (0.82)	
Satisfied	202 (74.09)	125 (82.24)	78 (63.93)	
Friendly and respectful staff, N (%)				<0.001
Dissatisfied	77 (28.10)	28 (18.42)	49 (40.16)	
No opinion	3 (1.09)	1 (0.66)	2 (1.64)	
Satisfied	194 (70.80)	123 (80.92)	71 (58.20)	
Friendly and respectful provider, N (%)				<0.001
Dissatisfied	77 (28.10)	26 (17.11)	51 (41.80)	
No opinion	2 (0.73)	0 (0.00)	2 (1.64)	
Satisfied	195 (71.17)	126 (82.89)	69 (56.56)	
Trust in skills of the provider, N (%)				0.020
Dissatisfied	58 (21.17)	23 (15.13)	35 (28.69)	
No opinion	4 (1.46)	3 (1.97)	1 (0.82)	
Satisfied	211 (77.37)	126 (82.89)	86 (70.49)	
Amount of explanation, N (%)				0.344
Dissatisfied	66 (24.09)	33 (21.71)	33 (27.05)	
No opinion	5 (1.82)	4. (2.63)	1 (0.82)	
Satisfied	203 (74.09)	115 (75.66)	88 (72.13)	
Quality of advice, N (%)				0.238
Dissatisfied	67 (24.45)	33 (21.71)	34 (27.87)	
No opinion	2 (0.73)	2 (1.32)	0 (0.00)	
Satisfied	205 (74.82)	117 (76.97)	88 (72.13)	
Ability to discuss health problems, N (%)				0.064
Dissatisfied	66 (24.18)	30 (19.87)	36 (29.51)	
No opinion	0 (0.00)	0 (0.00)	0 (0.00)	
Satisfied	207 (75.82)	121 (80.13)	86 (70.49)	
Procedure or treatment, N (%)				0.070
Dissatisfied	64 (23.36)	28 (18.42)	36 (29.51)	
No opinion	1 (0.36)	1 (0.66)	0 (0.00)	
Satisfied	209 (76.28)	123 (80.92)	86 (70.49)	

Availability of medicines, N (%)				0.009
Dissatisfied	74 (27.01)	31 (20.39)	43 (35.25)	
No opinion	3 (1.09)	3 (1.97)	0 (0.00)	
Satisfied	197 (71.90)	118 (77.63)	79 (64.75)	
Costs for services, N (%)				<0.001
Dissatisfied	65 (23.72)	33 (21.8571	32 (26.23)	
No opinion	34 (12.41)	1 (0.66)	33 (27.05)	
Satisfied	175 (63.87)	118 (77.63)	57 (46.72)	
Privacy during consultation, N (%)				0.017
Dissatisfied	77 (28.10)	33 (21.71)	44 (36.07)	
No opinion	2 (0.73)	2 (1.32)	0 (0.00)	
Satisfied	195 (71.17)	117 (76.97)	78 (63.93)	
Overall visit, N (%)				0.004
Dissatisfied	80 (29.20)	32 (21.05)	48 (39.34)	
No opinion	4 (1.46)	3 (1.97)	1 (0.82)	
Satisfied	190 (69.34)	117 (76.98)	73 (59.84)	
Time spent during consultation, N (%)				<0.001
Dissatisfied	73 (26.64)	25 (16.45)	48 (39.34)	
No opinion	1 (0.36)	1 (0.66)	0 (0.00)	
Satisfied	200 (72.99)	126 (82.89)	74 (60.66)	
Waiting time before consultation, N (%)				<0.001
Dissatisfied	107 (39.05)	30 (19.74)	77 (63.11)	
No opinion	0 (0.00)	0 (0.00)	0 (0.00)	
Satisfied	167 (60.98)	122 (80.26)	45 (36.89)	

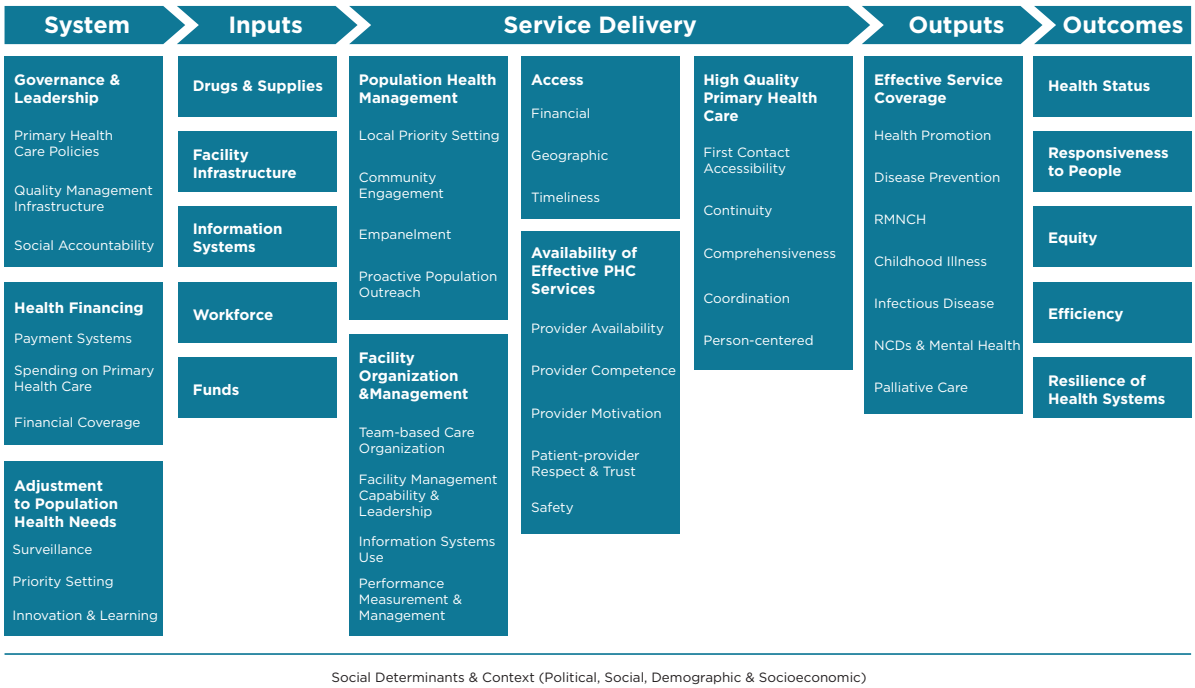
Abbreviations: CLC: community life centre; N: number; %: percentage

ANNEX 5 HEALTH SYSTEMS FRAMEWORKS: IHP+ AND PHCPI.

IHP+ Common Health Systems M&E framework (24)(25)



PHCPI Framework. (17)(18)



ANNEX 6 COLLABORATION PARTNERS

The table below provides an overview of the CLC and control facility partners mentioned by the key informants interviewed

Collaboration partner CLC-Githurai	Functional area
Gauteng Provincial DoH	Providing technical guidance for day to day functions, support for awareness campaigns, outreach and community mobilization activities, procurement of drugs for both facilities, mentorship and supervision for the CLC, training and development of staff, funding for Diepsloot South Clinic, Receives health statistics for both facilities,
Gauteng Department of Social Development	Assistance in the provision of social services to patients from both the CLC and Diepsloot South Clinic largely on psychosocial support, wellness programmes for staff, relief programmes initiation
Gauteng Department of Education	Provision of support for school based intervention programmes done at the CLC
Methodist Church Diepsloot	Providing CHW to assist the CLC in patient tracking, awareness campaign and referral to the clinic for health services assistance
Aurum Institute	Leads the voluntary counselling and testing services at Diepsloot South Clinic and participation in the clinic awareness programmes
Right to Care	Participates in Diepsloot South Clinic HIV programmes particularly on patient tracking as well as rendering home based care support initiatives. Also helps the clinic to ensure that patients are placed on ART programme. Also takes part in stakeholder's meetings, awareness and outreach activities
Ekurhuleni Local Municipality	The local municipality through Ward Councillors provides political will in support of both facilities health programmes, participates in the clinic committee, stakeholder meetings as well as supporting community mobilization efforts
Bophelong Victim Empowerment Support Centre	Works with the clinics to provide psychosocial support and shelter to domestic abuse victims, runs an empowerment programme
Community Representatives	Participate in stakeholder and community meetings, plays a crucial role in the functioning of the clinic committee
Religious leaders	Participates in community and stakeholders' meetings

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