



Differentiated service delivery adaptations during COVID-19 for adults receiving antiretroviral therapy in Durban, South Africa

eThekweni Municipality Health Unit
&
Centre for the AIDS Programme of Research in
South Africa





eThekweni Municipality Health Unit & CAPRISA

The eThekweni Municipality Health Unit runs 59 primary care clinics in the City of eThekweni (Durban) in South Africa and provides antiretroviral therapy (ART) to over 200,000 people living with HIV (PLHIV).

The Centre for the AIDS Programme of Research in South Africa (CAPRISA) is an HIV and tuberculosis research organization. The main goals of CAPRISA are to conduct locally responsive and globally relevant research on HIV/ AIDS and tuberculosis (TB), while building the research infrastructure and providing research training opportunities for the next generation of scientists





Location

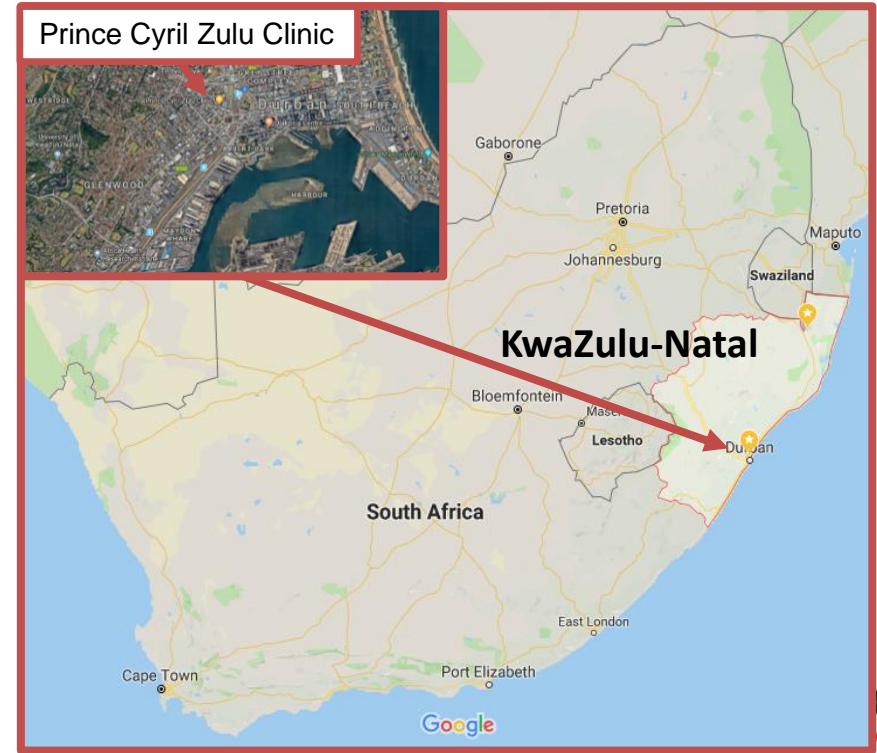
This work focuses on the Prince Cyril Zulu Communicable Disease Centre (CDC), which is run by the eThekweni Municipality Health Unit in Durban, South Africa. CAPRISA collaborates with the Health Unit on several implementation projects at this clinic.

Address:

Prince Cyril Zulu Clinic, University Avenue,
Berea, Durban, KwaZulu-Natal, South Africa

Geographic coordinates:

-29.858783, 31.008883





Prince Cyril Zulu CDC

- *Provides HIV, TB and sexual health services*
- *Located in central Durban, next to the main transport hub (train, bus station and taxi rank)*
- *Covers a diverse urban population, including over 12,000 people who are receiving ART, of whom less than half are receiving treatment in some form of differentiated ART delivery programme.*



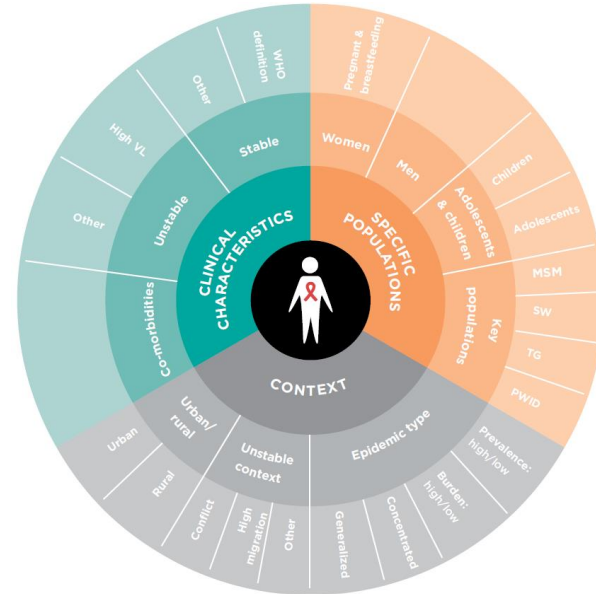
View of Prince Cyril Zulu clinic, ©Google Maps





Populations served

- Clinical characteristics: Clients who are stable on ART
- Specific population: Adults (very few children receive care at this clinic as broader primary care services such as child immunizations not provided)
- Context: Stable, urban context, with a generalized, high prevalence HIV epidemic setting.



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Purpose of the DSD Model (pre COVID-19)

Description: *The Centralised Chronic Medication and Dispensing and Distribution system is a national South African Programme that provides chronic medication, including ART, through a number of differentiated ART delivery models, including facility-based and community-based ART pickup points (which will be focused on here).*

Purpose: *The aim is to 'decant' clinics and provide streamlined ART to the over 5 million people receiving ART in South Africa, and is a major priority to achieving universal ART provision and maintaining high levels of treatment retention and viral suppression*

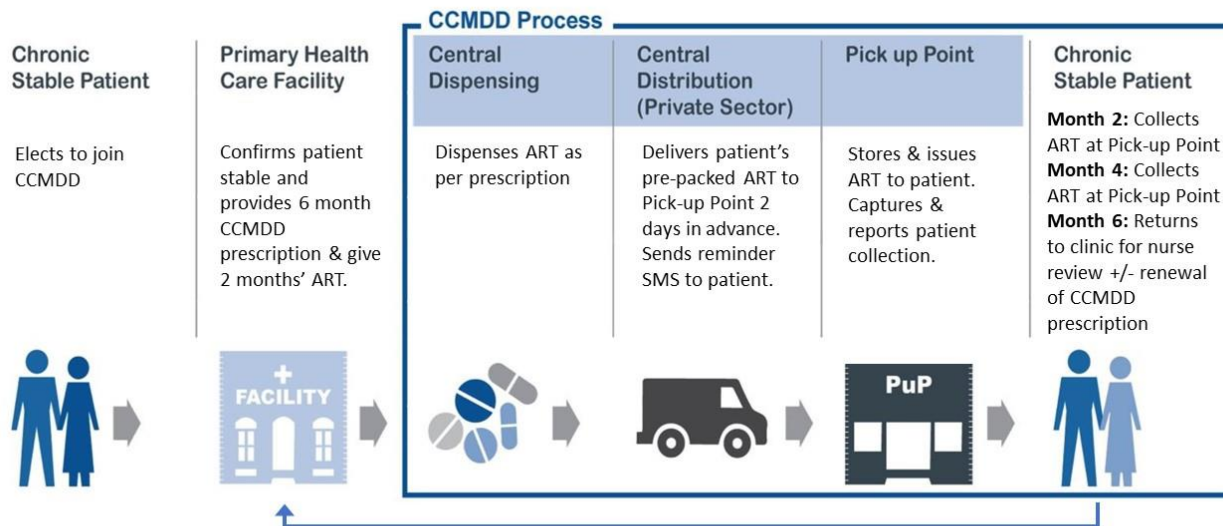
'Buy-in': *There have been extensive CCMDD implementation efforts from the national to district level. Prince Cyril Zulu was a pilot site in Durban for the CCMDD programme since 2016. By May 2020 approximately 95,000 clients from eThekweni Municipality clinics were enrolled in CCMDD.*

Eligibility: *Pre-COVID, CCMDD was restricted to adults >18 years old, on the same treatment regimen for at least 12 months, with two consecutive undetectable viral loads*





Overview of CCMDD (pre-COVID)



Patient flow through CCMDD (adapted from Roberts, P. Centralized Chronic Medicine Dispensing and Distribution (2018). http://cquin.icap.columbia.edu/wp-content/uploads/2018/03/Roberts_CCMDD_Final.pdf)



Facility pick-up points

	ART refills	Clinical consultation	Psychosocial support
WHEN	Every two months	Every six months	Every six months
WHERE	Spaced fast lane in clinic or 'PeleBox'	Clinical consulting room in clinic	Consulting room in clinic
WHO	Enrolled nurse, ART facilitator or automated 'PeleBox'	Professional nurse	Professional nurse or HIV counsellor if required
WHAT	ART in named, pre-packed bag, delivered to clinic from central depot	Vital signs, TB, side effects and adherence discussion, annual viral load check	Adherence counselling, other social support

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Facility pick-up points

Nurses preparing pre-packed ART to dispense to clients through facility pickup points



Clinic manager demonstrating the 'PeleBox', where clients enter a pin number to collect pre-packed medication from secure lockers in the clinic





Pre-COVID-19 building blocks for external pick-up points

	ART refills	Clinical consultation	Psychosocial support
WHEN	Every two months	Every six months	Every six months
WHERE	Private pharmacy	Clinical consulting room in clinic	Consulting room in clinic
WHO	Pharmacist	Professional nurse	Professional nurse or HIV counsellor if required
WHAT	ART in named, pre-packed bag, delivered to pharmacy from central depot	Vital signs, TB, side effects and adherence discussion, annual viral load check	Adherence counselling, other social support

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Pre COVID-19: Quantitative outcomes

- *Between June 2019 and April 2020 there was an increase in active CCMDD patients from 4884 to 5737 at the Prince Cyril Zulu Clinic, an increase of 853.*

	Overall increase	Increase before COVID adaptations	Increase before COVID adaptations, per month
CCMDD overall	1490	853	85.3
External PuP	495	169	16.9
Facility PuP	994	684	68.4



COVID-19 adaptations

Table 1: Changes to CCMDD in response to COVID-19

	Previous criteria	COVID-19 criteria
Eligibility:		
- Minimum time on ART	12 months	6 months
- Age	> 18 yrs	> 5 yrs
Once referred into CCMDD:		
- Duration of CCMDD prescription*	6 months	12 months
- Renewal of 6 month script	In facility	Remotely
- Maximum ART supply at pick-up point visit	2 months	3 months
- Window for ART pick-up	7 days	14 days
- Number of missed pick-ups allowed before de-registration	0	1
- Switching of pick-up points between clinic visits (through call centre)	Not allowed	Allowed

*This change required a regulatory change by the South African Health Products Regulatory Authority which lapsed on 30th Oct 2020

- ***Nationally: an overall strong emphasis on increasing use of ALL DSD models through CCMDD***
- ***Several changes to CCMDD, and the DSD models within CCMDD, also instigated to adapt to COVID-19 (see [here](#))***



Post-COVID-19 building blocks for facility pick-up points

	ART refills	Clinical consultation	Psychosocial support
WHEN	Every two <u>to three</u> months	Every six <u>to twelve</u> months	Every six <u>to twelve</u> months
WHERE	Spaced fast lane in clinic	Clinical consulting room in clinic	Consulting room in clinic
WHO	Enrolled nurse or ART facilitator	Professional nurse	Professional nurse or HIV counsellor if required
WHAT	ART in named, pre-packed bag, delivered to clinic from central depot	Vital signs, TB, side effects and adherence discussion, annual viral load check	Adherence counselling, other social support

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Post-COVID-19 building blocks for external pick-up points

	ART refills	Clinical consultation	Psychosocial support
WHEN	Every two <u>to three</u> months	Every six <u>to twelve</u> months	Every six <u>to twelve</u> months
WHERE	Private pharmacy	Clinical consulting room in clinic	Consulting room in clinic
WHO	Pharmacist	Professional nurse	Professional nurse or HIV counsellor if required
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Reasons for COVID-19 adaptations

- *The South African national lockdown was implemented on the 27th March 2020*
- *Strict restrictions on movement and cancellation of public transport, although travel to receive healthcare was allowed.*
- *CCMDD infrastructure utilized as part of COVID-19 response*
 - *To reduce congestion in clinics to prevent COVID-19 transmission*
 - *To reduce burden on clinics who may be dealing with large numbers of COVID-19 cases*
 - *To ensure that people receiving ART can continue to access treatment in the community during COVID-19 lockdown*
- *As well as adaptations to CCMDD, there was a focus on increasing referrals into CCMDD overall*
- *Many of the changes to CCMDD were already endorsed pre-COVID-19 but hadn't been implemented yet, so these changes were absorbed into [COVID-19 interim changes](#)*



COVID-19 adaptations adopted in Prince Cyril Zulu Clinic and quantitative outcomes

Two main adaptations implemented in Prince Cyril Zulu Clinic:

- 1) *Increase CCMDD referrals overall, particularly to external pickup points*
- 2) *Increase twelve month rather than six month scripts.*



Quantitative outcomes continued

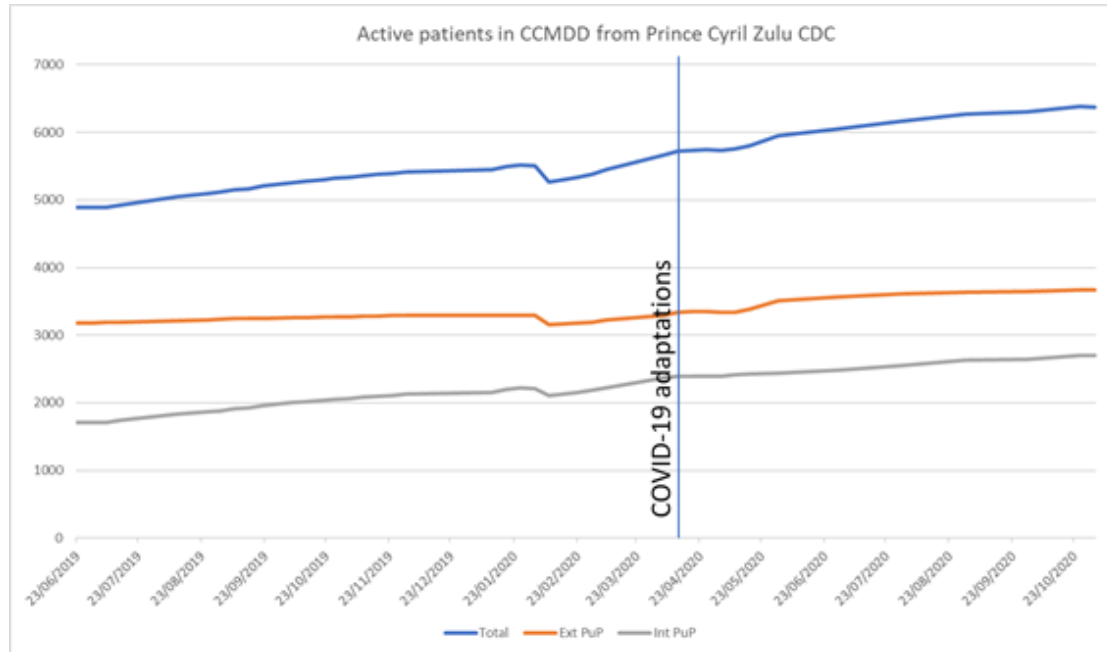
	Overall increase	Increase before COVID adaptations	Increase before COVID adaptations, per month	Increase after COVID adaptations	Increase after COVID adaptations, per month
CCMDD overall	1490	853	85.3	637	98
External PuP	495	169	16.9	326	50.2
Facility PuP	994	684	68.4	310	47.7

Between June 2019 and Oct 2020 clients using external pickup points increased from 3176 to 3671, and those using facility based pickup points increased from 1708 to 2702. The increase in active patients in CCMDD was quicker after the COVID-19 adaptations were introduced in April 2020, and this was mainly driven by an increase in clients using external pickup points



Quantitative outcomes continued

Figure 1: Trends in active patients in external & facility based DSD models at the Prince Cyril Zulu Clinic





Quantitative outcomes continued

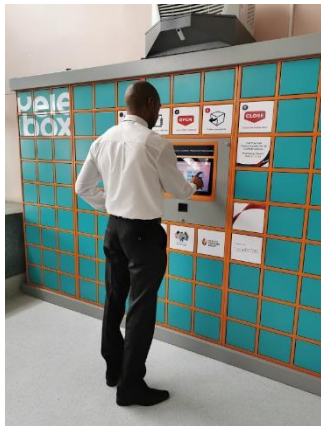
Table 1: Referrals into CCMDD from the Prince Cyril Zulu Clinic after the COVID-19 lockdown (April-Oct 2020)

	External pickup (N=2349)	Facility pickup (N=615)	Overall (N=2964)
Age (years)			
Mean (SD)	41.0 (8.28)	39.8 (9.34)	40.8 (8.52)
Median [Min, Max]	41.0 [2.00, 76.0]	39.0 [19.0, 89.0]	40.0 [2.00, 89.0]
Age group (years)			
0-18	1 (0.0%)	0 (0%)	1 (0.0%)
19-24	31 (1.3%)	16 (2.6%)	47 (1.6%)
25-34	461 (19.6%)	171 (27.8%)	632 (21.3%)
35-44	1100 (46.8%)	263 (42.8%)	1363 (46.0%)
45-54	609 (25.9%)	118 (19.2%)	727 (24.5%)
55+	147 (6.3%)	47 (7.6%)	194 (6.5%)
Gender			
Male	901 (38.4%)	280 (45.5%)	1181 (39.8%)
Female	1448 (61.6%)	335 (54.5%)	1783 (60.2%)
12 month prescription			
No	1645 (70.0%)	456 (74.1%)	2101 (70.9%)
Yes	704 (30.0%)	159 (25.9%)	863 (29.1%)
Referred after <11 months on ART			
No	2347 (99.9%)	615 (100%)	2962 (99.9%)
Yes	2 (0.1%)	0 (0%)	2 (0.1%)

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Feedback from providers regarding increased use of CCMDD



“Some patients lost their jobs or companies closed down during lockdown so many of them went back home. It helped for them to be able to change their pickup points. All in all it has been beneficial for the clinic as well as the patients”

“It has eased the flow of patients and the amount of patients attending the clinic daily. For the nurses the workload is simpler and the flow in the clinic is faster. The changes during lockdown benefitted both healthcare workers and patients as it lowered the exposure to each other and risk of COVID exposure.”



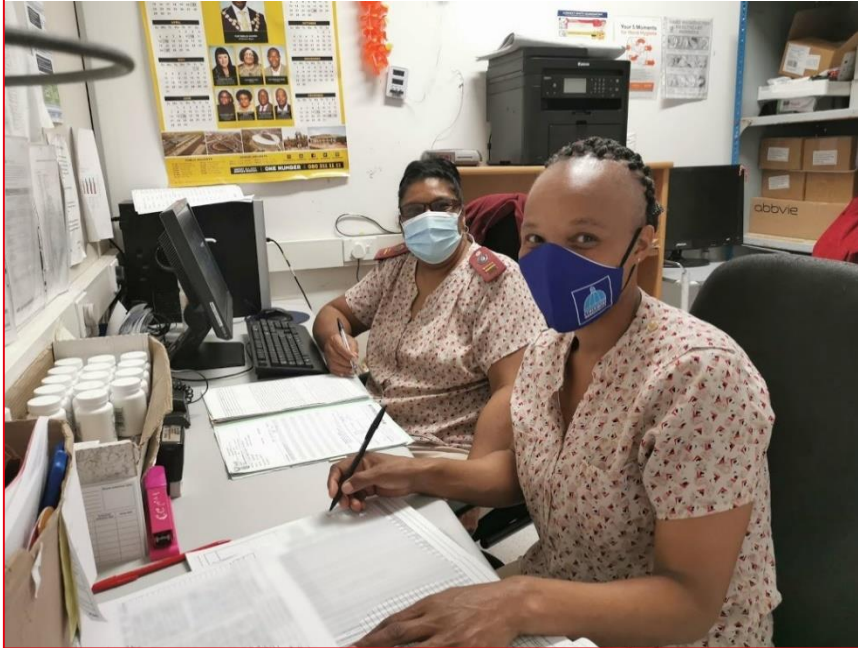
“During the COVID19 outbreak there appeared to be a general eagerness to decant patients into CCMDD – as this kept clinics less busy and assisted with social distancing etc. So it would seem that more patients may have been offered CCMDD during this time as it was advantageous for the clinics and patients.... Hopefully this is a trend that continues beyond the Pandemic.”





Feedback from providers regarding 12 month prescriptions

Nurses working in the external pickup point program



“Doing a 12 month script... was very effective as it negated the need for additional clinic visit for the patients. All facilities embraced the 12 months prescription as this was easier to explain to the patient and all follow-up dates were given by the clinic at the time of script generation.”

“The 12 month prescribing also had a positive impact on the totals retained on ART. This is something very positive for the clinics.”

“During lockdown it was difficult to get patients to come into the clinic as they were afraid of COVID. However when they heard of 12 months prescriptions they were happy to come in. It was much more convenient for them to come in only once and not more often. It has also reduced the influx of patients in the clinic helping congestion. I am a big fan of it.”



COVID-19: IMPACT ON OUR SERVICES

Impact of COVID-19

- *HIV testing and ART initiation were most heavily affected and decreased by 50% in the first month of lockdown, before gradually increasing towards pre-lockdown levels*
- *ART collection visits did not decrease drastically, but there was some evidence a short increase in missed ART collection visits in the first few weeks of lockdown*
- *The lockdown displaced the clients in different forms*
 - *some clients collect ART in facilities near their work (e.g. as domestic workers and industrial workers) and so they were affected when workplaces were shutdown*
 - *the public transport system was severely affected by the restrictions preventing people attending clinics*
 - *some clients from rural areas, other districts and provinces had to go back to their homes interrupting their treatment*

Impact of CCMDD adaptations

- *ART provision was largely maintained with no large drops in ART collections. People referred to external pickup points were not observed to return early to the clinic to collect treatment*
- *Referrals into external pickup points helped to decongest the clinic and prevent COVID transmission risk*
- *People who had to move during the COVID-19 period were able to change their pickup points without returning to the clinic*
- *Twelve month prescriptions meant people returned less to the clinic*



GOING FORWARD

- *Increased flexibility within CCMDD likely to be the main benefit.*
- *Although changes such as being able to change pick-up point mid-cycle, and increased period within which to collect treatment, are more pickup point related than clinic focused, and hence are difficult to analyse in our data*
- *Unfortunately, main adaptation used in Prince Cyril Zulu (12 month prescriptions), is unable to continue due to expiration of SAHPRA regulations that allowed this change. However, the Department of Health are considering an extension.*
- *More data is needed to demonstrate that 12 months prescriptions are safe compared to 6 months prescriptions – we aim to analyse this but results will only be available in a year's time*



COVID-19: CONCLUSION

- *Increased flexibility in the CCMDD system, both in eligibility criteria and in collections at facility and external pickup points are likely to significantly improve these DSD models*
- *Increased focus on referrals into CCMDD likely provided extra impetus to encourage the use of these DSD models*
- *Evidence to support these adaptations (e.g. 12 month prescriptions) are needed to encourage regulatory bodies to allow long term continuation*