

Using an electronic information system to improve the Central Chronic Medicine Dispensing & Distribution (CCMDD) model in South Africa: Synchronized National Communication in Health (SyNCH)

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HIV LEARNING NETWORK
The CQUIN Project for Differentiated Service Delivery

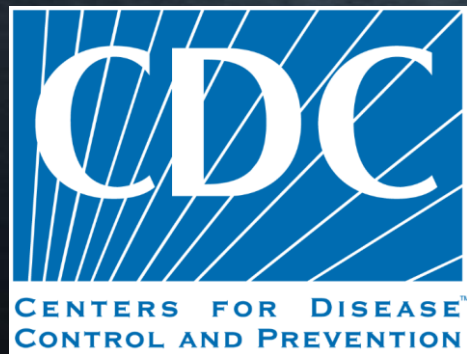


PEPFAR

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16 YEARS OF SAVING LIVES THROUGH AMERICAN GENEROSITY AND PARTNERSHIPS

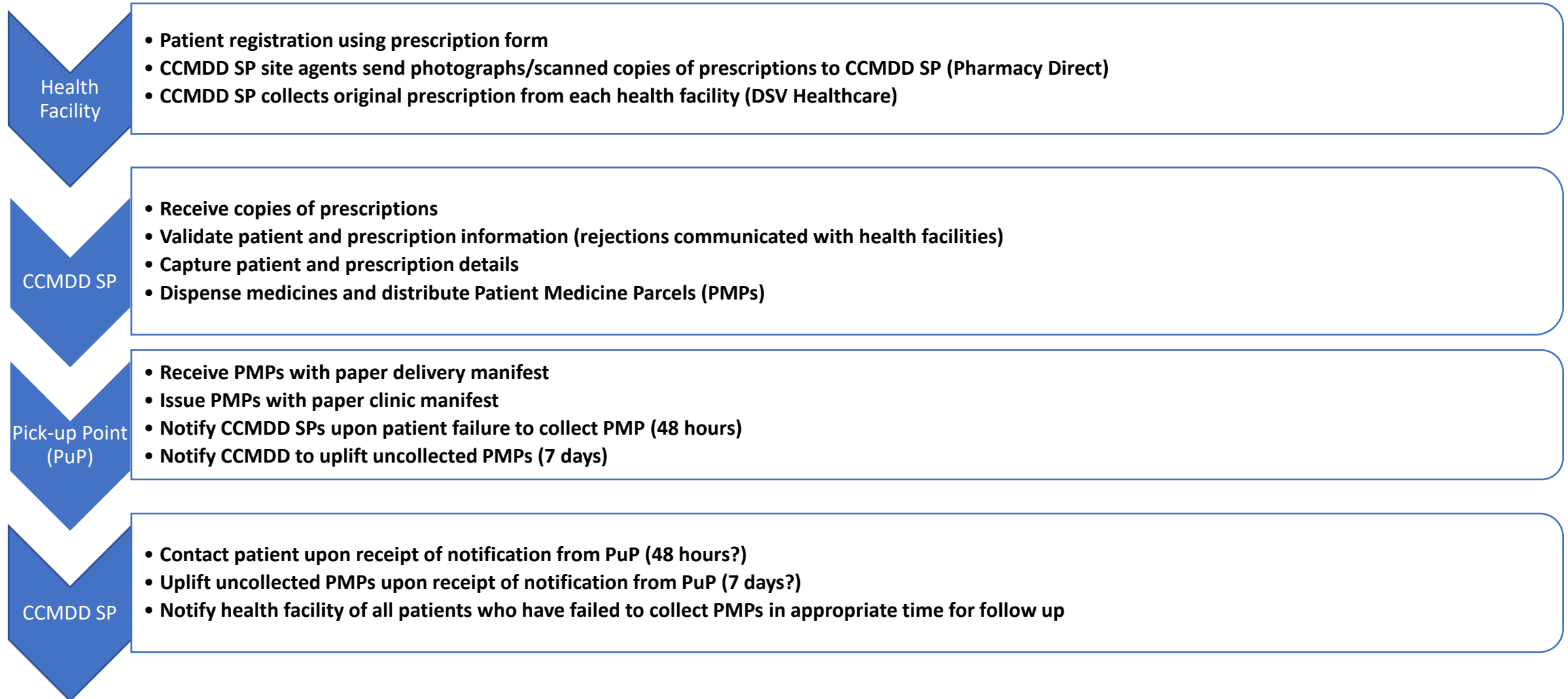
Background: DSD in South Africa

- Central Chronic Medicine Dispensing and Distribution (**CCMDD**) programme (NHI White Paper Chapter 6, Improving access to pharmaceutical services) was implemented to improve access to essential chronic medicines for patients in the public health sector
- Publically-funded and procured chronic medicines are packaged by external service providers and delivered/dispensed to patients at either an external community-based pick up point (e.g. pharmacy, library, etc.) or an internal pick up point (e.g. fast lane)
- Typically follows a 6-month cycle:
 - Script issuance and months 1 & 2 are dispensed from the facility
 - Months 3 & 4 issued at pick up point
 - Months 5 & 6 issued at pick up point
 - Patient returns to facility for script renewal
- Approximately 1.3 million active patients nationally receiving medicines through CCMDD; approximately 75% of scripts include antiretroviral drugs

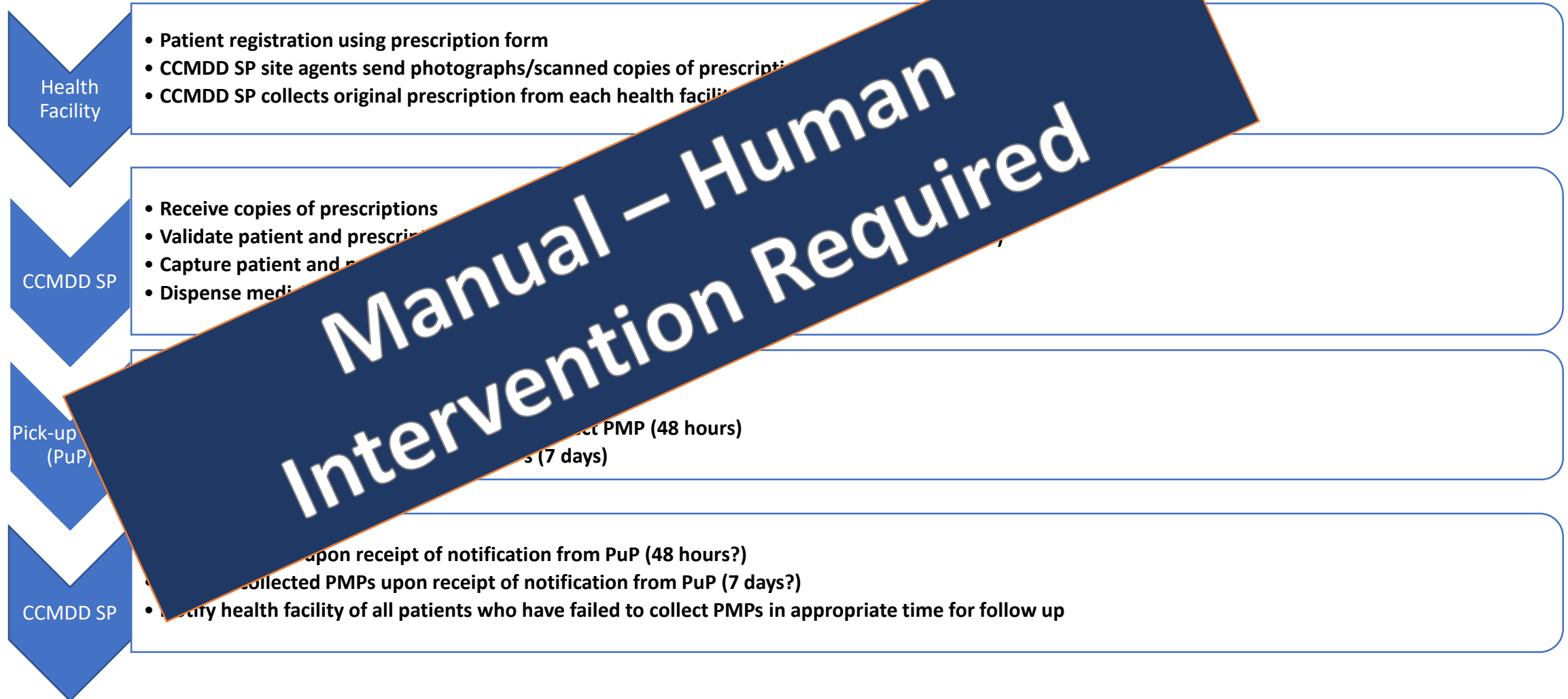
Background: DSD in South Africa

- **Rational Medicine Use:** “Patients receive medications appropriate to their clinical needs, in doses that meet their own individual requirements, for an adequate period of time, and at the lowest cost to them and their community.” (WHO, 1985).
- **Standard Treatment Guidelines (STGs)** were developed to promote rational medicine use
- CCMDD legacy (since 2014)
 - Weak paper-based systems to monitor patient medicine parcel collection (adherence to ART)
 - No systems in place to monitor rational medicine use
 - No transparency on processes
 - Reliance on CCMDD Service Provider (SP) data and communication

CCMDD Manual Paper Process

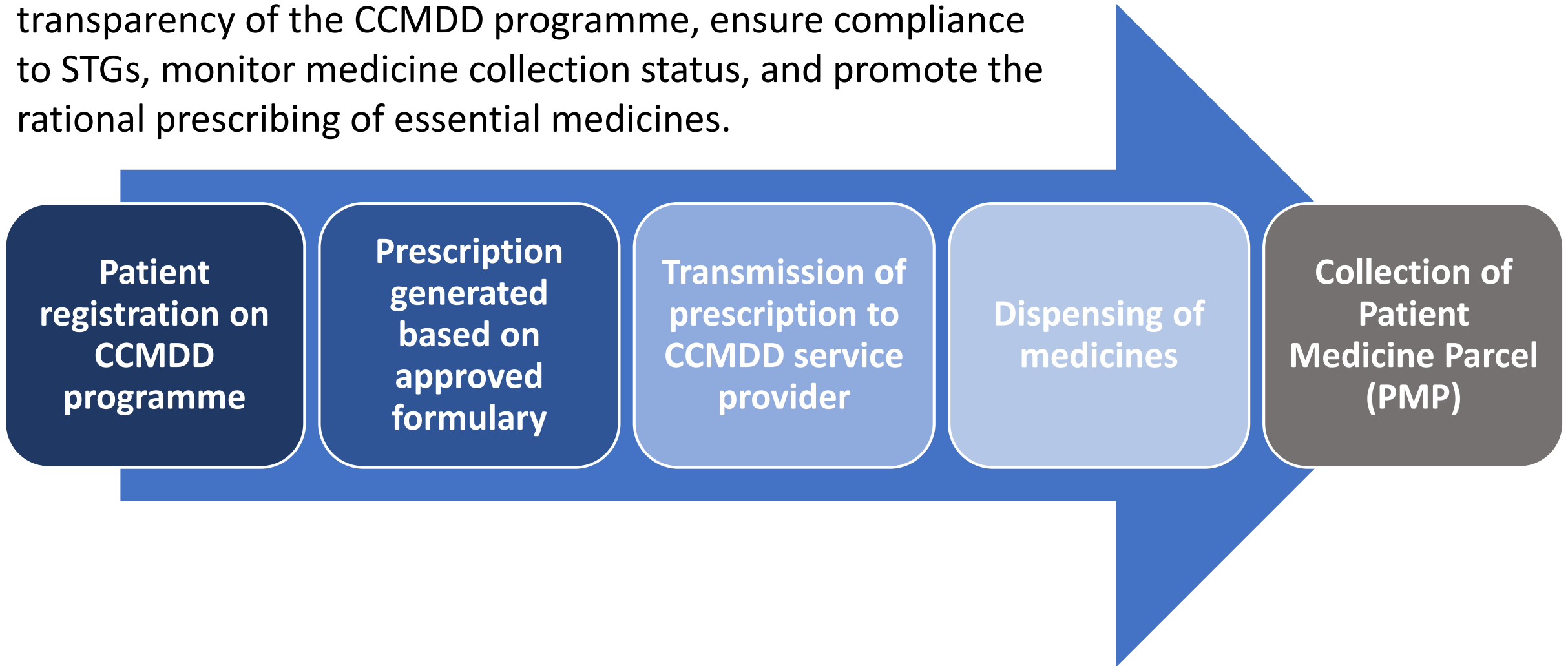


CCMDD Paper Process



SyNCH

SyNCH is a web system designed to improve process flows and transparency of the CCMDD programme, ensure compliance to STGs, monitor medicine collection status, and promote the rational prescribing of essential medicines.



CCMDD Challenges & SyNCH Solutions

1. Challenge	Prescription errors/rejections are communicated with the health facility and patient only when identified at the CCMDD SP. The patient often has to return to the health facility to correct the error
Solution	Using SyNCH, prescribers will be able to send accurate, error-free prescriptions electronically to a CCMDD service provider from the point-of-care (internal validations built into SyNCH to prevent profiles with missing data or incorrect data formats from being submitted to CCMDD SPs)
2. Challenge	Clinicians prescribe medicines/doses not approved on the CCMDD formulary resulting in prescription rejections (see point above)
Solution	SyNCH assists in promoting rational medicine use by ensuring compliance with STGs and formularies
3. Challenge	No means of readily collating prescribing and medicine dispensing information accurately
Solution	SyNCH Provide data for pharmacoeconomic evaluation, policy and decision-making <ul style="list-style-type: none">➤ Facilitates targeted academic detailing (RMU promotion strategy) based on data from prescriber accounts➤ Medicine utilisation data informs cost analyses and medicine selection policies

CCMDD Challenges & SyNCH Solutions

4. Challenge	Clinicians are required to write new patient and prescription details on a paper form at each patient clinical review
Solution	SyNCH Improve prescribing efficiencies - instant retrieval of prescription history allows for easy editing of previous prescriptions
5. Challenge	CCMDD SPs must interpret and re-capture prescriptions on their internal computer systems leading to transcription errors (medication errors)
Solution	SyNCH improves CCMDD SPs dispensing efficiencies <ul style="list-style-type: none">➤ Eliminates the time and need to manually capture prescriptions➤ Real-time electronic processes ensure that prescriptions do not have to be physically delivered to the CCMDD SP➤ Prescriptions are available immediately for dispensing following transmission
6. Challenge	Identification and commencement of tracing of patients who have not collected their PMP is dependent on the PuP communicating non-collection information to CCMDD SPs and CCMDD SPs communicating with health facilities and patients
Solution	SyNCH automatically notifies the CCMDD SP and health facility (via the SyNCH health facility interface) of all patients who have not collected their PMPs after 7 days of the scheduled collection date <ul style="list-style-type: none">➤ PMP non-collection statistics (at PUPs) report is available immediately at the healthcare facility to enable early tracing of patients (contributes to 90-90-90)

CCMDD Challenges & SyNCH Solutions

7. Challenge	Identification and commencement of tracing of patients who have not collected their PMP is dependent on the PuP communicating non-collection information to CCMDD SPs and CCMDD SPs communicating with health facilities and patients
Solution	SyNCH automatically notifies the CCMDD SP and health facility (via the SyNCH health facility interface) of all patients who have not collected their PMPs after 7 days of the scheduled collection date <ul style="list-style-type: none">➤ PMP non-collection statistics (at PUPs) report is available immediately at the healthcare facility to enable early tracing of patients (contributes to 90-90-90)
8. Challenge	Non-standardisation of Adherence Clubs (ACs) and Outreach Points (OPs) nomenclature and lack of master data for ACs and OPs
Solution	Adherence Clubs and Outreach Point administration tool <ul style="list-style-type: none">➤ ACs and OPs names and meeting dates are captured directly on SyNCH➤ Names and meeting dates are communicated with CCMDD SPs via the Application Programming Interface (API) – data is therefore consistent throughout the process➤ PMPs are managed electronically through the SyNCH PuP interface using customised functionality

CCMDD Challenges & SyNCH Solutions

9. Challenge	Provinces/Districts have to request contracting statuses of PuPs
Solution	PuPs administered on directly on SyNCH by NDoH <ul style="list-style-type: none">➤ Provinces can view contracting status using SyNCH – eliminates the need to phone NDoH to request contracting status➤ All PuPs are administered on SyNCH therefore creating a master data source for PuPs – CCMDD SPs import this data into their internal systems via the API thereby eliminating the need to manually look-up approved PuPs.
10. Challenge	Data is not routinely updated on other eHealth systems
Solution	SyNCH is designed to integrate with other eHealth systems such as Health Patient Registry System (HPRS) and TIER.net <ul style="list-style-type: none">➤ Once integrated, users do not need to capture patient demographic details if it already exists on HPRS – The unique number generated by HPRS will be used as the identifier for the patient profile thus ensuring that the same data exists in all systems➤ Once integrated with TIER.net, the plan is to automatically update TIER data based on the PMP collection status for individual patients

CCMDD Challenges & SyNCH Solutions

11. Challenge	Standardisation of reports between CCMDD SPs and verification of data reported
Solution	<p>All data captured on SyNCH can be used to develop automated reports – assists with M&E of the CCMDD Programme</p> <ul style="list-style-type: none">➤ For health facilities implementing SyNCH, patient statistics (demographics etc.) and epidemiology data reports are available instantly➤ The more facilities implementing SyNCH the easier it would be to generate reports at a facility/district/provincial/national level
12. Challenge	High costs incurred to pay CCMDD SPs
Solution	<p>Reduced cost to NDoH</p> <ul style="list-style-type: none">➤ CCMDD SPs are paid less for SyNCH generated prescriptions versus manual paper prescriptions due to elimination of manual capturing of data➤ Total estimated potential cost saving during this tender period = ~\$850,000

CCMDD Challenges & SyNCH Solutions

15. Challenge	Patients clinic hopping
Solution	<p>Patient identification is required on SyNCH</p> <ul style="list-style-type: none">➤ The system identifies patients previously enrolled on SyNCH including:<ul style="list-style-type: none">○ Name of the patient○ First enrolment date○ Last prescription date○ Prescriber○ Which clinic the patient last visited➤ This information is available at the point of care irrespective of which clinic the patient was enrolled at. This is dependent of the health facility utilising SyNCH

CCMDD Challenges & SyNCH Solutions

16. Challenge	Potential for fraud and unnecessary costs due to lost medication, health facilities opening uncollected PMPs and moving CCMDD medicine stock into health facility stock
Solution	PMPs are managed on SyNCH using scanning of PMP barcodes. ➤ Reports can be generated on: <ul style="list-style-type: none">○ all PMPs not scanned out for upliftment to CCMDD SPs○ all PMPs not scanned in by CCMDD SPs
17. Challenge	Identification of patients on TEE and/or planning for transitioning to TLD
Solution	Reports can be generated on all patients currently enrolled on SyNCH who are HIV positive and currently prescribed TEE. This data can be used for planning purposes

SyNCH vs Manual CCMDD process

	Manual	SyNCH
Live data available at health facility for tracing of patients who have not collected their PMPs. Contributes to 90-90-90 (adherence to ARVs)	X	✓
Real time notifications of patients seen at other health facilities before the clinical review date (clinic hopping)	X	✓
Prescriber level controls (Doctor <i>versus</i> Nurse prescribing privileges)	X	✓
Real time decanting statistics	X	✓
Reduction in patient consultation times and increases clinician efficiency	X	✓
Assigns accountability for PMP handling and management	X	✓

Thank You!

Acknowledgements:

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SyNCH Coverage

Table 1: Number of patients enrolled on CCMDD via SyNCH per district (as at 19 May 2019)

District	Patient Count	Patient Decanting			
		External	Internal	Adherence club	Outreach point
Chris Hani	1,819	285 (16%)	1534 (84%)	-	-
OR Tambo	1,587	1,399 (88%)	188 (12%)	-	-
Eastern Cape Total	3,406	1,684 (49%)	1,722 (51%)	-	-
Amajuba	10,221	5,362 (52%)	4,859 (48%)	-	-
eThekwini	79,832	50,085 (63%)	29,218 (37%)	449 (0,56%)	83 (0,10%)
uMgungundlovu	31,817	14,422 (45%)	17,240 (54%)	136 (0,43%)	19 (0,06%)
uMzinyathi	36,236	15,101 (42%)	20,620 (57%)	288 (0,79%)	227 (0,63%)
uThukela	29,588	4,108 (14%)	25,354 (46%)	27 (0,09%)	99 (0,33%)
Zululand	565	241	324	-	-
KwaZulu-Natal Total	188,259	89,316 (47%)	97,615 (52%)	900 (0,48%)	428 (0,23%)
Total number of patients registered via SyNCH	191,665	91,000 (47%)	99,337 (52%)	900 (0,47%)	428 (0,22%)

Cancelled and Rejected Prescriptions

Table 2: Cancelled and rejected prescriptions (September 2016 – 19 May 2019)

Reason for prescription cancellation	Eastern Cape	KwaZulu-Natal
Created in error	35	1503
Incorrect pick-up point	1	298
Non-collection, reason unknown	32	243
Other	78	1354
Patient Adverse Drug Reaction	1	11
Patient Demised	0	4
Patient no longer stable, e.g. patient defaulted, virological failure	26	164
Patient not willing to collect from PuP	6	42
Patient Relocated	23	128
Service Provider Rejection	1	3