

Assessment of Availability and Delivery of Pharmaceutical and Surgical Supplies in Bojanala District

June 2013



This report is made possible by the generous support of the American people through the US Agency for International Development (USAID), under the terms of cooperative agreement numbers GHN-A-00-07-00002-00 and AID-OAA-A-11-00021. The contents are the responsibility of the Strengthening Pharmaceutical Systems and Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Programs, respectively, and do not necessarily reflect the views of USAID or the United States Government.

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The Strengthening Pharmaceutical Systems (SPS) Program strives to build capacity within developing countries to effectively manage all aspects of pharmaceutical systems and services. SPS focuses on improving governance in the pharmaceutical sector, strengthening pharmaceutical management systems and financing mechanisms, containing antimicrobial resistance, and enhancing access to and appropriate use of medicines.

About SIAPS

The goal of the Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program is to assure the availability of quality pharmaceutical products and effective pharmaceutical services to achieve desired health outcomes. Toward this end, the SIAPS result areas include improving governance, building capacity for pharmaceutical management and services, addressing information needed for decision-making in the pharmaceutical sector, strengthening financing strategies and mechanisms to improve access to medicines, and increasing quality pharmaceutical services.

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Strengthening Pharmaceutical Systems and Systems for Improved Access to Pharmaceuticals and Services Program. 2013. *Assessment of Availability and Delivery of Pharmaceutical and Surgical Supplies in Bojanala District*. Submitted to the US Agency for International Development by the Strengthening Pharmaceutical Systems and Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Programs. Arlington, VA: Management Sciences for Health.

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ACKNOWLEDGEMENTS

SPS would like to acknowledge the following people without whom the work presented below could not have been achieved:

- Mr. H. T. Mphaka (Head of Pharmaceutical Services, North West Province)
- Mrs. M. Rakau (Chief Director, Bojanala Health District)
- Mrs. L. Oelofse (Assistant Manager, Pharmaceutical Services, Bojanala Health District)
- Bojanala hospitals and sub-districts pharmacy personnel
- Staff of the Strengthening Pharmaceutical Systems Program and Systems for Improved Access to Pharmaceuticals and Services Program

ABBREVIATIONS

BPA	basic pharmacist's assistant
CHC	community health centre
CSP	community service pharmacist
GPP	Good Pharmacy Practice
HR	human resources
LBPA	learner basic pharmacist assistant
LPBPA	learner post-basic pharmacist assistant
JST	Job Shimankane Tabane Hospital
MSH	Management Sciences for Health
MSM	medicine supply management
PA	pharmacist's assistant
PBPA	post-basic pharmacist's assistant
PDSX	stock management system
SAPC	South African Pharmacy Council
SD	sub-district
SOP	standard operating procedure
SPS	Strengthening Pharmaceutical Systems

EXECUTIVE SUMMARY

Poor availability of pharmaceutical and surgical supplies was experienced in the latter part of 2011 at hospitals and primary health care centers (PHCs) in Bojanala District, one of the four districts in the North West Province. This resulted in the decision to conduct a comprehensive survey within the district to determine reasons for the shortages and to come up with interventions to improve availability of pharmaceutical and surgical supplies at facilities.

Approach

The methodology used to conduct the survey included a retrospective study at all hospitals, all community health centres, and a random selection of clinics within each sub-district (SD). The National Core Standards List of Pharmaceuticals and Surgicals was utilised to measure availability of stock at the various facilities. Other aspects of the core standards assessed included human resources (HR) availability, training conducted, stock management procedures and stock control, Good Pharmacy Practice compliance, and patient care.

Overview of Findings

Key findings were the lack of implementation of accurate minimum-maximum stock levels at facilities which resulted in poor stock management. Some items were out of stock, while others were overstocked, resulting in wastage and expiry of products. The workload varied at different facilities, which affected compliance with Good Medicine Supply Management Principles. Poor structural compliance at many facilities negatively affected stock management. Relevant data was not available on medicines availability at the depot over the period of assessment due to a change in computerised stock management programmes. It was noted that PHCs in certain areas did not have any support visits from the pharmacists supplying them with stock.

Recommendations

Key recommendations include implementation of accurate minimum-maximum stock levels, which all facilities must follow. Problems with structural compliance at many facilities due to the physical layout of the store and lack of storage space need to be addressed as this is one of the reasons that stock levels are too low. Pharmacies are to increase minimum-maximum stock levels to ensure a 2-3 month stock holding to comply with medicine supply management principles to mitigate delays in deliveries from the Provincial Depot. This will ensure improved patient care at all facilities.

Medicine supply management training needs to be conducted again within the district, targeting personnel responsible for ordering at pharmacies and PHCs. Monthly pharmacist and pharmacist's assistant (PA) support visits to all PHCs need to be strengthened, focusing on improving systems and processes within the facilities.

Involvement of pharmacy managers in decision making with regard to budget allocations at the district level is recommended.

BACKGROUND

The Pharmaceutical Management Committee requested that the Strengthening Pharmaceutical Systems (SPS) programme, implemented by Management Sciences for Health, conduct a stock availability assessment in the Bojanala district to ascertain the availability of pharmaceuticals and surgical supplies, identify gaps in medicine supply management practices, and provide recommendations for improvement where appropriate. Reported frequent stock outs as well as disposal of large quantities of unusable pharmaceuticals within the district led the Pharmaceutical Management Committee to request this intervention.

The assessment was conducted in collaboration with Bojanala Pharmaceutical Services management. The objectives of the assessment were to:

- Assess the availability of pharmaceuticals and surgical supplies in selected health facilities in the district
- Assess medicine supply management practices
- Formulate recommendations for improvement

METHODS

A total of 34 health facilities including 5 hospitals, 10 community health centres (CHCs), 18 PHCs and one SD pharmacy (Moretele) formed part of the assessment. The list of facilities is attached (annex A). The period of interest for the assessment of availability was June 2011 to January 2012.

Data collection was done in the form of face-to-face interviews with key informants at the facilities. Patient exit interviews were also conducted for a target of 30 patients/care givers per facility.

Four teams of pharmacists and PAs led by pharmacy managers conducted interviews from February 23 to March 13, 2012. The data collectors received training on the aim of the study and how to conduct interviews and correctly fill in the forms. The assessment focused on the following areas:

- HR
- Pharmaceutical and surgical supplies availability
- Infrastructure
- Procedures and stock control
- Patient care/satisfaction

The data collection forms (annex B) used for the assessment were developed by SPS and were adapted to conform to the National Core Standards for health facilities in South Africa. A list of tracer medicines and surgical supplies was used to assess availability at all facilities. An additional list was used to determine availability for items specific to hospitals.

LIMITATIONS

Non-availability of stock at hospitals, community health centres, and clinics could not be linked to provincial pharmaceutical depot records for the period June 2011 to January 2012. This was due to the on-going implementation of a new computerized stock control system at the depot.

Retrospective availability of stock at clinics could not be determined as most of the facilities either did not perform monthly stock counts or did not have consistent records of all transactions on the stock cards. A thorough analysis of retrospective stock availability at hospital levels could not be done because of the switch from PDSX to RxSolution for stock control.

RESULTS

As indicated earlier, this report encapsulates all the elements of providing pharmaceutical services in the district, identifying the gaps and providing recommendations. The results reported here relate to HR, medicines and surgical supplies availability, infrastructure, systems and processes, procedures and stock control, and patient care/satisfaction.

Human Resources

The availability of suitably qualified health professionals is important for the effective management of pharmaceutical services. To that effect, the assessment in Bojanala focused on pharmacists, PAs, and registered nurses.

Pharmacists

Table 1. Number of Pharmacists at CHCs

Facility	Full time	Vacant funded posts	Total posts	Vacancy rate (%)
Bafokeng	1	0	1	0
Boitekong	1	0	1	0
Tlhabane	1	0	1	0
Bapong	1	0	1	0
Lethabile	1	0	1	0
Mathibestad	1	0	1	0
Syferskuil	0	0	0	0
Mabeskraal	0	1	1	100
Mogwase	1	0	1	0
Pella	1	0	1	0
Total	8	1	9	11.11

Table 2. Number of Pharmacists at Hospitals, including Moretele SD Pharmacy

Facility	Intern	CSP	Full time	Part time (5/8)	Vacant funded posts	Total posts	Vacancy rate (%)
	1	1	3	1	3	7	42.85
Job Shimankane Tabane (JST)	3	1	8	0	3	11	27.3
Koster	0	1	2	0	0	2	0
Moses Kotane	0	4	5	0	0	5	0
Swartruggens	0	1	2	0	0	2	0
Moretele SD Pharmacy	0	1	2	0	0	2	0
Total	4	9	22	1	6	29	20.7

To estimate the vacancy rates within facilities, the number of posts reported as filled or vacant was used as an indication of total posts available within the facility. Using this

calculation, only three facilities—Brits Hospital, JST, and Mabeskraal CHC—had vacant funded pharmacist posts at the time of the assessment as shown in tables 1 and 2. The average vacancy rate was 11.11% and 20.7% for CHCs and hospitals, respectively. Pharmacists based at health centres provide monthly support visits to PHCs in four of the five SDs in Bojanala.

There were a reported total of 30 pharmacists working full time in hospitals including Moretele SD Pharmacy and CHCs (figure 1) as well as one part-time (5/8) pharmacist at Brits Hospital. Pharmacists in SD health centres render medicine supply management visits to PHCs on a monthly basis. There were also 9 community service pharmacists (CSPs) and 4 interns at the time.

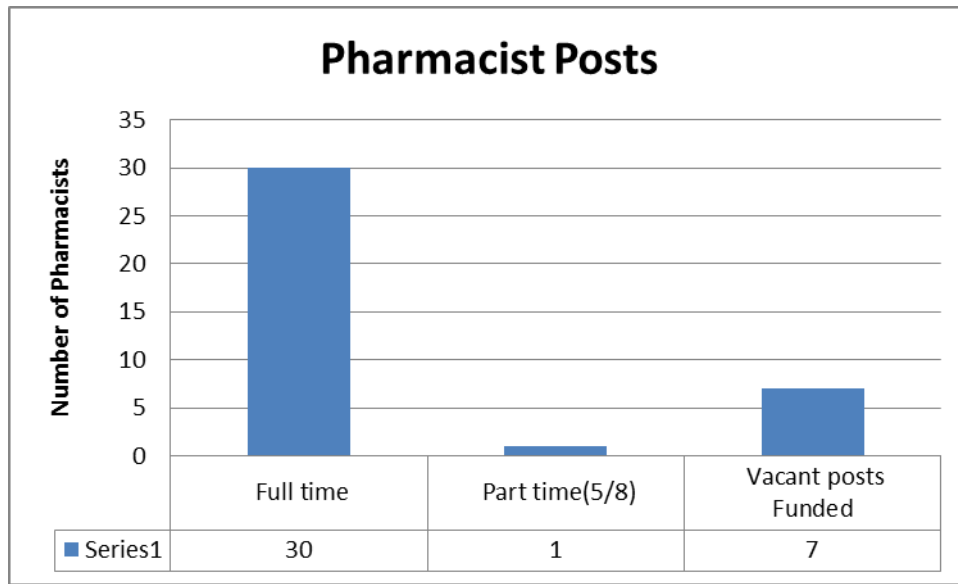


Figure 1. Pharmacist posts within hospitals and CHCs

Pharmacist’s Assistants

Table 3. PAs at CHCs

Facility*	Basic PAs (BPAs)			Post-basic PAs (PBPA)		
	Learner	Basic	Vacant funded posts	Learner	Post basic	Vacant funded posts
Bafokeng	0	0	0	1	1	0
Bapong	0	0	0	0	1	0
Boitekong	0	1	0	0	1	0
Letlhabile	0	1	0	0	1	0
Mogwase	0	1	0	0	0	0
Pella	0	1	0	0	0	0
Tlhabane	0	0	0	1	0	0
Total	0	4	0	2	4	0

*Mabeskraal, Mathibestad, and Syferskuil had no PAs at any level.

Table 4. PAs at Hospitals and Moretele SD Pharmacy

Facility	BPAs				PBPAs		
	Unregistered	Learner	Basic	Vacant funded posts	Learner	Post basic	Vacant funded posts
Brits	1	4	4	0	0	3	0
JST	1	1	7	0	1	3	0
Koster	0	1	0	0	0	0	0
Moses Kotane	4	0	9	0	0	1	0
Swartruggens	0	0	0	0	0	1	0
Moretele SD Pharmacy	0	0	1	0	1	0	0
Total	6	6	21	0	2	8	0

Of the 47 PAs identified, 10 (21.28%) were employed at CHCs and the remaining 37 (78.72%) were at the hospitals as shown in tables 3 and 4.

The facilities assessed had a total of 47 PAs that comprised 6 learner basic PAs (LBPA), 25 BPAs, 4 learner PBPAs (LPBPA), and 12 PBPAs; 6 unregistered PAs were also working in the facilities assessed (figure 2). No vacant posts were reported at the time of the assessment.

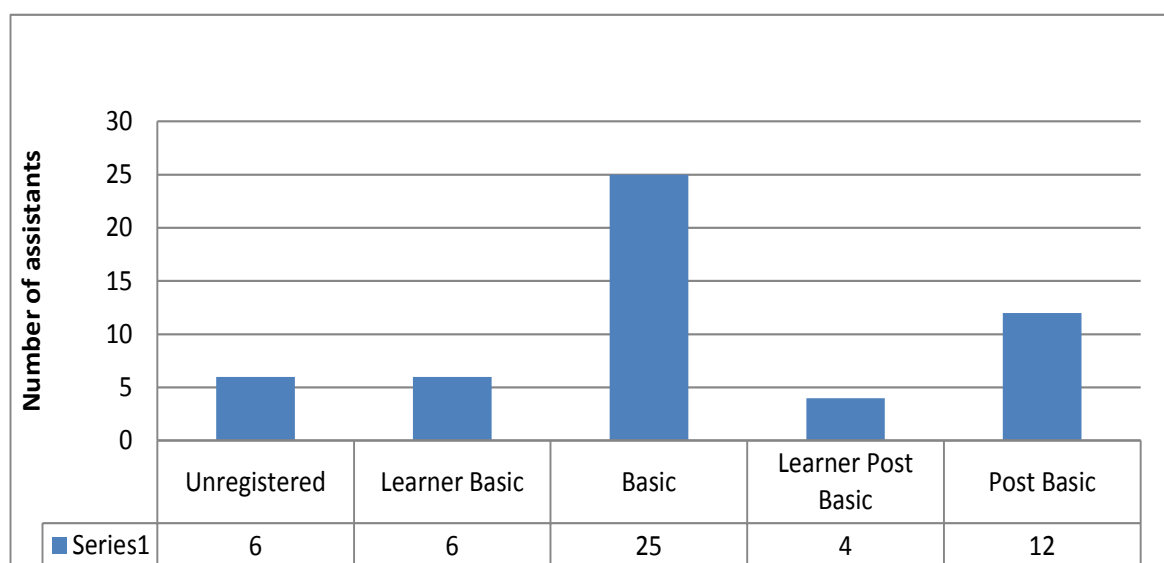


Figure 2. Pharmacists' assistants

Pharmacists vs. PAs**Table 5. Pharmacists and PAs per Type of Facility**

Type of facility	Pharmacist				Unregistered PAs	BPA		PBPA	
	Full time	CSPs	Interns	Part time (5/8)		Learners	Basics	Learners	Post-basics
CHC	8	0	0	0	0	0	4	2	4
Hospital	20	8	4	1	6	6	20	1	8
Moretele SD Pharmacy	2	1	0	0	0	0	1	1	0
PHC	0	0	0	0	0	0	0	0	0
District office	1	0	0	0	0	0	0	0	0
Total	30	9	4	1	6	6	24	3	12

Table 5 shows the distribution of pharmacists as well as PAs across the different types of facilities within the district. There were no PHCs that were reported to have any type of pharmacy personnel employed.

Moretele SD Pharmacy

Moretele SD Pharmacy is licensed and recorded as an institutional pharmacy with the South African Pharmacy Council (SAPC). It was established in 2008 after Jubilee Hospital was rezoned under Gauteng Province.

Nurses**Table 6. Nurses Employed per Facility**

Facility	Qualified in PHC	In PHC training	Practising without PHC qualification	Vacant posts	Total posts
Bafokeng CHC	5	2	10	0	17
Bapong CHC	2	1	15	0	18
Boitekong CHC	7	1	0	0	8
Lethabile CHC	2	1	12	0	15
Mabeskraal CHC	6	1	1	2	10
Mathibestad CHC	5	2	7	0	14
Mogwase CHC	12	0	2	0	14
Pella CHC	5	1	2	0	8
Syferskuil CHC	1	1	7	0	9
Tlhabane CHC	16	0	7	0	23
CHC total	61	10	63	2	136
Bakubung Clinic	4	1	1	0	6
Borolelo Clinic	1	1	0	1	3
Gateway PHC	4	0	1	0	5
Hebron Clinic	7	2	8	0	17
Ikhutseng Clinic	7	1	8	0	16
Kanana PHC	2	1	2	0	5
Karlien Park PHC	4	0	4	0	8

Facility	Qualified in PHC	In PHC training	Practising without PHC qualification	Vacant posts	Total posts
Maboloka Clinic	3	0	3	0	6
Maubane	4	0	3	0	7
Moruleng Clinic	5	0	1	0	6
Njobe	2	0	1	0	3
Phatsima PHC	2	0	2	0	4
Reagile Clinic	2	1	2	1	6
Sesobe Clinic	2	0	2	0	4
Silwerkrans Clinic	4	0	5	0	9
Swartdam	4	0	0	0	4
Tladistad	1	0	1	0	2
Wonderkop Clinic	5	0	0	0	5
PHC total	63	7	44	2	116
CHC + PHC total	124	17	107	4	252

Table 6 shows the number of nurses at each facility at the time of the assessment. A total of 252 nurses were reported as working at the CHCs and PHCs assessed. Of the 252 nurses, 43% (107/252) were practising without PHC qualification, whereas 7% (17/252) were undergoing training.

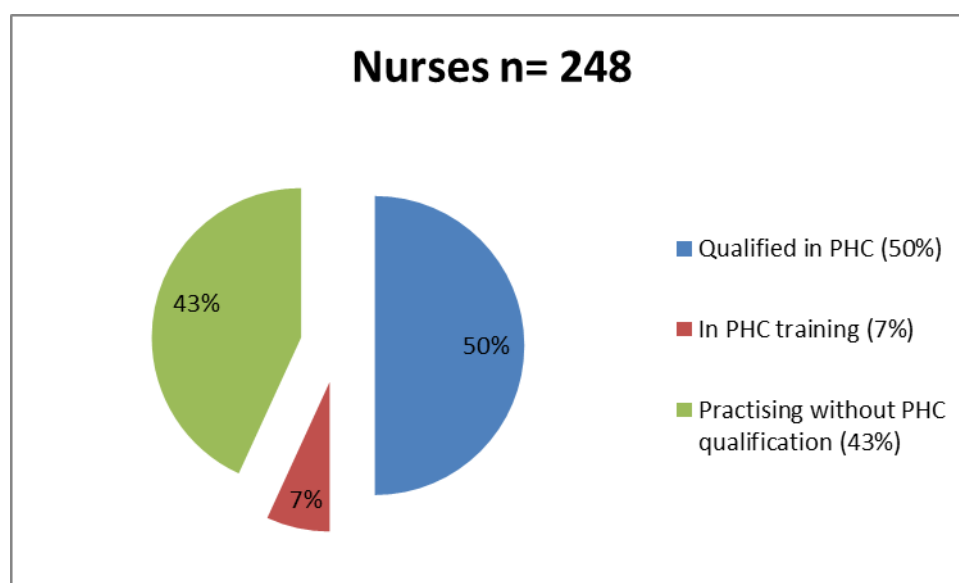


Figure 3. Nurses in facilities assessed

Training in Medicine Supply Management

One of the objectives of the National Drug Policy (NDP) is to achieve access and equity through effective management of the selection, procurement, distribution and use of medicines and medical supplies.

Suitably skilled personnel are required to make essential medicines available to those in need at the right time and in the right quantity; to ensure the safety, efficacy and quality of all medicines provided and to improve prescribing and dispensing practices.

Medicine supply management (MSM) training is referred to as external training received apart from routine in-service training. The results in figure 4 refer only to staff trained on MSM at facilities assessed in accordance with feedback given during the survey. Figure 4 shows that more nurses (50) have been trained on MSM than pharmacists and PAs (20).

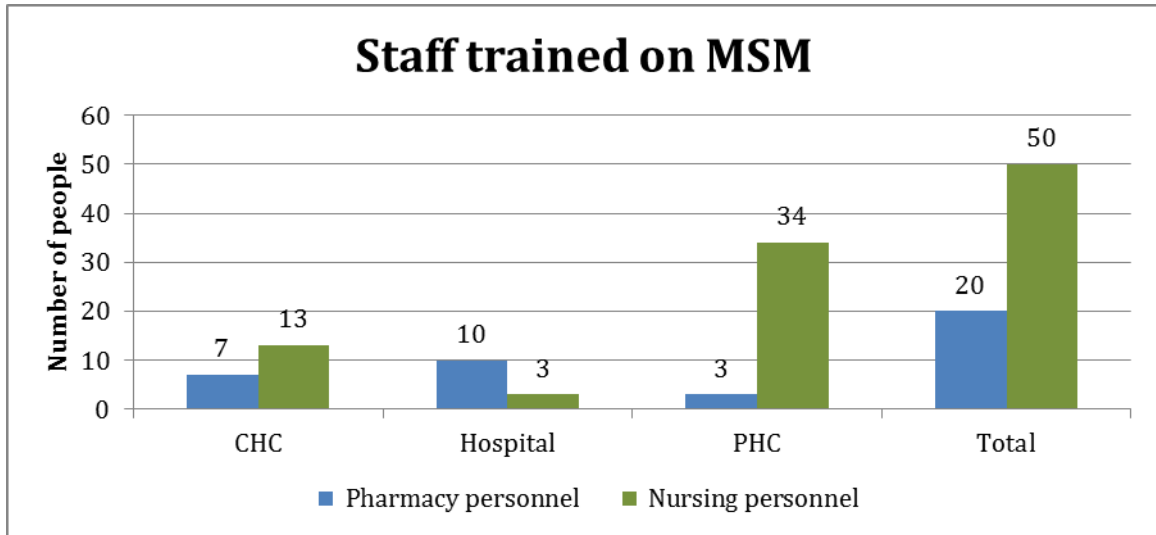


Figure 4. Staff trained on MSM from facilities in survey

Comparison of Service Provision

Figure 5 indicates that Koster and Swarttruggens Hospitals need additional PAs to bring the workload within the normal staffing range when comparing pharmacists to PAs.

The pharmacists' workload is only reflected in patient data (figure 5), but pharmacists provide other services, which include, but are not limited to:

- In-hospital services including issues to wards, casualty, and theatre
- Repacking of pharmaceuticals from bulk to patient-ready packs
- Distribution of pharmaceuticals and surgicals to PHCs attached to the hospital
- Administrative duties
- Financial management
- Weekly and monthly reports
- In-service training

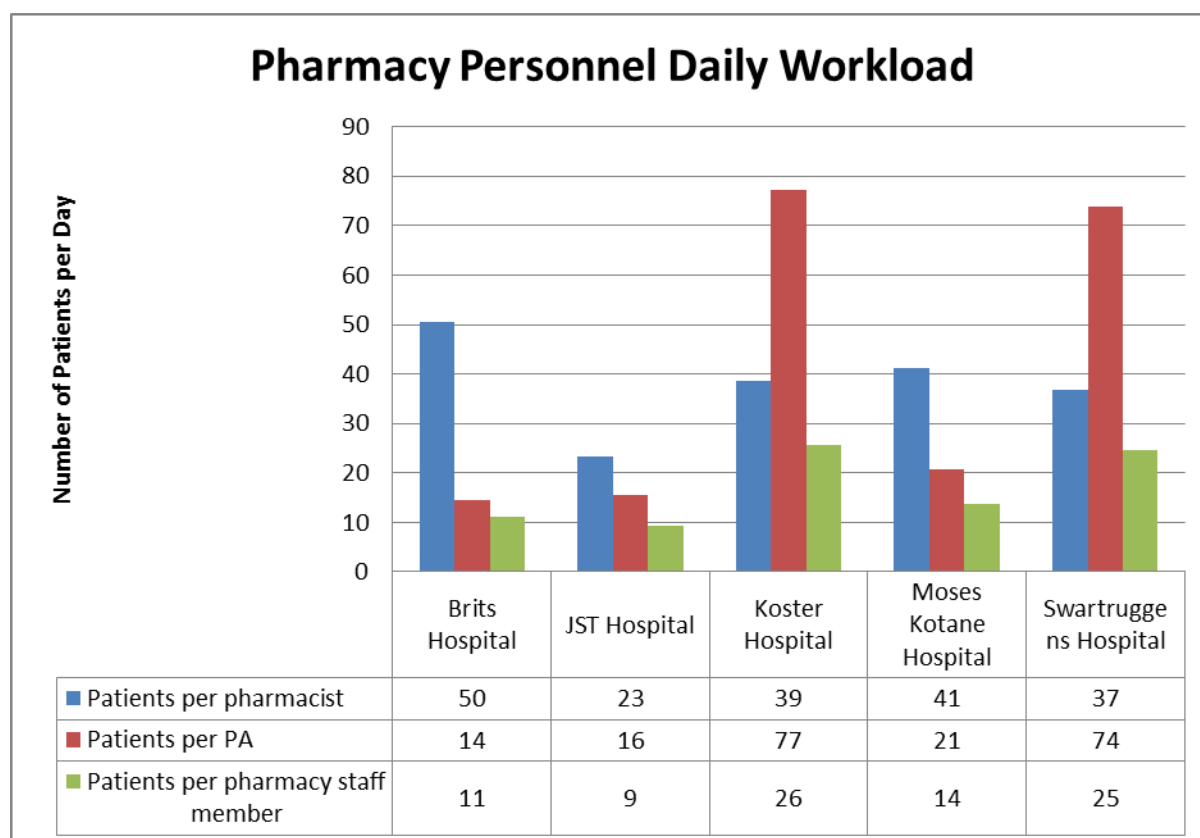


Figure 5. Pharmacy personnel daily workload at hospitals

Table 7. Pharmacy Personnel Patient Workload at CHCs

Facility	Patients per pharmacy personnel per day	Headcount	Pharmacy personnel
Bafokeng	2,379	57,095	3
Bapong	2,108	33,733	2
Boitekong	1,976	47,416	3
Letlhabile	2,296	55,106	3
Mabeskraal	-	24,043	0
Mathibestad	4,797	38,374	1
Mogwase	2,508	40,120	2
Pella	2,362	18,899	1
Syferskuil	-	28,777	0
Tlhabane	4,175	66,792	2

From table 7, it is noted that there are no pharmacy personnel at Mabeskraal and Syferskuil CHCs. Appointment of pharmacy personnel at these two CHCs is essential. The high workload at Mathibestad and Tlhabane CHCs indicates that additional pharmacy personnel are also needed here.

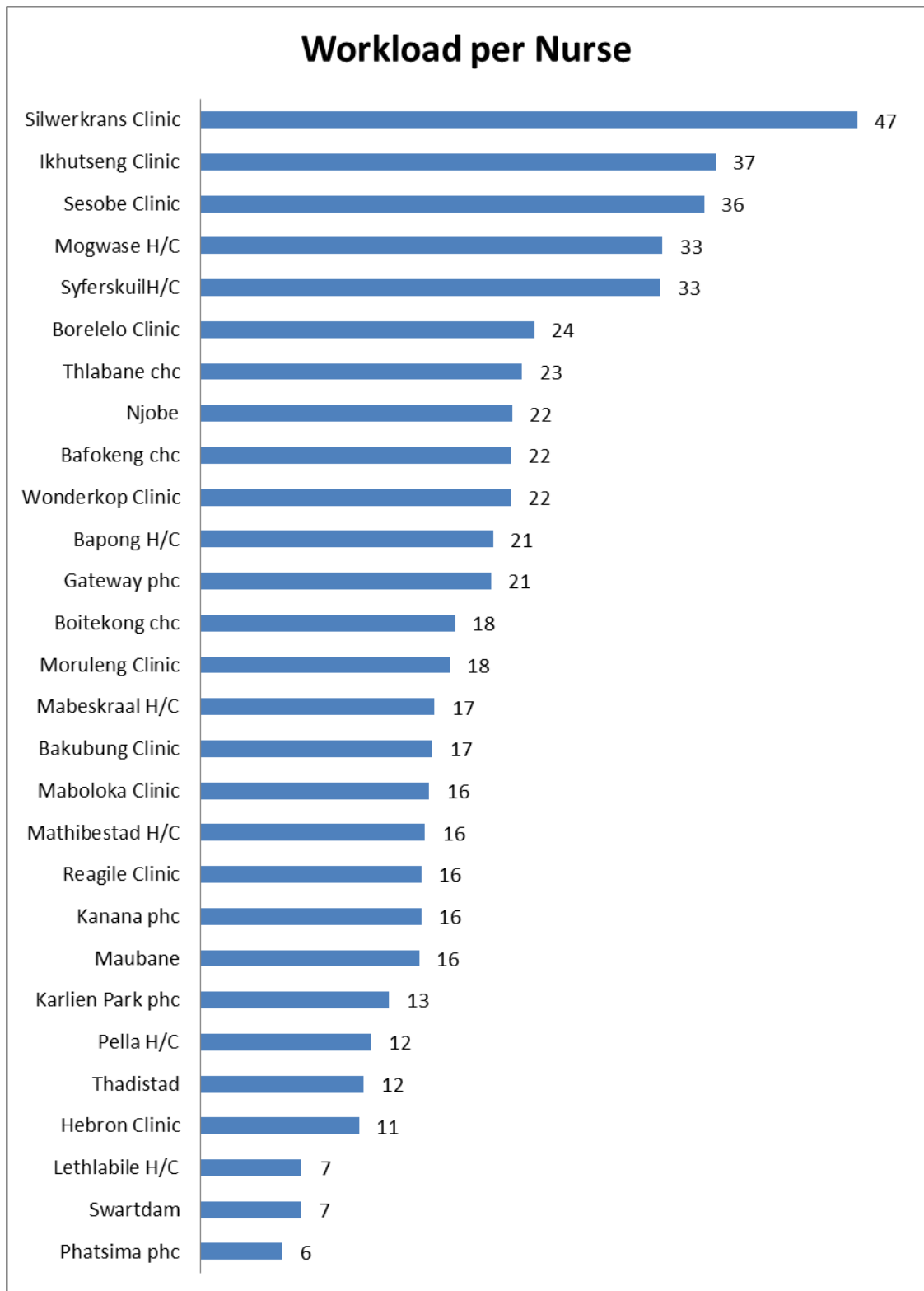


Figure 6. Number of patients per nurse per day at PHCs

Figure 6 depicts workload per nurse per day at CHCs and PHCs based on 22 working days per month.

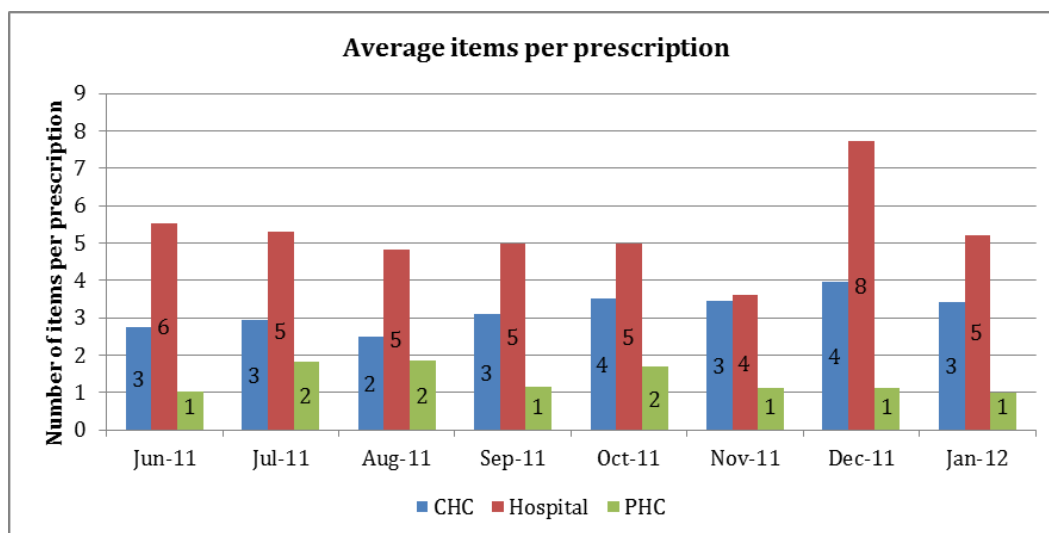


Figure 7. Items dispensed per prescription

The trend in terms of number of items per prescription (figure 7) at all levels of care is encouraging and must be monitored and maintained. At the hospital level, when the number of items per prescription is more than six, investigation is needed. Pharmaceutical and Therapeutics Committees have to provide guidance in this regard. The lower number of items per prescription at hospitals and PHCs in November 2011 reflects low availability after the depot switched to a new stock control system.

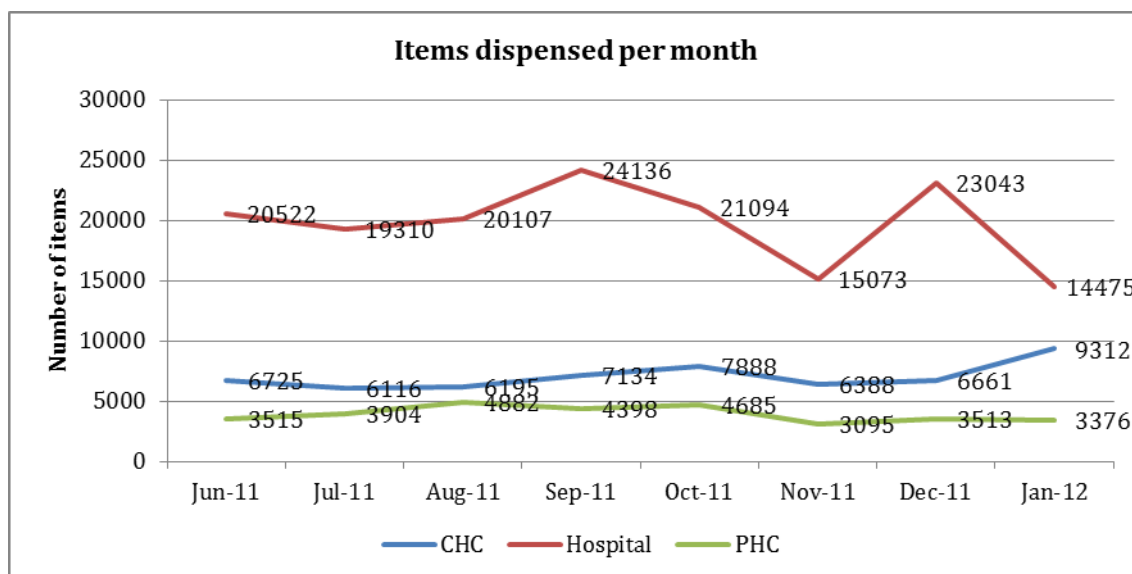


Figure 8. Average number of items dispensed per month per level of facility

Figure 8 depicts the average number of items dispensed at each level of care included in the survey. Comparative analysis could not be done because only 18 clinics within Bojanala were part of the survey. The data is, however, inclusive of all hospitals and CHCs within the

district. At the time of the survey, it was noted that more items are dispensed through hospital pharmacies than at CHCs.

Procedures and Stock Control

The Good Pharmacy Practice (GPP) rules in South Africa provide for having standard operating procedures (SOPs) available at different levels of health facilities. An assessment was conducted to determine the existence, nature, and use of SOPs to manage medicines and supplies at different facilities.

Receiving SOPs

Nearly all the facilities reported checking the number of boxes (97%) and stock received (94%) as part of the SOP for receiving medicines and supplies (figure 9). Only one CHC (Syferskuil) did not confirm checking the number of boxes and signing a driver's note. On the other hand, two PHCs (Njobe and Boitekong) did not check stock received against a delivery note. During the site visit (data collection day), all the boxes observed were sealed in a tamper-proof manner.

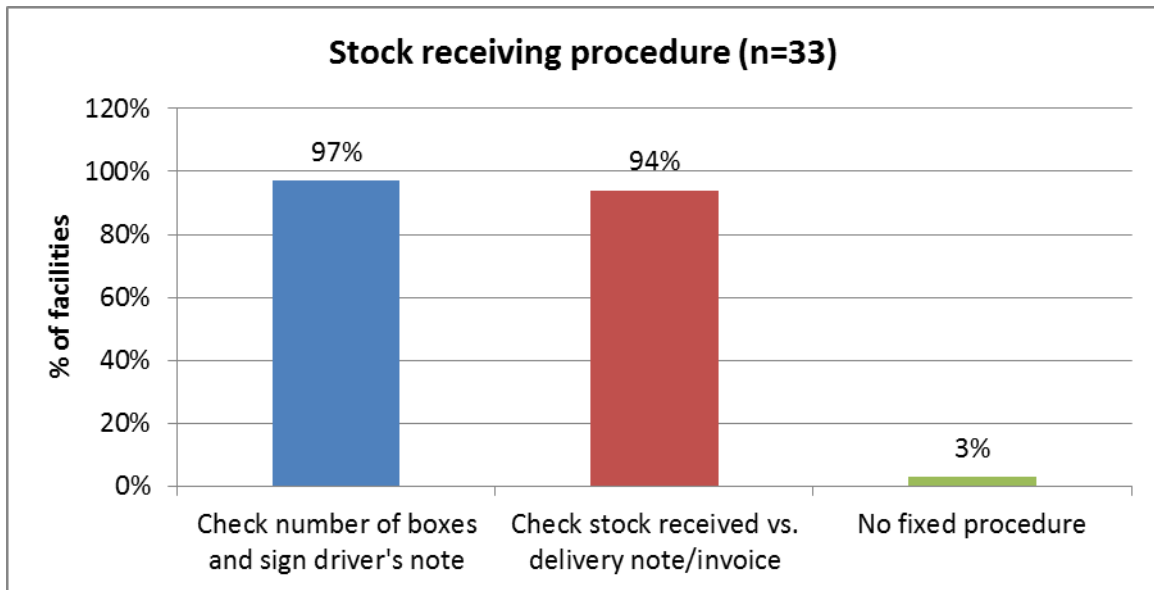


Figure 9. Procedure for receiving stock

Personnel Receiving Stock

Pharmacists were responsible for receiving stock at the hospitals, Moretele SD Pharmacy, and the CHCs, to a certain extent (table 8). Nurses were responsible for receiving stock at PHCs. All assistants at the hospital work under the direct supervision of a pharmacist. Pharmacists are responsible for checking the received stock against the invoices, and therefore adequate controls are in place.

Table 8. Personnel Responsible for Receiving Stock

Facility	Type of facility	Pharmacists	PA	Nurse
Bafokeng		1	1	
Bapong		1		
Boitekong			1	
Lethabile		1		
Mabeskraal	CHC			1
Mathibestad				1
Mogwase		1	1	
Pella				1
Syferskuil				1
Tlhabane		1		
Brits			1	
JST	Hospital	1	1	
Koster		1		
Moretele SD Pharmacy	Depot	1	1	
Moses Kotane	Hospital	1	1	
Swartruggens		1		

At all the PHCs included in the survey, stock is received by nurses.

Standard Operating Procedures

Figure 10 summarizes availability of SOPs for functions relating to pharmaceutical services. At facilities where SOPs were available, hard copies were not always presented during the assessment. Furthermore, most of the SOPs were last reviewed in 2002. This is not ideal because SOPs play a key role in handling medicines and supplies (ordering, receiving, storage, stocktaking, disposal, etc.). A detailed list of SOPs available per facility is provided as annex C.

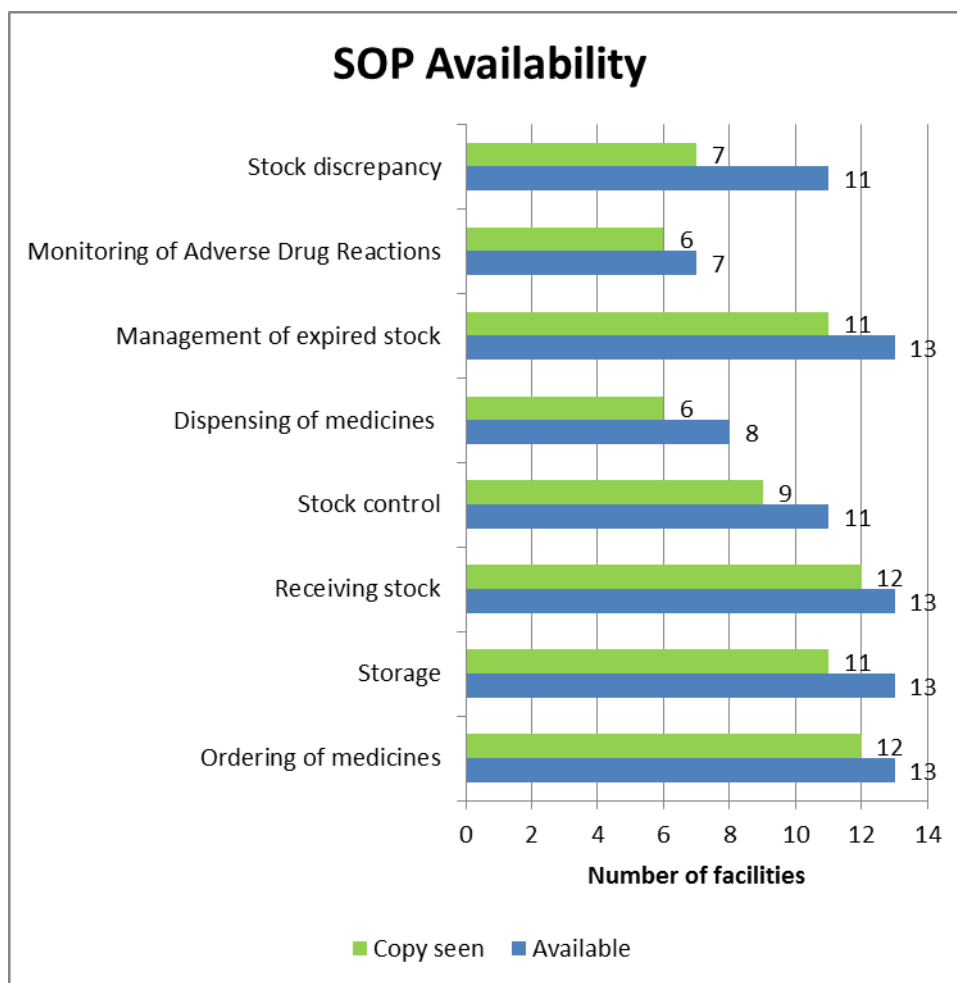


Figure 10. Availability of SOPs

Inventory Management Systems

Computerised inventory management systems were available at all hospitals assessed and Moretele SD Pharmacy. In addition to these electronic systems, JST and Moses Kotane also had stock cards in use.

Stock cards were the main form of inventory management system used at PHCs and CHCs (table 9). At the time of the audit, Mmabatho Medical Stores was out of stock cards and it was noted that many clinics had improvised by making their own stock cards.

Table 9. Noncomputerized Inventory Management Systems

Type of facility	Total facilities	Stock cards	Minimum and maximum levels
CHC	10	10	7
Hospitals and SD pharmacy	6	2	3
PHC	18	17	12
Total	34	29 (85%)	22 (65%)

Good Pharmacy Practice (GPP) Compliance

Figure 11 summarizes the proportion of health facilities assessed that were compliant with a select number of GPP rules. The majority of facilities (>75%) were compliant with the rules relating to fridge temperature and contents, stock placement on the floor, and locking of bulk store rooms. Only 44% of facilities (15) reported that room temperatures were checked twice a day.

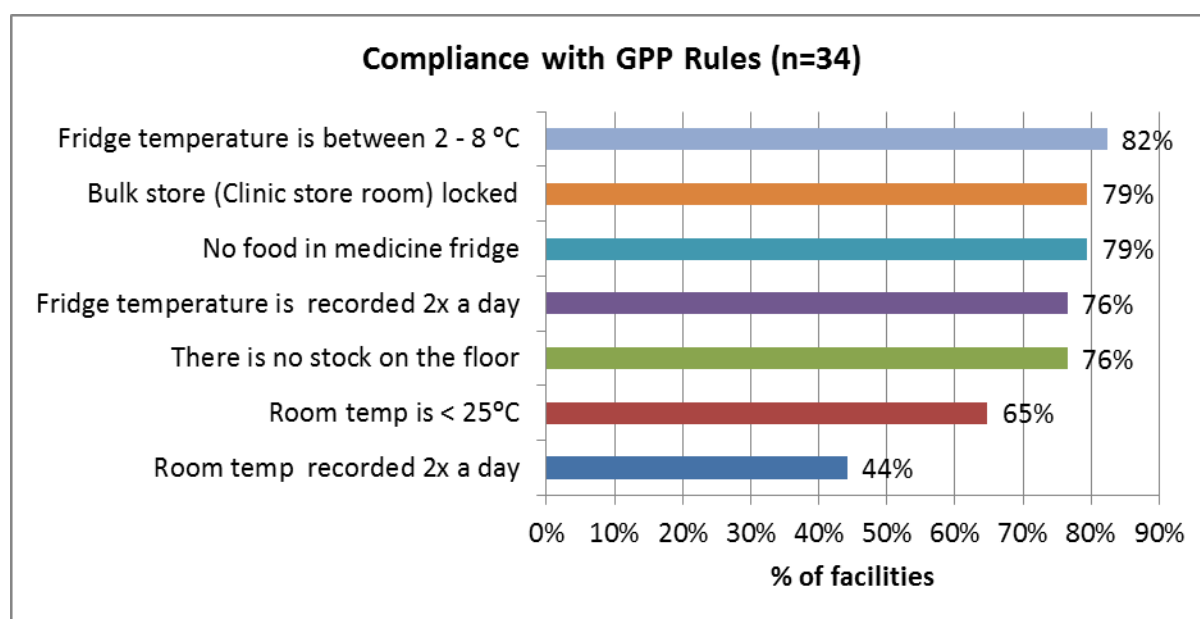


Figure 11. Facility compliance with GPP rules

A breakdown of the findings is provided in table 10. Only 22 of the facilities assessed had a room temperature that was less than 25 °C.

Table 10. Compliance with GPP Rules per Type of Facility

Standard to be met	Moretele SD				Total (n = 34)
	CHC (n = 10)	Pharmacy (n = 1)	Hospital (n = 5)	PHC (n = 18)	
There is no stock on the floor	9	0	4	13	26
Room temperature is below 25 °C	7	1	4	10	22
Room temperature recorded twice a day	6	0	4	5	15
Fridge temperature is between 2 and 8 °C	8	0	5	15	28
Fridge temperature is recorded twice a day	8	0	5	13	26
There is no food in the medicine fridge	7	0	5	15	27
Bulk store (clinic store room) locked	8	1	2	16	27

At the time of the audit, the backup generator at the Moretele SD Pharmacy was away for repairs and because of regular power outages, the refrigerators and thermolabile stock were stored at the SD office and monitored on a regular basis.

Stock Ordering and Delivery Practices

Inappropriate ordering practices can contribute to either stock outs or the accumulation of excess stock. Part of the assessment was to determine the frequency of ordering as well as lead times (time elapsed between placing of orders and receipt of stock).

Table 11 provides a summary of the frequency with which orders were placed by different types of facilities as well as the corresponding lead times. Hospitals and the Moretele SD Pharmacy placed orders at the depot on a weekly basis with a corresponding lead time equal to or less than seven days.

The majority of CHCs and PHCs placed their orders every second week and received deliveries within seven days. Two CHCs (Mathibestad and Syferskuil) and three PHCs (Maubane, Njobe, and Tladistad) placed orders monthly and received their stock within 14 days.

Table 11. Ordering Frequency and Lead Times

Type of facility	Lead time			Ordering interval time		
	< 7 days	7 days	14 days	7 days	14 days	30 days
CHCs		6	4		8	2
PHCs	2	9	7	1	14	3
Hospitals	3	2		5		
SD pharmacy	1			1		

Moretele SD Pharmacy had a schedule of one order per month per facility and is not in line with good MSM practice. This may have contributed to the increased number of emergency orders placed.

Emergency Stock Deliveries

For the purpose of this survey, emergency delivery is defined as orders placed outside normal delivery schedules. Out of the 34¹ facilities that responded to this question, only 4 reported not receiving any emergency deliveries (figure 12). The majority (64%) received 1 to 3 emergency deliveries per month. Reasons normally cited for placing emergency orders are:

- Out of stock from depot/hospital
- Poor stock management at facilities

¹ Sesobe clinic data was not available for this calculation

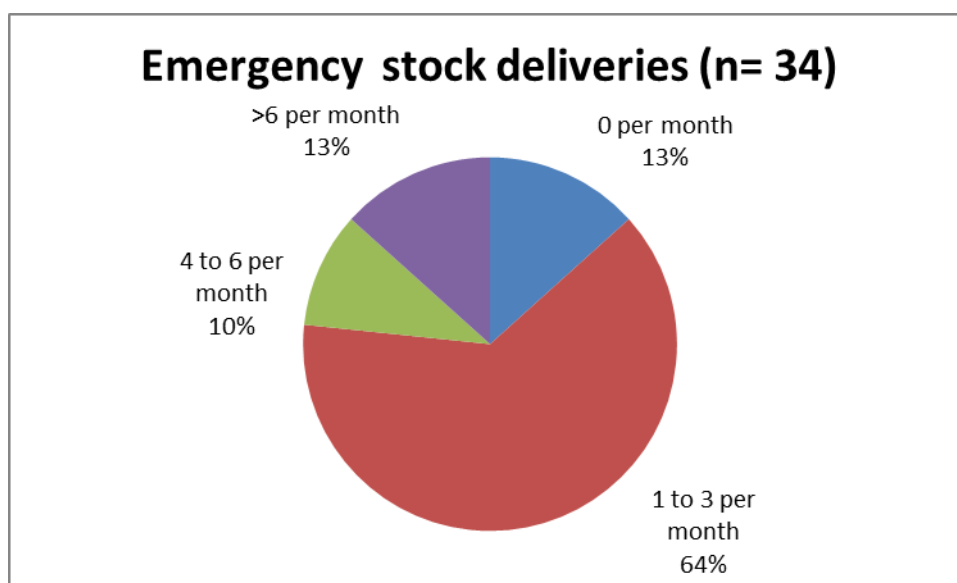


Figure 12. Emergency stock deliveries

Stock Counts

The assessment covered the period June 2011 to January 2012 (eight months). With regard to physical stock counts at the PHC level, a total of 7 (50%) facilities reported a physical stock count for each month. Tables 12 and 13 provide a breakdown of the number of stock counts conducted by each of the PHCs and CHCs, respectively.

Table 12. Frequency of Stock Counts (PHCs)

Facility	Number of physical stock counts
Bakubung	Missing data
Borolelo	Missing data
Gateway	3
Hebron	3
Ikhutseng	0
Kanana	1
Karlien Park	8
Maboloka	8
Moruleng	Missing data
Maubane	8
Njobe	8
Phatsima	5
Reagile	5
Sesobe	4
Silwerkrans	8
Swartdam	8
Tladistad	8
Wonderkop	Missing data

Table 13. Frequency of Stock Counts (CHCs)*

Facility	Number of physical stock counts
Bafokeng	8
Bapong	0
Boitekong	1
Syferskuil	8
Lethabile	3
Mabeskraal	0
Mathibestad	8
Pella	8
Tlhabane	0
Mogwase	Missing data

*Bapong, Mabeskraal, and Tlhabane did not report any stock counts during this period.

NW Pharmaceutical Depot Assessment

To gain a more holistic understanding of factors relating to medicine supply within Bojanala district, an assessment was also conducted at the pharmaceutical depot. The assessment focused on:

- SOPs related to schedule of deliveries, communication with the districts, stock discrepancies, dues out/backorders, overstock, stock nearing expiry dates, etc.
- Budget allocated to facilities
- Inventory management systems in place
- Medicine distribution from hospitals to clinics
- Stock availability during the study period per month

SOPs at the Depot

The depot had a weekly delivery schedule for all hospitals in the province.

At the time of the assessment, the following SOPs were not in place at the depot.

- SOP for communication with the districts or facilities
- SOP for stock discrepancies
- SOP for dues out/backorders, overstocked, stock nearing expiry dates

Budget Allocated to Facilities

- The budgets for health facilities are allocated and managed at the district level
- The depot (Head Office Finance Unit) journalises stock issued from facilities
- Provincial Pharmaceutical Services is not involved in the allocation of the medicines budget to the districts. Pharmacists are also not involved in the allocation of pharmaceutical budget for facilities within their respective districts, although they must monitor expenditures.

Inventory Management System

- Although the depot switched from the PDSX stock management program to the Oracle Drug Supply Management System (DSMS) in November 2012, the depot staff was still becoming familiar with it at the time of the assessment.
- All hospitals had switched from PDSX to RxSolution, a system that was provided by Strengthening Pharmaceutical Systems (SPS)
- Clinics are using stock cards that are available through the depot

Medicine Distribution from Hospitals to Clinics

Hospitals prepared orders for clinics which were delivered twice a month by using the services of small, medium, and micro enterprises (SMMEs). Contracts for SMMEs were awarded per district and most of them had expired during the time of the study.

SMMEs were, however, still supplying the respective clinics on a month-to-month contract until the new contract is awarded. The province, through the district pharmacists and Provincial Pharmaceutical Services, had initiated the process of drafting the generic specification for medicine distribution from hospitals to all clinics.

Stock Availability during the Study Period per Month

It was not possible to obtain data relating to stock availability during the review period.

Stock Availability and Inventory Management at Institutions and Facilities

For the purpose of this assessment/audit, stock was deemed available if a positive balance of usable stock was found on shelves or in consulting rooms.

During the site visits (data collection), the availability of pharmaceuticals and surgical supplies was determined. For each item, the inventory management system (electronic or non-computerised) was checked for accuracy. At each facility, data collectors also checked whether the inventory management tools listed maximum and minimum stock levels for each item.

Stock Availability and Information

Availability of information (proper recording) was checked for 2,022 items of which 1,463 (71%) were available on the day of the visit. The percentage availability at different facilities varied significantly from 47% to 96% (table 14). On average, only half of the stock cards assessed had accurate information. The proportion of items for which minimum and maximum levels were used averaged only 20% across all facilities. A breakdown of this information is provided per facility in the sections that follow.

Table 14. Stock Availability and Information on the Day of Site Visit (Data Collection)

Facility name	Type of facility	Availability			Accurate stock cards		Max/min	
		Total items	# of items	% availability	# of items	% with accurate info	# of items	% with max min
Mabeskraal	CHC	57	35	61	38	67	4	7
Tlhabane		57	37	65	27	47	0	0
Mogwase		57	40	70	31	54	39	68
Mathibestad		57	40	70	35	61	19	33
Syferskuil		57	43	75	17	30	3	5
Pella		57	44	77	44	77	28	49
Boitekong		57	46	81	28	49	0	0
Bapong		57	47	82	23	40	24	42
Bafokeng		57	49	86	39	68	27	47
Lethabile		57	51	89	45	79	50	88
Moretele		SD pharmacy	71	56	79	10	14	0
Brits	Hospital	71	52	73	24	34	0	0
Swartruggens		71	57	80	36	51	0	0
Koster		71	60	85	28	39	0	0
Moses Kotane		71	61	86	10	14	0	0
JST		71	68	96	23	32	0	0
Hebron		57	27	47	35	61	2	4
Maboloka		57	28	49	31	54	7	12
Borelelo		57	30	53	34	60	0	0
Reagile		57	31	54	31	54	0	0
Ngobi		57	33	58	35	61	3	5
Tladistad		57	33	58	36	63	19	33
Moruleng	PHC	57	34	60	35	61	15	26
Bakubung		57	35	61	32	56	12	21
Ikhutseng		57	36	63	27	47	1	2
Silverkrans		57	36	63	41	72	14	25
Kanana		57	38	67	29	51	0	0
Sesobe		57	39	68	29	51	8	14
Wonderkop		57	41	72	26	46	21	37
Gateway		57	46	81	21	37	5	9
Karlien Park		57	47	82	25	44	23	40
Swartdam		57	47	82	41	72	22	39
Phatsima		57	48	84	20	35	15	26
Maubane	57	48	84	28	49	19	33	
Total		2,022	1,463	–	1,014	–	–	–
Average		–	–	72	51	380	20	–

Stock Availability at Hospitals

Four hospitals had greater than 80% availability with the exception of Brits Hospital (73%) and Moretele SD Pharmacy (79%; figure 13).

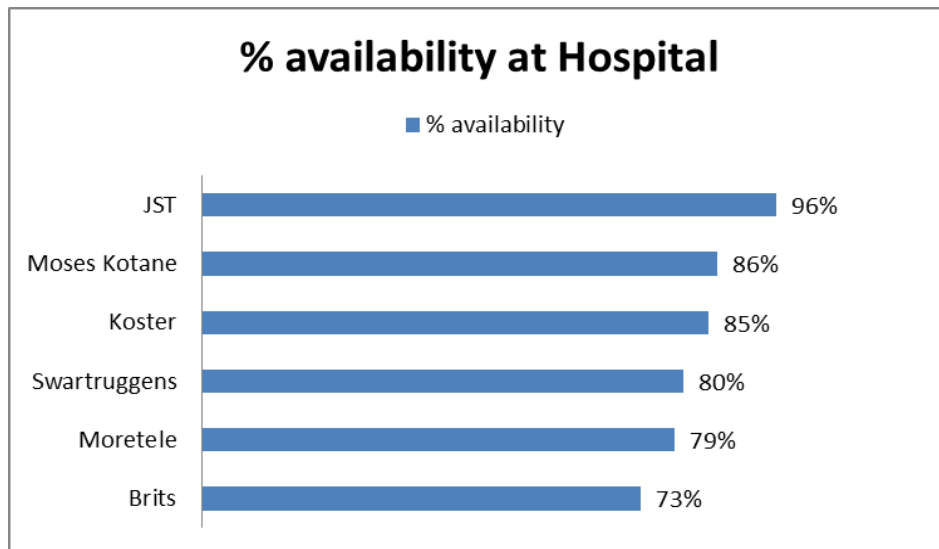


Figure 13. Stock availability at hospitals

Stock Availability at CHCs

Six of the CHCs assessed had less than 80% of stock available on the day of the visit (figure 14). Mabeskraal and Tlhabane CHCs had the lowest levels of availability at 61% and 65%, respectively.

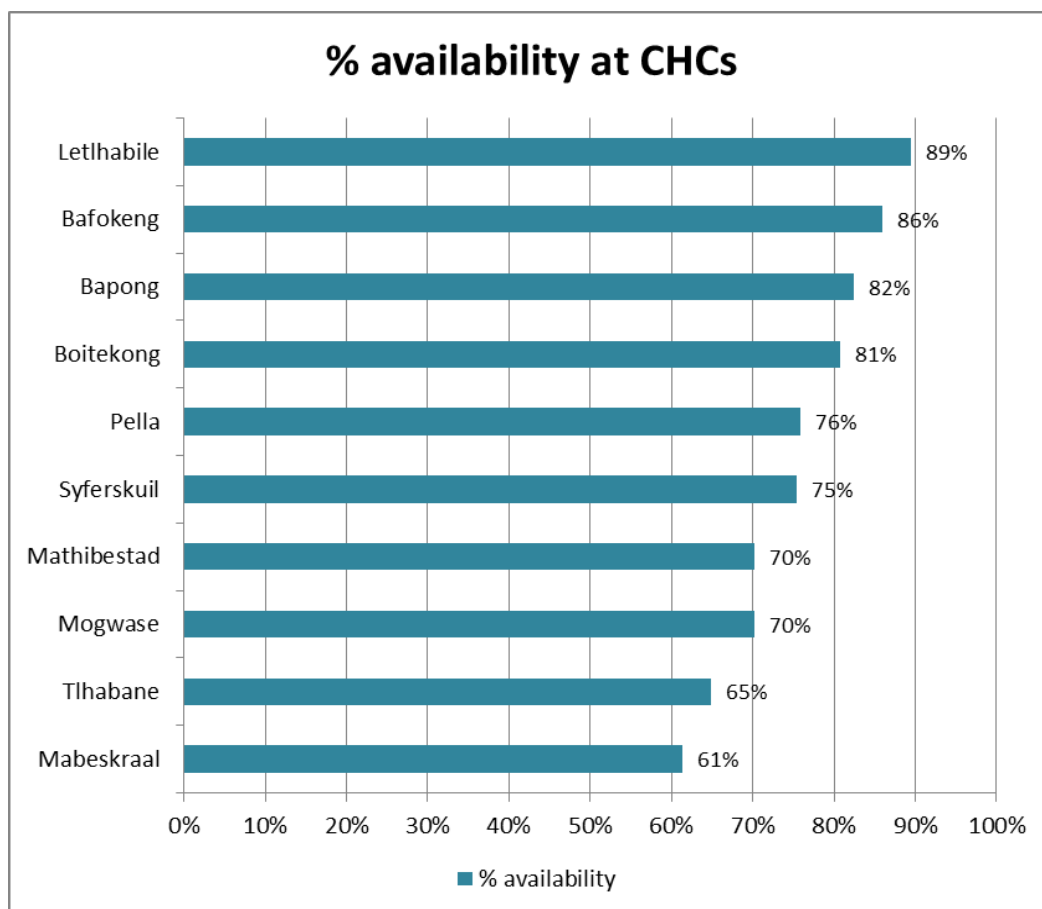


Figure 14. Stock availability at CHCs

Stock Availability at PHC Clinics

Stock availability on the day of the visit was below 80% for 13 out of the 18 PHCs that were assessed (figure 15).

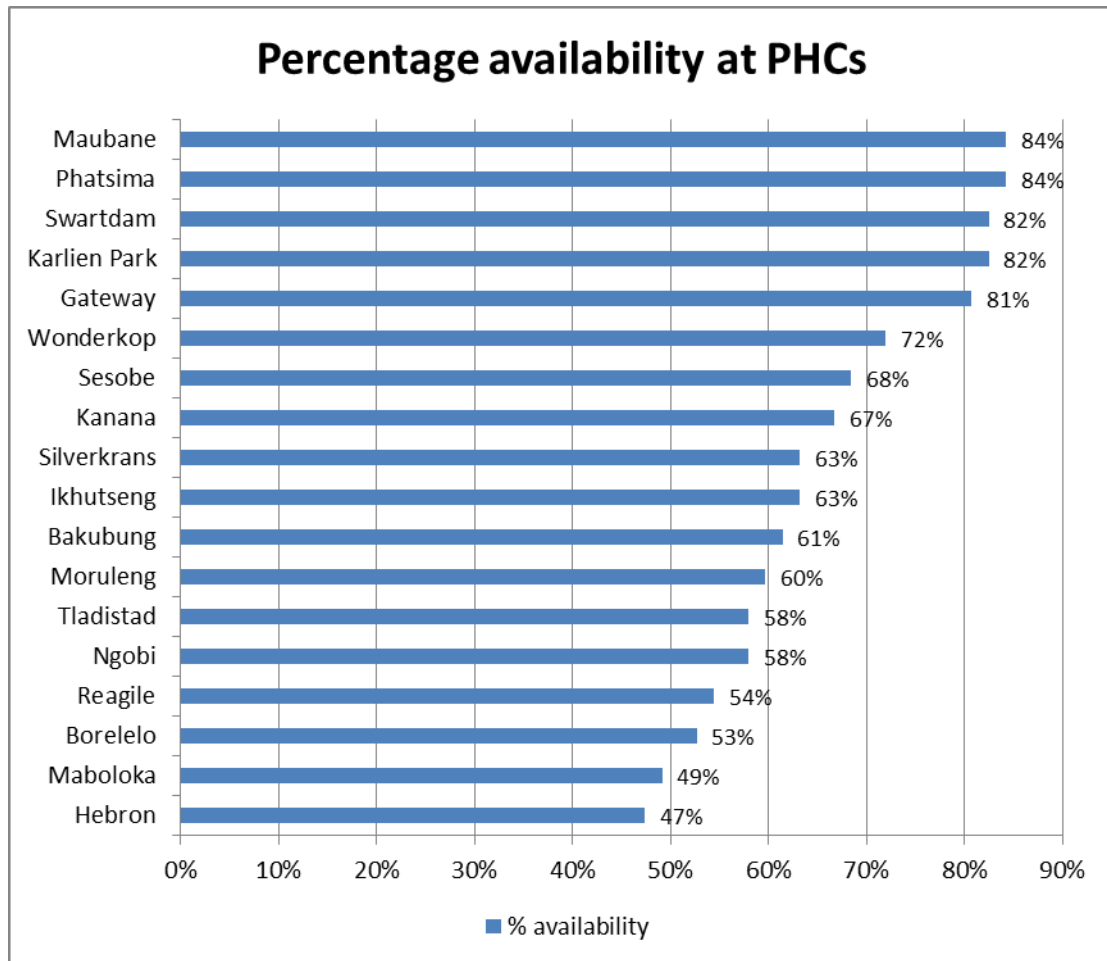


Figure 15. Stock availability at PHCs

Inventory Management at Hospitals and the SD Pharmacy

Information contained in the inventory management systems at all hospitals, however, consistently did not match the number of items on the shelf (stock accuracy). The percentage of items for which this information was accurate ranged from 14% at Moses Kotane to 51% at Swartruggens Hospitals (figure 16). Survey showed that there were no minimum/maximum stock levels in place at the hospitals and the SD pharmacy.

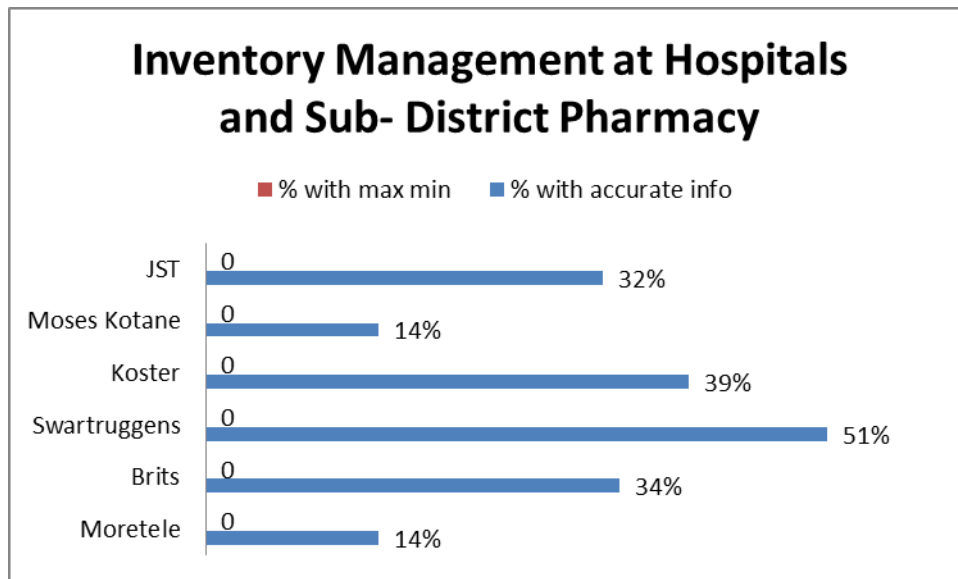


Figure 16. Inventory management at hospitals and SD pharmacy

Inventory Management at CHCs

The majority of CHCs scored quite low regarding the accuracy of information in inventory management systems (stock cards). Letlhabile (79%) and Pella (76%) CHCs had the highest proportion of items whose information was reflected correctly on stock cards (figure 17). The percentage of accurate information available was below 70% for the rest of the CHCs ranging from 30% to 68%. The correct use of maximum and minimum order levels also seems to be a matter of concern.

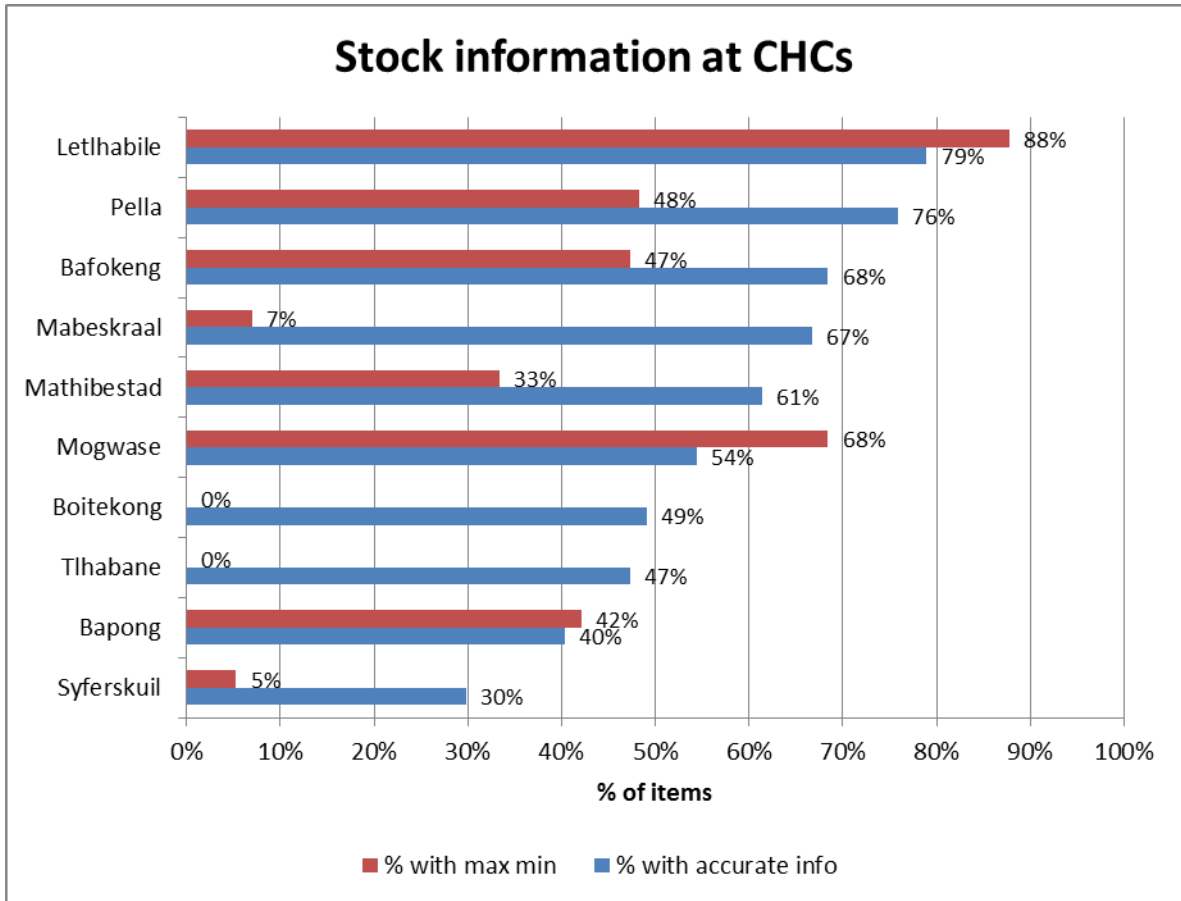


Figure 17. Inventory management at CHCs

Inventory Management at PHCs

Similar to the trend in CHCs, all PHCs scored below 80% for the accuracy of inventory management information (figure 18).

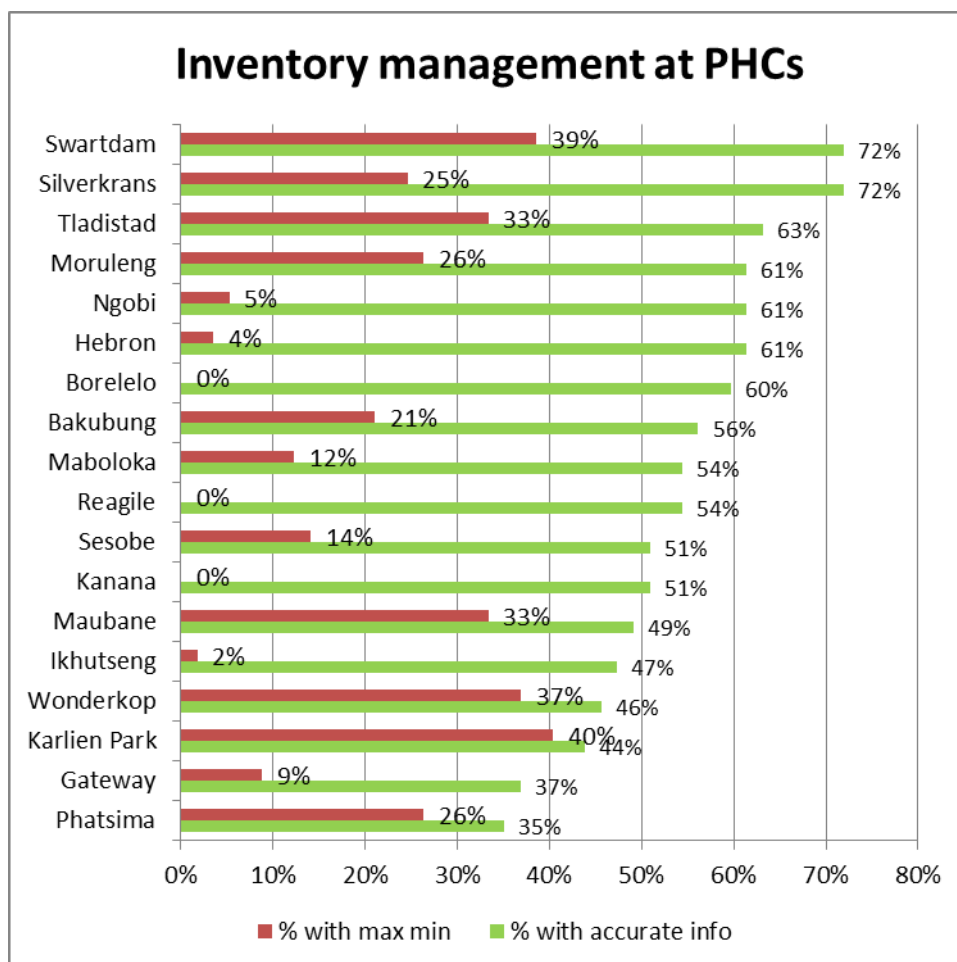


Figure 18. Inventory management at PHCs

Availability of Stock Records

Part of the assessment sought to determine trends in availability of pharmaceuticals during the assessment period (June 2011 to January 2012). This proved to be a challenge as not all the necessary records were available on stock cards. Table 15 shows the proportion of expected records that were actually available at the time of the assessment.

The total expected number of records was calculated by multiplying the number of tracer items assessed by eight (months). Total available records were a product of the number of records available per facility and the number of months. Record keeping is an area that requires particular attention in improving MSM within these facilities.

Table 15. Stock Records within PHCs and CHCs (June 2011-January 2012)

Facility name	Type of facility	Total records available ²	% of available records
Bafokeng	CHC	64	14
Bakubung	PHC	3	1
Bapong		88	19
Boitekong	CHC	74	16
Borolele		46	10
Boruleng		54	12
Gateway		59	13
Hebron		26	6
Ikhutseng		24	5
Kanana		12	3
Karvien Park	PHC	91	20
Lethabile		338	74
Mabeskraal	CHC	36	8
Maboloka	PHC	64	14
Mathibestad	CHC	151	33
Maubane	PHC	184	40
Mogwase	CHC	118	26
Patsima	PHC	39	9
Pella	CHC	52	11
Reagile		82	18
Sesobe		82	18
Silverkrans	PHC	142	31
Syferskuil	CHC	148	32
Tlhabane		0	0
Wonderkop	PHC	65	14
Total		2042	18

Patient Care

A total of 905 patients and care givers attending the health care facilities being assessed were interviewed to share their experiences. Interviews were conducted at all the facilities with the exception of the pharmaceutical depot in Mmabatho and the Moretele SD Pharmacy. Most of the patients interviewed were in the 17-to-60 age range (figure 19); 72% were female and 28% male. Chronic patients who collected their medication monthly accounted for 74% of the 810 who responded to the question on number of visits to the facilities.

² The total number of expected records was 456 for all facilities with the exception of Pella CHC which had 464.

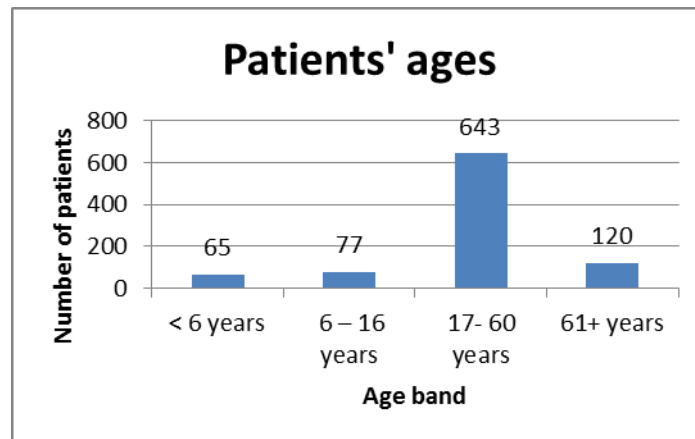


Figure 19. Patients' age groups

Figure 20 provides a breakdown of the information that patients said was provided to them by the person who dispensed their medication. The majority of patients were informed of the appropriate dose and dosing interval (89%) as well as the illness for which they were being treated (83%). Less than half of the patients were told about a maximum dose (45%), side effects (39%), and what to do with left over medicine (21%).

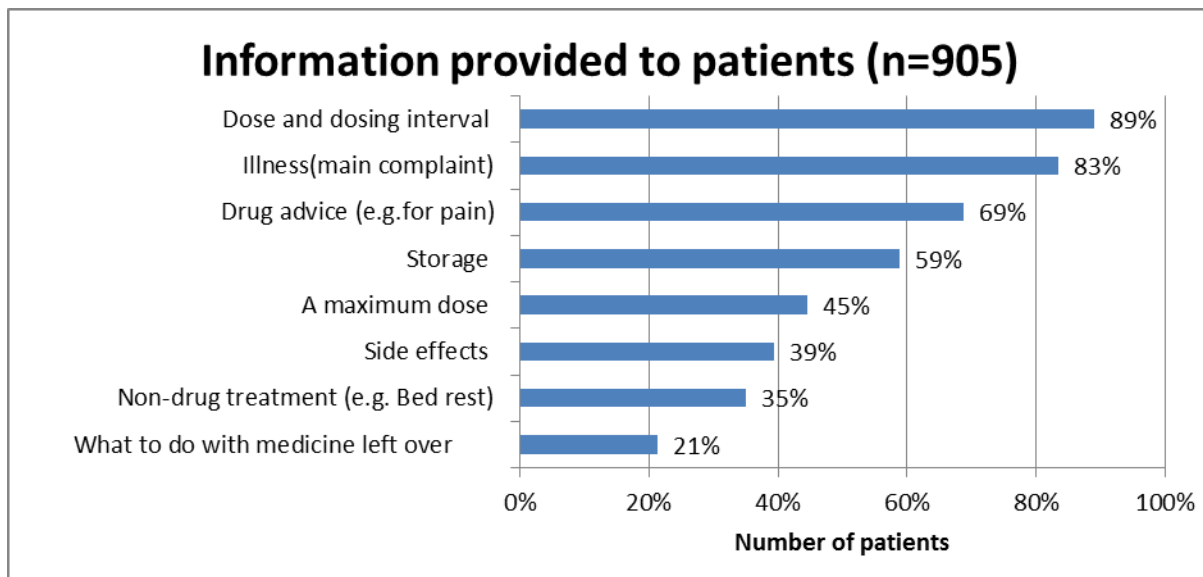


Figure 20. Patient counseling

Part of the interview sought to determine the most common reasons for patients returning to a facility (figure 21). Availability of good services, close proximity to home, and collection of refilled or “repeat” medicines were the most frequently cited reasons.

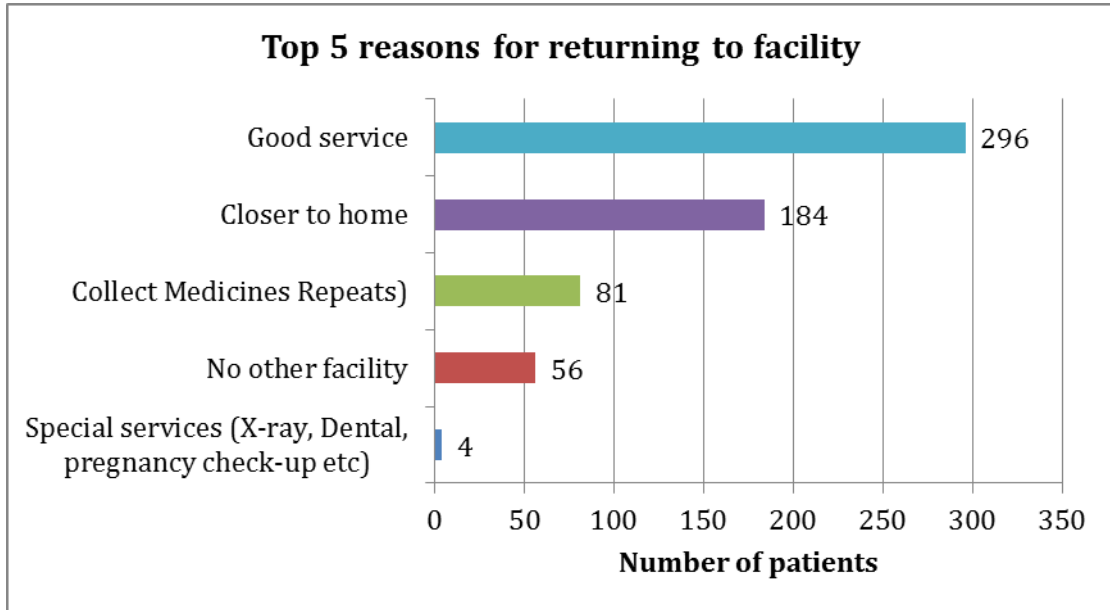


Figure 21. Reasons for returning to a facility

Patients were also asked to indicate reasons for choosing not to return to the facility. Only 32 individuals responded. Of these, 22 cited poor service (no medicines, staff attitude, long waiting times, etc.) as the main reasons for not returning to a facility (figure 22).

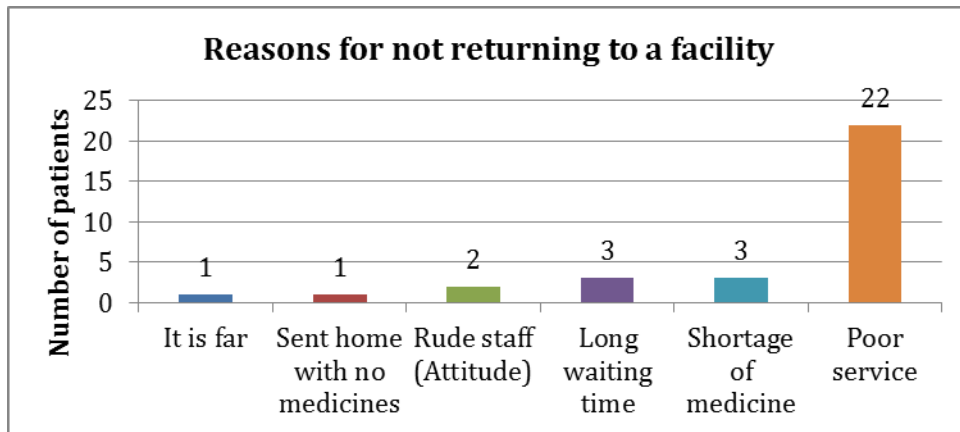


Figure 22. Reasons for not returning to a facility

A total of 662 patients indicated areas where they felt improvements could be made in the respective facilities (figure 23).

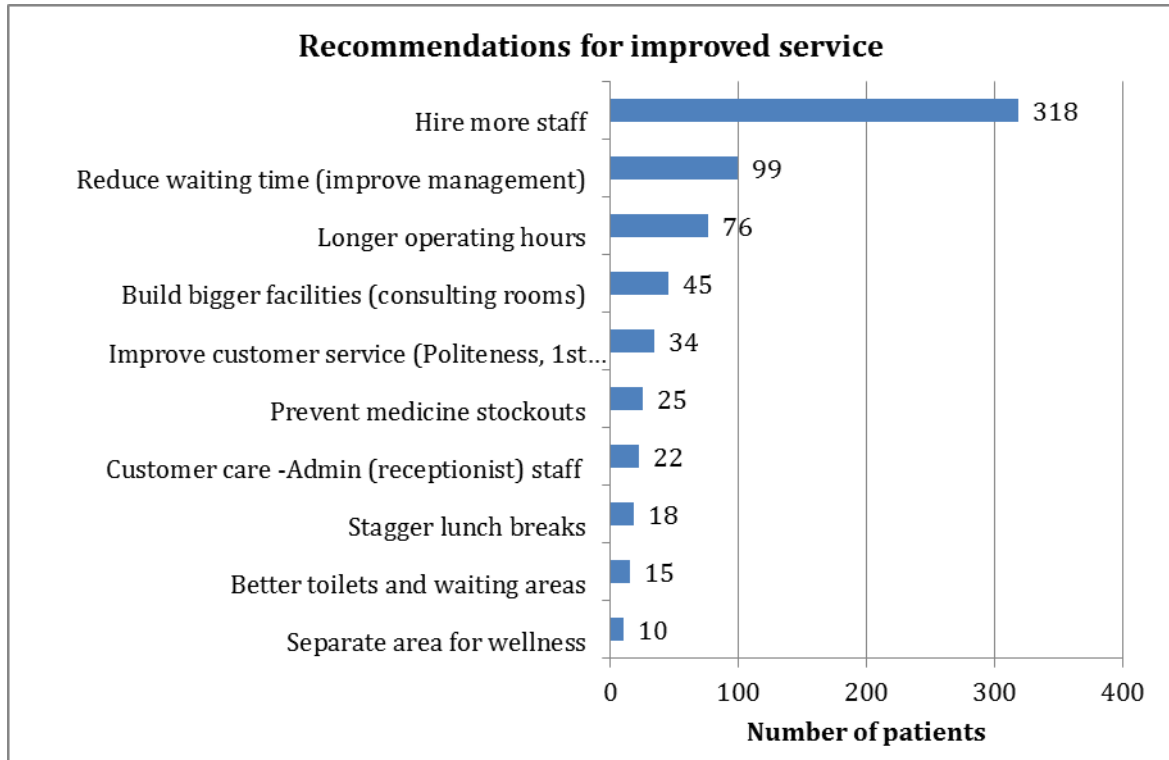


Figure 23. Patient recommendations for improvement

DISCUSSION

Human Resources

Assessment on HR was conducted in all participating facilities, where available numbers of personnel were reported. Although some facilities indicated a need for extra personnel, conclusions on actual vacancy rates could not be reached because there was no copy of the organizational structure for verification at the time of the audit.

The audit showed that 78.72% (37/47) of PAs are considered part of the hospitals' staff and the remainder (21.28%; 10/47) on the CHCs' staff.

Although there is a need for PAs at PHC facilities to fulfil MSM duties, 52% of nursing personnel who are practising without PHC qualification need to be mentored on principles of MSM, which could contribute towards better stock management.

More posts are needed at CHCs (33) compared to PHCs (24). The additional staffing may not be justifiable, but the figures reported indicate the workload currently being experienced by the staff. The suggestion is for the Work Study Directorate to re-evaluate the workload in health facilities and conduct thorough assessments on HR to align with current practices. All facilities keep records of patients (daily patient load) seen per month, which can be further interrogated in conjunction with other indicators to establish staffing norms.

Of the participating facilities assessed, 70 nursing and pharmacy personnel were reported to have been trained on MSM; those trained could mentor their co-workers under the supervision of a pharmacist. Facilities that are doing well can be used as a benchmark to promote good practices within the district.

Service Provision

This subsection dealt with the number of patients seen per month, number of items dispensed per prescription, and the number of prescriptions dispensed per month. The purpose was to compare the staff allocated to render pharmaceutical services to the actual workload. Lack of proper records for the period of interest prevented a conclusion in terms of workload.

It was noted that hospitals were dispensing more items than the CHCs and PHC clinics combined. This could be due to inadequate referral processes, patient preferences, or non-availability of supplies at the CHCs and clinics. Facilities with a higher level of care would have medication and diagnostic tools available that clinics would not. Not all patients can be down-referred as the service needed to treat or monitor some patients is not available at these facilities, e.g., renal care.

Procedures and Stock Control Systems

An investigation was undertaken to establish the existence, nature, and use of SOPs and the availability and use of inventory management tools (stock cards or computers).

An SOP is a set of instructions or steps that must be followed to complete a specific job or task safely, with no adverse impact on the environment, and in a way that maximises operational and production requirements (GPP, 2010).

From the results, it is clear that 79% (27/34) of facilities did not have SOPs for managing stock including monitoring of adverse drug reactions (ADRs). During the assessment, most of the stock transactions in the PHC facilities were inconsistent, making it difficult to establish the availability of stock during the period of interest (June 2011-January 2012). Focus should therefore be directed to stock control measures, which are linked directly to shortages or excess stock that can lead to expiry of medicines. District Pharmaceutical Services could assist in the development of PHC SOPs, mentoring PHC facility managers and ensuring implementation.

With regard to monitoring ADRs, some hospitals within the district have been monitoring ADRs for more than three years, a lesson learned that can be duplicated and cascaded to other facilities.

NW Pharmaceutical Depot

All hospitals and some SD pharmacies (Moretele and Matlosana) order their medicines and medical supplies from the Pharmaceutical Depot based in Mahikeng. It was therefore important to assess the availability of medicines and supplies from the depot, the budget, procedures, and systems in place.

It was not possible to obtain data relating to stock availability during the review period because of a new computerised system being implemented at the depot. Therefore, a link between a shortage of stock at the facility level and its availability or non-availability could not be established. Annex D provides information on the number of issues to facilities in the province on items assessed during the review period.

The lack of important SOPs on communication with the facilities, stock discrepancies, dues out, backorders, overstock, and stock nearing expiry dates could have affected the delivery of commodities in one way or another.

The budget for pharmaceuticals and supplies is being handled at the district level with little or no input from the pharmacists. One could not be held accountable if supplies were not provided due to lack of funding.

The switch from one computerised system to another (in November 2010), to which staff is still becoming accustomed, could have affected the delivery of commodities or impacted availability.

Stock Availability

Stock availability assessments were conducted in all 34 facilities. An item was deemed available if there was a positive balance of usable stock counted on the shelf on the day of the visit. Stock movement transactions in the stock control system (manual or computerised) were used to determine retrospective stock availability in selected facilities. Since most

facilities did not have a complete record of stock transactions, a conclusion could not be deduced on stock availability during the period June 2011 to January 2012.

According to the assessment, recorded stock availability was 83% (354/426) at hospitals (including Moretele SD Pharmacy), 76% (432/570) at CHCs and 66% (67/1026) at PHCs, which is way below the 96% provincial target. This prompts serious actions from both District Pharmaceutical Services and the PHC directorate.

Patient Care

Patients or their care givers were interviewed to share their experiences after attending the facility of their choice. The inputs of the patients are important for quality improvement in service delivery. It was encouraging to note that approximately 89% of those interviewed knew about the dose and dosing interval and that 83% were aware of their illness. Of concern, however, was that only 39% of patients knew about side effects.

The recommendations for service improvement suggested by the patients, such as hiring more staff, reducing waiting time, extending working hours, and building bigger facilities, would need attention.

CONCLUSION

The aim of the study was to conduct an assessment of stock availability in 34 health facilities in the Bojanala District, identify gaps in MSM practices, and provide recommendations. The National Core Standards list of tracer medicines and surgical supplies was used to assess availability at all facilities. The period of interest for the assessment was June 2011 to January 2012.

It was a challenge to ascertain the availability of medicines and supplies during the period of interest because most facilities did not have a complete record of stock transactions. However, on the days of assessment (facility visits), the percentage availability was 66% at PHCs, 76% at CHCs, and 83% at hospitals.

RECOMMENDATIONS

Human Resources

Because of poor stock management in most of the facilities assessed, we recommend addressing these matters as follows:

- Regular support from the hospital pharmacy where PHC facilities are attached to
- Creation of PA posts in PHC facilities
- Recording PHC facilities with full time PAs with the SAPC
- Mentoring clinic supervisors in monitoring and evaluation of pharmaceutical indicators relating to stock management
- Mentoring and in-service training by supporting hospital and CHC pharmacy personnel to ensure best practices at all facilities as stipulated in Good Pharmacy Practices
- Licensing pharmacies at CHCs with full-time pharmacists by the Department of Health and recording with the SAPC

Service Provision

- Implement inventory monitoring tools, such as stock cards
- Strengthen down-referral systems
- Demand proper recording and maintenance of stock control systems by all facilities in accordance with Public Finance Management Act regulations and procedures
- Institute minimum/maximum stock levels for most products to help alleviate stock outs

Procedures and Stock Control Systems

- Review, develop, and implement SOPs at the depot, hospitals, SD pharmacy, CHCs, and PHCs

Pharmaceutical Depot

- Strengthen communication between depot and facilities
- Maximize usage of the computerized system for reports (issues, backorders, supplier performance, etc.), estimation of needs, and stock availability reporting

Stock Availability

- Improve adherence to stock control systems and stock availability reporting at the district level by training and mentoring PHC managers on the importance of stock control management
- Establish, implement, and maintain stock usage levels (minimum/maximum) for ordering purposes

Patient Care

- Consider implementing recommendations as stated by the patients during interviews, such as reducing waiting time and counselling on side effects
- Strengthen counselling patients about ADRs and educating them to report ADRs

ANNEX A. FACILITIES ASSESSED

Sub-District	Facility
Kgetleng	Borolelo Clinic
	Koster Hospital
	Reagile Clinic
	Swartruggens Hospital
Madibeng	Bapong
	Hebron Clinic
	Brits Hospital
	Ikhutseng Clinic
	Lethabile
	Maboloka Clinic
	Wonderkop Clinic
Moretele	Mathibestad
	Maubane
	Njobe
	Moretele SD Pharmacy
	Swartdam
	Syferskuil
	Tladistad
Moses Kotane	Bakubung Clinic
	Hospital
	Mabeskraal
	Mogwase
	Moruleng Clinic
	Pella
	Sesobe Clinic
	Silwerkrans Clinic
Rustenburg	Bafokeng
	Boitekong
	Gateway Clinic
	JST
	Kana Clinic
	Karlien Park
	Phatsima Clinic
	Tlhabane

ANNEX B. DATA COLLECTION FORMS 1 TO 4

FORM 1 - HUMAN RESOURCES		
Number of pharmacists		On sub district structure
		On hospital structure
		Nongovernmental organization (NGO)
		Full time
		Part time
		Vacant posts
		Additional posts needed
Number of pharmacists interns		
Number of CSP pharmacists		
Number of medical practitioners in clinical practice		Full time
		Part time
Number of basic level pharmacist assistants		Unregistered
		Learner basic
		Basic
		Vacant posts
		Additional posts needed
Post-basic level pharmacists' assistants		Learner post basic
		Post-basic
		Vacant posts
		Additional posts needed
Number of PHC nurses (PHC)		Qualified in PHC
		In PHC training
		Practising without PHC qualification
		Vacant posts
		Additional posts needed
Staff trained in drug supply management		Pharmacy personnel
		Nursing personnel
		Other
Patients & Prescription Statistics		
Headcount (for PHC and only)	Jun-11	
No. of items dispensed (hospital and only)		
No. of prescriptions (hospital and only)		
No. of down-referrals (for hospital only)		

Annex B. Data Collection Forms 1 to 4

Headcount (for PHC and only)	Jul-11
No. of items dispensed (hospital and only)	
No. of prescriptions (hospital and only)	
No of down-referrals (for hospital only)	
Headcount (for PHC and only)	Aug-11
No. of items dispensed (hospital and only)	
No. of prescriptions (hospital and only)	
No of down-referrals (for hospital only)	
Headcount (for PHC and only)	Sep-11
No. of items dispensed (hospital and only)	
No. of prescriptions (hospital and only)	
No of down-referrals (for hospital only)	
Headcount (for PHC and only)	Oct-11
No. of items dispensed (hospital and only)	
No. of prescriptions (hospital and only)	
No. of down-referrals (for hospital only)	
Headcount (for PHC and only)	Nov-11
No. of items dispensed (hospital and only)	
No. of prescriptions (hospital and only)	
No. of down-referrals (for hospital only)	
Headcount (for PHC and only)	Dec-11
No. of items dispensed (hospital and only)	
No. of prescriptions (hospital and only)	
No. of down referrals (for hospital only)	
Headcount (for PHC and only)	Jan-12
No. of items dispensed (hospital and only)	
No. of prescriptions (hospital and only)	
No. of down-referrals (for hospital only)	

FORM 2 - STOCK CONTROL		
Which of the following receiving procedures apply at this facility?	1a. - Check number of boxes and sign driver's note	
	1b. - Check stock received against delivery note/picking slip/invoice	
	1c. - No fixed procedure	
Who is responsible for the receipt of medicine in the facility?	Pharmacist	
	Medical Practitioner	
	Nurse	
	Store person	
	Other	
Specify, other		
Are cartons sealed in a tamperproof way? (Data collector to check)		
Are there <u>written Standard Operating Procedures</u> for:	Ordering of medicines	Available
		Copy seen
		Date of Update
	Storage	Available
		Copy seen
		Date of Update
	Receiving stock	Available
		Copy seen
		Date of Update
	Stock control	Available
		Copy seen
		Date of Update
	Dispensing of medicines	Available
		Copy seen
		Date of Update
	Management of expired stock	Available
		Copy seen
		Date of Update
	Monitoring of ADRs	Available
		Copy seen
		Date of Update
	Stock discrepancy	Available
		Copy seen
		Date of Update
Is a computerized system used for inventory/stock control purposes?		
If answer above. is Yes, check date of last entry		
Are there any <u>non-computerised</u> stock control measures in use at this facility?		

If answer above is Yes, which <u>non-computerised</u> stock control measures are in use at this facility? <i>(Please tick as appropriate)</i>	Stock cards	
	Ordering cards only/Requisition	
	Minimum stock levels	
	Maximum stock levels	
	Reorder level	
Medicines are stored correctly as per Good Pharmacy Practice	There is no stock on the floor	
	Room temperature is below 25°C	
	Room temperature recorded twice a day	
	Fridge temperature is between 2 and 8 °C	
	Fridge temperature is recorded twice a day	
There is no food in the medicine fridge		
What is the lead time for orders placed (Approved clinic list)? (number of days = date stock received – date stock ordered) = calendar days		
What is your ordering interval (Approved clinic list)? (number of days = date order 2 placed – date order 1 placed) = calendar days		
How many physical counts were done during the period June 2011 - January 2012?		
When last was a formal stock-take done in this facility?		
Number of routine deliveries received from the supplier per month		
Number of emergency deliveries/collections from supplier(s) per month (Average)		
Do you sometimes have to borrow or send for stock to/from other facilities? <i>(Please indicate frequency per month as appropriate)</i>	Borrow from elsewhere: Tick as appropriate and indicate frequency. e.g., Clinic 5	Clinic
		Frequency
		Private Hospital
		Frequency
		Public Hospital
Do you do buy out for?		Pharmaceutical
		Surgical

FORM 3A – SURGICAL	
Stock No	Generic Name
2157	SWABS GAUZE, ABSORBENT, TYPE 3 100X100MM 8 PLY 100'S
2224	GLOVE SURGICAL, LONG, LATEX, SIZE 7.0, Box of 50
2213	GLOVE EXAMINATION, NON STERILE, LATEX, LONG CUFF, PREPOWDERED, SIZE MEDIUM 100'S
2161	SWABS ALCOHOL 24X30MM 200'S
2739	TUBE ENDOTRACHEAL, CUFFED, PREFORMED FOR ORAL USE, 7.0MM 1'S
2071	BANDAGE LIGHT SUPPORT COTTON CREPE 100MMX4.5M 12's
2025	ADMIN SET, FOR ADULT USE, 2 Y-SITE, 20 DROPS/ML FLUID 20DROP/ML 1's
2048	INTRAVENOUS CANNULA RADIO-PAQUE 22G 200422 100'S (Jelco)
2009	SYRINGE HYPODERMIC, ECCENTRIC NOZZLE, 2 PART, 5ML 100'S
0876	BLADE, SCALPEL SURGICAL, NO. 24 100'S
2205	MASK, FACE WARD WITH LOOPS, DISPOSABLE (Queen Charlotte)
2840	TAPE, SURGICAL, ADHESIVE FILM, PERMEABLE 25MMX5M 1's (Transpore)
2005	NEEDLE HYPODERMIC 23G X 1" (BLUE) 100's
2039	INFUSION SET, INTERMITTENT, WINGED 0.8 MM (21G) X 20MM (TT 100-21) 1'S (Butterfly - & Hospital Only)
3733	CATHETER, URETHRAL, FOLEY 2WAY, SILICONE, ELASTOMER COATED LATEX, 16F, 5ML BALLOON 1'S
0853	MASK, AEROSOL, LOW RESISTENCE W/ HIGH FLOW NEBULIZER, ADULT, TUBING 22MM 1'S
0936	SUT CHROMIC 2/0 1/2TP 30MM 75CM 12's
FORM 3B – Antiretoviral (ARVs)	
5293	ABACAVIR SOL 120MG/ML 240ML 1'S
3711	LAMIVUDINE ORAL SOLN. 10MG/ML 240ML 1'S
5315	LOPINOVIR/RITONAVIR 80/20MG SYRUP 60ML 5'S
2305	NEVIRAPINE SUSP 50MG/5ML 240ML 1's
5350	EFAVIRENZ 50MG TABS 30'S
5344	EFAVIRENZ 600MG TABS 30'S
5300	LAMIVUDINE TABS 150MG 60'S
5578	LOPINA VIR 200MG & RITONAVIR 50MG 120'S
5301	NEVIRAPINE TABS 200MG 60'S
5383	RITONAVIR CAPS 100MG 84'S
5287	STAVUDINE 30MG CAPS 60'S
5565	TENOFOVIR TABLETS 300MG 30's
5294	ZIDOVUDINE CAPS 300MG 60'S
FORM 3B - TB MEDICINES	
0078	RIFAM 150mg/INH 75mg/ETHA 275mg/PZA 400mg 100's
5537	RIFAMPICIN 150MG ISONIAZID 75MG 84'S
0590	ETHAMBUTOL TABS 400MG 100'S
0617	ISONIAZID TABS 100MG 28'S
5681	ISONIAZID 300MG 28'S
0083	STREPTOMYCIN INJ 1g/3ml 10's
5533	RIFAM 60MG ISONIAD 30MG PZA 150MG 100'S (Rimcure)

FORM 3B – THERMOLABILE	
5606	VACCINE PENTAXIM
2379	INSULIN HUMILIN 30/70 Pens 3ml, 5
FORM 3B - EMERGENCY TRAY	
0148	ADRENALINE ACID TART.INJ EQ/ADREN.1mg/ml 1:1000 10's
0178	DIAZEPAM 5MG/ML INJ 2ml 10's
FORM 3B – PHARMACEUTICALS	
0004	AMOXYCILLIN SUSP 125MG/5ML 100ml 1's
3320	AMOXYCILLIN CAPS 250MG 15's
5558	CEFIXIME TABLET 400MG 1's
0080	CEFTRIAZONE INJ 1g VIAL 1's
0318	CO-TRIMOXAZOLE SYR 50ml 1's
3973	CO-TRIMOXAZOLE TABS 480MG 20'S
5557	HYDROCHLOROTHIAZIDE TABS 12,5MG 28'S
3975	IBUPROFEN TABS 200MG 15'S
5732	METFORMIN TABS 850MG 56's
0137	NORETHISTERONE INJ 200mg/ml LONG-ACTING 100's
0495	SODIUM CHL POTASS.SOD CIT.PULV 26G 50'S (Sorol)
0383	PARACETAMOL SYR 120MG/5ML 50ML 1's
3195	PARACETAMOL TABS 500MG 10'S
0122	SALBUTAMOL M.D.I COMPLETE 100mcg 300 DOSE 1's
2061	SODIUM CHLORIDE 0.9% 1L
0727	VITAMIN A TABS 50 000U 200's
FORM 3C - HOSPITAL LIST ONLY	
2292	AMIKACIN INJ 500MG/2ML 10's
2482	BUDESONIDE M.D.I. 200MCG 300DOSE 1'S
3026	CARBAMAZEPINE TABS 400MG CR 30'S
0247	PERINDOPRIL TABS 4mg 28's
0193	FUROSEMIDE 20mg/2ml INJ 10's
0195	HALOPERIDOL 5mg INJ 1ml 5's
0196	HEPARIN SODIUM 5000iu/ml INJ 5ml 10's
0200	HYDROCORTISONE SOD.SUCC.INJ 100mg/2m
0225	MAGNESIUM SULP INJ 50% 2ml 10's
0284	VACCINE TETANUS ADSORBED P6550 10DOSE 10ml 10's
0000	Modified Ringers
0246	OXYTOCIN INJ 10iu 1ml 10's
0252	PHENYTOIN SODIUM 50mg/ml INJ 5ml 10's
3180	SIMVASTATIN TABS 10MG 28'S

FORM 4 – Patient Care Survey/Exit Interview (To be completed for 30 patients)		
Age of patient	< 6 years	
	6 – 16 years	
	17- 60 years	
	61+ years	
Gender	Male	
	Female	
Who handed the medicine to you? Tick the applicable box	Prescriber (Nurse or Doctor)	
	Dispenser	
	Other	
How often do you come to collect your medicine? Tick appropriate box	Monthly	
	2 monthly	
	3 monthly	
	Other	
May I please see all your medicine? <i>Look at the medicine and ask the following question.</i>		
What has the provider told you about your medicine?		
Illness (main complaint) e.g., bronchitis		
Drug advice e.g., for pain, for fever, for dehydration.....		
Non-drug treatment e.g. bed rest, drink a lot of fluids....		
Side effects e.g., nausea, drowsiness.....		
Dose and dosing interval e.g. 2 tablets 6 hourly		
A maximum dose e.g., takes maximum 8 tablets/day.....		
Storage e.g., keep medicine out of reach of children.....		
What to do with medicine left over , e.g., discard any solution left over after 24 h....		
Labelling requirements (1 = Yes, 0 = No), Tick the appropriate box)	Name (Initial) and Surname	
	Directions	
	Name of Institution	
	File number	
Number medicines were dispensed?		
How many medicines were prescribed?	Number prescribed	
	None or Don't know	
How many medicines were substituted?	Number substituted	
	None or Don't know	
How many medicines were you asked to collect at a later date?	Number of medicines	
	None or Don't know	

Please specify if (above) applicable	
Do you know what this medicine is used for?	
Can you explain how you use your medicines?	
Do you know what side affects you could expect from the medicines?	
Are you satisfied with the care you have received in this facility today?	
If dissatisfied) Please tell me about the things that you are not satisfied with.	Staff shortages
	Staff attitude
	Medicine supply
	Waiting time
	Waiting area
	Other (Specify)
How much time have you spent at this facility? (minutes) Tick the unshaded block (Explain)	< 1 Hour
	1 - 2 Hours
	2 - 4 Hours
	> 4 Hours
	Do not know
Would you visit this health facility again? (Yes = 1 & No = 0)	
If the answer above is "Yes", why?	
If the answer above is "No", why?	
Is there a facility closer to your home where you can collect your medicines?	
If answer above is yes, Why did you visit this facility rather than the closer one?	
Is transport to this facility a problem for you?	
How long did you wait to collect your medicines? Tick the appropriate answer	< 10 minutes
	10 - 30 minutes
	30 - 60 minutes
	1 - 1.5 hours
	> 1.5 hours
What are your suggestions for improving care in this facility?	

ANNEX C. AVAILABILITY OF SOPS

Facility	Type of facility	Ordering of medicines		Storage		Receiving stock		Stock control		Dispensing of medicines		Management of expired stock		Monitoring of ADRs		Stock discrepancy		
		Avail ³	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	
Bafokeng	CHC	✓	✓	✓	✓	✓	✓	*		*		✓	✓	*		*		
Bapong		✓	*		*		*		*	✓	*	✓	*	*	*	✓	*	
Boitekong		*		*		*		*		*		*		*		*		
Lethabile		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*	*	*	
Mabeskraal		*		*		*		*		*		*		*		*		
Mathibestad		*		*		*		*		*		*		*		*		
Mogwase		✓	*	✓	*	✓	*	✓	*	✓	*	✓	*	✓	*	✓	*	
Pella		✓	✓	✓	✓	✓	✓	✓	✓	*	*	✓	✓	✓	✓	✓	✓	
Syferskuil		*		*		*		*		*		*		*		*		
Tlhabane		*		*		*		*		*		*		*		*		
Moretele SD	SD	✓	✓	✓	✓	✓	✓	*		*		✓		*		✓		
Brits	Hospital	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
JST		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Koster		✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*	✓	✓	*	*	✓	✓
Moses Kotane		✓	✓	✓	✓	✓	✓	✓	✓	✓	*	*	✓	✓	*	*	✓	✓
Swartruggens		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

³ Available

Annex C. Availability of SOPs

Facility	Type of facility	Ordering of medicines		Storage		Receiving stock		Stock control		Dispensing of medicines		Management of expired stock		Monitoring of ADRs		Stock discrepancy		
		Avail ³	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	Avail	Copy seen	
Bakubung	PHC	*		*		*		*		*		*		*		*		
Borolelo		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gateway		*		*		*		*		*		*		*		*		*
Hebron		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Ikhutseng		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Kanana		*		*		*		*		*		*		*		*		*
Karlien Park		*		*		*		*		*		*		*		*		*
Maboloka		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Maubane																		
Moruleng		*		*		*		*		*		*		*		*		*
Njobe		*		*		*		*		*		*		*		*		*
Phatsima		*		*		*		*		*		*		*		*		*
Reagile		*		*		*		*		*		*		*		*		*
Sesobe		*		*		*		*		*		*		*		*		*
Silwerkrans		*		*		*		*		*		*		*		*		*
Swartdam		*		*		*		*		*		*		*		*		*
Tladistad		*		*		*		*		*		*		*		*		*
Wonderkop	✓		✓		✓		✓		✓		✓		✓		✓		✓	

ANNEX D. NUMBER OF DEPOT ISSUES PER LINE ITEM TO FACILITIES IN THE PROVINCE

Stock	Generic Name	Jun-11	Jul-11	Aug-11	Sep-11*	Nov-11	Dec-11	Jan-12
2157	SWABS GAUZE, ABSORBENT, TYPE 3 100X100MM 8 PLY 100'S	18	11	2	0	3	5	18
2224	GLOVE SURGICAL, LONG, LATEX, SIZE 7.0, Box of 50	17	13	13	9	2	15	17
2213	GLOVE EXAMINATION, NON STERILE, LATEX, LONG CUFF, PREPOWDERED, SIZE MEDIUM 100'S	0	2	11	11	3	2	0
2161	SWABS ALCOHOL 24X30MM 200'S	16	12	18	15	0	16	16
2739	TUBE ENDOTRACHEAL, CUFFED, PREFORMED FOR ORAL USE, 7.0MM 1'S	0	0	0	0	0	0	0
2071	BANDAGE LIGHT SUPPORT COTTON CREPE 100MMX4.5M 12's	14	25	21	16	1	12	14
2025	ADMIN SET, FOR ADULT USE, 2 Y-SITE, 20 DROPS/ML FLUID 20DROP/ML 1's	24	14	22	21	3	12	24
2048	INTRAVENOUS CANNULA RADIO-PAQUE 22G 200422 100'S (Jelco)	0	0	0	9	0	0	0
2009	SYRINGE HYPODERMIC, ECCENTRIC NOZZLE, 2 PART, 5ML 100'S	14	19	14	14	1	10	14
876	BLADE, SCALPEL SURGICAL, NO. 24 100'S	13	9	15	7	0	10	13
2205	MASK, FACE WARD WITH LOOPS, DISPOSABLE (Queen Charlotte)	3	13	2	0	2	4	3
2840	TAPE, SURGICAL, ADHESIVE FILM, PERMEABLE 25MMX5M 1's (Transpore)	8	0	24	6	1	10	8
2005	NEEDLE HYPODERMIC 23G X 1" (BLUE) 100's	13	18	22	16	1	12	13
2039	INFUSION SET, INTERMITTENT, WINGED 0.8 MM (21G) X 20MM (TT 100-21) 1'S (Butterfly - CHC & Hospital Only)	1	2	0	0	0	0	1
3733	CATHETER, URETHRAL, FOLEY 2 WAY, SILICONE, ELASTOMER COATED LATEX, 16F, 5ML BALLOON 1'S	4	2	0	2	1	6	4
853	MASK, AEROSOL, LOW RESISTENCE WITH HIGH FLOW NEBULIZER, ADULT, TUBING 22MM 1'S	1	0	3	2	0	0	1
936	SUT CHROMIC 2/0 1/2TP 30MM 75CM 12's	8	10	21	14	0	10	8
5293	ABACAVIR SOL 120MG/ML 240ML 1'S	0	0	2	7	14	9	0
3711	LAMIVUDINE ORAL SOLN. 10MG/ML 240ML 1'S	8	23	33	9	3	15	8
5315	LOPINOVIR/RITONAVIR 80/20MG SYRUP 60ML 5'S	0	0	0	4	14	0	0

Annex D. Number of Depot Issues per Line Item to Facilities in the Province

Stock	Generic Name	Jun-11	Jul-11	Aug-11	Sep-11*	Nov-11	Dec-11	Jan-12
2305	NEVIRAPINE SUSP 50MG/5ML 240ML 1's	5	19	16	6	1	8	5
5350	EFAVIRENZ 50MG TABS 30'S	9	37	15	8	4	14	9
5344	EFAVIRENZ 600MG TABS 30'S	24	43	47	22	5	37	24
5300	LAMIVUDINE TABS 150MG 60'S	22	34	53	18	2	36	22
5578	LOPINAVIR 200MG & RITONAVIR 50MG 120'S	14	17	20	8	1	11	14
5301	NEVIRAPINE TABS 200MG 60'S	12	21	40	18	3	17	12
5383	RITONAVIR CAPS 100MG 84'S	3	0	1	0	0	0	3
5287	STAVUDINE 30MG CAPS 60'S	15	23	43	11	4	30	15
5565	TENOFIVIR TABLETS 300MG 30's	20	29	43	20	3	29	20
5294	ZIDOVUDINE CAPS 300MG 60'S	9	23	28	8	2	19	9
78	RIFAM 150mg/INH 75mg/ETHA 275mg/PZA 400mg 100's	8	9	7	4	7	4	8
5537	RIFAMPICIN 150MG ISONIAZID 75MG 84'S	11	27	13	12	7	14	11
590	ETHAMBUTOL TABS 400MG 100'S	11	16	13	6	1	6	11
617	ISONIAZID TABS 100MG 28'S	0	7	0	0	0	3	0
5681	ISONIAZID 300MG 28'S	21	17	19	14	4	17	21
83	STREPTOMYCIN INJ 1g/3ml 10's	20	11	11	7	4	2	20
5533	RIFAM 60MG ISONIAD 30MG PZA 150MG 100'S (Rimcure)	10	4	7	4	0	5	10
5606	VACCINE PENTAXIM	25	54	41	27	7	21	25
2379	INSULIN HUMILIN 30/70 Pens 3ml, 5	10	36	32	27	5	8	10
148	ADRENALINE ACID TART. INJ EQ/ADREN. 1mg/ml 1:1000 10's	15	12	17	19	1	13	15
178	DIAZEPAM 5MG/ML INJ 2ml 10's	5	11	8	10	2	14	5
4	AMOXYCILLIN SUSP 125MG/5ML 100ml 1's	0	24	25	21	2	13	0
3320	AMOXYCILLIN CAPS 250MG 15's	19	0	0	3	2	21	19
5558	CEFIXIME TABLET 400MG 1's	21	23	27	18	2	12	21
80	CEFTRIAXONE INJ 1g VIAL 1's	12	13	17	16	3	16	12
318	CO-TRIMOXAZOLE SYR 50ml 1's	4	13	17	10	3	6	4
3973	CO-TRIMOXAZOLE TABS 480MG 20'S	15	9	19	29	3	16	15
5557	HYDROCHLOROTHIAZIDE TABS 12,5MG 28'S	16	16	19	1	0	22	16

Assessment of Availability and Delivery of Pharmaceutical and Surgical Supplies in Bojanala District

Stock	Generic Name	Jun-11	Jul-11	Aug-11	Sep-11*	Nov-11	Dec-11	Jan-12
3975	IBUPROFEN TABS 200MG 15'S	17	30	47	30	6	29	17
5732	METFORMIN TABS 850MG 56's	0	0	0	0	0	0	0
137	NORETHISTERONE INJ 200mg/ml LONG-ACTING 100's	9	20	10	13	1	10	9
495	SODIUM CHL POTASS.SOD CIT. PULV 26G 50'S (Sorol)	0	8	8	11	0	1	0
383	PARACETAMOL SYR 120MG/5ML 50ML 1's	23	33	29	11	0	36	23
3195	PARACETAMOL TABS 500MG 10'S	36	41	37	30	2	29	36
122	SALBUTAMOL M.D.I COMPLETE 100mcg 300 DOSE 1's	27	18	3	37	0	30	27
727	VITAMIN A TABS 50 000U 200's	0	0	0	0	0	0	0
2292	AMIKACIN INJ 500MG/2ML 10's	1	1	1	2	0	0	1
2482	BUDESONIDE M.D.I. 200MCG 300DOSE 1'S	5	5	9	5	0	13	5
3026	CARBAMAZEPINE TABS 400MG CR 30'S	16	22	21	15	2	26	16
247	PERINDOPRIL TABS 4mg 28's	19	32	38	20	3	23	19
193	FUROSEMIDE 20mg/2ml INJ 10's	13	17	23	18	6	16	13
195	HALOPERIDOL 5mg INJ 1ml 5's	9	11	7	10	4	8	9
196	HEPARIN SODIUM 5000iu/ml INJ 5ml 10's	5	2	2	3	2	1	5
200	HYDROCORTISONE SOD. SUCC. INJ 100mg/2m	13	19	26	24	7	19	13
225	MAGNESIUM SULP INJ 50% 2ml 10's	5	0	36	5	7	4	5
284	VACCINE TETANUS ADSORBED P6550 10DOSE 10ml 10's	7	10	11	7	1	10	7
246	OXYTOCIN INJ 10iu 1ml 10's	19	26	15	24	2	17	19
252	PHENYTOIN SODIUM 50mg/ml INJ 5ml 10's	10	4	9	13	1	7	10
3180	SIMVASTATIN TABS 10MG 28'S	11	6	13	13	3	8	11

*In October 2011, the NW Depot switched from PDSX to the new system and there was no activity (issues) for the whole month.