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Process Evaluation of Auditable Pharmaceutical Transaction Service in Seka primary Hospital, Jimma Zone, South West Ethiopia

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Abstract

Background: A well-functioning drug supply management is the corner stone for any meaningful health service. However, Pharmaceutical supply systems in many developing countries have severe problems, including inefficient selection, procurement and use of drugs. The magnitude and extent of the problem is huge and chronic in the Ethiopian health care system for a long time.

Objective: To evaluate auditable pharmaceutical transaction service process in Seka primary hospital, Jimma zone south west Ethiopia.

Evaluation Methodology: Case study design involving both quantitative and qualitative methods was conducted in Seka primary hospital. The focus of this evaluation was on the process of Auditable pharmaceutical transaction service. The evaluation was focused on process part of the program with dimensions; availability, compliance and client satisfaction in the dimension of accommodation. Resource inventory, document review; key informant interviews and observations were conducted. Client satisfaction was assessed through exit interview; with sample size of 326. The qualitative data was analyzed manually using thematic analysis and quantitative data were analyzed by using SPSS version 23 software.

Results: In Seka primary hospital, percentage availability of the 32 selected Key medicine was 10.7(82.0%) and there were no *expired drugs* found on their shelves. The availability of 17 of the required 20(85%) *professionals* was adequate according the Auditable pharmaceutical transaction service. The average *lead time* was found to be less than five days. The average *counselling* and *dispensing time* were 5:43 minutes and 1:17 minutes, respectively. The average *number of drugs* per prescription was 2.0. The 1154(97.9%) of drugs prescribed by generic name and 1175(99.7%) of prescribed drugs on *Essential Drug List* indicates prescribers 'adherence to facility specific List.

Conclusion: This evaluation revealed that (based on the pre-set judgment criteria) the achievement of the Auditable pharmaceutical transaction service in Seka primary Hospital was *GOOD* 82.6 % (achieved 355.2 of 430 weight given), i.e. even though it is Good achievement ,there are areas that needs improvement. Areas for improvement identified were: Pre- and in-service training for all health workers involved in store room and dispensary to improve on the medium *counselling time*, poor *record keeping* and the extremely poor *labeling* of drugs which this all improve the overall client satisfaction .

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Background

Diseases such as pneumonia, diarrhea, and malaria are the major causes of morbidity and mortality in Ethiopia. These and other diseases of public health importance can be successfully treated with essential medicines. Essential medicines are those that satisfy the priority health care needs of the population. They are selected with due regard to disease prevalence, and evidence of efficacy, safety, and comparative cost-effectiveness. Essential medicines are intended to be available at all times in adequate amounts, in the appropriate dosage forms, with assured quality, and at a price the individual and the community can afford. However, essential medicines are not adequately available at all public health facilities on a continuous basis for multiple reasons. [1, 2]

Pharmacy service is an essential component of health care delivery in hospitals. It contributes to improved treatment outcomes through ensuring availability and rational use of quality, safe and effective medicines. Provision of effective pharmacy service is also crucial for early recognition & prevention of medication errors, adverse drug events and for the prevention and containment of antimicrobial resistance and also promotes optimal use of meager resources thereby improving quality of care resulting in better health outcomes.[3].

Globally more than 50% of all medicines are prescribed, dispensed or sold inappropriately, and half of all patients fail to take medicines correctly and hence the overuse, underuse or misuse of medicines harms people and waste resources. More than 50% of all countries do not implement basic policies to promote rational use of medicines. This is high in developing countries; only less than 40% of patients in the public sector and 30% in the private sector are treated according to clinical guidelines [4].

Good Pharmaceutical service promote the safe, rational and cost effective use of drugs thus maximizing health gain and minimizing risk of patient. Well-organized pharmaceutical service ensures the continuous availability of all pharmaceuticals [5]. In opposite poor drug supply management results in unreliable availability of drugs that leads to stock out, shortage and then to irrational prescribing, poor adherence, emergence of Antimicrobial resistance strains, treatment failure, It could also result in significant wastage of resources due to deterioration, expiration, diversion,. which leads not only to the morbidity or mortality of a patient but also have socioeconomic impacts [6].

According to WHO one of the building blocks of health system is pharmaceuticals which accounts for 10-30% of health care costs[7]. Millions of people worldwide die or face disability each year due to diseases that have proven pharmaceutical treatments [8]. In order to decrease these preventable deaths, access must increase to necessary medicines[9]. Around two billion people worldwide and over one-half of the poorest in Asia and Africa are known to have inadequate access to essential medicines and vaccines, or none at all[10].

Provision of essential medicines was outlined by World Health Organization as one of the eight essential components of primary health care [8]. The availability of necessary medicines is integral to modern health care, access to these medicines is the fundamental right of every person. However, the WHO) reported that approximately 67% of the population lives without

access to essential medicines [11]. Among the medicines made available, more than 50% are prescribed, dispensed, or sold inappropriately, and 50% of patients fail to take them correctly [12].The factors undermining the availability of medicines include poor medicine supply and distribution systems; insufficient health facilities and staff; low investment in health; and the high cost of medicines [13].

In Ethiopia a double burden of diseases is already emerging, with a mix of persistent infectious diseases and increasing non-communicable diseases and injuries[12].Most of these health challenges could have easily been prevented or treated by ensuring the continuous availability and proper use of a few essential medicines selected on the basis of disease prevalence and evidence of the efficacy, safety, and relative cost-effectiveness of these medicines. However, there are many reasons these essential medicines are not adequately available at all public health facilities on a continuous basis [14].

The poor governance of the pharmaceutical sector in the country is believed to have contributed significantly to most of the challenges related to pharmaceuticals management at different levels of the health system [15]. The selection and prioritization of medicines was not guided by proven tools and techniques, resulting in frequent stock outs and expiry of life-saving medicines. Moreover, the provision of pharmaceutical services was not systematized to ensure proper workflow and adequate medication use counseling during the dispensing process, compromising the overall treatment outcome and patient satisfaction.

Documentation of services was very minimal and was not standardized. As a result, relevant reports were neither generated nor shared with the relevant body to guide the decision-making processes. In recognition of the problems, the country implemented several measures in the past to build a strong pharmaceutical and medical supplies system. Notable among these measures were an increase in health care spending including the drug budget as well as an increase in the drug-financing risk pool, the establishment of the Pharmaceutical Fund and Supply Agency (PFSA), and the introduction of systems, tools, and guidelines such as the Integrated Pharmaceutical Logistics System (IPLS), Logistics Management and Information System (LMIS), Auditable Pharmaceutical Transactions and Services (APTS), and Ethiopian Hospital service transforming Guidelines [4].

Federal ministry of health (FMOH) of Ethiopia has been implementing different reforms to improve the quality and accessibility of services at all of the country's health system and these are Business Process Re – engineering; Pharmaceutical Fund and Supply, Ethiopian Hospital Reform Implementation Guideline, Health Care Financing, Food and Medicine Regulation and others. As part of this reform, the ministry of health developed the Ethiopian hospital service transformation guidelines [16]. One of the parts in the guideline is the pharmacy chapter that the hospital is using to improve the pharmacy services[4].

During implementation of pharmacy chapter from EHSTG in Debre Markos hospital; there were challenges related to medicine transaction that could not be resolved using the existing tool which gave birth the idea of a system called the Auditable Pharmaceutical Transactions and Services in July 30, 2010. Auditable pharmaceutical transaction service was created as a system to track information on pharmaceutical transaction that makes transactions transparent, measurable and accountable. The system also designed to manage pharmaceutical budget rationally and envisages the implementations of health care financing by enabling recording of detailed descriptions of pharmaceuticals consumed and by helping preparations of monthly summary of claims for insurances/sponsors. The system facilitates the physical inventory of pharmaceuticals, process of handing over during resignations of professionals and facilitates auditing. Furthermore continuous supply of pharmaceuticals to the community at an affordable price can be attained. The system also results in optimal treatment outcomes which improve knowledge on correct dosage of drugs and customer satisfaction [17]. Currently more than 47 hospitals from different regions are implementing auditable pharmaceutical transaction service and Ethiopian federal Ministry of health is preparing a huge medicines procurement plan to improve access to essential and specialty medicines at hospitals and APTS is one of the strategic initiatives to do [9]. Hence,

assessing the implementation status of auditable pharmaceutical transaction service in order to make further improvements in the areas where gaps are seen.

Statement of the Problem

In recent years, Ethiopia's FMOH has made tremendous efforts to improve the quality of health services at the hospital level, as laid out in the Ethiopian Hospital service transformation Guideline[18].However, frequent stock-outs of essential medicines and poor quality of pharmacy services pose challenges to achieving the desired level of success in hospital improvement. A 2003 assessment of Ethiopia's pharmaceutical sector showed that the average duration of stock-outs of essential medicines was 99.2 days in the 2002 in public health facilities and regional drug stores. Various findings showed that essential medicines are poorly available 65% with high expiry rate 8.24% nationally There are poor information on product and financial values of medicines, inefficient utilization of medicines budget, poor pharmacy infrastructure and chaotic work flow, all together resulting in poor quality of medicines management and erratic dispensing activities including counseling services and low overall patient satisfaction on pharmacy services 74.5%[19]. Many of these problems were attributable to poor governance in the pharmaceutical sector. Specifically, a lack of transparency and accountability left pharmaceutical transactions and services vulnerable to mismanagement, including poor planning, decision making, prescribing and dispensing, and reporting, which compromised both the availability and use of medicines [20].

And Since Seka primary hospital is the only hospital in Seka Chekorsa woreda Jimma zone south west of Ethiopia which serves a total of 242,302 populations. Hence, evaluating the implementation status of the system in order to make further improvements in the areas where gaps are seen.

Evaluating the program and identifying gaps and enabling factors of the program implementation is very important to provide information on some component parts the program implementation limitation. Therefore, this study identified the possible problems of APTS implementation, to identify implementation status of the program and forward recommendations for further improvement of the program

Significance of the Evaluation

The World Bank identified corruption and lack of transparency in the pharmaceutical sector, as the greatest "cancer" and obstacle to social and economic development, keeping millions of people trapped in poverty. Execution of pharmaceutical transactions and services in hospitals of Ethiopia lacks transparency and accountability; thus vulnerable for corruption [21]. Auditable pharmaceutical transaction service is the national wide focus area that the government put his effort to ensure transparency and accountability and efficient utilization of medicine budget [23].

So, doing process evaluation is an input by identify the possible barriers of service implementation and provide systematic information guide on the bases of evaluation dimensions for improve the service in the future.

The evaluation was significant to find the gaps between actual practices with the desired practice during the implementation process of auditable pharmaceutical transaction service in Seka primary Hospital. So the result of the evaluation could provide some applicable recommendations to make further improvement in areas where gaps are seen and strengthen areas in which the system is good at in order to improve the pharmaceutical governance of the hospital. The result of this evaluation could also be used by the stakeholders both governmental and non-governmental organization that works in collaboration with the hospital in improving the health care system.

Thirdly, the evaluation will also be a contribution to the increase of the general knowledge of the subject matter and will act as a reference for future evaluators.

Methods

Evaluation Design

A facility based case study design with quantitative and qualitative data collection methods was employed and the qualitative data was complimenting the quantitative.

Table 1. Stakeholder analysis for auditable pharmaceutical transaction service evaluation at Seka primary Hospital Jimma Zone, south west Ethiopia, 2019

Stakeholders	Role in the program	Interest in evaluation	Role in the evaluation	Communication way	Level of importance (H,M,L)
Oromia regional health bureau	Decision maker Capacity building Resource allocation	To know the level of implementation of the program Utilizing the results for decision making To identify the level and type of support the program need	Interpreting findings For dissemination of the finding	Formal letter Discussion	H
Jimma ZHD	Decision maker Resource allocation Planning routine program monitoring Supportive supervision	Strengthening and gap identifying in APTS To identify the level and type of support the program need	Describing program activities and outcomes Information provision about the program	Formal letter Discussion	H
Woreda health office	Program coordination Technical support	Strengthening and gap identifying in APTS Implementing evaluation results Utilizing the results for program improvement To figure out the gaps in resource distribution, training needs assessment, client satisfaction level To know the level of implementation	Describing program activities and outcomes Information provision about the program	Formal letter Discussion Telephone	H
Health facility	Implementer Service providers	Over all APTS improvement	Source of data Utilization of findings	Formal letter Discussion	H
Health care provider	Service provision Recording and reporting	Knowing the implementation status of APTS	Data source	Interview	M
Beneficiaries					
PFSA	Provision of drugs and supplies	Service improvement	Finding Users	Formal letter	H

Table 2. Socio-demographic profile of clients/patients visiting the outpatient pharmacies of Seka primary Hospital (n=308)

Variable		**Frequency (%)**
Gender	Male	211 (64.7%)
	Female	115 (35.3%)
Marital status	Single	83(25.5%)
	Married	226 (69 .3%)
	Divorced	10 (3.1%)
	Widowed	7(2.1%)
Religion	Orthodox Christian	77(23.6%)
	Islam	185 (56.7%)
	Catholic	3 (0.9%)
	Protestant	61 (18.7%)
Residence	Urban/town	182(55.8%)
	Rural	144(44.2%)
Educational status	Unable to read and write	173(53.1%)
	Able to read and write only	62(19.0%)
	Primary school	37(11.3%)
	Secondary school	26 (8.0%)

Table 3. List of key medicines availability in primary level hospital

No.	Medicine Name	Availability ty in store
		Yes=1 No=0
1	Amoxicillin 250mg/500mg cap/	1
2	Amoxicillin 125mg/5ml syrup/	1
3	Ceftriaxone 500mg/ 1g injection	1
4	Ciprofloxacin 500mg caps/tab	1
5	Sulphamethoxazole + Trime-	1
6	Arthmeter + Lunfanthrine	1
7	Mebendazole oral suspen-	0
8	Metronidazole 250mg cap/tab	1
9	Atenolol 50mg tab	1
10	Enalapril 5/10mg tab	1
11	Hydrochlorothiazide 25mg tab	1
12	Metformin 500mg tab	1
13	Simvastatin 20mg tab	0
14	Diazepam 5mg tab	1
15	Amitriptyline 25mg tab	1
16	Fluoxetine 20mg cap	1
17	Phenobarbitone 100mg tab	1
18	Haloperidol tab	0
19	Omeprazole 20mg cap	1
20	Salbutamol inhalers	1
21	Oral rehydration salts (ORS)/zinc	1

Table 4. Total human resource in Seka primary hospital pharmacy unit

No	Professions	trained on APTS	not trained on APTS	% trained on APTS
1	pharmacist + druggist	13	2	84.6
2	APTS accountant	3	1	75.0
Total		16	3	

Table 5. Percentage availability of key medicines in primary level hospital

No.	Medicine Name	Availability ty in store Yes=1 No=0
1	Amoxicillin 250mg/500mg cap/tab	1
2	Amoxicillin 125mg/5ml syrup/suspension	1
3	Ceftriaxone 500mg/ 1g injection	1
4	Ciprofloxacin 500mg caps/tab	1
5	Sulphamethoxazole + Trimethoprim 200mg + 40mg in 5ml	1
6	Arthmeter + Lunfanthrine	1
7	Mebendazole oral suspension,100mg/5ml	0
8	Metronidazole 250mg cap/tab	1
9	Atenolol 50mg tab	1
10	Enalapril 5/10mg tab	1
11	Hydrochlorothiazide 25mg tab	1
12	Metformin 500mg tab	1
13	Simvastatin 20mg tab	0
14	Diazepam 5mg tab	1
15	Amitriptyline 25mg tab	1
16	Fluoxetine 20mg cap	1
17	Phenobarbitone 100mg tab	1
18	Haloperidol tab	0
19	Omeprazole 20mg cap	1
20	Salbutamol inhalers	1
21	Oral rehydration salts (ORS)/zinc	1
22	Diclofenac Sodium 50mg tab	1
23	Paracetamol 120mg/5ml	1
24	Sodium chloride 0.9% (normal saline)	1
25	Oxytocin 10 IU	1
26	Magnesium sulphate inj.	0
27	Ferrous sulphate + folic acid tab	1
28	Oral contraceptives tab	1
29	EFV/3TC/ TDF tab combination	1
30	RHZE tab	1
31	Vitamin K 10 IU	1
32	Tetracycline eye ointment	0

Table 6. Total human resource in Seka primary hospital pharmacy unit

No	professions	trained on APTS	not trained on APTS	% trained on APTS
1	pharmacist + druggist	13	2	84.6
2	APTS accountant	3	1	75.0
total		16	3	

Table 7. Summary of performance on resource availability indicators in Seka primary Hospital, Southwest Ethiopia, 2020

S.no	Indicators	weight give (W)	Achievement (P)	Score (%)	Judgment parameter
1	Availability of key medicines used to treat top 10 in dispensing units	20	16.4	82	V. good (>=85%) Good (75-84%) Fair (55-74%) Poor (>55%)
2	Number of pharmacy staff who receive in-service training on APTS.	10	8.4	84.6	
3	Number of pharmacy accountant who receive in-service training on APTS	10	7.5	75	
4	Availability of tablet counting tray as per guideline	10	7.4	74.2	
5	Availability of refrigerator in the dispensary as per guideline	10	10	100	
6	Availability r of APTS guideline in the facility	10	10	100	
7	Availability of dispensing window as per guideline	10	10	100	
8	Availability of counselling window as per guideline	15	15	100	
9	Availability of waiting area as per guideline	15	15	100	
10	Availability of facility specific medicine list approved by DTC	10	10	100	
11	Availability of standard treatment guideline	10	10	100	
12	% of annual allocated budget for APTS utilized in last three months	10	10	100	
total Availability indicator =12		140	129.7	92.6	

Table 10. Judgment matrix of performance indicators of compliance to national standards in Seka primary Hospital, Southwest Ethiopia, 2020

S.no	Indicators	weight give (W)	Achievement (P)	Score (%)	Judgment parameter
1	Proportion of reports send to next supervisors timely	10	10	100	V. good (>=85%) Good (75-84%) Fair(55-74%) Poor(>55%)
2	% of expired drugs in dispensaries at the time of the visit	10	10	100	
3	Average time between requisition of drug & receipt (average lead time- for last three months- days)	10	9.5	95	
4	Proportion of pharmacy staff who got supportive supervision in the last 3 months	10	7.5	75	
5	Proportion of prescribed medicine dispensed adequately labeled	15	2.2	14.4	
6	Percent of medicine prescribed by generic name	10	10	100	
7	Number of Drug Prescribed per Prescription	15	11.7	78	
8	Percent of medicines procured/received based on facility specific list	10	10	99.7	
9	Average dispensing time in minute	10	9.5	95	
10	Average counselling time in minute	10	5.6	56	
11	Average stock-out duration of selected key medicine (days)	10	8.7	87	
12	% of prescribed drug dispensed to patients	15	12.1	80.3	
Total compliance indicator =12		**135**	**106.8**	**79.1**	

Table 11. Socio-demographic profile of clients/patients visiting the outpatient pharmacies of Seka primary Hospital (n=326)

Variable		**Frequency (%)**
Gender	Male	211 (64.7%)
	Female	115 (35.3%)
Marital status	Single	83(25.5%)
	Married	226 (69 .3%)
	Divorced	10 (3.1%)
	Widowed	7(2.1%)
Religion	Orthodox Christian	77(23.6%)
	Islam	185 (56.7%)
	Catholic	3 (0.9%)
	Protestant	61 (18.7%)
Residence	Urban/town	182(55.8%)
	Rural	144(44.2%)
Educational status	Unable to read and write	173(53.1%)
	Able to read and write only	62(19.0%)
	Primary school	37(11.3%)
	Secondary school	26 (8.0%)
	Certificate/Diploma	12 (3.7%)
	Degree and above	16 (4.9%)
Employment status	Government employee	66 (20.2%)
	Private company employee	11 (3.4%)
	NGO employee	8 (2.5%)
	Merchant	44 (13.5%)
	House wife	13 (4.0%)
	Student	32 (9.8%)
	Farmer	117 (35.9%)
	Retired	3 (0.9%)
	Other	32 (9.8%)
Status/type of visit	New visit	222 (68.1%)
	Repeated Visit	104 (31.9%)
What is your reason for your visit to the hospital pharmacy?	To get medicines for yourself	268 (82.2%)
	To get medicines for friend/family	58 (17.8%)
Is your visit because of chronic disease? (hint: diabetes, hypertension, asthma, psychosis)	Yes	229 (70.2%)
	No	119(29.8%)
Did you get the medicine with?	Cash	253 (77.6%)
	Credit	61(18.7%)
	Free	12 (3.7%)
Total counseling time in minutes	<5minut >5minutes	
Total waiting time in minutes	<25 minutes >25 minutes	

Table 12. Patient satisfaction with Auditable pharmaceutical transaction service under different criteria

Variable	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree/ (%)	Strongly agree (%)
Are you satisfied with the location of the pharmacy?(a1)	31(9.5%)	27(8.3%)	36(11.0%)	55 (16.9%)	177(54.7%)
Are you satisfied with the Convenience of the dispensing area and counter for service provision?(a3)	52(16.0%)	27(8.3%)	35(10.7%)	47(14.4%)	165(50.6%)
Are you satisfied about counselling area of pharmacy shop?(a4)	27(8.3%)	20(6.1%)	36(11.0%)	64(19.6)	179(54.9%)
Are you satisfied about waiting area of pharmacy shop?(a5)	31(9.5%)	27 (8.3%)	36 (11.0%)	55(16.9%)	177(54.3%)
Are you satisfied that you receive the medications from the pharmacy exactly according to the prescription?(b1)	24(7.4%)	19(5.8%)	33 10.1%)	64 (19.6%)	186(57.1%)
Are you satisfied with promptness of processing prescription medicines?(b2)	20 (6.1%)	23(7.1%)	34 (10.4%)	67 (20.6%)	182(55.8%)
Are you satisfied with availability of medicine or health appliance you need?(b3)	20 (6.1%)	10(3.1%)	37 (11.3%)	61 (18.7%)	198(60.7%)
Are you satisfied with waiting time?(b4)	24(7.4%)	19(5.8%)	33(10.1%)	64(19.6%)	186(57.1%)
Are you satisfied with the cost of medicine you purchased?(b5)	31(9.5%)	-	-	119(36.5%)	169(51.8%)
Are you satisfied with the knowledge of counselling person? (c1)	38(11.7%)	50(15.3%)	33(10.1%)	19(5.8%)	131(40.2%)
Are you satisfied with the clarity of the pharmacy professional's instructions about how to take your medication? (c2)	-	-	38(11.7%)	119(36.5%)	169(51.8%)
Are you satisfied with necessary instruction and warning about your medications? (c3)	52(16.0%)	27(8.3%)	35(10.7%)	47(14.4%)	165(50.6%)
Are you satisfied with counseling time time?(c5)	16(4.9%)	23(7.1%)	34(10.4%)	70(21.5%)	183(56.1%)
Are you satisfied with privacy for discussion?	12(3.7%)	24(7.4%)	17(5.2%)	40 (12.3%)	233(71.5%)
Are you satisfied with courtesy and respect shown to you by the pharmacy staff	15(4.6%)	7(2.1%)	37(11.3%)	64(19.6%)	203(62.3%)

Table 13. Summary of Indicators for Accommodation for Process Evaluation of Auditable pharmaceutical transaction service in Seka primary Hospital ,Jimma Zone ,south west Ethiopia

S.no	Indicators	weight give (W)	Achievement (P)	Score (%)	Judgment parameter
1	Proportion of clients satisfied with the location of the pharmacy	10	7.2	71.2	V. good (>=85%) Good (75-84%) Fair (55-74%) Poor (>55%)
2	Proportion of clients satisfied with the Convenience of the dispensing area and counter for service provision	10	6.6	65.7	
3	Proportion of clients satisfied about counselling area of pharmacy shop	10	7.5	75	
4	Proportion of clients satisfied about waiting area of pharmacy shop	15	10.8	72	
5	Proportion of clients satisfied that you receive the medications from the pharmacy exactly according to the prescription	10	7.7	77	
6	Proportion of clients satisfied with availability of medicine or health appliance you need	10	8	80	
7	proportion of clients satisfied with waiting time	10	8.8	88	
8	Proportion of clients satisfied with the cost of medicine you purchased	10	8	80	
9	Proportion of clients satisfied with the knowledge of counselling person	10	7.3	73	
10	Proportion of clients satisfied with the clarity of the pharmacy professional's instructions about how to take your medication	10	8.8	88	
11	proportion of clients satisfied with necessary instruction and warning about your medications	10	6.5	65	
12	proportion of clients satisfied that pharmacist tries to make sure that you understand how to take your medication properly	10	7.3	73	
13	proportion of clients satisfied with counselling time	10	7.8	78	
14	proportion of clients satisfied with privacy for discussion	10	8.4	84	
15	proportion of client satisfied with courtesy and respect shown to you by the pharmacy staff	10	8.2	82	
total accommodation indicator =15		**155**	**118.9**	**76.7**	

Table 14. Overall judgment matrix of performance indicators of satisfaction of auditable pharmaceutical transaction service in Seka primary hospital Southwest Ethiopia, 2020

S.No	Dimension	Number of Indicators	weight (W)	result		Judgment parameter
				value	finding	
1	availability	12	140	129.7	92.6%	V. good (>=85%) Good (75-84%) Fair(55-74%) Poor(>55%)
2	compliance	12	135	106.8	79.1%	
3	Accommodation	15	155	118.7	76.7 %	
Total		39	430	355.2	82.6 %	

Indicators

During Evaluability Assessment a lot of indicators were listed based on their relevance to the sub-dimensions /relevance matrix/criteria and prioritized. For this evaluation relevant indicators are used during this process evaluation of auditable pharmaceutical transaction service at Seka primary hospital through active participation of stakeholders. The indicators were adapted from the objective and strategies of national APTS guideline. The evaluation indicators are process indicators within the total of 38; availability, satisfaction (Accommodation) and compliance indictors 10, 15 and 13 respectively were identified and agreed for measuring the implementation of the program are used to judge the program of auditable pharmaceutical transaction service at Seka primary hospital.

Source Population

The source populations to identify process of APTS was CEOs, clinical director, pharmacy head, health management information system focal person, finance head and APTS accountant .

The source populations for patient satisfaction was all patients who got pharmacy service on the data collection period in Seka primary hospital.

Documents related to finance, human resources, and stock records that are available at facility from January 8, 2020 to March 8, 2020 was reviewed to gather information on relevant indicators. Registers, vouchers, medicines sales reports, requisition/ procurement forms, and bin/stock cards was reviewed.

Pharmacy staff was observed on counselling process for rational use of drugs and adequacy of labeling of medicine package.

Study Population

CEOs , clinical director ,head pharmacist, APTS accountant, health management information system focal person, finance head and, patients got pharmacy service from hospital in Seka Chekorsa Woreda to receive pharmacy service during data collection, and

Documents related to finance, human resources, procurement, and stock records that are available at health facilities from January 8, 2020 to March 8, 2020 was reviewed to gather information on relevant indicators. Registers, vouchers, medicines sales reports, requisition/procurement forms, and bin/stock cards was reviewed.

Pharmacy staff was observed on counselling process for rational use of drugs and adequacy of labeling of medicine package.

Study unit and Sampling Unit

Chief executive officer, clinical director ,APTS accountant ,health management information system focal person and pharmacy head , finance head, APTS user (clients), and registers (logbook, vouchers and dispensary tally sheet), documents was sampling unit.

Dependent Variables

Overall satisfaction

Independent Variable

Patients socio demographic characteristics, (age ,sex ,religion, residency , Educational level

Waiting time,

Counselling time

Sampling Procedure and Techniques

Client Exit Interview

In this particular evaluation client exit interview was used to assess client satisfaction on the pharmacy service s provision through structured questionnaire. It was administered immediately after the service provision. All clients who was utilize pharmacy service within study period at Seka primary hospital was included in this study by Systematic Random Sampling technique until the calculated sample size (n=326) reached.

Observation

Data was collected for counseling time on rational use of medicine, availability of key medicines, the adequacy of records and adequacy of labeling on medicine package.

Counseling time was calculated based on the time the dispenser spent providing information to the patient on medicines provided to him/her.

Each health care provider was observed on five clients on counselling rational use of drug, two observation at the first day and three on the next working day.

Document Review

All APTS monthly reports produced, all stock status analysis findings and ABC/VEN analysis conducted in the process of APTS from January 8, 2020 to March 8, 2020 was reviewed.

Key Informant Interview

Chief executive officer, clinical director, APTS accountant, health management information system focal person and pharmacy head and finance head that fulfilled the inclusion criteria were the key informants. Sami-structured key informant interview guide was used to conduct interview.

Inclusion and Exclusion Criteria

Inclusion Criteria

APTS accountant, health management information system focal person ,pharmacy head and finance head have been trained on APTS

Patients who received pharmacy service in APTS implementing hospitals in Seka Chekorsa Woreda during the study period was taken.

Exclusion Criteria

Clients who are mentally incompetent was not included in this study for exit interview.

Service providers with no APTS training

Data Collection Tools

In order to address the evaluation question both qualitative and quantitative data collection techniques was used. [44].In this study both method of data collection was employed. The following data Collection technique was used:

Document Review Template

Template for records and documents review and resource inventory observation was adapted from CDC 2000 program evaluation checklist [45].

Key Informants Interview Guide

In-depth interview guide for key informants was developed after assessment of the program by using checklist.

Structured

Questionnaire for client exit interview were adapted from WHO 2000 satisfaction questionnaire with little modification [46].

Data Collection Techniques and Procedures

The data collection uses both quantitative and qualitative methods. Quantitative method used to describe service accommodation (client service satisfaction) and qualitative method (document review, expert interview and observation) identifies the reasons for the observed level of achievement [8,29]. Two diploma druggists data collectors and one BSc pharmacist supervisors was recruited for data collection and training was given to data collectors by Principal evaluator concerning the data collection tool, interviewing procedures, the sampling technique to

follow, and to review document. The principal evaluators was overseeing the performance of each data collector's daily, progress made and gave comments for each step. The collected data was sent to the principal evaluator from each of data collectors.

Data Collection Field Work

Data was collected from February 7 – March 5, 2020 from Seka primary Hospital.

During data collection the data collector reach the health facility before 2:30 A.M local time before the pharmacy is opened and data collection was proceed up to 10:30 P.M.

Data Quality Control

Data quality was controlled starting from the time of questionnaires preparations. The questionnaire was adapted by reviewing relevant literatures on the subject to ensure reliability. Before conducting the evaluation adapted tools with minimal modification, translated by an individual who have a very good ability of both English and Afan Oromo languages translate the English version to Afan Oromo.

Another individual of similar ability then translated the final or the agreed Afan Oromo version of the questionnaire back to English with the first to check for any inconsistencies or distortion in the meaning of words in the content of the tools. The collected data was sent to the principal evaluator from each of data collectors.

The data collectors were trained on the content of the data to be collected, ethical issues to be addressed during gathering the data, how to communicate with respondents, how to use the data collection guide and tools by principal evaluator 2 days prior to pre-testing the quality of the tool. Supervisors were also trained on the content to be covered during data collectors training, on how to manage data collection process and the way to monitor the quality of data by principal evaluator.

Pre-testing the Tools

Pre-test was conducted to test quality of tool to advance the credibility of the tool on other than the study facility assisted by supervisors and principal evaluator 3 days prior to formal data collection.

Data Editing, Coding and Verification

Data editing, coding and verification of the filled in questionnaires was carried out during data collection. Right after data collection each data collector submits filled in questionnaires to the supervisor; and the supervisor and the evaluator edit and code the filled in questionnaires and check for consistency. To prevent loss of data, soft copy files was backed up regularly. Filled in questionnaires and formats will kept in secured place to ensure confidentiality and privacy until their proper disposal.

Data Entry, Processing and Analysis

Quantitative data was entered onto Epi Data version 3.1 software templates for cleaning and checking of data for accuracy and completeness then exported to SPSS version 23, descriptive, bivariate and multivariate analysis was performed. A descriptive analysis was done by using frequency, mean and percentages.

Satisfaction of clients on pharmacy service was rated by 15 items each having five point Likert scale from strong disagree [1] strong agree[5] and that was re-coded in to new different variables. Satisfaction related variables which came up with a high internal consistency (Cronbach's alpha= 0.756).

To see the total score of each respondent, the points obtained from the 15 items by each respondent was computed. A respondent have a minimum of 15 and a maximum of 75 points on APTS satisfaction score. Clients was categorized as not satisfied if they score below the mean and satisfied if they score ≥ to the mean satisfaction score.

The qualitative data was transcribed, translated, coded and categorized finally thermalized manually with respective dimensions and results was narrated.

Ethical Clearance

Approval of ethical clearance was secured from Jimma University institute of health Sciences ethical committee before the beginning of data collection activity. Prior to the data collection, permission letter was obtained from Jimma Zone Health Department and Seka Chekorsa woreda health office and supportive letters was written to Seka primary hospital. In addition data collectors explained the purpose of the study,

confidentiality and anonymity of the data; and verbal consent was obtained from all study participants.

Evaluation Dissemination Plan

After the first analysis of the data collected, the evaluator prepared a draft document and discussed with the major stakeholders for their comments. The final evaluation report with relevant documents will be submitted to Jimma University and the major stakeholders, after its final approval by the University. The report included abstract, background information, the problem statement, evaluation questions, general and specific objectives, study design and methodology that have been used, findings and interpretation of the results, conclusion and recommendations. Two hours presentation of major findings and discussion with program implementers will be held at the Seka primary Hospital. Publication will also be considered.

Results

Availability of Resources to Provide Auditable Pharmaceutical Transaction Service

Availability of key Medicine

Thirty two essential drugs which were used to treat most common top ten diseases in the Seka primary hospital were selected with the major stakeholders. Using the standard formula on the survey form, percentage of the 32 selected key medicine physically available at the time of the visit in the storerooms\dispensaries were calculated. The data that shows availability of key medicine in Seka primary hospital found to be 81.2 percent. Among thirty two key medicine that expected to be available in the hospital pharmacy unit;,Mebendazole oral suspension, Simvastatin 20mg tab, Haloperidol tab, Magnesium sulphate inj and Tetracycline eye ointment were not found at the time of facility audit.

"*.....To increase the availability of essential medicines, inventory management needs to be improved so that decisions are guided by accurate information.*" 35 years old male BSc pharmacist experience of 3 year

Availability of Trained Staff's

There are thirteen trained pharmacy professionals providing auditable pharmaceutical transaction services in Seka primary hospital. Ten (76.9%) Out of 13 pharmacy professional are male and the rest are females. There are three finance professional working in the cashier window to collect daily transaction income. So this produce a total of seventeen staff are working in Seka primary hospital pharmacy unit. All pharmacy staff including APTS accountants were trained on auditable pharmaceutical transaction service which is organized by Oromia regional health bureau except one APTS accountants, one druggist and BSc pharmacist. Among the total pharmacy professional seven (53.8%) of them are BSc. Pharmacists and the rest are diploma druggist. The percentage of availability of professionals for Seka primary Hospital was 13 of 16 required (81.3%).

"….. *Most training was provided to urban and good performance hospitals… Even if it was reach to rural and newly established centers. Like ours, there is high turnover of trained health professionals from this kind of HFs.*" 25 years old female BSc pharmacist experience of 1 year.

Availability of APTS Tools and Pharmacy Work Flow Arrangement

All recording and reporting formats related to APTS were available in the health facility including; monthly summary reporting format basic tools of APTS such as cash sales ticket and dispensing registers, tablet counting tray, refrigerator, facility specific list which is approved by drug therapeutic committee, computer in pharmacy accountant office, scientific calculator, swivel chair and room thermometer were available and in use at Seka primary hospital pharmacy unit. Recent edition of APTS guideline, standard treatment guideline, good dispensing manual and drug formulary, procurement police manual were available in Seka primary hospitals pharmacy unit.

" *… We face interruption in printing materials such as* monthly summary reporting format *…if such supplies were addressed, the program may become more successful.*" A 38 years old female BSc pharmacists

Seka primary hospital renovated the outpatient pharmacy premises and rearranged patient flow as per the APTS standards; they are having rearranged workflow, having two doors, waiting area, counseling

room, standard counters in place, and staff adjustment and being cashiers within the dispensary. So, the work flow arrangement restructured as ENTRY, Evaluator/ Biller, cashier, drug use counselor and EXIT

Allocated Budget,

In the past three months, of the Birr 388,000.00, budget allocated for 2011\12 fiscal year for Seka primary hospital; they spent (on drug) the amount of Birr 328,913.95(85.2%).

"…..Drug and Therapeutics Committees (DTCs) have developed and approved hospital-specific medicines lists." A 31 years old male pharmacist key informant, 2 years' experience

Compliance of Health Care Providers to National Standards

Average Counselling and Dispensing Times Per Patient (min)

Short consultation times give patients little chance to obtain information about their treatment. The average observed consultation time recorded for the 362 patients in the Seka primary hospital, dispensing unit were 4:03 minutes and the average observed dispensing time for the 362 patients were 1:17 minute.

Existence of Expired Drugs on Shelves

To determine if expired drugs were in the health facility on the day of the visit, the expiry dates of the 32 selected key medicine available in the stores\dispensaries were checked. The percentage of expired drugs observed on the day of the visit was 0% in both dispensaries and store, indicating that there were no expired drugs found on their shelves. Seka primary hospital used ordering and receiving vouchers (models 19-22) to manage drug logistics and used stock\bin card.

Average Lead Time (for Last Three Months)

The average time between requisition of drug and receipt (lead time), was used to assess the effectiveness of procurement and distribution system of drugs in APTS. It was found on average the lead time from the time of ordering drugs from the zonal store or PFSA to the time obtaining drugs was less than 5 days.

Stock-out of key Medicine

To measure the availability of key medicine to treat top ten common health problems in the past three months, the stock cards of the store and dispensary were reviewed. The number of days for which the key medicine were not available (zero stock) within the review period were recorded and calculated using the standard formula (Survey Form 3). The average stock-out duration of key medicine was 20.3 days/year in Seka primary hospital.

Adequate Record Keeping

Inventory management at Seka primary hospital was not computerized but they were used stock cards, requisitions and receipt vouchers (Models 19-22) to capture logistics data for selected key medicine to control logistics management of drugs (Survey Form 3). The team identified as few as five records (20.1%) that were not accurate specifically ceftriaxone 500mg iv, Cotimoxazole 240mg Po, Diazepam 5mg Po, ORS ,and EFV/3TC/TDF tab combination.

A 35 years old female key informant, HMIS at Seka primary hospital said,

"… Even though there was supportive supervision from zone health department and Oromia regional health bureau, supervisor competency should be considered. Provision of updated training, refreshment on APTS especially on registers because sometimes incomplete records were seen due to unfamiliarity of it."

Supervision Received (in the Past Three Months)

The evaluation finding revealed that among the expected at least one supervision within the three months covered by the survey, had been supervised by the higher level experts; and hence the average percentage of storerooms\dispensaries received supervision in the past three months were three of four (100%).

Prescribed Drugs Dispensed to Patients

To examine the nature of patient care 362 outpatients were selected for exit interview. Patients leaving the hospital (after they have been treated) were interviewed to know how many of the prescribed drugs were dispensed to them, if the drugs were adequately labeled, and if the patients know how and when to take their drugs. Among the 362 outpatients interviewed,

172(41%) were males and 246(59%) were females. The percentage of prescribed drugs dispensed to patients indicates the facility capacity to manage the availability of selected key medicine regularly. The average result of the exit interview was 619(80.3%)

Prescribed Drug on Facility Specific List (FSL)

The prescribers are expected to prescribe drugs on the facility specific list, accordingly, percentages of drugs prescribed from key medicine list was used to assess the prescribers 'adherence to the FSL. The percentage of prescribed drugs on FSL showed a average of 1,175(99.7%)

Drugs Prescribed by Generic Name

To assess the extent to which prescribers stick to the recommendation that all drugs should be prescribed by their generic name, the percentage of drugs prescribed by generic name was calculated using standard formula. The percentage of drugs prescribed by generic name were 359(96.0%) in Seka primary hospital.

Average Number of Drug Prescribed Per Prescription

Prescription review was done on 611 randomly selected prescriptions prescribed in past three months to identify whether average number of drugs prescribed per one outpatient encounter, percentage of drugs prescribed on the key medicine. The average number of drugs per prescription prescribed at Seka primary hospital was found to be 2.0, the evaluation revealed that for the hospital, 163(27.2%) of prescriptions were prescribed with one drug, 307(51.1%) of prescriptions prescribed with two drugs and the remaining 130 (21.7%) of prescriptions were prescribed with three and more drugs.

Adequate Labelling of Dispensed Medicine

Two hundred thirty six (72.4%) of the 611 medicine packages reviewed had the patient's name written on the label. Frequency (49.1%) and duration (47.2%) of dispensed medicine were the most frequently component of drug full information missed labeled. The medicine name and its strength (67.2%) were the most frequent information written on the labels.

Quantitative Data

Socio-demographic Profile

The response rate of clients was 100%. Therefore, the total number of clients involved in the study was 326.

Among the total of 326 clients interviewed, more than two third (64.7%) were male. Nearly two thirds (69.3 %) of the participants were married, and 56.7% were Muslims. In terms of residence, 55.8% of the participants were from the relatively urban/town areas where the hospital is located.

Participants whose who are unable to read and write accounted for more than half (53.4%) of the participants. More than one –fourth (35.9%) of participants are farmers followed by merchants, who made up of about 14.2% of the participants.

Most of the participants who visited the hospitals were new visors, accounting for more than three quarters (69.3%). While nearly three quarters (82.2%) visited the pharmacies to get medicines for themselves, the rest were acquiring the medicines for their friend or families. The overwhelming majority (67.4%) reported that they had some type of chronic illness. 70.2 % of the participants reported that they paid for the medications (Table 3).

Patient Satisfaction on Auditable Pharmaceutical Transaction Service

The result on the suitability of the dispensing area clients either satisfied or very satisfied was 71.6. The result obtained for privacy setting either satisfied or very satisfied was the 83.3%. About 66.6 % of the patients were either satisfied or very satisfied with the dispensing process, while 88.3% of clients were satisfied with the competence of pharmacy staff during dispensing. Around 77.6 percent of the respondents acknowledged that they received good assistance from pharmacy staff. Overall satisfaction stood at an average of 61.3%.

Discussion

Availability of key Medicine

The availability of key medicine in health facility is crucial in the overall treatment of diseases.

Theoretically, APTS is believed to increase availability of medicine in the pharmacy store and dispensing unit of health facilities. To procure pharmaceuticals, direct procurement methods, followed by preforms based, and open tender methods. The average percentage availability of selected key medicine at the time of the survey data collection for Seka primary hospital was 10.7(81.0%), which was a medium achievement according the agreed upon judgment criteria(80-90%) and the 100 % target set in HSDP III [7] . The figure for the store supplying the dispensary was only two (15.4%), showing a very weak achievement. The reason given by the store's manager was that the store only keeps free drugs and line items. The result of this survey 10.7(82.0%) was better than the 2003 Assessment of the Pharmaceutical Sector in Ethiopia [9] (76.8%) and almost similar to 83.3% figure of the 2006 DACA RDU study10. The improvement might be as a result of revolving drug fund and the BPR. This might also be due to the 2003 study was done seven years earlier than this study.

Availability of Human Resources for APTS

Availability of resources (human and physical) is considered paramount important in delivering quality APTS and has direct relation with implementation of activities planned. A well-functioning and well-performing health system requires the right number of skilled service providers in the right location at the right time. Availability of adequate and motivated human resources based on APTS system design assumptions is one of the critical APTS implementation enablers. Seka primary hospital has been implementing auditable pharmaceutical transaction service since 2017.The national APTS guideline recommend sixteen pharmacy professionals and four APTS accountants at primary hospital level. During data collection period, there were thirteen trained pharmacy professionals and four APTS accountant providing auditable pharmaceutical transaction services in Seka primary hospital had less than the required human power. The average percentage of professionals for Seka primary hospital was 17 of the required 20 human power (about 85%), which was high achievement according the APTS and the judgment criteria (>80%).

All pharmacy staff including APTS accountants were trained on auditable pharmaceutical transaction service except one APTS accountants, one druggist and BSc pharmacist. The percentage of APTS trained professionals for Seka primary hospital was 14 out of 17 (about 88.2%), which was high achievement according the judgment criteria (>80%).

Regarding Availability of APTS tools and pharmacy work flow arrangement in Seka primary hospital all recording and reporting formats related to APTS were available in the health facility including; monthly summary reporting format basic tools of APTS such as cash sales ticket and dispensing registers, tablet counting tray, refrigerator, facility specific list which is approved by drug therapeutic committee, computer in pharmacy accountant office, scientific calculator, swivel chair , recent edition of APTS guideline, standard treatment guideline, good dispensing manual and drug formulary, procurement police manual and room thermometer were available which is consistent with the national auditable pharmaceutical transaction service guideline .Pharmacy premises and rearranged patient flow as per the APTS standards; they are having rearranged workflow at OPD, having two doors, waiting area, counseling room, standard counters in place, and staff adjustment and being cashiers within the dispensary. So, the work flow arrangement restructured as ENTRY, Evaluator/Biller, cashier, drug use counselor and EXIT. The percentage of APTS tools and pharmacy work flow arrangement for Seka primary hospital was hundred percent available, which was high achievement according the judgment criteria (>80%).

Standard Treatment Guideline (STG) and Facility Specific List

During the data collection period, Seka primary hospital had both the Standard Treatment Guideline and facility specific list in the consultation and dispensing area. During discussion of preliminary report of the evaluation with the HCs the evaluator distributed the soft copies of the old and the 2010 editions of the Standard Treatment Guideline s and facility specific list, including some important SOPs. PFSA Jimma branch also distributed few hard copies of 2010 editions two weeks after data collection period of this study) The percentage availability of both Standard Treatment

Guideline and facility specific list at Seka primary hospital was 100 % which was high achievement by the judgment criteria(>80% for both) and the expected 100% availability in health facilities6, 55-57, 60. The result was better than the study in Sudan (0.1%)14 and the 2006 RDU study of DACA (15.4%). This might be due to the DACA study was done four years earlier than this study.

Budget Allocation

Utilization of budget help to assess the efficiency and effectiveness of the health facility in using the budget allocated for purchasing drugs. In the past three months, of the total Birr 386,000.00 budget allocated to buy drugs for the 2011\12 fiscal year, the average percentage of budget utilization of the Seka primary Hospital was Birr 328,913.95(85.2%), which means the hospital utilized the budget allocated for the past three months on time. This was high achievement according to the judgment criteria set by the stakeholders (>80%).

Compliance of Health professional to APTS National Guidelines

Average Counselling Times Per Patient (min)

The average consultation time which a patient spent with a dispenser to get information about the medicine and the need to take the drug accordingly, was taken to measure the indicator counselling time (in minutes) per patient. The average was 5:43 minutes was too short to evaluate a patient and prescribe a treatment for most cases and, therefore, was low achievement according to the evaluation parameter (<60%) and the 10 minutes (and more) set by the APTS guideline.

"… because of patient load, especially on market days, week beginning and weekends and we were not aware of the shorter counselling time and promised to improve. A 32 years old male druggist one year experience said KII

The average counselling time of this evaluation corresponded with results reported in the studies conducted in Cambodia11 (4.43 minutes) and the 2006 RDU study of DACA10 (4.58 minutes).

Average Dispensing Time per Patient (min)

Where dispensing time is longer, labeling is more often adequate, and patient knowledge of dosing is also better. A dispensing time of less than one minute is considered too short 1. The evaluation finding reveals that even though the average dispensing time were high. The result shows that the dispensers take adequate time (more than one minute) to give information to patients how and when to take their drug. In contrast with shorter consulting time (low by the standard set) the achievement of the dispensing sections of the hospital was high according to the judgment criteria (>80%). The average of 00:01.17 minutes for Seka primary hospital was very close to the 00:01:19 minutes recorded in the 2006 study by DACA [10].

Existence of Expired Drugs on Shelves

The percentage of expired drugs on shelves at the time of the visit was 0% in Seka primary hospital storerooms\dispensaries, indicating the optimal (100%) achievement by the judgment criteria (<2%) and above the 1% achievement goal set in the HSDP III7. The result from the studies in Philippines [12], the Sudan14 and Uganda15 shows the same result (0%). Whereas, the 2003 National assessment study for Ethiopia was much higher (9.7%). The improvement could be related to the decentralized procurement system set by the APTS.

Average Lead Time (for Last Three Months)

The average time between requisition of drug and receipt (lead time), was used to assess the effectiveness of distribution system or procurement of drugs. Hospital drug therapeutic committee were responsible for determining the quantity of drugs they need to purchase and for delivery of their orders to their health facilities. It was found on average in Seka primary hospital the lead time from the time of ordering drugs from the next level or PFSA to the time obtaining drugs was less than 5 days, which was high achievement according the judgment criteria (>80%).

Stock-out of Essential Drugs

The calculated annual stock-out duration using

the time covered by the study shows the stock-out duration of selected essential drugs of 20.3 days/year in Seka primary hospital. Even if they claim there was no stock-out during the past three months, there were no stock\bin cards to calculate the stock-out duration which indicate poor record keeping. The longer stock-out duration in Seka primary hospital store might not have strong effect on the availability of the selected key medicine at the facility level, because it keeps only free drugs. If the hospital store runs out of some free drugs, the health facility can buy it using their own budget\revolving drug fund.

"….. Even though we do not have stock cards to monitor the drug supply management, the other administrative reports and documents shows there was no drug stock-out". A 27 years old male druggist store managers

The stock-out duration for the Hospital might not be more than the 20.3 days\year, which was high achievement according to the evaluation judgment criteria (>80%) but not reached the recommendation of zero stock-out6, 7, 60. The evaluation finding of average 20.3 days\year stock-out duration was almost similar to the findings of 18.4 days\year in Sudan (2007)14 and 24.9 days\year in Philippine (2009)12; but much better than the 58.7 days\year of 2003 National assesement9.

Adequate Record Keeping

As discussed above, the inventory management at Seka primary hospital was not computerized and there were no stock\bin cards to control the drugs supply management system. However, this facility uses requisitions and receipt vouchers (Models 19-22) to capture logistics data for selected key medicines. This pull down the average calculated record keeping adequacy of the 32 selected key medicine in Seka primary hospital was five of 32(20.8%); which was low achievement according to the judgment criteria (<60%) set by stakeholders.

"….lack of awareness and training were the major reasons for not using stock\bin cards in the hospital". A 27 years old male druggist store managers

Overall record keeping system needs to be improved in the hospital store, but Similar finding of 28.5% was recorded in Sudan (2007)14.

Supervision Received (in the past three months)

During survey data collection, experts working in the Auditable pharmaceutical transaction service (store managers and dispensers) were interviewed on supervision of drug supply management (Survey Form 1). When asked when they received their most recent supervision visit within the last three months covered by the study, responded they had their last visit within the last month. The finding showed that among the expected at least one supervision within the three months covered by the survey, Seka primary hospital storerooms\dispensaries had been supervised by the higher level experts. The average percentages of storerooms\dispensaries received supervision in the past three months were therefore storerooms\dispensaries (100%), which was high achievement by the judgment criteria (>80%).

Prescribed Drugs Dispensed to Patients

The exit interview of 362 outpatient's data revealed that significant percentage of patients 290 (80.3%) had their prescribed drugs obtained the hospital dispensaries, which was (marginally) high achievement according the judgment criteria (>80%). This was in line with the 10.7(82.0%) average availability of the 32 selected essential drugs in Seka primary hospital. The survey result was closely similar with the 81.3 % and 81.4% reported in the 2003[9] and 2006[10] National studies in Ethiopia, respectively. This indicates that still a lot has to be done to attain the 100% availability of essential drugs objective goal set in the HSDP III [7].

Prescribed Drug on Facility Specific List

The Hospital 1,179(99.7%) percentage of prescribed drugs on facility specific list was high achievement according to the judgment criteria and the expected optimal 100 %(6, 7, 60). This indicates a good adherence of the prescribers to facility specific list. The percentage of drugs prescribed that were on the facility specific list was found to be high Seka primary hospital. The 99.7% Seka primary hospital percentage of drugs prescribed from the essential drug list was similar to 99.7 and 96.8% found in both Cambodia, 2002[11] and Uganda 2008[15].

Average Number of Drug Prescribed Per Prescription

This evaluation reveals that, among the 611 patients' prescriptions reviewed, the average number of drugs per prescription received, at Seka primary hospital , was found to be 2.0, which can be considered marginally medium achievement by judgment criteria (1.8-2.1=60-80%) and acceptable prescribing practice when compared with the currently recommended not more than 2.0 drugs per prescription(6, 9, 55,59). The figures show that prescribing behavior is relatively best in Seka primary hospital (1.8) The 2.0 average number of drug per prescription at Seka primary hospital was similar to the two Ethiopia National studies of 2003[9], 2006[10] and the 2009 in Philippine[12], respectively.

Drugs Prescribed by Generic Name

Generic drugs are more economic than the branded drugs and prescribing drugs by generic name helps to reduce the confusion among the prescribers and dispensers while prescribing and dispensing. The percentage of drugs prescribed by generic name in Seka primary hospital was 1,154(97.9%), which was high achievement in relation to the judgment criteria (>85%) set by the stakeholders and the ideal 100%(6, 7, 60). The percentage of drugs prescribed by generic names (97.9%) in this evaluation was almost similar with the 99.8% recorded in Cambodia11.

Drugs Dispensed Adequately Labeled

An adequate label includes at least the name and strength of the drug and written instructions on the envelop how to take it. The written information on the drug containers\envelopes reflects the extent of the dispenser's careful attention during dispensing the drugs and it helps to remind the patient\caregiver when, for how long and how much quantity of drugs to take in case of forgetting the verbal instructions. The data concerning labeling of drugs shows extremely poor achievement in Seka primary hospital. The percentage of 189(57.9%) for the hospital was far below the agreed upon judgment criteria (<60%) and the expected 100% (58-60).

"…..patient load, especially on market days, week beginning and weekends forced to rush and give patients only verbal explanation how the individual drugs should be taken and it should not be the acceptable norm of conduct". A 32 years old male dispensary head 3 years' experience, KII

The 14.4% of drugs adequately labeled was not much far from the 20% reported in the DACA 2006[10] study.

Client Satisfaction

When we see location , cleanliness and hygienic condition of pharmacy shop , Convenience of the dispensing area and counter for service provision and counselling area of pharmacy shop 54.7 % , 39.0 % , 50.6%,and 54.9% respectively clients were satisfied at all,

During auditable pharmaceutical transaction service the satisfaction measured from the perspective of clients. When we saw comfortable and favorable of the service was found to be 50.6 % and 54.7%. This result is different from study conducted in Kenya which revealed that 82% and 84% respondents were reported that health the waiting area was comfortable and the location of pharmacy was convenient respectively [28],

On the basis of the findings of our studies on satisfaction with the privacy of outpatient pharmacy is 122(37.8%) respondents were satisfied. But the baseline assessment did at Federal, Addis Ababa &teaching hospitals shows that 54.9% of respondents were satisfied with the privacy in dispensary area which is shows our finding is lower than Addis Ababa this may be due to not having proper and well organized premises or infrastructures.[32]

Provider courtesy and respect, counseling time, necessary instruction and warning about medications and knowledge of counselling person were 62.3%, 71.5,56.1 ,50.6 and 40.2 respectively when we compare this result with other researches done, there is difference with research done in Kenya were the respondent happy about their interactions with the service provider, 97% of the respondent were reported the provider as friendly, 98% of them showed as the provider well prepared and the entire study participant (100%) reported the provider listened well [21,28].

This study revealed that 196(60.7%) of respondents in Seka primary hospitals are understands what the pharmacy service providers instructed them. this shows that it is not comparable with the studies

done in Sudan that is 82% of respondents understand what the pharmacy service providers Instructed so the hospital has to be work greatly on instruction services which was given for the patients at the outpatient pharmacy services. [7]

This our studies shows that 156(48.3%) of respondents in Seka primary hospitals were satisfied with the amount of time that the pharmacy professionals spend with them for providing the appropriate medications information. However, the study done in Gonder university referral hospitals shows that only 9.2% of the respondents were satisfied with amount of time spent with the pharmacy professionals.[22] this may be due to there is a variation in pharmacy professionals approach to the respondents.

Conclusion

The overall findings of this evaluation revealed that the achievement of Seka primary hospital on auditable pharmaceutical transaction service was medium (70.3%) by the criteria set to measure the achievement of the selected indicators. The result showed that Seka primary hospital were not yet performing at the optimal level; but with extra efforts exerted the achievement can be improved to high achievement. Strengths to be sustained and weakness to be improved are concluded below.

Strengths

Nonexistence of expired drugs in storeroom\dispensaries at the time of the visit was judged to be optimal high achievement. So, the past three months, of the total budget allocated for the 2011 \12 fiscal year, half of the entire budget allocated to buy drugs was spent on time. This was high achievement according to the judgment criteria. Availability of required human power for APTS was high achievement according the national APTS guideline and the judgment criteria, and the lead time (the time from ordering drugs from the next level or PFSA to the time obtaining drugs) was high achievement according the judgment criteria.

The average dispensing time was high achievement according the judgment criteria and the stock-out duration was high achievement according to the evaluation criteria but not reached the recommended zero stock-out.

However, prescribed drugs dispensed to patients were (marginally) high achievement according the judgment criteria and was in line with the average availability of the 32 selected key medicine in health facility.

Prescribed drugs on facility specific list were high achievement according to the judgment criteria and the 100% expected. This indicates a good adherence of the prescribers to facility specific list and Drugs prescribed by generic name were high achievement in relation to the judgment criteria set by the stakeholders and closer to the ideal 100%. Availability of both STG and facility specific list was high achievement by the judgment criteria which was 100 %

Judgment on the service accommodation where perceived/satisfied by clients were FAIR with respect to sated criteria. Mostly clients were reflected that the waiting area, availability of key medicine, waiting time, and counselling time maintenance of their privacy during counseling was not satisfied with.

The evaluation result of this study concluded that the overall process of auditable pharmaceutical transaction service in Seka primary hospital was FAIR as per-sated judgment criteria with key stakeholders during EA phase.

Weakness

Counselling time was low achievement according to the evaluation parameter and the 10 minutes (and more) set by the national auditable pharmaceutical transaction service. Seka primary hospital was not used computerized data recording and bin cards, and were not considered as using scientific method for estimation of drug requirement, which was low achievement when compared to judgment and the facility were using requisitions and receipt vouchers (Models 19-22) to capture logistics data for selected essential drugs. This pull down the average calculated record keeping adequacy of the 32 selected essential drugs in Seka primary hospital; which was low achievement according to the Judgment criteria.

Recommendations

The findings of this evaluation recommends that the existing strategies on APTS documents, STGs, FSL and other SOPs needs to be implemented to make

drugs more available and used in a more rational way. Although further investigation is required to obtain a more in-depth understanding of the causes and consequences of the findings, the results of this evaluation provide broad directions for future research and action. It is therefore recommended that the following steps be taken to improve APTS in Seka primary hospital:

Seka Primary Hospital

The Standard Treatment Guideline (*STG*) and facility specific List should be made available to HCs and professionals.

Dispensers should improve the existing less than 10 minute counselling time they spent with their patients and make sure patients understand the information.

The established Drug Therapeutic Committees (DTCs) in the facility should be trained on how to quantify, estimate and procure drugs based on appropriate scientific method\s.

The facility should use the computers in the hospital for computerized record keeping and they should also use stock\bin cards to capture logistics data of drugs and supplies.

Pharmacy professionals should improve drug labeling and drug information provision to patients during drug dispensing.

Regional Health Bureau, Zonal Health Department and Partners

Regional health bureau, zonal health department and partners (FMHACA\PFSA etc) should provide pre- and in-service trainings for all health workers involved in dispensing to improve on counselling time and to curb the tendency of over prescribing antibiotics in order to reduce the potential development of drug resistance.

2. To improve on poor drug labeling and poor record keeping, continuous training for pharmacy professionals and store managers is required to scale up dispensing practices and drug storage and distribution.

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