College of Medicine and health science
School of public health

Thesis on project **to improve medical record completeness** in outpatient department, in Dilchora Hospital, Dire Dawa, Eastern Ethiopia.

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Declaration

I am hereby to declare, that except for references to other people's work which have been duly acknowledged, this capstone project is my own composition and neither in whole nor in part has this capstone project report been presented for the award of a degree or masters in this university or else.

Principal Investigator: ----------

Signature.....… Date…….

Advisor: ----------

Signature.....… Date…….

Co-Advisor: ----------

Signature.....… Date…….

Examiner: ……..

Signature.....… Date…….

Abstract

Background: - Any medical information is important in managing patient condition, follow up, legal issues and useful for any relevant condition related to patient. Despite the importance of medical records to high quality and efficient care management of patients' medical records, especially in developing countries like Ethiopia, it has not been a priority. Studies conducted related to medical record completeness from different aspects showed that poor medical record management system compromises patient and client care at different level.

Methods: A hospital bases cross sectional pre and post interventional study was conducted at Dil-chora hospital, Dire Dawa, eastern Ethiopia from March to June 2018.A total of 88 patients medical record folder was reviewed, 50 nurses with structured questionnaire and a focused discussion was conducted with five concerned body. Data collected using a standard structured questionnaire and reviewed out-patient medical record folders were transferred into SPSS version 20 for further statistical analysis. Variables with a p-value of less than 0.05 at multiple logistic regression analysis were considered statistically significant factors for the utilization of selected variables of out-patient medical records.

Results: The study revealed that 12% of the health workers had a good level of awareness on completeness of out-patient medical records, 0%HMIS training and, supervision, 24% completeness of out-patient medical records during base line assessment (Pre intervention). And the intervention has showed a significant improvement for the selected combed variables from 24% to 92%.

Conclusion: As more than half of the health workers working at government health institutions of East Gojjam were poor health information users compared with the findings of others studies. HMIS training, data analysis skills, supervision, regular feedback, and favorable attitude were factors related to routine health information system utilization. Therefore, a comprehensive training, on HMIS and regular supportive supervision are highly recommended for improving medical record completeness in all governmental and privet health facilities.

Keywords: Out-patient medical records, Dil-chora hospital Dire Dawa, Eastern Ethiopia.

Acronyms

EHSTG ……Ethiopian Hospital Service Transformation Guide

EFY……. Ethiopian Fiscal Year

HMIS……Health Management Information System

MR ……Medical Record

MRN……. Medical Record Number

OPD ……. Out-Patient Department

WHO ……World Health Organization

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Chapter One

1. Background

1. Introduction

Dire Dawa is located in the eastern part of the country. There are about 2 governmental and 3 private hospitals. And also 15 Health Centers, 32 Health Posts and 17 medium and higher privet clinics in administration. Dilchora Hospital is one of the oldest hospital Administration and the hospital is established in Nehase 5, 1952 E.C and has undergone many processes till it was named Dire Dawa General Hospital in Tahisas 26, 2000 E.C. And the hospital is currently serving more than 3 million population including the neighboring regions (Ethiopian Somali and Eastern Oromia) and also neighboring countries (Djibouti and Somali Land). The hospital has departments and 450 staffs with different specialties. For instance, there are 8 senior specialties, 35 GP ,153 nurses and 289 supportive staffs. The total outpatient per capita is estimated to be 0.26 and annually 118886-number of OPD visits were registered in 2010 EFY. The hospital has currently a total annual budget of 74 million. Both electronic and paper based HMIS was implemented as a pilot in 2001. Thought it was a pilot site as compared to the other regions the implementation is not satisfactory. Annual report of 2009 EFY for Dilchora hospital outpatient attendants 118886 and the outpatient per capita were 0.26

The vision of the hospital is “To see healthy, productive and prosperous– Dire Dawa community”.

Mission “Preventing suffering, disability and mortality, and promoting the public’s health status through providing quality, equitable, and accessible curative and rehabilitative healthcare services with focus on affordability for those who cannot afford”.

The Ethiopian Federal ministry of health(FMOH) has underlined the importance of Health management of information system(HMIS) for appropriate data gathering from all parts of the country. In line with this the FMOH has assumed HMIS as main agenda in Health Service Development plan (HSDP II). Since then the HMIS is being implemented in all most all health facilities in the country. The purpose of HMIS is to routinely generate quality health information that provides specific information support to the decision-making process at each level of the health system for improving the performance of health services delivery. HMIS is not only

meant as a system for data collection and generating quality information, but continued use of that information for decision making for improving the performance of health services delivery is an essential output of HMIS (17).

Any medical information is important in managing patient condition, follow up, legal issues and useful for any relevant condition related to patient. Completed patient record is an important tool to monitor performance of quality health service delivery for patients or clients, report activities and to know and manage the gap. Additionally, it is important for researchers to get complete data of patients that will contribute to the improvement of health service delivery and quality improvement [1,7,9].

MR documentation is essential to ensure quality of care for every patient. All information regarding the patient and his/her course of care at the hospital should be recorded in the MR. This includes his/her presenting symptoms and medical history, any diagnostic test orders and results, all documentation from care providers and consultants, interventions, diagnostics, medications, therapy, and information and instructions at discharge. Any subsequent return visits to the hospital should be recorded in the same MR [1,7].

A well-managed medical records system is critical to improve the provision of quality health care services to ensure safe medical practice, efficient and effective services and improve the patient's experience and satisfaction with their medical encounter. A strong medical records system is also equally important to make clinical and public health evidence based practices as well as making informed decisions. In addition, medical records may serve as a reliable source of information for medico-legal issues and medical/ public health researchers [5, 6 ,15,16].

Assessing the status of outpatient medical record completeness in Dilchora Hospital will enable the decision makers to address the aforementioned gaps for sustainable data quality improvement. Therefore, this study will identify and address problems related to medical record completeness in outpatient department.

1.2 Statement of the problem

In most countries including Ethiopia, general outpatient clinics are for patients who attend the hospital for treatment of a minor disease or problem, for example, mild acute respiratory infections, minor injuries (cut/bruise/sprain), cough, cold, flu, headache, etc [4].

And the outpatient medical record is separate from the inpatient medical record. And it is the ideal situation to have both in-patient and out-patient which are filed in the one folder under with the same medical record number. This system is of benefit to the patient, as all their health information at that hospital is in one place for their continuing care. It also benefits the health care provider, who is able to refer to previous notes when treating the patient for a new episode of a previous illness or for a new illness [4].

Despite the importance of medical records to high quality and efficient care management of patients' medical records, especially in developing countries like Ethiopia, it has not been a priority. Generally, inadequately supported and poorly managed; study done in a rural hospital in Ethiopia shows that only 45.7% of medical records were complete [11]. The result of the pre and post intervention study done on completeness of inpatient medical records in Menelik II Referral Hospital showed that the intervention done has increased the overall inpatient medical record completeness by 11% from 73% to 84% (P value < 0.05[7].

Another capstone project on the completeness of outpatient individual folder medical documentation in Gedo hospital showed improved after intervention from 34.81% out of 50 medical documentations which were completed in pre- intervention to 82.3% medical documentation completeness level with overall statistically significant result of (P-value<0.001). The above studies have shown that there is still huge gap in terms of record completeness though the finding varies from pre to post after intervention (15).

A strong medical records system is also equally important to make clinical and public health evidence based practices as well as making informed decisions. In addition, medical records may serve as a reliable source of information for medico-legal issues and medical/ public health researchers [5].

Overall HIS in Ethiopia is poorly developed for many reasons of which lack of extensive researches done in the area of medical records is the major. Dilchora hospital is the first high burdened public hospital in the administration that uses both paper based and electronic health management information system (HMIS). The hospital has been experiencing problems related to medical record and no study has been conducted to address its long time existed problem. Data obtained from different sources in Dilchora hospital also showed that ……

And there are conclusions on suggesting more researches to be done on HIS in this country by prioritizing the components which are highly affected. In this way it is possible for individuals, organizations and other stakeholders to contribute to the development strong medical recording system of this country [6].

1.3 Significance of the study

Study on patient medical record completeness from different aspects would be conducted in different countries worldwide, especially developing world including our country Ethiopia, showed poor medical record management system, which compromises patient and client care at different level.

With this in view, a study is planned to carry out a hospital based on pre and post interventional and the results of this study will provide very good improvement on medical records documentation, accessibility and utilization. It will improve quality of healthcare and patient satisfaction as well though improving continuity of care and reinforcing professional informed decision making power.

The result of this finding will be alleviate to certain extent the problem related to outpatient medical record completeness in the hospital and help the hospital administration to closely monitor their medical record information system management to maintain the requirements its standards. The staffs have also acquired knowledge of overcoming medical record completeness related problem through conducting such training on awareness on medical record completeness. On the other hand, this study has enhanced the improvement of quality of care by suggesting focus areas for supportive supervisions and monitoring and evaluation of patient medical records at public health facilities by local and national health authorities. Identified areas of intervention by this study has enabled relevant partner organizations to implement professional and facility capacity building activities. Finally, the study findings have been suggested to serve as an input for prospective researchers investigating various aspects of medical records at public health facilities and has also benefited patients through improvement of quality of care there after ensure their medical record complete.

Chapter 2

Objective of the research

General objective

- To improve the completeness of medical records at out-patient department of Dilchora hospital from 24% to 80% by the end of June 2018.

Specific objectives

- To identify the root cause of medical record incompleteness at Dilchora hospital outpatient department.
- To Improve out-patient Medical record completeness for the variable patient identification from the 30% to 80% by the end of June 2018.
- To Improve out-patient Medical record completeness for the variable family medical history from the16% to 80% by the end of June 2018.
- To Improve out-patient Medical record completeness for the variable clinical observation from the 28% to 80% by the end of June 2018.
- To Improve out-patient Medical record completeness for the variable outcome of visit from the 16% to 80% by the end of June 2018.
- To Improve out-patient Medical record completeness for the variable report of tests from the 36% to 80% by the end of June 2018.
- To Improve out-patient Medical record completeness for the variable referral information from the 4%to 80% by the end of June 2018.

Chapter 3

Root cause analysis

A root cause analysis is a step-by-step process that answers the question “why is the problem happening?” and it helps to ensure that we solve the problem permanently. Root cause analysis consists three major steps.

1) Collecting possible root causes.
2) Verifying and
3) Identifying real root cause.

This project has concluded that all nurses who are/has worked has low or no awareness on outpatient medical record completeness, training and supervision. Therefore, providing training and strengthening supervision plays important role.

Regarding the focus group discussion which was done with six (6) persons, four of them stated that lack of awareness & supervision are the main cause for the incompleteness of outpatient medical record.

The other two mentioned lack of commitment of nurses & physicians are the reason for the incompleteness of outpatient medical record.

But all of them has agreed for the existence of the problem and have confirmed there is no lack of logistics related to medical records and they suggested that giving training on health management information system (HMIS) could resolve the problem

So that I used fishbone and questionnaire among the root cause analysis tools to collect initial perspectives and to organize opinion in to quantifiable data respectively.

Chapter 4

Literature review

Medical record documentation is essential to ensure quality of care for every patient. All information regarding the patient and his/her course of care at the hospital should be recorded in the medical record folder. This includes his/her presenting symptoms and medical history, any diagnostic test orders and results, all documentation from care providers and consultants, interventions, diagnostics, medications, therapy, and information and instructions at discharge. Any subsequent return visits to the hospital should be recorded in the same patient folder [1].

So, in this study completeness of medical records in outpatient setting is assessed in terms of some data that needs to be collected, including: -

- Patient identification as for inpatients;
- Family health history, relevant history of presenting illness and physical findings;
- Clinical observations;
- Reports of tests and procedures performed;
- The outcome of the visit. For example, follow-up for further treatment, admission to hospital, no further treatment etc.;
- Referral information such as correspondence from a local doctor or community nurse; and
- The doctor/nurse seeing the patient should sign the medical record to indicate [3].

The information contained in the medical record allows health care providers to determine the patient's medical history and provide informed care. The medical record serves as the central repository for planning patient care and documenting communication among patient and health care providers and professionals contributing to the patient's care [4].

The health care professional responsible for administering each clinical event, intervention, instruction or observation, as soon as possible after the occurrence, should document each clinical event, intervention, instruction or observation. All entries should be dated and authenticated with full signatures. Professional designation (i.e. MD, RN, etc.) should also be included; which will be

nurses in my case. This information is to be filed in one folder divided in separate sections for each visit/admission in chronological order [1].

With the many advancements made in information technology over the past 20 years, particularly in healthcare, a number of different forms of electronic health records (EHR) have been developed, tested and implemented. Some institutions/countries are currently planning the introduction of a nationwide electronic health record while others have actually implemented some form of EHR. However, the type and extent of electronic health records vary and what one country calls an EHR may not be the same as that developed in another country [4].

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Chapter 5

Methods and Materials

5.1 Study area and period

This study was conducted in Dire Dawa Administration, Dilchora hospital from March to May in 2018. Dire Dawa is one of the two chartered cities in eastern Ethiopia (the other being the capital, Addis Ababa). Dire Dawa lies in the eastern part of Ethiopia which is 501 km away from Addis Ababa. The Dire Dawa Administration has 1 governmental hospital, 15 health centers, and 34 health posts. Except for the regional health bureau, it has no zonal or district health bureau.

Dire Dawa Administrative Council is located in the eastern part of Ethiopia about 515 kms away from the capital city of Addis Ababa. It has 9 town kebels and 38 rural kebels and it has no Woreda and Zonal structure. It has population of 466,000, of which48.9% are male and 51.9% are females. Unlike other cities 58% resides in urban and 42% in rural.

In Dire Dawa Administrative Council, there are two public three private hospitals,15 Health Centers, 32 Health Posts and 17 medium and higher privet clinics. All these together with trained and competent professionals had made the health coverage >100%.

Dilc-hora hospital was established in Nehase 5, 1952 E.C and has undergone many processes till it was named Dire Dawa Referral Hospital in Tahisas26, 2000 E.C. And it is a general hospital with catchment area population of around 1.5 million and it is because the hospital serves neighboring regions (Ethiopian Somali and Oromiya) and neighboring countries (Djibouti and Somali Land). This study will be conducted ….

5.2 Study Design

Hospital based quantitative and qualitative cross sectional pre and post intervention study design.

5.3 Source Population: - Dilchora hospital individual patient medical folder and Health professionals working in the hospital.

5.4 Study Population: - an individual folder of outpatients who attended OPD service from March to May in 2018 and nurses who have worked/working in the outpatient's department for two years.

5.5. Sample size and sampling technique

5.5.1. Sample size

The sample size was determined after assuming the Hospital performance monitoring and improvement guidelines. Accordingly, a sample size of 50 medical records or 5% of the overall performance of the hospital at a given time can be used to evaluate the performance of a given hospital. Therefore; a sample of 50 medical record folders from Dilchora hospital outpatient was reviewed and on the other hand, all nurses who have worked /are working in outpatient department were interviewed [3 and 12].

The sample size for post-intervention evaluation needed to detect improvement of medical record completeness at outpatient departments from baseline 35% ($P_0 = 0.35$) to the desired 80% ($P_1 = 0.8$) is calculated using the formula for two population proportion:

$$n = \frac{(Z\alpha_{2} + Z_\beta)^2 * P\ 1-P}{(P-P_o)^2} \qquad n = 38$$

Where;

n = number of sample

$P = (P_o + P_1)/2$, pooled proportion (0.575)

$Z_{\alpha/2} = 1.96$, at 95% level of confidence

$Z_\beta = 0.84$, at power of 80%

5.5.2. Sampling Technique

Before the commencement of data collection, a discussion was held with medical record room coordinator of the hospital to maintain those records which have had OPD visits during the study period. After agreement has reached with medical record room staffs; all medical record which are gathered from different OPDs will be stored at one site in medical record room and for baseline assessment purpose 50 randomly selected individual folders will be taken. For post intervention assessment similar procedure will be applied and data will be collected accordingly.

For the interview purpose the name all nurses who has worked in the two years in the outpatient department will be obtained from matron offices. Nurses will be contacted for interview after their individual consent obtained. Data collectors will conduct the interview accordingly.

5.6. Data collection Procedure

Data collection questionnaire and checklist is prepared from different sources. The Ethiopia hospital performance monitoring and improvement guidelines, National HMIS guideline and different published and unpublished literatures sources were also used (15,16, 17). Data collectors are trained nurses working in different health facilities at outpatient departments. One-day training will be given for data collectors to familiarize them with the data collection instruments and to make correction if any which are related the instruments. The principal investigator will follow the data collectors during data collection period and thereafter.

5.7. Study Variables

5.7.1. Dependent Variable

Medical record completeness (Complete/not complete)

5.7.2. Independent Variables

5.7.2.1. Health workers related

Age, Educational status, work experience, training status of HMIS (Trained/not trained), marital status,

5.7.2.2 Medical record related

MRN, Family History, Clinical observation, Test request attachments, outcome of visit, referral information, date and signature, International disease code, availability of logistics

5.5 Inclusion criteria:

-All individual outpatient folder in record unit recorded as outpatient services during the data collection days (period)

-For the structured questioner 50 nurses who have worked/working in outpatient department since 2009 E.C.

5.6 Exclusion criteria:

- All individual patient folders of inpatient medical records during the study period in the record unit.

-All nurses who have not worked/ working in outpatient department since the year 2009 E.C.

Operational Definitions

- **Outpatient visit:** - All services provided as an outpatient during ONE single visit to an outpatient department, other than admitted patients to any ward.
- **Completeness of medical record:** -presence of selected variable (patient identification on each attachment, clinical observation, report of test & procedure performed and date and signature of the clinician) among all the necessary information of patients based on the standard formats and all entries are dated and signed.
- **Medical Record.** They are papers that document the care and treatment a patient received.

5.7. Data Analysis

Data will be entered on both excel sheet and SPSS version 24 statistical software. After data cleaning is completed analysis will be done. Descriptive statistics will be used to describe the variables in the study from pre to post intervention assessment. Frequency and percentage will be reported for each variable in the study including pre and post intervention findings. Association will be determined using chi square test at 0.05 level of significance. Tables and graphics will be used to describe the data.

5.8. Data quality Management

The study will use trained and experience nurses who have training on HMIS. One-day training will be given to the data collectors before commencement of any data collection. The investigator will supervise the overall data collection process. Completeness of the collected data will be checked on daily bases before leaving the hospital and 5% of data will be double entered to maintain the consistency.

5.9. Ethical clearance

The ethical clearance will be obtained from Addis Ababa University College Health science and school of public. The letter will be submitted to Dire Dawa Health bureau to write a letter cooperation to Dilchora Hospital. After getting the letter of consent from Dilchora Hospital the concerned department will be contacted and consented.

5.10. Dissemination of the finding

The finding of the study result will be submitted to the college of health science and school of public health Addis Ababa university for public defense. The finding will also be submitted to

Dilchora Hospital and will be presented at the regional annual review meeting. The investigator has also interest to publish the finding on peer reviewed journals.

Chapter 6

Generate and select best intervention

1. Train Physicians and using Electronic Medical Record System
2. Train nurses on the existing paper based medical record system

So the second intervention (train nurses on the existing paper based medical record system) has been selected as the best considering the cost, feasibility, time and its impact.

Project Scope and Goal

The scope and goal of this project is to get Dilchora hospital OPD medical recorded complete and ultimately improve quality, continuity of care and patient satisfaction in healthcare.

Project Deliverables

Studies have showed that incompleteness of medical records is a significant problem that affects the quality of health care services in many hospitals of Ethiopia. Improving the completeness of patient's records is an important step towards improving the quality of healthcare. A study in Menelik II Referral Hospital, Addis Ababa, Ethiopia showed that physician note format was attached for 111 (100%) and completed for 103 (92.8%), physician order sheet was attached for 111 (100%) and completed for107 (96.4%), nursing care plan was attached for 109 (98.2%) and completed for 85 (76.6%), medication administration format was attached for 103 (92.8%) and completed for 78(70.3%), and at last discharge summary was attached for 107(96.4%) and completed for 93 (83.8%).

With this in view, I am planning to carry out a hospital based pre and post implementation study and it is my belief that the results of this study will provide very good improvement on medical records documentation, accessibility and utilization in Dilchora hospital, Dire Dawa, Eastern Ethiopia. And ultimately improve the continuity of care and reinforce the professional decision making power which are the main components of quality of care.

Monitoring and evaluation

Follow up and supportive supervision by head nurse and PI during implementation period through card review.

Indicators

Processes indicators: -

- Number of trained nurses
- Identified root cause

Outcome indicators: -

- **80**% of OPD attendant folder with complete medical record

Result

The completeness of out-patient medical record was assessed in terms of charting (recording) patient identification, family medical history, clinical observation, outcome of the visit, date and signature of the clinician and international disease code for every visit of a patient and keeping attached reports of tests & procedures and referral information.

Consequently, the result showed significant improvement for all variables as follows: -

- Patient identification from 30% to 87%
- Family medical history from 16% to 74%
- Clinical observation from 28% to 92%
- Outcome visit from 16% to 89%
- Date and signature of the clinician from 20% to 89%
- International disease code from 0% to 71%
- Attachment of report of tests and procedures from 36% to 82%
- Attachment of referral information from 4% to 24%

Very importantly a collective improvement of the variables; patient identification, clinical observation, report of tests & procedure performed and date &signature of the clinician from 24% baseline to 80% post intervention.

Discussion

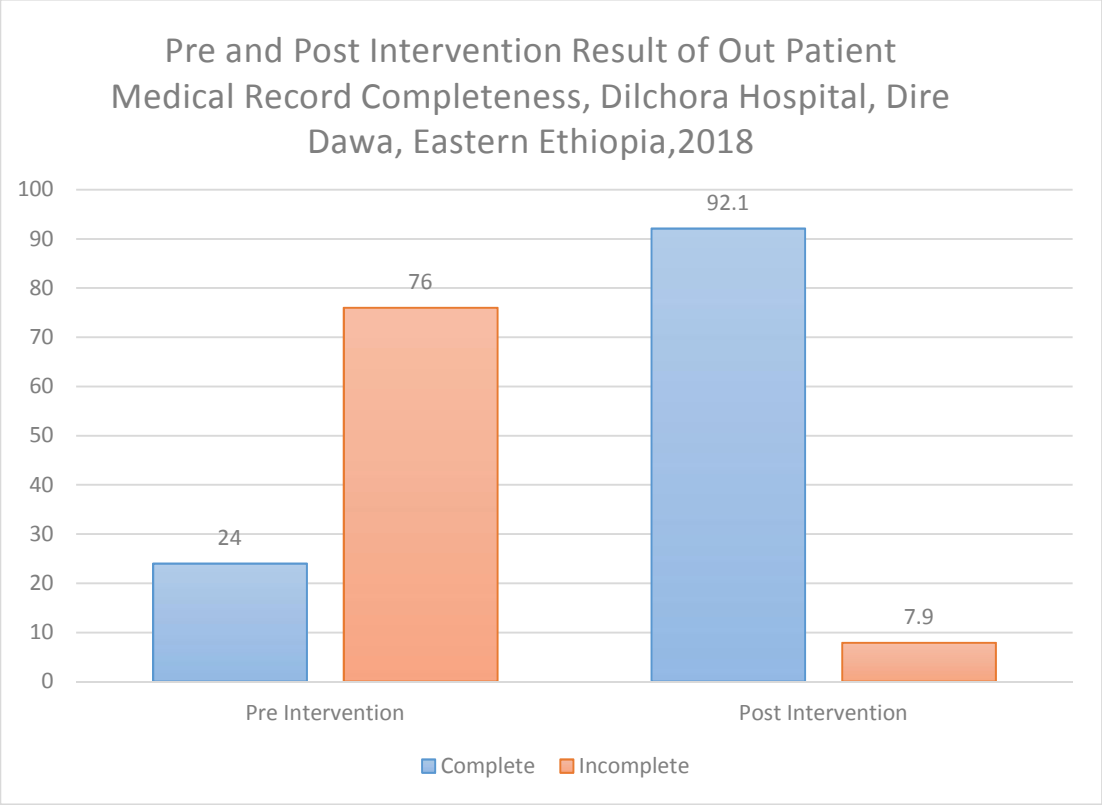
My study showed that the intervention I did could accomplished a magnificent improvement in allover medical record completeness in outpatient setting in Dil-chora hospital Dire Dawa, eastern Ethiopia.

The intervention I choose was effective and efficient with regard to the impact, cost, time and feasibility.

When measuring the improvement, it has increased by 63% from 24% to 87% (p-value X) which is the highest compared with a study done on completeness of in-patient medical record in Minilik II referral hospital which has showed improvement of 11% from 73% to 84%, p-value < 0.05

To show the improvement on completeness of medical record of outpatient for individual variables in per centile the highest being 76 followed by 71,69,64,58,57,46, and 20 for the outcome of visit, international disease code, date & signature of clinician, clinical observation, family medical history, patient identification on every attachment, report of test and procedure performed and referral information respectively.

This graph is to show the significant improvement made on the selected combined variable with a difference of 68% that was 24% pre-intervention to 92% post-intervention.



This is to show the improvement on completeness of medical record of outpatient Dil-chora hospital, Dire Dawa, Eastern Ethiopia for individual variables.

Out Patient Medical Record Completeness, Dilchora Hospital, Dire Dawa, Eastern Ethiopia,2018							
s.no	Indicators	Category	**Result**				**Pre-Post Intervention Difference (50%)**
			Pre Intervention		**Post Intervention**		
			Frequency	**Percent**	**Frequency**	**Percent**	
1	Patient Identification	yes	15	30	33	86.8	56.8
		no	35	70	5	13.2	
2	Family health history	yes	8	16	28	73.7	57.7
		no	42	84	10	26.3	
3	Reports of tests and procedures performed	yes	18	36	31	81.6	45.6
		no	32	64	7	18.4	
4	clinical Observation	yes	14	28	35	92.1	64.1
		no	36	72	3	7.9	
5	The outcome of the visit.	yes	8	16	33	86.8	70.8
		no	42	84	5	13.2	
6	Referral Information	yes	2	4	9	23.7	19.7
		no	7	14	0	0	
		NA	41	82	29	76.3	
7	Date and signature	yes	10	20	33	86.8	66.8
		no	40	80	5	13.2	
8	International Disease Code	yes	0	0	27	71.1	71.1
		No	50	100	11	28.9	
9	Completeness during Pre and posttest Intervention	Yes	12	24	35	92.1	68.1
		No	38	76	3	7.9	

Conclusion

This project has concluded that all nurses who are/has worked has low or no awareness on outpatient medical record completeness, training and supervision. Therefore, providing training and strengthening supervision plays important role.

Furthermore, researches are suggested to be conducted in other health facilities and interventions has to be made depending on the finding.

Recommendation

The hospital and the reginal health bureau as well needs to give emphasis for the completeness of outpatient medical records as it contributes to good quality of healthcare. And this can be achieved through awareness creation at different level in health facilities.

In line with this supportive supervision needs to be carried out and written feedback should be documents to sustain and farther improve completeness of outpatient medical records.

Finally, such a project has to be scaled up in other health facilities in the Administration.

Challenges

There is very few / no studies at outpatient medical record completeness and short time for the project life to measure its impact.

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Annex

Table 1:- HMIS standard checklist, Dawa Dawa, Eastern Ethiopia, 2018

S. No	Elements of Checklists	Yes	No
1	Unique medical record number assigned to a patient during his/ her first visit of care.		
2	The hospital shall have a single unified medical registration unit for all patients' registration.		
3	The hospital utilizes paper and computer-based systems to register and retrieve medical records.		
4	The hospital avails and utilizes a standard set of formats that comprise a complete medical record for continuum of patient's care.		
5	The hospital shall implement and comply with national guidelines to manage access to patient's medical records.		
6	The Hospital's MRU head ensures allocation and availability of all necessary resources to manage medical recording activities.		
7	Hospital performs medical record auditing, data quality checks, archiving/culling procedures and takes corrective actions on a regular basis.		
8	Hospital ensures patient's medical records return from different service units to MRU at the end of each service day in accordance with medical record tracing system		
9	The hospital utilizes MPI		
10	Is the medical record room good enough for the service?		
11	Are patient documents kept orderly?		

Table 2:- Check list prepared to assess the completeness of medical record at outpatient department , Dilchora Hospital, Dire Dawa, 2018.

1 MRN	2 Patient Identification	3 Family health history	4 Clinical observations	5 Reports of tests and procedures performed	6 The outcome of the visit.	7 Referral information	8 Date and signature	9 International Disease Code

3) Family health history. Relevant history of presenting illness and physical findings

4) Clinical observations (Including current DX and treatment)

5) Reports of tests and procedures performed. Are they attached?

6) The outcome of the visit. (For example, follow-up for further treatment, admission to hospital, no further treatment

7) Referral information. Such as correspondence from a local doctor or community nurse.

8) Date and signature of the Doctor/nurse seeing the patient.

Table 3:-Gent chart prepared for the assessment of completeness medical record ,Dilchora Hospital, Dire Dawa, 2018.

Activities	March,2018				April,2018				May,2018			
	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
Base line assessment												
Verification and analysis												
Generate alternative intervention and select the best												
Generate alternative intervention, select the best and implement.												
Monitoring												
Evaluation												

Table4:- Financial breakdown **assessment of medical record completeness in Dilchora Hospital, Dire Dawa, 2018.**

Action Item	Participants	Unite cost	Total cost	Remark
Training for base line assessment	11 nurses	300 *11 *2day	6600	
Trainer allowance	Trainers	300*3persons*1day	900	
Card review and questioner	11 nurses allowance	300 * 6*3	5400	
Focus group discussion	50 nurses transport allowance	50 * 90	4500	
Data collection on FGD	Data collectors	300*2	900	
Tea break	50 nurses	90 * 50	4500	
Stationary	Paper, toner, Internet…	2000	2000	
Hard disc	Data storage	1500 * 1	1500	
Training cost for nurses	153 nurses	150 *153	22950	
Transport and allowance for PI	MHA student	1000 + 1449	2449	
Total		------	49,899	

Table to show step how to select the best among alternative innervation (Quantitative Options Appraisal) to improve medical record completeness in outpatient department in Dilchora hospital, Dire Dawa, Ethiopia 2018.

Alternative interventions	Impact	Cost	Time	Feasibility	Sum
1. Train Physicians and using Electronic Medical Record System	3	2	2	4	11
2. Train nurses on the existing paper based medical record system	5	3	3	5	16

Note: Each option ranked on a score of 1-5 with 5 being the best, or strongest, option.

Table to show step how to select the best among alternative innervation (Qualitative Options Appraisal) to improve medical record completeness in outpatient department in Dilchora hospital, Dire Dawa, Ethiopia 2018.

Alternative interventions	Impact	Cost	Time	Feasibility
1. Train Physicians and using Electronic Medical Record System	Good	Very High	1 month	Low
3. Train nurses on the existing paper based medical record system	Good	Low	15days	High

Table5:-Project Logical Framework for the assessment of medical record completeness in Dire Dawa, Dilchora Hospital, 2018.

What you want to achieve (objective)	How to measure change	Information Source	Important assumption.
Goal To have complete medical records of patient information at OPD.	A change in the percentile of Pt's folder with complete medical records among OPD attendants in Dilchora hospital.	Supervisors (Head nurses) and reviewing patient folder.	• Knowledge and commitment of medical staffs in OPD assisted by training. • Monitoring and Evaluation
Purpose: -to improve quality of healthcare and patient satisfaction.	A change in the percentile of Pt's folder with complete medical records among OPD attendants in Dilchora hospital.	Supervisors (Head nurses) and reviewing patient folder.	• Knowledge and commitment of medical staffs in OPD assisted by training. • Monitoring and Evaluation
Output ❖ Complete medical record, improved quality of healthcare and patient satisfaction	Increased in percentage of patient folder with complete medical records of OPD attendants.	Supervisors (Head nurses) and reviewing patient folder.	• Knowledge and commitment of medical staffs in OPD assisted by training. • Monitoring and Evaluation
Activity ✓ Baseline assessment ✓ Orientation for head nurses ✓ Training for all nurses. ✓ Monitoring and evaluation	• Number of patient's card reviewed • Number of head nurses oriented • Number of nurses trained	• Patient card review • Continuous supervision	• Sustainability of completeness of medical records

Questioner to assess awareness of nurses on completeness of MR in OPD

1) Have you ever been assigned and worked in outpatient department in 2009 and 2010 EC?
   A) Yes
   B) No
2) Have you ever encountered lack of logistics like test request papers, fastener and any formats used for health management information system (HMIS)?
   A) Yes
   B) No
3) If yes to question number 2 which item?
   A) Test request paper
   B) Fastener
   C) HMIS formats
   D) All
   E) None
4) Is checking for the completeness of MR your responsibility?

A) Yes
B) No

5) How do you feel that patient identification for every attachment?

A) Strongly agree
B) Neutral
C) Agree
D) Disagree
E) Strongly disagree

6) Do you know that International Disease Code should be written for every visit?

A) Strongly agree
B) Agree
C) Neutral
D) Disagree
E) Strongly disagree

7) Do you have International Disease Code Manual at hand?

A) Yes
B) No

8) Have you ever been supervised on the completeness of MR in outpatient department?

A) Yes
B) No

9) Do you usually check every document?

A) Yes
B) No

10) What do you do if you found incomplete MR?
A) Try to trace and make it complete
B) Nothing
11) What do you mean by MR incompleteness?

Missing

A) Patient identification
B) Family health history, relevant history of presenting illness and physical findings
C) Clinical observations
D) Reports of tests and procedures performed
E) The outcome of the visit.
F) Referral information
G) Date and signature of the Doctor/nurse seeing the patient.
H) International Disease Code

12) Have you ever trained on medical record keeping?
A) Yes
B) No

Fishbone root cause analysis