ASSESSMENT OF COMPLETENESS OF MEDICAL RECORD (SUMMARY SHEET) IN MEDICAL UNIT 1 OF YANGON GENERAL HOSPITAL, 2017

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M.B., B.S

Master of Medical Science

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Thesis submitted to
the Postgraduate Academic Board of Studies
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This thesis has been approved and passed by the Board of Examiners.

Chief Examiner

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ABSTRACT

A cross-sectional descriptive study on assessment of completeness of medical record summary sheet in Medical Unit 1 of Yangon General Hospital during 2017 was conducted and the aim of this study was to describe the completeness of items in summary sheets during the period from November, 2018 to May, 2019. Summary medical records documented were randomly selected to obtain a sample size of (144) summary sheets over twelve months. Documented summary sheets performed by medical officers from Medical Unit 1 were reviewed for completeness by using standardized checklist.

After reviewing all the twenty-nine items included in the summary sheet used in Yangon General Hospital, different levels of completeness were found. Only three items concerning with "Date of Admission, Date of Discharges and For All Injuries' showed (100%) completeness and another ten items concerning with "Hospital Number, Ward/Specialty, Name, Age, Sex, Marital Status, Ethnic Group, Religion, Address and Principle Diagnosis" had shown between (80%) to (99%) completeness. But six items with completeness levels between (1%) to (40%) were found in items concerning with "Source of Admission, Serial Number of Admission, Complications, Treatment, Discharge Status and Investigations". Items with (0%) completeness were seen in six items concerning with "Length of Stay, Date of Birth, Permanent Address, Surgical Operation (Procedure), Current Co- Morbidities and Police Case". Four items showed (50%-79%) moderate level of completeness in items such as "Father Name, Occupation, Medical Officer Signature and Medical Officer Name".

Average overall completeness percentage for 144 summary sheets had shown (53.60%) completeness after excluding irrelevant items of "for all injuries and surgical operation".

Completeness on documentation performed by old paper-based system or advanced user friendly workflow process of computerized system will be needed more technical, financial and manpower supports as well as more research activities for time savings during documentation and conveniences of data retrieval.

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LIST OF ABBREVIATIONS

AS	Assistant Surgeon
BSC	Balanced Scorecard
CI	Confidence Interval
CME	Continued Medical Education
DHP	Department of Health Planning
EHR	Electronic Health Record
EMR	Electronic Medical Record
HIA	Health Information Administrator
HIBA	Hospital Italiano Bouneo Aires
HIM	Health Information Manager
HIS	Health Information System
IBM	International Business Machines
ICD-10	10 Revision of the International Classification of Diseases and Health Related Problems
ICU	Intensive Care Unit
IOM	International Organization for Migration
LIS	Laboratory Information System
MIS	Medical Information System
MLRs	Medico-Legal Records
MOHS	Ministry of Health and Sports
MR	Medical Record
MRA	Medical Record Administrator
MRD	Medical Record Department
MRN	Main Registration Number
MRN	Medical Record Number
MRO	Medical Record Officer
MU 1	Medical Unit 1
NAPCI	National Alliance for Primary Care Informative
OPD	Outpatient Department

PCP	Primary Care Physician
PHC	Primary Health Care
PIS	Pharmaceutical Information System
POMR	Problem Orientated Medical Record
PS	Plan de Salud
RN	Registration Number
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
TDN	Terminal Digit Number
WHO	World Health Organization
YGH	Yangon General Hospital

CHAPTER 1
INTRODUCTION

1.1 Background Information

The life and the health of patients who are taking treatment and medical care in hospitals mainly depend on the quality of care being provided. Well-trained doctors and nurses, high quality facilities and equipment could facilitate the good medical care for the patients. If there is an absence of accurate, comprehensive, up-to-date and accessible medical record, the medical person may not offer the best treatment or may in fact misdiagnose a condition which can also have serious consequences (Garba, 2016).

The important information including the patient name, age, and gender; the source of information; and the date and time of encounter must be included in the clinical notes which should be well kept, be clearly written and give the detailed picture of the clinical information. Relevant history and detail of the physical examinations with the positive and negative findings should be clearly documented in the medical records (Ngo, et al., 2016).

The physician who created the medical record and the facility in which the record was created actually belong in a physical medical record. The patient owns the information gathered within the original medical record. Therefore, the patients are allowed to obtain a copy of their medical records, but not the original documents (Elliott, 2000).

The availability of all the necessary information of the patient based on the standard formats attached at the annex, and all entries dated and signed may make the completeness of medical record when checked. Physician note, physician order sheet, nursing care plan, medication administration sheet, and discharge summary were assessed for completeness of medical record (Tola, et al., 2017).

A summary of the patient's stay in hospital written by the attending doctor is the discharge summary. The minimum details provided in discharge summary are "patient identification, reason for admission, examinations and findings, treatment for

the patient during their stay in hospital and proposed follow up". As the medical records and discharge summaries could be misplaced once the patient has been discharged, they should not be left in the ward for completion (WHO, 2006).

Details concerning to the main condition, sex and age of patient plus the outcome, alive or dead, are required by the hospitals and authorities. The discharge clerk in the Medical Record Department (MRD) needs to check to ensure that all the forms are in the medical record. This procedure is often called the discharge analysis. For example, the record is checked to ensure that if the patient has had an operation, an "Operation Report" is noted in the record. In addition, the clerk needs to check that all progress notes, pathology and X-ray forms, nursing notes etc. There should also be done a final discharge note made by the attending doctor by indicating to where the patient has been discharged and arrangements for follow up (WHO, 2006).

The clerk in MRD also needs to sort the forms into the correct order if they are not already correctly sorted. In the case of a new patient, the forms are attached to a medical record folder with a clip or fastener and the patient's name and Medical Record Number (MRN) are clearly written in the correct place on the folder. If the patient has been in hospital before, the old records are retrieved and the latest admission forms are added by placing them behind the appropriate admission divider. The discharge clerk needs to check if the doctor has completed the lower part of Front Sheet (Summary Sheet). The main condition has been recorded along with any other condition treated during the patient's length of stay in hospital. In some countries, it is referred to as the Principle Diagnosis (Huffman, 1990). The signature of the doctor is important as it shows that the doctor has completed the medical record and takes responsibility for the contents. If there is no discharge summary, the medical record department should assign the responsible doctor to make documentation in the record to write completely (WHO, 2006).

All discharged summary shall be completed within 1—29 days after discharge. Within 48 hours discharge documentation summaries (short stay form) may be substituted for a dictated discharge summary in cases of patients with a problem of a minor nature that requires less than a 48 hour period of hospitalization. A transfer summary may be substituted for the discharge summary when patients are transferred to a different level of hospitalization or residential care within the

organization, it must be completed prior to the transfer of the patient. All summary records should be dated and authenticated by the responsible physician (Davis, 2008).

1.2 Problem Statement

In recent years, completeness of medical records has become an important issue, not only because of its importance in promoting high standards of patient care, but also because of its impact on governments' the maintenance for health services in many developing countries (WHO, 2003).

During the years of 1960s, problem orientated medical record (POMR) in hospital administration was initiated with the expectation to obtain an ordered, complete and updated medical record. Some concerns due to voluminicity, incompleteness and out-datedness of medical records have been reported to understand the existing problems including data retrieval on paper based medical records as an example (Franco, et al., 2015).

In Esmaieli article, it is mentioned that progress notes of all groups are in poor level of documentation. The summary sheet may be mistaken with each other, incomplete registration of data in a medical record leading to duplication of the tests and ongoing further expenses for patients are under consideration for solving the problems that occurred during medical recording processes. Planning patients' treatments, care projects, and in addition for making documentations of records and disease diagnoses by the medical doctors could be supported with preparedness of standardized inpatients' medical report forms in hospitals. A good performance is shown in summary sheet completed by the residents. Document registrations that did not include any aspect of the present study have been conducted as new studies in Mazandaran province to modify the documentation after determining the present situation about documentation. Valid and reliable tools to measure the status of medical records have been applied by health authorities to obtain the health goals (Saravi, et al., 2016).

Among many hospitals from developed and developing countries, autonomy or decentralization in processes for management of the medical records applied in each hospital may lead to poorly designed filing systems, loss of information, premature destruction or unnecessary retention of records and ultimately to a state of

inefficiency and wasted resources. The importance of patients' records in the health facility was considered as primary purpose for patient care (Ngidi, 2015).

Medical record department related problems are found out that records are misplaced, wrongly filed and unavailable when required. The paper based medical charts could be easily lost or misfiled or can slip out of the record if not securely fastened.

For the medical record department, there are vacancy posts for trained staff as medical record technicians in Yangon General Hospital.

The problem of incomplete medical records is a perpetual problem with some physicians, Record Clerks and Librarians go to limitless ends to cajole physicians, particularly with the senior ones, into keeping the records current. Although this is often the best way to accomplish the desired results, the staff members who are treating too many patients should have time for keeping adequate minimum information in the records and might be probably too busy to give adequate care to their patients. On the other hand, to obtain correct data, it entails much paperwork. Physicians often find it this boring, but this can only be ascribed to a limited version concerning their total responsibility (Sakharkar, 2009).

The quality care for the patients could be compromised by the incompleteness of medical records in hospital setting and that can lead to different medical errors and patient dissatisfaction. To monitor the magnitude of the problems, the medical record completeness is part of the national key performance indicators in health care management (Tola, et al., 2017).

1.3 Justification

The documentation of completeness of medical record (summary sheet) is ought to conduct in Yangon General Hospital because it is the oldest and largest tertiary care as well as the teaching hospital under Ministry of Health and Sports (MOHS) in Myanmar for delivering quality patient care. Health care activities are provided by so many different branches of medical and surgical fields which were using advanced medical equipment and machines enormously.

The updated information about documentation of summary medical record by the medical doctors in Medical Unit 1 will be able to identify the situational overall completeness, the possible needs and gaps about incompleteness during medical

record documentation procedures and will inform about the leading causes of morbidity and mortality of the prevalent diseases during 2017, the frequency of the use of the advanced diagnostic equipment in medical wards during 2017, as well as will provide possible solutions concerning the improvement of medical record department which is now in developing stage.

In medical practice, medical records (summary sheets) are useful for evaluation of performance and competency of medical doctors to improve the quality of health information system and management. It is important in management for quality patient care activities, for solving the problems in negligence related issues, and for creation of preventive and corrective measures in risk management concerning with medical services. Medical records are also vital for hospital service planning activities, expansion of hospital facilities and budget allocation which are always prioritized according to resulted leading causes of morbidity and mortality in hospital.

In Myanmar, the government shared the budget across the health sectors and facilitated for the provision of good quality medical services and care across all spectrums including clinics, health centers and the hospitals during last decade. Budget allocation of MOHS to hospital settings was based on the information acquired from the medical record departments of hospitals to determine the needs.

The performances of the affairs of treatment and prevention which are known as the reflecting mirror of the medical affairs in an institute can be witnessed by the assessments of completeness of summary medical records. For the purposes of protecting the researchers, training medical care staff, as well as general studies and qualitative studies to proceed, systematic documentation of medical record procedures are fully applied in government hospital. The most valuable criteria of hospital staff professional assessment are the medical record documentation and dissemination of information which are also used as the foundation of the programming and decision making management in education, research and health (Saravi, et al., 2016).

In the developing countries, research works for accessibility, completeness, physician satisfaction of teaching hospital aspects are conducted by evaluation of the medical records (Kumar, et al., 2012).

As processes for evaluation and planning of healthcare services, the performance not only in short term but also in the long term plans should be laid

down by the hospital managers to improve the management in medical record department. A tool in the management system called Balanced Scorecard (BCS) is used, so which enables organizations to correct operational functions. It provides feedback on both internal processes and external outcomes, in order to improve strategic performance and outcomes continuously (Ajami, et al., 2013).

CHAPTER 2
LITERATURE REVIEW

2.1 Definition of medical record, medical record department and its characteristics

A medical record is a clear, concise, correct and chronological record of the patient's illness, the course of disease, the investigation done, the result thereof, the diagnoses, the treatment measures instituted and the extent of recovery therefrom (Joshi,2009).

Characteristics of completeness of information and efficient record management system are regarded as the characteristics of a quality medical record. Documents or records produced must always be available when needed. "One patient one folder" will facilitate the tracing of records easily by using a folder for every patient who received treatment at the hospital. Main Registration Number (MRN) together with one attendance registration number, namely Encounter Number for each visiting episode of treatment is used as only one Registration Number (RN). Medical records must be systematically stored in medical records storage room using Terminal Digit Number (TDN). A checklist of the documents and the documents needed to be arranged in chronological sequence to facilitate the retrieval of information must be included. All continuation sheets should have MRN and page number (Pauzi, 2017).

To obtain the accurate, complete and comprehensive document, every health care personal should be involved in registration, examination and treatment. The individual health personal must be aware that good quality medical record is essential and must ensure to contain sufficient data on the patient and treatment provided (Pauzi, 2017).

The patient demographic information should include the full name of patient as in identity card, identification number, registration number of patient (MRN/RN) followed by date of birth, age, sex, race, marital status, nationality, country residence, mailing address, next of kin, occupation and contact phone number. For records keeping, tracing, and tracking in a variety of purposes such as utilization of clinical or

epidemiological research by age, gender, descent, nationality and so on, accuracy of patient registration data is important (Pauzi, 2017).

All clinical information should be documented chronologically according to time, date, signature and name with designation stamp of healthcare team when the patient was being treated in treatment room. In the patient's medical record, the referral letter must be filed. All documentations should be accurate and adequate pertinent to the health care experiences of the patient including telephone conversations or verbal orders in the medical record. Only the health problems and treatment of the patient must be related to all entries that are made. A complete consent letter from the patient must be contained for the surgical procedures that are carried out. In the medical record, all entries are made in a way that they are not alterable. A single line through the incorrect entry must be used for any correction and must be initialed dated with time. Correction materials or erasers are not allowed to use. It is not recommended for using the abbreviations. Only abbreviations that have been approved by the Ministry of Health are allowed, if there is a reason to use an abbreviation. Repeated or copied and pasted information, symbols, and abbreviations that are widely used in treatment written do not reflect the characteristic quality of the medical record (Pauzi, 2017).

An essential medical record department in any hospital serves as a resource for evaluation, training of medical professionals, and the basis for clinical research. For many effective research activities, MRD is required to be scientifically recorded observations reflected in the medical record. The medical record department has responsibilities to provide service to patients, medical staff, and hospital administration in support of good medical care (McGibony, 1969).

The main functions of medical record department as a general rule in hospital can be described with this quote: "the most successful man is the man who has the best information". Medical record is a scientific document, containing patient's identification, dates, illness, history, physical examination, clinical findings, investigations, diagnosis, treatment given and end results (WHO, 2006).

In teaching hospital, the staff members working in the Medical Record Department conform to the norms prescribed by authority. Medical record departments are computerized with internet connection. The in-patient discharged case records are received from the office of the Nursing Superintendent along with the

daily census register. Such received records are verified with the ward census registers for accuracy. The in-patient discharged case records which are received on-daily-basic, are being processed by trained coding clerk for the procedures such as assembling check, deficiency check, discharge analysis, coding of diagnoses as per International Classification of Diseases, X^{th} Revision (ICD-10) published by World Health Organization (WHO), and coding of operative procedures. And then such coded records are computerized. Color folders are being used for each month to avoid wrong filing. Complete documented records are separately filed in the respective pre-numbered folders for medico-legal case records and death case records and kept under safe custody. The death registers that include sufficient information are being maintained about the patient who had died along with the diagnosis and code number. The Accident Registers are received from the Casualty daily and details of treated patients are entered in the separate Nominal Register for Medico Legal Cases for reference (WHO, 2006).

The period for which the medical records can be retained in the hospital can vary from hospital to hospital, depending upon the teaching and training on research facilities available. In general, the periodicity is 5 years for Out Patient Department (OPD) records, 10 years for inpatient records and medico-legal records permanently. Depending on the type of the hospital, there may be at least (7) reasons for keeping medical records. To provide the high quality care, the medical record may be used for the teaching or institution of medical staff, medical students, nurses and other professions (Grant, 1978).

The medical record may definitely be used in medical research. Those records may also be used in the hospital development program in public health work. It is vital and sometime only source of statistical information. It can be of considerable legal use. Other assistance to patients should be provided, e.g. when the patient claims insurance or damages from other parties and organizations, the medical records provide the necessary information on which decision may be reached (Grant, 1978).

Filing system of records plays a crucial role in the smooth function of the medical record department. An efficient system involves the procedures like properly organizing the documents of each patient. For identifying each record, the records can be indexed by using alphabetical unit, numerical unit, serial unit, and terminal digit. The record files should be placed in cabinets/shelves and a standard method for

keeping the files should be used to track when the medical records are withdrawn from the cabinet/shelf (Sakharkar, 2009).

In Myanmar, there had been no medical record department before 1962. The different sizes with different formats were used as medical records. After 1962, the MRDs were organized and medical records were standardized to (37) forms. In 1994, the former formats were reorganized into (20) forms which have currently been using in public hospitals (DHP, 2011).

When a manual system is used in a hospital for medical recording procedures, it is often difficult to verify data unless certain steps are built in. These could include routinely performing quantitative analyses on all medical records of discharged patients with verification by a second person. However, this would affect efficiency, as it would delay the processing of the medical record. Alternatively, a regular review could be conducted (WHO, 2003).

Historically, paper based medical records have been used for centuries with the advantages; such as low implementation cost, wide spread acceptance, mobile and can enter subjectivity data, as well as with limitations; such as paper records needing a big space for storage purpose, being a very fragile medium that needs to be organized properly, only one person can access at a time, data recorded may not be in a uniformity standard with tendency to be missing or lost or misplaced or leading to complexity and unmanageable, frequent illegibility in clinical notes, lack of capacity to be accessed remotely or cannot be accessed across different locations (Sridhar GR et. al.,2009), growing so thick more than hundred pages and involving different volumes and various storage sites, having the nature easily affected by water and fire, having the need to be locked in a storage area in order to protect confidentiality, integrity and security of information. Significant clinical and operational benefits were provided by conversion of all information in paper medical records to electronic medical records (Ariffin, et al., 2018).

The situation before implementation of EMR, manual record keeping standard about patients' information was used in paper record formats among hospitals. Information written by healthcare professionals in the paper based records was hand written as well as usually difficult to read, transcribe and understand. Then that could lead to potential for medical errors. The remarkable factors such as "duplication of services, delay in treatment, increased duration of stay in hospital, increased errors in

medication due to absence or inaccessibility of data" had pointed out about high failure rates towards paper based information storage and retrieval systems (Crane and Raymond, 2003).

Physical records from paper documents or print outs from diagnostic devices were converted as forms of digital images by using the scanning process and those were stored in computerized system. Therefore, original formats could be kept without losing any medical or legal information by performing the scanning processes. For making the data stored as electronically in computers to be complete, the scanned physical records were undeniably important. But transforming to digital images of conversion by scanning was time consuming work and also expensive. The accuracy of conversion could also be affected by the factors such as the sources of physical records which varied and were made up of several formats, sizes and of different media types from documents used among different facilities of private and government sectors on referral status as an example. And not all doctors were satisfied with using the images of scanned documents because scanned records were not always usable depending on the quality of image produced (Laerum, et al, 2003).

An initial step in enabling medical record data owners and users, patients, and policy makers to evaluate and communicate data quality findings in a well-defined manner with a shared vocabulary was being established by a consistent and common data quality terminology (Kahn, et al., 2016).

2.2 Studies in medical record documentation and completeness

The Department of Health Planning (DHP) conducted the study on the data quality assessment of medical record services in selected hospitals in 2013. The (1078) medical records are reviewed for completeness. In MR-1, (95.7%) in sex, (99.9%) in age, (99.9%) in admission diagnosis and (37.5%) in discharge diagnosis were complete. In MR-2 documentation, the study showed (98.0%) in present chief complaints and (85.6%) in provisional diagnosis completeness. In MR-3, (98.8%) in doctors' order and treatment, (97.0%) in progress notes and (76.0%) in doctors' sign were complete (DHP, 2013).

Supervision and monitoring of medical record services including the summary sheet of the Medical Record was conducted by the Department of Health Planning in 2014. The (1109) medical records were reviewed for discharge diagnosis, coding

diagnosis and ICD-10 coding at diagnosis in six selected hospitals. This study showed the correctness of choosing coding diagnosis by medical record technician was (88%) and correctness of ICD-10 coding was (75%) (DHP, 2014).

A cross-sectional descriptive study conducted in King Faisal Specialist Hospital and Research Centre, Saudi Arabia showed that accurately documented record was (83.3%) and (70%) was assigned a correct code in (300) medical records (Farhan, et al., 2004).

A cross-sectional descriptive study in Yangon general Hospital provided the information of completeness after reviewing (100) records, (45%) of ethnic group item, (70%) of the occupation item, (26%) of medical officer's signature item and (32%) of medical officer's name item which were incomplete in the patient summary sheet. These all were due to the lack of both quantitative and qualitative analyses of medical records and feedback mechanism. Quantitative analysis was identified by incomplete or inaccurate area of records while qualitative analysis explored inconsistency that resulted in incomplete or inaccurate documentation (Aung-Gyi-Maung, 2003).

A cross-sectional descriptive study was done in San-Pya Hospital, Thingangyun Township during 2008 and it showed that after reviewing (200) medical records, incomplete documentations of MR-1 were (62.5%) in ethnic groups, (87%) in occupation, (45.5%) in final diagnosis, (81%) in notes of surgical operations, (88%) in complications, (8.5%) in medical officers' signatures and (91%) in names of medical officers. Those of MR-7 were incomplete as (47%) in nurses' names, (8%) in Anesthetists' names, (6%) in type of anesthesia, (77%) in duration of operation, (3%) in signature of surgeon and (1%) in pre and post-operative diagnosis and operative findings (Swe-Swe-Win, 2008).

A cross-sectional descriptive study was done in New Yangon General Hospital in May, 2009. Thirty medical record forms from three studied wards were checked and it showed that there was discharge diagnosis in MR-1 of all records. In MR-2, the documentation for relevant history, finding and differential diagnosis are not more than (13%) and, doctors name and signature was filled only in one case for the whole hospital. For MR-7, the surgeons' signatures were noted in 10 records, started and finished time was present in 3 records and there was no documentation for duration of operation (Tin-Tin-Yee, 2009).

The cross-sectional descriptive study was conducted in Yangon General Hospital in May, 2010. Some weakness in documentation was found after reviewing 100 medical records. In MR-1, only five records in which discharge diagnosis had been completed were calculated. In MR-2, the frequency of family history and differential diagnosis filling were not more than 8 records and doctors' names and signatures were not filled out in all records. In MR-3, the patients' names, ages, wards were absent in (99) medical forms and doctor's sign and name were absent in 93 medical forms (Kyi-Kyi-Aye, 2010).

In New Yangon General Hospital, the cross-sectional descriptive study showed the findings after reviewing (30) medical records. The incompleteness of documentation in MR-1 was (23.3%) in the permanent address, (100%) in date of previous admission and referred hospital, (53%) in police case and (90%) in discharge diagnosis. In MR-2, the percentage of past medical history, family history, social history, doctors' signature and name were documented in (39%) of the study records. In MR-3, (53.3%) of selected records were only filled for the doctor's name and signature. In MR-7, duration of operation time was not filled out in all records, the time that operation begins and ends were documented in (20%) of records (Min-Zaw-Aye, 2011).

A cross-sectional descriptive study was conducted in Mandalay General Hospital in 2012. Three hundred medical records were checked for completeness of medical record documentation. This study showed completeness of (98.5%) in admission number, (79.3%) in discharge date and time, (58.2%) in discharge diagnosis and (0.4%) in permanent address in MR-1. In MR-2, (99.2%) in history of present illness, (98.1%) in past history, (97.3%) in provisional diagnosis, (85.7%) in signature of examiner and (26.3%) in name of patients showed the completeness of medical records, In MR-3, it was shown that (99.6%) in date, (99.1%) in progress notes, (97.4%) in time and (9.9%) in doctor's sign were completed (Win-Ei-Ei-Thaw, 2012).

A cross-sectional descriptive study was conducted in West Yangon General Hospital about the assessment on medical record documentation and quality of disease coding. After reviewing (162) medical records, the completeness of MR-1 for each item of individual records are satisfactory in which 10 out of 44items in MR-1 are (100%) complete. Failure of item to be documented was found in MR-2 and only

two items were complete in all study records out of 14 items. The completeness of each item in MR-3 is unsatisfactory in which all items are not (100%) complete. Correct coding diagnosis is (88.9%), correctness of ICD-10 coding is (93.2%) and overall quality of coding is (85.2%) (May-Lynn-Htun, 2015).

The cross-sectional descriptive study was conducted in Nay Pyi Taw 1000 Bedded General Hospital about the assessment of completeness of record documentation and quality coding of modified trauma registry. In this study, the completeness of medical record documentation is satisfactory because total reviewed (1041) records of modified trauma registry had shown that completeness (100%) among modified trauma registry running number, hospital registration number, patient's title, patient's name, age, sex, patient's current address (urban/rural), occupation, date, time, date arrived at hospital, time arrived at hospital, injury occurred (Township), injury occurred (State and Region), place of occurrence, intention, occupational injury, uses of alcohol, seat belt, safety helmet and mobile phone. Transportation of the injured to the hospital from injury site showed (100%) completeness but transfer from other health facilities showed that (99.6%), (99.7%) completeness for transportation with ambulance or not, respectively. History of consciousness showed (0%) completeness, and (88.5%) completeness for pulse rate and respiratory rate (51%) were also calculated (Win-Naing, 2016).

The pre- and post-intervention study has been conducted for completeness of medical record in Menelik II Referral Hospital, Addis Ababa, Ethiopia. The overall completeness showed (84%) in inpatient medical records and high completeness in inpatient physician order sheet (96.4%) was seen whereas inpatient medication administrations sheet completed for (70.3%) and it is the least. It was found out that a simple set of intervention to inpatient medical record format and training the healthcare provider can make improvement in completion of medical records of inpatients. The application of strategic problem solving measures is effective in medical record documentation to be completed and had improved the quality of healthcare. About (16.2%) of inpatient summary medical records is incomplete in comparison with the study performed in Canada in which discharge summaries were assessed for completeness and accuracy. During post intervention evaluation, an enhancement of completeness and reporting of inpatient medical record completeness improved significantly from baseline (0%) to (73.6%) according to the results of the

study in a Dalefage Primary Hospital, West Afar, Ethiopia. By implementing a set of intervention, it can bring the evidence for improvement in completeness of medical records (Tola, et al., 2017).

A randomized single-blind experiment was conducted for determining whether a validity of flow sheet type of summary medical record could support as a mean to communicate clinical information without traditional medical record. It is said that the researchers compared two groups of outpatient physician-patient encounters. In 1980, a flow sheet summary record was provided to physicians with the option to receive the standard medical record if they desired and named as study encounters (Group S) and in the (27) control encounters (Group C), a standard medical record plus the flow-sheet summary record were given to physicians. A fifty-nine per cent of study-group physicians refused to receive the full medical record. Pre- and post-encounter chart review showed that the study group was found not to be different ($p= 0.013$) from controls significantly with regard to the follow up of clinical information as measured. Physicians in the study group with the greater frequency than the control group were unable to identify by retrospective chart overlooked clinical information. Analysis of flow-sheet type of summary medical record serving as a sole source of clinical information in the substantial number of outpatient follow-up encounters in a medical subspecialty clinic was concluded by the researchers without deterioration in the communication of clinical information (Whiting, et al., 1980).

In a study of a sample of records from eight general practices, about (10%) of patients' age were not recorded and that (99%) of males did not show indications of their marital status, and (60%) did not record about occupation. With regard to disease episodes, a diagnosis was recorded in a little over half of the episodes and was the only recorded item in (10%) of the records. The most frequently recorded item occurring in (70%) of episodes was about the therapeutic agent, but the amount prescribed was recorded in only one-quarter of the episodes, and the dosages in less than one-fifth. No symptoms are recorded in less than half of the episodes and a physical sign is recorded in only one third of the episodes (Dawes, 1972).

In a cross-sectional study conducted in a family health center in El-Shorouk city, a sample size of 200 records among 1000 records were reviewed to measure completeness of the medical records. Among 200 records, about 130(65%) of records had been properly organized. The most frequently recorded item with completeness

(100.0%) was personal data. The record about general examination shows (51.5%). Completeness scores from (80-100%) from standards are obtained in (88.5%) of all records and the minimal passing score is (80.0%) for every item to pass the completeness check (Wagida, et al., 2015).

A cross-sectional descriptive study was done in (27) trainees at established trainers' course to assess the format, and content of medical record summaries in South Western Region of England. The willingness of trainers to participate in discussion to record summaries is (100%) because index notes are returned as (100%). The great variability of information recorded in the summary and the poor quality of a large number of summaries owing to information on the general practitioners' continuation cards were not being recorded, so the study is said to be impressive. Some summaries were clear to read, partly because of good handwriting or typing but also because they were neatly laid out than other, and some appeared good but were in fact very incomplete. Most of the salient points had been extracted from the records in some other cases, but this information had been redistributed in a variety of locations, for example, on the summary card, on the wallet, on an investigation card or a preventive medicine card, or on the back of immunization card. The needs for clearer guidelines are highlighted by the study when future criteria for trainers are being considered (Presley, 1988).

2.3 Types of medical record used in HIS and its significances

(a) Paper based Medical Record

It is an old traditional method for documentation of medical records.

(b) Electronic Medical Record

Computerization of the entire function of the medical record department is the most suitable and beneficial in hospital administration. Daily operations performed by the staff in MRD might be impacted because those staff had to deal with larger amount of information and documentation handling. Comprehensive computerized hospital management system can also provide the improved competency and efficiency on medical record documentation by the health professionals. The hospital with well-equipped electronic medical record system could have the benefits for "location monitoring of patient charts; automatic assignment of ICD numbers; improvement in procedures concerning with hospital

admission, discharge, birth, death, and other medical records; and simplification of chart-storage functions. In addition, the confidentiality of patient information in a computerized system is well maintained with the same rules that were applied in a traditional record system (Sakharkar, 2009).

Electronic Medical Record (EMR) is also called as computerized medical information system (MIS) in which patient information are collected, stored and displayed (Dave, 2004).

2.4 Manpower in Medical Unit 1 of YGH for medical record documentation

Assistant surgeon (AS) posts for medical record documentation for the discharged patients in MU 1 are (16) medical doctors per month currently with or without proper training about medical record documentation.

CHAPTER 3
OBJECTIVES

3.1 General Objective

To study the completeness of medical record (summary sheet) documentation by the medical doctors from Medical Unit 1 in Yangon General Hospital

3.2 Specific Objectives

1. To describe the manpower and organization set up of medical record department of Yangon General Hospital.
2. To describe the completeness of medical record (summary sheet) in Medical Unit 1 during 2017

CHAPTER 4
RESEARCH METHODOLOGY

4.1 Study Design

The cross-sectional descriptive study design was used for medical record summary sheet reviews for completeness.

4.2 Study Period

The study period was from December, 2018 to May, 2019.

4.3 Study Area

The study was carried out in Medical Record Department of Yangon General Hospital.

4.4 Study Population

The summary sheets of Medical Record of Medical Unit 1 during 2017 were reviewed.

Inclusion Criteria

The data from medical records (Summary Sheets) of patients of 13 years above and the patients of any sexes were collected.

Exclusion Criteria

All the cases who had been absconded during 2017 in Medical Unit 1 were excluded.

4.5 Sample Size Determination

Sample size was determined by following formula.

$n=\frac{z^2\ p\ (1-p)}{d^2}$ (Daniel & Cross, 2013)

$n=\frac{(1.96)^2\ 0.5\ (0.5)}{(0.09)^2}$

= 119

Where,

n= sample size

z= 1.96 at 95 % Confidence Interval

p= proportion of completeness= 50% (Assumption)

d= margin of error= 0.09

Sample size of at least 119 was needed for the study.

The missing value 10% of n is considered, so, the total sample size of at least 131 samples was needed. In this study, a total of 144 medical records were reviewed.

4.6 Sampling Procedures

The patients admitted to Medical Unit 1 for each month were listed as sampling frame. From each month, twelve medical records were randomly selected. Therefore (144) medical records were collected for the whole year. Among those medical records, one hundred and forty-four summary sheets were reviewed for completeness. All the twenty-nine items consisted in each summary sheet were checked.

4.7 Data Collection Methods and Tools

Documented summary sheets of medical records were reviewed for completeness by using checklist developed from Guard Book of Department of Health Planning. After checking the completeness, data about all the items of summary sheets were collected.

4.8 Data management

Data analysis was done by International Business Machines Statistical Package for Social Sciences-16 (IBM SPSS-16) soft-ware. Descriptive and summary statistics were carried out. Completeness of each item and each record were calculated and described as frequency percentage.

4.9 Ethical Consideration

Permission for assessment of completeness of documented Summary Sheets of Medical Record was requested to two Senior Medical Superintendents of Yangon General Hospital for approval. After the official permission was given, the data collection for the study was established at the medical record department. This study has been approved by the Institutional Review Board (IRB) of the University of Public Health (Yangon) with Certificate of Approval No. UPH-IRB (2018/M. Med. Sc. HA&HM/19).

CHAPTER 5
FINDINGS

In this study, organization structure of Medical Record Department (MRD) in Yangon General Hospital was firstly studied. Then documented summary sheets from Medical Unit 1 during 2017 were reviewed for completeness of medical record documentation performed by medical officers working at Medical Unit 1 of Yangon General Hospital.

5.1 Organization structure and manpower of medical record department

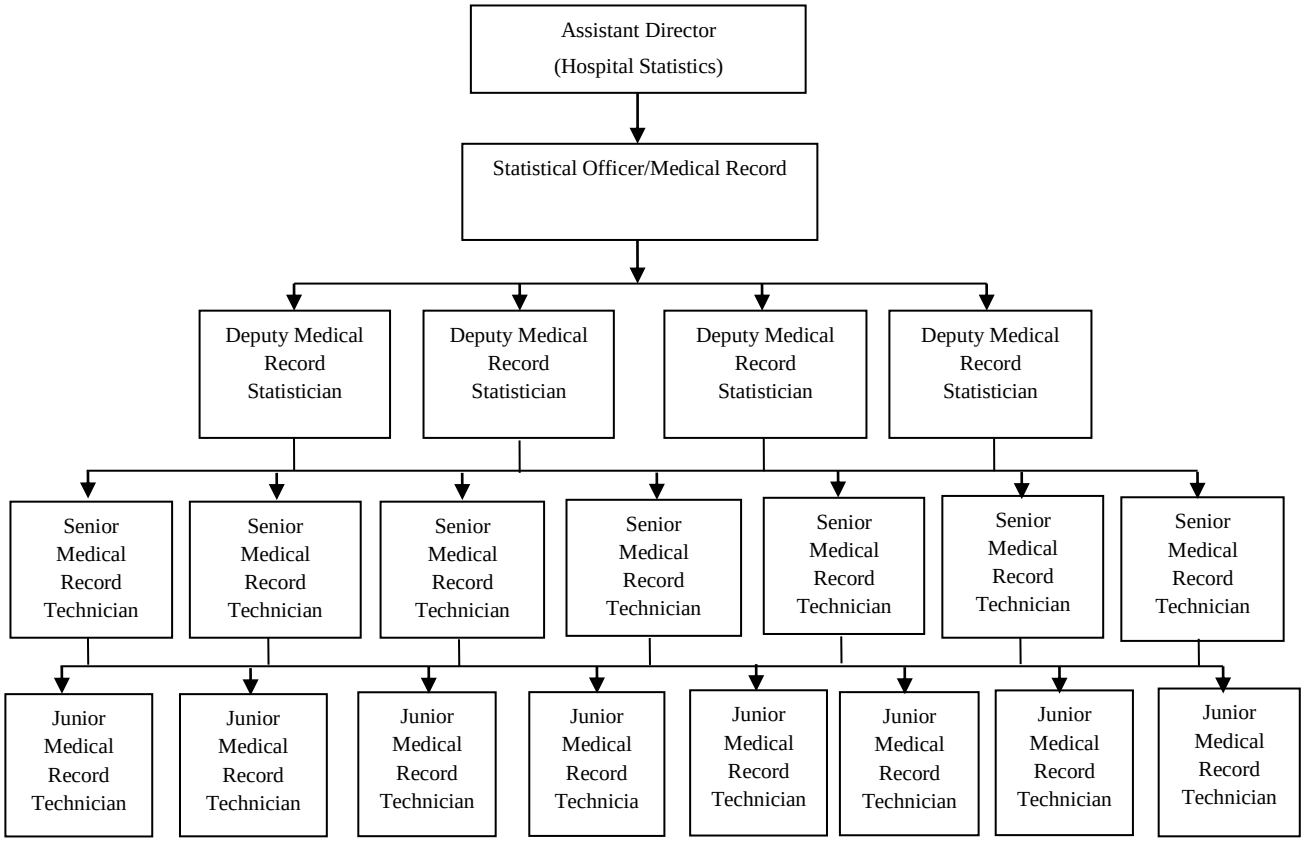


Figure (5.1) Organogram of medical record department

Organization structure of medical record department of Yangon General Hospital was established under Ministry of Health and Sports, Union of Myanmar as a

formal government infrastructure set up. One Assistant Director for hospital statistics had the sole responsibility for the medical record department in Yangon General Hospital. One post for Statistical Officer/Medical Record (SO/MR) is appointed at the Medical Record Department as a second line manager for all responsibilities and concerns under Assistant Director. Under supervision and guidance by SO (MR), four Deputy Medical Record Statisticians (DMRSs), seven Senior Medical Record Technicians (SMRTs) and eight Junior Medical Record Technicians (JMRTs) were sanctioned according to different levels of authority.

Table (5.1) Manpower of medical record department in YGH during 2018

No	Rank	Sanctioned	Appointed	Vacant
1	Assistant Director (Hospital Statistics)	1	-	1
2	Statistical Officer/Medical Record	1	1	-
3	Deputy Medical Record Statistician	4	3	1
4	Senior Medical Record Technician	7	6	1
5	Junior Medical Record Technician	8	-	8
	Total	**21**	**10**	**11**

There was one vacant post of Assistant Director for hospital statistics in YGH during 2018. One Statistical Officer (Medical Record) is currently appointed at the Medical Record Department for all responsibilities and concerns. Under supervision and guidance by SO (MR), three Deputy Medical Record Statisticians, six Senior Medical Record Technicians were working.

One vacancy post for Deputy Medical Record Statistician, one vacancy post for Senior Medical Record Technician, and eight vacant posts for Junior Medical Record Technician during 2018 were reported. Paper medical records were stored and data entries were electronically processed by the Statistical Officer/Medical Record,

Deputy Medical Record Statisticians and Senior Medical Record Technicians at the medical record department on daily office hour basis.

5.2 Completeness of summary sheets of medical records

Summary sheets had five parts to be completed and described as 1st, 2nd, 3rd, 4th and 5th Parts. Altogether, a total of twenty-nine components or items were included in each summary sheet. The 1st Part had seven components or items and concerned with hospital related items. The 2nd Part consisted of eleven items and concerned with patient profile. Only one item of "Investigation" was described as procedure related indicator in the 3rd Part of the summary sheet. Disease related indicators were included in the 4th Part of the summary sheet of medical record. Items representing for "Medical Officer Signature and Medical Officer Name" were consisted and concerned with the staff related indicators in the 5th Part of the summary sheet. The items from summary sheets were summarized from twenty standardized Medical Record (MR) forms which had been currently using as MR-1 to MR-20 forms in the medical wards and surgical wards. Those forms were applied from Guard Book which was used in Yangon General Hospital since 1964.

5.2.1 Completeness of hospital related items in summary sheets of medical record forms

The following table described about the completeness of items in 1st part of summary of medical record performed by medical officers in MU 1 of Yangon General Hospital.

Table (5.2) Distribution of completeness of hospital related items in summary sheets from MU 1 of YGH during 2017(n=144)

Items	Complete Number (%)	Not Complete Number (%)
Hospital Number	143 (99.3%)	1 (0.7%)
Source of Admission	39 (27.1%)	105 (72.9%)
Sr. No. of Admission	2 (1.4%)	142 (98.6%)
Date of Admission	144 (100%)	0 (0%)
Date of Discharge	144 (100%)	0 (0%)
Length of Stay (Day)	0 (0%)	144 (100%)
Ward/Specialty	142 (98.6%)	2 (1.4%)

In this study, seven hospital related items such as “Hospital Number, Source of Admission, Serial Number of Admission, Date of Admission, Date of Discharge, Lengthy of Stay and Specialty and Ward” were reviewed for completeness. Among them, two items about “date of admission and date of discharge” showed full completeness (100%) and the other five items were not fully completed.

The item describing about the “length of stay” during admission to YGH had shown zero percent (0.0%) completeness in 1st part of the summary sheet.

The item described about “serial number of admission” had also been shown as only (1.4%) of the completeness level.

The “source of admission” item had been shown as (27.1%) completeness level.

Concerning with the item “hospital number” among seven hospital related items, there was only one case with incompleteness percentage (0.7%) and it had shown the 2nd highest completeness percentage of (99.3%) compared to the other six items in 1st part of the summary sheet. The reason about incompleteness for the item

"hospital number" was that it was found as the 2nd time admission to Yangon General Hospital and the medical officers missed the follow up check to complete the information about hospital number for that case.

The last item listed in 1st part of the summary checklist was "ward/specialty" and it had shown as 3rd highest completeness percentage of (98.6%).

5.2.2 Completeness of patient related items in summary sheets of medical record forms

The completeness performance for patient related items in summary sheet by medical officers from MU 1 of YGH during 2017 was described in the following table.

Table (5.3) Distribution of completeness of patient related items in summary sheets from MU 1 of YGH during 2017(n=144)

Items	Complete Number (%)	Not Complete Number (%)
Name	143 (99.3%)	1 (0.7%)
Father Name	79 (54.9%)	65 (45.1%)
Age	132 (91.7%)	12 (8.3%)
Sex	129 (89.6%)	159 (10.4%)
Date of Birth	0 (0.0%)	144 (100%)
Marital Status	123 (85.4%)	21(14.6%)
Ethnic Group	126 (87.5%)	18 (12.5%)
Religion	128 (88.9%)	16 (11.1%)
Occupation	107 (74.3%)	37 (25.7%)
Address	131 (91.0%)	13 (9.0%)
Permanent Address	0 (0.0%)	144 (100.0%)

The above table describing about the status of completeness of patient particulars in items from the 2nd part consisted in documented summary sheets had shown incompleteness in all eleven items. All of these items were not fully completed. The three items with completeness level over ninety percent (99.3%, 91.7%, 91.0%) were seen in items such as "name, age, and address" respectively.

Those three items were regarded as higher percentage of completeness levels among (144) summary sheets.

Zero percent completeness level was also identified in two items namely “date of birth and permanent address”.

The five items with calculated completeness levels between seventy percent and ninety percent were seen in items such as “occupation (74.3%), marital status (85.4%), ethnic group (87.5%), religion (88.9%) and sex (89.6%)”.

The item described about “father name” in this summary sheet had been shown as moderate completeness level of approximately fifty-five percent.

5.2.3 Completeness of procedure related items in summary sheets of medical record forms

The following table described about the completeness performance by medical officers from MU 1 of YGH.

Table (5.4) Distribution of completeness of procedure related items in summary sheet from MU 1 of YGH during 2017(n=144)

Items	Complete Number (%)	Not Complete Number (%)
Investigations	4 (2.8%)	140 (97.2%)

In the above table, representing the 3rd Part data, there was only one item concerned with procedure related heading such as “investigation” with completeness percentage (2.8%). In those four sheets, two Ultrasonic non-invasive investigations, one chest X-ray and one Electrocardiography were noted.

5.2.4 Completeness of disease related items in summary sheets of medical record forms

The following table described about the completeness performance for disease related items by medical officers from MU 1 of YGH.

Table (5.5) Distribution of completeness of disease related items in summary sheet from MU 1 of YGH during 2017(n=144)

Items	Complete Number (%)	Not Complete Number (%)
Principal Diagnosis	142 (98.6%)	2 (1.4%)
Surgical Operation (Procedure)	0 (0.0%)	144 (0.0%)
Current Co - Morbidities	0 (0.0%)	144 (100.0%)
Complications	3 (2.1%)	141 (97.9%)
Treatment	8 (5.6%)	136 (94.4%)
For All Injuries	1 (100.0%)	143 (99.3%)
Discharge Status	46 (31.9%)	98 (68.1%)
Police Case	0 (0.0%)	144 (100.0%)

Above eight items had described about completeness of disease related items in 4th part of the summary sheet. The items concerned with 'surgical operation" had showed (0.0%) completeness and it was not relevant in medical diseases. For all injuries, there was one case diagnosed as "fall from height" and the remaining (143) cases were not relevant. Concerning with item "police case" in summary sheets, the completeness was (0.0%) and that zero digit had been representing that none of these items were completed by the responsible medical officers. The item representing for "principle diagnosis" had shown as completeness percentage (98.6%). In Yangon General Hospital, those principle diagnoses were also coded by referring the International Classification of Disease Coding-10 to complete the medical record summary sheets in both paper and electronic medical records.

Similar to the item for "surgical operation", the item about "current co-morbidities" was shown as zero percent completeness. Although this item was related to medical wards, no one had recorded about it.

Item for the “complications” status had also seen only in three cases out of all (144) cases and it was only two percent (2.1%) and unsatisfactory.

Item concerning with “discharge status” had been shown by the completeness percentage (31.9%) among all samples.

Concerning with the item about “treatment”, the completeness percentage was seen as only (5.6%).

5.2.5 Completeness of staff related items in summary sheets of medical record forms

The performance data by sixteen medical officers from MU 1 of YGH was found in the following table.

Table (5.6) Distribution of completeness of staff related items in summary sheet from MU 1 of YGH during 2017(n=144)

Items	Complete Number (%)	Not Complete Number (%)
M.O. Signature	85 (59.0%)	59 (41.0%)
M.O. Name	84 (58.3%)	60 (41.7%)

Concerning with items” medical officer signature and medical officer name”, there were completeness percentages (59.0%) and (58.3%) in both items respectively. Although those items were not fully completed among (144) samples of summary sheet, the findings were relatively satisfactory because medical officers signed in (85) cases of summary sheets and write the names in (84) cases out of all samples. The incompleteness levels to describe about the signature and name of the medical officer were seen approximately in forty-one and forty-two percent of the cases respectively.

5.3 Overall completeness of all items in summary sheets of medical record forms

The following table described about the overall completeness of summary sheets performed by medical officers from MU 1 of YGH during 2017.

Table (5.7) Distribution of overall completeness of summary sheets from MU 1 of YGH during 2017(n=144)

Over all Completeness	Frequency	Percentage (%)
21-30 Percent	5	3.5%
31-40 Percent	8	5.6%
41-50 Percent	55	38.2%
51-60 Percent	60	41.7%
61-70 Percent	16	11.1%
Total	**144**	**100.0%**

The above table described about the frequency distribution of overall completeness. No summary sheet was recorded about all twenty-nine items among all summary sheets. Overall completeness (41-50) % was seen in (38.2%) percent of summary sheets. There were five summary sheets which had been recorded only six to eight items. Therefore, it was found that lowest level (3.5%) of which was represented for (21-30) % of overall completeness percentage.

Overall completeness level (31-40) % was seen in (5.6%) of cases among all samples. Sixteen summary sheets were completed to represent the overall completeness level (61-70) percent. Out of twenty-nine items, maximum number of completed items in each summary sheet was twenty items.

Thus, the highest overall completeness level of (61-70) % was seen in (11.1%) cases of all (144) summary sheets. The 2nd highest overall completeness percentage of (51-60) % was found in (41.7%) of cases out of (144) summary medical records.

5.4 Monthly average completeness of all items among summary sheets of medical record forms

The following table had been described for average total completed items per month during 2017 by the medical officers from MU 1.

Table (5.8) Monthly average completeness of number of items in summary sheet of MR from MU 1 of YGH during 2017(n=144)

Month	Mean	SD	Minimum	Maximum
January	15.5	3.7	8	20
February	15.2	1.7	11	17
March	15.2	2.2	11	18
April	17.4	1.0	15	18
May	13.8	2.9	7	18
June	12.0	2.3	6	14
July	14.4	2.6	8	17
August	15.7	0.7	15	17
September	12.5	1.9	7	15
October	14.4	1.7	11	16
November	14.5	1.9	10	17
December	13.2	1.5	9	15

The minimal value of completed items among (144) documented summary sheets was found in the month of June and its value was (6). Out of all twenty-nine items per each summary sheet, the maximum value of completed items among documented summary sheets was seen in the month of January, 2017 and its value was (20).

The minimum average completed items by the medical officers was shown as (12.0) in the month of June, 2017 and the maximum average completed items had been known as (17.4) in the month of April, 2017. The values concerning with Standard Deviation (SD) had ranged between (0.7) to (3.7) over twelve months.

CHAPTER 6
DISCUSSION

In this study, a total of one hundred and forty-four summary sheet forms documented by the medical officers in Medical Unit 1 during 2017 were randomly selected at the Medical Record Department to obtain sufficient sample size with equal distribution over twelve months of the year. The format summary sheet was analyzed and classified into standardized data collection form as a checklist.

Since the assessment of completeness of medical record summary sheets was specifically done on old paper based medical records, the data retrieval from the Medical Record Department were time consuming and only cooperation from all staff of MRD made the procedure convenient.

The functions of medical record department are to provide a good medical record system, to generate hospital statistics, to develop new record systems in new departments, to make reporting to State and Health Agencies, and to provide training and quality assurance (Sakharkar, 2009).

The item described about the "length of stay" in 1st part of summary sheet during admission to YGH had shown zero percent completeness by indicating the problem about time limitation during the time of the documentation by the staff. But the length of stay in hospital could be recalculated on later time by reviewing the items described about "date of admission and date of discharge" which of each had been shown as one hundred percent completeness level among hospital related items in 1st part of the summary sheet.

Zero percent completeness levels were also identified in two items included in 2nd part of summary sheet namely "date of birth and permanent address". Therefore it could be stated that the patients admitted to Medical Unit 1 were not able to provide the information concerning with those items for completing in the summary sheets. These two items were important for health management such as age determination in Government's service affairs, referral patterns and drainage areas for continuing health care.

The item presenting about the "surgical operation" in 3rd part of summary sheet had showed completeness level zero percent. It was not relevant in medical diseases because that was rarely and eventfully to be done in medical wards. Exceptionally, a case such as admission diagnosis of acute gastritis would accidentally end as "perforated peptic ulcer with underlying bronchial asthma with oral corticosteroid medication" in responsible surgical ward as transfer out case from a medical ward in Yangon General Hospital. Moreover, the referred cases from medical wards to do minor surgical operations like difficult biopsies or lumber puncture for spinal fluid investigation procedures as different examples should be tracked and assessed in surgical wards to obtain complete information. In this study, the item concerned for "surgical operation" with highest incompleteness level (100.0%) was regarded as irrelevant factor to describe the completeness of summary sheets in medical wards.

It was shown as a zero percent completeness concerning with the item about "current co-morbidities", and it indicated that the responsible medical officers were not completing information about that item at all in the summary sheets. This item might be useful to identify leading mortality and morbidity cases after summary review.

Zero percent representing that none of the items were being completed was also found in item "police case" in summary sheets according to pure medical disease nature were prevalent in Medical Wards.

In many countries, the title of the person in charge of the MRD has been changed during recent years such as changes from Medical Record Officer (MRO) and Medical Record Administrator (MRA) to Health Information Manager (HIM) or Health Information Administrator (HIA). The title for MRO or the medical record clerk is appointed according to the job description of the health system in many developing countries. The incompleteness of medical record may possibly be due to the problems or deficiencies such as legibility (hand writing, typed, computer generated), retention and preservation, confidentiality, privileged communication, storage (space), uniformity, utility, quality, terminology/abbreviation, retrieval (timing) and medico-legal reporting (Putul and Yadav, 2016).

The item described about "serial number of admissions" in 1st part had also been shown as only (1.4%) completeness level. This item was important for repeated

admissions to some specialties like oncology or surgical wards in YGH. Some could be the transferred cases from general medical wards after confirming the definite diagnoses and then the responsible medical or surgical wards provided specific treatments in medical care activities.

The "source of admission" item in 1st part had been shown as (27.1%) completeness level and but there were some factors to complete this information fully in the summary sheets on later time of admission/discharge of the specified patient by the hospital administrators or record clerks.

In hospital setting with emerging heavy workload facilities, paper based medical record system is still playing a main role especially in developing countries for quality and safety care to all patients. Information about challenges and barriers during medical record documentation should be shared and considered as a point to a current status of maintaining basic traditional paper based medical records. Those medical records are usually to be destroyed in every five or ten years as a local context. Therefore, another implementation procedure should be planned and budgeted for preservation of the medical records (Institute of Medicine, 1997).

The status of completeness of items on patient particulars from the 2nd part of documented summary sheets had shown incompleteness in all eleven items.

The three items with completeness level over ninety percent were seen in items such as "name, age, and address" respectively. Those items were very important factors about information on patient identification in quality care process in hospital setting to facilitate error prevention and patients' safety.

Concerning with the items such as "age (calculated according to date of birth), gender status, marital status, occupation, and current address, those might be needed to be updated soon after admission. So, the time to spend for completeness of data in a checklist by the medical doctor would be in possible state of compromise.

Medical officers were routinely performed to fill up the information about the patient particulars. Those information data were sometime provided by oral and hear-say information by the patient or their relatives. And sometime because of such information obtained were not accurate or not relevant, the medical officers made let some parts of medical record forms keeping not being fully filled during time of admission.

The five items with calculated completeness levels between seventy and ninety percent (70.0% to 90.0%) were seen in items such as “occupation, marital status, ethnic group, religion and sex”. Those personal data were important for seeking medical care and to make decision about out of pocket health care expenditure by the patient and patient family members during the time of hospital admission.

The item described about “father name” had been shown as moderate completeness level of fifty-five percent. In Western countries, the fathers’ names or surnames were understood as those were the same with the patients’ surnames in male patient and maidens’ names in female patients. But in Myanmar, father names were mostly used as personal identification, guardianship for medico-legal issues, and curative activities for some genetic diseases.

In the 3rd Part data, there was one item concerned with procedure related heading such as “investigations” with completeness percentage (2.8%) among (144) cases during 2017. But completeness of procedure related item “investigations” in Yangon General Hospital can also be partly assessed by the secondary data from separate Laboratory Information System (LIS) because it was the first information system processed electronically in Yangon General Hospital.

If it is to be valuable in the patient’s concurrent care, the medical record needs timely entries. Documentation of the history, physical examination, and operative reports in medical records is particularly important. The improvement for the medical record department processes was conducted at Aratolah-Kashani Hospital in Isfahan, Iran by utilization of Lean Management which is a process improvement technique to identify waste actions and processes to eliminate them. An applied interventional study had been conducted there. The brainstorming exercises, observations, interviews and workflow reviews were done during data collection period. MRD staff and other expert staff who were stakeholders and users of MRD within the hospital were also included as the study population (Ajami, et al., 2015).

Completeness of disease related items had been described in eight items consisted in 4th part of the summary sheet. The results had showed that six items were completed below forty percent.

Concerning with the item “for all injuries”, there was one case diagnosed as “fall from height” and being expressed as completeness percentage (100.0%) and the

rest (143) cases were not relevant because those cases were non-trauma cases. But the item “for all injuries” represented for cases had been mentioned to tick for information about different sub-classes of accidents or incidents such as “electrocution” or “suicide cases and occupational hazards like chemical poisoning” respectively as examples in other sub-classes of medical diseases. Those cases are usually preliminarily noted as “police case” in the admission medical records to exclude the medico-legal concerns.

The item representing for “principle diagnosis” with higher completeness percentage (98.7%) was filled in summary sheets. Sometime medical officers and medical record officers failed to complete about the definite diagnoses of medical diseases. Because at the time of discharge, information about diagnoses of some rare medical diseases to be completed in summary sheets were still needed to wait the laboratory reports or results of the remarkable support provided by National Health Laboratory of Lower Myanmar. In Yangon General Hospital, those principle diagnoses were also recorded by referring the International Classification of Disease Coding-10 to complete the medical record summary sheets in both paper and electronic medical records.

Item for the “complications” status showing higher percentage of incompleteness (97.9%) in summary sheets might be due to time constraint factor.

The completeness percentage (31.9%) by “discharge status” among all samples was seen and they are important for information like follow up calls and readmissions in continuity of care.

Concerning with the item about “treatment”, the higher incompleteness level of (94.4%) was calculated for the general medical ward. Therefore, healthcare expenditures, needs and gaps for continuity of care about health care delivery could not be estimated by summary review.

The higher percentage levels of completeness of documented summary sheets were regarded as positive findings among the records. The higher percentage of completeness such as more than 90 percent completeness levels are regarded as satisfactory findings (Davis, 2008).

And the higher proportions of incompleteness were also found as negative findings among the samples. The more the incomplete levels found, the more the unsatisfactory findings among the documented summary sheets.

In Clark Memorial Hospital, Jeffersonville, Indiana State, U.S.A, medical record completion policies under Health Information Manager (HIM) were laid down for completeness of medical records. Delinquent medical record is a medical record that remains incomplete with documentation deficiencies thirty days after discharge. Incomplete medical record is a medical record with documentation deficiencies that remains incomplete for 1-29 days after discharge. Total number of medical records delinquent for any reasons shall not be exceeded 10% of the average monthly discharges for the entire hospital. Clark Memorial Hospital stated that health professionals had to follow the standard procedures for documentation of discharge summary (Davis, 2008).

Careful supervision and coordination of many aspects were required for a successful paper-based medical record system in the health care organizations. Policy makers and administrative personals need to make big decisions beginning from selection and implementation of procedural documentation activities, as well as training and maintenance for medical records. Procedural training and lead changes to roles of healthcare professionals within the offices must be involved (College of Physicians and Surgeons of Alberta, 2005).

Incomplete documentation of medical records may be due to the fact that the doctors and the surgeons believed that it is vital for the patients to provide the medical or surgical care required, but documentation of the data concerning to care to was not considered as a part of treatment process by them. The problems were also due to the lack of supervision on the performances of the assistants and interns during documentation of medical records. Poor documentation was resulted due to (56.0%) of respondents having poor supervision of attendance on performance of interns and residents in Tavakoli study (Saravi, et al., 2016).

CHAPTER 7
CONCLUSION

The study on the assessment of completeness of medical record (summary sheets) in Medical Unit 1 of Yangon General Hospital revealed the situation about the completeness in medical record documentation. All the five parts included in summary sheets were documented by the senior medical officers and assistant surgeons in the Medical Unit 1 just before the patient was discharged from the hospital.

In this study, the two items showing the full completed levels (100.0%) in summary sheet of documented medical records were “Date of Admission and Date of Discharge”. Therefore, the levels of completion in two items among the seven items of 1st Part of the summary sheet were satisfactory. The item described about “For All Injuries” in 4th part of summary sheet was also shown as completed percentage (100.0%) as the information was completed in one relevant case and the remaining one hundred and forty-three cases were irrelevant.

Exactly (0.0%) completed levels among total twenty-nine items found respectively in the summary sheets were “Length of Stay, Date of Birth, Permanent Address, Surgical Operation (Procedure), Current Co-Morbidities and Police Case”. Thus the data from those six items had been shown as absolutely unsatisfactory findings in the study.

The ten documented items identified as completed levels ranging from (80.0%) to (99.0%) can be seen in items describing about “Hospital Number, Specialty, Name, Age, Sex, Marital Status, Ethnic Group, Religion, Address, and Principle Diagnosis”.

Items included in the summary sheet showing completed levels between (40.0%) and (59.0%) were “Father Name, M.O Signature, and M.O Name”.

The only item with calculated completeness level between (60.0%) to (79.0%) in the summary sheet was “Occupation”.

Among the items included in summary medical records, the items showing completed levels less than (40.0%) and greater than (1.0%) were “Source of Admission, Serial Number of Admission, Investigation, Complications, Treatment, and Discharge Status”.

Average overall completed level documented among twenty-nine items in all five parts of summary sheets of medical records used in MU 1 of Yangon General Hospital during 2017 was shown as (49.9%).

Those resultant data could be used for continuity of care over subsequent visits, historical and medico-legal purposes in health management processes. Those medical records are also evidences based for statistics, research and implementation activities in program management in hospitals.

Therefore, the findings from this study of average overall completeness approximately fifty percent indicated that the urgent need to develop new guidelines or pre-service curriculum concerning medical record documentation, the need for favor the practice of assistant surgeons on better improved systematic documentation, as well as a call for continuous supervision and monitoring activities by senior medical personals, ward in-charges, and administrators at different levels of the hospital management.

Finally, it could be concluded that the findings on assessment of completeness of summary sheet medical record documentation in Medical Unit 1 of Yangon General Hospital during 2017 was less satisfactory compared with the findings conducted in other government hospitals. The documentations on summary sheet should be strengthened by upgrading the forms and by providing more regular and refresher course trainings to medical officers in terms of technical, financial and manpower supports as continuous quality improvement activities from hospital management committee of Yangon General Hospital.

CHAPTER 8
RECOMMANDATIONS

The following factors are suggested for the improvement of medical record (summary sheet) documentation performed by the medical officers in quality of care process activities of Yangon General Hospital as recommendations of this study.

(1) As there was an average completeness (49.9%) for the overall 144 randomly selected sample summary sheets of the medical records, it showed that the medical doctors in Medical Unit 1 as well as all medical doctors appointed at Yangon General Hospital will need more training for the standardized updated medical record documentation procedures as soon as possible.

(2) Pre-service trainings or on-job trainings about medical record documentation which were already and previously provided to newly appoint medical officers or transferred from other government peripheral hospitals should be assessed and reviewed for necessary new training on trainers (TOT) and refresher course training programs concerning medical record documentation procedures. And cultures with updated situational transition state of electronic medical record should also be considered and planned during time of hospital management committee meetings.

(3) Existing routine medical record documentation procedures, on arrival computerized registration EMR storage data compilation or digital image scanning process for paper based medical records in the wards or in medical record department should be periodically strengthened and evaluated to solve the problems such as limitation of time frame and man power shortage as examples.

(4) All the medical records to be sent or to be returned to the medical record department from the wards should be checked by one focal medical personal.

(5) Regular monitoring, supervision and evaluation for accurate documentation on both types of medical records of paper-based system or computerized system in Yangon General Hospital should be planned as sustainability and efficiency approaches.

REFERENCES

Ajami, S., Ketabi, S., Sadeghian, A., and Saghaeinnejad-Isfahani, S., 2015. Improving the Medical Records Department Processes by Lean Management. PubMed 2015-01-01. Journal of Education and Health Promotion / Vol. 4.48 / May 2015. Available at: http://www.jehp.net DOI:10.4103/2277-9531.157244. [Accessed December 10, 2018]

Ajami, S., Ebadsichani, A., Tofighi,S., and Tavakoli, N., 2013. Medical Records Department and Balanced Scorecard Approach. PubMed Central, 2013-01-01. Journal of Education and Health Promotion. 2013;2:7. Published 2013 Feb 28. doi:10.4103/2277-9531.107932.eCollection2013. Available at: https://www.ncbi.nlm.nih.gov [Accessed December 10, 2018]

Ariffin, N.A.bt N., Ismail, A.bt., Kadir, I.K.A., & Kamal, J.I.A., 2018. Implementation of Electronic Medical Records in Developing Countries: Challenges and Barriers. International Journal of Academic Research in Progressive Education and Development, 7(3), 187-199. [0nline] http://hrmars.com/index.php/pages/detail/publication-ethics. ISSN2226-6348. Available at: http://dx.doi.org/10.0067/IJARPED/V7-13/4358.[Accessed February, 2019]

Aung-Gyi-Maung, 2003. *Situational Analysis of Medical Record Section in Yangon General Hospital*. M.Med.Sc (Hospital Administration and Health Management), Thesis, University of Public Health, Yangon.

College of Physicians and Surgeons of Alberta, 2005. Transition to electronic medical records. Guidelines. Available at:www.cpsa.ab.ca.com publications resources/ attachments_ polices/transitions.

Crane, R.M. and Raymond, B., 2003. Fulfilling the Potential of Clinical Information Systems. The Permanente Journal 7(1). January 2003.

Da’ve, D., 2004. *Benefits and Barriers to Electronic Medical Records Implementation*. Caring: National Association for Home Care Magazine. Nov; 23, no. (11), pp. 50-51. PMID:15633313.

Davis, D.J., 2008. Medical Record Completion Policy#; by Director of Health Information Management. CLARK MEMORIAL HOSPITAL (September). [Online] https://www.clarkmemorial.org

Dawes, K.S., 1972. Survey of general practice records. British Medical Journal, 22 July 1972, 3(5820):219-23 PMID:5040710 PMCID:1785673 [Online] DOI:10.1136/bmj.3.5820.219

Department of Health Planning (DHP), 2011. *Training on CA-MRS and ICD-10 to the Medical Doctors*. Report, Ministry of Health, Union of Myanmar.

Department of Health Planning (DHP), 2013. *Report on Data Quality Assessment of Medical Record Services in Selected Hospitals*. Ministry of Health, Union of Myanmar.

Department of Health Planning (DHP), 2014. *Report on Supervision and Monitoring of Medical Record Services including Coding Audit*. Ministry of Health, Union of Myanmar.

Elliot, 2000. Health Information Management by Elliot Health System

Farhan, J., Al-Jummaa, S., Al-Rayes, H., and Al-Naser, A., 2004. *Documentation and coding of medical records in a tertiary care centre.* Ann Saudi Med 2005, vol. 25(1): 46-49. PMID: 15822494.

Franco, M., Bordoni M.V.G., Otero C., Landoni M.C., Benitez S., Borbolla D., Luna D., 2015. Problem Oriented Medical Record: Characterizing the Use of the Problem List at Hospital Italiano Buenos Aires. *MEDINFO 2015ehealth-enabled Health, I.N Sarkar et al. (Eds.)©2015 IMIA and IOS Press.*[Accessed November,2018] doi:10.3233/978-1-61499-564-7-877

Garba K.D., 2016. Significance and challenges of Medical Records: A Systematic Literature Review, University Library, Bayero University, Kano, Nigeria, July, 2016, Available at: http://www.researchgate.net/publication/309034245

Grant, C., 1978. *Hospital Management,* 1st edition, Edinburgh, Churchill Livingstone. (October 3, 1977). ISBN-10:0443016771.

Huffman, E.K., 1990. Medical Record Management.9th Revision, Berwyn, Physicians' Record Company, 33-35, 1990.

Institute of Medicine, 1997. Committee on improving the Patient Record. The Computer-based Patient Record: An Essential Technology for Health Care, Rev. ed. Dick, R.S., Steen, E.B., and Detmer, D.E., (eds). Washington, D.C: National Academy Press.

Joshi, D.C., & Joshi, M., 2009. *Hospital administration*, first edition, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi.

Kahn, M.G., Callahan, T.J., Barnard, J., Bauck, A.E., Brown, J., Davidson, B.N., Estiri, H., Goerg, C., Holve, E., Johnson, S.G., Liaw, S-T., Hamilton-Lopez, M., Meeker, D., Ong, T.C., Ryan, P., Shang, N., Weiskopf, N.G., Weng, C., Zozus, M.N., and Schilling, L., 2016. A Harmonized Data Quality Assessment Terminology and Framework for the Secondary Use of Electronic Health Records Data. *(Wash DC)*, 4(1), 10.13063/2327-9214.1244. *eGEMS(Generating Evidence & Methods to improve patient outcomes):* Vol. 4: Iss. 1, Article 18. DOI: https://dx.doi.org/ 10.13063/2327-9214.1244 Available at: http://repository.edm-forum.org/egems/vol4/Iss1/18. [Accessed April, 2019]

Kumar, B.D., Kumari, Vinaya, C.M., Sharada M.S., and Mangala M.S., 2012. Evaluation of medical records system in an upcoming teaching hospital-a project of improvisation. PubMed 2012-08-01 [Accessed November, 2018]

Kyi-Kyi-Aye, 2010. *Medical Record Department of Yangon General Hospital*. Dip.Med.Sc(Hospital Administration), paper, University of Public Health, Yangon.

Laerum, H., Karlsen, T.H., & Faxvaag, A., 2003. Effects of Scanning and Eliminating Paper-Based Medical Records on Hospital Physicians' Clinical Work Practice. *Journal of the American Medical Informatics Association*, 10(6), 588-595. [Accessed February, 2019]

May-Lynn-Htun, 2015. *Assessment on Completeness of Medical Record Documentation and Quality of Disease Coding in West Yangon General Hospital*. M. Med. Sc (Hospital Administration and Health Management), Thesis, University of Public Health, Yangon.

McGibony, J.R., 1969. *Principles of Hospital Administration*. New York.

Min-Zaw-Aye, 2011. *Medical Record Department of New Yangon General Hospital*. Dip. Med. Sc (Hospital Administration), paper, University of Public Health, Yangon.

Ngidi, T., 2015. Management of Medical Records: A Study at Princess Marina Hospital-Gaborone, Botswana, Master Degree in Archives and Records Management, University of Boswana.

Ngo, E., Patel, N., Chandrasekaren, K., Tajik, A.J., and Paterick, T.E., 2016. The importance of the Medical Record: A critical professional responsibility. Copyright©2016 by Greenbranch Publishing LLC. Available at: www.greenbranch.com|800-933-3711.

Pauzi, N.S.M., 2017. Characteristics of quality medical record; My Health Kementerian Kesihatan Malaysia, 14, June 2017. [Accessed February, 2019]

Presley, P., 1988. Format and content of medical record summaries in 27 training practices, Journal of the Royal College of General Practitioners, January,1988; 38, 26-27.

Putul, M., and Yadav, M., 2015. Documentation of Medical Record in Day to Day Medical Practice, 2015. IJHRMLP, Vol: 02 No.01, Page 29-34. January, 2016, India. [Accessed November,2018]

Sakharkar, B.M., 2009. *Principles of Hospital Administration & Planning*. second edition, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi.

Saravi, B.M., Asgari, Z., Siamian, H., Bagherian, E., Farehabadi, Heidari, A., Gorji, Motamed, N., Fallahkharyaki, and Mohammadi, R., 2016. Documentation of Medical Records in Hospitals of Mazandaran University of Medical Sciences in 2014: A Quantitative Study, Original Paper/ ACTA INFORM MED. 2016 JUN: 24(3):202-206, published online: 04/06/2016, published print: 06/2016 [Accessed December, 2018]

Sridhar, G.R., Allam, A.R., Muraleedharan, M.V., Kumar, R.V.J., & Venkat, Y., 2009. "Electronic medical records and hospital management systems for management of diabetes", *Diabetes & Metabolic Syndrome: Clinical Research and Reviews,*Vol.3 Iss pp 55-99

Swe-Swe-Win, 2008. *Situation of Medical Records in Sanpya Hospital, Thingangyun*. Dip.Med.Sc (Hospital Administration), paper, University of Public Health, Yangon.

Tin-Tin-Yee, 2009. Medical Record Unit of New Yangon General Hospital. Dip.Med.Sc (Hospital Administration), paper, University of Public Health, Yangon.

Tola, K., Abebe, H., Gebremariam, Y., and Jikamo, B., 2017. Improving Completeness of Inpatient Medical Records in Menelik II Referral Hospital, Addis, Ababa, Ethiopia. Advances in Public Health, Volume 2017, Article ID 8389414, 5 pages. Published 12 April 2017. [Online] Available at: https://doi.org/10.1155/2017/8389414.

Wagida, A.A., Abo El Ezz, N.F., Elhossiney, D.M., Abd Allah, R.A., 2015. Measurement of Completeness of Medical Records in Family Health Center in El Shorouk City, MOHP, Cairo, Egypt. October, 2015. The Egyptian Journal of Community Medicine, Vol. 34 No.3 July 2016.

Win-Ei-Ei-Thaw, 2012. *On Medical Record Documentation in Surgical Wards of Mandalay General Hospital*. M.P.H (Master of Public Health), Thesis, University of Public Health, Yangon.

Win-Naing, 2016. Assessment of completeness of record documentation and quality coding of modified trauma registry in Nay Pyi Taw 1000 Bedded General Hospital. M.Med.Sc (Hospital Administration and Health Management), thesis, University of Public Health, Yangon.

World Health Organization (WHO), 2006. Medical Records Manual, A Guide for Developing Countries, World Health Organization, South East Asia, Revised and updated.

World Health Organization (WHO), 2003. Improving Data Quality, A Guide for Developing Countries, World Health Organization, Geneva.

Whiting, O.K.Q.E., Simborg, D.W., and Epstein, W.V., 1980. A Controlled Experiment to Evaluate the Use of Time Oriented Summary Record. A journal article in Medical Care, Vol.18, No.8 (August 1980) pp. 842-852

ANNEX (1) VARIABLES AND OPERATIONAL DEFINITIONS

No.	Variables	Operational Definitions	Scale of Measurements
1.	Medical Record	A collection of facts about a patient's health history, including past and present illness and treatment written by the health care professional treating the patient.	Nominal
2.	Summary Sheet	A summary of the patient's stay in hospital written and signed by the attending doctor just before the patient is released from the hospital	Nominal
3.	Hospital Number	Medical Record number and the number that identifies the patient's medical record and is used to file the medical record.	Numerical
4.	Source of Admission	The place in outpatient department where patient had to admit to hospital	Nominal
5.	Serial Number of Admission	The frequency of admission by the same patient to the same hospital	Numerical
6.	Date of Admission	The date and time that the patient had started to stay in hospital to get the treatment by the health professional	Numerical

No.	Variables	Operational Definitions	Scale of Measurements
7.	Date of Discharge	The date and time that the patient is released from the hospital	Numerical
8.	Length of Stay	The length of duration in days that the patient had admitted to hospital and then discharged	Numerical
9.	Ward/Specialty	The name of the ward or specialty in hospital	Nominal
10.	Name	A word or set of words by which a patient is known, addressed or referred to.	Nominal
11.	Father Name	The name of male parent or biological male parent of the patient is identified as the personal data.	Nominal
12.	Age	The Patient's age	Numerical
13.	Sex	The patient's sex or gender	Nominal
14.	Date of Birth	Date/Month/Year of the patient	Numerical
15.	Marital Status	Whether or not the patient is married.	Nominal
16.	Ethnic Group	Nationality or tribe of patient	Nominal

Annex| ii

No.	Variables	Operational Definitions	Scale of Measurements
17.	Religion	The belief in or the worship of a god or gods or any such system of belief or worship by the patient	Nominal
18.	Occupation	Patient's job or hobby or the routine daily work activities	Nominal
19.	Address	The number of the house, the name of the street where the patient is currently living or working before admission to the hospital	Nominal
20.	Permanent Address	The name of the township where the patient permanently lives	Nominal
21.	Investigation	The act or the process to examine the patient carefully, especially to discover the true nature of the disease	Nominal
22.	Principle Diagnosis	The final diagnosis confirmed before the patient is discharged from the hospital	Nominal
23.	Surgical Operation (Procedure)	Surgical operation or procedure done or performed to the patient for treatment or investigation	Nominal
24.	Current Co-Morbidities	The disease or illness with the underlying disease that can cause fatal condition to patient	Nominal

Annex| iii

No.	Variables	Operational Definitions	Scale of Measurements
25.	Complications	An extra medical problem which make it more difficult to treat an existing illness	Nominal
26.	Treatment	The use of the drugs or exercises etc. to cure a person of an illness or injury	Nominal
27.	For All Injuries	Different types of physical harm or injury caused by an accident or an attack to a patient	Nominal
28.	Discharge Status	An accepted or official condition, especially after the medical treatment had been provided to the patient during hospital admission and then the patient is released from the hospital	Nominal
29.	Police Case	The disease or accident concerning with the police matter or medico-legal status	Nominal
30.	Medical Officer Signature	Medical Officer's name written by himself, always in the same way, usually to show that something has been written or agreed by himself.	Nominal
31.	Medical Officer Name	The name of the Medical Officer who is responsible for medical record keeping.	Nominal

Annex| iv

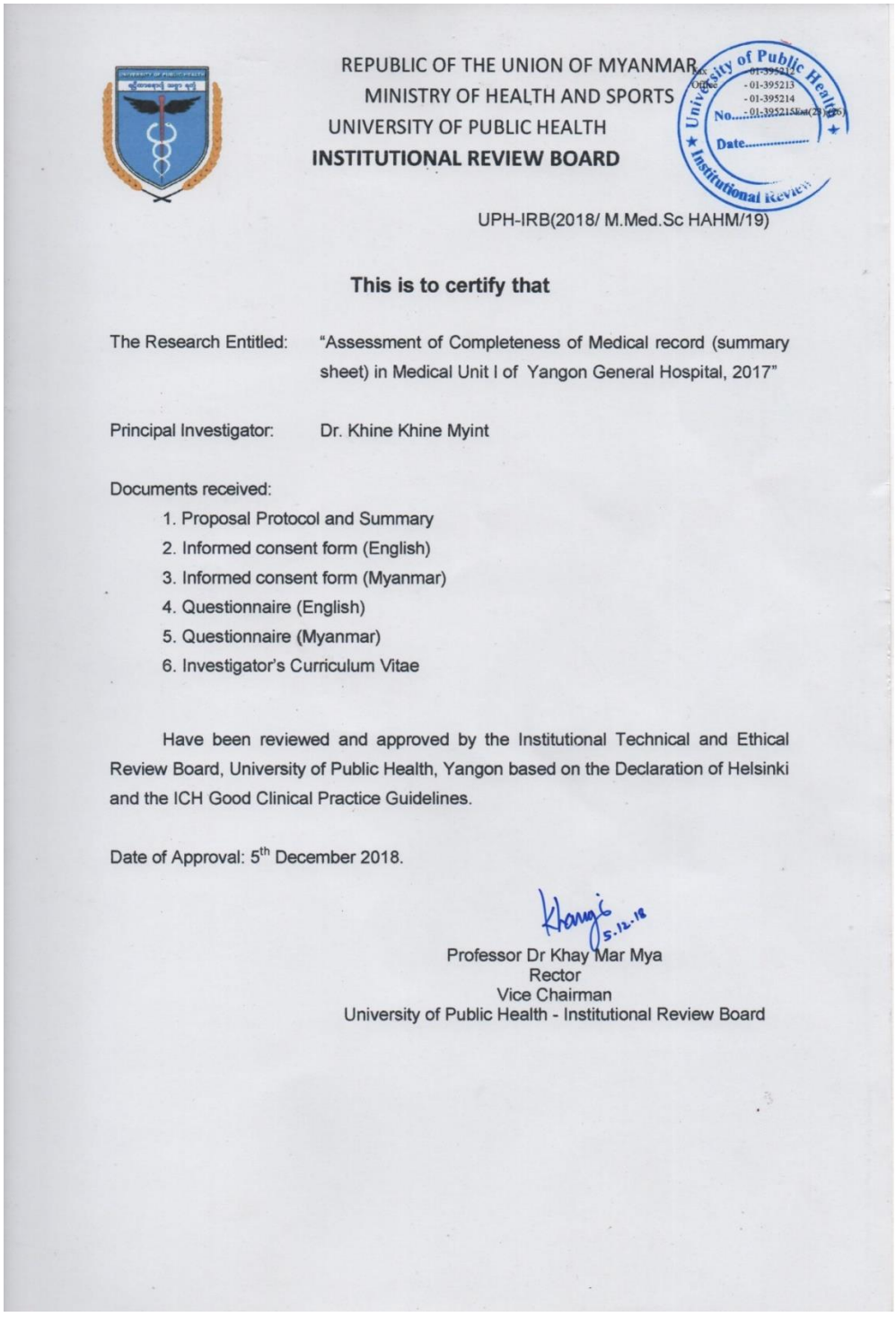
ANNEX (2) SUMMARY SHEET OF YGH

ANNEX (3) GANTT CHART

Month	November				December				May				June			
Week	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**	**1**	**2**	**3**	**4**
Protocol preparation																
Protocol defend																
Pilot study and preparation for data collection																
Data collection																
Data Analysis and thesis writing																
Thesis preparation																
Thesis submission to examiner																
Thesis defend																
Submission of thesis																

Annex| vi

ANNEX (4) Certificate of Institutional Review Board



REPUBLIC OF THE UNION OF MYANMAR
MINISTRY OF HEALTH AND SPORTS
UNIVERSITY OF PUBLIC HEALTH
INSTITUTIONAL REVIEW BOARD

UPH-IRB(2018/ M.Med.Sc HAHM/19)

This is to certify that

The Research Entitled: "Assessment of Completeness of Medical record (summary sheet) in Medical Unit I of Yangon General Hospital, 2017"

Principal Investigator: Dr. Khine Khine Myint

Documents received:

1. Proposal Protocol and Summary
2. Informed consent form (English)
3. Informed consent form (Myanmar)
4. Questionnaire (English)
5. Questionnaire (Myanmar)
6. Investigator's Curriculum Vitae

Have been reviewed and approved by the Institutional Technical and Ethical Review Board, University of Public Health, Yangon based on the Declaration of Helsinki and the ICH Good Clinical Practice Guidelines.

Date of Approval: 5th December 2018.

Professor Dr Khay Mar Mya
Rector
Vice Chairman
University of Public Health - Institutional Review Board

ANNEX (5) CURRICULUM VITAE

Name	Dr. Khine Khine Myint
Date of Birth	25.10.1971
Place of Birth	Maw-La-Myine
Nationality	Mon+ Myanmar
Religion	Buddhist
Marital Status	Single
Academic qualification	M.B.,B.S(June/1999)
Date of starting Government service	08.04.2007
Current post	Assistant Director, Disaster and Public Health Emergency Response Division, Department of Public Health, MoHS, Nay Pyi Taw (17.7.2017) to until now
Previous posts	1.Assistant Surgeon, State General Hospital, Maw-La-Myine, Mon State (8.4.2007) to (8.9.2009)
	2.Medical Officer, Maternal and Child Health, Township Health Department, Htan-Ta-Bin Township, Yangon Region (14.9.2009) to (30.4.2015)
	3.Assistant Surgeon, Disaster and Public Health Emergency Response Division, Department of Public Health, MoHS, Nay Pyi Taw (3.5.2015) to (17.7.2017)