

**ASSESSMENT OF THE COMPLINACE OF MEDICAL RECORDS  
DOCUMENTATION ON NABH STANDARDS IN A PRIVATE  
TERTIARY CARE HOSPITAL IN U.P.**

Dissertation Submitted to



**The IIHMR University, Jaipur**

for the partial fulfillment for the award of the degree of  
Master of Business Administration (MBA)

In

Hospital and Health Management

By

Pooja Tiwari

Under the Supervision and Guidance of

Dr. P. R. Sodani

2021

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## DECLARATION BY STUDENT

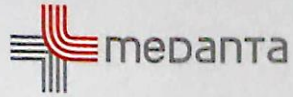
I hereby declare that this dissertation titled **Assessment of The Compliance of Medical Records Documentation on the NABH Standards in a Private Tertiary Care Hospital in U.P.** is the bona fide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in the text.



(Signature)

Name of Student: **POOJA TIWARI**

Date: **01.07.2021**



## CERTIFICATE

This is to certify that **Pooja Tiwari** in partial fulfillment of the requirements for the award of the degree of **MBA (Hospital and Health Management)** from the IIHMR University, Jaipur has successfully completed her/his internship at **Medanta Hospital, Lucknow**, during March 22, 2021 to June 19, 2021.

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Date: 30/6/2021

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## CERTIFICATE

This is to certify that dissertation titled **Assessment of the Compliance of Medical Records Documentation on the NABH Standards in a Private Tertiary Care Hospital in U. P.** is a record of the research work undertaken by **Pooja Tiwari** in partial fulfillment of the requirements for the award of the degree of **MBA (Hospital and Health Management)** from the IIHMR University, Jaipur under my guidance and supervision and his/her approach to the research study has been sincere, scientific, and analytical.

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## **ABSTRACT**

### **Background:**

Medical records are an integral part of a patient's medical journey under the jurisdiction of a healthcare provider. Considering the importance of medical records, for a patient as well as healthcare providers, it becomes essential that medical records maintained are complete, accurate, and of a standardized format. NABH is an accreditation body in India, which has issues standards, necessary for a healthcare facility to achieve in order to receive its accreditation. Since NABH standards are considered a benchmark for quality in services offered by hospitals to its patients, evaluation of medical records on the NABH standards must be carried out to ensure that the medical records are complete, accurate, and standardized.

### **Objective:**

To assess the compliance of medical records documentation as per NABH checklist from January 1, 2021 to May 31, 2021. To evaluate the compliance of different types of medical records and perform and comparative analysis. To assess the medical records on the predetermined quality indicators for the past 5 months (January 1, 2021 to May 31, 2021).

### **Methods:**

It was a descriptive cross-sectional study, covering a span of five months (January 1, 2021, to May 31, 2021). A total sample of 500 medical records were selected through random sampling method for the study. Only the inpatient records of the discharged patients were included in this study while the records where hospitalization was not warranted for more than 24 hours were excluded.

### **Results**

The compliance of medical records documentation of the private tertiary care hospital on NABH checklist for the month of January-May was significantly lower in parameters of "Progress Sheet- Doctor", and "Medication Administration Record", as compared to others. It was also noticed that the compliance of the medical records decreased with increase in the length of stay of the patient. The compliance of the

medical records decreased significantly for all parameters except for “Discharge/Death/LAMA Summary” in the month of May.

## **Conclusion**

The compliance of the medical records was inconsistent, and varied according to month, specialty, length of stay and parameters. Training and capacity building, incentivization, and periodic monitoring of the documentation process might be helpful in improving the compliance of the medical records in the future.

## **ACKNOWLEDGEMENT**

**“Appreciation is a wonderful thing: it makes what is excellent in others belong to us as well.”**

**-Voltaire**

Words of acknowledgement, however many they might be, are insufficient to express the gratitude I feel towards the people who have constantly supported me in successfully completing my dissertation in these unforeseen and unpredictable circumstances.

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I would also thank the Academic Committee and Placement Committee for their assistance wherever necessary.

In the end, I would like to extend my heartfelt gratitude to my friends and family, who were like a pillar of support for me, and without whom, the completion of this project was difficult.

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## **ABBREVIATIONS**

**AJUMS:** “Ahvaz Jundishapur University of Medical Sciences”

**ASQua:** “Asian Society for Quality in Healthcare”

**CTVS:** “Cardio-Thoracic and Vascular Surgery”

**ENT:** “Ear, Nose and Throat”

**GI:** Gastro-Intestinal

**HDU:** “High Dependency Unit”

**ICU:** “Intensive Care Unit”

**IPD:** “In-Patient Department”

**ISQua:** “International Society for Quality in Healthcare”

**KPI:** “Key Performance Indicators”

**LAMA:** “Leave Against Medical Advice”

**MAR:** “Medication Administration Record”

**MO:** “Medical Officer”

**MRD:** “Medical Records Department”

**MRI:** “Magnetic Resonance Imaging”

**NABH:** “National Accreditation Board for Hospital and Healthcare Providers”

**PAC:** “Pre-Anesthesia Checkup”

**PCC:** “Primary Care Centers”

**QCI:** “Quality Council of India”

**RFA:** “Request for Admission”

**TPA:** “Third Party Administrators”

**USA:** “United States of America”

## INTRODUCTION

Medical records, health records, or medical charts as they are interchangeably named, are said to be the most important source of information regarding a patient's span of care in a hospital/healthcare facility. They are often described as the systematic documented evidence of a patient's history of illness, treatment, and care across a definite period under the jurisdiction of a particular healthcare provider. A medical record documents variety of "notes" which includes clinical observations, drug administrations, physician's orders, investigations, treatment plans, health assessments, billings, consent forms, and other important records deemed integral to the patient's tenure under a healthcare provider. Since, medical records serve as a documented history of a patient's span of care, it finds its uses in variety of ways. While medical records help clinicians in providing customized quality care to each patient, it also facilitates the hospitals by providing vital information for conducting research, evaluate performance of the services offered, and formulate future policies. It facilitates reduction of medical errors during a patient's care in the hospital/healthcare facility and serves as an important evidence in medico-legal cases.

Considering the importance of medical records for a patient as well as the healthcare providers, it becomes essential that medical records maintained are complete, accurate and of a standardized format. The healthcare practitioners and other personnel entering information in the medical records should follow appropriate guidelines when doing so and must complete them within a specified time. In a hospital/healthcare facility, a medical records department or health information systems department is responsible for maintaining the medical records in a facility. They ensure that the records are standardized, accurate and complete, and notify the clinicians in case any relevant information is missing. Several organizations have also laid down mandatory standards for medical records

documentation in a healthcare facility, the compliance to which is imperative for those seeking licensing and accreditation from these organizations.

The National Accreditation Board for Hospitals & Healthcare Providers (NABH), which is a constituent board, set up by the Quality Council of India (QCI), is one such organization, which operates various accreditation programs for hospitals and other healthcare providers. The board possesses full functional autonomy in its operations and receives support from all the stakeholders which includes the industry, consumers, government, etc. NABH, even though being an institutional body in itself, also has memberships across various organizations. These are institutional membership of the International Society for Quality in Health Care (ISQua), membership of the Accreditation Council of ISQua, and board membership of Asian Society for Quality in Health Care (ASQua). Its hospital accreditation program was started in the year 2005, with the intention of improving the quality and safety of patient care at public as well as private hospitals. Today, NABH is being acknowledged globally as one at par with other internationally recognized accreditation standards and accredited by ISQua itself. The NABH comes in two forms, Full NABH, suitable for large Specialty and Tertiary Care level hospitals, and Entry Level NABH, for smaller hospitals. It has 10 chapters, which contains 100 standards and 503 objective elements. These standards cover the complete range of services and operations provided by the Hospital, beginning from the patient registration, their preliminary assessment, to laboratory services both inhouse and outsourced, patient's rights and education, policies and procedures for patient care, medication management, infection control and waste management, facility management and security, human resource and their management, and the healthcare information system.

NABH has become the highest benchmark for quality of patient care in a hospital in India. It ensures that the patients receive healthcare from a credential medical staff, with dignity and respect, and where a patient's rights are respected and protected. The staff also benefits from the accreditation because it provides a platform for continuous learning, a conducive environment and healthy environment, commitment and leadership, and accountability for the clinical and administrative processes. It stimulates continuous improvement in the quality of services offered, enabling the hospital in demonstrating its commitment to quality care and raising the confidence of its beneficiaries in the services offered by the hospital. Moreover, NABH accreditation, also serves as an objective element for empanelment by Insurance and various TPAs. Needless to say, it is a great matter of repute for a Hospital to receive accreditation from NABH.

Since NABH standards are considered the benchmark for quality in services offered by a hospital to its patients, it becomes important that the documentation of the medical records must be evaluated on these standards. Medical records are an integral part of a patient's journey in a hospital or under a healthcare provider. Therefore, it becomes imperative that the documentation of the medical records must be assessed on the standards appointed by NABH, to ensure that the medical records are structured, accurate and standardized. This study is conducted in a Private Tertiary Care hospital situated in Western UP, with the aim of assessing the documentation of medical records on the objective elements specified by NABH. It also aims to perform a comparative analysis of different types of medical records and evaluate them on the predetermined quality indicators to assess the compliance of medical records with respect to the NABH standards. It is expected that with this study, the hospital would be facilitated in enhancing the best documentation practices, while adhering to the NABH standards, because it would directly reflect upon the quality of

care provided and help the organization in its accreditation process for NABH.

## **LITERATURE REVIEW**

Although medical records constitute an integral component in a patient's life at a hospital, little research has been conducted to evaluate its documentation process. Similarly, even though NABH is the pioneer accreditation body for hospital accreditation, very few articles have documented its compliance with the accreditation standards of NABH in India.

In the year 1991, H. Feather and N. Morgan, described the role of medical records and the concerned department in the risk management practices (2). They stated that medical records should be treated as an integral part of the patient care and holds great importance. In the situation where a medicolegal case arises, the information missing from the medical records might be as significant as the information present.

Renvoize et al in 1997 (1) described the documentation of patient care under a healthcare provider as the Achilles heel of clinical services. They also stated that improvements can be achieved by using a multidisciplinary, semi-structured medical record, but appropriate strategies need to be paired with the process. This would work towards overcoming the professional and cultural barriers to unified documentation.

Mishra et al. (2009), a team of researchers from Nepal, conducted a study with aim of assessing the adequacy of medical records in Bir Hospital, a medical university in Nepal. They analyzed the discharge summaries of patient for a period of 6 months in a single tertiary care unit (3). They found that in 66 percent of cases patient's condition at discharge was not mentioned, doctor's signature was illegible in 79.3 percent of cases, and 96.9 percent of were discharged without any instructions given to them.

There were several other disparities observed in the discharge summary as well.

Lövestam et al (2013), conducted a research in which they evaluated the documentation of dietic care in the Swedish Medical Records. It was a retrospective audit in which 147 dietic notes from the electronic medical records were taken and evaluated. The audit showed them that several significant components of the nutrition care were not documented properly. It outlined the fact that the Swedish dieticians need to improve the medical records documentation of the dietic records. It was also suggested by the authors that a structured documentation model might be helpful in the process (5).

It was in the year 2015 that Halasa et al. conducted a four-year retrospective study to assess the economic impact of JCI accreditation on the performance of hospitals on selected structural and outcome measures in Jordan. They found that out of the five selected measures, statistically significant effects were observed in three. When combined over 3 years, it was expressed into a total savings of US\$ 593 000 in the healthcare system of Jordan (14).

Two researchers named Anshu Gupta and Chhavi Gupta, in 2016, described the role of NABH core indicators in facilitating the monitoring of quality and safety of blood transfusion through a two-year retrospective study conducted in a tertiary care hospital of a metropolitan city in India (6). They observed significant improvement in the quality of the process with reduced wastage of blood and blood components, lower incidence of transfusion reactions and lesser average turnaround time for the blood and blood component's issues.

In another study Nomura et al. (2016), analyzed the quality of nursing documentation using Quality of Nursing Diagnoses, Interventions, and Outcomes. It was an observational study, in which the authors compared

the documentation before and after the hospital accreditation in a university hospital (8). It was observed that after the hospital accreditation, there were significant improvement in the documentation in 24 out of 29 items (82.8 percent).

Ryan et al (2017) discussed about the adherence to medical regimens and medical records accuracy in polypharmacy patients in the United States by selecting a retrospectively tested patient cohort of 821 individuals. They found that poor adherence and inaccurate/incomplete medical records give rise to incomplete knowledge about the medication therapy in these patients (4).

Prerana Singh and Sakshi John (2018), a team of researchers from Jamia Hamdard, New Delhi, conducted a study in which they analyzed the health records documentation process in a tertiary care hospital as per the National Standards of Accreditation. 200 patient files from the nursing stations, wards and critical areas were selected and assessed on the predetermined documentation review audit tool. Through their study they found that higher compliance was observed in surgical patient files as compared to the medical patient records (7). They also noted various areas of patient files where compliance was varying and used this information to communicate to the staff about the improvement measure to be undertaken in the future.

Nugraheni et al. (2019), assessed the management of medical records in Primary Care Centers in Indonesia, on the basis of the accreditation for these facilities and the legislative provisions applicable. The study revealed partial fulfillment for the Standard Criteria 8.4.1 and 8.4.2 while there was complete overall fulfillment for the Standard Criteria 8.4.3 and 8.4.4. They described that the fulfillment of the above-mentioned criteria was greatly influence by regulations, manager's commitment in following them, and synchronizing these regulations in the primary health centers with legislations which are recognized nationally and internationally.

The same year, Sadagheyani (2019) mentioned the issue of poor-quality medical records in Iran in their research paper and stated that physicians and surgeons emphasize the criticality of high-quality care for the patient, but do not recognize the documentation of medical records as an integral component of the patient care. In their research paper they described the study conducted to assess the role accreditation in improvement of medical records documentation in Iran (9). The study was conducted in 2018 and analyzed a sample of 1500 inpatient medical records of Besat Hamadan Hospital from the year 2011 (pre-accreditation) and 2017 (post-accreditation). The authors found that there was significant improvement in all forms after the accreditation of documentation status as compared to previous arrangements. Admission and Discharge Summary forms saw highest improvement, while lowest improvement score was obtained for progress notes (pre-accreditation) and clinical form header (post-accreditation).

In 2020, A similar study was conducted by Attia et al. in which they assessed the impact of achieving accreditation standards in a hospital on the quality of electronic health records. A private 30 bedded hospital in Abha, Aseer Saudi Arabia was selected for this study and 18 percent of medical records of the discharged patients were manually chosen each month for the audit. The data collection was based on the modified medical records checklist adapted according to the JCI criteria (10). The authors observed that after the accreditation, there was significant improvement in the compliance with complete medical records documentation.

A study by Sharifi et al. (2021), described the factors that affected the quality of medical records through the implementation of accreditation models in hospitals. A set of 28 semi-structured interview schedule was used to collect information from medical administrators and supervisors of various departments such as nursing, medical records, and accreditation of

academic hospitals in Ahvaz, Southwest Iran. The factors facilitating and hindering factors which affected the quality of documentation were categorized into three levels, organizational, environmental, and personal. Six facilitating factors namely, organizational structure, organizational culture, management support, individual characteristics, and perceived benefits science and technology while five hindering factors identified in this study were program structure, organizational structure, beliefs, justice, and individual characteristics (10).

Table 5.1, described below, presents a summarized version of the literature review discussed above.

**Table 5.1. Summarized Version of the Review of Literature.**

| <b>Author<br/>(Year)</b>    | <b>Study<br/>Location/<br/>Sample<br/>Size</b>                                            | <b>Methodology</b>                                                                                                                                                                                                                                                               | <b>Salient Features</b>                                                                                                 |                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                             |                                                                                           |                                                                                                                                                                                                                                                                                  | <b>Objective</b>                                                                                                        | <b>Results</b>                                                                                                                                                                                                                                                                                                                                |
| Mishra et al.<br>(Apr 2009) | <b>Location:</b><br>Nepal<br><br><b>Sample<br/>Size:</b><br>130<br>Discharge<br>summaries | <b>Study Period:</b><br>Apr 2008- Oct<br>2008<br><b>Study Design:</b><br>Descriptive<br>Cross-Sectional<br>Study.<br><b>Study Setting:</b><br>Liver Unit Bir<br>Hospital, Nepal.<br><b>Sampling<br/>Technique:</b> NA<br><b>Study Tool:</b><br>Predetermined<br>Audit Checklist. | Aim of<br>assessing the<br>adequacy of<br>medical<br>records in Bir<br>Hospital, a<br>medical<br>university in<br>Nepal | In 66 percent of<br>cases patient's<br>condition at<br>discharge was not<br>mentioned,<br>doctor's signature<br>was illegible in<br>79.3 percent of<br>cases, and 96.9<br>percent of were<br>discharged<br>without any<br>instructions given<br>to them. Several<br>other disparities<br>were observed in<br>the discharge<br>summary as well |
| Lövestam et<br>al. (2013)   | <b>Location:</b><br>Sweden<br><br><b>Sample<br/>Size:</b><br>147 dietic<br>notes          | <b>Study Period:</b><br>2009<br><b>Study Design:</b><br>Retrospective<br>Observational<br>Audit<br><b>Study Setting:</b><br>Six hospitals and                                                                                                                                    | To evaluate the<br>documentation<br>of dietic care<br>in the Swedish<br>Medical<br>Records.                             | Several significant<br>components of the<br>nutrition care<br>were not<br>documented<br>properly. Swedish<br>dieticians needed<br>to improve the<br>medical records                                                                                                                                                                           |

Table 5.1. Summarized Version of the Review of Literature. Continued

|                                  |                                                                                                                                                                      |                                                                                                                                                                                                                                                                                  |                                                                                                     |                                                                                                                                                                                                                                   |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  |                                                                                                                                                                      | 4 PCCs in central Sweden<br><b>Sampling Technique:</b> NA<br><b>Study Tool:</b> “Diet-NCP-Audit” instrument                                                                                                                                                                      |                                                                                                     | documentation of the dietic records. They suggested that a structured documentation model might be helpful in the process.                                                                                                        |
| Anshu Gupta, Chhavi Gupta (2016) | <b>Location:</b> India<br><br><b>Sample Size:</b> NA                                                                                                                 | <b>Study Period:</b> 2011-2012.<br><b>Study Design:</b> Retrospective study<br><b>Study Parameters:</b> “whole blood and blood component usage”, “transfusion reactions”, “wastage of blood and blood products”, and “average turnaround time”.<br><b>Sampling Technique:</b> NA |                                                                                                     | Significant improvement in the quality of the process with reduced wastage of blood and blood components, lower incidence of transfusion reactions and lesser average turnaround time for the blood and blood component’s issues. |
| Nomura et al. (2016)             | <b>Location:</b> Brazil (in a general and public university hospital with 60 specialties and approximately 850 beds.)<br><br><b>Sample Size:</b> 224 medical records | <b>Study Period:</b> 2012-2013<br><b>Study Design:</b> Observational study<br><b>Study Sample:</b> Hospitalizations in clinical and surgical units.<br><b>Sampling Technique:</b> Through PEPI software version 4.0                                                              |                                                                                                     | After the hospital accreditation, there were significant improvement in the documentation in 24 out of 29 items (82.8%).                                                                                                          |
| Prerna Singh (Aug 2018)          | <b>Location:</b> India<br><br><b>Sample Size:</b> 200 patient files                                                                                                  | <b>Study Period:</b> NA<br><b>Study Design:</b> Observational, Prospective Study with                                                                                                                                                                                            | To analyze the health records documentation process in a tertiary care hospital as per the National | Higher compliance was observed in surgical patient files as compared to the medical patient records.                                                                                                                              |

**Table 5.1. Summarized Version of the Review of Literature. Continued**

|                              |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                        |                                                                                                                                                                    |
|------------------------------|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                              |                                                                      | <p>Hypothesis testing</p> <p><b>Study Setting:</b> A private hospital in Delhi, India</p> <p><b>Sampling Technique:</b> Convenience Sampling</p> <p><b>Study Tool:</b> Documentation Review Audit Tool.</p>                                                                                                                                                                                       | Standards of Accreditation                                                                                             | Various areas of patient files where compliance was varying was also noted.                                                                                        |
| Ryan et al. (Sept. 2018)     | <p><b>Location:</b> USA</p> <p><b>Sample Size:</b> 821 US adults</p> | <p><b>Study Period:</b> 2015</p> <p><b>Study Design:</b> Retrospective Observational Study</p> <p><b>Study Setting:</b> Cleveland Clinic, Cleveland, Ohio.</p> <p><b>Sampling Technique:</b> Random Sampling in patients receiving a Vit. D test.</p> <p><b>Study Tool:</b> A multiplex assay to quantitatively assess the serum concentrations of medications followed by interview schedule</p> | To assess the adherence to medical regimens and medical records accuracy in polypharmacy patients in the United States | Poor adherence and inaccurate/incomplete medical records give rise to incomplete knowledge about the medication therapy in these patients.                         |
| Nugraheni et al. (July 2019) | <p><b>Location:</b> Indonesia</p> <p><b>Sample Size:</b> NA</p>      | <p><b>Study Period:</b> NA</p> <p><b>Study Design:</b> Qualitative Research</p> <p><b>Study Setting:</b> Primary care centers of Indonesia.</p> <p><b>Sampling Technique:</b> NA</p> <p><b>Study Tool:</b> Participation included observation, non-</p>                                                                                                                                           | Assessing the management of medical records in Primary Care Centers in Indonesia                                       | Partial fulfillment was observed for the Standard Criteria 8.4.1 and 8.4.2 while there was complete overall fulfillment for the Standard Criteria 8.4.3 and 8.4.4. |

Table 5.1. Summarized Version of the Review of Literature. Continued

|                         |                                                                                                               |                                                                                                                                                                                                                                                                                                                         |                                                                                                                     |                                                                                                                                                                        |
|-------------------------|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         |                                                                                                               | structured interviews, and discussions.                                                                                                                                                                                                                                                                                 |                                                                                                                     |                                                                                                                                                                        |
| Sadagheyani H.E. (2019) | <b>Location:</b><br>Iran<br><br><b>Sample Size:</b> 1500 records                                              | <b>Study period:</b><br>2011 and 2017<br><b>Study Design:</b><br>Analytical Cross-Sectional Study<br><b>Study Setting:</b><br>Besat Hospital in affiliation with Hamadan University of Medical Sciences, Iran.<br><b>Sampling Technique:</b><br>Systematic Sampling<br><b>Study Tool:</b><br>Researcher made checklist. | To assess the role accreditation in improvement of medical records documentation in Iran                            | Significant improvement in all forms was observed after the accreditation of documentation status as compared to previous arrangements                                 |
| Attia et al. (May 2020) | <b>Location:</b><br>Saudi Arabia<br><br><b>Sample Size:</b> 18 percent of the medical records for each month. | <b>Study Period:</b><br>Jan 2014-Jun 2015<br><b>Study Design:</b><br>Analytical Cross Sectional Study<br><b>Study Setting:</b> A Private 30 bedded hospital in Saudi Arabia<br><b>Sampling Technique:</b><br>Random sampling<br><b>Study Tool:</b><br>Medical record completeness checklist.                            | To assess the impact of achieving accreditation standards in a hospital on the quality of electronic health records | After the accreditation, there was significant improvement in the compliance with complete medical records documentation                                               |
| Sharifi et al. (2021)   | <b>Location:</b><br>Iran<br><br><b>Sample Size:</b><br>28 administrators and supervisors of nursing, medical  | <b>Study Period:</b><br>NA<br><b>Study Design:</b><br>Qualitative Research.<br><b>Study Setting:</b><br>Five educational institution in affiliation with "AJUMS"                                                                                                                                                        | To describe the factors that affected the quality of medical records through the implementation of accreditation    | Three level of factors affecting the quality of records viz. organizational, environmental, and personal.<br><b>Facilitating factors:</b><br>Organizational structure, |

**Table 5.1. Summarized Version of the Review of Literature. Continued**

|  |                            |                                                                                         |                     |                                                                                                                                                                                                                                                       |
|--|----------------------------|-----------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | records, and accreditation | <b>Sampling Technique:</b> NA<br><b>Study Tool:</b> Semi-structured interview schedule. | models in hospitals | organizational culture, management support, individual characteristics, and perceived benefits and science and technology<br><b>Hindering factors:</b> Program structure, organizational structure, beliefs, justice, and individual characteristics. |
|--|----------------------------|-----------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### **RESEARCH OBJECTIVE:**

1. To assess the compliance of medical records documentation as per NABH standards from January 1, 2021 to May 31, 2021
2. To evaluate the compliance of different types of medical records and perform and comparative analysis.
3. To assess the medical records on the predetermined quality indicators for the given months (January 1, 2021 to May 31, 2021).

#### **RESEARCH METHODOLOGY:**

**Study Design:** Descriptive Cross-Sectional Study

**Study Duration:** Five months (January 1, 2021 to May 31, 2021)

**Study Sample:** 500 completed medical records.

**Sampling Technique:** Simple Random Sampling

**Study Tool:** Medical Records Audit Checklist specified by the Organization.

**Inclusion Criteria:** Completed IPD/ICU records of the patients with hospitalizations of more than 24 hours.

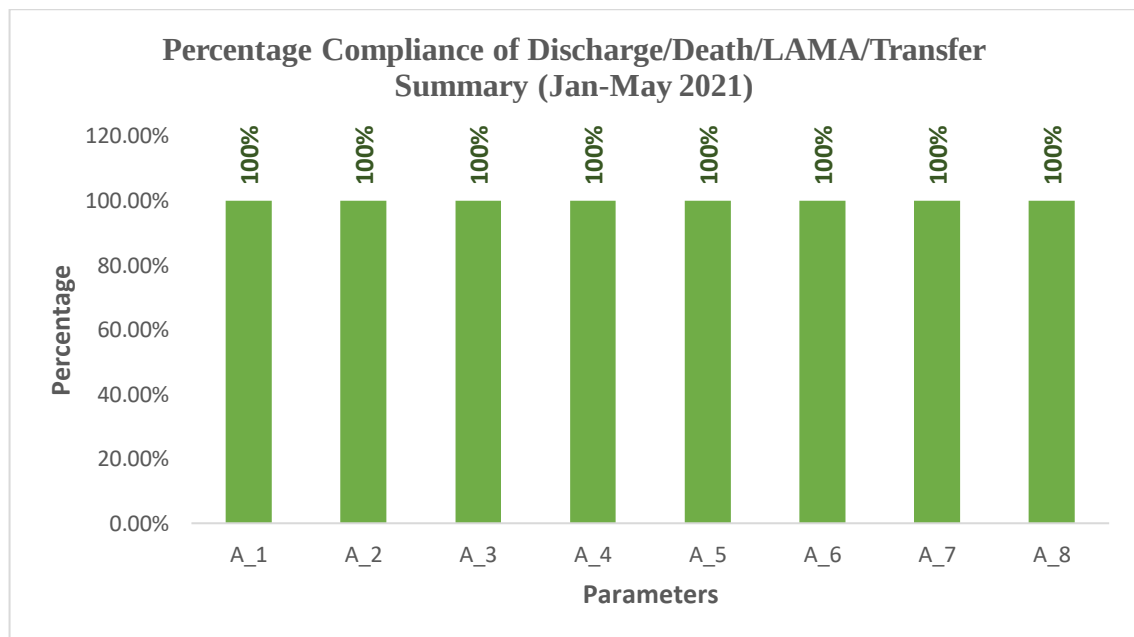
**Exclusion Criteria:** Daycare, or Surgical procedures where hospitalization is not warranted for more than 24 hours.

## RESULTS:

**OBJECTIVE 1: To assess the compliance of medical records documentation as per NABH standards from January 1, 2021 to May 31, 2021.**

### I. TOTAL COMPLIANCE OF ALL PARAMETERS ON THE NABH STANDARDS

#### A. Discharge/Death/LAMA/Transfer Summary Complete (Closed Files)



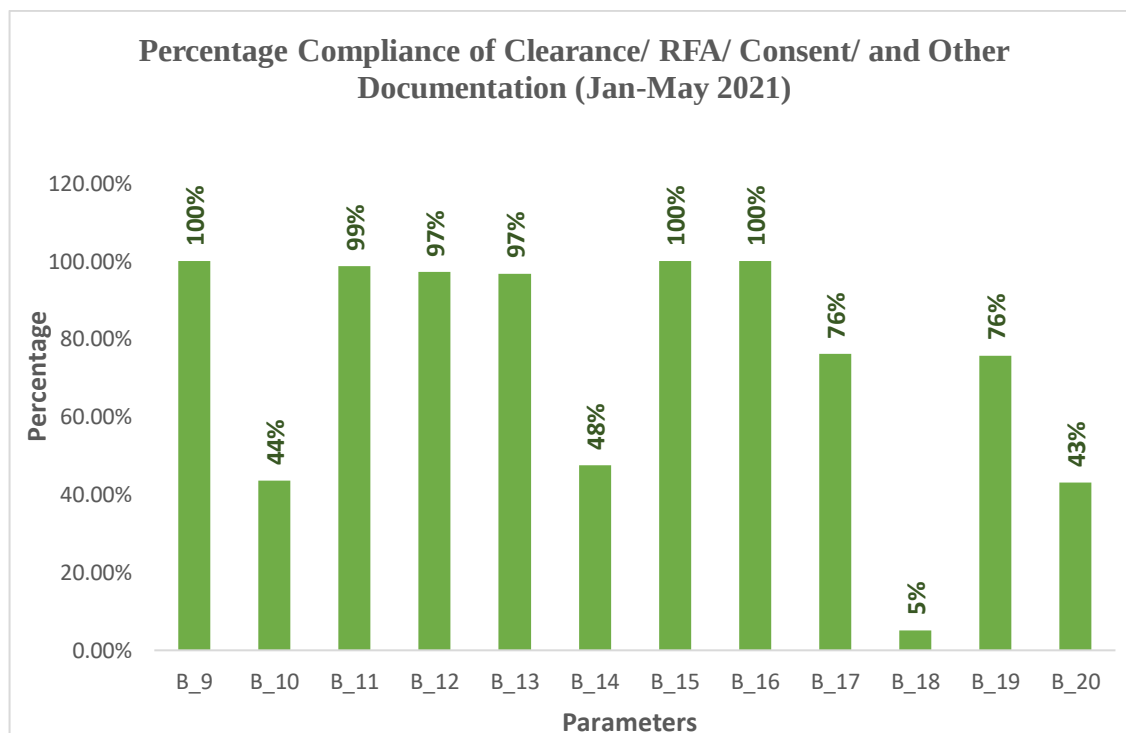
**Fig. 8.1. Percentage Compliance of Discharge/Death/LAMA/Transfer Summary (Jan-May 2021).** “A\_1 = Diagnosis; A\_2 = On Admission History and Findings; A\_3 = Treatment Given; A\_4 = Investigations; A\_5 = Surgery/Procedure Done; A\_6 = Advice on Discharge; A\_7 = Follow up advice & When & how to obtain urgent care; and A\_8 = Signed by Doctor.”

Fig. 8.1 shows the distribution of overall compliance of parameters A\_1 to A\_8 for **Discharge/Death/ LAMA/Transfer Summary** for the months January to May. It shows that the percentage compliance of all records and is 100 percent for all the parameters in this section. This implies that the documentation was up to the standards of NABH for these parameters.

#### B. Clearance/ RFA/ Consent/ and Other Documentation:

The below figure (Fig. 8.2) shows the overall compliance distribution of Parameters B\_9 to B\_20 for **Clearances/RFA/Consent/Other Documentation** for the months

January-May. It shows 100 percent overall compliance for B\_9, B\_15, and B\_16. The lowest overall compliance is seen for the parameter B\_18 with the overall compliance of 5 percent followed by B\_10 and B\_14 with the overall compliance of 44 percent and 48 percent, respectively.

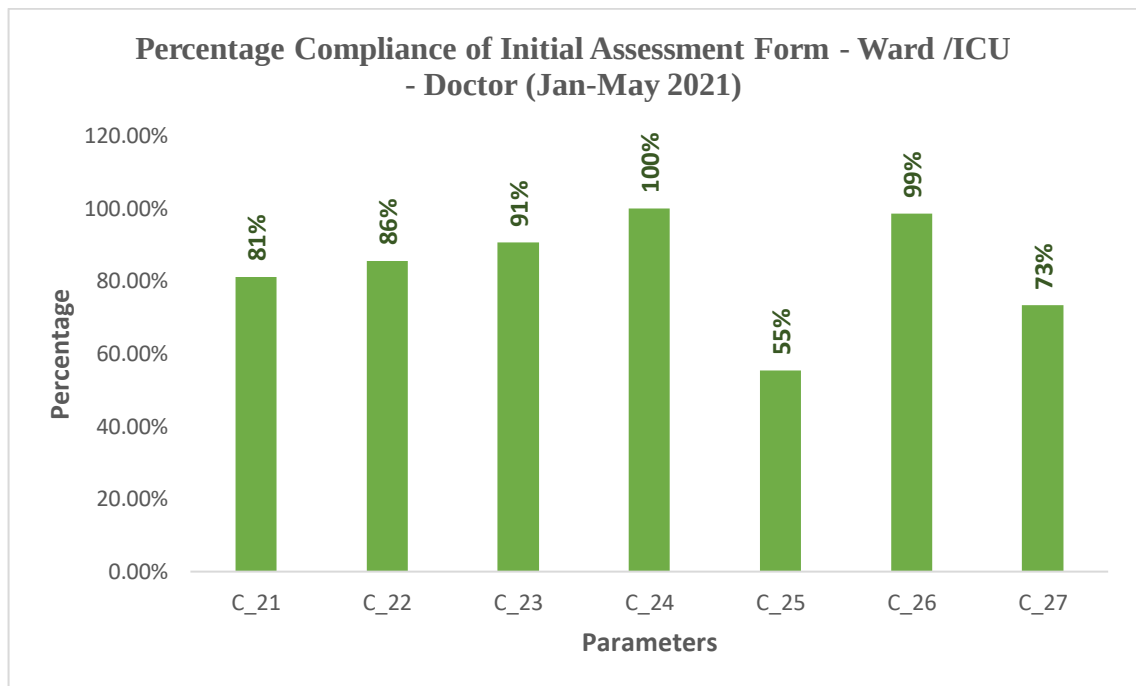


**Fig. 8.2. Percentage Compliance of Clearance/ RFA/ Consent/ and Other Documentation (Jan-May 2021).**

“B\_9 = Financial Clearance Slip; B\_10 = Discharge Handover Form; B\_11 = Discharge/LAMA/Death Note; B\_12 = Request for Admission; B\_13 = Face-sheet; B\_14 = Consent Form for Medical Management; B\_15 = Emergency and Trauma Care-Initial Assessment; B\_17 = Nursing Daily Flow Sheet (IPD); B\_18 = Cross Consultation; B\_19 = Diet Chart, B\_20 = Non-Drug Order Sheet.”

### C. Initial Assessment Form - Ward /ICU – Doctor

Fig 8.3. Shows the overall percentage compliance distribution for the parameters C\_21 to C\_27 for **Initial Assessment done by the Doctor** for January-May. From the above graph it is observed that parameter C\_24 has the highest compliance at 100 percent while C\_25 is the parameter with the lowest compliance at 55 percent. Moreover, the parameters with a compliance of less than 70 percent are C\_25 (55 percent), and C\_27 (73 percent)

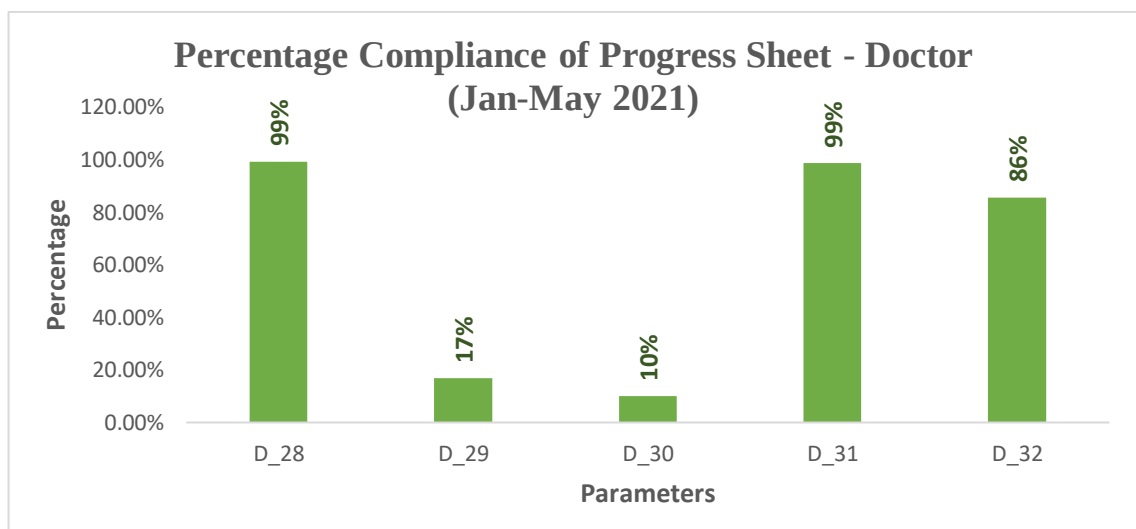


**Fig. 8.3. Percentage Compliance of Initial Assessment Form – Ward/ICU – Doctor (Jan-May 2021).**

“C\_21 = Date and Time; C\_22 = History and Examination Completely filled in; C\_23 = Relative’s Signature; C\_24 = Provisional Diagnosis Entered; C\_25 = Plan of Care with Desired Outcome; C\_26 = Signed by MO; C\_27 = Countersigned by Consultant.”

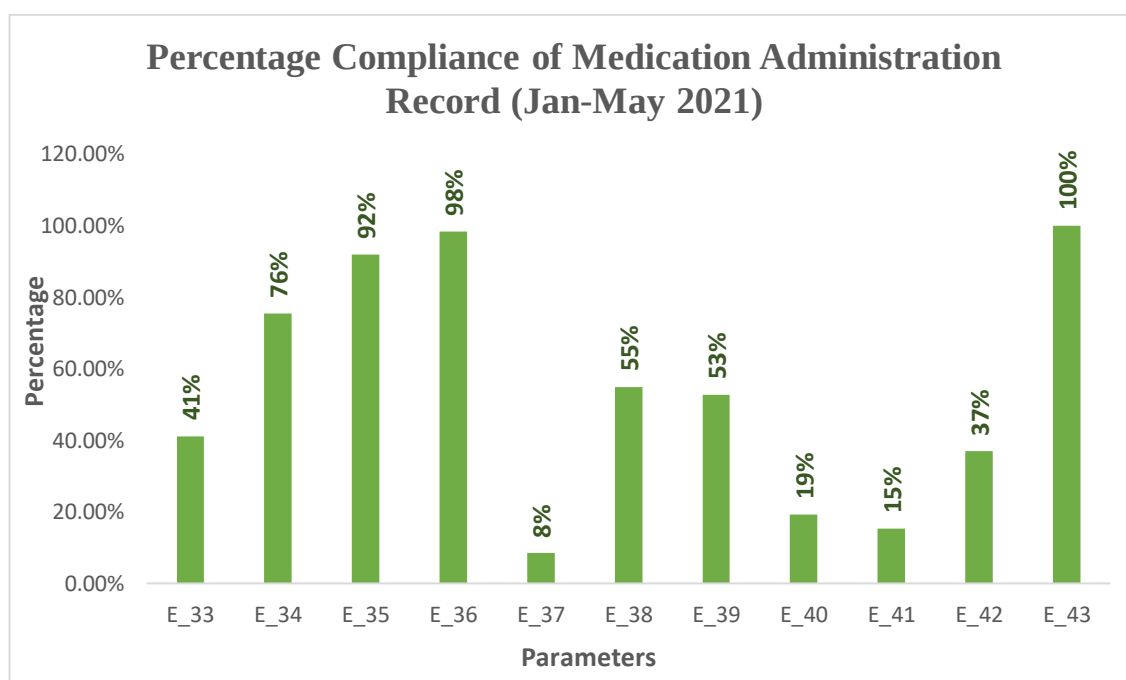
#### **D. Progress sheet – Doctor**

The overall percentage compliance distribution for the parameters D\_28 to D\_32 of **Progress Sheet** is shown in Fig. 8.4 for January-May. It shows that the highest total compliance is seen for the parameter D\_28 with 99 percent and lowest is seen for D\_30 with ten percent compliance. The two parameters with a compliance of less than 75 percent are D\_29 (17 percent), and D\_30 (Ten percent).



**Fig. 8.4. Percentage Compliance of Progress Sheet – Doctor (Jan-May 2021).** “D\_28 = At least One Entry by Doctor Per Day – Daily Rounds; D\_29 = Author of the Entry is Identifiable; D\_30 = All Entries Dated and Time; D\_31 = Nurses Progress Notes; D\_32 = Nursing Care Plan in Each Shift.”

## E. Medication Administration Record (MAR)



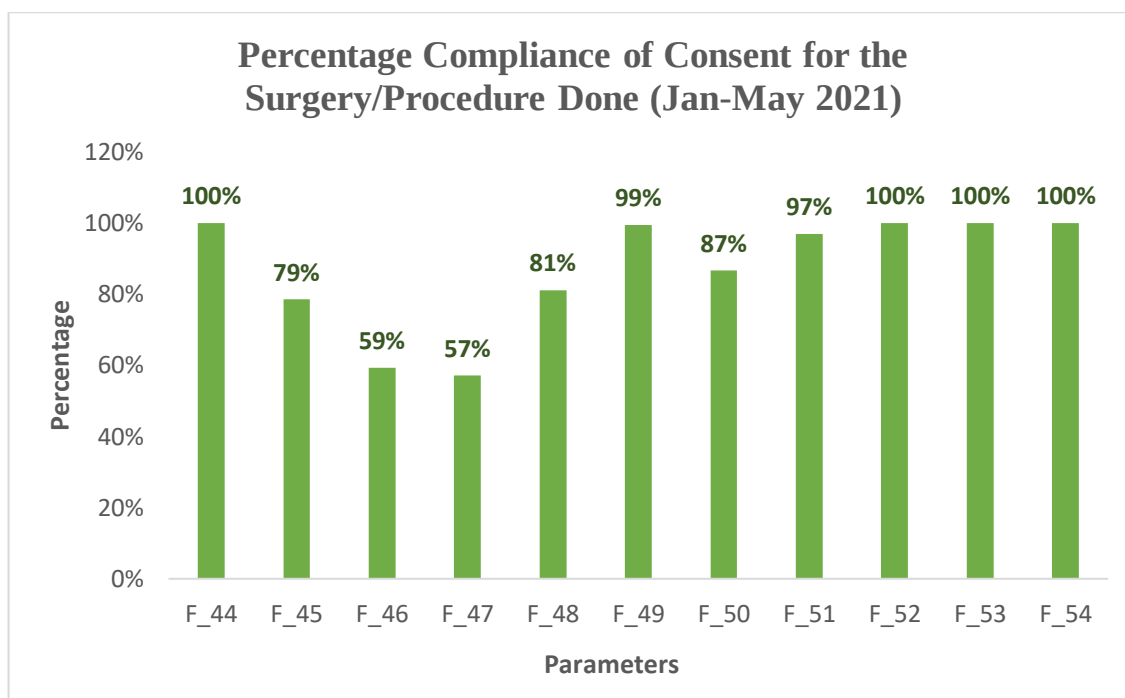
**Fig. 8.5. Percentage Compliance of Medication Administration Record (Jan-May 2021).** “E\_33 = Allergy Mentioned; “E\_34 = Drugs Names Entered in Capitals; E\_35 = All Three Mentioned- Dose, Route, and Frequency; E\_36 = No Overwriting; E\_37 = All Drug Prescriptions Have Start Date and Time; E\_38 = Stat Prescriptions Have Start Date and Time; E\_39 = SOS Orders With Indication and Duration Before Repeat Dose; E\_40 = Telephonic Orders Countersigned by Consultant within 24 hours; E\_41= All Discontinued Drugs Mentioned with Date and Time; E\_42 = Author of the Entry is Identifiable; E\_43 = Only Accepted Abbreviations Used”.

In the above figure, Fig. 8.5, the overall percentage compliance distribution is seen for the parameters E\_33 to E\_43 of **Medication Administration Record** for the months January-May. It is seen in the above graph that the highest overall compliance is seen for the parameter E\_43 with 100 percent and lowest is seen for E\_37 at eight percent. Moreover, the parameters having an overall compliance less than 75 percent were, E\_33 (41 percent), E\_37 (Eight percent), E\_38 (55 percent), E\_39 (53 percent), E\_40 (19 percent), E\_41 (15 percent), and E\_42 (37 percent).

## F. Surgery/Procedure done CONSENT.

The below figure, Fig 8.6, displays the overall percentage compliance distribution for the parameters F\_44 to F\_54 of **Consent taken for a Surgery/Procedure** for months January-May. It can be observed that the highest total compliance is seen for the parameters F\_44, F\_52, F\_53, and F\_54 with 100 percent and the lowest total compliance seen for the parameter F\_47 which shows a compliance of 57 percent. The

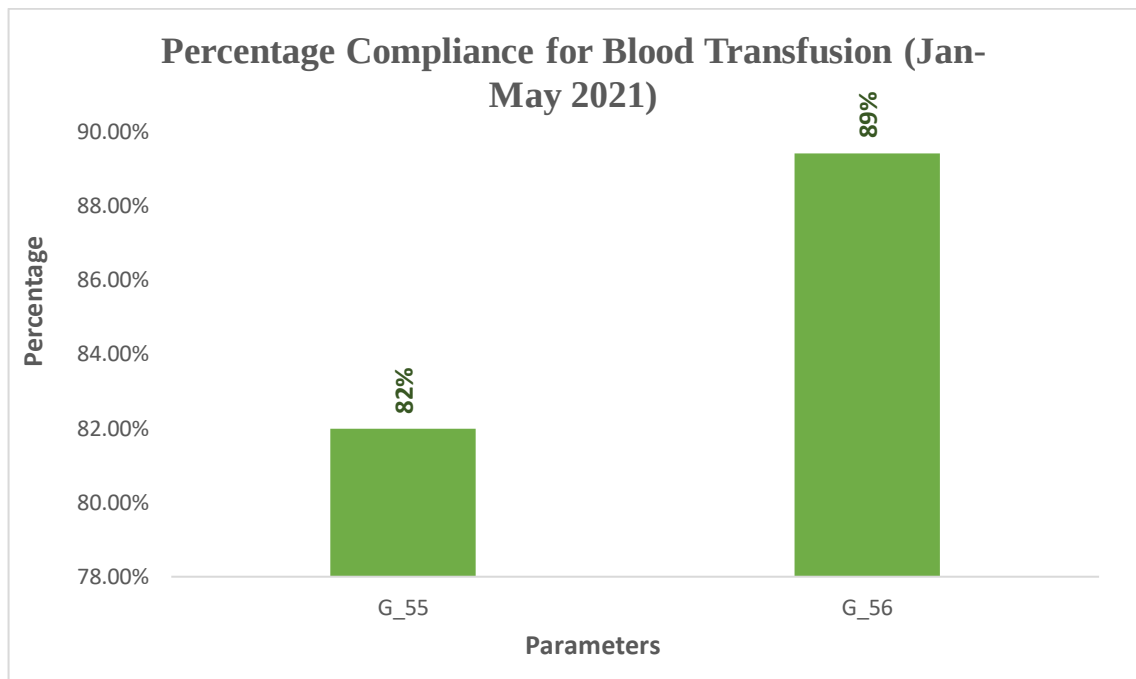
parameters for which a compliance of less than 75 percent is observed are F\_46 (59 percent) and F\_47 (57 percent). It's implied that improvement in the compliance of these two parameters would result in a better overall compliance of the documentation of medical records.



**Fig. 8.6. Percentage Compliance of Consent for the Surgery/Procedure Done (Jan-May 2021).** “F\_44 = Consent Present for Every Procedure/Surgery Done; F\_45 = Consent: All Signatures Present and Complete; F\_46 = Consent to HIV Testing; F\_47 = High Risk Consent (If Applicable); F\_48 = Consent for Anesthesia, Complete; F\_49 = Pre-Operative Evaluation (PAC); F\_50 = Per-Operative Monitoring; F\_51 = Post-Operative Instructions; F\_52 = Pre-Operative Checklist; F\_53 = Surgical Safety Checklist; F\_54 = Procedure Sheet/OT Notes”.

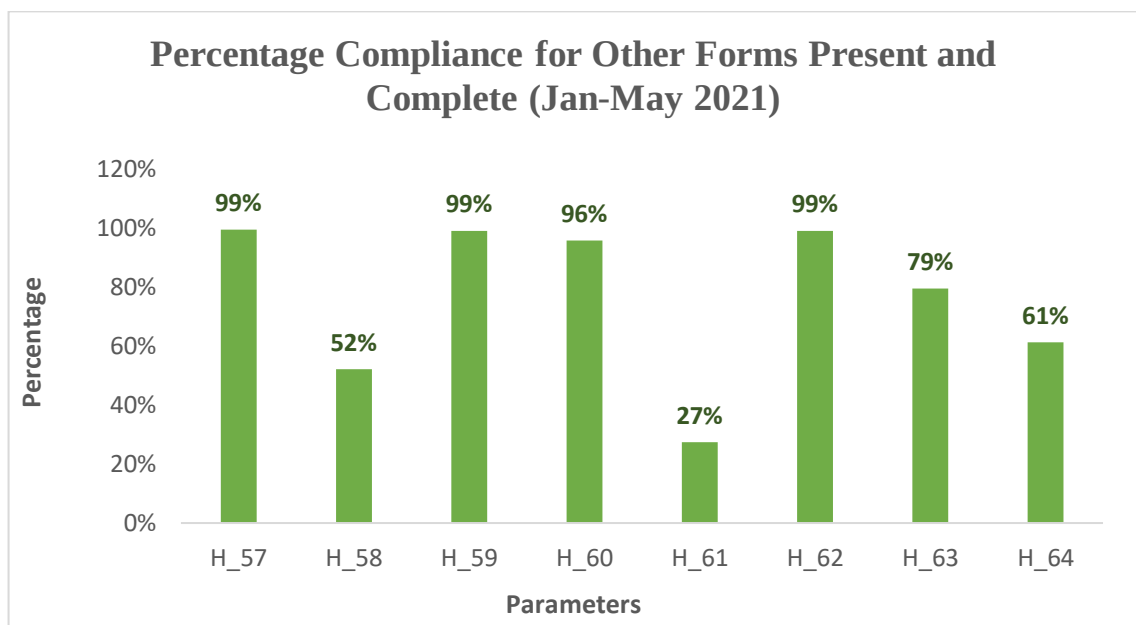
## G. Blood Transfusion

The month-wise percentage compliance distribution for parameters of Blood Transfusion documents is shown in Fig. 8.7. The total compliance for parameter G\_55 is 82 percent whereas for G\_56 it is 89 percent. The compliance for this section can be said to be good since both the parameters have a percentage compliance of more than 75 percent.



**Fig. 8.7. Percentage Compliance for Blood Transfusion (Jan-May 2021).** “G\_55 = Informed Consent for Blood Transfusion; E\_56 = Blood and Blood Components Transfusion Monitoring”.

#### H. Other Forms Present and Complete.

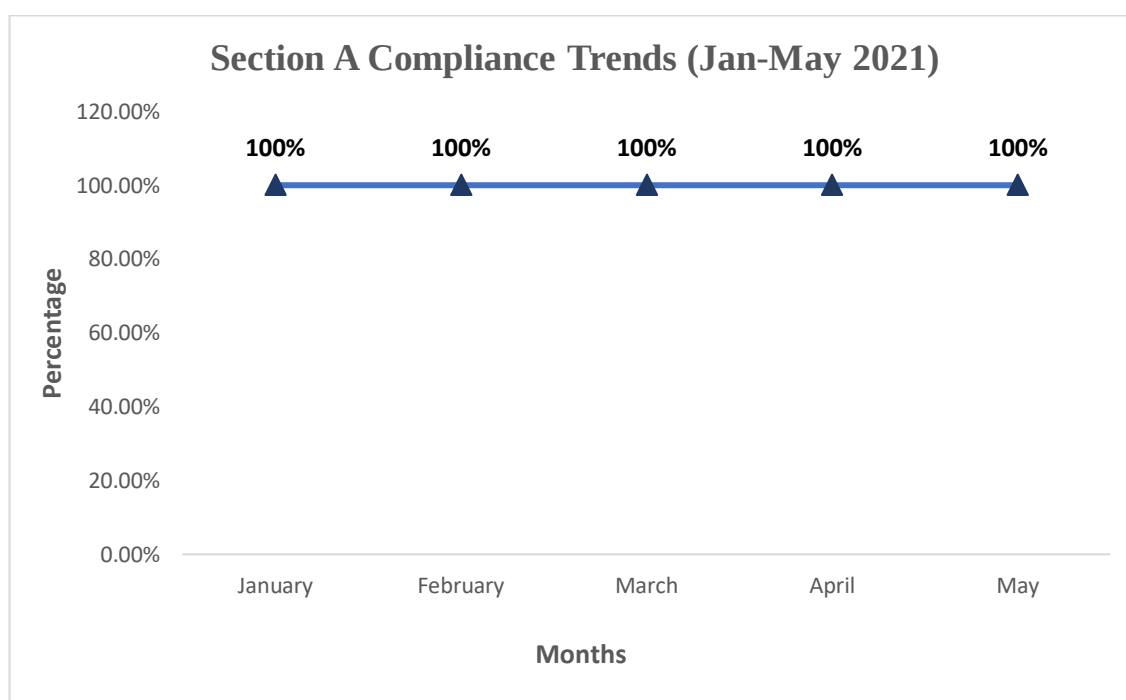


**Fig. 8.8. Percentage Compliance for Other Forms Present and Complete (Jan-May 2021).** “H\_57 = Critical Care Flow Sheet; H\_58 = Transfer-Out Form Ward/ICU/HDU; H\_59 = Nutritional Screening and Regular Nutritional Assessment; H\_60 = Physiotherapist Assessment and Notes; H\_61 = Intake Output Chart; H\_62 = Glucose Monitoring Chart; H\_63 = Special Forms if Applicable (Restraint Consent, Dialysis, MRI etc.); H\_64 = Patient and Family Communication Record”.

Presented above in the given figure, Fig 8.8 is the overall percentage compliance distribution for the parameters H\_57 to H\_64 of **Other Forms and Documents** of the

medical records. They contain critical care flowsheet, transfer out forms, nutritional assessment forms, physiotherapists assessment forms and notes, intake-output chart, glucose monitoring chart, special forms, and patient-relative communication record. The highest total compliance is seen for the parameter H\_57 at 99 percent and lowest for H\_61 at 27 percent. The parameters for which the overall is less than 75 percent are, H\_58 (52 percent), H\_61 (27 percent), and H\_64 (61 percent). It implies that improvement in the compliance of these parameters can contribute towards improvement in the compliance score of the medical records documentation further.

## II. SECTIONWISE COMPLIANCE TRENDS OF THE MEDICAL RECORDS (JAN-MAY 2021):

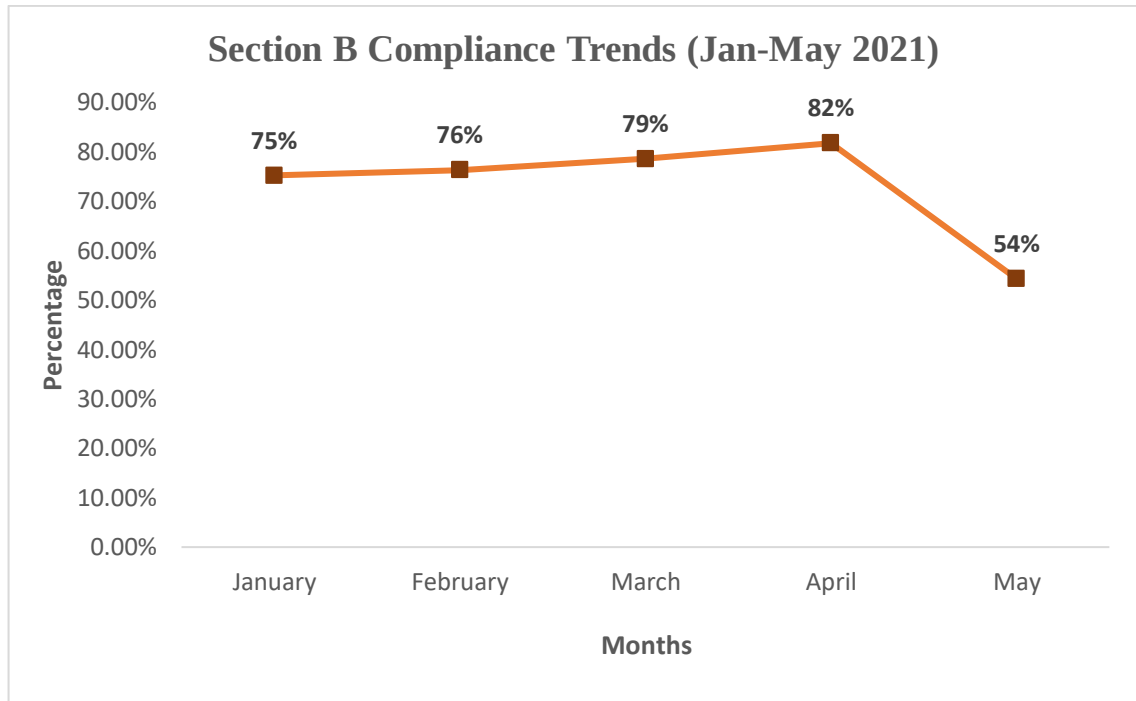


**Fig. 8.9. Section A Compliance Trends (Jan-May 2021).** “A = Discharge/Death/LAMA/Transfer Summary Complete.”

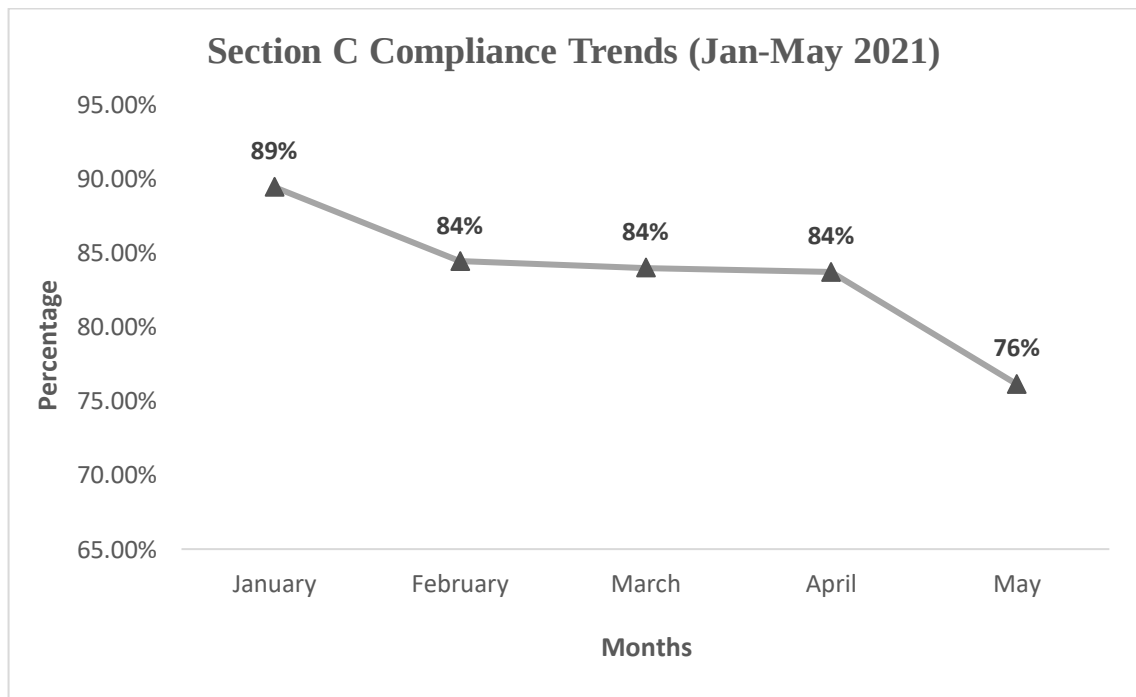
The above figure, Fig 8.9 shows the compliance trends for section A of the **Medical Records Audit Checklist** for the months of January to May. It shows a consistent compliance trend of 100 percent from January to May. It means that for section A, there was full compliance observed for all months.

Fig 8.10 presents the compliance trends for section B of the medical records audit checklist, from January to May. Section B covers the clearance forms, request for admission forms and face-sheet, and other documents such as emergency and trauma care initial assessment forms, nurse’s initial assessment form at time of admission, nursing flow-sheet, diet chart and non-drug order sheet. From the figure it can be said

that the compliance of this section increased from 75 percent in January to 82 percent in April, but it dipped to 54 percent in the month of May. This indicates that in the months of May, the compliance score of some or all the parameters was lesser as compared to previous months.

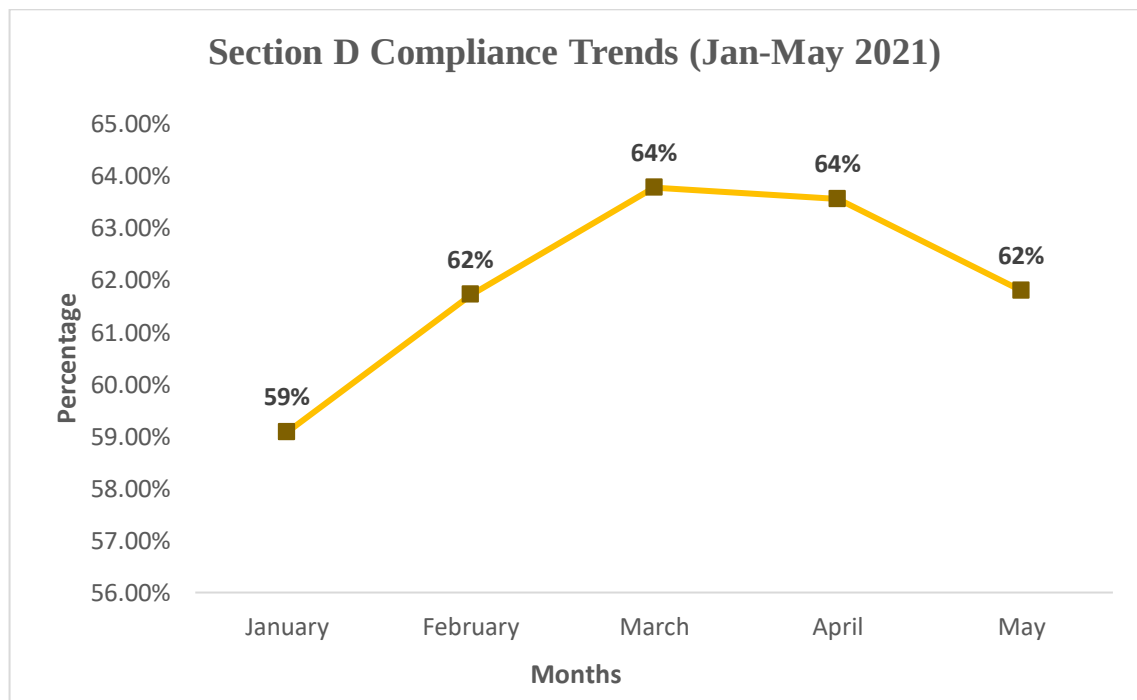


**Fig 8.10. Section B Compliance Trends (Jan-May 2021).** “B = Clearance/RFA/Consent/Other Documentation.”



**Fig 8.11. Section C Compliance Trends (Jan-May 2021).** “C = Initial Assessment Form – Ward/ICU – Doctor.”

The compliance trends of section C are presented in the figure 8.11 shown above. It is observed in the above figure that the compliance for this section was highest in January with a compliance of 89 percent, but it gradually decreased to 76 percent in the month of May. Although the compliance for this section is above 75 percent and might be considered acceptable, the decreasing trend of the compliance rates is a cause for concern.

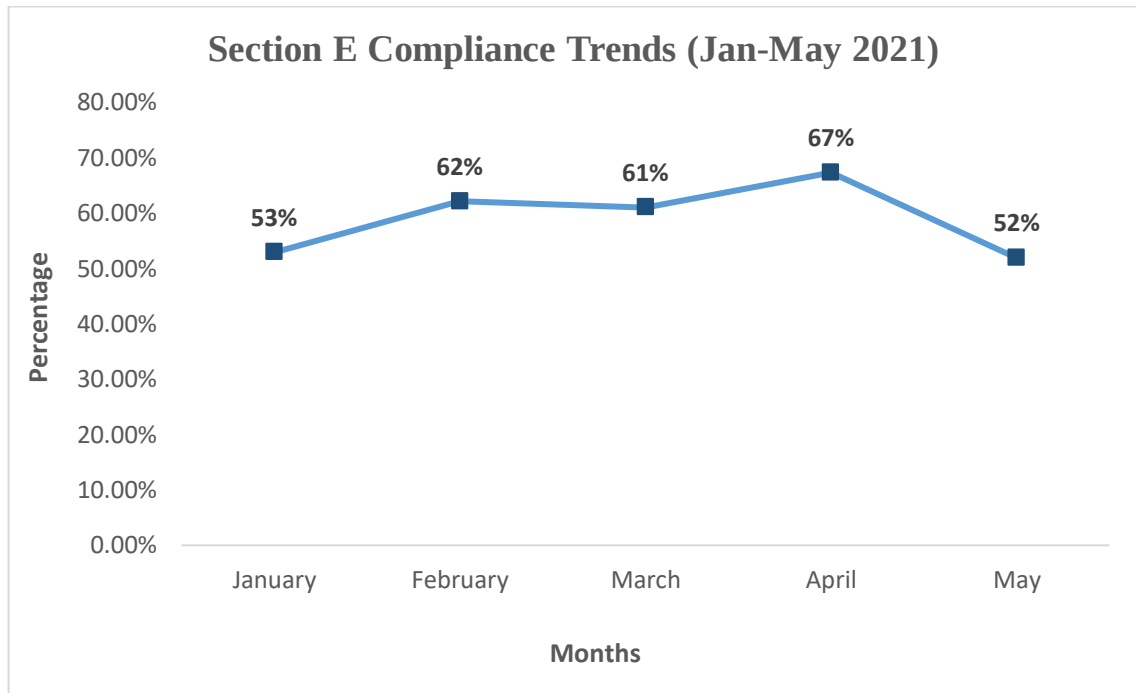


**Fig 8.12. Section D Compliance Trends (Jan-May 2021).** “D= Progress Sheet – Doctor”

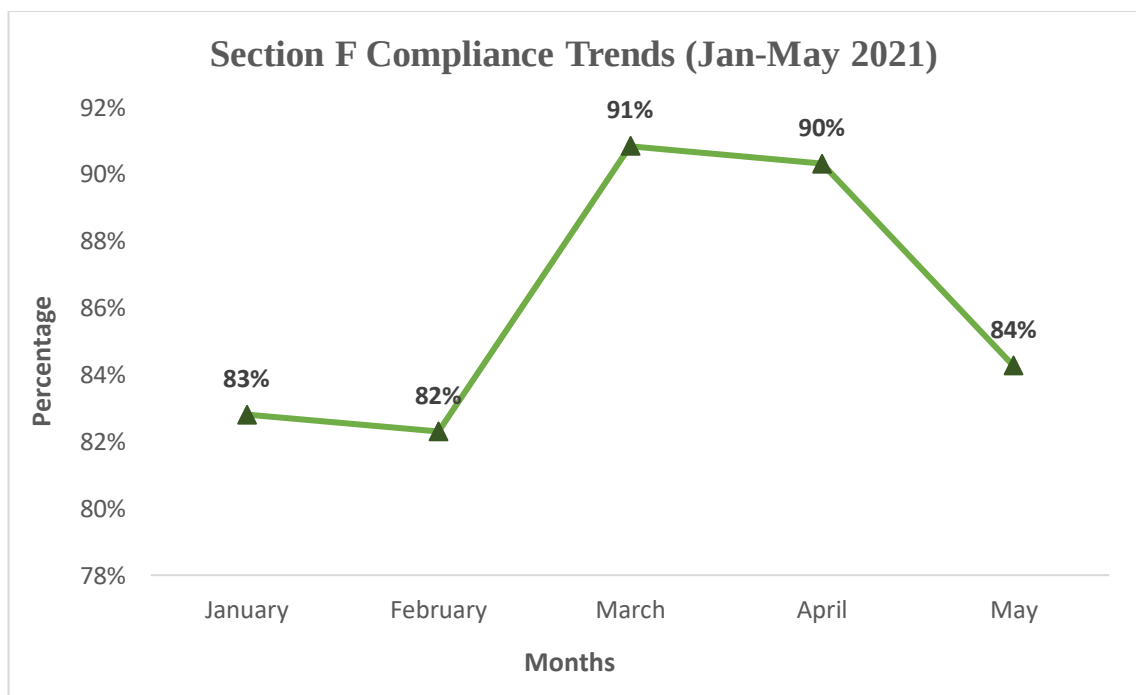
In the above figure, Fig 8.12, which shows the compliance trends for section D, “Progress Sheet-Doctor” of the medical records audit checklist for months January-May, it is observed that the compliance rate was 59 percent in January. It gradually rose to 64 percent in March and then it decreased to 62 percent in May. In none of the months, the compliance was above 75 percent, which is a reason for further evaluation. Also, even though the compliance in May is higher than that of January, the decreasing trend from the month of March cannot be ignored.

Fig 8.13 shows an inconsistent compliance trends of the section E, “Medication Administration Record” for the period of January to May. Its compliance increased from 53 percent in January, to 62 percent in February, dipped slightly to 61 percent in March, then rose to 67 percent in April, and then further decreased to 52 percent in May. For none of the months, the compliance was more than 75 percent. The fact that

the compliance rate has been irregular for this section, and that it has not been able to rise above 75 percent in any month, should be further evaluated and examined.



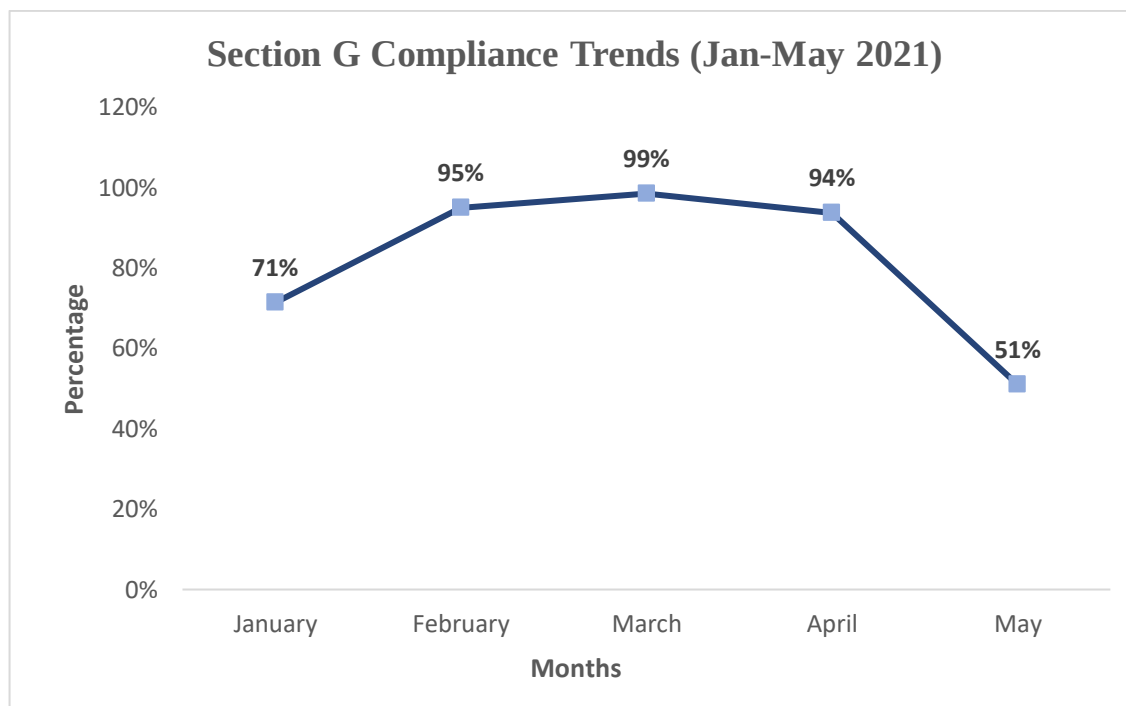
**Fig 8.13. Section E Compliance Trends (Jan-May 2021).** “E = Medication Administration Record”.



**Fig 8.14. Section F Compliance Trends (Jan-May 2021).** “F = Consent for Surgery/Procedure Done”

The above figure, Fig 8.14, shows the compliance trends of section F, “Consent for Surgery/Procedure Done”, for the period of January to May. It is observed in the given figure that the compliance improved from January (83 percent) to March (91 percent)

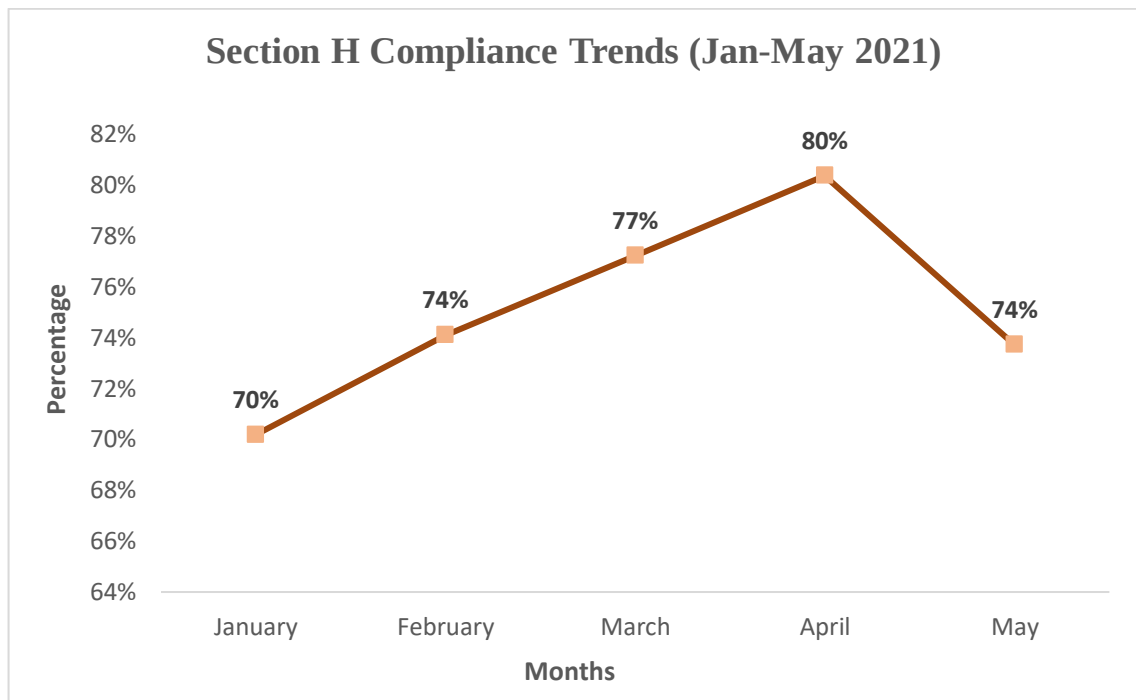
but declined to 84 percent in May. However, for none of the months the compliance went below 75 percent. This is a positive sign, but the parameters in which the compliance decreased in the month of May must be evaluated, so that the compliance can be improved like previous months.



**Fig 8.15. Section G Compliance Trends (Jan-May 2021).** “G = Blood Transfusion”

In Fig 8.15, it is shown that, the compliance rate of section G, “Blood Transfusion”, rises to 99 percent in March from 72 percent in January. It declines slightly in April (94 percent), and then a steep decline is seen in the month of May, where it dips to 51 percent. This is a big cause for concern, and the reason for this decline must be evaluated further.

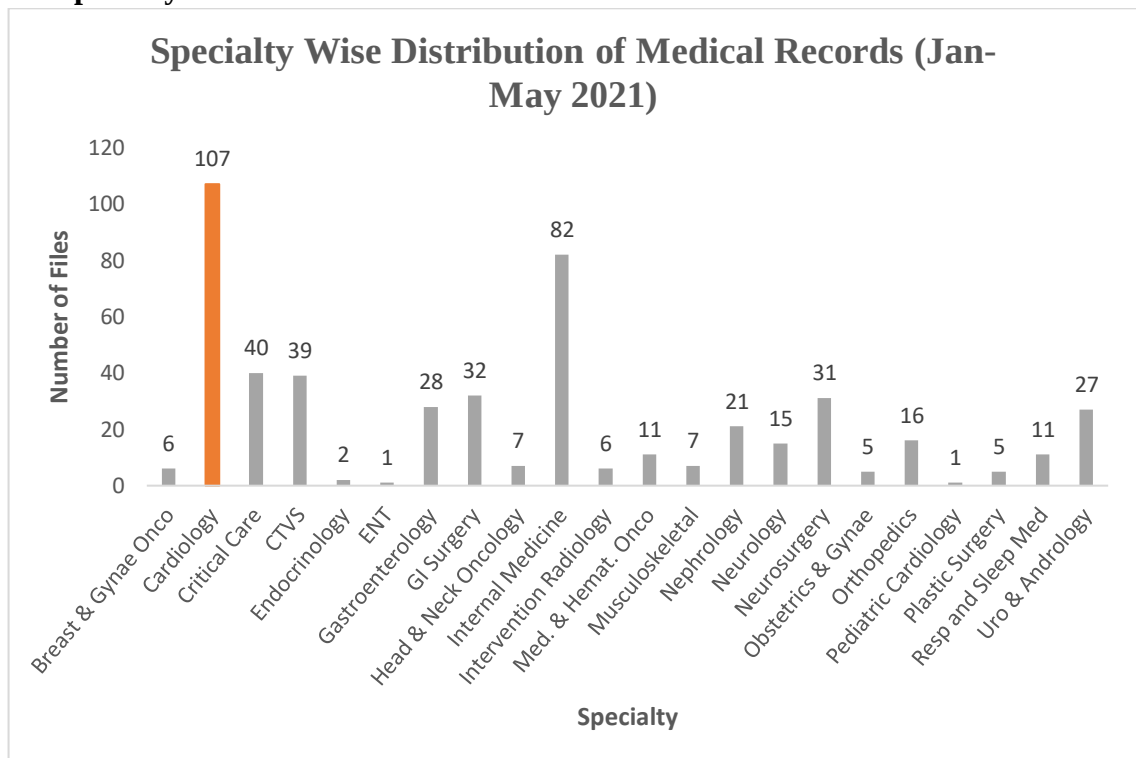
The figure 8.16 observes the compliance trends for the section H, “Other forms, present and complete” for January-May. This section contains the critical care/intensive care flow sheet, transfer out forms, nutritional assessment and nutritional plan, physiotherapist assessment and notes, intake-output chart, glucose monitoring chart, special forms, and patient and family communication record. It is observed that the compliance rose from 70 percent in January to 80 percent in April. But then it saw a decline to 74 percent in May, following the trend as previous graphs.



**Fig 8.16. Section H Compliance Trends (Jan-May 2021).** “H = Other Forms Present and Complete.”

### III. SPECIALTY-WISE COMPLIANCE OF THE MEDICAL RECORDS (JAN-MAY)

#### A. Specialty Distribution



**Fig. 8.17. Specialty-wise Distribution of Medical Records (Jan-May 2021)**

In the above figure, Fig. 8.17, the frequency distribution of various specialties of the medical records is displayed. The highest share of medical records belongs to Cardiology, at 107 followed by Internal Medicine with 82 records. Only 1 record could be obtained of rare specialties such as Pediatric Cardiology and ENT. Other rare specialties also had smaller share of the records as seen by the above graph.

## B. Month wise Percentage Compliance for Various Specialties (Jan-May 2021)

**Table 8.1. Month-wise Percentage Compliance for Various Specialties (Jan-May 2021)**

| Specialty               | No. of Files | Percentages |     |     |     |     |       |
|-------------------------|--------------|-------------|-----|-----|-----|-----|-------|
|                         |              | Jan         | Feb | Mar | Apr | May | Total |
| Med. & Hemat. Oncology  | 11           | 80          | NA  | 84  | 95  | NA  | 90    |
| Uro & Andrology         | 27           | 76          | 88  | 89  | 88  | 86  | 87    |
| ENT                     | 1            | NA          | 87  | NA  | NA  | NA  | 87    |
| GI Surgery              | 32           | 79          | NA  | 83  | 8%  | 73  | 83    |
| Breast & Gynae Oncology | 6            | 79          | NA  | 82  | NA  | 86  | 81    |
| Head & Neck Oncology    | 7            | NA          | 79  | 84  | 85  | 78  | 81    |
| Intervention Radiology  | 6            | NA          | 77  | 90  | 83  | 78  | 80    |
| Orthopedics             | 16           | 81          | 80  | 79  | 78  | NA  | 80    |
| CTVS                    | 39           | 80          | 79  | 81  | 81  | 73  | 80    |
| Musculoskeletal         | 7            | 75          | 84  | 81  | NA  | NA  | 80    |
| Plastic Surgery         | 5            | 76          | 79  | 86  | NA  | 75  | 79    |
| Nephrology              | 21           | 79          | 78  | 76  | 87  | 66  | 79    |
| Obstetrics & Gynecology | 5            | 82          | NA  | 76  | NA  | NA  | 78    |
| Neurosurgery            | 31           | 75          | 79  | 79  | 81  | 74  | 77    |
| Cardiology              | 107          | 72          | 77  | 77  | 80  | 77  | 76    |
| Gastroenterology        | 28           | 73          | 73  | 77  | 82  | 71  | 75    |
| Critical Care           | 40           | 72          | 74  | 78  | 81  | 69  | 74    |

**Table 8.1. Month-wise Percentage Compliance for Various Specialties (Jan-May 2021) Continued**

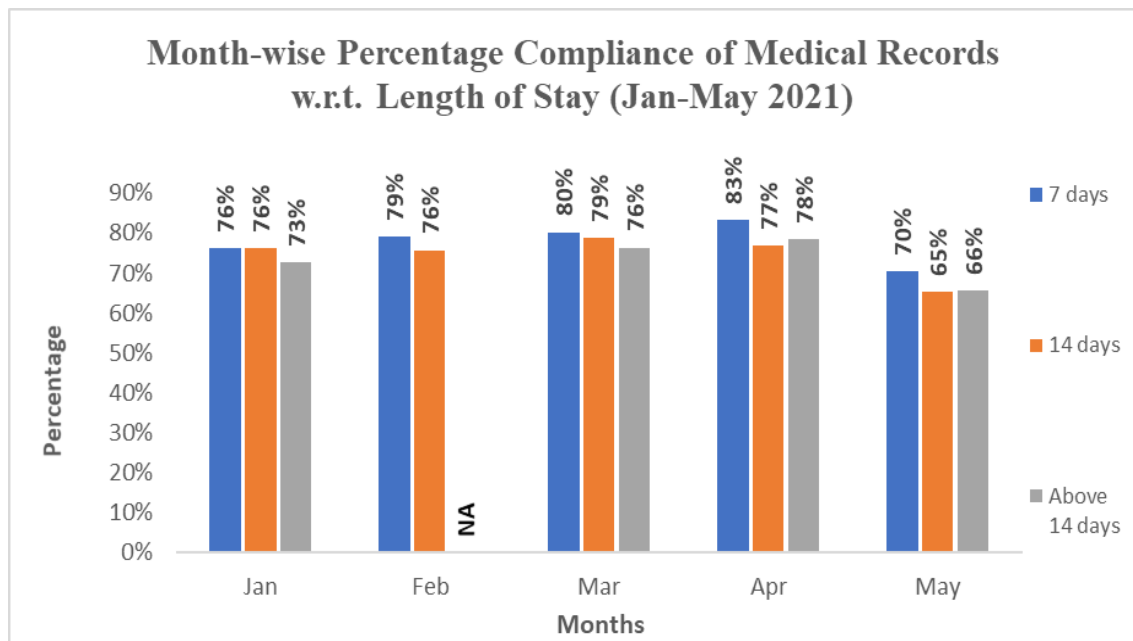
|                                |    |    |    |    |    |    |           |
|--------------------------------|----|----|----|----|----|----|-----------|
| Respiratory and Sleep Medicine | 11 | 70 | NA | 6  | 82 | 75 | <b>74</b> |
| Neurology                      | 15 | 70 | 76 | 77 | 78 | NA | <b>74</b> |
| Endocrinology                  | 2  | NA | NA | 73 | NA | NA | <b>73</b> |
| Internal Medicine              | 82 | 83 | 78 | 80 | 88 | 66 | <b>71</b> |
| Pediatric Cardiology           | 1  | 68 | NA | NA | NA | NA | <b>68</b> |

Table 8.1 displays the month-wise percentage compliance for various specialties from January to May. From the given Table it is observed that the highest total compliance is seen for Medical and Hematology Oncology (90 percent), while the lowest total compliance is seen for Pediatric Cardiology (68 percent). Additionally, it is observed that the percentage compliance has greatly reduced for the month of May in all specialties. This might be attributed to the second wave of the pandemic resulting in the overwhelming of the health infrastructure and workforce. The specialties whose records were not obtained in a particular month are designated “NA” in front of them. The table also highlights the three specialties with highest and lowest compliance, in green and red, respectively.

#### **IV. COMPLIANCE OF MEDICAL RECORDS BY THE LENGTH OF STAY OF THE PATIENT**

##### **A. Month-wise Percentage Compliance with respect to Length of Stay (Jan-May 2021)**

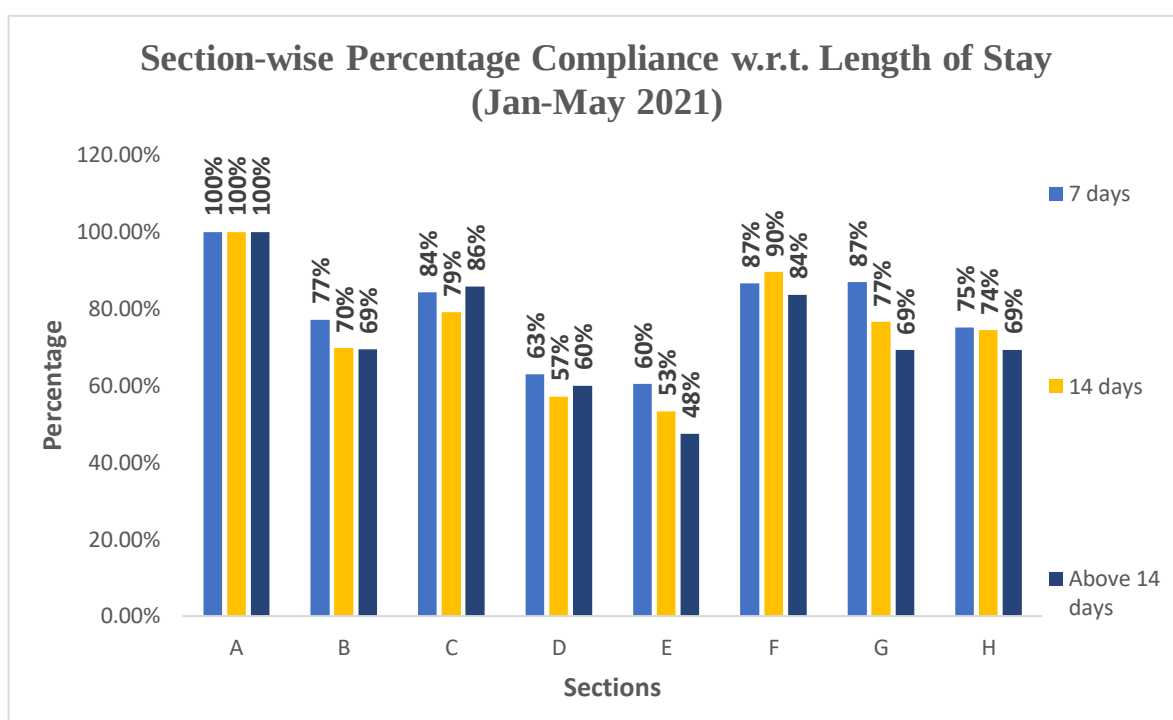
In the below figure, the month-wise percentage compliance distribution is shown according to the length of stay of the patient. At a first glance, it is observed from the given figure that the shorter the duration of the stay better is the compliance of the medical record documentation on an average. For the month of January, highest compliance (76 percent) was seen for records with length of stay of 14 days, and lowest compliance (73 percent) was for files with stay of more than 14 days. A drop in the compliance of medical records is seen in May, which is in accordance with the previous findings as well. For March, the highest compliance is at 80 percent and is for stay less than 7 days, whereas the lowest compliance is for stay of more than 14 days at 76 percent. For April and May, the lowest compliance is seen for stays up to 14 days at 77 percent and 65 percent, respectively.



**Fig. 8.18. Month-wise Percentage Compliance of Medical Records with respect to Length of Stay (Jan-May 2021).**

## **B. Section-wise Percentage Compliance with Respect to Length of Stay**

Section-wise percentage compliance with respect to length of stay is observed in the figure below, i.e., Figure 8.19. It is seen that Section A has the highest percentage compliance with 100 percent and is equal for stays less than 7 days, less than 14 days and above 14 days. This finding is supported by other previous observations as well. Moreover, the lowest compliance for all types of length of stays is seen in section E. In general, the figure displayed below suggests that higher the length of stay, lower the compliance. When observed individually it is found that for section C and D the lowest compliance is for stays less than 14 days and is 79 percent and 57 percent, respectively. For section F, the highest compliance observed is for stays up to 14 days with 90 percent.



**Fig. 8.19. Section-Wise Percentage Compliance with respect to Length of Stay (Jan-May 2021).**

“A = Discharge/Death/LAMA/Transfer Summary Complete; B = Clearance/RFA/Consent/Other Documentation; C = Initial Assessment Form – Ward/ICU – Doctor; D= Progress Sheet – Doctor; E = Medication Administration Record; F = Consent for Surgery/Procedure Done; G = Blood Transfusion; H = Other Forms Present and Complete.”

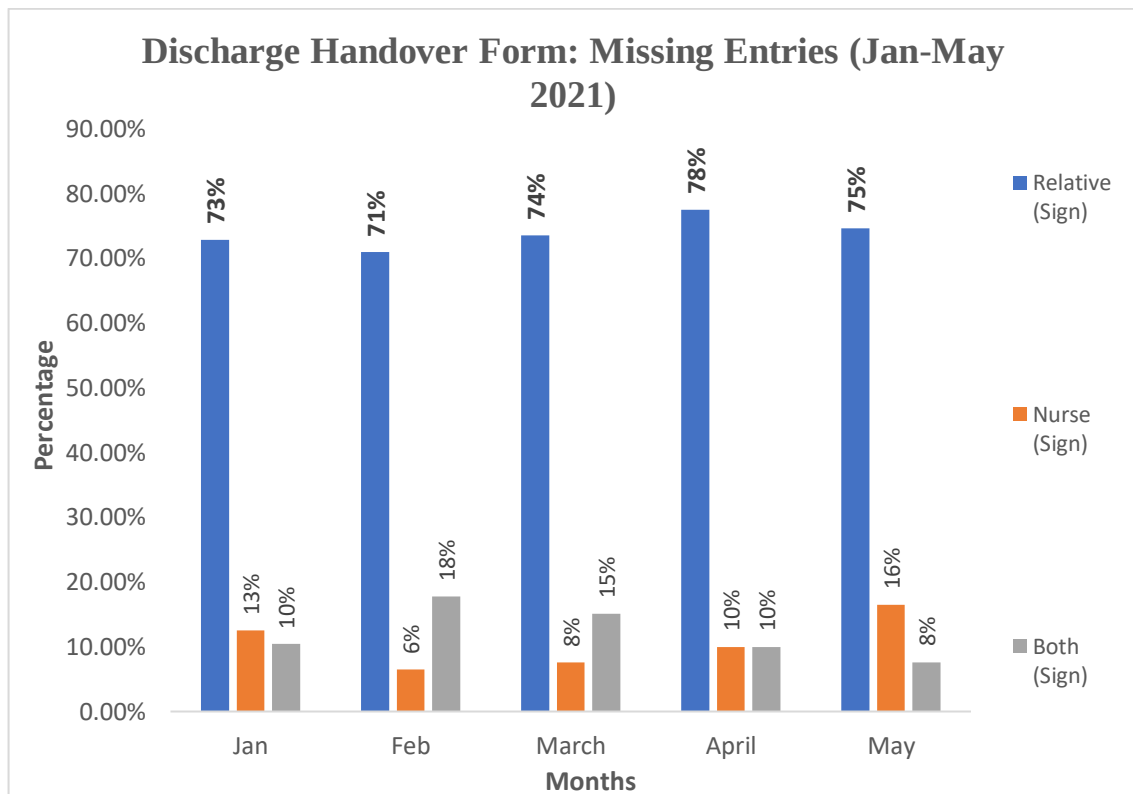
## V. MISSING INFORMATION IN THE PARAMETERS WITH COMPLIANCE LESS THAN 50 PERCENT (FREQUENCY DISTRIBUTION: JAN-MAY)

In the above observations, all the parameters which showed an overall compliance of less than 50 percent were taken and evaluated for all the missing information found in the medical records for these entries. These parameters are listed in the following tables and figures, along with the number of files with no compliance for these parameters, as well as the information which was missing from the records for them.

### i. Parameter B\_10: Discharge Handover Form

**Table 8.2. Number of files with non-compliance for parameter B\_10.**

| Total number of files | Jan | Feb | Mar | Apr | May |
|-----------------------|-----|-----|-----|-----|-----|
| 282                   | 48  | 62  | 53  | 40  | 79  |



**Fig 8.20. Discharge Handover Form: Percentage Distribution of Missing Entries (Jan-May 2021).**

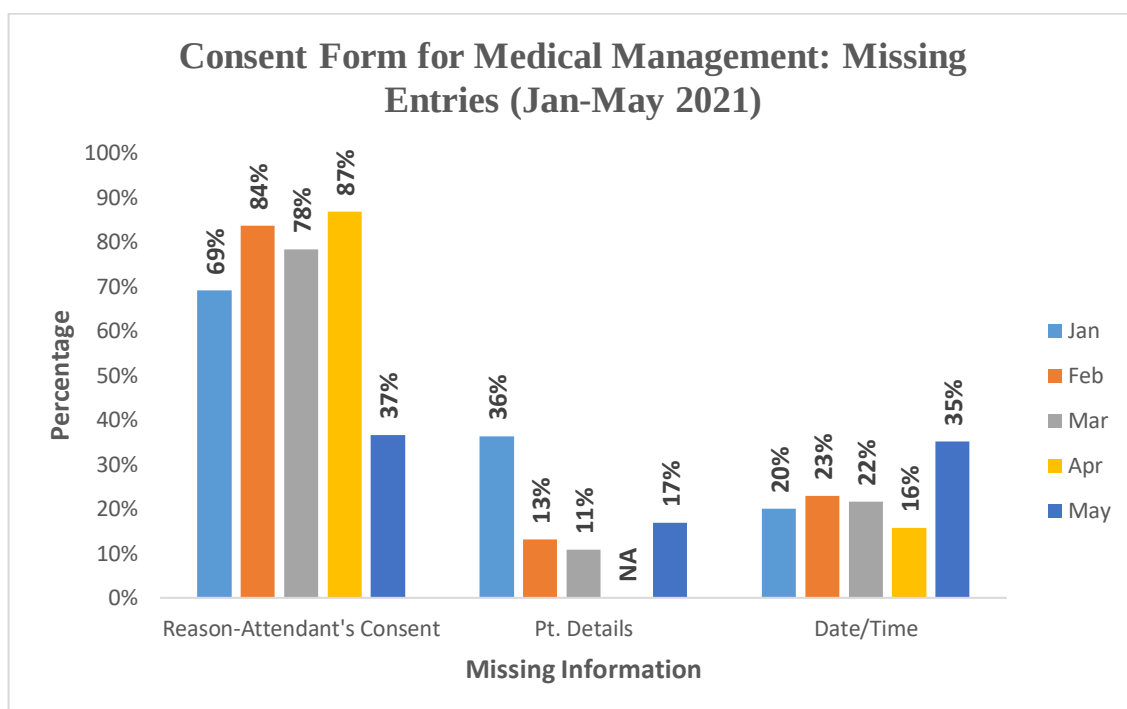
The above figure displays the month-wise distribution of all missing information in the Discharge Handover Form for January-May. The highest percentage is attributed to the Patient's relatives' signature on the handover form at 74 percent total percentage, while the lowest percentage is of Absent forms with total percent at 2. The percentage of missing Nurse's signature on the handover form is most in May (16 percent) while highest percentage of both the Nurse's signature and Relative's signature missing is in February (17 percent).

## **ii. Parameter B\_14: Consent form for Medical Management**

Fig 8.21 shows the month-wise distribution of all the missing information in the Consent Form for Medical Management for the months January-March. The highest percentage of missing information belongs to "Reason for attendant's consent when the patient is unable to provide consent" with highest frequency in April with 87 percent and lowest in May with 37 percent approximately. Its total percentage was 68. Other significant information missing were "Date and Time" of consent and "Patient's details" on the consent form with total percentages of 24 and 17, respectively.

**Table 8.3. Number of files with non-compliance for parameter B\_14.**

| Total number of files | Jan | Feb | March | April | May |
|-----------------------|-----|-----|-------|-------|-----|
| 262                   | 55  | 61  | 37    | 38    | 71  |



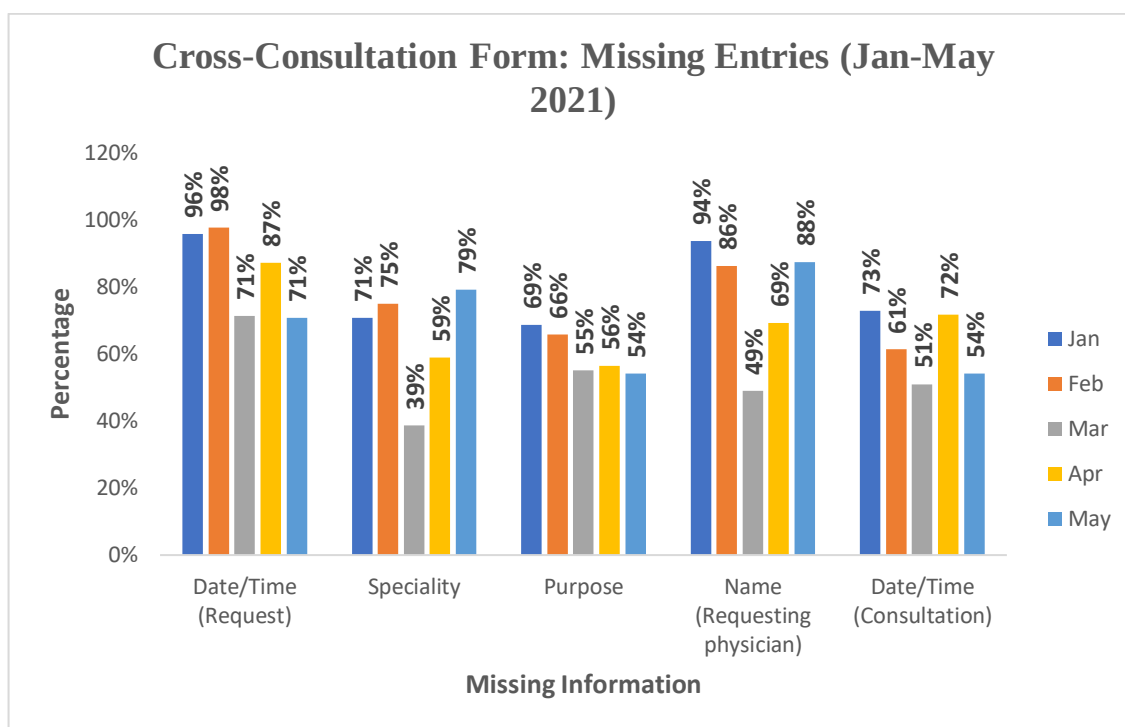
**Fig. 8.21. Consent Form for Medical Management: Percentage Distribution of Missing Entries (Jan-May 2021)**

### iii. Parameter B\_18: Cross-Consultation Form

The figure presented below; Fig 8.22 shows the month-wise distribution of all the missing information in the Cross-Consultation Form for January-May. The most significant entries that missing are “Date and Time of Request”, “Specialty requested to”, “Name of the requesting physician”, “Date and Time of consultation”, and “Purpose of the Consultation” with approximate total percentages of 91, 66, 78, 67, and 63, respectively. The incidence of these missing information is lowest in March except “Purpose” which is lowest in May.

**Table 8.4. Number of files with non-compliance for parameter B\_18**

| Total number of Files | Jan | Feb | Mar | Apr | May |
|-----------------------|-----|-----|-----|-----|-----|
| 204                   | 48  | 44  | 49  | 39  | 24  |

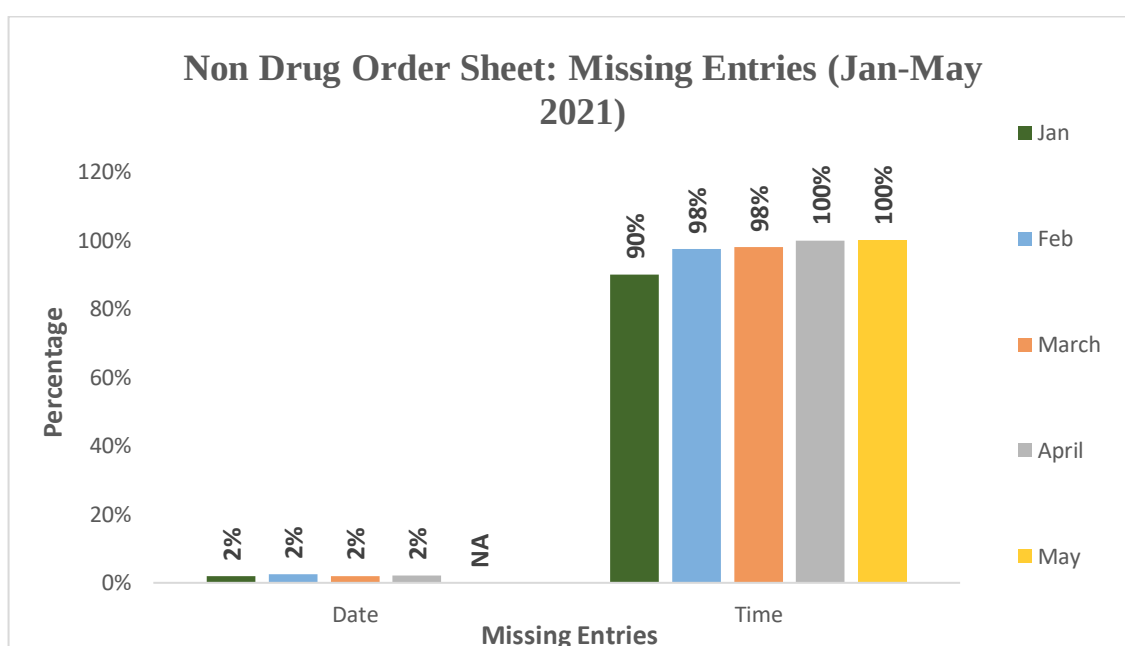


**Fig 8.22. Cross-Consultation Form: Percentage Distribution of Missing Entries (Jan-May 2021)**

#### iv. Parameter B\_20: Non-Drug Order Sheet

**Table 8.5. Number of files with non-compliance for parameter B\_20**

| Total number of files | Jan | Feb | March | April | May |
|-----------------------|-----|-----|-------|-------|-----|
| 271                   | 50  | 41  | 49    | 48    | 83  |



**Fig 8.23. Non-Drug Order Sheet: Percentage Distribution of Missing Entries (Jan-May 2021).**

The most significant missing information presented in Fig 8.23 among all the missing information in the Non-Drug Order sheet for January-May was “Time” of the order which was missing from all the records in the month of April and May at 100 percent and was slightly lower in the previous months. It was also seen that the incidence gradually increased from 90 percent in January to 100 percent in April and May.

**Table 8.6. Other Parameters and the Missing Information for Non-Compliance (Jan-May 2021)**

| <b>Parameters</b> | <b>Description</b>                                            | <b>No. of files with "No Compliance"</b> | <b>Missing Information</b>                                      |
|-------------------|---------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------------|
| <b>C_25</b>       | Plan of care with desired outcome                             | 223                                      | Desired outcome not mentioned                                   |
| <b>D_29</b>       | Author of the entry is identifiable (Name, Sign, id)          | 416                                      | ID not mentioned, Signature not identifiable                    |
| <b>D_30</b>       | All entries dated and timed                                   | 449                                      | Time not mentioned                                              |
| <b>E_33</b>       | Allergy mentioned                                             | 294                                      | Allergy not mentioned                                           |
| <b>E_37</b>       | All drug prescriptions have start date and time               | 454                                      | Time not mentioned                                              |
| <b>E_40</b>       | Telephonic orders countersigned by consultant within 24 hours | 21                                       | Verification date and time not mentioned, Verification not done |
| <b>E_41</b>       | All discontinued drugs mentioned with date and time           | 310                                      | Time of discontinuation not mentioned                           |
| <b>E_42</b>       | Author of the entry is identifiable (Name, Sign, id)          | 314                                      | ID not mentioned, Signature not identifiable                    |
| <b>H_61</b>       | Intake Output chart                                           | 283                                      | Grand Total Intake and Grand Total Output was not mentioned     |

Table 8.6 presents with some other parameters, for which the compliance is less than 50 percent. The description of the parameters, number of files with non-compliance and the missing information in these medical records are also listed. For parameter C\_25, desired outcome was the biggest missing entry, while for D\_29 it was the absence of Doctor’s ID or identifiable signature. For D\_30, time was missing in most medical records, whereas allergy was not mentioned in parameter E\_33 very often. Similarly, time was not mentioned for E\_37 where all drug prescription were required to have start

date and time. Verification time was mostly missing for telephonic orders in E\_40, while the other reason for its non-compliance was the absence of verification altogether. In E\_41, time of discontinuation of a drug was not mentioned, and the doctor's ID was missing when the parameter E\_42 was evaluated. When the parameter E\_61 is observed, it is found that the grand total intake and output was not mentioned in any of the forms in records with non-compliance.

## VI. MISSING INFORMATION: SOME OTHER IMPORTANT PARAMETERS (FREQUENCY DISTRIBUTION: JAN-MAY 2021)

Apart from the missing information in parameters with the compliance of less than 50 percent, an attempt was made to examine some other important parameters for missing information. These parameters, the number of files with non-compliance, as well as the missing information in them is also mentioned in the following graphs and tables.

### i. Parameter C\_21: Initial Assessment Form - Ward /ICU – Doctor

#### a. Date and Time

Table 8.7. Number of files with non-compliance for parameter C\_21

| Total number of files | Jan | Feb | March | April | May |
|-----------------------|-----|-----|-------|-------|-----|
| 94                    | 9   | 19  | 16    | 14    | 36  |

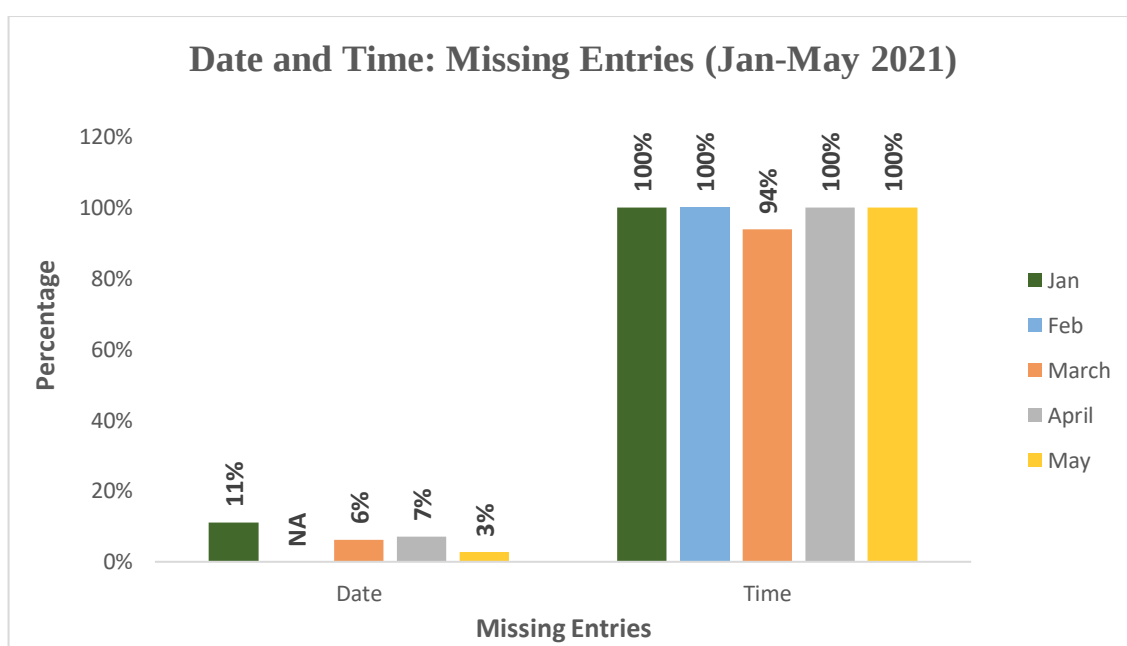


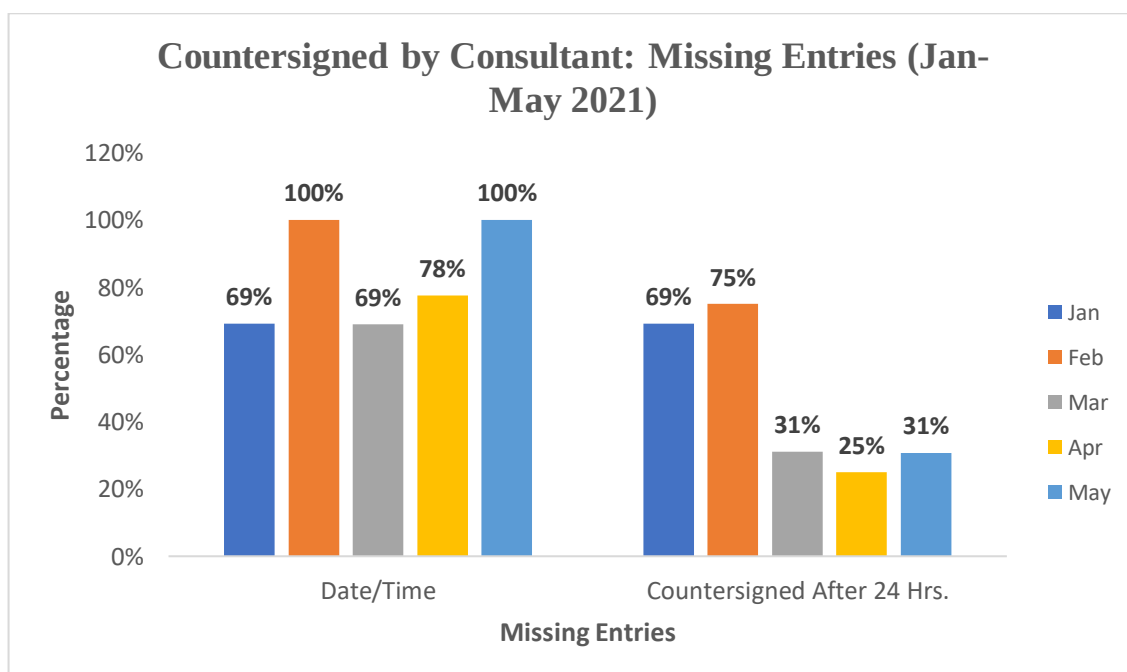
Fig 8.24. Date and Time: Percentage Distribution of Missing Entries (Jan-May 2021)

The above presented figure shows the percentage distribution of all the missing information from the Date/Time section of the Initial Assessment Form filled by the Doctor. It is seen that the entry that was significantly missing from all the records with non-compliance with total percentage at 99. It is lowest in the month of March where it is missing in 94 percent of the records and 100 percent for the rest of the months except May where is 99 percent.

**b. Parameter C\_27: Countersigned by Consultant.**

**Table 8.8. Number of files with non-compliance for parameter C\_27**

| Total number of files | Jan | Feb | March | April | May |
|-----------------------|-----|-----|-------|-------|-----|
| 133                   | 13  | 12  | 29    | 40    | 39  |



**Fig 8.25. Countersigned by Consultant: Percentage Distribution of Missing Entries (Jan-May 2021)**

The above figure presents the percentage distribution of all the missing information from the section of Consultant's countersignature in the records which show non-compliance for the months January-May. The entry with the highest total percentage is "Date/Time" of counter signature at 83 percent. It shows highest incidence in February and May where the entry is missing from all the records at 100 percent. Other significant observation regarding the missing entries is the delay in the counter

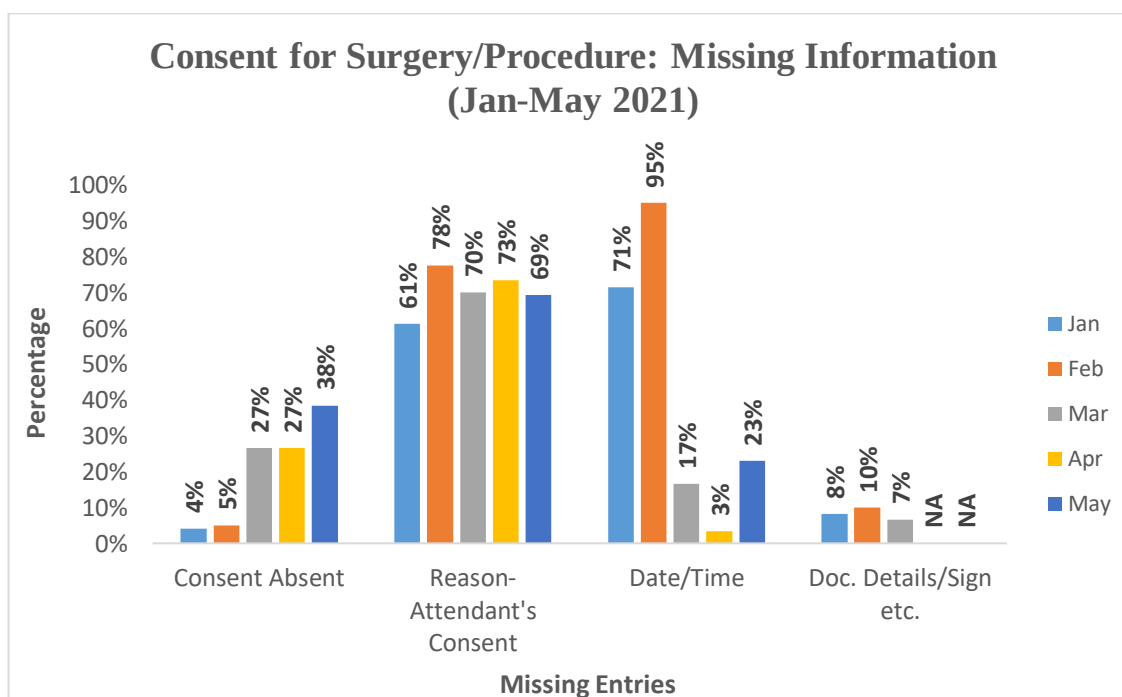
signature which has total percentages of 37, with highest incidence in the month of February with 75 percent.

**v. Parameter F\_45: Consent for Surgery/Procedure**

**Table 8.9. Number of files with non-compliance for parameter F\_45**

| Total number of files | Jan | Feb | March | April | May |
|-----------------------|-----|-----|-------|-------|-----|
| 162                   | 49  | 40  | 30    | 30    | 13  |

The following figure, Fig 8.26, shows the percentage distribution of all the missing information from the Consent form for surgery/procedure performed from the records with non-compliance for months January-May. The missing entry with highest total percentage distribution is the “reason for attendant’s consent when the patient is unable to provide consent” at 70 percent. It is also noteworthy that in February 95 percent of the records were missing the date and/or time of the consent signing. The total percentage however for this entry was 51 percent approximately.



**Fig 8.26. Consent for Surgery/Procedure: Percentage Distribution of Missing Entries (Jan-May 2021)**

vi. **Parameter F\_46: Consent to HIV Testing**

Table 8.10. Number of files with non-compliance for parameter F\_46

| Total number of files | Jan | Feb | March | April | May |
|-----------------------|-----|-----|-------|-------|-----|
| 103                   | 35  | 37  | 14    | 7     | 10  |

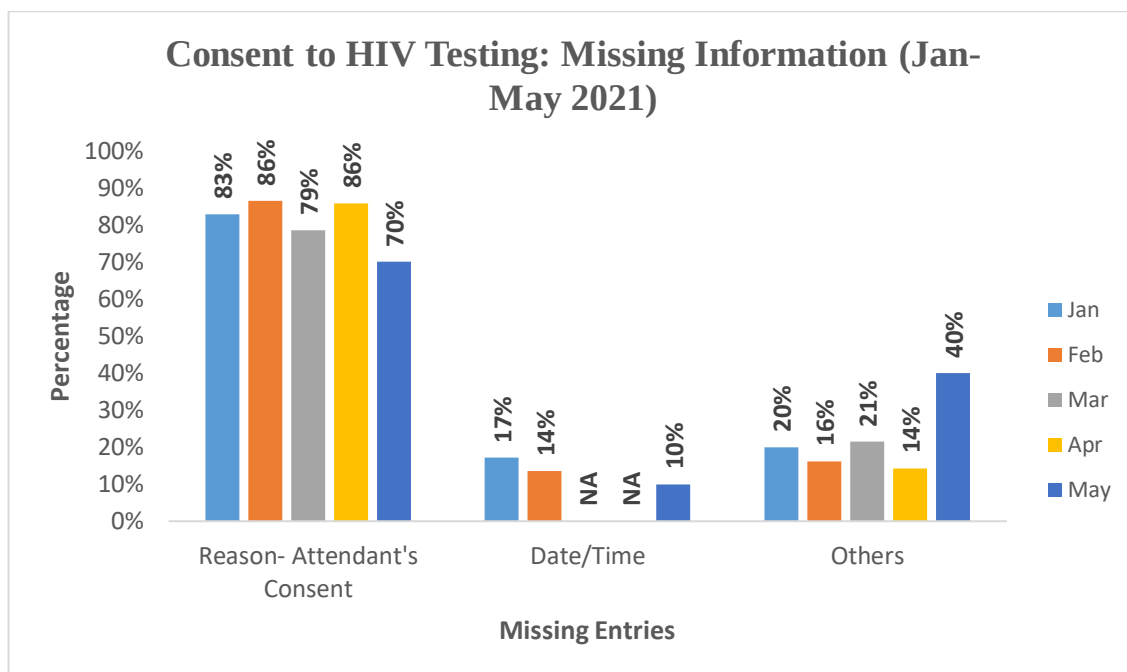


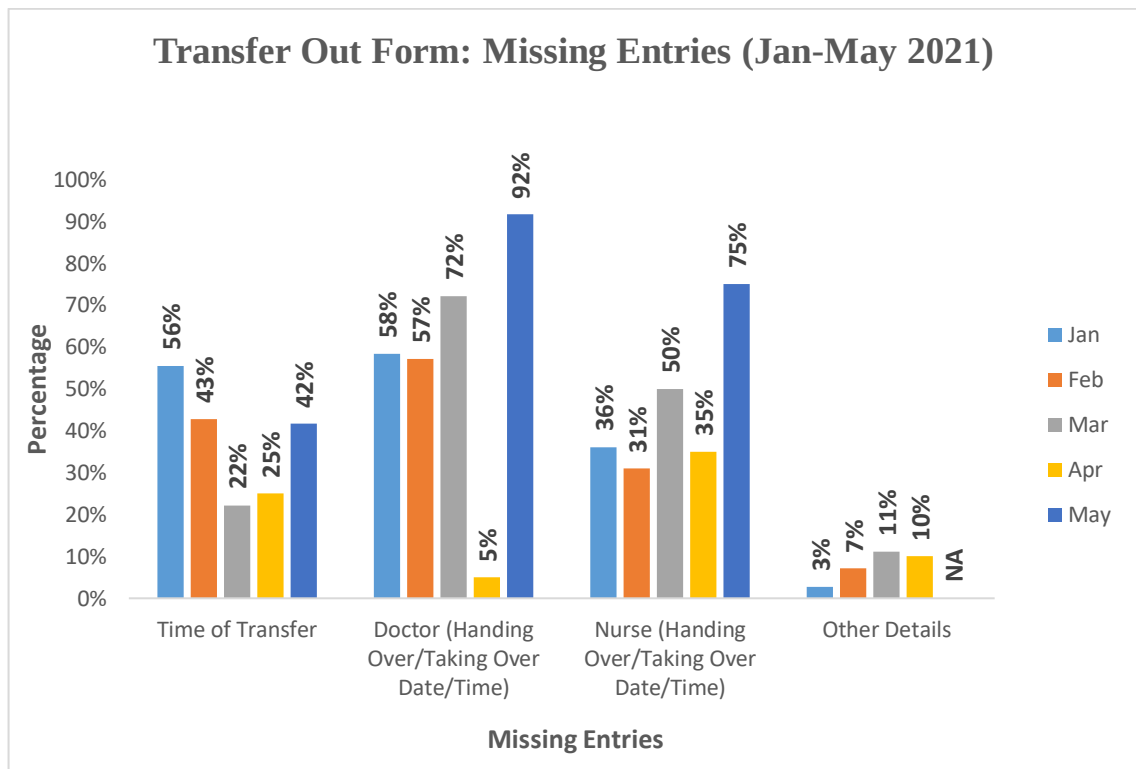
Fig 8.27. Consent for HIV Testing: Percentage Distribution of Missing Entries (Jan-May 2021)

In fig 8.27, presented is the percentage distribution of all the missing information from the Consent from for HIV testing in records showing non-compliance for the months January-May. It is observed that the missing entry with highest total percentage is “reason for attendant’s consent when the patient was unable to provide consent” and was 83 percent. It was highest in the month of February with 86 percent approximately and lowest in May at 70 percent approximately.

vii. **Parameter H\_58: Transfer Out Form**

Table 8.11. Number of files with non-compliance for parameter H\_58

| Total number of files | Jan | Feb | March | April | May |
|-----------------------|-----|-----|-------|-------|-----|
| 128                   | 36  | 42  | 18    | 20    | 12  |



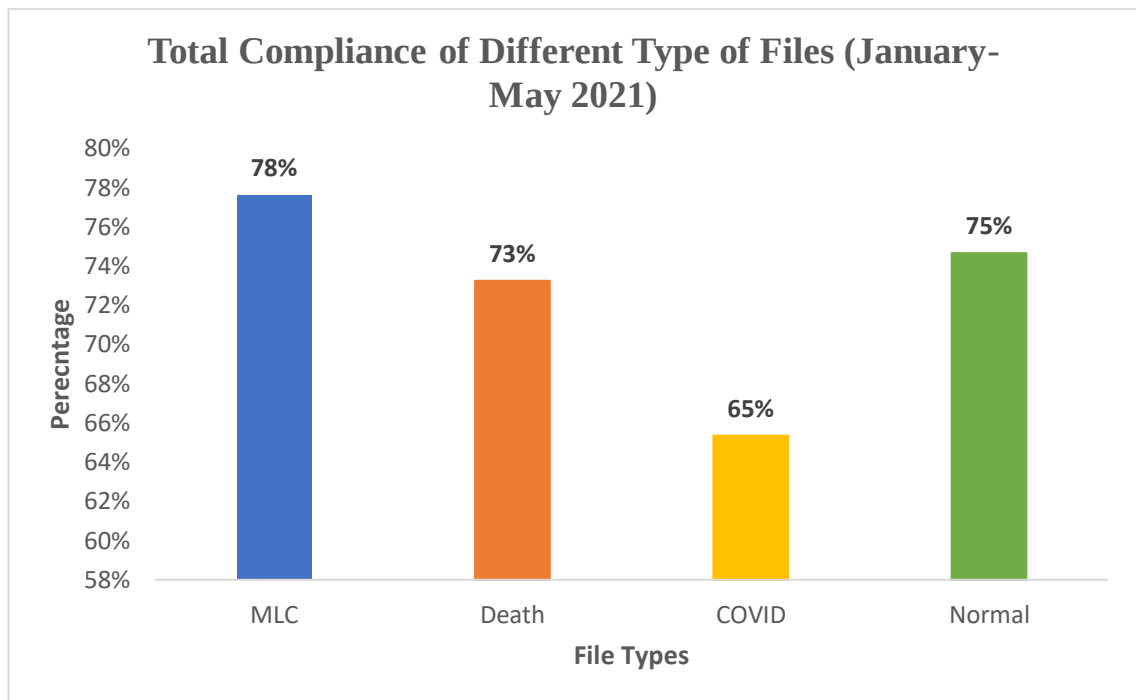
**Fig 8.28. Transfer Out Forms: Percentage Distribution of Missing Entries (Jan-May 2021)**

Fig. 8.28 represents the percentage distribution of all the missing information from the “Transfer Out form of Wards/ICUs” in medical records showing non-compliance in January-May. From the given figures it can be interpreted that the most common entry found to be missing from the transfer out form was “Date/Time mentioned by the taking over/handing over doctor” with 55 percent of the records with missing entry followed by “Time of Transfer of the patient” with 41 percent of the records missing this information. It is also noteworthy that for the month of May, date/time mentioned by taking over/handing over doctor and taking over/handing over nurse were the two most frequently missing entries with 92 percent and 75 percent of the approximate medical records missing this information, respectively.

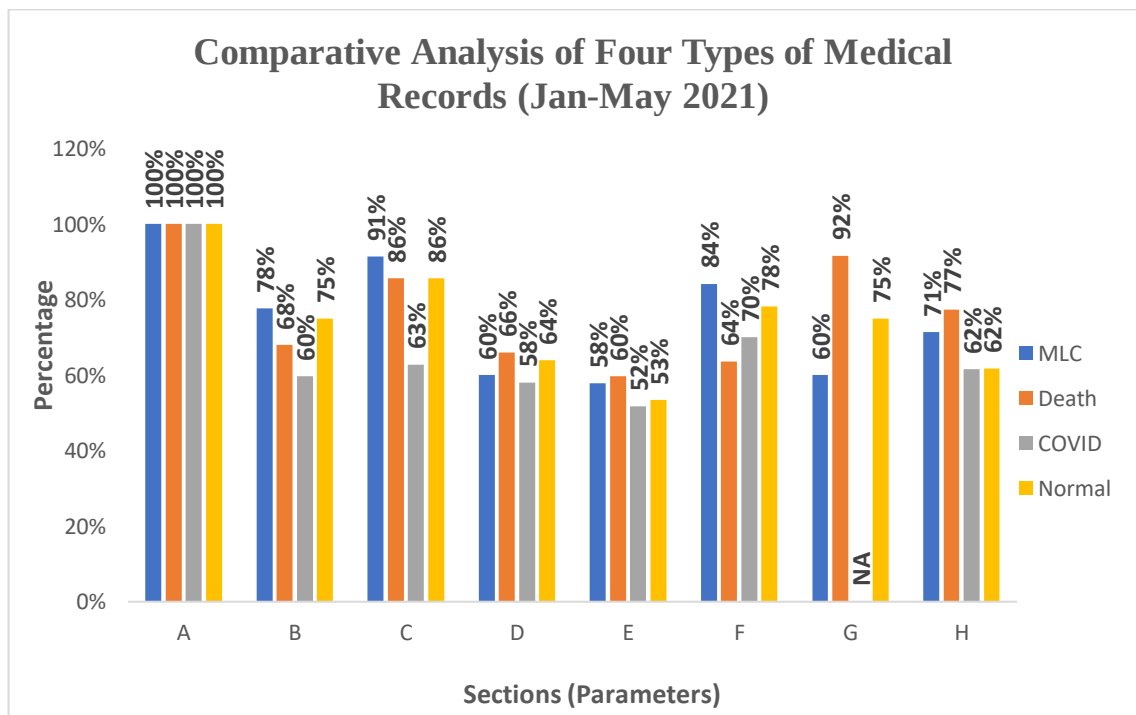
**OBJECTIVE 2: To evaluate the compliance of different types of medical records and perform and comparative analysis.**

For the comparative analysis, a total of ten files of each type of medical records were taken from the month of January-May. These files were then compared on the same parameters of the medical records audit checklist.

The figures presented below, Fig 29 and 30, shows the total and section-wise comparison of percentage compliance of four different types of medical records. These are Medico-legal Case files, Death files, COVID files and Normal Inpatient files. At first glance it appears that the type of medical record with highest overall compliance is the Medico-legal case file with 78 percent total compliance followed by Normal inpatient file with the compliance of 75 percent approximately. The least compliance is observed in COVID files having 65 percent overall compliance rate. When observing the section-wise compliance of the medical records, however, a different finding is noticed. For section A, the compliance rate is equal for all types of files with 100 percent. In section B, MLC files have the highest compliance (78 percent) and COVID files have the lowest (60 percent). When it comes to section C, again highest compliance is in MLC files and lowest in Covid files with 91 and 63 percent, respectively. Coming to section D, the highest compliance is noticed in Death files at 66 percent, and lowest in COVID files with 58 percent. When compared for section E, a similar observation is made, the highest compliance is in Death files (60 percent) and lowest in COVID files (51 percent). In section F, MLC files have the highest compliance at 84 percent with lowest compliance going to Death files with 64 percent. In section G, it is observed that the highest compliance was in Death files (92 percent) and lowest in MLC files (60 percent). However, COVID files show zero percent for this section, which can mean that the parameters in the section G were NA or not applicable for the COVID files. Lastly, Death files again had highest compliance for section G (77 percent) and Normal inpatient files and COVID files both had the lowest compliance at 62 percent.



**Fig 8.29. Total Compliance of Different Types of Files (Jan-May 2021)**



**Fig 8.30. Comparative Analysis of Four Types of Medical Records (Jan-May 2021)**

**OBJECTIVE 3: To assess the medical records on the predetermined quality indicators for five months (January 1, 2021 to May 31, 2021).**

**Table 8.12. Key Performance Indicators (January-May 2021)**

| <b>S.No.</b> | <b>Key Performance Indicators</b>                                                                                                                                  | <b>Number of Records</b> | <b>Total Records</b> | <b>Percentage</b> |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------|-------------------|
| <b>1.</b>    | <b>Percentage of medical records having incomplete or improper consent</b>                                                                                         | 85                       | 396                  | <b>21.46</b>      |
| <b>2.</b>    | <b>Percentage of medication charts with error prone abbreviations</b>                                                                                              | 0                        | 498                  | <b>0.00</b>       |
| <b>3.</b>    | <b>Percentage of surgeries where the organization's procedure to prevent adverse events like wrong site, wrong patient, and wrong surgery have been adhered to</b> | 413                      | 413                  | <b>100.00</b>     |
| <b>4.</b>    | <b>Percentage of prescribing error in each medication administration record sheet</b>                                                                              | 147                      | 500                  | <b>29.40</b>      |

The KPIs or Key Performance Indicators mentioned in the Table 2 are derived from the list of predetermined KPIs specified by NABH. From the above Table it can be interpreted that 21 percent of the medical records have either an incomplete/improper consent or the consent form is absent from the file. There are zero percent error prone abbreviations in the medical charts of the patient files. This means that all the abbreviations used a standardized and in the acceptable format. The percentage of surgeries where the organization's procedure to prevent adverse events have been adhered to, is 100. That means all the procedures and guidelines for the surgeries done have been properly followed. There is 29 percent of prescribing error found in the medication administration record sheet. This implies that in 29 percent of the patient files either the drug name is not mentioned in capitals, the dose, frequency, and route of administration has not been mentioned or there is overwriting present.

## DISCUSSION:

From the results of this study, it was revealed that the compliance of medical records documentation of the private tertiary care hospital on NABH checklist for the month of January-May was significantly lower in parameters D and E as compared to others. Overall, less than 75 percent compliance was observed in “Progress Sheet-Doctor” and “Medication Administration Records”. More than 75 compliance was observed in “Discharge/Death/LAMA Summary complete”, “Clearances/RFA/Consent/Other Documentation”, “Initial Assessment Form-Ward/ICU-Doctor”, “Surgery/Procedure done - Consent”, “Form for Blood Transfusion”, and “Other Forms Present and Complete”. The three specialties with the highest compliance were, “Medical & Hematology Oncology”, “Urology & Andrology”, and “ENT”. Similarly, the three specialties with the lowest compliance were, “Endocrinology”, “Internal Medicine”, and “Pediatric Cardiology”. It was also noticed that the compliance of the medical records decreased with increase in the length of stay of the patient. May was the month which saw decreased compliance for all the parameters except for “Discharge/Death/LAMA Summary”.

The strength of the study lies in its sample size to include 500 medical records covering a span of five months from January to May. The sampling method has been chosen as simple random sampling, so as to make the sample as generalizable as possible. This study has also attempted to compare four different type of medical records, the medico-legal case files, the death files, COVID files, and normal inpatient files. In this study, attempt has been made to document all the missing information for the important parameters from a file with non-compliance.

The biggest weakness of this study is the possibility of selection bias, in choosing the medical records for the assessment. It cannot be denied that there might some selection bias in the way the records have been chosen for the assessment in this study. Another weakness this study has that, it chooses to assess the completed medical records for compliance or non-compliance and may have lost the opportunity to evaluate active/current medical records, which could have provided a clearer picture of the medical records documentation compliance in the hospital.

Nevertheless, the study was successful in bringing out some significant observations and has laid down a concrete foundation for future studies as well.

## **CONCLUSION AND RECOMMENDATIONS:**

It is a well established fact that medical records have paramount importance when it comes to a patient's journey under the jurisdiction of a healthcare provider. Medical records contain extremely sensitive and critical information related to a patient and patient care in a facility. Therefore, it is essential that the medical records are maintained timely, accurately, and in a standardized format. NABH, which also works towards improving the quality of patient care in hospitals and healthcare facilities, have laid down several standards for medical record documentation, compliance to which is necessary for receiving accreditation by the organization NABH.

This study assessed the compliance of medical records documentation on the standards laid down by NABH with the help of a medical records audit checklist specified by the organization from January 2021 to May 2021. It showed that the compliance of the medical records was inconsistent, and varied according to month, specialty, length of stay and parameters.

However, the point to be taken into consideration is the period this study was conducted in. The healthcare system was overwhelmed during this period with the uprising pandemic and the same could be attributed to the decrease in the compliance of the medical records. It is suggested that another study be conducted when the pandemic is over, so that the accurate estimation of the medical records' compliance could be made. Few other recommendations that could be suggested to improve the compliance of medical records documentation in this hospital or any healthcare establishment in general includes i) periodic training and sensitization of doctors, nurses, paramedical, and other related healthcare personnel regarding the standardized and acceptable medical record documentation practices, ii) monitoring and evaluation, iii) Incentivization for better performance and iv) appointment of a designated staff for reviewing the completeness of medical records on daily basis.

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