



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

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What is a Medical Record?

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.

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

In a hospital medical records department or health information systems department is responsible for ensuring that the records are standardized, accurate and complete.

The National Accreditation Board for Hospitals & Healthcare Providers (NABH), which is a constituent board, set up by the Quality Council of India (QCI), is an organization, which operates various accreditation programs for hospitals and other healthcare providers.

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, to ensure that the medical records are structured, accurate and standardized.

AIM OF THE STUDY

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.

LITERATURE



REVIEW

Author (Year)	Study Location/ Sample Size	Methodology	Salient Features	
			Objective	Results
Mishra et al. (Apr 2009)	Location: Nepal Sample Size: 130 Discharge summaries	Study Period: Apr 2008- Oct 2008 Study Design: Descriptive Cross-Sectional Study. Study Setting: Liver Unit Bir Hospital, Nepal. Sampling Technique: NA Study Tool: Predetermined Audit Checklist.	Aim of assessing the adequacy of medical records in Bir Hospital, a medical university in Nepal	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. Several other disparities were observed in the discharge summary as well
Lövestam et al. (2013)	Location: Sweden Sample Size: 147 dietetic notes	Study Period: 2009 Study Design: Retrospective Observational Audit Study Setting: Six hospitals and four PCCs in central Sweden Sampling Technique: NA Study Tool: “Diet-NCP-Audit” instrument	To evaluate the documentation of dietetic care in the Swedish Medical Records.	Several significant components of the nutrition care were not documented properly. Swedish dieticians needed to improve the medical records documentation of the dietetic records. They suggested that a structured documentation model might be helpful in the process.

Author (Year)	Study Location/ Sample Size	Methodology	Salient Features	
			Objective	Results
Anshu Gupta, Chhavi Gupta (2016)	Location: India Sample Size: NA	Study Period: 2011-2012. Study Design: Retrospective study Study Parameters: “whole blood and blood component usage”, “transfusion reactions”, “wastage of blood and blood products”, and “average turnaround time”. Sampling Technique: 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)	Location: Brazil (in a general and public university hospital with 60 specialties and approximately 850 beds.) Sample Size: 224 medical records	Study Period: 2012-2013 Study Design: Observational study Study Sample: Hospitalizations in clinical and surgical units. Sampling Technique: 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%).

Author (Year)	Study Location/ Sample Size	Methodology	Salient Features	
			Objective	Results
Prerna Singh (Aug 2018)	Location: India Sample Size: 200 patient files	Study Period: NA Study Design: Observational, Prospective Study with Hypothesis testing Study Setting: A private hospital in Delhi, India Sampling Technique: Convenience Sampling Study Tool: Documentation Review Audit Tool.	To analyze the health records documentation process in a tertiary care hospital as per the National Standards of Accreditation	Higher compliance was observed in surgical patient files as compared to the medical patient records. Various areas of patient files where compliance was varying was also noted.
Ryan et al. (Sept. 2018)	Location: USA Sample Size: 821 US adults	Study Period: 2015 Study Design: Retrospective Observational Study Study Setting: Cleveland Clinic, Cleveland, Ohio. Sampling Technique: Random Sampling in patients receiving a Vit. D test. Study Tool: A multiplex assay to quantitatively assess the serum concentrations of medications followed by interview schedule	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.

Author (Year)	Study Location/ Sample Size	Methodology	Salient Features	
			Objective	Results
Nugrahe ni et al. (July 2019)	Location: Indonesia Sample Size: NA	Study Period: NA Study Design: Qualitative Research Study Setting: Primary care centers of Indonesia. Sampling Technique: NA Study Tool: Participation included observation, non-structured interviews, and discussions.	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.
Sadaghey ani H.E. (2019)	Location: Iran Sample Size: 1500 records	Study period: 2011 and 2017 Study Design: Analytical Cross-Sectional Study Study Setting: Besat Hospital in affiliation with Hamadan University of Medical Sciences, Iran. Sampling Technique: Systematic Sampling Study Tool: 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

Author (Year)	Study Location/ Sample Size	Methodology	Salient Features	
			Objective	Results
Attia et al. (May 2020)	Location: Saudi Arabia Sample Size: 18 percent of the medical records for each month.	Study Period: Jan 2014-Jun 2015 Study Design: Analytical Cross Sectional Study Study Setting: A Private 30 bedded hospital in Saudi Arabia Sampling Technique: Random sampling Study Tool: 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)	Location: Iran Sample Size: 28 administrator-s and supervisors of nursing, medical records, and accreditation	Study Period: NA Study Design: Qualitative Research. Study Setting: Five educational institution in affiliation with “AJUMS” Sampling Technique: NA Study Tool: Semi-structured interview schedule.	To describe the factors that affected the quality of medical records through the implementation of accreditation models in hospitals	Three level of factors affecting the quality of records viz. organizational, environmental, and personal. Facilitating factors: Organizational structure, organizational culture, management support, individual characteristics, and perceived benefits and science and technology Hindering factors: Program structure, organizational structure, beliefs, justice, and individual characteristics

M E T H O D O L O G Y

- **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

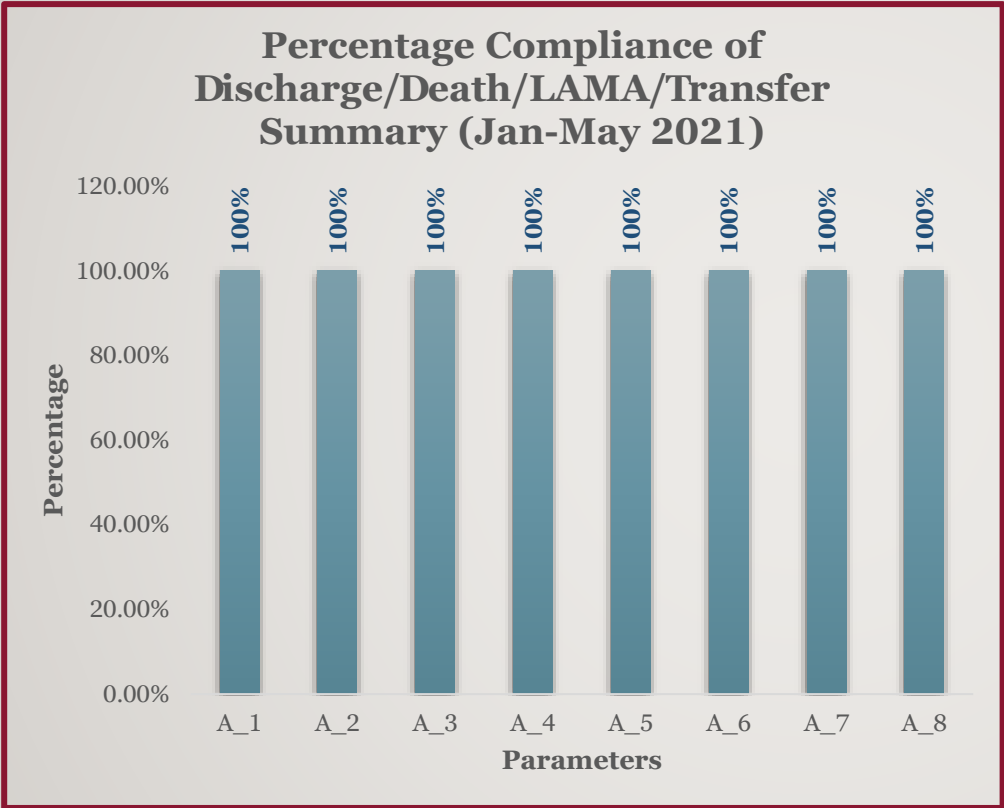


Fig. 8.1. Percentage Compliance of Discharge/Death/LAMA/Transfer Summary (Jan-May 2021). “A_1 = Diagnosis; A_2 = On Admission History and Findings; A_3 = Treatment Given; A_4 = Investigations; A_5 = Surgery/Procedure Done; A_6 = Advice on Discharge; A_7 = Follow up advice & When & how to obtain urgent care; and A_8 = Signed by Doctor.”

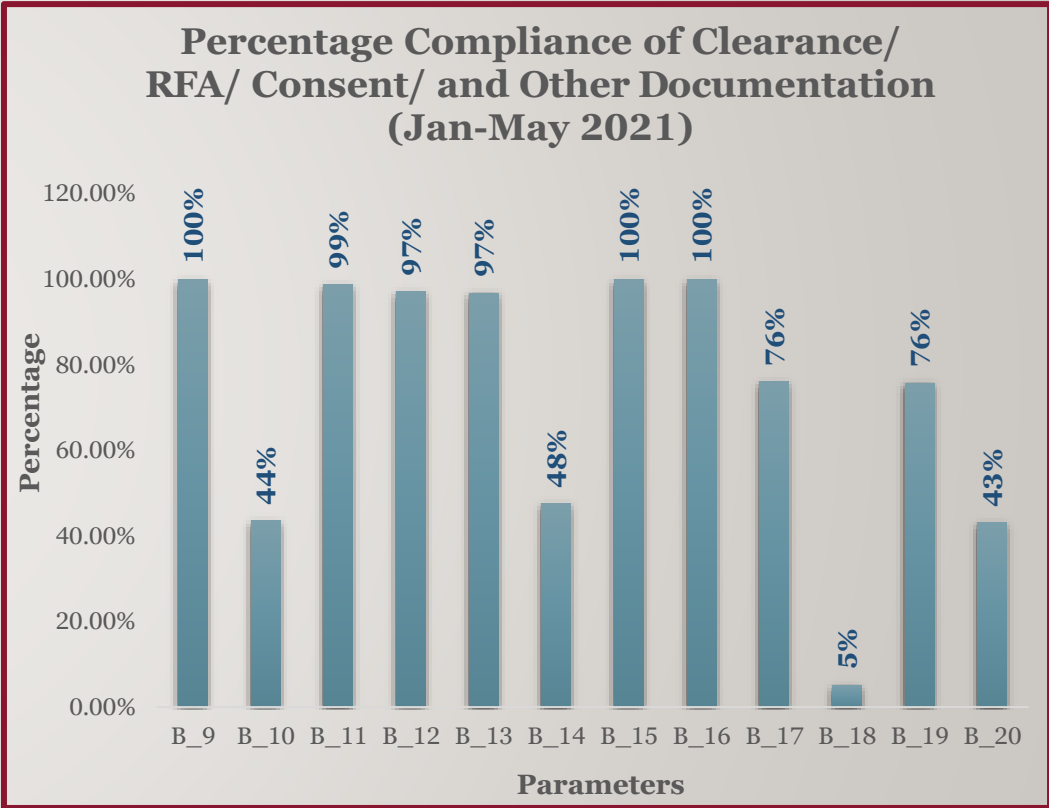


Fig. 8.2. Percentage Compliance of Clearance/ RFA/ Consent/ and Other Documentation (Jan-May 2021). “B_9 = Financial Clearance Slip; B_10 = Discharge Handover Form; B_11 = Discharge/LAMA/Death Note; B_12 = Request for Admission; B_13 = Face-sheet; B_14 = Consent Form for Medical Management; B_15 = Emergency 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.”

Percentage Compliance of Initial Assessment Form - Ward /ICU - Doctor (Jan-May 2021)

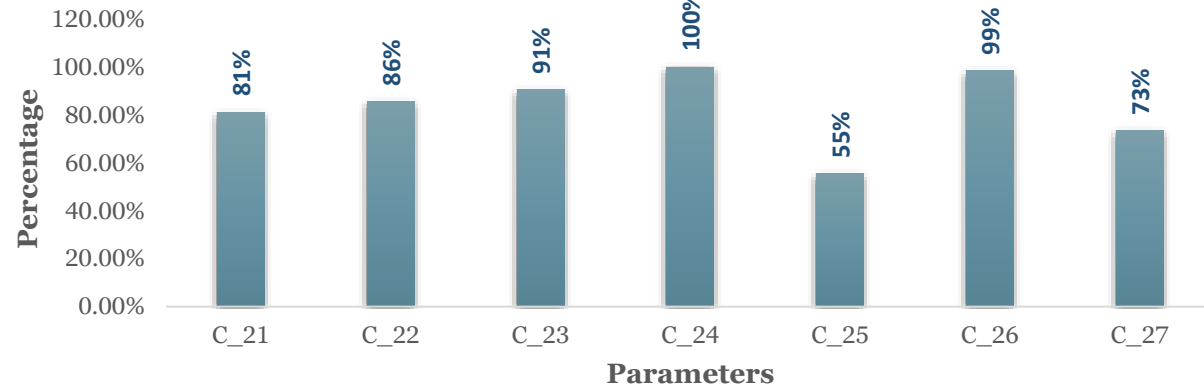


Fig. 8.3. Percentage Compliance of Initial Assessment Form – Ward/ICU – Doctor (Jan-May 2021). “C_21 = Date and Time; C_22 = History and Examination Completely filled in; C_23 = Relative’s Signature; C_24 = Provisional Diagnosis Entered; C_25 = Plan of Care with Desired Outcome; C_26 = Signed by MO; C_27 = Countersigned by Consultant.”

Percentage Compliance of Progress Sheet - Doctor (Jan-May 2021)

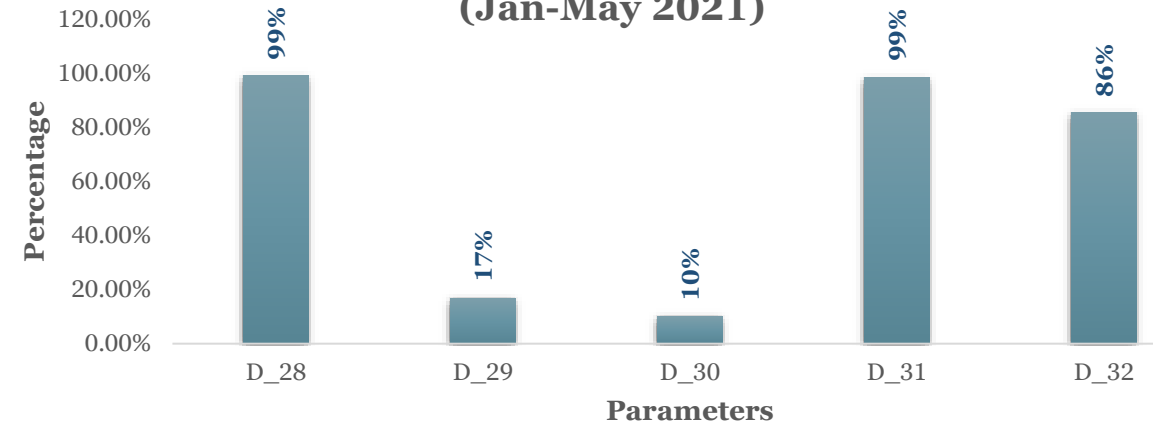


Fig. 8.4. Percentage Compliance of Progress Sheet – Doctor (Jan-May 2021). “D_28 = At least One Entry by Doctor Per Day – Daily Rounds; D_29 = Author of the Entry is Identifiable; D_30 = All Entries Dated and Time; D_31 = Nurses Progress Notes; D_32 = Nursing Care Plan in Each Shift.”

Percentage Compliance of Medication Administration Record (Jan-May 2021)

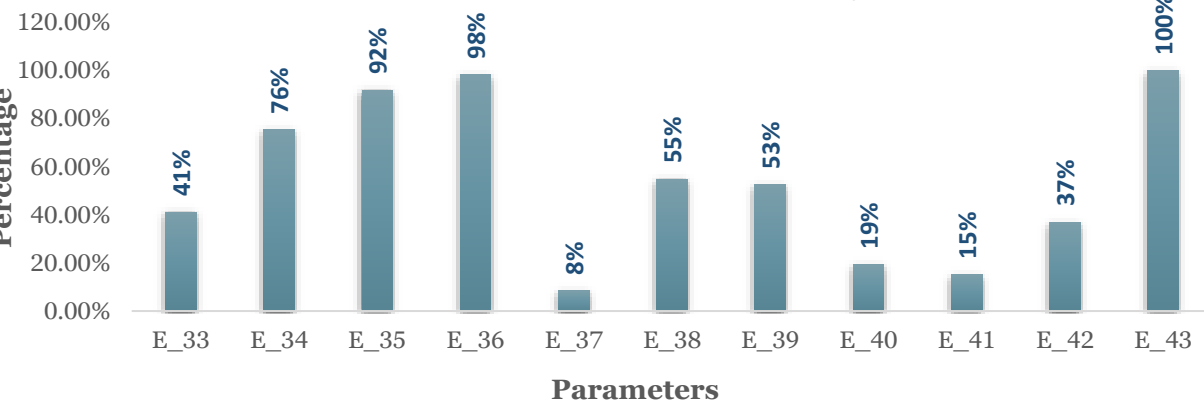


Fig. 8.5. Percentage Compliance of Medication Administration Record (Jan-May 2021). “E_33 = Allergy Mentioned; E_34 = Drugs Names Entered in Capitals; E_35 = All Three Mentioned- Dose, Route, and Frequency; E_36 = No Overwriting; E_37 = All Drug Prescriptions Have Start Date and Time; E_38 = Stat Prescriptions 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”.

Percentage Compliance of Consent for the Surgery/Procedure Done (Jan-May 2021)

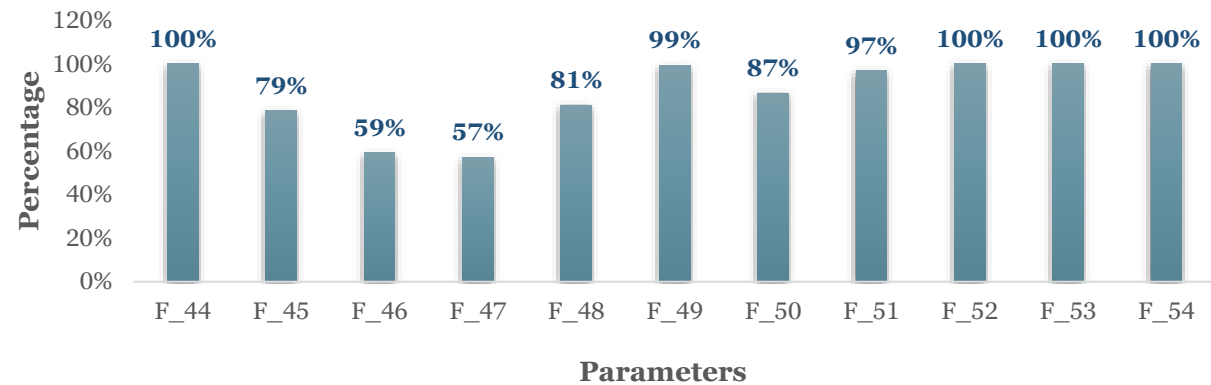


Fig. 8.6. Percentage Compliance of Consent for the Surgery/Procedure Done (Jan-May 2021). “F_44 = Consent Present for Every Procedure/Surgery Done; F_45 = Consent: All Signatures Present and Complete; F_46 = Consent to HIV Testing; F_47 = High Risk Consent (If Applicable); F_48 = Consent for Anesthesia, 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”.

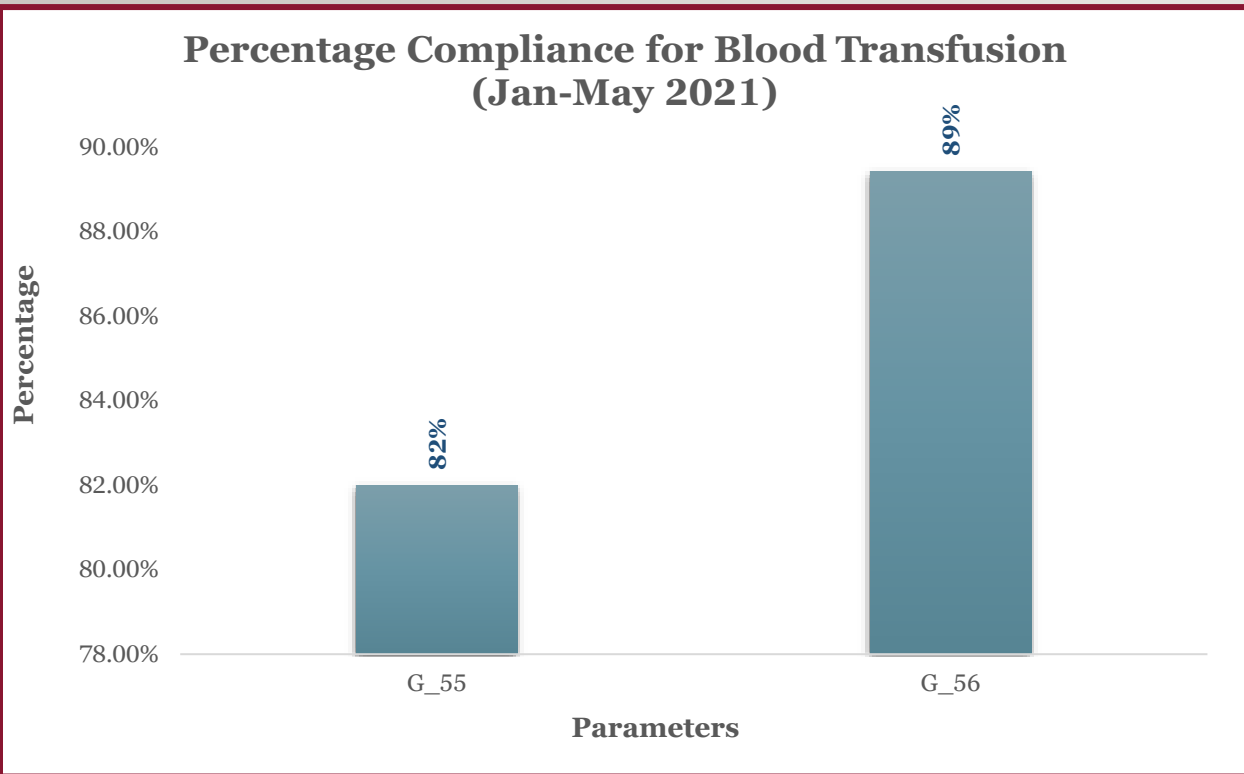


Fig. 8.7. Percentage Compliance for Blood Transfusion (Jan-May 2021). “G_55 = Informed Consent for Blood Transfusion; E_56 = Blood and Blood Components Transfusion Monitoring”.

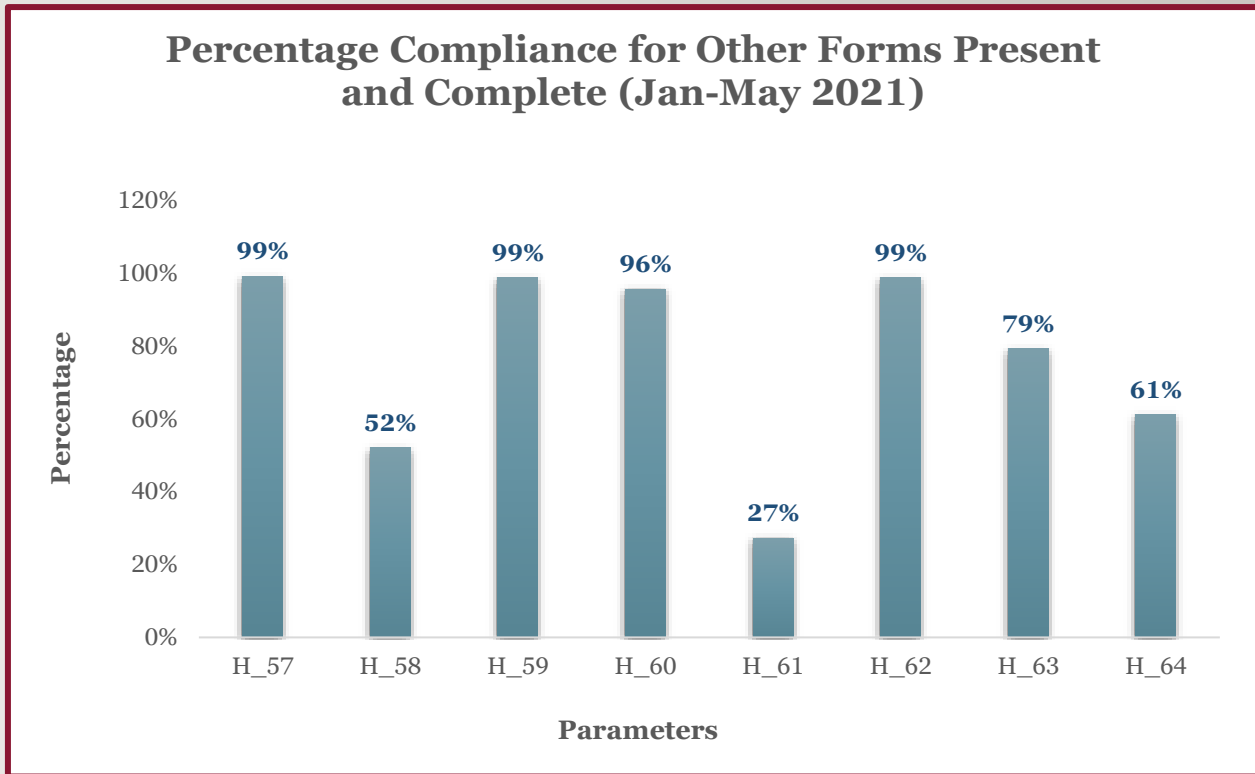


Fig. 8.8. Percentage Compliance for Other Forms Present and Complete (Jan-May 2021). “H_57 = Critical Care Flow Sheet; H_58 = Transfer-Out Form Ward/ICU/HDU; H_59 = Nutritional Screening and Regular Nutritional Assessment; H_60 = Physiotherapist Assessment and Notes; H_61 = Intake Output Chart; H_62 = Glucose Monitoring Chart; H_63 = Special Forms if Applicable (Restraint Consent, Dialysis, MRI etc.); H_64 = Patient and Family Communication Record”.

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

Section A Compliance Trends (Jan-May 2021)

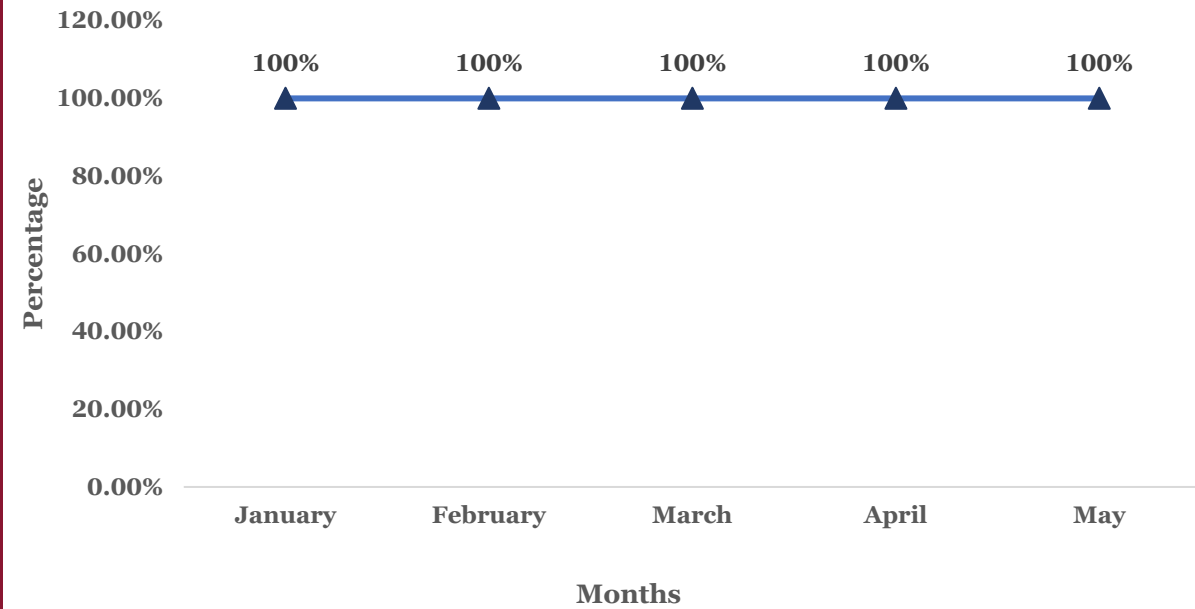


Fig. 8.9. Section A Compliance Trends (Jan-May 2021). “A = Discharge/Death/LAMA/Transfer Summary Complete.”

Section B Compliance Trends (Jan-May 2021)

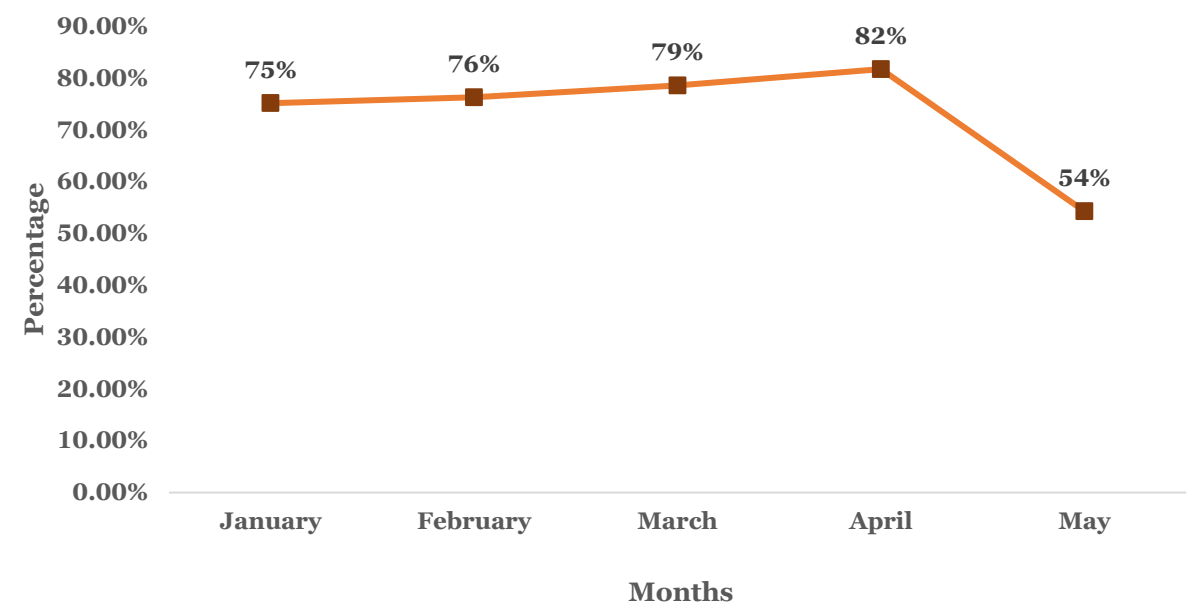


Fig 8.10. Section B Compliance Trends (Jan-May 2021). “B = Clearance/RFA/Consent/Other Documentation.”

Section C Compliance Trends (Jan-May 2021)

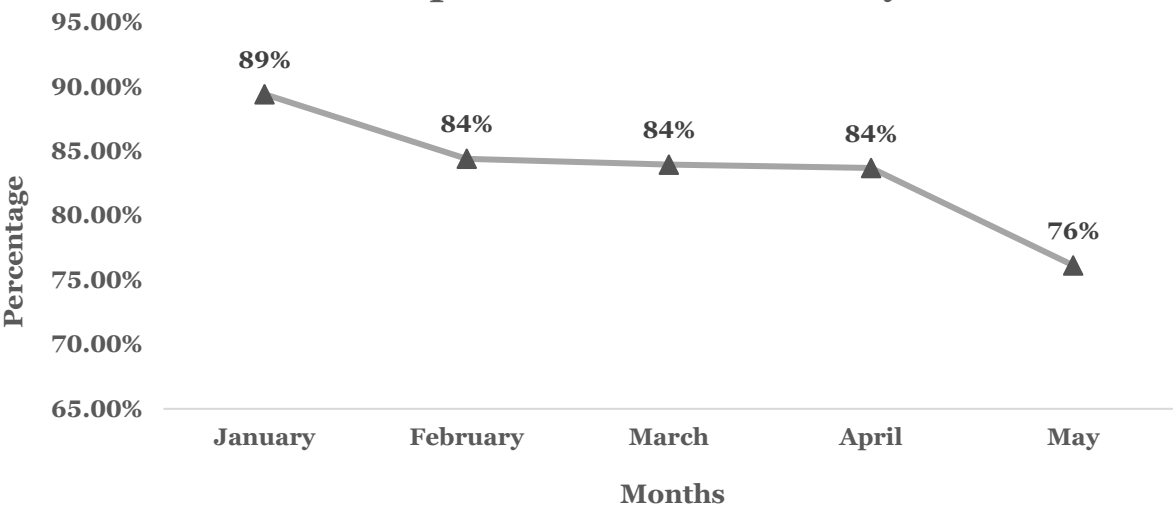


Fig 8.11. Section C Compliance Trends (Jan-May 2021). “C = Initial Assessment Form – Ward/ICU – Doctor.”

Section D Compliance Trends (Jan-May 2021)

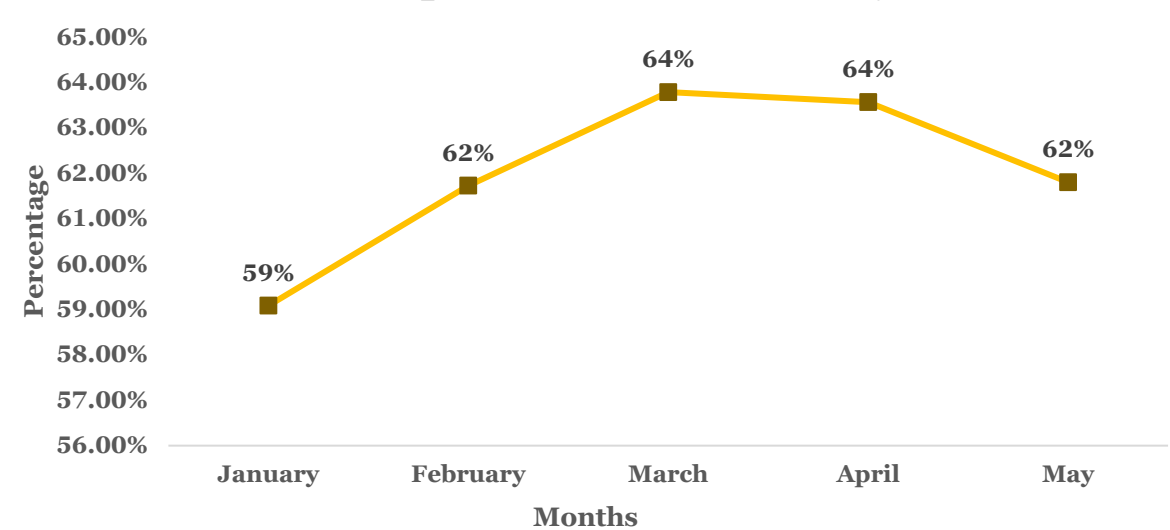


Fig 8.12. Section D Compliance Trends (Jan-May 2021). “D= Progress Sheet – Doctor”

Section E Compliance Trends (Jan-May 2021)

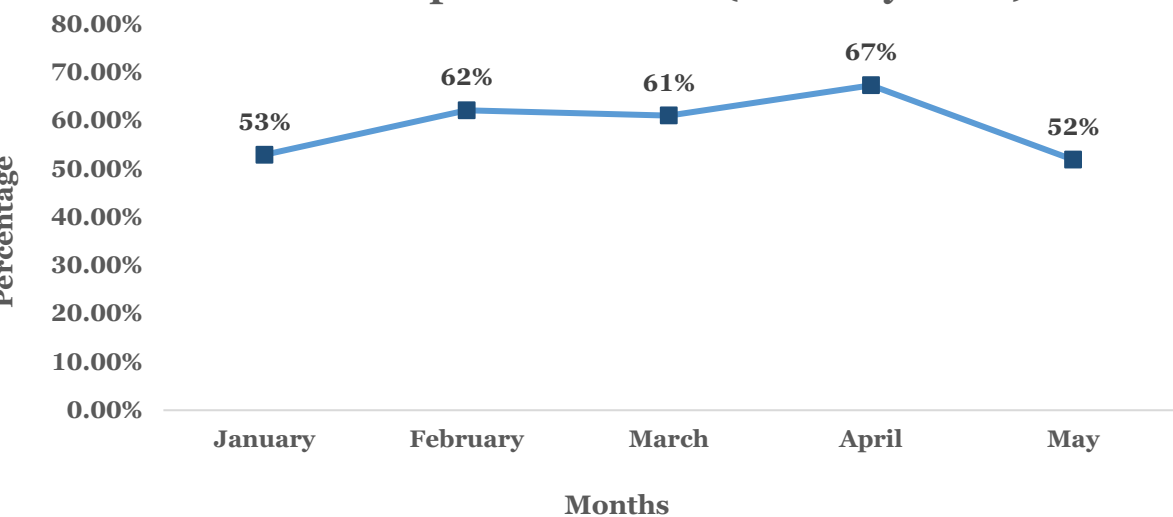


Fig 8.13. Section E Compliance Trends (Jan-May 2021). “E = Medication Administration Record”.

Section F Compliance Trends (Jan-May 2021)

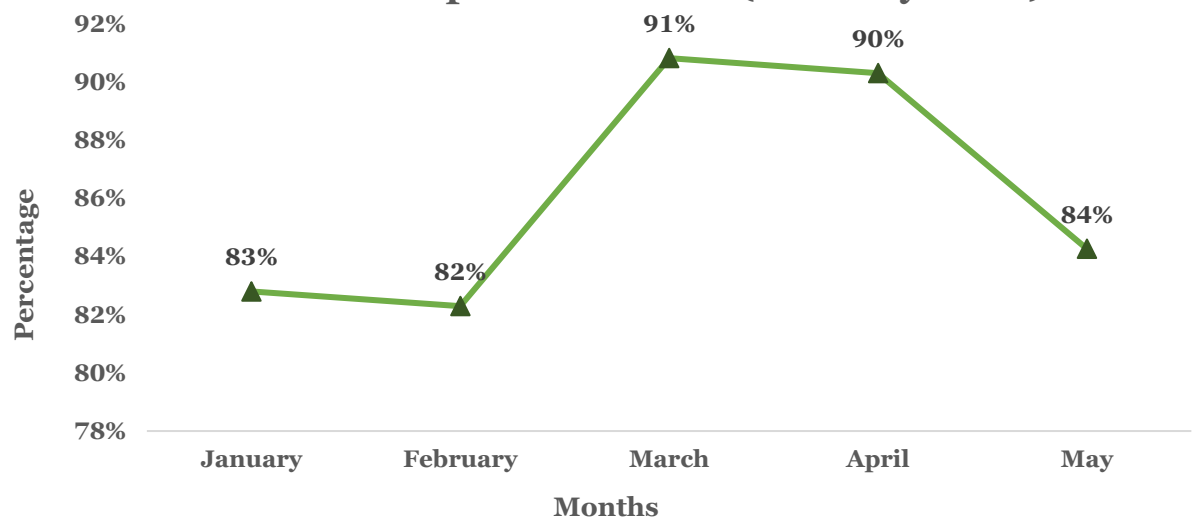


Fig 8.14. Section F Compliance Trends (Jan-May 2021). “F = Consent for Surgery/Procedure Done”

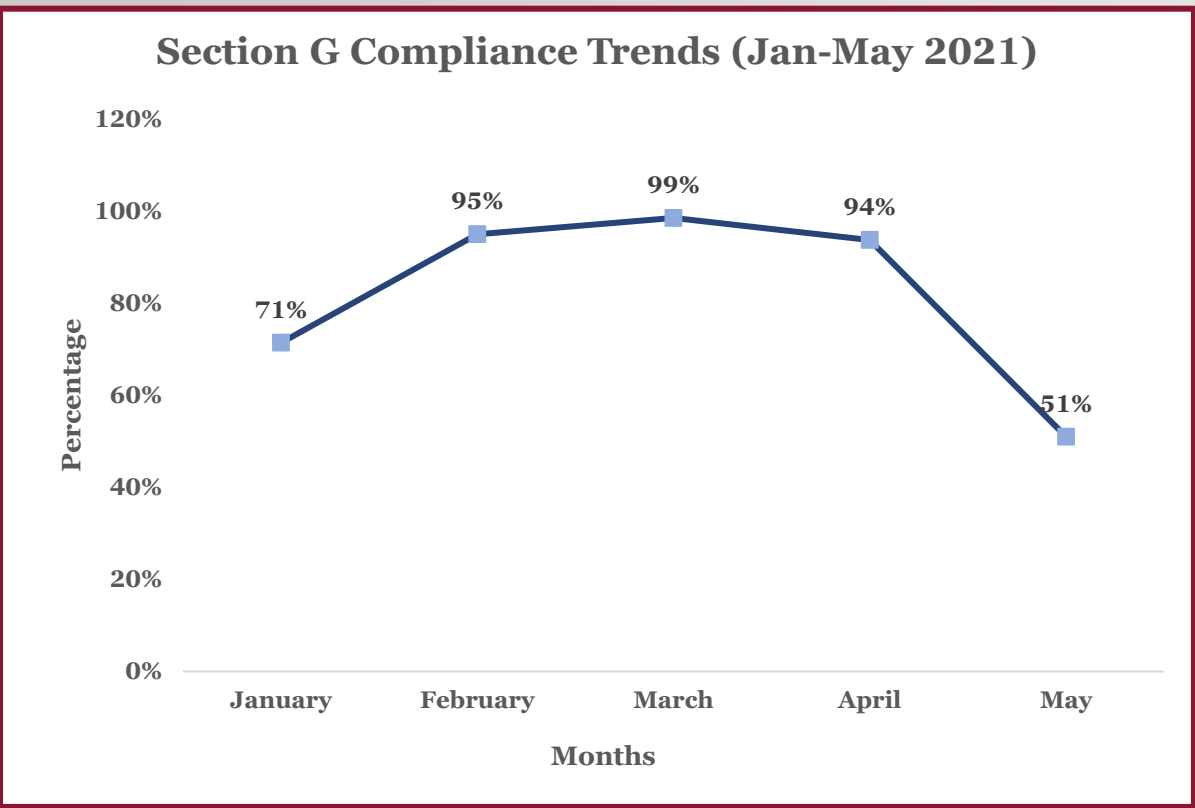


Fig 8.15. Section G Compliance Trends (Jan-May 2021). “G = Blood Transfusion”

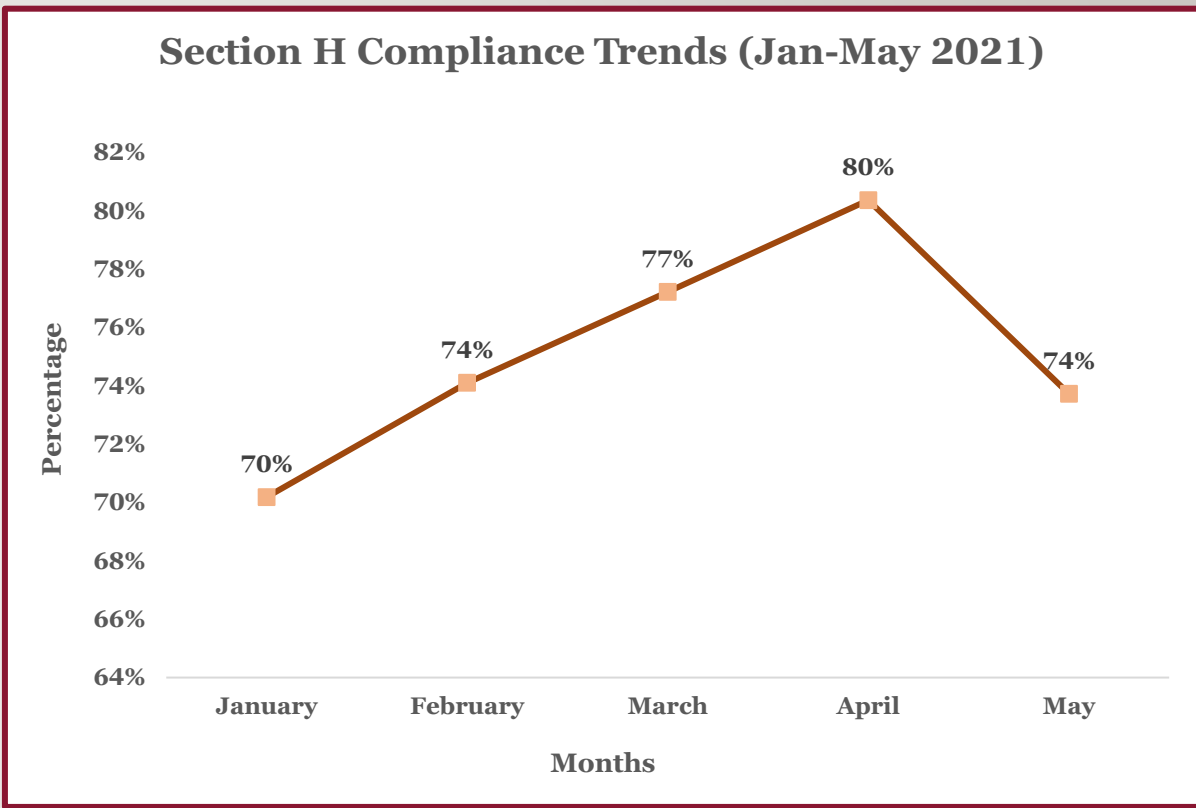


Fig 8.15. Section H Compliance Trends (Jan-May 2021). “H= Other Forms Present and Complete”

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

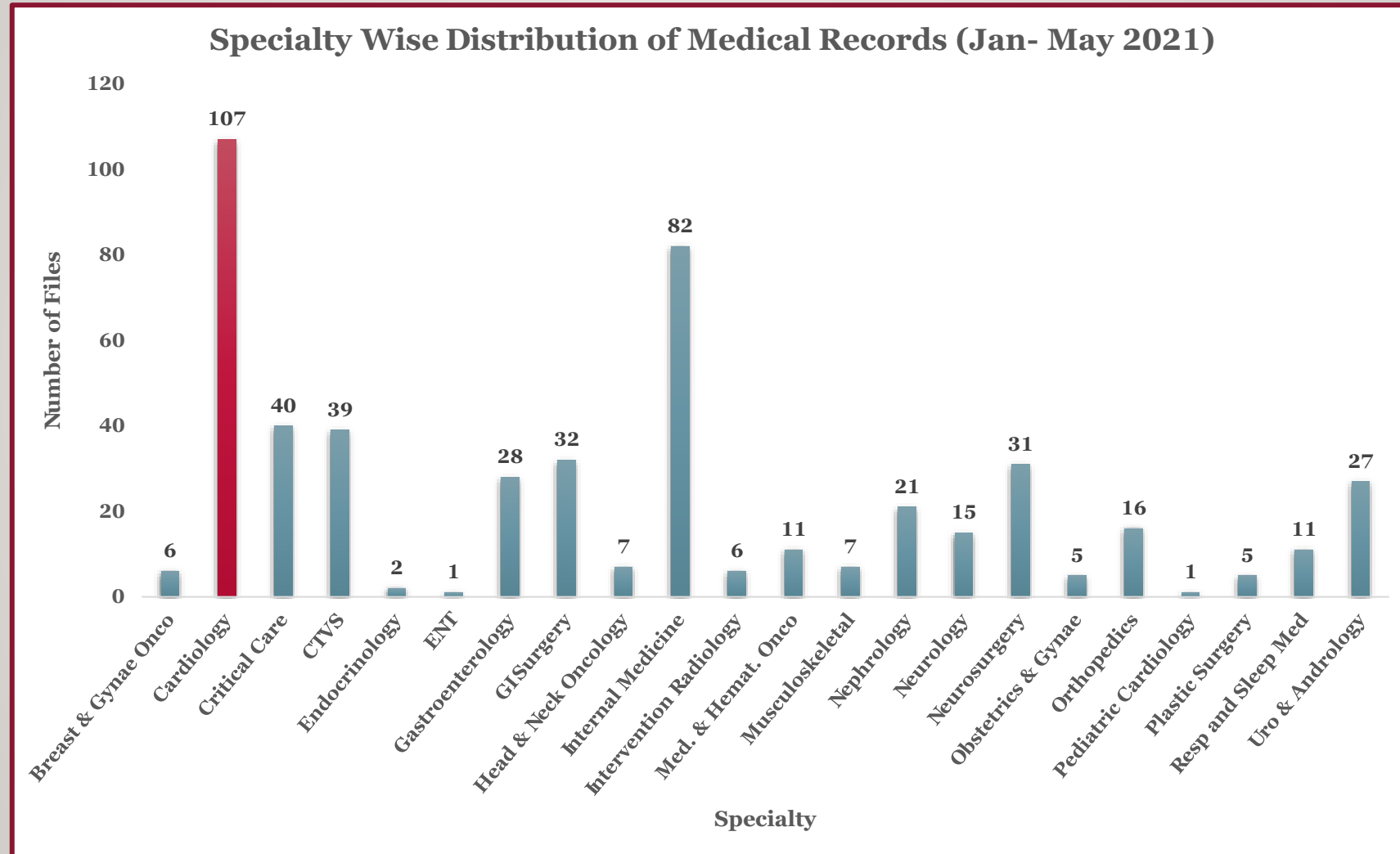


Fig. 8.17. Specialty-wise Distribution of Medical Records (Jan-May 2021)

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

Specialty	No. of Files	Percentages					
		Jan	Feb	Mar	Apr	May	Total
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
Gastroenterolog y Critical Care	28	73	73	77	82	71	75
	40	72	74	78	81	69	74
Respiratory and Sleep Medicine	11	70	NA	6	82	75	74
Neurology	15	70	76	77	78	NA	74
Endocrinology	2	NA	NA	73	NA	NA	73
Internal Medicine	82	83	78	80	88	66	71
Pediatric Cardiology	1	68	NA	NA	NA	NA	68

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

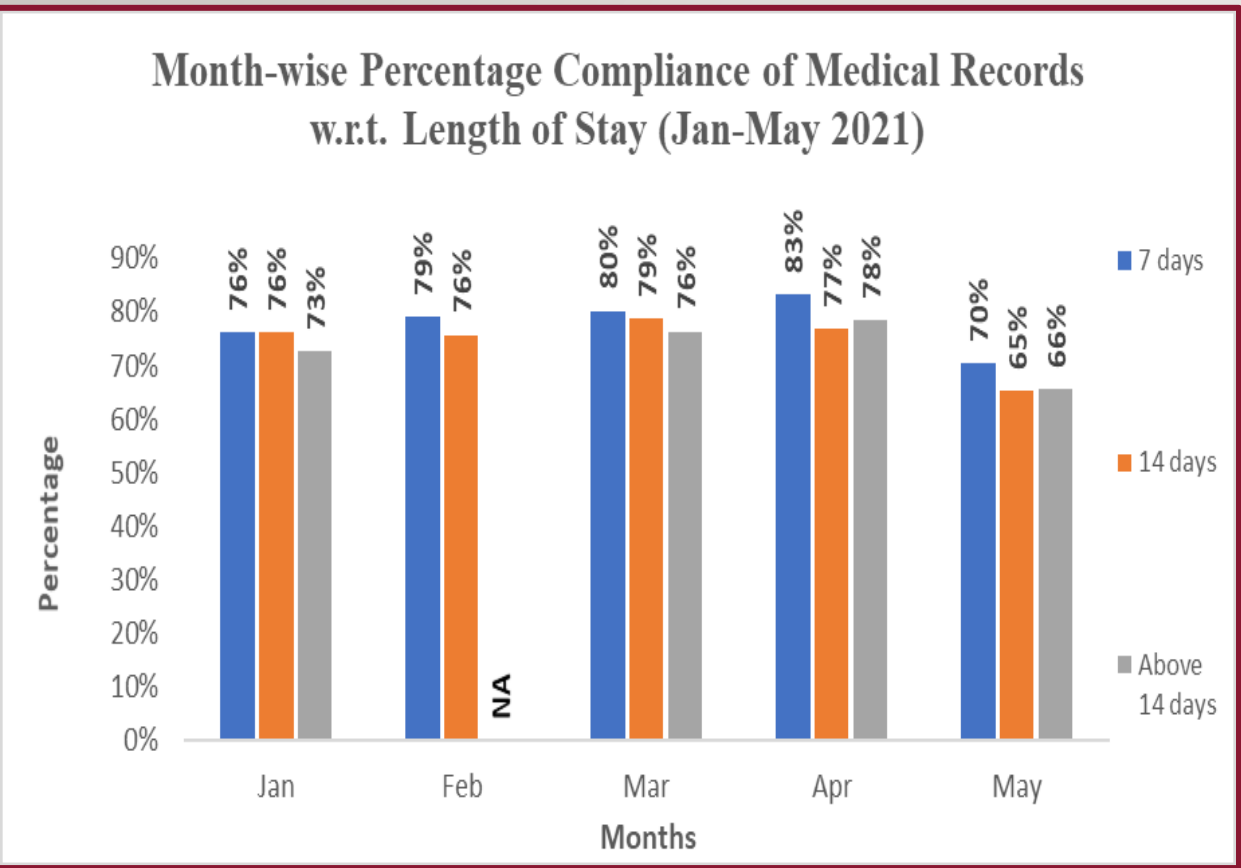


Fig. 8.18. Month-wise Percentage Compliance of Medical Records with respect to Length of Stay (Jan-May 2021).

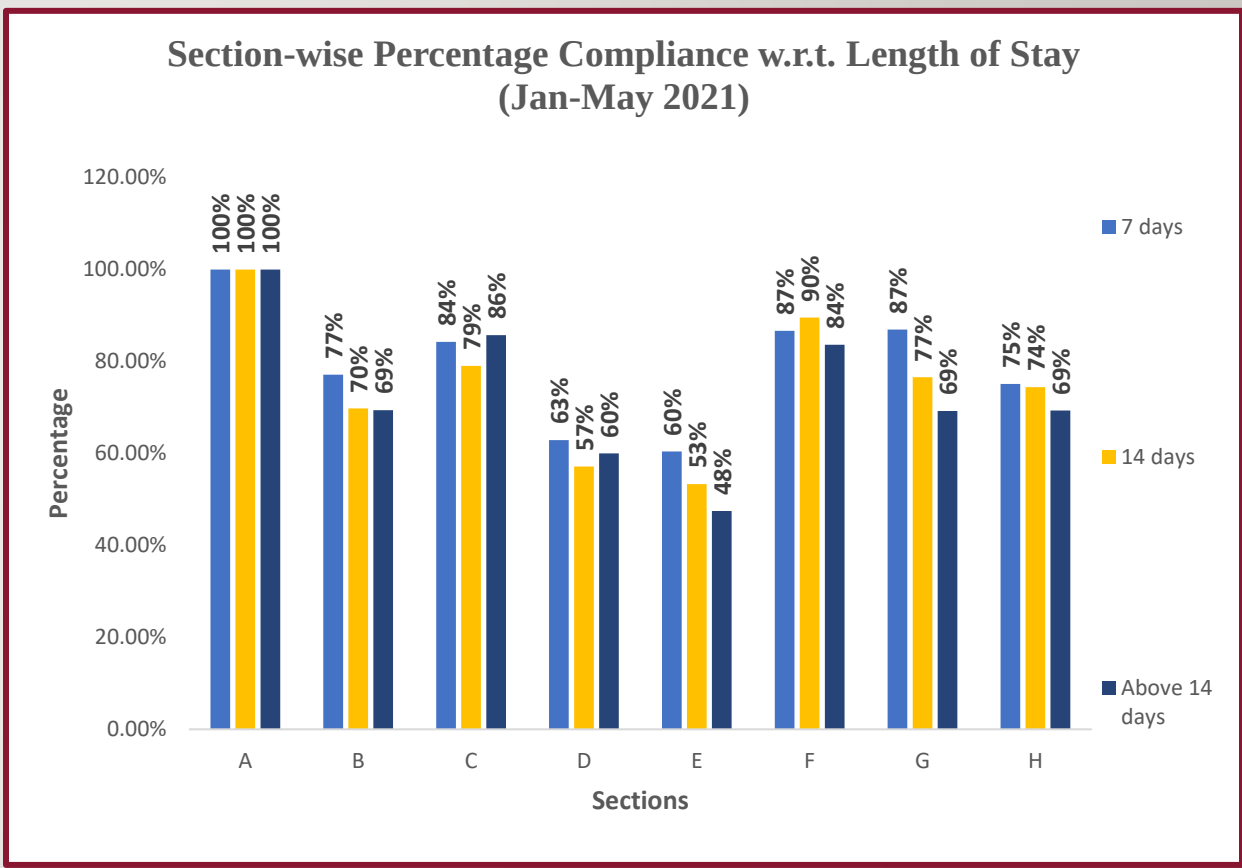


Fig. 8.19. Section-Wise Percentage Compliance with respect to Length of Stay (Jan-May 2021).
“A = Discharge/Death/LAMA/Transfer Summary Complete; B = Clearance/RFA/Consent/Other Documentation; C = Initial Assessment Form – Ward/ICU – Doctor; D= Progress Sheet – Doctor; E = Medication Administration Record; 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)

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

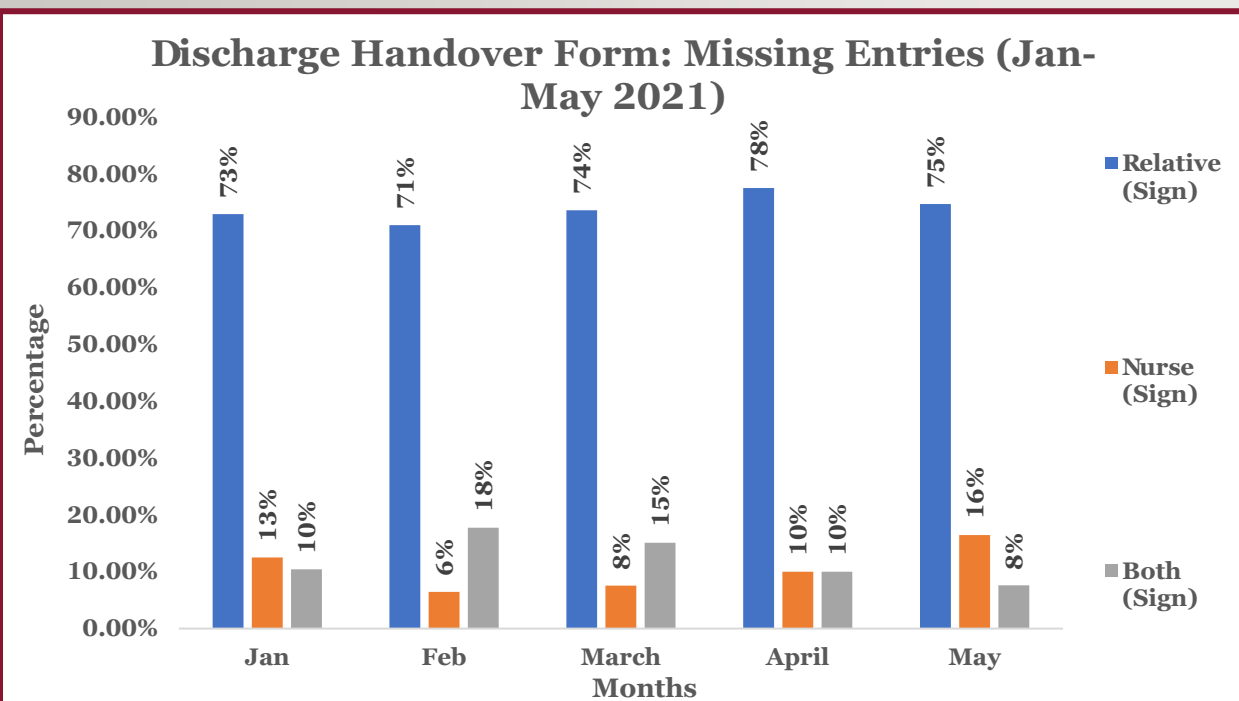


Fig 8.20. Discharge Handover Form: Percentage Distribution of Missing Entries (Jan-May 2021).

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

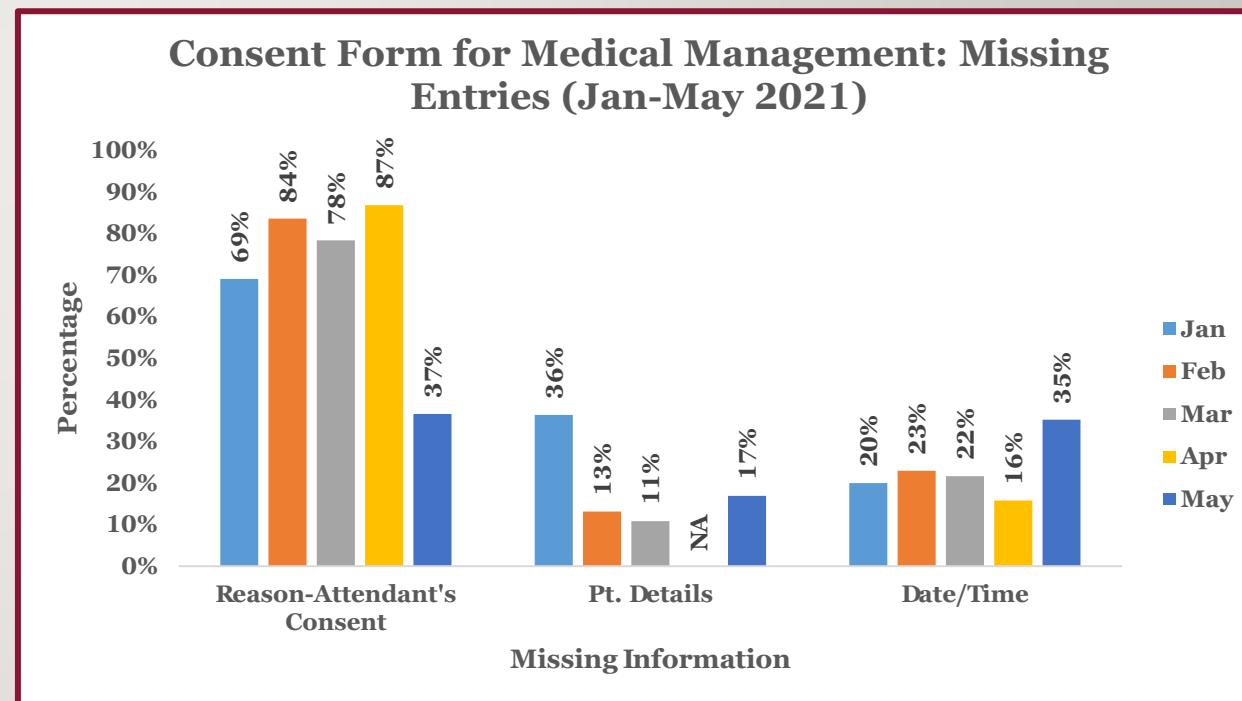


Fig. 8.21. Consent Form for Medical Management: Percentage Distribution of Missing Entries (Jan-May 2021)

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

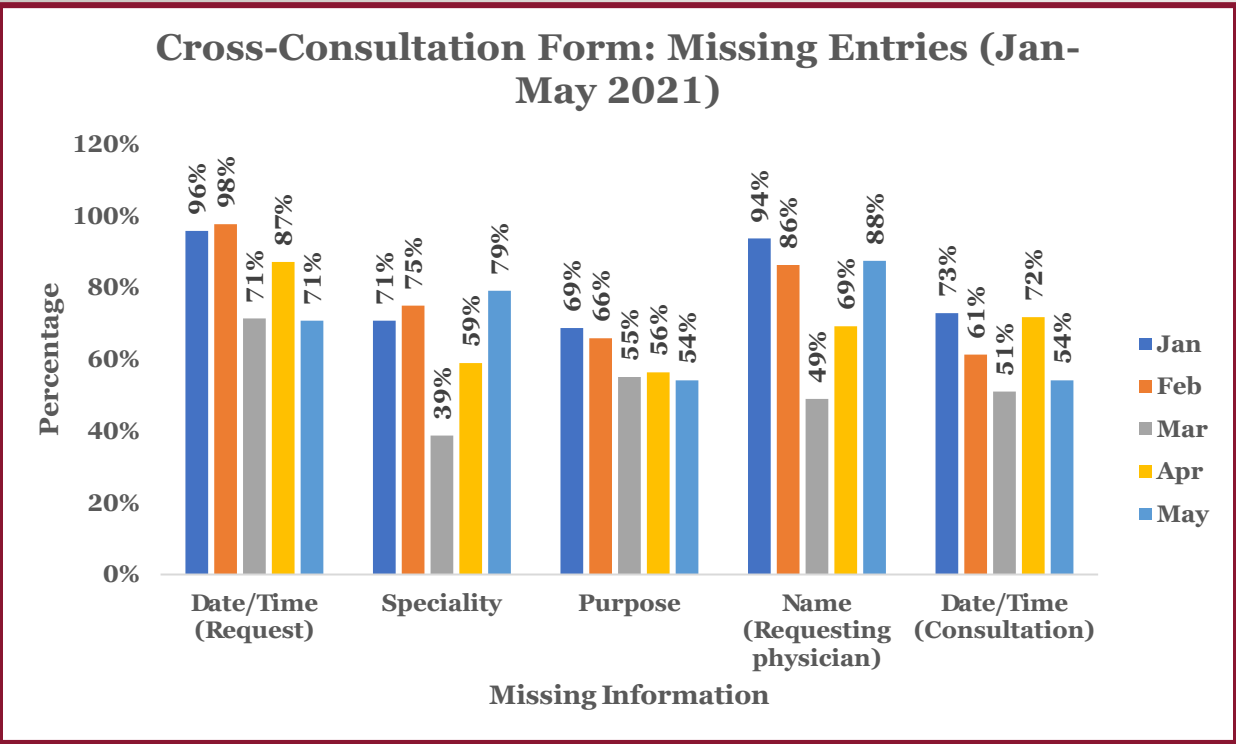


Fig 8.22. Cross-Consultation Form: Percentage Distribution of Missing Entries (Jan-May 2021)

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

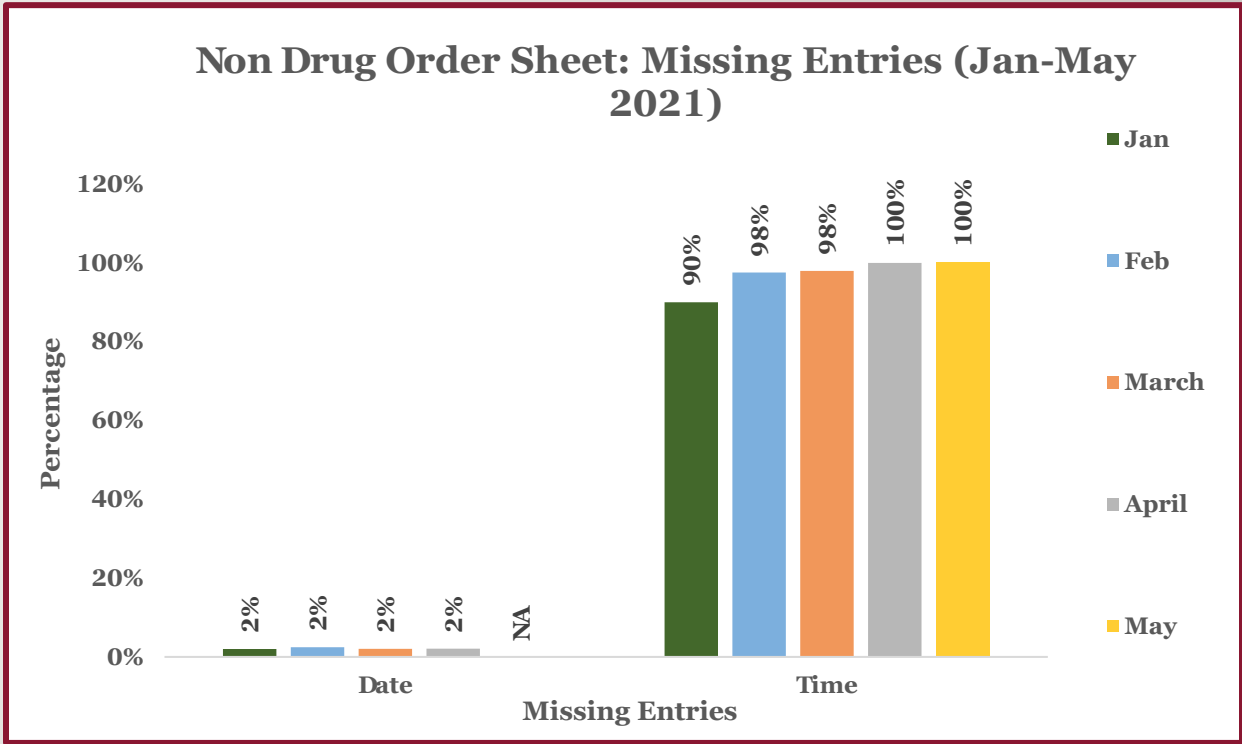


Fig 8.23. Non-Drug Order Sheet: Percentage Distribution of Missing Entries (Jan-May 2021).

Table 8.6. Other Parameters and the Missing Information for Non- Compliance (Jan-May 2021)	Parameters	Description	No. of files with "No Compliance"	Missing Information
	C_25	Plan of care with desired outcome	223	Desired outcome not mentioned
	D_29	Author of the entry is identifiable (Name, Sign, id)	416	ID not mentioned, Signature not identifiable
	D_30	All entries dated and timed	449	Time not mentioned
	E_33	Allergy mentioned	294	Allergy not mentioned
	E_37	All drug prescriptions have start date and time	454	Time not mentioned
	E_40	Telephonic orders countersigned by consultant within 24 hours	21	Verification date and time not mentioned, Verification not done
	E_41	All discontinued drugs mentioned with date and time	310	Time of discontinuation not mentioned
	E_42	Author of the entry is identifiable (Name, Sign, id)	314	ID not mentioned, Signature not identifiable
	H_61	Intake Output chart	283	Grand Total Intake and Grand Total Output was not mentioned

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

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

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

Date and Time: Missing Entries (Jan-May 2021)

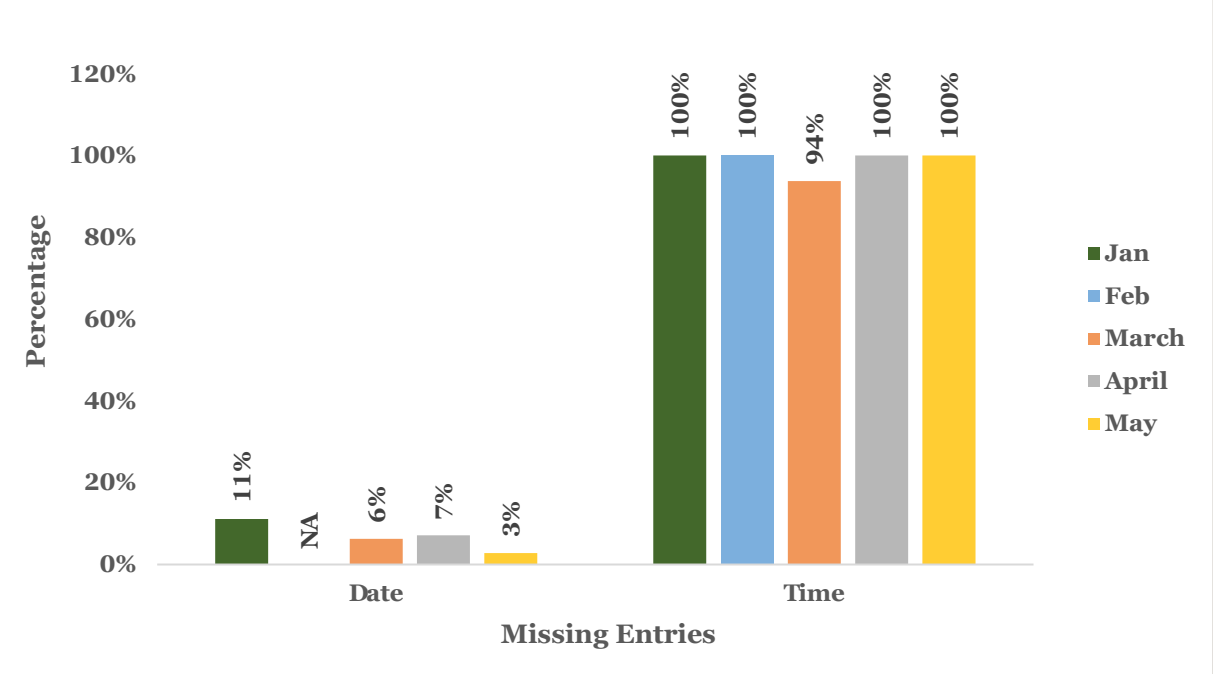


Fig 8.24. Date and Time: Percentage Distribution of Missing Entries (Jan-May 2021)

Countersigned by Consultant: Missing Entries (Jan-May 2021)

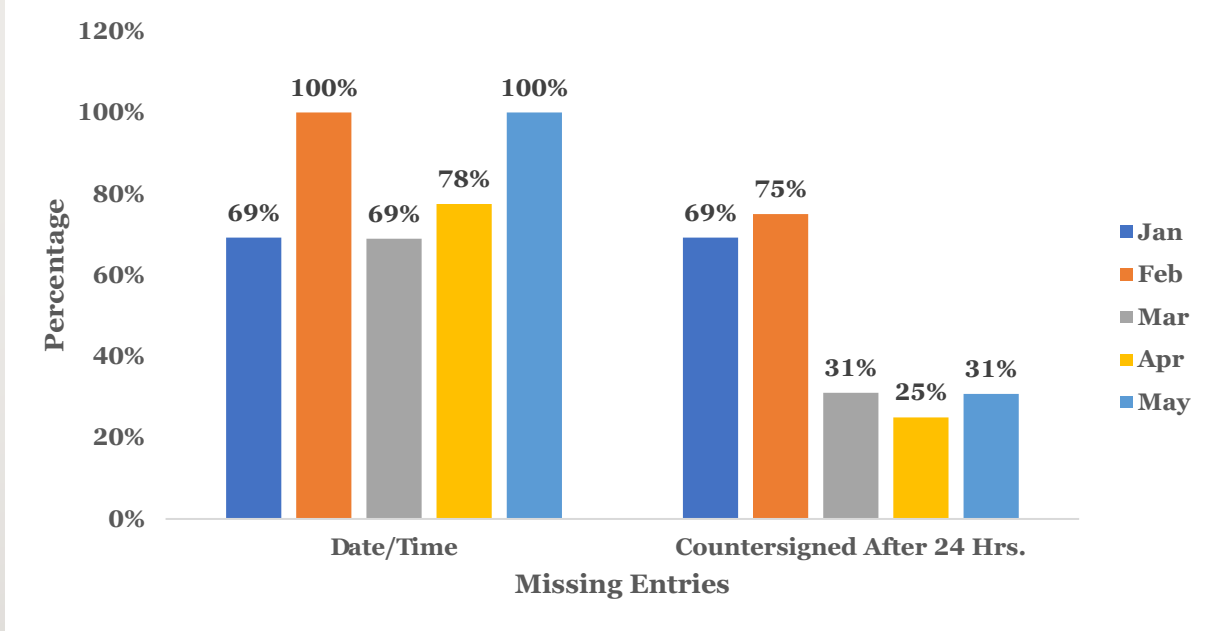


Fig 8.25. Countersigned by Consultant: Percentage Distribution of Missing Entries (Jan-May 2021)

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

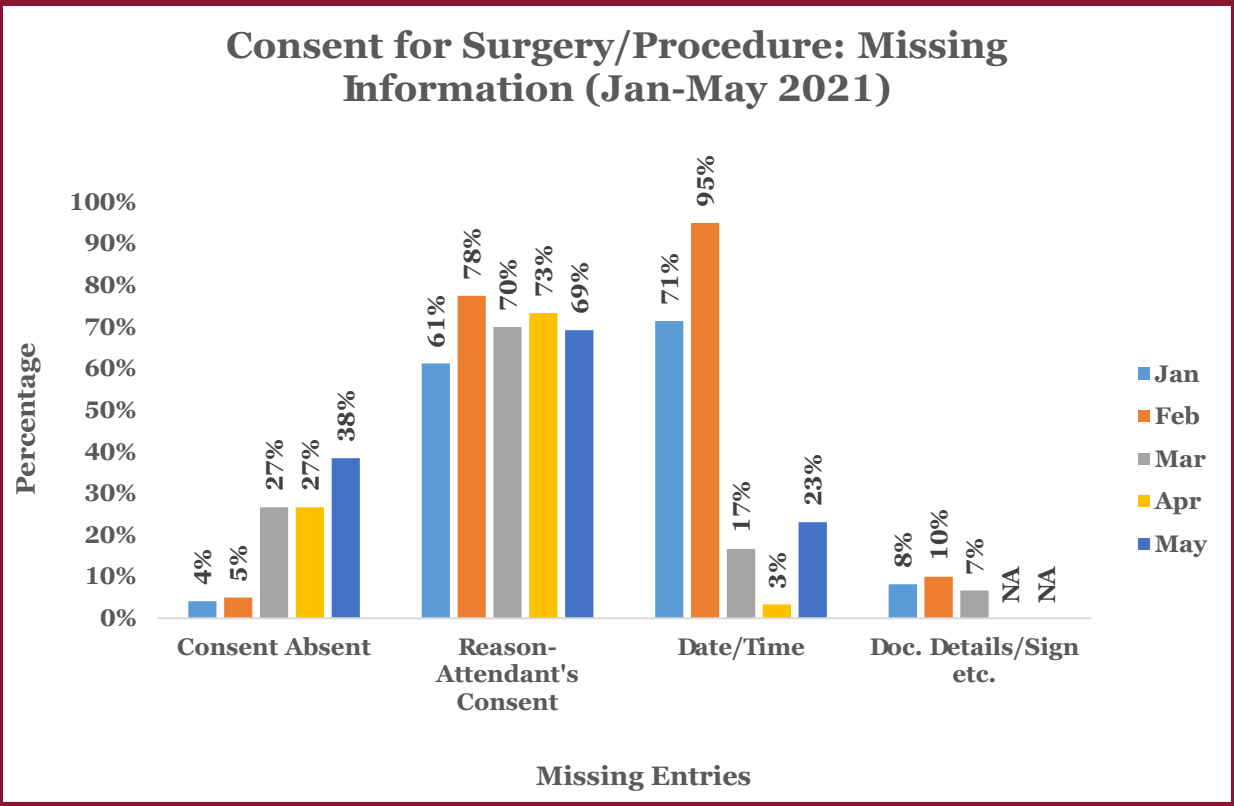


Fig 8.26. Consent for Surgery/Procedure: Percentage Distribution of Missing Entries (Jan-May 2021)

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

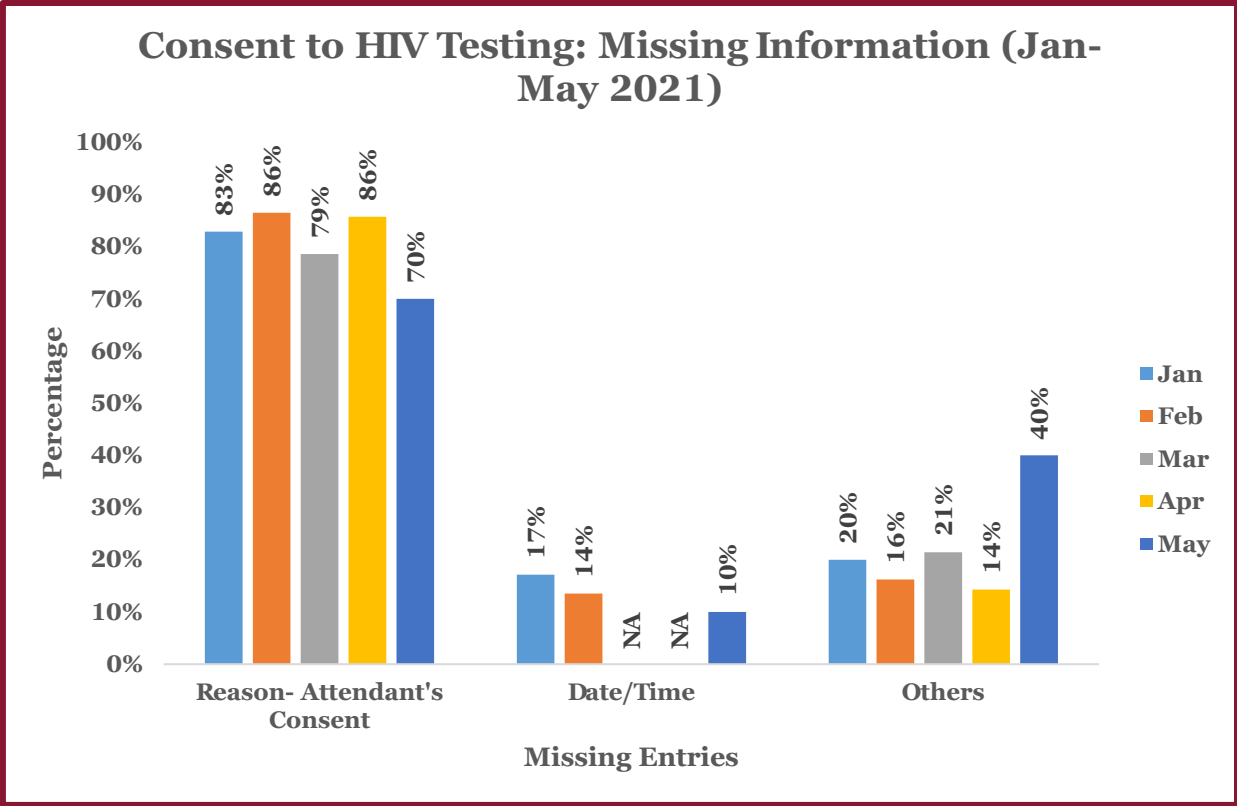


Fig 8.27. Consent for HIV Testing: Percentage Distribution of Missing Entries (Jan-May 2021)

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

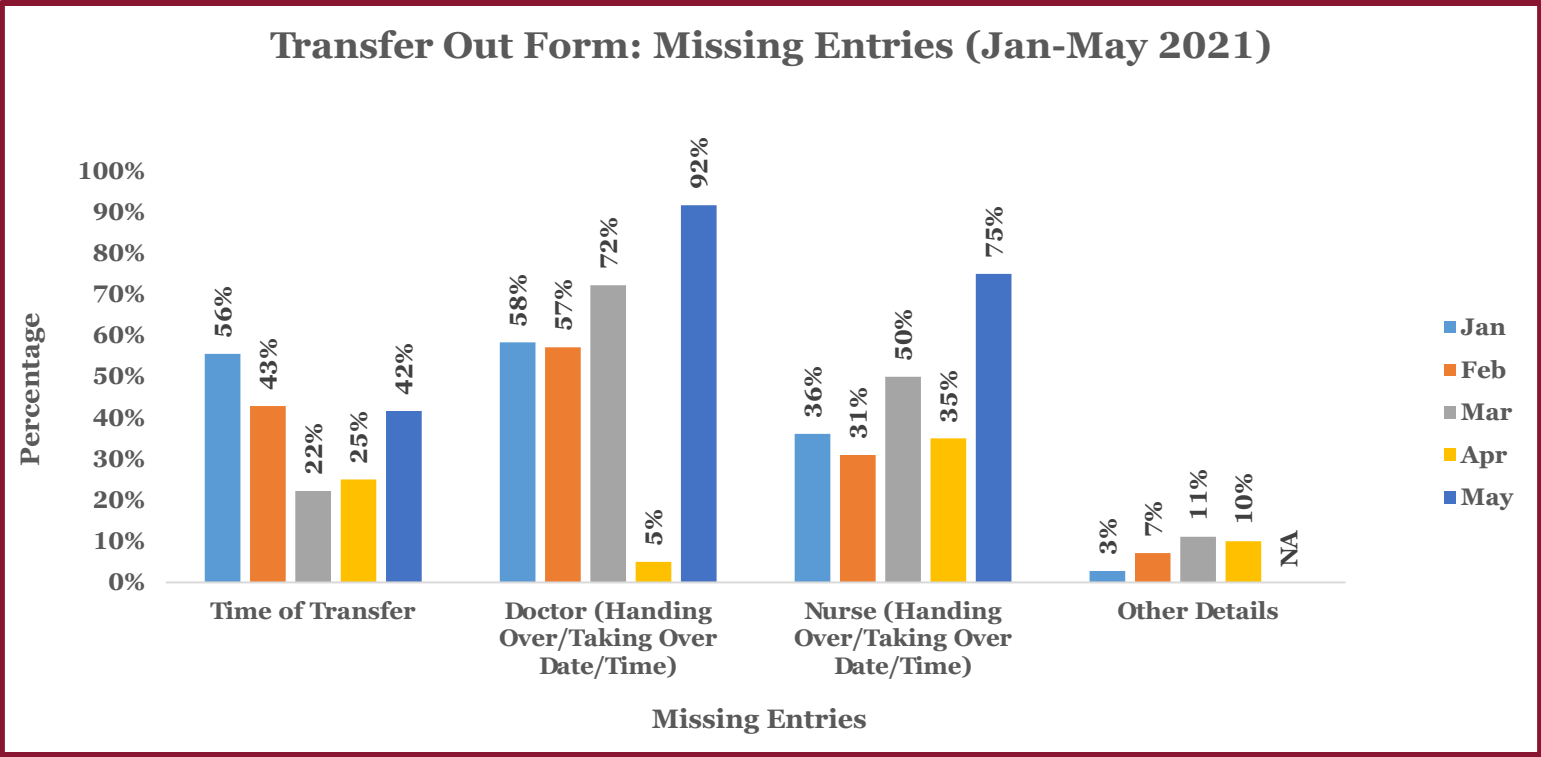


Fig 8.28. Transfer Out Forms: Percentage Distribution of Missing Entries (Jan-May 2021)

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

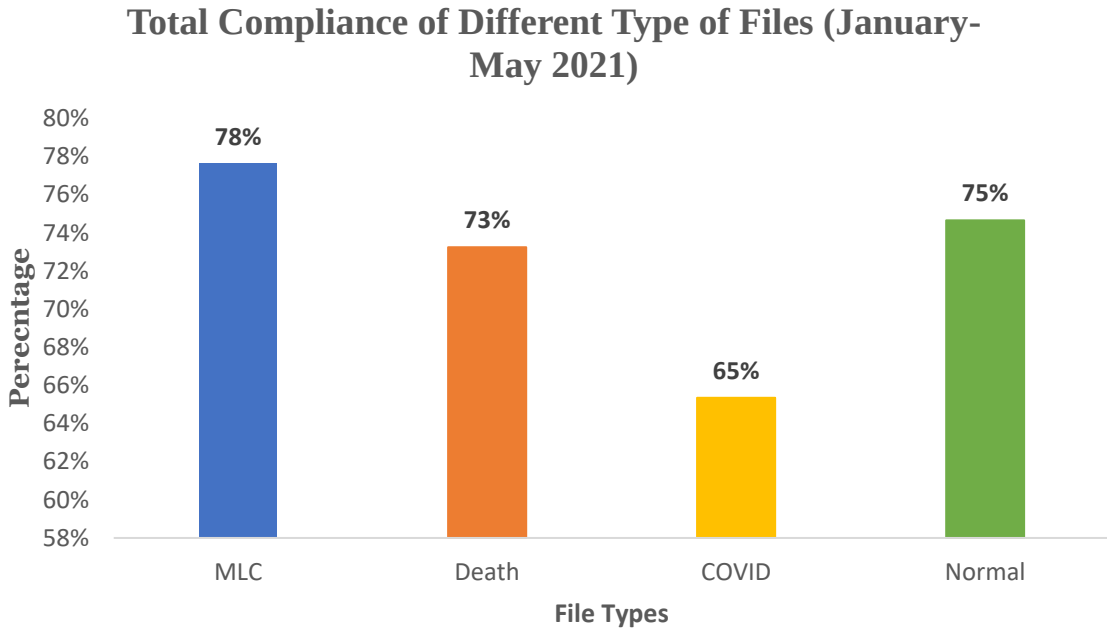
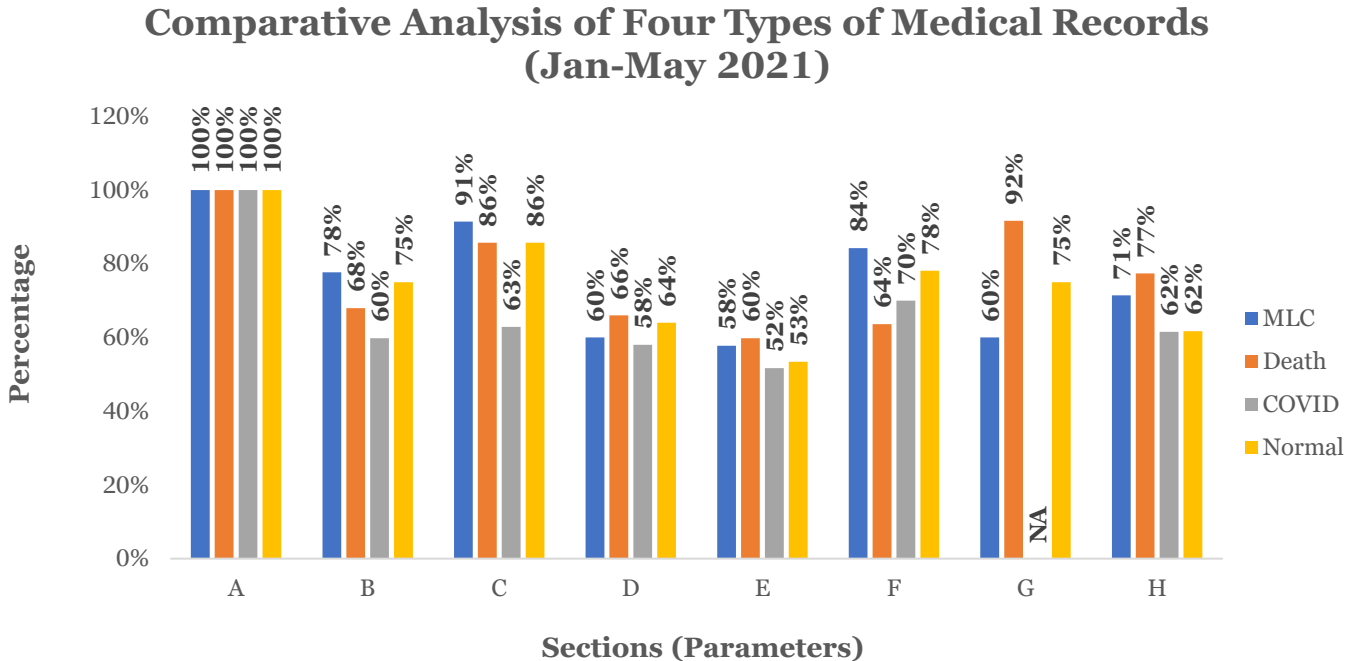


Fig 8.29. Total Compliance of Different Types of Files (Jan-May 2021)

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



DISCUSSION

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”.

STRENGTHS

- Its sample size to include 500 medical records covering a span of five months from January to May.
- Simple random sampling, so as to make the sample as generalizable as possible.
- Attempted to compare four different type of medical records, the medico-legal case files, the death files, COVID files, and normal inpatient files.
- Attempt has been made to document all the missing information for the important parameters

WEAKNESSES

- 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.
- 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.

CONCLUSION



RECOMEDATIONS

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RECOMMENDATIONS

Few 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.

THANK



YOU