

# Hospital Compliance with Clinical Documentation Standards: A Descriptive Study in two Iranian Teaching Hospitals

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## Abstract

**Background and Objectives:** Standard clinical documentation is an integral part of quality patient care. This study aimed to explore compliance of two Iranian teaching hospitals with the clinical documentation standards.

**Methods:** A total of 400 records were surveyed. Data were collected using a checklist of standard measures. The checklist comprised 15 items selected from relevant guidelines from either the American Health Information Management Association or Iranian Ministry of Health and Medical Education. Data were analyzed using descriptive statistics.

**Findings:** On average, 50.2% of medical records were provided in high compliance with standard measures, 26.4% in moderate compliance, and 23.4% in non-compliance. The average highest frequency of compliance with documentation standard was received by "Only blue ink is used for writing" (92%), followed by "Consent forms are completed" (79%) and "Highlighter pen or correction pen is avoided" (71%). The average lowest frequency of compliance with standards was identified for "Admission form is typed and inserted as first page" (0.5%) followed by "Unusable elements for patient are mentioned" (0.75%), and both "Error corrections (if any) are signed and dated by the editor." (2.52%), and "Cause of error reporting (if any) is mentioned." (2.52%).

**Conclusions:** Our results indicated an unsatisfactory level of compliance with clinical documentation standards in the studied hospitals. In addition, some of the lowest rated measures were related to documentation of errors in data recording and their subsequent correction, which can potentially lead to adverse patient outcome or legal consequences. Hence, our study provides further evidence for the urgency of developing strategies to improve commitment of Iranian hospitals to clinical documentation standards.

**Keywords:** Clinical Documentation Standards, Hospital, Patient Records

## Background and Objectives

Standard documentation of patient records is one of the critical aspects of quality healthcare and hospital accreditation [1]. The records of clinical data are the major guides for clinical decision making and provision of timely interventions for patients. These documents are also the most important reference frames in forensic medicine to protect patients' legal rights [2, 3]. In addition, the progress of medicine

as an evidence-based science is dependent on the availability of accurate patient records for use in research and scientific hypotheses [4]. These facts represent standard medical documentation as an extremely important requirement for providing safe and quality care to patients, and in a broader perspective, developing a robust clinical process [5].

Despite their importance, medical records are often incomplete [6-10]. Some of the deficiencies include lack of authors' identity information, incomplete coverage of patient care data [11], and inappropriate reporting of errors and their corrections. The most important factor in low quality documentation of clinical records is the lack of commitment to the standard measures [5]. Previous studies indicated that in Iran, many hospitals do not fully comply

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with the standard documentation criteria [12, 13]. The first step to address this challenge is to identify the most critical aspects of the problem. Built on that, this brief report presents the results of a retrospective survey of compliance with clinical documentation standards in two hospitals of the Fars Province, situated in southern Iran.

## Methods

This study was a descriptive retrospective study. The study population was medical records of patients admitted and discharged by two teaching hospitals of Jahrom University of Medical Sciences during January to April 2010. Four hundred sets of medical documents were randomly selected from historical records, surgical reports, and doctors' prescriptions. Data were collected using a checklist containing 15 measures of standard documentation. The measures were selected from the list of standard documentation criteria recommended by the American Health Information Management Association (AHIMA) and those administered by the Iranian Ministry of Health and Medical Education (MOHME). The compliance with measures was evaluated based on a three-point scale; a mean compliance with standards less than 50% was taken as "Non-compliance", between 50% to 80%, "Moderate Compliance", and higher than 80%, "High Compliance". Data were analyzed using SPSS Version 10.

## Results

Table 1 and Table 2 represent the level of compliance with documentation standards in Motahhari Hospital (A) and Peymanieh Hospital (B), respectively. The mean score of compliance with documentation standards in hospital A was 53.57%. In addition, in this hospital, 57% of the records showed high compliance with standards, 21.4% moderate compliance, and 26.9% non-compliance. The highest compliance score in hospital A was received by "Forms developed by Ministry of Health are used." (100%), followed by "Consent forms are completed." (98.4%) and "Only blue ink is used for writing" (97.2%). The lowest score was received by "Admission form is typed and inserted as the first page." (zero percent).

The mean score of compliance with documentation standards in hospital B was 51.69%. In addition, in this hospital, 49.5% of the records showed high compliance with standards, 25.5% moderate compliance, and 26% non-compliance. The highest compliance score in hospital B was received by "Records are signed by the author." (98.6%), followed by "Author's name is written below their signature" (92.7%) and "Signature verification rules are followed." (92.7%). The lowest score was received by "Forms developed by Ministry of Health are used." (zero percent).

Figure 3 compares mean ratings of compliance with standards in the studied hospitals. As seen

**Table 1 Compliance with Clinical Documentation Standards in Motahhari Hospital**

Standard Documentation Measures	Total Records	Non-compliance	%	Moderate Compliance	%	High Compliance	%
Records are signed by the author.	250	7	2.8	100	40	143	57.2
Author's name is written below their signature.	250	2	0.8	102	40.8	146	58.4
Signature verification rules are followed.	250	48	19.2	81	32.4	121	48.4
Only blue ink is used for writing.	250	0	0	7	2.8	243	97.2
Only a single item is included in each line.	250	6	2.4	81	32.4	163	65.2
Free spaces (if any) are marked up.	250	17	6.8	62	24.8	171	68.4
Unusable elements for the patient are mentioned.	250	248	99.2	0	0	2	0.8
Consent forms are completed.	250	3	1.2	1	0.4	246	98.4
Erroneous data (if any) are marked up.	168	86	51.1	20	11.9	62	36.9
Cause of error reporting (if any) is mentioned.	168	167	99.4	0	0	1	0.6
Error corrections (if any) are signed and dated by the editor.	168	161	95.9	5	3	2	1.1
Highlighter pen or correction pen is avoided.	168	12	7.1	1	0.6	155	92.3
Admission form is typed and inserted as the first page.	250	0	0	250	100	0	0
Forms developed by Ministry of Health are used.	250	0	0	0	0	250	100
Latin words are written correctly and completely.	250	43	17.2	79	31.6	128	51.2

**Table 2 Compliance with Clinical Documentation Standards in Peymanieh Hospital**

Standard Documentation Elements	Total Records	Non-compliance	%	Moderate Compliance	%	High Compliance	%
Records are signed by the author.	150	1	0.7	1	0.7	148	98.6
Author's name is written below their signature.	150	0	0	2	1.4	148	98.6
Signature verification rules are followed.	150	5	3.3	6	4	139	92.7
Only blue ink is used for writing.	150	12	8	13	8.7	125	83.3
Only a single item is included in each line.	150	6	4	15	10	129	86
Free spaces (if any) are marked up.	150	40	26.7	40	26.7	70	46.6
Unusable elements for the patient are mentioned.	150	147	98	2	1.3	1	0.7
Consent forms are completed.	150	26	17.3	54	36	70	46.7
Erroneous data (if any) are marked up.	70	8	11.4	5	7.1	57	81.5
Cause of error reporting (if any) is mentioned.	70	64	91.5	1	1.4	5	7.1
Error corrections (if any) are signed and dated by the editor.	70	61	87.1	5	7.1	4	5.8
Highlighter pen or correction pen is avoided.	150	13	8.6	67	44.7	70	46.7
Admission form is typed and inserted as the first page.	150	1	0.7	147	98	2	1.3
Forms developed by Ministry of Health are used.	150	1	0.7	149	99.3	0	0
Latin words are written correctly and completely.	150	14	9.4	65	43.3	71	47.3

"Only blue ink is used for writing." gained the highest mean rate, followed by "Consent forms are completed.", and "Highlighter pen or correction pen is avoided.". Conversely, factors such as "Admission form is typed and inserted as the first page.", "Unusable elements for the patient are mentioned.", "Cause of error reporting (if any) is mentioned.", and "Error corrections (if any) are signed and dated by the editor." were poorly complied with.

## Discussion

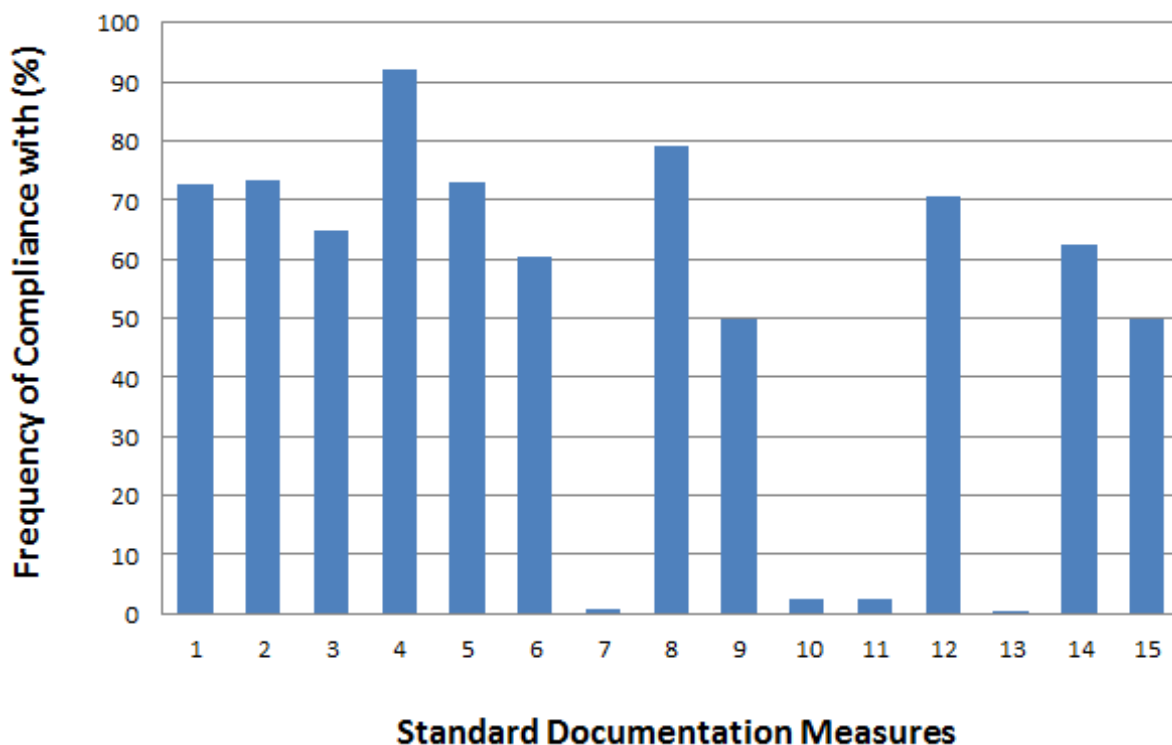
Compliance with clinical documentation standards is a crucial requirement to effective patient follow up and patient rights protection. Following the course of some previous studies, this study aimed to further explore the extent to which Iranian hospitals are committed to conforming to these standards. Results showed that in the studied hospitals, about half of the clinical documents were provided in high compliance with standards, leaving approximately one fourth with moderate compliance, and the same portion with non-compliance. This is evidently a weak record of hospital conformance with standard documentation measures. Our study revealed that the poorest compliance levels were related to documentation of errors and their modification; virtually, all records with error correction did not include the cause of error, date of modification, and the name

of the modifier. This can negatively affect patient follow up, create the risk of adverse outcome, and potentially lead to legal consequences for hospitals and their staff.

Only a single measure of clinical documentation standard was fully observed in over 80% of the documents ("Only blue ink is used for writing"). While hospital B showed a good score of inclusion of author information in clinical records, on average 30% of the documents were incomplete in this regard. Inclusion of the name and signature of the clinicians who are responsible for filling patient care records is essential for patient follow up, adhering to clinical procedures, and retrospective inquiry of medical errors [14]. The hospital administrators, therefore, need to place stronger emphasis on clinicians' commitment in providing their identity information in clinical documents.

Standard documentation implies reporting of clinical events in concrete phrases and abbreviations. In addition, clear definition of terms needs to be provided when necessary. In particular, Latin words are required to be spelled out correctly and written completely [12]. In this measure as well, the hospitals did not show an adequate level of conformance with the standards, leaving approximately half of the records vulnerable to error in reading and interpretation.

The two hospitals displayed different patterns of compliance with documentation standards. The major



**Figure 1** Mean frequency of compliance with clinical documentation standards. Variables: 1. Records are signed by the author. 2. Author's name is written below their signature. 3. Signature verification rules are followed. 4. Only blue ink is used for writing. 5. Only a single item is included in each line. 6. Only a single item is included in each line. 7. Free spaces (if any) are marked up. 8. Unusable elements for the patient are mentioned. 9. Consent forms are completed; Erroneous data (if any) are marked up. 10. Cause of error reporting (if any) is mentioned. 11. Error corrections (if any) are signed and dated by the editor. 12. Highlighter pen or correction pen is avoided. 13. Admission form is typed and inserted as the first page. 14. Forms developed by Ministry of Health are used. 15. Latin words are written correctly and completely.

difference was related to the use of standard clinical record sheets administered by MOHME. While hospital A was completely committed to the standard MOHME sheets, hospital B never used them. In addition, while consent forms were completed in virtually all cases in hospital A, the rate of completion was below half in Hospital B. In hospital A, use of highlighter or correction pen was very frequent, but hospital B showed higher compliance with the criterion. Moreover, clinical records in hospital B were by far more accurate in recording the authors' name and signature and following signature verification rules in comparison to hospital A. Other differences in pattern of compliance with documentation standards were comparable between the two hospitals.

Standard documentation of medical records requires that all relevant fields be completed [12]. Existence of blanks in the records can cause uncertainty in interpretation of data, and leaves the risk of their unrealistic completion in the future. Our results showed that on average, half of the documents were

not filled in completely. This can result in reduced confidence in reliability of the documents.

Overall, our results showed an unsatisfactory level of conformance to the clinical documentation standards in the studied hospitals. The level of compliance with standards in these hospitals was lower than that in hospitals of Ardabil University of Medical Sciences [12]. However, the pattern of compliance with standards was comparable between our study and the studies carried out in other Iranian teaching hospitals [13]. The low conformance of hospitals with clinical documentation standards calls for urgent investigation of causative factors followed by implementation of strategies to address the problem.

## Conclusions

This study explored the compliance with clinical documentation standards in two Iranian teaching hospitals. It was revealed that only half of the inquired standard measures are complied with in the hospitals, with a quarter of the measures moderately complied with and

another quarter totally ignored. In agreement with previous studies, our report indicates an unsatisfactory rate of hospital compliance with clinical documentation standards. The average rate of compliance was less than 80% for all but one measure. In particular, we found an extremely poor compliance with the standards of error reporting and modification, which can potentially lead to adverse outcomes and legal consequences. Therefore, our study provides further evidence for the urgency of developing strategies to improve commitment of Iranian hospitals to clinical documentation standards.

### Competing Interests

The authors declare no competing interests.

### Authors' Contributions

MH, SA, and AA jointly led the design, conduct and write-up of the study. MI contributed in data analysis. MPM collected the data and made a major contribution in data analysis and manuscript preparation. All authors read and approved the final manuscript.

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