

## Studying the Items of Morning Reports based on ISO 10015 Standard in Teaching Hospitals of Mashhad University of Medical Sciences, Iran

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### Abstract

**Background:** Morning reports, along with clinical rounds and practical tutorials are common, useful, and valuable procedures in clinical education. This method has standards that play an important role in helping the students in learning, when complete. The purpose of this study was to evaluate the effective items in morning reports of clinical wards of Mashhad University of Medical Sciences.

**Materials and Methods:** This cross-sectional study was conducted from October 2016 until January 2017 in teaching hospitals in Mashhad University of Medical Sciences. The questionnaire in this study included items evaluating morning report, based on ISO 10015 Standard, with confirmed reliability and validity. In this questionnaire, 36 items affecting the quality of a morning report were evaluated. The questionnaires were completed by attending the morning report sessions of 18 clinical sections in educational hospitals and examining existing profiles. The obtained data was analyzed by SPSS software version 16.

**Results:** The results of this study showed that mean time of starting the morning report was 7:54 AM. Percentage of attendance of professors was 50%, assistants 61.1%, interns 77.8%, and externs 77.8%. The case being reviewed was selected by assistant or chief assistant in 50% of cases based on common diseases; in 28% of cases, based on the patients' condition and according to the severity of the diseases, and in 22% based on the diseases mentioned in the course curriculum. Regarding effective environmental factors, the morning report was held away from the noise in 94.4% of cases, had a black/white board in 88.9%, data projector in 94.4% with mean room size of 70 m<sup>2</sup>. Mean number of cases introduced at each session was 2.6 cases. In each session, the first presenter was an intern in 77.8% of cases and extern in 22.2% of cases. In none of the sessions, professors of pharmacology or pathology were present and only in 16.7% of the sessions, radiology professors attended the sessions.

**Conclusion:** Morning report had a good condition in internal and surgical wards of teaching hospitals of Mashhad University of Medical Sciences, but is still far from standard conditions. Thus, serious measures should be taken to standardize the morning reports in teaching hospitals.

**Key Words:** Clinical Training, ISO 10015, Morning report, Teaching Hospital.

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## 1- INTRODUCTION

The morning report is used to describe the case-based conferences, where residents, interns, teachers and other medical learners gather in order to discuss a patient and clinical cases (1). The aim of morning report can be divided into 5 categories: 1. Education, 2. Assessing residents and quality of services, 3. Identifying and reporting adverse drug events, 4. Discussing non-medical items, such as moral and economic issues (cost-effectiveness of the treatment), and 5. Social interaction. Morning report, along with clinical rounds and practical tutorials are common, useful, and valuable procedures in clinical education and practical trainings, worldwide. The main applications of morning reports is to obtain a general view of the activities performed in the ward, analyze different dimensions of patients' diagnosis and therapy, evaluate residents' performance, evaluate services provided to patients, recognize undesirable events and the reasons, and the relations between medical staff.

Some mention the following roles as the main uses of the morning report:

- The morning report can be a mechanism for the department head to monitor the quality.
- Morning report can be an environment for assessing the clinical decisions taken by the assistants, by their colleagues.
- Morning report is considered a place for teaching the skills and leadership of chief assistants.
- Morning report is a daily opportunity for interns, assistants and professors to interact with each other and improve their relations for better patients' care and education (1-3).

The morning report is today considered as one of the most known methods for medical education (4). Morning report is a

training process, in which participants discuss patients and try to solve a diagnostic puzzle. Introducing a patient can include a brief discussion of each patient admitted last night, until a full introduction of a newly admitted patient with finding unusual and interesting findings (5). Morning report is used to describe case-based conferences, held by the attendance of the department head, professors, chief assistants, other assistants, and interns who were on duty the night before. The main applications of the morning report include: bringing a general view of the activities in the ward, analyzing different diagnostic and therapeutic dimensions of patients, assessing the performance of residents, assessing services provided to patients, recognition of undesirable events, their reasons, and interaction between the medical staff (3).

The morning report, is, on the other hand, a tool for evaluating clinical services, and ensure the quality. In a simultaneous study at several USA medical universities, half of the internal residents believed that half the doctors invited to the morning report session were a general practitioner; also, regarding treatment and care, "an interesting cases" were preferred than the review of a patient admitted the day before (6). Based on the results reported by Wenger and Shpiner on the morning reports at 124 Medical Schools (7), a new structure was suggested for improving the quality of morning report in 1993: **a)** To achieve a different result in early diagnosis, patients are followed up after discharge up to six months; **b)** Morning reports sessions should not be a place to blame and scare the students; **c)** During sessions, feedbacks are provided. Results of a study in the United States on 356 residents have suggested the following as the most important educational methods in morning reports, including: 1. Discussion on how to approach patient, diagnosis, and

treatment; 2. Presenting an article about the patient; 3. Reviewing board questions; 4. Distribution of handbooks; 5. Training on patient bedside; 6. Reviewing all the admitted patients. Morning report promote the basic knowledge, differential diagnosis skills, problem solving skills, and is considered as a tool for evaluating clinical services and a means to ensure quality. The results of evaluating the morning reports in internal wards of Tehran University of Medical Sciences also showed that the majority of structural indicators of morning reports had a significant relationship with the rate of interest, but no comprehensive and acceptable pattern was presented (8). Despite the wide use of morning reports, still, a pervasive pattern, accepted by all experts has not been provided. This method has standards that, when complete, play an important role in helping the students to learn. However, it seems the first step towards improving the quality of this kind of education, is knowing the current status of these reports, and identifying the strengths and weaknesses for reformation. The aim of this study was to evaluate the factors influencing the morning reports of Mashhad University of Medical Sciences, Iran.

## 2- MATERIALS AND METHODS

This cross-sectional study was conducted in teaching hospitals (Imam Reza, Ghaem, Ommolbanin, Ibn Sina, Kamyab, and Dr. Sheikh) of Mashhad University of Medical Sciences. The researchers attended morning reports at 18 clinical wards to check the quality of morning reports. The questionnaire in this study included items evaluating morning report, based on ISO 10015 Standard. ISO 10015 is an international auxiliary standard that integrates with the ISO 9001 standard, a quality management system implemented with human resources development approach in organizations to identify and improve the educational

process, which tries to provide more effective education in organization, resulting in efficacy of educational periods; today, the use of modern managerial methods in educational services centers has changed to an undeniable necessity and management of educational quality as the most important and pervasive method, able to provide suitable and new methods and models in such organizations and help educational service units in better delivery of quality and less costs, and hence, the need to create and deploy it as much as possible and the importance and position of educational quality has now changed to the dominant vision at organizations and educational centers (9).

This questionnaire has 36 items affecting the quality of a morning report. The validity of the questionnaire was estimated by 7 experts in medical education, health education, and community medicine and its reliability was assessed by a Cronbach's alpha of 0.83. Questionnaires were completed in person during the morning sessions in 18 clinical wards and assessment of items. The mentioned sessions were divided into 9 surgery and 9 internal wards: General Surgery (Ghaem and Imam Reza Hospitals), Obstetrics and Gynecology (Ghaem, Imam Reza, and Amolbinin Hospitals), orthopedic (Ghaem, Imam Reza, and Shahid Kamiyab Hospitals), internal (Ghaem and Imam Reza hospitals), pediatric (Ghaem, Imam Reza, and Dr. Sheikh Hospitals), Infectious (Imam Reza Hospital), Cardiac (Ghaem and Imam Reza Hospitals), psychiatry (Ibn Sina Hospital), ear, nose and throat (Ghaem Hospital).

The study method was as following: after coordinating with the head of the teaching hospitals and the director of the aforementioned wards, the researchers participated in the morning reports of these groups, and, after the completion of the sessions, the questionnaires were

completed with the assistance of a chief assistant, manager, educational expert, and secretary. Information was gathered as a whole and the obtained data were analyzed using SPSS software and appropriate tests. P-value was considered significant, when less than 0.05.

### 3- RESULTS

Morning report, along with clinical rounds and practical tutorials are common, useful, and valuable procedures in clinical education and practical trainings, worldwide. The main applications of morning reports is to obtain a general view of the activities performed in the ward, analyze different dimensions of patients' diagnosis and therapy, evaluate residents' performance, and services provided to patients, recognize undesirable events and the reasons, and the relations between medical staff. Morning report assessment results, according to ISO 10015 standard at 18 clinical wards of Mashhad University of Medical Sciences, are presented in **Table.1.**

As observed, the beginning time of 27.8% of reports was 7:30 AM and 61.1% started at 8:00 AM with mean of 7:54 AM. The number of faculty members present in 61.1% of cases were 4 or less, and in 38.9%, more than 4 up to 8 faculty members. The first presenter was an intern in 77.8% of cases and intern in 22.2%.

How to submit the report by the first person was short in 33.3% of cases, detailed in 44.4%, and with the differential diagnosis in 22.2% of cases. Patient selection for review in 50% of cases was performed by the assistant or chief assistant and based on common diseases, 27.8% based on the difficulty of the disease, and in 22% cases based on the diseases listed in the course curriculum. The time of selecting patients to report was morning in 61.1% cases and 38.9% in the night before. The mean number of cases reported was 2.6 cases.

The management mechanism was complaint-based in 16.7% of cases, case-based in 27.8% and 55.6% was based on both. In 77.8% of cases, medical ethics were considered and the students' responsibility towards patients were discussed. In 83.3%, a summary report was provided by professors during sessions. Involvement of educators in the discussion on the case was performed by assistants in 44.4%, interns in 38.9%, and only 16.7% in externs. The morning report was held away from the noise in 94.4% of cases, had a black/white board in 88.9%, data projector in 94.4% with mean room size of 70 m<sup>2</sup>. In none of the sessions, professors of pharmacology or pathology were present and only in 16.7% of the sessions, radiology professors attended the sessions.

**Table-1:** The results of the analysis of items assessing morning reports based on ISO 10015 Standard (among 18 wards of Mashhad University of Medical Sciences)

Variables	Status	Number	Percent
1. Morning reporting time	7:30	5	27.8
	8:00	11	61.1
	8:15	1	5.6
	8:30	1	5.6
2. The size of the morning sessions session hall (meter)	30	1	5.6
	50	4	22.2
	60	6	33.3
	80	2	11.1
	90	1	5.6
	100	1	5.6
	120	1	5.6

	200	2	11.1
3. Noisy meeting space	Yes	17	94.4
	No	1	5.6
4. The educational equipment includes blackboard and whiteboard	Yes	16	88.9
	No	2	11.1
5. Training facilities include projectors and video data	Yes	17	94.4
	No	1	5.6
6. Meetings according to previous schedule	Yes	17	94.4
	No	1	5.6
7. Timely attendance by professors	Yes	15	83.3
	No	3	16.7
8. The proper number of professors	1	2	11.1
	2	1	5.6
	3	4	22.2
	4	4	22.2
	5	2	11.1
	6	2	11.1
	7	2	11.1
	8	1	5.6
9. Perform the attendance of the professors	Yes	9	50
	No	9	50
10. The attendance of the assistants	Yes	11	61.1
	No	7	38.9
11. The attendance of the interns	Yes	14	77.8
	No	4	22.2
12. The attendance of the externs	Yes	14	77.8
	No	4	22.2
13. Manage meetings by professors	Yes	14	77.8
	No	4	22.2
14. Meetings are held responsible as speaker guides	Yes	14	77.8
	No	4	22.2
15. Manage time at meetings	Yes	13	72.2
	No	5	27.8
16. Report provider	Intern	4	22.2
	Extern	14	77.8
17. How to report	Brief	6	33.3
	Detailed	8	44.4
	Along with differential diagnosis	4	22.2
18. Observe writing on blackboard / whiteboard	Yes	9	50
	No	9	50
19. Patient selection by	On call Professor	4	22.2
	Another Professor	4	22.2
	Senior Resident	6	33.3
	Assistant Officer	4	22.2
20. Time to choose patients	Morning	11	61.1
	The night	7	38.9
21. Selection criteria for patients	The severity and severity of the disease	5	27.8
	Common cases	9	50
	Educational curriculum	4	22.2
22. Number of patients introduced	1	1	5.6
	2	8	44.4
	3	7	38.9
	4	1	5.6
	5	1	5.6
23. The process of delivering patients step by step	Yes	14	77.8
	No	4	22.2

24. A specific program for the presence of pathologists	Yes	0	0
	No	18	100
25. A specific program for the presence of pharmacologists	Yes	0	0
	No	18	100
26. A specific program for the presence of professors	Yes	3	16.7
	No	15	83.3
27. The management mechanism of the meetings	Complaint based	3	16.7
	Disease-based	5	27.8
	Both	10	55.6
28. Involve educators in the discussion	Assistants	8	44.4
	Interns	3	16.7
	Externs	7	38.9
29. The content of the discussion is proportional to the level of the learner	Yes	14	77.8
	No	4	22.2
30. Office of Evidence-Based Discussion	Yes	15	83.3
	No	3	16.7
31. Summing up the discussions by the professor	Yes	15	83.3
	No	3	16.7
32. Discussion of the responsibility and commitment of physicians	Yes	14	77.8
	No	4	22.2
33. Talk about how to communicate with patients	Yes	10	55.6
	No	8	44.4
34. Modification provided by the professor to the student introducing the case	Yes	15	83.3
	No	3	16.7
35. Assess, modify and guide the discussion by the professor	Yes	17	94.4
	No	1	5.6
36. Deliver productive feedback to the students	Yes	16	88.9
	No	2	11.1

#### 4- DISCUSSION

Morning reports is a conference, where medical team members (attend, resident, intern, extern, etc.) discuss patients admitted in the past 24 hours (10). Clinical training in healthcare environments are provided in different forms; morning reports are the cornerstone of internal medicine residents from years ago, formed by various groups of professors and students with different educational goals (11). When the morning report is conducted correctly, it provides a student-centered educational experience that links chief assistants with university professors and strengthens collaboration and creates a competition to develop sense of skill and trust. The morning report is a good tool for transferring the educational experience, which for inexperienced residents, is considered an important step in advancement to professionalism (12). In this study, educational sessions in the

morning reports (9 wards), and surgery wards (9 wards), affiliated to Mashhad University of Medical Sciences, were evaluated in terms of structure and content. Considering structure, in educational centers, affiliated to Mashhad University of Medical Sciences, in approximately 61.1% of cases, morning reports began at 8 AM that are consistent with the results of most other studies (13-16). Studies also reported sessions starting at 9 AM (17), middle of the day (16), and afternoon (3, 16). Responsibility for introducing the patient in the morning report sessions in our study were assigned to an intern in most cases (77.8%) that is slightly different from the rest of the world. Because in most studies conducted in this regard, usually assistants are responsible for introducing the patient (2, 13, 16, 17). Some articles also stated that the intern on duty is responsible for the introduction of patient during sessions (14, 17, 18).

Perhaps the introduction of a patient by interns in our country is because the assistants carry out heavy duties and this will reduce their burden of duty. On the other hand, if this task is handled by interns, it can enhance their experience in taking histories, and diagnostic skills, clinical decision-making, problem-solving, and create a sense of social interaction and strengthen their sense of responsibility. Patients selected to be introduced in the morning reports at Mashhad University of Medical Sciences were in most cases, common diseases (50%), and in 27.8% of cases were complicated and difficult cases. In other studies to introduce all admitted patients (3, 14, 19, 20), unusual and rare patients (14-17), common diseases, and interesting patients from the point of view of the presenter (18).

In the present study, about 3 patients were fully discussed in most sessions. Most studies have reported 2 to 3 patients (13, 18). Common types of morning reports were as follows:

1. Evidence-Based morning report (15 minutes) included the following steps: Search results: the chief assistant asks the report of the search results of 3 cases. The assistants report their findings. In preparing this report, the following factors were important: exact questions, short answers, quality of scientific evidence, evidence associated with patient's problem solving.

2. Reports of admissions: the team on duty prepares a list of hospitalized patients in terms of age, sex, chief complaint, and diagnosis and delivers it to the chief assistant. The chief assistant can handle this step in three ways: \*Asking specific questions about a specific patient in order to use educational moments and teachable tips. \*Paying attention to patients whose diagnosis is an example of the principles reviewed in previous morning report sessions. \*The chief assistant may ask a

resident on duty to report all admissions to participants.

3. Complete introduction of the patient (30 minutes): in this step, one to three patients are introduced. In this section, the emphasis is on clinical reasoning, rather than reviewing the memories. Thinking is used here; in general, at this stage, discussion on each patient leads to one or two searchable questions. The question that, when answered, is both necessary for patient care and the unknown or controversial group. Discussion may continue after the question raised. But at the end of the discussion, it becomes clear that the answer of questions should be searched, found, and be presented in the next meeting.

4. Introduction of the raised question: (5 minutes): in this step, the question that the assistant should look for and the results are reported in the next day. Questions should be completely clear for the assistant and everyone should agree with the question (19, 20). In the present study, the manager and director of the morning report session was a faculty member in most cases, and assistant in few cases.

According to conducted studies, the director of morning reports were a chief assistant (10, 12, 16, 19, 20) or a faculty member (3, 20). In our study, the main audience were not certain class of students, but according to the results of most studies, the main audience of the morning reports are assistants. In the present study, only in a few sessions, specialists from other disciplines attended (usually radiologists). While, according to other studies, in more than 70% of cases, experts from other disciplines, such as pharmacology and ethics experts attended sessions (3, 10). The presence of clinical pharmacists, dietitians, and radiologists in sessions seems to add to the richness of session content and improved therapeutic performance for patients.

Proposing a proper morning report:

1) Providing an environment for positive learning: Creating an opportunity for residents to learn, teach, the rest and nutrition section of the program;

2) Chief resident must schedule meetings, and support the presenter, if the number of participants is high. Ensuring the start, presence, and timely end of the meeting, and daily explanation of the goals is the responsibility of the chief resident. The learning goals should be predefined for each month (21-26).

3) Special morning reports for each patient (50 minutes): 10 minutes for evaluating the presenter with appropriate questions, 5 minutes for reviewing admitted patients admitted the night before, and discussing the causes of death and the results of autopsies, 35-45 minutes for introduction of patients, selected by the resident, and presenting articles related to the presented case with a pre-designed turn (27, 28).

4) Improving learning and its stability in participants' mind through decision making, questions and answers, discussion, and better results to solve similar problems (25).

5) To create a dynamic relationship (positive feedback) between participants and improve their assessment; taking notes should be avoided.

6) Self-education: resulting from encouraging regular study and more interest in searching information and increasing greater ability for better treatment (26- 28).

#### 4-1. Limitations of the study

The lack of examination of all clinical wards in hospitals was subject to limitations.

### 5- CONCLUSION

Morning report in internal and surgical wards was acceptable and close to the

standard conditions. But given the results and its distance from favorable conditions, it seems that drastic measures should be taken to standardize morning reports in the teaching hospitals and plan for inviting professors of other related fields to participate in morning reports.

**6- CONFLICT OF INTEREST:** None.

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