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**KEMPINSKI HOTEL CORVINUS
REGINA BALLROOM I.**

**Erzsébet tér 7-8, Budapest V.
Monday 10:00 – 18:15**

2.4. QUALITY IN HEALTHCARE

Session Chair: *Grace Brannan, Ohio University, College of Osteopathic Medicine, Athens, OH, USA*

16.55 A Study on the Structure of Educational Content for Healthcare Quality and Safety

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A Study on the Structure of Educational Content for Healthcare Quality and Safety

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Summary

Many hospitals are now introducing the Quality Management System (QMS) so as to ensure a high quality of healthcare service. Therefore, medical staff will have to acquire knowledge and master skills in QMS and healthcare safety. However, it may be difficult to develop an effective education system. The authors have considered the educational content for QMS and healthcare safety and we have proposed the creation of a table of the aforementioned content. Also, we have tried to utilize the table to confirm that carrying out education in QMS and healthcare safety in hospital A has been effective.

Keywords

Quality Management System (QMS), Education and Training for QMS, Education System, Healthcare Safety

1. Introduction

Hospitals offer a healthcare service through using teams of two or more professionals. It is necessary to establish a quality assurance system at the team in order to improve quality of healthcare. Therefore, many hospitals are introducing Quality Management System (QMS).

If the staff in a hospital does not have enough knowledge of QMS, it may be difficult for them to establish QMS. The staff will therefore need to acquire the knowledge and master the skills of QMS through education and training for QMS. Moreover, hospitals need to offer a safe healthcare service obviously. Safety is a key element of quality which hospitals attach great importance to. Therefore, healthcare safety and the prevention of accidents need to be emphasized in education and training for QMS.

However, it is difficult to develop an effective education system in hospitals. As a result, the staff lacks a good education and training. It is therefore necessary to consider the educational content for QMS and healthcare safety.

In this paper, we have discussed the educational content for QMS and healthcare safety in order to develop education system. Then we have proposed a table of the aforementioned content. Also, we have carried out the education and training for QMS and healthcare safety in hospital A by utilizing the table and we confirmed that this education was effective.

2. Investigating the Current Situation and Considering the Requirements of the Table of Educational Content

In order to understand the current problems regarding education in QMS and healthcare safety in hospitals, we have collected materials used in the past for education in QMS and healthcare safety in two hospitals that have introduced QMS, and we have investigated these in detail. Also, an interview about the past methods of education (for example, the details of measures taken to evaluate how well the staff was learning) was conducted with the nurse in charge of education. As a result, we were able to summarize the problems in current education in QMS and healthcare safety as follows:

- (1) There is very little education in QMS.
- (2) The education in healthcare safety is not continuous.
- (3) There is little education for staff except for newcomers.

We also considered the requirements of the table of educational content for solving these problems:

- (a) The educational content should cover knowledge and skills which can be extended into various forms of health care quality and safety measures.
- (b) The table can be utilized when any hospital plans and carries out education in QMS and healthcare safety, depending on the level of QMS which had already been applied in each case.
- (c) The education that each member of staff should be given needs to be made clear.

In order to solve problems (1) and (2), it will be necessary for each hospital to make a plan for education by ensuring that it covers the development of knowledge and skills which can be extended into every aspect of healthcare quality and safety. This is requirement (a). Moreover, if each hospital could plan the education in QMS and healthcare safety according to the state of QMS in each hospital, continuous education could be carried out. This is requirement (b). As a result, problem (2) may be solved. Furthermore, all staff who work in hospitals should be given an education which enables them to offer effective health care. It will therefore be necessary to be clear about what kind of education each person needs. This corresponds to the requirement (c). If requirement (c) can be satisfied, it will be possible to resolve problem (3).

3. Proposing the Table of Educational Content on Healthcare Quality and Safety

We considered the table of educational content on healthcare quality and safety according to the following steps:

Step 1: Investigating the Tasks of QMS and Safety Manager

In order to decide what educational content were needed for QMS and healthcare safety, we had to make the activities clear. As quality and safety managers were already working in the hospitals, we needed to make their tasks clear with reference to existing guidelines for healthcare activities.

Step 2: Considering Classification and the First Hierarchy of Educational Content

We considered which elements were necessary for carrying out the activities of Step 1 with reference to existing literature on QMS and healthcare safety. As a result, we considered 19 possible areas of educational content, which we called “the first hierarchy of educational content”.

Next, we considered the connection of the first hierarchy to the educational content. As a result, the first hierarchy was divided into four areas of educational content:

- 1) educational content related to the significance of QMS and healthcare safety,
- 2) educational content for each stage of the Plan-Do-Check-Act (PDCA) rotation cycle,
- 3) educational content in the PDCA rotation cycle,
- 4) educational content in offering safety healthcare service.

We called the aforementioned four areas of educational content “classification”. Then we arranged and classified the first hierarchy. The structure of the first hierarchy is shown in figure 1.

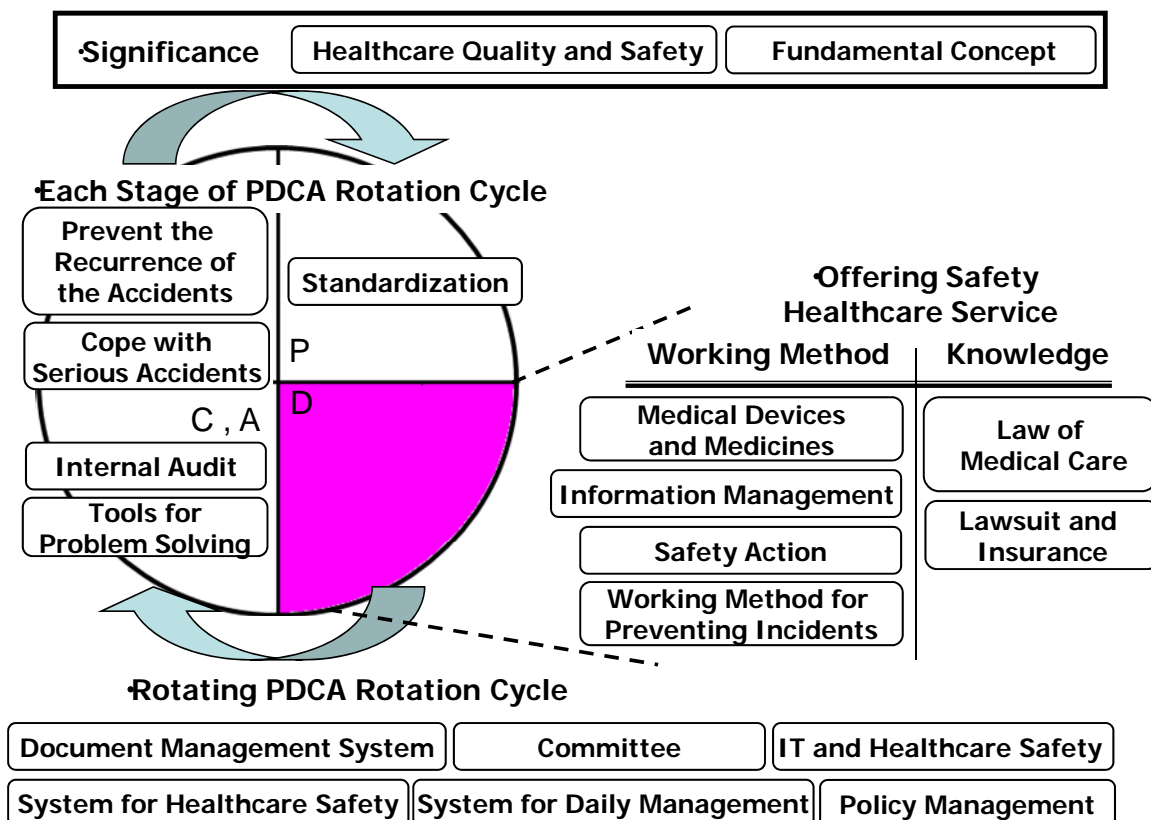


Figure 1: The structure of the first hierarchy

Step 3: Defining the Target People of the Education

The education that each member of staff should be getting will differ because the functions of QMS and healthcare safety that each staff needs to carry out will differ. We divided the target people of different types of education with regard to the functions of QMS and healthcare safety. After interviewing a healthcare quality and safety manager in hospital B, we understood that the functions of QMS and healthcare safety differ depending on the managerial position and committee that each member of staff is a member of. Therefore, we divided the target people of the education into four types: a) the general staff, b) the managers of each department, c) the committee on healthcare quality and safety, d) the healthcare quality and safety managers.

Step 4: Considering the Abilities of Each Target People to Acquire in Education

We considered the abilities that each target people should be able to acquire in education for QMS and healthcare safety, according to the functions considered in Step 3. Then, we arranged these abilities by a form of classification that was utilized as an arrangement standpoint of the first hierarchy in Step 2.

Step 5: Developing the Second Hierarchy of Educational Content and Detailed Content from the First Hierarchy

The first hierarchy of educational content considered in step 2 was abstract. Therefore, in considering concrete educational content, we considered the second hierarchy of educational content that has been developed in a concrete way from the first hierarchy and we considered detailed content that should be used in education in hospitals.

The processes of standardization, internal audit and daily management are carried out not only in hospitals but also in the industrial world. We considered the second hierarchy and the detailed content of the aforementioned processes with regard to the literature of QMS and the textbook for quality control in the industrial world. Ways of preventing the recurrences of accidents are very important in the medical service. We considered the second hierarchy and detailed content of these actions with regard to the textbook for healthcare safety, the educational content of healthcare safety and the results of analyzing the incidents in hospital A.

As a result, we considered 71 the second hierarchy of educational content and 236 detailed content.

Step 6: Considering the Relations between Educational Content and the Target People

It was necessary to clarify the educational content that each person should receive in order to effectively carry out the education of QMS and healthcare safety varies according to their managerial position and committee. Therefore, we considered the relationship between the detailed content that was considered in Step 5 and the target people of the education, which was divided into four types in Step 4. This result was shown by marking “●” in table 1.

According to the aforementioned Six Steps, we considered educational content, the target peoples and the relationship between content and the target people. Then, we arranged these results in an easy to view way in table 1 (next page). This is a table of educational content for healthcare quality and safety. We proposed table 1.

In table 1, we arranged the first hierarchy, the second hierarchy and the detailed content in order. The detailed content was the most concrete. Also, table 1 is shown as the result of relations between educational content and the target people of education. Thus hospitals would hopefully be able to carry out the suitable education that each member of staff should have had by utilizing table 1.

For example, in the case of carrying out the education of document management system for all staff, hospitals needed to choose the educational content for the significance of document management system marked “●” on all target people in table 1. If hospitals carry out education for managers, they need to choose the content for the concrete method of the document management system marked “●” on all the personnel except the general staff. Consequently, because hospitals will be able to plan concrete education for each member of staff by utilizing table 1, we concluded that problems (1)–(3) were solved.

Table 1: A table of educational content for healthcare quality and safety

Classification	First hierarchy	Second hierarchy	Detailed contents	Target people			
				General staffs	Manager of each department	Committee of healthcare quality/safety	Healthcare quality/safety manager
....				
Each stage of PDCA cycle	Prevent the recurrence of the accidents	Reports about incidents	Purpose of reports	●	●	●	●
			Method to write reports	●	●	●	●
			Method to turn in reports	●	●	●	●
		Method of incidents analysis	POAM	●	●	●	●
			RCA		●	●	●
			MedicalSAFER			●	●
		Method of countermeasures	Type of countermeasures	●	●	●	●
Error Proofing	●		●	●	●		
....				
Rotating PDCA cycle	Document Management System	Significance of document system	Significance of documentation	●	●	●	●
			Significance of document system	●	●	●	●
			Type of document	Regulations, manual	●	●	●
		Concrete method of document management system	Making a document		●	●	●
			Approval of a document		●	●	●
						
....				
Offering safety healthcare service	Medical devices and medicines	Significance	Significance of handling	●	●	●	●
			Type of medical devices (Ex. Risky devices and so on)	●	●	●	●
		Handle medical devices	Method to handle medical devices in a hospital ward	●	●	●	●
			Method to dump medical devices				●
....				

4. Verification

4.1 Confirming that Educational Content Cover All Necessary Content of Healthcare Quality and Safety

In order to confirm that requirement (a) was fulfilled, we asked 9 members of the medical staff who were working in 6 hospitals that had introduced QMS to discuss the suitability of educational content with regard to the education in their hospitals. Then, we interviewed them with regard to this result. Table 2 shows the number and the details that the 9 members of the medical staff indicated.

Table 2: The number and the details of indications for educational content

Indication category	Number	Details of indications
Addition	29	Anti-cancer drug should be included in the content of medicines.
	
Deletion	1	The content of infection control is not necessary.
Correction	7	The content of communication would be better divided between communication for medical staff and communication for patients.
	

A lot of the numbers indicate additions. However, most of the indications for addition are concerned with the addition of detailed content. There is no indication of how to handle the

addition and deletion of the first hierarchy. Furthermore, indications about correction will be solved not by correcting the educational content but by correcting the arrangement of educational content and altering the wording. Therefore, we concluded that educational content that is considered in this paper covers all the necessary content of healthcare quality and safety.

We discussed the necessity for addition and correction of educational content indicated by 9 members of the medical staff. Then we corrected part of the content. As a result, the second hierarchy included 74 types of content and the detailed content included 241 types of content.

4.2 Confirming the Effectiveness of an Education by Utilizing the Table of Educational Content

- Carrying Out an Education by Utilizing Table 1 -

We asked hospital A to plan and carry out education for QMS and healthcare safety by utilizing the table of educational content in order to confirm that each hospital can carry out effective education as in requirement (b). Table 3 is shown as a part of the education plan that a manager of healthcare quality and safety in hospital A planned.

Table 3: Education plan in hospital A (Partial)

Category	Educational content	Target Object	Date
Step1	1.KYT (Hazard Prediction Training)	Indispensable people are new comers and managers. Optional people are others.	18, 19, 25, 26 Jun. 2009
	2.Reports about incidents		11, 12, 25, 26 Jun. 2010
	3.Method of incidents analysis (POAM)		9, 10, 23, 24 Jul 2009
	4.Method of taking countermeasures (Error-Proof)		1, 3, 22, 23 Jul 2010
Step2	1.Standardization (Process Flow Chart)	People who received all education of Step1.	20, 21 Aug. 2009
	2.Method of incidents analysis (POAM)		26, 28 Aug. 2010
	3.Document Management System		27, 28 Aug. 2009
			16, 17 Sep. 2010
			7, 8, Dec. 2010
			17, 18 Dec. 2010
			13, 14 Jan. 2011

A manager of healthcare quality and safety in hospital A chose the educational content that hospital A should attach great importance to by utilizing table 1 according to the state of the activities in QMS and healthcare safety. The manager planned the education plan as table 3. For example, in case of education for reports about incidents, the usual form of education in hospital A only included ways to input incident data into a computer. However, in hospital A, the number of reports of incidents for submission was small. Furthermore, the submitted reports were often lacking in important information. The manager decided that both the content of the purposes of reports about incidents and the content of the way to write reports should be included in the education carried out in hospital A. Therefore, the manager included these content elements in the education plan as can be seen in table 3.

The education was carried out according to table 3 plan in hospital A. The education of step1 has carried out for 2 years. More over 150 staffs in all participated in each education of step1. The education of step2 started in 2010. About 70 staffs participated in each education of step2. Hospital A has continued carrying out both step1 and step2.

In order to confirm the effect of education carried out in hospital A, we carried out a questionnaire about a significance of each education in step1 to the staff participated in

education of step1. The answers would be given on a five-points scale. Score 5 means “significance” and score 1 means “no-significance”. The result of a questionnaire is shown in figure 2.

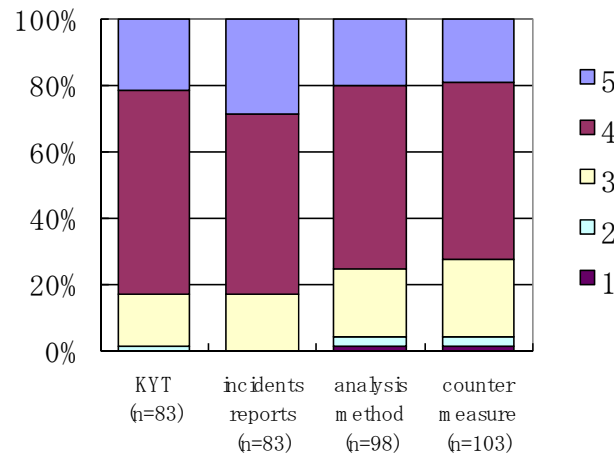


Figure 2: The result of a questionnaire about a significance of each education in step1

About 80 % of staff answered very significance or significance. Therefore, we confirmed that the education that was carried out in hospital A by utilizing table 1 was effective.

5. Discussion

In this study, we have considered the first hierarchy of educational content with regard to the activities of healthcare quality and safety. Then, we considered the detailed content of education for healthcare quality and safety from the first hierarchy. In the table of educational content, we arranged the first hierarchy, the second hierarchy and the detailed content in order. By utilizing table 1, each hospital can choose educational content according to the state of the activities of healthcare quality and safety because the relation between the activities of healthcare quality and safety and concrete educational content is clear. Each hospital can attach great importance to education by improving current solutions to problems regarding activities such as those of hospital A in chapter 4.2. Therefore, the requirement (b) is fulfilled by table 1.

In this study, we divided the target people into 4 types according to the functions of QMS and healthcare safety. Then we considered the relationship between educational content and the target people of the education. As a result, the education that each target people should receive is made clear. If hospitals carry out education functionally, they need to choose necessary content from the content that corresponds to each target by marking “●”. Furthermore, hospitals can carry out education for all staff if they choose the educational content that corresponds to all target people by marking “●”. Therefore, it is easily possible for hospitals to carry out education according to the type of education needed.

6. Conclusion and Future Issues

In this paper, we proposed a table of educational content for healthcare quality and safety in order to develop an educational system. Then, the education in healthcare quality and safety was carried out in hospital A by utilizing the table and we confirmed that this education was effective.

We will be considering two issues in future research: (1) verification of the appropriateness of the relationship between educational content and the target people of education for requirement (c), and (2) a consideration of how to place educational content in order.

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