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Risk management in hospital settings: understanding and improving the current practice

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Abstract

In the healthcare industry, a large number of patients experience adverse events. To ensure patient safety, risk management has been implemented in hospitals. However, there is still a great potential to improve current risk management practices. Thus, this study aims to understand risk management practices applied in hospital settings and gives some suggestions to improve them. While a questionnaire survey was designed to understand current risk management applications, risk management literature was reviewed to understand and to improve these risk management applications. Results demonstrate that over 70 percent of practitioners and managers consider risk management as defining threats to patients while fewer agree on the ISO definition of risk. Additionally, almost half of the practitioners and managers agree with the statement that risk assessment is more important than risk mitigation. In terms of tools use, participants mostly used Failure Mode and Effect Analysis (FMEA), brainstorming and risk matrix techniques to manage risks. In light of the questionnaire results and literature review, risk management practices could be advanced by focusing on safety culture, staff involvement, safety training, risk reporting systems and risk management tools.

Keywords: Risk; risk management; patient safety; healthcare

1. Introduction

The Healthcare system is complex and dynamic. Additionally, healthcare staff is highly pressured. Therefore, patient safety is difficult to ensure (Jun, Ward, & Clarkson, 2010). It is estimated that 850000 medical errors occur annually in the UK healthcare services (P. J. Clarkson et al., 2004) and 400 patients die or seriously get injured annually as a result of these errors (Donaldson, 2002). What is more, the total number of patients experiencing adverse events in each year is estimated to be around 42500 in England and Wales (Smith, 2007) and over a million in the USA (Kohn, Corrigan, & Donaldson, 2000; Starfield, 2000). Also, a research claims that these patient safety problems are not only in the USA and UK, but also all over the world (P. J. Clarkson et al., 2004).

Since the Institute of Medicine report in 2000, healthcare organizations have been encouraged to learn from incidents, to develop a safety culture and to improve their risk management practices (Cagliano, Grimaldi, & Rafele, 2011; Sokol & Neerukonda, 2013). To achieve this, healthcare organizations have adopted engineering approaches from safety-critical industries (P John Clarkson et al., 2004). Risk management is one of these engineering applications that the healthcare industry has been adapted to ensure patient safety. While the initial focus on risk management was on financial issues as a result of healthcare insurance crisis in the USA, this understanding then moved to safety and quality issues (Dückers et al., 2009; Youngberg, 2011).

Risk management has been partially implemented in hospital settings because of limitations. Some researchers addressed gaps in risk management processes, such as risk identification (Simsekler, Card, Ward, & Clarkson, 2015; Simsekler, Card, Ruggeri, Ward, & Clarkson, 2015) and risk mitigation (Card, Simsekler, Clark, Ward, & Clarkson, 2014). However, there is little evidence found on the practical application of risk management and different levels understanding on that. Therefore, this study attempts to understand managers' and practitioners' perceptions and their implications, and to suggest potential improvement areas within current risk management practices.

2. Method

To understand practical and theoretical applications, this study conducted a questionnaire and reviewed risk management literature. The questionnaire was designed to analyze practitioners' and managers' understanding of risk management applications. The questionnaire was aimed to be short to overcome time constraints in healthcare. Thus, the questionnaire consisted of 10 multiple-choice questions *(Please see appendix 1 for the questionnaire template)*. An online survey tool was used to set up questionnaire electronically and then, survey link was posted through LinkedIn groups (e.g. doctors, managers, risk managers and patient safety groups). The questionnaire was also conducted in person in a hospital setting. Data were collected via online (170 responses) and in-person (20 responses). Results were received from a variety of countries, namely USA (68), UK (42) and other countries (80). Then, collected data were categorized based on respondents' positions to observe different perceptions between managers and practitioners. Finally, data were analyzed to explain and improve current risk management practices.

3. Results

The following sections of this paper highlight questionnaire results. The results are divided into three sections: understanding of risk and risk management, risk management strategy and use of risk management tools.

Understanding of risk and risk management

Figure 1a and 1b demonstrate participants' results of the risk and risk management related questions. While 64 percent of the practitioners agreed (strongly agree and agree) with the ISO 31000 definition of risk, "the effect of uncertainty on objectives", 73 percent of the practitioners agreed that risk management is about identifying possible threats to patients (see in figure 1b). Practitioners confirmed a more comprehensive understanding of risk as in the ISO definition, yet still more practitioners agreed on a specific focus: "risk management is about identifying possible threats to patients". Same perception was observed among managers that they agreed on the ISO definition by 71 percent and more on the understanding of risk management by 78 percent.

After analyzing data based on respondents' location, it was recognized that there is a contrast between the US and UK results. To give more detail, UK practitioners agreed with 100 percent on the risk management definition more than UK managers did (78 percent). However, US trend was similar to the overall results. Managers agreed (95 percent) with the statement more than practitioners did (65 percent).

'Risk is the effect of uncertainty on objectives'

Figure 1a: Risk definition

'Risk management identifies possible threats to patients'

Figure 1b Risk management definition

Risk management strategy

A following question was asked: "to what extend do you agree that risk assessment is more important than risk mitigation?" to understand respondents' priority. While 47 percent of practitioners considered risk assessment as being more important than risk mitigation, 44 percent of managers agreed with the same statement. Although it is arguable that which of these should be a priority, risk management priority should be more likely to reduce risks. When results were compared based on locations, again similar responses received from different countries except UK managers and practitioners agreeing slightly more. Figure 2 below illustrates the overall responses to the given statement.

'Risk assessment is more important than risk mitigation'

Figure 2 Risk management strategy

Use of the risk management techniques

This study also asked respondents which techniques they use for risk management applications. Results revealed that Failure Mode Effect Analysis (FMEA) was the most commonly used tool. Then, the risk matrix and brainstorming were used (see figure 3). Most importantly, results found that practitioners rarely use tools, except brainstorming and what-if techniques. However, it should be noted that using a large number of tools does not

necessarily mean a good practice of risk management. Risk management tools should be used when it is necessary and where it is proper.
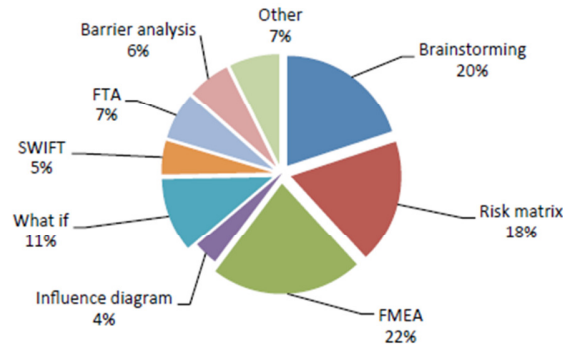

Figure 3 Risk assessment techniques used by respondents

4. Discussion

There was slight difference on a general understanding of risk and risk management between managers and practitioners. Also, it was found that healthcare staff has a priority on risk assessment rather than risk mitigation. This may be as a result of external authorities encouragement on risk assessment. Therefore, a common understanding of *how many risks assessed that much better risk management* could have been developed among healthcare staff. However, the ideal risk assessment is to mitigate risks. Hence, balancing these two should be aimed to achieve effective risk management practices. Not surprisingly, managers are more likely to use risk management techniques than practitioners, which means that front line staff is not really involved in the risk management practices. Within these tools, FMEA is the most commonly used technique. This can be explained with the development of Healthcare Failure Mode and Effect Analysis (HFMEA) by the Department of Veterans Affairs (DeRosier, Stalhandske, Bagian, & Nudell, 2002) and an enormous number of publications available in the literature (Lu, Teng, Zhou, Wen, & Bi, 2013; Manger, Paxton, Pawlicki, & Kim, 2015; Perks, Stanic, Stern, & et al., 2012; Shebl, Franklin, & Barber, 2012). When results are analyzed based on respondent locations, it has seen that UK respondents demonstrate different patterns than other countries. Different results among countries could be explained by different healthcare systems and by national authorities different level of influences on healthcare organizations.

In order to improve risk management practices, some suggestions can be given such as developing safety culture (Al-Assaf, Bumpus, Carter, & Dixon, 2003), encouraging staff involvement into risk management practices (Khatri, Brown, & Hicks, 2009), providing safety training (Mackert, Ball, & Lopez, 2011) and encouraging use of risk management reporting systems and tools.

While safety culture is a key point to encourage all healthcare staff involvement in risk management, blaming is the major handicap to implement that (P. J. Clarkson et al., 2004; Muralidhar, Taneja, & Ramesh, 2012). Healthcare staff should not be afraid of making errors and team members should recover each other's errors when they occur. This understanding is well established in the aviation industry. Cabin crew make many mistakes during flights, but anyone who realizes the mistake, solves the problem (Firth-Cozens, 2001). So, crew teams prevent mistakes before they lead to adverse events. It should be also noted that while poor team work increases the number of errors, good teams reduce the errors by helping each other and correcting each other's mistakes (Lester & Tritter, 2001; Wiegmann, ElBardissi, Dearani, Daly, & Sundt, 2007).

Ensuring safety training is also an essential factor that could improve risk management practice, especially for practitioners (Mackert et al., 2011). A research asked 40 practitioners whether or not they have been trained on risk management or patient safety and results revealed that none were trained (Arfanis & Smith, 2012). However, all practitioners are expected to register risks in their local risk register systems. Therefore, healthcare organizations should provide training to healthcare staff to support their role in the risk management practice. Also, external

authorities should create safety training regulations to encourage healthcare organizations to provide effective training.

Reporting systems of the incidents or risks have also potential to improve current practice (Barach & Small, 2000). Incident reporting is one of the main sources to define risk. However, it is estimated that only between 22-83 percent of incidents are reported (Parkes, Pyer, Wray, & Taylor, 2014; Pietro, 2000). Since the gap between the estimated incident reports is really high, it already implies that there is a problem in the reporting culture. Therefore, effective reporting should be encouraged to improve risk management practices by feeding risk management with lessons learnt from incident experiences. However, it should be stated that a large number of insufficiently reported incidents cannot contribute to the risk management process. A low rate of reporting is also a problem as well as the high rate of reporting, which hides problems to be solved (Macrae, 2008). Therefore a more effective balance should be achieved between reporting too many and too few to management risks.

There are a variety of risk management tools are to prevent incidents, to mitigate risks, and to ensure safety. However, this study found that practitioners do not have the tendency to use risk assessment tools. Some underlying reasons for this lack of implementation can be explained by healthcare staff time allowance, staff knowledge levels and staff fears of being exposed for their mistakes (Carroll, 2009; Eidesen, Sollid, & Aven, 2009; Spedding & Rose, 2008). Another point is that hospitals have a static system that uses the same risk assessment tool for all types of risks and with all processes, which sometimes is not adequate. Still, healthcare organizations benefit from risk management tools through the proper use and right selection of the risk assessment techniques (e.g. FMEA, FTA, ETA, and HRA) by the involvement of staff at all levels.

Some limitations of this research should be also mentioned. Characteristics of the risk management practice may differ from one country to another. Different hospital types or even different hospital wards may have different levels of risk management understanding. Therefore, the same risk management practices may not be as effective. Additionally, questionnaires may be biased by the fact that respondents could have tried to provide correct answers rather than revealing their real experiences and knowledge. However, this study gives an overview of the risk management practices by highlighting general issues.

5. Conclusion

Risk management is a way to ensure patient safety by preventing adverse events, but current risk management practice has not properly implemented yet. Some of the problems observed with this study can be given: having different perceptions of risk management, healthcare staff giving a priority on risk assessment rather than risk mitigation and lack of risk management tools use especially by practitioners. However, there is a great potential to improve risk management practices. Some interventions could be suggested such as safety culture, staff training and the proper use of risk management tools. Further research can be conducted to implement suggested interventions in a hospital setting.

Acknowledgments

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Appendix 1

This questionnaire aims to understand and develop healthcare risk management practices and strategies in hospital settings.

Your answers will help to understand the current situation of risk management in hospital environment.

Position in the hospital/ country:

To what extent to you agree with the following statements:

1) Risk is the effect of uncertainty on objectives

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

2) Risk management is about identifying possible threats to patients

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

3) Risk management involves ensuring that the hospital works efficiently

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

4) Risk management aims to ensure that the healthcare provided is good value for money.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

5) Identifying a large number of risks makes the system safer and better.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

6) Risk assessment is more important than risk mitigation.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

7) Risk is efficiently managed in my organisation.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

Could you please answer the following questions?

8) When thinking about risk, my primary focus is on the needs of:

☐ An individual patient ☐ A group of patients (e.g. ward) ☐ The hospital as a whole ☐ The local community ☐ The NHS ☐ Other

If other, could you please specify?

[   ]

9) Which technique do you use for risk management

☐ Brainstorming   ☐ FMEA   ☐ What If   ☐ FTA

☐ Likelihood Impact Grid (Risk Matrix)   ☐ Influence Diagram   ☐ SWIFT   ☐ Barrier Analysis

10) When tracking risks, I formally review risks at a frequency of:

☐ Once per day   ☐ Once per week   ☐ Once per month   ☐ Once per year

☐ Every few days   ☐ Every few weeks   ☐ Every few months   ☐ Every few years

☐ Other

If other, could you please specify?

☐

Email address (Optional) :

☐ If you would like a summary of the *results*, *please* tick the box by providing *your email address*.

Thank you for participating in our questionnaire.