Understanding and Improving Current Risk Management Practices in Hospital Settings

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ABSTRACT

A large number of patients in the healthcare industry have adverse events. Risk management has been implemented in hospitals to ensure patient safety. However, there is still a lot of room for improvement in current risk management practices. As a result, the purpose of this research is to better understand risk management practices in hospital settings and to make recommendations to improve them. While a questionnaire survey was created to understand current risk management applications, risk management literature was reviewed in order to comprehend and improve these risk management applications. The findings show that over 70% of practitioners and managers regard risk management as defining threats to patients, while only a minority agree on the ISO definition of risk. Furthermore, nearly half of practitioners and managers agree that risk assessment is more important than risk mitigation. To manage risks, participants mostly used Failure Mode and Effect Analysis (FMEA), brainstorming, and risk matrix techniques. Based on the results of the questionnaire and the literature review, risk management practices could be advanced by emphasizing safety culture, staff involvement, safety training, risk reporting systems, and risk management tools.

KEYWORDS: risk management, patient safety, and healthcare.

ARTICLE DETAILS

1. INTRODUCTION

The healthcare system is complex and ever-changing. Furthermore, healthcare workers are under a lot of stress. As a result, ensuring patient safety is difficult (Jun, Ward, & Clarkson, 2010). It is estimated that 850000 medical errors occur each year in the UK healthcare system (P. J. Clarkson et al., 2004), with 400 patients dying or being seriously injured as a result of these errors (Donaldson, 2002). Furthermore, the total number of patients experiencing adverse events in England and Wales each year is estimated to be around 42500 (Smith, 2007) and over a million in the United States (Kohn, Corrigan, & Donaldson, 2000; Starfield, 2000). Furthermore, a study claims that these patient safety issues exist not only in the United States and the United Kingdom, but all over the world (P. J. Clarkson et al., 2004).

Since the publication of the Institute of Medicine report in 2000, healthcare organizations have been encouraged to learn from incidents, create a safety culture, and improve their risk management practices (Cagliano, Grimaldi, & Rafele, 2011; Sokol & Neerukonda, 2013). Healthcare organizations have adopted engineering approaches from safety-critical industries to accomplish this (P John Clarkson et al., 2004). One of these engineering applications that the healthcare industry has adapted to ensure patient safety is risk management. While the initial emphasis on risk management was on financial issues as a result of the healthcare insurance crisis in the United States, this understanding has since shifted to safety and quality concerns (Dückers et al., 2009; Youngberg, 2011).

Due to resource constraints, risk management has only been partially implemented in hospital settings. 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 (Simsekler, Card, Ruggeri, Ward, & Clarkson,

2015). (Card, Simsekler, Clark, Ward, & Clarkson, 2014). However, there is little evidence on the practical application of risk management and varying levels of understanding. As a result, this study seeks to comprehend managers' and practitioners' perceptions and their implications, as well as to identify potential areas for improvement in current risk management practices.

2. METHOD

This study used a questionnaire and reviewed risk management literature to better understand practical and theoretical applications. The purpose of the questionnaire was to assess practitioners' and managers' understanding of risk management applications. The questionnaire was designed to be brief in order to accommodate time constraints in healthcare. As a result, the questionnaire contained ten multiple-choice questions (Please see appendix 1 for the questionnaire template).

An online survey tool was used to create the questionnaire electronically, and the survey link was then distributed via LinkedIn groups (e.g. doctors, managers, risk managers and patient safety groups). The questionnaire was also administered in person at a hospital. Data was gathered both online (170 responses) and in-person (20 responses). Results were received from a variety of countries, including the United States (68), the United Kingdom (42) and others (80). The collected data was then classified based on the positions of the respondents in order to observe differences in perceptions between managers and practitioners. Finally, data was analyzed in order to better understand and improve current risk management practices.

3. RESULTS

The sections of this paper that follow highlight the questionnaire results. The findings are divided into three categories: risk understanding and risk management, risk management strategy, and risk management tool use.

Risk comprehension and risk management

Figures 1a and 1b show the responses of participants to risk and risk management-related questions. While 64% of practitioners agreed (strongly agree and agree) with the ISO

31000 definition of risk as "the effect of uncertainty on objectives," 73% agreed that risk management is about identifying potential threats to patients (see in figure 1b). Although practitioners confirmed a more comprehensive understanding of risk as defined by ISO, more practitioners agreed on a specific focus: "risk management is about identifying potential threats to patients." Managers shared the same perception, with 71 percent agreeing on the ISO definition and 78 percent agreeing on risk management understanding.

Following data analysis based on respondent location, it was discovered that there is a disparity between the US and UK results. To be more specific, UK practitioners agreed with 100 percent of UK managers on the risk management definition (78 percent). However, the trend in the United States was similar to the overall results. Managers agreed with the statement more than practitioners (95 percent) (65 percent).

Understanding of risk and risk management

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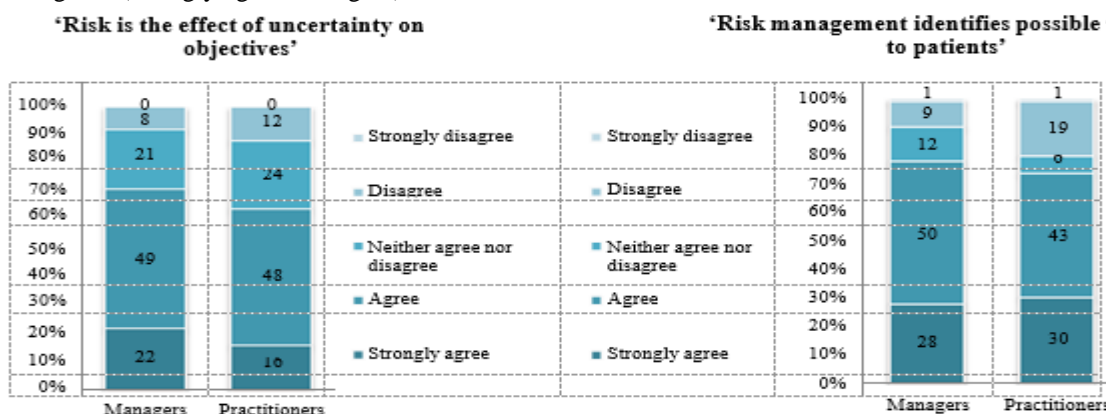

Figure 1a: Risk definition

Figure 1b Risk management definition

Risk management strategy

"To what extent do you agree that risk assessment is more important than risk mitigation?" was the question. to comprehend respondents' priorities While 47 percent of practitioners thought risk assessment was more important than risk mitigation, 44 percent of managers agreed. Although it is debatable which of these should be prioritized,

risk management is more likely to reduce risks. When the results were compared by location, similar responses were received from different countries, with the exception of UK managers and practitioners who agreed slightly more. The overall responses to the given statement are depicted in Figure 2 below.
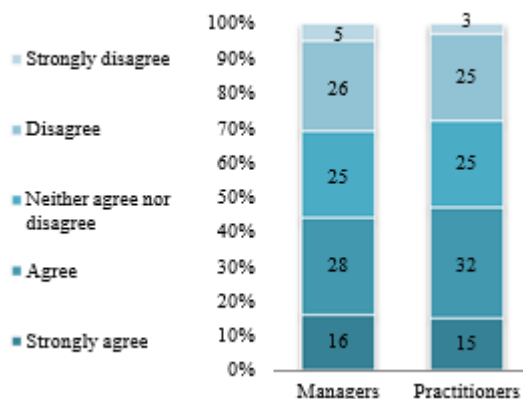
'Risk assessment is more important than riskmitigation'

Figure 2. Risk management strategy

Use of the risk management techniques

Respondents were also asked which techniques they use for risk management applications in this study. According to the findings, the most commonly used tool was Failure Mode Effect Analysis (FMEA). The risk matrix and brainstorming were then used (see figure 3). Most importantly, the findings revealed that practitioners, with the exception of

brainstorming and what-if techniques, rarely use tools. It should be noted, however, that using a large number of tools does not guarantee success.

This does not always imply good risk management practice. Risk management tools should only be used when absolutely necessary.
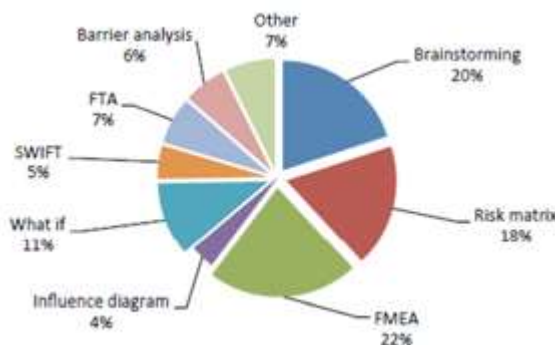

Figure 3 Risk assessment techniques used by respondents

4. DISCUSSION

Managers and practitioners had slightly different general understandings of risk and risk management. Furthermore, it was discovered that healthcare staff prioritizes risk assessment over risk mitigation. This could be due to external authorities encouraging risk assessment. As a result, healthcare staff could have developed a shared understanding of how many risks were assessed, allowing for much better risk management. The ideal risk assessment, on the other hand, is to mitigate risks. To achieve effective risk management practices, these two should be balanced. Not surprisingly, managers are more likely than practitioners to

use risk management techniques, implying that front-line staff are not fully engaged in risk management practices. FMEA is the most commonly used technique among these tools. This can be explained by the Department of Veterans Affairs' development of Healthcare Failure Mode and Effect Analysis (HFMEA) (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 by respondent location, it is discovered that UK respondents exhibit different patterns than

respondents from other countries. Different results across countries could be explained by different healthcare systems and different levels of influence on healthcare organizations by national authorities.

Some suggestions for improving risk management practices include developing a safety culture (Al-Assaf, Bumpus, Carter, & Dixon, 2003), encouraging staff participation in risk management practices (Khatri, Brown, & Hicks, 2009), providing safety training (Mackert, Ball, & Lopez, 2011), and encouraging the use of risk management reporting systems and tools.

While safety culture is important for encouraging all healthcare staff to participate in risk management, blaming is a major impediment to implementing it (P. J. Clarkson et al., 2004; Muralidhar, Taneja, & Ramesh, 2012). Healthcare workers should not be afraid to make mistakes, and team members should help each other recover from mistakes. This understanding is common in the aviation industry. Cabin crew make numerous errors during flights, but anyone who recognizes the error solves the problem (Firth-Cozens, 2001). As a result, crew teams prevent mistakes from becoming catastrophic events. It should also be noted that, while poor teamwork increases the number of errors, good teams reduce errors by assisting and correcting each other's errors (Lester & Tritter, 2001; Wiegmann, ElBardissi, Dearani, Daly, & Sundt, 2007).

Providing safety training is another important factor that could improve risk management practice, particularly for practitioners (Mackert et al., 2011). A research asked 40 practitioners if they had received risk management or patient safety training, and the results revealed that none had (Arfanis & Smith, 2012).

All practitioners, however, are required to register risks in their local risk register systems. As a result, healthcare organizations should train their staff to support their role in risk management practice.

Furthermore, external to encourage healthcare organizations to provide effective training, authorities should develop safety training regulations.

Incident or risk reporting systems have the potential to improve current practice (Barach & Small, 2000). One of the primary sources for defining risk is incident reporting. However, only 22-83 percent of incidents are reported, according to estimates (Parkes, Pyer, Wray, & Taylor, 2014; Pietro, 2000). Because the difference between estimated incident reports is so large, it already suggests that there is a problem with the reporting culture.

As a result, effective reporting should be encouraged in order to improve risk management practices by feeding incident experiences into risk management. However, it should be noted that a large number of incidents that are not adequately reported cannot contribute to the risk management process. A low rate of reporting, as well as a high rate of reporting, are both issues that must be addressed (Macrae, 2008). As a result, a more effective balance should be struck between

reporting too many and too few risks to management.

A variety of risk management tools are available to help prevent incidents, mitigate risks, and ensure safety. However, this study discovered that practitioners have a low proclivity to use risk assessment tools. Some of the underlying causes of this lack of implementation can be attributed to healthcare staff time allocation, staff knowledge levels, and staff fears of being exposed for their mistakes (Carroll, 2009; Eidesen, Sollid, & Aven, 2009; Spedding & Rose, 2008). Another issue is that hospitals have a fixed system that uses the same risk assessment tool for all types of risks and processes, which is sometimes insufficient. Nonetheless, healthcare organizations benefit from risk management tools by involving staff at all levels in the proper use and selection of risk assessment techniques (e.g., FMEA, FTA, ETA, and HRA).

Some limitations of this study should be mentioned as well. The characteristics of risk management practice may differ from country to country. Different hospital types and even hospital wards may have varying levels of risk management comprehension. As a result, the same risk management practices may be less effective. Furthermore, questionnaires may be skewed because respondents may have attempted to provide correct answers rather than revealing their true experiences and knowledge. This study, on the other hand, provides an overview of risk management practices by highlighting general issues.

5. CONCLUSION

Risk management is a method of ensuring patient safety by preventing adverse events, but current risk management practices are ineffective. Some of the issues identified in this study include: different perceptions of risk management, healthcare staff focusing on risk assessment rather than risk mitigation, and a lack of risk management tools used, particularly by practitioners. However, there is significant room for improvement in risk management practices. Interventions such as safety culture, staff training, and proper use of risk management tools could be suggested. More research can be done to put the suggested interventions into practice in a hospital setting.

REFERENCES

I. Al-Assaf, A. F., Bumpus, L. J., Carter, D., & Dixon, S. B. (2003). Preventing errors in healthcare: a call for action.

II. *Hospital Topics*, *81*(3), 5–12.

III. Arfanis, K., & Smith, A. (2012). Informal risk assessment strategies in health care staff: an unrecognized source of resilience. *Journal of Evaluation in Clinical Practice*, *18*, 1140–1146.

IV. Barach, P., & Small, S. (2000). Reporting and preventing medical mishaps: lessons from non-medical near miss reporting systems. *British Medical Journal*, *320*(7237), 759–763.

V. Cagliano, A. C., Grimaldi, S., & Rafele, C. (2011). A systemic methodology for risk management in healthcare sector. *Safety Science*, *49*(5), 695–708.

VI. Card, A. J., Simsekler, M. C. E., Clark, M., Ward, J. R., & Clarkson, P. J. (2014). Use of the Generating Options for Active Risk Control (GO-ARC) Technique can lead to more robust risk control options. *The International Journal of Risk & Safety in Medicine*, *26*(4), 199–211.

VII. Carroll, R. L. (2009). *Risk management handbook for health care organisations*. (R. Carroll, Ed.) (Student Ed). San Francisco: Jossey-Bass.

VIII. Clarkson, P. J., Buckle, P., Coleman, R., Stubbs, D., Ward, J. R., Jarrett, J., … Bound, J. (2004). Design for patient safety: a review of the effectiveness of design in the UK health service. In *7th Biennial Conference on Engineering Systems Design and Analysis*. Manchester: ESDA.

IX. DeRosier, J., Stalhandske, E., Bagian, J. P., & Nudell, T. (2002). Using health care failure mode and effect analysis: the VA National Center for patient safety's prospective risk analysis system. *The Joint Commission Journal on Quality Improvement*, *28*(5), 248–267.

X. Donaldson, L. (2002). An organisation with a memory. *Clinical Medicine*, *2*, 452–457.

XI. Dückers, M., Faber, M., Cruijsberg, J., Grol, R., Schoonhoven, L., & Wensing, M. (2009). *Safety and risk management in hospitals*. London.

XII. Eidesen, K., Sollid, S. J. M., & Aven, T. (2009). Risk assessment in critical care medicine: a tool to assess patient safety. *Journal of Risk Research*, *12*(3-4), 281–294.

XIII. Firth-Cozens, J. (2001). Cultures for improving patient safety through learning: the role of teamwork. *Quality in Health Care*, *10*((Suppl II)), ii26–i31.

XIV. Jun, G. thomas, Ward, J., & Clarkson, P. J. (2010). Systems modelling approaches to the design of safe healthcare delivery: ease of use and usefulness perceived by healthcare workers. *Ergonomics*, *53*, 829–847.

XV. Khatri, N., Brown, G., & Hicks, L. (2009). From a blame culture to a just culture in health care. *Health Care Management Review*, *34*, 312–322.

XVI. Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (2000). *To err is human*. Washington, DC: National Academy Press.

XVII. Lester, H., & Tritter, J. Q. (2001). Medical error: A discussion of the medical construction of error and suggestions for reforms of medical education to decrease error. *Medical Education*, *35*, 855–861.

XVIII. Lu, Y., Teng, F., Zhou, J., Wen, A., & Bi, Y. (2013). Failure mode and effect analysis in blood transfusion: a proactive tool to reduce risks. *Transfusion*, *53*, 3080–3087.

XIX. Mackert, M., Ball, J., & Lopez, N. (2011). Health literacy awareness training for healthcare workers: improving knowledge and intentions to use clear communication techniques. *Patient Education and Counseling*, *85*(3), e225– e228.

XX. Macrae, C. (2008). Learning from patient safety incidents: creating participative risk regulation in healthcare.

XXI. *Health, Risk & Society*, *10*(1), 53–67.

XXII. Manger, R. P., Paxton, A. B., Pawlicki, T., & Kim, G.-Y. (2015). Failure mode and effects analysis and fault tree analysis of surface image guided cranial radiosurgery. *Medical Physics*, *42*(5), 2449–2461.

XXIII. Muralidhar, S., Taneja, A., & Ramesh, V. (2012). Patient safety culture-perception of health care workers in atertiary care hospital. *The International Journal of Risk & Safety in Medicine*, *24*, 191–9.

XXIV. Parkes, J. H., Pyer, M., Wray, P., & Taylor, J. (2014). Partners in projects: preparing for public involvement in health and social care research. *Health Policy*, *117*(3), 399–408.

XXV. Perks, J., Stanic, S., Stern, R., & et al. (2012). Failure mode and effect analysis for delivery of lung stereotactic body radiation therapy. *International Journal of Radiation Oncology Biology Physics*, *83*(4), 1324–1329.

XXVI. Pietro, D. A. (2000). Detecting and reporting medical errors: why the dilemma? *BMJ*, *320*, 794–796.

XXVII. Shebl, N., Franklin, B., & Barber, N. (2012). Failure mode and effect analysis outputs: are they valid? *BMC Health Service Research*, *12*, 150–159.

XXVIII. Simsekler, M. C. E., Card, A. J., Ward, J. R., & Clarkson, P. J. (2015). Trust-Level Risk Identification Guidance in the NHS East of England. *The International Journal of Risk & Safety in Medicine*, *27*(2), 67–76.

XXIX. Simsekler, M. C. E., Card, A. J., Ruggeri, K., Ward, J. R., & Clarkson, P. J. (2015). A comparison of the methods used to support risk identification for patient safety in one UK NHS foundation trust. *Clinical Risk*, *21*(2-3), 37–46. Smith, I. (2007). *Building a World Class NHS*. New York: Palgrave Macmillan.

XXX. Sokol, P. E., & Neerukonda, K. V. (2013). Safety risks in the ambulator y setting. *American Society for Healthcare Risk Management*, *32*(3), 21–25.

XXXI. Spedding, L., & Rose, A. (2008). *Business risk management handbook*. Oxford: CIMA.

XXXII. Starfield, B. (2000). Is U.S. health really the best

in the world? *Journal of the American Medical Association*, *284*(4), 483–485.

XXXIII. Wiegmann, D., ElBardissi, A., Dearani, J., Daly, R., & Sundt, T. (2007). Disruptions in surgical flow and their relationship to surgical errors: and exploratory investigation. *Surgery*, *142*(5), 658–

665.

XXXIV. Youngberg, B. J. (2011). *Principles of risk management and patient safety*. Sadbury, Massachusetts: Jones&Bartlett Learning.

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:

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

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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.