Neuroendocrinology Letters Volume 37 Suppl. 2 2016
ISSN: 0172-780X; ISSN-L: 0172-780X; Electronic/Online ISSN: 2354-4716
Web of Knowledge / Web of Science: Neuroendocrinol Lett
Pub Med / Medline: Neuro Endocrinol Lett

Risk management in inpatient units in the Czech Republic from the point of view of nurses in leadership positions

Radka Prokešová [1], Iva Brabcová [2], Radka Pokojová [2], Sylva Bártlová [2]

1 University of South Bohemia in České Budějovice, Faculty of Health and Social Sciences, Institute of Humanities in Nursing Professions, České Budějovice, Czech Republic
2 University of South Bohemia in České Budějovice, Faculty of Health and Social Sciences, Institute of Nursing, Midwifery and Emergency Care, České Budějovice, Czech Republic

Correspondence to: Ing. Radka Prokešová, PhD.
University of South Bohemia in České Budějovice, Faculty of Health and Social Sciences, Institute of the Humanities in Nursing Professions
J. Boreckého 1167/27, 370 11 České Budějovice, Czech Republic.
e-mail: rprokes@zsf.jcu.cz

Submitted: 2016-08-24 Accepted: 2016-09-20 Published online: 2016-12-18

Key words: **risk management; health facility; nurse manager; risk; mistake prevention**

Neuroendocrinol Lett 2016; **37**(Suppl. 2):39–45 **PMID:** 28233959 NEL371016A06 © 2016 Neuroendocrinology Letters • **www.nel.edu**

Abstract

OBJECTIVES: The goal of this study was to assess specific features of risk management from the point of view of nurses in leadership positions in inpatient units in Czech hospitals.
METHODS: The study was performed using a quantitative research strategy, i.e., a questionnaire. The data sample was analyzed using SPSS v. 23.0. Pearson's chi-square and analysis of adjusted residues were used for identifying the existence associations of nominal and/or ordinal quantities. 315 nurses in leadership positions working in inpatient units of Czech hospitals were included in the sample. The sample was created using random selection by means of quotas.
RESULTS: Based on the study results, statistically significant relations between the respondents' education and the utilization of methods to identify risks were identified. Furthermore, statistically significant relationships were found between a nurse's functional role within the system and regular analysis and evaluation of risks and between the type of the healthcare facility and the degree of patient involvement in risk management.
CONCLUSION: The study found statistically significant correlations that can be used to increase the effectiveness of risk management in inpatient units of Czech hospitals. From this perspective, the fact that patient involvement in risk management was only reported by 37.8% of respondents seems to be the most notable problem.

INTRODUCTION

Risk management in healthcare is currently an issue of great interest – from the point of view of hospital management, staff, and patients. The goal of risk management in hospitals is to reduce or eliminate the occurrence of events that negatively impact patient and staff health as well as negatively impact the overall healthcare facility in general (Prokešová *et al.* 2014). Nurses play important roles at all levels of hospital management, including the management of nursing care,

ORIGINAL ARTICLE

which is naturally one of the key areas associated with patient risks and safety (Brabcová *et al.* 2014, DuPree *et al.* 2014).

There are numerous definitions for the term "risk" in professional literature. In the sphere of healthcare, the most fitting definition is *an event differing from the expected outcome has a high probability of happening* (Smejkal and Rais 2013). Risk management in healthcare consists in planning, organizing, and management of a complex program of activities which identify, evaluate, and take preventive measures against risks that could result in patient and/or staff injuries and the loss of or damage to property followed by an associated financial cost (Grohar-Murray and diCroce 2003). Risk management in healthcare facilities consists of four interconnected phases: identification, evaluation, management (reduction or prevention), and monitoring (Pokojová 2011). One approach to hospital risk management consists of detection of undesirable outcomes, analyzing the causes, estimating their probability and consequences, and adopting suitable measures to prevent the events from happening again (Wolff *et al.* 2011).

The method used to assess risks represents a substantial part of risk management. Using suitable methods for risk identification is crucial for obtaining a list of risks. Methods can be proactive (i.e., the risks are detected and subsequently dealt with before an event occurs) or reactive (the risk is identified after an event has happened).

FMEA (Failure Mode and Effect Analysis) represents a proactive approach, the purpose of which is to effectively prevent negative outcomes associated with analyzed risks (Tichý 2006). FMEA enables the cause of negative outcomes to be systematically sought and identified; the nature or seriousness of the risk is assessed, along with potential causes and contributing factors, and, last but not least, FMEA determines what steps need to be taken to minimize or eliminate the risk.

Another approach is called the *screening method*, which consists of systematic monitoring of various sources of data focused on the occurrence of adverse events and usually demands two levels of data checking to determine (1) whether an adverse event really happened and (2) whether there was a correlation between the event and the healthcare provided (Hřib and Vychytil 2009).

A third approach is called *external monitoring*, in which a trained observer monitors the whole process of providing healthcare in order to make a more accurate assessment (Hřib and Vychytil 2009).

A fourth approach to risk management uses *passive reporting*, which consists of reporting risk-related adverse events by hospital staff. Passive surveillance does not involve systematic data collection; medical staff and other healthcare facility staff are obliged to report adverse events that they caused or are caused by other employees, as well as events whose etiology is unknown (Hřib and Vychytil 2009).

A fifth approach is called the *epidemiologic approach* to risk management and consists of an analysis of risk factors (genetic, endogenous, exogenous) which affect the spread of illnesses within a population, it also analyzes the sources of these factors which, if present, significantly increases the potential for disease development in persons who are at risk (Bencko 2015).

Healthcare risk management is based on the Luxembourg Declaration on Patient Safety 2016, and its implementation by healthcare providers in the Czech Republic is supported by the Ministry of Health of the Czech Republic. In accordance with the recommendation of the Luxembourg Declaration (2016), there is an effort toward gradual integration of risk management into the system of external quality evaluation of Czech healthcare; these policies are mandated in Act 372/2011 of the Code, and in Executive Regulation 102/2012 of the Code on quality evaluation of inpatient healthcare. The internal interpretation by the current hospital management is that risk management and quality management closely correlated and even fade into one another in some areas, e.g., in standard development, implementation, and audit implementation (Kecliková and Briš 2011). Quality indicators are often used to assess risks (Somrová and Bártlová 2012). The trend toward gradual integration of risk management into systems of external quality evaluation of Czech healthcare, contained in the national accreditation standards (National Accreditation Standards SAK CR 2016), are based on the recommendations in the Luxembourg Declaration (2016) regarding the scope of the requirements for quality and safety management of healthcare facilities.

The main goal of the study was to describe specific features of risk management from the point of view of nurses in leadership positions (i.e., director of nursing, head nurse, and ward nurse) in inpatient units of Czech hospitals. In accordance with the main goal of the study, the following partial goals were set:

- to identify correlations between nurse education and utilization of methods to assess risk in inpatient units of Czech hospitals;
- to identify correlations between the functional role of the nurse within the system in inpatient units and regular risk analysis and assessment in their hospitals;
- to determine whether there was, from the point of view of respondents, a relationship between of type of the healthcare facility and patient involvement in risk management.

MATERIALS AND METHODS

A survey of hospitals in the Czech Republic was performed using a quantitative questionnaire. The questionnaire consisted of 85 closed- and open-ended questions. For the purpose of this study, the area of Risk Management (Part B), questions 1 to 14, was analyzed in addition to the part containing identification data

Copyright © 2016 Neuroendocrinology Letters ISSN 0172–780X • www.nel.edu

(Part A). Data collection was carried out in the form of a field study using a face-to-face dialogue between the questioners and respondents from Sept. 15 to Sept. 30, 2013. The data was analyzed using SPSS, version 23.0. Pearson's chi-square test and analysis of adjusted residues were used for identifying the existence of relationships in nominal, and/or ordinal quantities. Testing was performed according to the character of the signs based on χ^2 Pearson's chi-square test, in all cases the resulting characteristic of the independence test was calculated. The analysis of the adjusted residues was used for determining the significance of the data deviations and the expected values (described by sign diagrams in the tables). Significance was set at 0.05.

A selective sample of respondents was created through random choice by means of quotas. 315 nurses in leadership positions working in inpatient units of hospitals were included in the sample. The parameters of the selective sample were established on the basis of data from the Institute for Healthcare Information and Statistics, Ministry of Health of the Czech Republic that were in force on Dec. 31, 2011. The number of the nurses in leadership positions in the various regions was derived from the total number of staff nurses; age structure was based on data from the Institute for Healthcare Information and Statistics for 2011. The selective sample of nurses in leadership positions can be regarded as representative for the individual regions and the nurse's age. In the scope of the study, attention was paid to the professional characteristics of the respondents, namely to: (1) highest achieved level of education, (2) total years of nursing experience in the healthcare system (an indicator of professional stabilization and, at the same time, the degree of the experience within the profession), (3) length of current employment (both a measure of stability as well as a measure of turnover trends within a specialty), (4) type of hospital and ward where the nurses were employed, and (5) nurse's position (ward nurse, head nurse, or director of nursing). The selective sample of respondents was comparatively evenly distributed across the various types of hospitals (i.e., university, regional, district, municipal and private). The selective sample represented nurses from all departments.

RESULTS

In the scope of this study, various aspects of risk management in inpatient units of Czech hospitals were studied from the perspective of nurses in leadership positions. The study was focused on the methods used for assessing risks (i.e., FMEA, screening method, method of external observation, method of passive reporting, and the epidemiologic approach, including the influence of nurse education on the implementation of these methods, the problems of risk assessment and management, risk avoidance, and patient involvement in risk management.

Using the methods of risk assessment demands some knowledge and skill in the area of risk management and places demands on the education of nurses at hospitals where risk management is implemented. Correlations between respondent education and the utilization of risk assessment and prevention strategies are shown in Table 1.

Based on our data, significant correlations between level of nurse education and the use of risk assessment were identified. The chi-square characteristic of independence test (χ^2) was 29.012 with 12 degrees of freedom $p<0.01$ ($p=0.004$). The study showed that the "screening method" was the method most frequently cited by respondents as being used in Czech hospitals (54%), followed by the "epidemiologic approach" (14.9%), FMEA (14.6%), the "method of external

Tab. 1. Utilization of methods for assessing risk and its relationship to level of education of nurses in leadership positions in inpatient departments of Czech hospitals.

***n*=315 (in %)**		**Use of methods to reveal risks**					
		FMEA	**Screening method**	**Method of external observation**	**Method of passive (backward) reporting**	**Epidemiologic approach**	**Total**
Row percent	Secondary education	6.2%	50.0%	8.8%	10.0%	25.0%	100.0%
	Higher professional education	19.0%	42.9%	19.0%	1.6%	17.5%	100.0%
	Academic qual. (BA)	17.6%	59.7%	5.9%	6.7%	10.1%	100.0%
	Academic qual. (MA)	15.1%	60.4%	11.3%	5.7%	7.5%	100.0%
	Total	14.6%	54.0%	10.2%	6.3%	14.9%	100.0%
Sign diagram	Secondary ed.	–	0	0	0	++	
	Higher professional ed.	0	–	++	0	0	
	Academic qual. (BA)	0	0	–	0	0	
	Academic qual. (MA)	0	0	0	0	0	

Tab. 2. The influence of the nurse's role within the system on regular risk assessment – *n*=315 (in %).

Functional position		Regular risk assessment				Total
		Yes	No	I don't know	I don't want to answer	
Row percent	Director of nursing	50.0%	7.2%	7.1%	35.7%	100.0%
	Head nurse	69.0%	9.2%	9.2%	12.6%	100.0%
	Ward nurse	69.6%	6.5%	15.5%	8.4%	100.0%
Total		68.6%	7.3%	13.3%	10.8%	100.0%
Sign diagrams	Director of nursing	0	0	0	++	
	Head nurse	0	0	0	0	
	Ward nurse	0	0	0	–	

Tab. 3. The influence of the hospital type on patient involvement in risk management: (*n*=267 (in %).

Hospital type		Patient involvement in risk reduction			Total
		Yes	No	I don't know	
Row percent	University	48.3%	43.3%	8.4%	100.0%
	Regional	26.2%	60.7%	13.1%	100.0%
	District	48.0%	50.0%	2.0%	100.0%
	Municipal	23.9%	63.1%	13.0%	100.0%
	Private	42.0%	42.0%	16.0%	100.0%
Total		37.8%	51.7%	10.5%	100.0%
Sign diagrams	University	0	0	0	
	Regional	–	0	0	
	District	0	0	–	
	Municipal	–	0	0	
	Private	0	0	0	

observation" (10.2%), with the least used method being "passive reporting" (6.3%). Nurses with only secondary educations significantly more frequently favored the "epidemiologic approach" to assessing risks. They were significantly less likely not to use the "proactive method". In contrast, respondents with higher professional education statistically more frequently favored the method of "external observation" compared to other nurses, and were statistically less likely to favor "screening methods". Nurses with university education (Bachelor's, Master's degrees) mention the use of "external methods" in their clinics significantly less frequently. Nurses with a master's degree did not show any statistically significant deviations with regard to the mentioned methods.

Risk management represents a process in which the identified risks need to be regularly assessed. The correlations found between the nurse's role within the system and regular risk analyses and assessments in their units are given in Table 2.

Our study found statistically significant correlations between role of nurses within the system and regular risk analyses and assessments. Chi-square characteristic of independence test (χ^2) was 13.013 with 6 degrees of freedom, $p<0.05$ ($p=0.43$). Almost 70% of respondents stated that they regularly evaluated the risks of medical and nursing care (68.6%). Interestingly, directors of nursing care were more careful with respect to this question; they stated significantly more frequently that they did not want to answer this question.

In the process of risk management, it is essential to take preventive measures to avoid adverse events. Effective mechanisms to reduce risk include patient involvement (Bártlová *et al.* 2014) in risk management. Patient involvement in risk management is an important risk management tool and its use appears to vary depending on hospital type (i.e., university, regional, district, municipal, or private), at least from the point of view of our respondents, which are described in Table 3.

Our study found statistically significant correlations between the type of hospital and patient involvement in risk management. Chi-square characteristic of independence test (χ^2) was 17.552 with 8 degrees of freedom, $p<0.05$ ($p=0.25$). Patient involvement in risk manage-

Copyright © 2016 Neuroendocrinology Letters ISSN 0172–780X • www.nel.edu

ment was confirmed by only 37.8% of respondents. In contrast, 51.7% of respondents stated that patients were not involved in risk management, and 10.5% of nurses answered "I don't know."

Respondents from regional and municipal hospitals stated significantly more frequently that they involved patients in risk management; on the other hand, nurses in district hospitals did not. The study shows that hospital type also influenced the willingness to involve patients in risk management.

DISCUSSION

Risk management in inpatient units of Czech hospitals should be performed more professionally, and the most suitable methods should be used in order to prevent adverse events that could harm patients or hospital staff or cause financial and nonfinancial losses. In this respect, "proactive methods" appear to be the best, since they enable early detection of potential risks (Lago *et al.* 2012) and, after corrective measures, they significantly reduce the occurrence of adverse events and the harm associated with them.

The FMEA method is a widely used tool for uncovering potential risks in healthcare; it is increasingly used for active assessment and improvement in the safety of complicated healthcare processes, such as drug administration and blood transfusions (Ashey *et al.* 2010). The use of FMEA in inpatient units of Czech hospitals was mentioned by only 14.6% of respondents. According to a study by Shebl *et al.* (2012), who investigated the usability of this method by hospital staff, FMEA received both positive and negative responses. Most of the respondents had positive opinions after using FMEA in healthcare, mainly thanks to its structure and suitability for multidisciplinary teams, since it enables identification of high risk areas. However, FMEA was also criticized for being time consuming, subjective, and temporary. The above mentioned authors, however, agreed that the importance of FMEA in clinical practice depends on the experience, managerial style, and composition of multidisciplinary teams. The methodology and complexity of the method may explain why nurses without higher levels of education mention the use of this method significantly less frequently.

The "screening method" using data resources is another proactive method used in healthcare, in which risks that could result in adverse events are sought out. During the use of this method, computer algorithms are often employed, which can help evaluate the quality hospital care (Iezzoni *et al.*1992). According to nurses in leadership positions, it was the most frequently use method in inpatient units of Czech hospitals (54% of respondents). Oddly, nurses with no academic education mention this method statistically less often. It may be due to the fact that this method can be successfully used under the precondition of sufficient methodological knowledge (particularly the way of evaluation of the data studied) and by consumption consisting in systematic monitoring of varied data resources and searching for risks on the basis of detected correlations.

The method of "external observation" (monitoring) uses a trained observer to assess risks. Evaluations, which are based on observations, can be also used to evaluate the organization of hospital wards (Stab *et al.* 2016). However, its disadvantages include it being time consuming and it is not effective in spotting rarer adverse events (Hřib and Vychytil 2009). As far as the use of this method to inpatient units is concerned, respondents with higher levels of professional education mentioned this application statistically more frequently than nurses with lower levels of education, except for nurses with a bachelor's degree who, in contrast, mention the application on their wards significantly less frequently. Altogether, this method of risk assessment was mentioned by 10.2% of respondents and, so, it represents the second least frequent method of risk management.

The method of "passive reporting" is one of the reactive methods of risk management; it detects risks by means of reporting adverse events (including healthcare related infections). When an adverse event occurs, every hospital employee is obliged to report it, based on the requirements of accreditation standards and Czech legislation (National Accreditation Standards CR 2016). The results of this method are prone to both qualitative and quantitative distortion (Jindrák *et al.* 2014). In the scope of the study, no significant differences associated with nurse education were found; therefore, it can be stated that the use of this method is not associated with the level of the nurse's education. On the other hand, the study found that this method was the least frequently used method for assessing risk; only 6.3% respondents use it.

Application of the "epidemiologic approach" to risk management is based on an analysis of risk factors, e.g., infection (McNeil *et al.* 2014), the presence of which increases the potential for disease development. The favored use of this method in risk management in inpatient units was stated by 14.9% of the respondents. Statistically it was more frequently mentioned by respondents with secondary educations. Its use is probably associated with the long term use of this method and also by the statistically less frequently used FMEA, which is methodologically more complicated.

The goal of successful risk management is not only to uncover risks but also to regularly re-assess risk. Regular evaluations can prevent the development of weak points that can lead to adverse events. The frequency of assessments and independent re-evaluations depend on the experience of the hospital (7 Steps to Effectively Run HIPAA Risk Assessments). It is the risk assessment on one's workplace that is one of the tasks of nurses in leadership positions. This study found that in inpatient units of Czech hospitals, regular risk assessments were confirmed by 68.6% of respondents, while 13.3%

answered "I don't know", 10.8% of respondents refused to answer, and 13.3% of respondents answered that a risk assessment had not been performed in their units. The final response is certainly a troubling one, and warns us that a number of hospitals either do not regularly perform risk assessments or nurses in leadership positions are not sufficiently involved in the process.

Patient involvement in risk management represents an important risk management tool in hospitals. When this, currently topical, component is incorporated, nurse involvement, particularly involvement of nurses in leadership positions, is inevitable. Unfortunately, this study revealed very unfavorable results in inpatient departments of Czech hospitals, with more than half (51.7%) of respondents stating that in their unit's, patients were not involved in risk management, while 10.5% of respondents said they did not know if patients were involved in risk management. Patient involvement in risk management was confirmed by only 37.8% of respondents. In hospitals where patient involvement in risk management was confirmed, regional hospitals involve patients significantly less frequently than university, district, and private hospitals. In hospitals in which it was confirmed that patients were not involved in risk management, there were no significant differences associated with hospital type. When analyzing hospitals where nurses were not able to answer this question, a statistically lower number of district hospitals were found in comparison with university, regional, municipal, and private hospitals. This result deserves further attention to analyze why patients are not involved in risk management and whether this option has been fully considered by hospital management. This is a serious problem, and a successful solution could considerably contribute to the overall effectiveness risk management programs and, meaningfully reduce the number of adverse events. An important study found that patients often reported risks that had not been identified using any of the traditional mechanisms (The Role of the Patient in Safety 2016). Patient participation in their own healthcare is naturally conditioned on the willingness and interest of the clinical staff towards accepting patient involvement (Schwappach and Wernli 2010). Approaches that lead to improvement through patient involvement often unintentionally threaten to undermine mutual relationships and reduce trust in staff competences; therefore, the exact form of cooperation with patients' needs to be established (Hrisos and Thomson 2013).

CONCLUSION

The results of this study reflect the view of nurses in leadership positions with regard to risk management in inpatient units of Czech hospitals. Respondents described the "screening method" as the most frequently used method for assessing risks (54%) with the "epidemiologic approach" (14.9%) being a distant 2nd. FMEA (14.6%), "external observation" (10.2%), and "passive reporting" (6.3%) came in 3rd, 4th, and 5th, respectively. The study also showed that statistically significant correlations between role of nurses within the system and regular risk analysis and assessment. The regular risk assessment in inpatient units of Czech hospitals was only confirmed by 68.6% of respondents; in other clinics, regular risk assessment was either not performed or the nurses did not know about the assessments or they did not want to answer the question. Statistically significant correlations were shown between hospital type and patient involvement in risk management. Since 51.7% of respondents stated that patients were not involved in risk management, it is safe to say that this represents a serious problem, the solution of which could contribute to the overall effectiveness of risk management in inpatient units of Czech hospitals and, as a result, meaningfully reduce the number of adverse events. This finding has important potential for optimizing and increasing the effectiveness of risk management in inpatient units of Czech hospitals.

ACKNOWLEDGEMENT

The results published in this article were based on a study performed under the support of the Internal Grant Agency of the Ministry of Health of the Czech Republic within the scope of a project with registration number NT 14133 called "Increased Safety of Nursing Care".

Conflict of interest. *The authors report no conflict of interest.*

REFERENCES

1 Ashley L, Armitage G, Neary M, Hollingsworth G (2010). A practical guide to failure mode and effects analysis in health care: making the most of the team and its meetings. The Joint Commission Journal on Quality and Patient Safety. **36**(8): e351–e358.
2 Bártlová S, Tóthová V, Brabcová I, Prokešová R, Kimmer D (2014). The hospitalized patient as a partner in the survey on safe care in the Czech Republic. Neuroendocrinol Lett. **35**(Suppl. 1): e5–e10.
3 Bencko V (2015). Použití epidemiologických dat při odhadu míry rizika karcinogenity a princip předběžné bezpečnosti [Use of epidemiologic data to assess the carcinogenesis risk and the principle of preliminary safety]. [online] [cit. 2016-12-08]. Available from: https://dspace.vutbr.cz/bitstream/handle/11012/42755/exfos2015-26.pdf?sequence=1&isAllowed=y (Czech).
4 Brabcová I, Bártlová S, Tóthová V, Prokešová R (2014). The possibility of patient involvement in prevention of medication error. Kontakt. **16**(2): e65–e70.
5 DuPree E, Fritz-Campiz A, Musbeno D (2014). A new approach to preventing falls with injuries. Journal of Nursing Care Quality. **29**(2): e99–e102.
6 Grohar-Murray ME, DiCroce HR (2003). Zásady vedení a řízení v oblasti ošetřovatelské péče [Principles of nursing guidance and management]. Praha: Grada (Czech).
7 Hrisos S, Thomson R (2013). Seeing it from both sides: do approaches to involving patients in improving their safety risk damaging the trust between patients and healthcare professionals? Plos One. **8**(11): e80759.

Copyright © 2016 Neuroendocrinology Letters ISSN 0172–780X • **www.nel.edu**

8 Hřib Z, Vychytil P (2009). Evidence a řízení nežádoucích událostí při poskytování zdravotních služeb, 2. etapa – analýza shromážděných dat a vytvoření doporučení pro správnou praxi. Závěrečná zpráva II fáze studie [Registration and management of adverse events while providing healthcare service. Stage 2 – Analysis of the collected data and development of recommendations for good practice. Final Report – II phase of the study]. Ministerstvo zdravotnictví České republiky. [online] [cit. 2016-12-08]. Available from: http://www.mzcr.cz/KvalitaABezpeci/Soubor.ashx?souborID=17028&typ=application/msword&nazev=Z%C3%A1v%C4%9Bre%C4%8Dn%C3%A1%20%20zpr%C3%A1va.doc (Czech).

9 Iezzoni LI, Foley SM, Heeren T, Daley J, Duncan CC, Fisher ES, Hughes J (1992). A method for screening the quality of hospital care using administrative data: preliminary validation results. Quality review bulletin. **18**(11): e361–e371.

10 Jindrák V, Hedlová D, Urbášková P *et al.* (2014). Antibiotická politika a prevence infekcí v nemocnici [Antibiotic policy and infection prevention at hospitals]. Praha: Vydavatelství Mladá fronta (Czech).

11 Keclíková K, Briš P (2011). Risk management and internal audit in integrated process management of hospitals. Ekonomie a Management. **14**(4): e55–e66.

12 Lago P, Bizzarri G, Scalzotto F, Parpaiola A, Amigoni A, Putoto G, Perilongo G (2012). Use of FMEA analysis to reduce risk of errors in prescribing and administering drugs in paediatric wards: a quality improvement report. BMJ Open. **2**(6):e001249.

13 Luxembourg Declaration on Pacient Safety (2016). In: Patient Safety – Making it Happen! [online] [cit. 2016-10-08]. Available from: http://ec.europa.eu/health/ph_overview/Documents/ev_20050405_rd01_en.pdf

14 McNeil R, Small W, Wood E, Kerr T (2014). Hospitals as a ‚risk environment': an ethno-epidemiological study of voluntary and involuntary discharge from hospital against medical advice among people who inject drugs. Social Science & Medicine. **105**: e59–e66.

15 Národní akreditační standardy Spojené akreditační komise (SAR) ČR (2016). In: Dokumenty ke stažení (Spojená akreditační komise) [National accreditation standards of the United Accreditation Committee]. [online] [cit. 2016-12-08]. Available from: http://www.sakcr.cz/cz-main/dokumenty/akreditace/ (Czech).

16 Shebl N, Franklin B, Barber N, Burnett S, Parand A (2012). Failure mode and effects analysis: views of hospital staff in the UK. J Health Serv Res Policy. **17**(1): e37–e43.

17 Schwappach DL, Wernli M (2010). Chemotherapy patients' perceptions of drug administration safety. Journal of Clinical Oncology. **28**(17): e2896–e2901.

18 Smejkal V, Rais K (2013). Řízení rizik ve firmách a jiných organizacích [Risk management in companies and other organizations]. Praha: Grada (Czech).

19 Somrová J, Bártlová S (2012). Význam akreditace nemocnic pro ošetřovatelství [Importance of hospital accreditation for nursing]. Kontakt. **14**(4): e410–e420.

20 Stab N, Hacker W, Weigl M (2016). Work organization in hospital wards and nurses' emotional exhaustion: A multi-method study of observation-based assessment and nurses' self-reports. International Journal of Nursing Studies. **61:** e52–e62.

21 Pokojová R (2011). Řízení rizik [Risk Management]. Sestra. 21 (1): e29–e30 (Czech).

22 Prokešová R, Brabcová I, Bártlová S, Tóthová V (2014). Specifics of risk management in select medical facility. Kontakt. **16**(4): e256–e262.

23 Tichý M (2006). Ovládání rizika: Analýza a management [Risk mastering. Analysis and management]. Praha: C. H. Beck (Czech).

24 The Role of the Patient in Safety (2016). [online] [cit. 2016-16-08]. Available from: https://psnet.ahrq.gov/primers/primer/17/the-role-of-the-patient-in-safety

25 Vyhláška č. 102/2012 Sb., o hodnocení kvality a bezpečí lůžkové péče (2016). [Regulation 102/2012 of the Code on the inpatient care quality assessment and safety]. [online] [cit. 2016-16-08]. Available from: http://www.mzcr.cz/kvalitaabezpeci/obsah/hodnoceni-kvality-a-bezpeci-zdravotnich-sluzeb_2556_15.html (Czech).

26 Wolff AM, Bourke J, Campbell IA, Leembruggen DW (2001). Detecting and reducing hospital adverse events: outcomes of the Wimmera clinical risk management program. Medical Journal of Australia. **174**(12): e621–e625.

27 Zákon č. 372/2011 Sb., o zdravotnických službách a podmínkách jejich poskytování (2016). [Act 372/2011 of the Code on health care service and the conditions of providing healthcare service]. [online] [cit. 2016-16-08]. Available from: http://www.mzcr.cz/kvalitaabezpeci/obsah/hodnoceni-kvality-a-bezpeci-zdravotnich-sluzeb_2556_15.html (Czech).

28 7 Steps for Hospitals to Run Effective HIPAA Risk Assessments (2016). [online] [cit. 2016-16-08]. Available from: http://www.beckershospitalreview.com/healthcare-information-technology/7-steps-for-hospitals-to-run-effective-hipaa-risk-assessments.html