VISOKA ZDRAVSTVENA ŠOLA V CELJU

MODEL INFORMACIJSKEGA SISTEMA ZA PREPREČEVANJE NAPAK V PROCESU NUJNE MEDICINSKE POMOČI

A MODEL OF INFORMATION SYSTEM FOR PREVENTING ERRORS IN EMERGENCY MEDICAL CARE PROCESS

Študent: ROK UŠEN

Vpisna številka: 1011011056

Mentor: doc. dr. Vesna Prijatelj, viš. med. ses., univ. dipl. org. inf.

Študijski program: VISOKOŠOLSKI STROKOVNI ŠTUDIJSKI PROGRAM ZDRAVSTVENA NEGA

CELJE, 2014

IZVLEČEK

Uvod: Napake pri nudenju zdravstvenih storitev se dogajajo. Manjši delež predstavljajo tiste, za katere so odgovorni ljudje, prevladujejo pa tiste, ki nastanejo v neustrezno zasnovanih sistemih. Podatki za Slovenijo kažejo, da se vsakemu desetemu pacientu v procesu zdravljenja zgodi neželen dogodek. Letno po ocenah strokovnjakov zaradi tega umre med 200 in 300 ljudi. Nekakovostno izvajanje zdravstvenih storitev predstavlja tudi finančno breme javnim financam v ocenjeni višini 300 milijonov evrov na leto. K aktivnemu preprečevanju napak v zdravstvu se vključujejo številni strokovnjaki z vseh področij. Eden od učinkovitih načinov preprečevanja škode za pacienta je tudi uporaba sodobne informacijsko komunikacijske tehnologije (v nadaljevanju IKT).
Namen diplomskega dela je bil izdelati model informacijskega sistema, uporaba katerega bi zmanjšala tveganje za nastanek napak v procesu nujne medicinske pomoči (v nadaljevanju NMP).
Metode dela: Najprej smo uporabili metodo deskripcije in kompilacije. Pregledali smo domačo in tujo strokovno literaturo s področja obravnave in preprečevanja napak v zdravstvu. Preučili smo delovni proces nudenja NMP, pri čemer smo uporabili Metodo strukturirane analize. Delovni proces smo preučili v treh največjih ustanovah v mreži NMP (v nadaljevanju ustanove A, B in C). Za oceno tveganj za nastanek napak smo uporabili Metodo analize možnih napak in njihovih posledic prirejene za zdravstvo (ang. Health Failure Mode and Effect Analysis – HFMEA). Z uporabo te metode smo določili aktivnosti v procesu, ki jim je bilo potrebno nameniti pozornost in jih izboljšati, da do napak ne bi več prihajalo. V nadaljevanju smo s pomočjo metode Analize temeljnih vzrokov (ang. Root Cause Analysis – RCA) poiskali vzroke za nastanek napak. Metoda se osredotoča na odkrivanje vzrokov za nastanek napak s ciljem preprečevanja ponavljanja le- teh. Na podlagi ugotovljenih kritičnih aktivnosti v procesu in vzrokov za nastanek napak smo izdelali model za preprečevanje napak. Z metodo prototipiranja smo razvili prototip za podporo predlaganemu modelu ter ga ocenili s PSPN matriko prednosti, pomanjkljivosti, priložnosti in nevarnosti (ang. SWOT analysis). Nato smo še enkrat uporabili HFMEA metodo, s katero smo ocenili učinke korektivnih ukrepov, ki smo jih uvedli s ciljem preprečevanja napak v procesu NMP. Na koncu smo predstavili rezultate raziskave ter izzive za nadaljnje raziskovalno delo.
Rezultati: Na podlagi analize prenovljenega modela procesa NMP ugotavljamo, da uporaba predlaganega modela za 64 % zmanjša tveganje za nastanek napak. Predlagan model pozitivno vpliva na dejavnike tveganj za nastanek napak: komunikacijo, pozornost zaposlenih in kompleksnosti delovnih nalog, s tem pa na kakovost podatkov in posledično kakovost zdravstvene oskrbe.

Prototipna rešitev v praksi ponuja uporabniku dostopnost do kakovostnih podatkov, ki so potrebni za realizacijo zastavljene naloge. Poleg tega pripomore k lažjemu in hitrejšemu sprejemanju vsakodnevnih odločitev, načrtovanju delovnega procesa in obdelavi statističnih podatkov.
Razprava in sklep: Sodobne informacijsko komunikacijske rešitve za preprečevanje napak v procesu NMP se uporabljajo izjemoma. Razlog za to lahko iščemo v visokih finančnih vložkih za spreminjanje obstoječega sistema in dejstvo, da je vodstveni kader izvajalcev

navajen utečenega delovnega procesa in niso naklonjeni spremembam. Uvajanje informacijskih rešitev v proces NMP in v zdravstvo nasploh je nujno, vendar pa je spremembe potrebno vpeljati postopoma, usklajeno in izvajalce navdušiti za njihovo uporabo.

Ključne besede: zdravstvo, zdravstvena napaka, nujna medicinska pomoč, informacijsko komunikacijska tehnologija, kakovost

ABSTRACT

Introduction: In the course of providing health care errors may occur. People are responsible for a lesser part of them but the majority is made because of unsuitable systems. In Slovenia, every tenth patient is confronted with an undesirable episode during the medical process. As a result of those episodes, annually between 200 and 300 patients die. When the medical facilities deal with low-quality medical services there comes to a financial burden for public finances (annually 300 million Euros). Professionals from different areas are being included in the active prevention of medical errors. One of the effective ways of preventing medical errors is utilization of modern communication technology.
Purpose: A purpose of my thesis was to produce a model of information system whose use would diminish a risk for new errors in emergency medical care process.
Methods: The methods of description and comparison were used in our thesis. Some Slovene and foreign literature, focusing on medical errors and how to prevent them, was studied. In our studies we focused on a process of emergency medical care, where we used A method of structural analysis. A working process in emergency medical care was studied in the three biggest health facilities in the emergency medical care network (facilities A, B and C). Health Failure Mode and Effect Analysis – HFMEA was used to evaluate the risk for errors. Using this method, we predetermined activities in the process which needed to be focused on and improved in order to avoid more errors. Root Cause Analysis – RCA was used to find causes for errors. A method is focused on finding causes for them; its goal is to prevent their reiteration. When we found critical activities in the working process and causes for errors, we made a model for preventing them. By the method of prototyping a prototype to support the proposed model was developed and evaluated by the SWOT analysis. Again, the HFMEA method was used to evaluate the effects of corrective actions, introduced to prevent errors in the emergency medical care. In the end the results of our research and new challenges were presented.
Results: By means of the renewed model of emergency medical care we found out that using the new model reduces the risk for making errors for 64 %. A proposed model positively influences the risk factors for making errors, which are communication, employees' attention and the complexity of working tasks; and consequently the data quality and quality of medical care. Our prototype not only offers the access to the quality data which is needed for the task realisation but also helps with faster and easier decision-making, planning of the working process and processing of the statistical data.

Discussion and conclusions: Modern information and communication resolutions for preventing errors in medical emergency care are only exceptionally used. The arguments can be found in high financial inputs for changing the present system. The second factor is leading personnel who is used to old and familiar working process and is not in favour of changes. Introducing informational solutions into the medical emergency care and health care in general is essential but those changes need to be introduced gradually and employees need to be encouraged about using it.

Key words: health care, a medical error, emergency medical care, information and communications technology, quality