Healthcare Quality and Patient Safety in the Intensive-Care Units of Yerevan Hospitals

Master of Public Health Integrating Experience Project

Professional Publication Framework

by

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List of Abbreviations

BBP Basic Benefit Package

ICU Intensive Care Unit

IOM Institute of Medicine

MOH Ministry of Health

NHS National Health Institute

RA Republic of Armenia

SAQ Safety Attitudes Questionnaire

UK United Kingdom

USA United States of America

WHO World Health Organization

Abstract

Introduction: Quality of healthcare is a relatively new concept, and until recent decades it was hard to describe or measure it. Donabedian defined quality of health care as a product of two main factors – *science and technology of health care* and *application of that science and technology in the practice*. High quality of care serves as a marker of optimal patient safety. No extant studies of healthcare quality and patient safety completed in Armenia are represented in the peer-reviewed literature. There is extremely limited evidence and understanding of how quality and safety are perceived and defined by different stakeholders in Armenian healthcare, and whether those perceptions and definitions are cohesive and correspond to international standards or not.

Study Purpose: The *primary aim* of the study is to understand how healthcare quality and patient safety in the ICUs of Yerevan hospitals are perceived and defined by the different stakeholders of the system. The *secondary aim* of the study is to explore the cultural context of frontline clinicians' perceptions of quality and safety through investigation of safety culture existent in those ICU settings.

Methods: The project is a mixed methods QUAL-quant cross-sectional study of different stakeholders' (ICU physicians, nurses, hospital administration representatives, policy makers and real-time ICU patients' family members) perceptions of healthcare quality and patient safety in the ICUs of Yerevan hospitals, as well as of features of safety culture existent in those ICUs. The qualitative component is the dominant element of the study. The quantitative part serves as a complementary method to reflect the context of safety culture in the ICUs of Yerevan hospitals.

Results: The respondents naturally separated “real” and “ideal” situations from one another, indicating that the expectations on quality of care and the current situation are very different. Hierarchical control, as the main way of quality assurance, and culture of blame are the main attributes of the real situation regarding healthcare quality and patient safety in the ICUs of Yerevan hospitals. Whereas, there should be clearly defined criteria, quality standards and protocols along with transparent flow of information to judge about healthcare quality. The organizational culture in all of the targeted ICUs can be described as pathological, considering the fact that blame and hierarchical control are the main driving forces of quality and safety initiatives. Patient-centered care, emotional support, access to care, communication and information, efficiency of care, are among the most popular dimensions of quality according to the patients and their family members. The next major finding is that in order to improve the quality of care and patient safety *financing*, *education* and the *way the system functions* need to be changed. The mean scores for teamwork climate, safety climate, job satisfaction, stress recognition, perceptions of management, and working conditions were respectively 79.7 (SD=9.2), 75.8 (SD=10.8), 93.1 (SD=12.9), 36.3 (SD=28), 82.4 (SD=19.4), and 92.7 (SD=13.3). There were statistically significant differences between the hospitals only in the working conditions scale (between Hospitals A and B (p=0.032), and between Hospitals C and B (p=0,005).The mean score for working conditions in the Hospital A was 90.3 (SD=14.9), in Hospital B it was 98.7 (6.1), in Hospital C it was 86.3 (SD=16.1).

Conclusion: While the frontline clinicians and administration representatives accept that without clearly defined standards, criteria, and protocols, the quality and safety wouldn't be achieved; there is ambiguity, when we will have those in practice. The patients and family members’ understandings of quality and patient safety are mostly based on the nice and caring attitude of the clinicians. The accessibility of care, patient rights, interests, and patient engagement in establishing quality of care are still to be achieved. Our findings also suggest that in order to achieve tangible results in terms of healthcare quality and patient safety, we need comprehensive strategies to modify healthcare financing, healthcare education, as well as both - hospital level and system level management.

Introduction

Quality of healthcare is a relatively new concept, and until recent decades it was hard to describe or measure it[1]. Donabedian defined quality of health care as a product of two main factors – *science and technology of health care* and *application of that science and technology in the practice*[1,2]. The terms of quality and safety in healthcare are closely related. High quality of care serves as a marker of optimal patient safety.

An important landmark in the health care quality and safety movement is considered the publication of the Institute of Medicine's (IOM) report "To Err is Human: Building a Safer Health System" in 1999, as a result of which quality of care was prioritized by the health care providers. The report pointed out that up to 98 000 deaths per year occur in the US as a result of medical errors[3,4]. Shortly after the publication of the latter another report by IOM was published, "Crossing the Quality Chasm: A New Health System for the 21st Century", which emphasized that there are safety and quality problems in healthcare, because the healthcare relies on outmoded systems of work. Accordingly, in order to achieve safe and high quality of care, the systems of care need to be redesigned[5]. A Similar report about the health care system of United Kingdom, "An Organization with a Memory", was published in 2000, pointing out that in NHS hospitals adverse events, when harm is caused to patients, occur in approximately 10% of hospital admissions (more than 850 000 patients per year)[6].

Currently in Armenia there is no precise information available about the prevalence of medical errors and adverse events occurring in the Armenian health care system. The latter might be a result of absence of clear culture of safety, as well as lack of appropriate reporting systems. However, based on some US estimates, it is assumed that in Armenia nearly 8000 hospital admissions (out of 200,000 hospital admissions) per year may be associated with medical errors, which counts for loss of approximately AMD 1 billion of hospital costs[7].

Background and Significance

Concepts of Healthcare Quality and Patient Safety

The global healthcare industry has adopted some of the commonly used quality assurance and quality improvement strategies from other industries, i.e. airline industry, gas and oil industry, nuclear power industry, car industry, which, due to the character of their practice, require a strong accent on safety. In those industries the core driver for quality movement was in fact *safety* [3].

Safety in the healthcare context can be discussed on different levels. The term safety in healthcare may refer to the *system* safety at a larger scale and to the *patient* safety in a narrower scale[8,9]. The Lucian Leape Institute, established by the United States National Patient Safety Foundation, has identified five fundamental concepts related to healthcare system safety: *transparency, care integration, patient engagement, restoration of joy and meaning in work, and medical education reform*. The realization of those concepts is essential in achieving healthcare system safety[8]. Safety at a narrower scale - patient safety, can be defined as reduction of risk of healthcare-associated unnecessary harm to an acceptable minimum, where healthcare-associated harm, in its turn, is the harm, which arises from plans and actions taken during the provision of healthcare, rather than caused by disease or injury[9]. The core idea underlying patient safety is that patients should not be harmed by the care that is intended to help them, and safety should be a precondition in health care[5,8].

In order to assess the quality of care the necessary information can be obtained from three main domains: *structure, process and outcome*[1]. Donabedian's Structure-Process-Outcome (S-P-O) model serves as a conceptual framework for this project. In this approach *structure* refers to the attributes of the setting in which the care is delivered, including the material resources, such as equipment, facilities, human resources and organizational structure. The *process* is about what is being done in delivering and receiving care, involving the patient's

activities in seeking health care, as well as the provider's activities in diagnosing and/or implementing the treatment. Finally, the *outcome* refers to the effects of health care on the patient's health status, improvements in the patient's knowledge, changes in the behavior, as well as the patient satisfaction with the care[1,2]. Donabedian determines and describes several attributes of quality, which are *efficacy, effectiveness, efficiency, optimality, acceptability, legitimacy and equity*[1]. (See Figure 1, Appendix 3) These attributes of quality are reflected in the specific aims of quality improvement suggested by the Institute of Medicine in its report "Crossing the Quality Chasm: A New Health System for 21st Century". According to the latter healthcare should be *safe, effective, patient-centered, timely, efficient* and *equitable*[5]. (See Table 1, Appendix 3)

Medical Errors

There are two general approaches to understanding medical errors in the context of patient safety – person approach and system approach. The person approach emphasizes individual factors, and in case of adverse events the clinicians are blamed for inattention, forgetfulness, moral weakness[10]. In terms of person approach to errors the harm reduction relies on ever-increasing heroism of clinicians rather than designing safe systems[11]. A lesson learnt from other industries is the recognition that the majority of errors in most industries occur because of systems used. Approaching the errors from the systems' perspective implies that making errors is possible whenever humans work, because of the limitations the humans face regarding concentration, prolonged attention, multitasking[10,12]. In systems approach errors are viewed as consequences rather than causes. One of the main ideas is that though the human conditions can hardly be changed, the conditions under which humans work can be modified building mechanisms to prevent errors and/or alleviate their effects[10].

In terms of systems approach care consists of connected processes that influence each other and patient outcome. An error occurring in one of the processes does not necessarily lead to

fatal event. In this case, the hazards on one side and the losses on the other side are separated by different barriers/layers, which are developed in different process stages. Every single barrier is not perfect and can be penetrated, however the next barrier is designed in such a way that even the error that penetrated though the previous barrier is put to hold in the next. This model is known as the Swiss cheese model, which was initially designed and used in oil industry, then airline industry[10,13]. (See Figure 2, appendix 3) The application of Swiss cheese model[10] to health care suggests that there is need for comprehensive quality assurance program to ensure quality and safety in the all processes of care, which in turn, will result in a safer patient journey [10].

In the context of patient safety outcomes there is a challenge in separating preventable harm from non-preventable/inevitable harm. In airline industry, for example, all fatal crashes are viewed as preventable. Preventable harm means that clinicians did or failed to do something (i.e. error) which caused harm; the latter would have been prevented if the error had not occurred. Despite many similarities between healthcare and aviation industry in terms of safety and quality, healthcare is different from it and other industries that deal with high-risk handling situations, and even if the patients receive the best-known medical treatments, some of them will inevitably die or suffer complications[14]. The preventable adverse events and potential adverse events ("near misses") indicate that a medical error was existent in the provision of care, while non-preventable adverse events reflect that there were unavoidable complications[15].

Safety Culture

The way how the errors are detected and handled within the healthcare organization is highly dependent on the organizational culture of the setting, particularly the culture of safety[4]. In this context Westrum [16] has defined the culture as the organization's way to respond to the challenges and opportunities it encounters. It shapes the organization's response to problems.

Thus one of the most important things in terms of safety culture is the flow of information[16]. Organizational culture of safety can be described through the model of cultural maturity, which suggests five stages of development of the safety culture: *pathological* (the main desire is not to get caught by the regulator), *reactive* (organizations start to take safety seriously only after incidents), *calculative* (there are systems to manage hazards), *proactive* (organization works on the problems that can be still found) and *generative* (there is active participation at all levels)[13]. (See Figure 3, appendix 3)

Medical training and the culture instilled during this training emphasize autonomy of action putting accent on personal responsibility. The latter has led to a culture of hierarchy and authority in decision making among the medical personnel and to a belief that mistakes should not be made[4]. In case of occurring, mistakes/errors are usually treated in frames of personal approach rather than systems approach, meaning that they are considered as personal and professional failures[4]. However, in order to succeed in the pursuits of achieving safety there is need to improve the culture of safety ensuring that reporting will be non-punitive, and that improving patient safety requires fixing the system rather than blaming. As there is always probability of making failures, this approach suggests learning from them and training the workforce to recognize and recover from them[4,10].

In order to explore safety culture in healthcare settings, there is a widely accepted structured questionnaire – the Safety Attitudes Questionnaire (SAQ), which can be used to measure safety culture in different clinical settings. The SAQ, developed by Sexton and colleagues, is one of the most widely used validated tools to measure safety culture[17]. It has demonstrated good psychometric properties in capturing the caregivers' attitudes regarding six patient safety related domains: *teamwork climate, safety climate, perceptions of management, job*

satisfaction, working conditions, and stress recognition. The SAQ gives a snapshot of the safety culture of a particular setting through surveying the frontline caregivers[17,18].

Healthcare Quality and Patient Safety in ICUs

Patient safety is a public health concern across all the countries in the world. However, issues related to patient safety are different depending on the setting, available resources and culture[19]. The existing evidence from population level data about the rates of injuries to patients in hospitals as well as medical errors suggests that extremes of age, complex care, urgent care, and a prolonged hospital stay are associated with more medical errors[11,14,15,20-22]. In this context the intensive care units pose an interest in exploring patient safety issues.

A multinational study conducted by Valentin and colleagues indicates that 38.8 sentinel events occur per 100 patient ICU days[22]. The latter might be associated with the following interrelated factors: complex interactions between medical/nursing/technician health care professionals and therapeutic intervention per disease entity[21]. There is a high risk for infection among the ICU population. Another multinational study by Alberti and colleagues discovered that 19% of ICU patients develop an infection sometime during their ICU stay[20]. Healthcare quality and patient safety issues occur in ICU settings more intensely, thus they are of special interest in terms of quality and safety research[11,14,15,20-22].

Situation in Armenia

The global literature on healthcare quality and safety suggests that countries in different development levels are affected by patient safety issues unequally[23]. Currently the methods to assess healthcare-associated harm have only been used in developed countries, where data-rich medical records tend to be available. Healthcare-associated harm has been studied in developed countries since the early 1990s[23]. However, methods for data-poor settings have not been identified despite the fact that there is little known about the magnitude of harm in

developing and transitional countries. Data-poor settings, according to WHO, are "those institutions that either do not have adequate routine information systems necessary to conduct a particular investigation, or if they have them, the data sources are unreliable, incomplete or inaccessible"[23]. Armenia lacks adequate reporting systems, which could serve as a basis for conducting particular investigation of patient safety issues[7]. Currently there are information systems providing data about hospital fatality rates; however the analysis of that kind of data provides only crude measures of the general picture, while the reporting and analysis of adverse events and hospital readmissions could have been more useful in terms of describing general situation of patient safety issues in Armenia[24].

Armenia has inherited from Soviet Union a highly centralized healthcare system dominated by vertical management. In the Soviet Union the right to free medical care was guaranteed by the Constitution, however the quality of care was not a priority. It was considered a part of the providers' performance assessments only when dealing with severe failures. The system mainly emphasized structural and quantitative indicators[7]. After gaining its independence, Armenia faced several devastating social-economic and political challenges which made it impossible for the health care system to function in the way it did during the Soviet period. Since that time, the system has undergone number of changes, including decentralization and privatization of services, which have transformed it from a centrally organized and run system into a fragmented one that performs inconsistently[7,25].

Currently in the Armenian healthcare system systematic approaches towards quality assurance, medical error reporting and prevention of adverse events are almost non-existent. There are several official documents adopted by the government concerning the current policy regarding health care quality. Particularly, there is a concept-paper on the "Improvement and control of the quality of healthcare provided to RA Population" approved

by the Government in 2002. This document emphasizes that the tendency of worsening of the health indicators of the population is related not only to the difficult social-economic situation of the country, but is also conditioned by the absence of appropriate mechanisms clarifying the rights, interests as well as the responsibilities of health care providers and recipients. There are some criteria, standards, and protocols developed back in the Soviet years that are currently partially used in practice. The majority of those protocols are outmoded and are sometimes creating obstacles instead of serving their mission[26]. Regarding healthcare quality another concept paper was approved by the Government in 2010, "Assessment of the quality of healthcare services in the Republic of Armenia", which aims at establishing and ensuring continuous application of an effective and viable system of healthcare quality monitoring, continuous assessment and problem identification based on systemic approach, clearly regulated methodology, procedures and functional means[27]. However, the policy regarding healthcare quality is limited to those concept papers and there are no systematic procedures implemented.

Despite the presence of some official documents about quality and safety, no extant studies of healthcare quality and patient safety completed in Armenia are represented in the peer-reviewed literature. Thus, there is extremely limited evidence and understanding of how quality and safety are perceived and defined by different stakeholders in Armenian healthcare, and whether those perceptions and definitions are cohesive and correspond to international standards or not[26,27].

Study Purpose

The *primary aim* of the study is to understand how healthcare quality and patient safety in the ICUs of Yerevan hospitals are perceived and defined by the different stakeholders of the system. The *secondary aim* of the study is to explore the cultural context of frontline

clinicians' perceptions of quality and safety through investigation of safety culture existent in those ICU settings. The findings may further serve as a basis for carrying out different initiatives related to assurance of quality and safety.

Methods

Approach, Design, and Methodology

The project is a mixed methods QUAL-quant cross-sectional study of different stakeholders' perceptions of healthcare quality and patient safety in the ICUs of Yerevan hospitals, as well as of features of safety culture existent in those ICUs. Those stakeholders are ICU physicians, nurses, hospital administration representatives, policy makers and real-time ICU patients' family members.

The qualitative component is the dominant element of the study, aiming at understanding the phenomenon of quality and safety within the naturalistic context of the ICU, rather than experimental settings[28,29]. The qualitative analysis provides rich descriptions of perceptions of healthcare quality and patient safety in the Yerevan ICUs[30].

The quantitative part serves as a complementary method to reflect the context of safety culture in the ICUs of Yerevan hospitals. It helps to explore the cultural context of frontline clinicians' perceptions of quality and safety through investigation of safety culture existent in those ICU settings. The findings may further serve as a basis for carrying out different initiatives related to assurance of quality and safety.

The qualitative and quantitative methods were used in parallel during the data collection, and the mixing was done during the final stage of analysis synthesizing the information obtained from both methods.

Participants

A purposive sample of stakeholders in ICU quality and safety in Armenian healthcare was recruited to participate in the study. Those stakeholders include ICU frontline clinicians (physicians and nurses), hospital administration representatives, ICU patients' family members interviewed during hospitalization, and policy makers.

In order to contact ICU frontline medical personnel (physicians and nurses) and hospital administration representatives, the student investigator with the support of her advising team approached three Yerevan hospitals through official letters. The physicians, nurses and hospital administration representatives at hospitals which agree to participate were asked to engage in semi structured in-depth interviews. The frontline clinicians and the hospital administration representatives were asked to share their perceptions and definitions of quality and safety.

In frames of the quantitative component of the study self-administered, anonymous structured questionnaire about the safety culture (SAQ) was distributed among all the physicians and nurses of the selected ICUs. As the clinicians have different working shifts during the week, some of them were having vacations, or were absent for different other reasons, in order for the fieldwork not to last too long, it was decided to include only those clinicians, who were in the hospital at the moment of distribution, or during the next day.

The SAQ consists of six scales, each of them capturing the caregivers' attitudes towards different patient safety domains: teamwork climate, safety climate, job satisfaction, stress recognition, perceptions of management, and working conditions. Each scale contains a set of questions to be answered using a five-point Likert scale (1=Disagree Strongly, 2=Disagree Slightly, 3=Neutral, 4=Agree Slightly, 5=Agree Strongly)[17]. There are some negatively worded questions, which were reverse scored in the analysis stage in order for them to match the positively worded questions. In order to calculate 100 point scale score for an individual

respondent, reverse scoring of negatively worded items was done, and then the mean of the set of items from the scale was calculated, 1 was subtracted from the mean, and the result was multiplied by 25[17].

The real-time ICU patients' family members were directly approached in the hospital and asked to participate in the in-depth interviews. They reflected on their hospital experience, on the way how they define quality and safety.

Policy makers were recruited through official letters of invitation. Representatives of the Quality Management Division of the Ministry of Health[1] of the RA were approached specifically. The policy makers were asked to share their perspectives on quality and safety, as well as the current and future trends in the context of healthcare quality and safety in Armenia.

Data Collection

Procedures

In order to understand how healthcare quality and patient safety in the ICUs of Yerevan hospitals are perceived and defined by the different stakeholders of the system, semi structured in-depth interviews were conducted with them. The interview guide has predetermined questions, however the ordering was flexible based on the flow of the conversation. The questions included in the interview guide have possible probes to obtain the necessary information. Overall as much in-depth interviews were conducted as needed for achieving data saturation, which refers to the point at which no new relevant data seems to emerge concerning the phenomena under exploration[31].

[1] By the time the research team completed the field work of this study and finished the processing of the paper, several structural changes occurred in the MOH, as a result of which this division does not exist anymore.

Additionally, in order to capture the safety culture of those ICUs included in the study, the Safety Attitudes Questionnaires was administered to all the frontline medical personnel (ICU physicians and nurses) of the ICUs.

The participation in the study was anonymous, and the personal information about individual study participants as well as participating hospitals was kept confidential. Besides, before starting the data collection, all the tools for data collection passed IRB confirmation, ensuring that no harm will be caused to the participants of the study.

Data Management

The in-depth interviews, upon the permission of the participants, were recorded by audio recorders and then fully transcribed to Armenian, afterwards translated to English. Additionally, notes were taken during the interviews to contextualize interview transcripts. The completed Safety Attitudes Questionnaires were entered to SPSS data sheet. All the transcriptions as well as the SPSS database were accessible only to the research team.

Data Analysis

The data obtained from the in-depth interviews was analyzed through content analysis, which is a flexible method for dealing with large volumes of textual data[28]. An inductive conventional content analysis was done, meaning that the data was used to generate ideas, unlike the opposite approach (deductive), which takes the idea and uses data to confirm or reject it[29,32,33]. The transcripts from the in-depth interviews were read, and coding was done; codes were derived from words and meaningful units from the text. Afterwards, abstraction was done: the codes were grouped, generating categories, and then the categories were grouped to generic categories, which, in turn, were grouped to larger categories (such as main categories or themes depending on the level of abstraction commensurate with the original category)[34] .

The analysis of the SAQs was done using SPSS. Descriptive statistics, frequency and exploratory data analysis were conducted.

Mixing Data

At first the data obtained from in-depth interviews and SAQs were analyzed separately. Afterwards, the data from the in-depth interviews of hospital administration representatives, frontline medical personnel, real-time ICU patients' family members and the data from SAQs were combined to present the cultural context of the different perceptions and definitions of healthcare quality and patient safety. Thus, the quantitative data served as a complementary component being a basis to derive the perceptions and definitions of different stakeholders about healthcare quality and patient safety in the ICUs of Yerevan hospitals.

Results

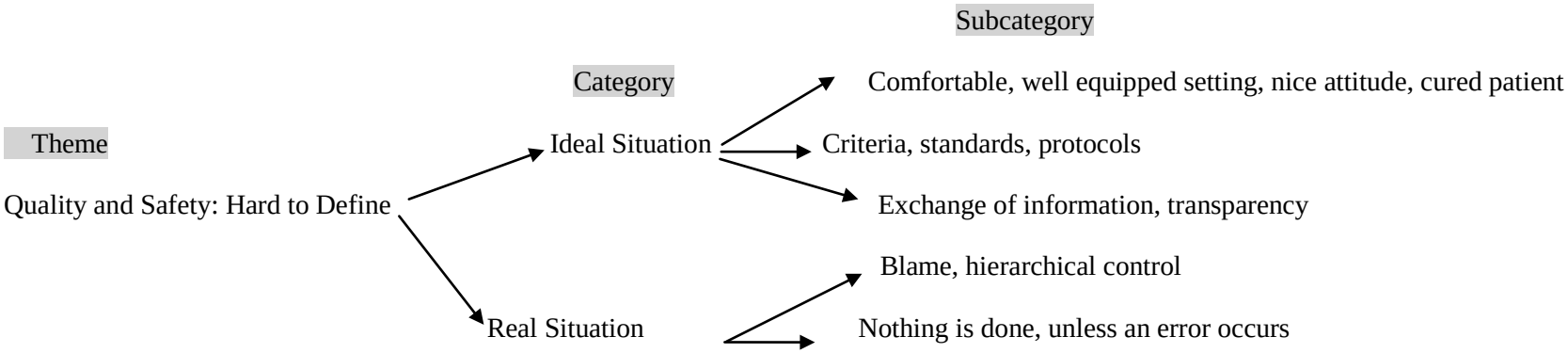
Qualitative Analysis

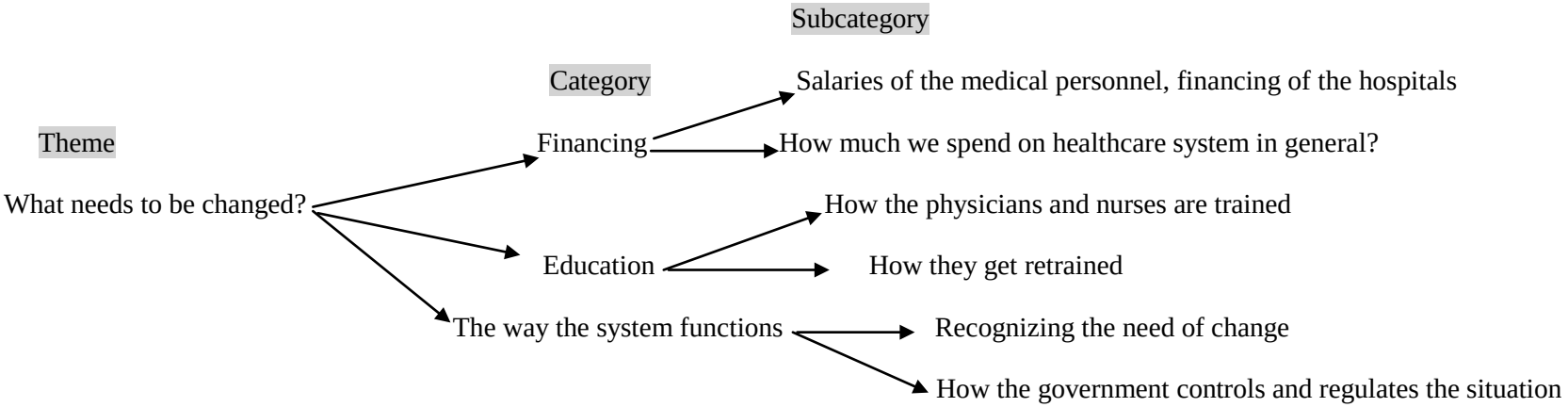
Participants

Overall twenty two respondents participated in an interview and all but one agreed to audio recording. Notes were taken for that interview. The respondents included policy makers, frontline clinicians (ICU physicians and nurses), hospital administration representatives, and patients' family members. The research team reached the policy makers from Ministry of Health of RA, and the other stakeholders were recruited from three hospitals in Yerevan.

Stakeholder	***Setting and number of respondents***		
	Hospital A	*Hospital B*	*Hospital C*
Administration representative	2	1	1
Physician	2	2	2
Nurse	2	2	2
Patient's family member	1	1	2
	Ministry of Health		
Policy maker	2		
Total	**22**		

Two main themes emerged in analysis of the interview data. These themes are *quality and safety: hard to define* and *what needs to be changed*. Each theme encompasses a set of categories, which describe different aspects of the theme. The first theme – *quality and safety are hard to define*, is described by the respondents through two main categories, which emerged during the analysis – ideal situation (1) and real situation (2) in terms of quality and safety. The second theme – *what needs to be changed* is represented by three main categories financing (1), education (2), and the way the system functions (3). The categories themselves consist of different interrelated subcategories.


Subcategory
Category
Comfortable, well equipped setting, nice attitude, cured patient
Theme
Ideal Situation
Criteria, standards, protocols
Quality and Safety: Hard to Define
Exchange of information, transparency
Blame, hierarchical control
Real Situation
Nothing is done, unless an error occurs


Subcategory
Category
Salaries of the medical personnel, financing of the hospitals
Theme
Financing
How much we spend on healthcare system in general?
What needs to be changed?
How the physicians and nurses are trained
Education
How they get retrained
The way the system functions
Recognizing the need of change
How the government controls and regulates the situation

Theme 1: Quality and Safety are hard to Define

The respondents shared their understanding and perspectives of healthcare quality and patient safety during the in-depth interviews. The study was multi centered and included three ICU settings, which differed from one another by their medical equipment, resources, financial situation. However, the opinions of the respondents coming from those various ICU contexts were quite similar and were triangulated among different participants. Different definitions of quality and patient safety emerged from the interviews, emphasizing different aspects of quality and safety.

Most participants, when talking about their understandings of quality and safety, described what should quality and patient safety be like in ideal circumstances and what those are like in reality. They mentioned a huge gap between so called “ideal” and “real” situations. Two main categories were derived from their reflections on healthcare quality and patient safety - *ideal situation* and *real situation*.

Ideal situation

Ideal situation as a category contains several subcategories, which emerged from the interview data. Those subcategories are: (1) comfortable, well equipped setting, nice attitude, (2) criteria, standards, protocols, and (3) exchange of information, transparency. As diverse respondent groups were included in the study, their perspectives on quality and safety were different. The differences were particularly more noticeable between professional stakeholders (policy makers, hospital administrators, frontline clinicians) and patients' family members. According to the patients' family members quality is represented by a clean, comfortable, well equipped setting, and a caring attitude on the part of physicians and nurses.

“A good physician, an attentive nurse plus caring attitude, perhaps nothing else is needed”.

Patent's family member, Hospital B

Patient' family members emphasized structural components of care (fresh equipment, medical devices and materials, clean setting) and positive patient outcome as indicators of quality and safety of care.

"When your room is clean and comfortable, when you trust your physician, when you are sure that s/he will do no harm to you, it means you receive high quality and safe care".

Patient's family member, Hospital A

The patients' and their family members' expectations about the care play a crucial role in shaping their understanding about quality and safety.

"Before coming to the hospital, you already have some expectations about the care, and those expectations form the standard (norm) for you. I consider the care as high quality and safe if it fits my standards".

Patient's family member, Hospital C

The understanding and perspectives on quality and safety among professional stakeholders including policy makers, frontline clinicians, and hospital administration representatives differed from those of patients' family members. The "criteria, standards, and protocols" were terms around which the "professionals" organized their thoughts.

"The first thoughts that come to my mind when I hear the phrase healthcare quality are criteria and standards; if you want to understand or measure the quality, you need to have clearly defined criteria".

Hospital B, Administration Representative

Professional stakeholders particularly emphasized the importance of measuring quality and safety.

"Ideally we should have special veritable criteria and standards in order to link our discussion to and to judge about quality based on them".

Hospital C, Physician

Policy makers discussed how relevant their current activities are to quality management activities that they ideally should occupy their attention with. They mentioned that they are not doing something they are supposed to do, and the reason for that is the absence of standards for quality.

"The quality management procedures that we imagine, are not incorporated in our current everyday activities; when we have the tools for quality management – criteria, standards, and protocols, we will not be sitting in our rooms and writing referrals or doing other paper work".

Policy Maker

According to frontline clinicians, patient outcomes and clinician-patient relationships are not always a direct indicator of quality. Unlike family members, who mostly emphasized treatment outcomes and perceptions of a caring attitude from physicians and nurses, clinicians view quality and safety as much more complex:

"If you are, let's say, curing someone's teeth, and you cure very well, you excellently cure the caries, and s/he is very satisfied, but during that process you infect her/him with Hepatitis B, then this kind of health service cannot be considered as good quality service. If you rescue the patient from bleeding, but because of transfusion s/he gets Hepatitis C, then it is not a good quality care too, despite the fact that the life of the patient has been saved. The opposite is also possible: you may do everything right, but the outcome might be very bad. In this case the care process might be organized according to the criteria, but because of the health condition, it was not possible to have good results. So what? Was the quality bad in the last case?"

Physician, Hospital A

Policy makers, frontline clinicians, and hospital administration representatives emphasized flow of information and how information circulates in the healthcare system. The latter is not only about the hospital level exchange of information, but rather a system-wide sharing of information about what is going on in the system. The three hospitals, which were included in

the study, had their specific reporting procedures. They mostly gather annual and/or trimester reports. Then they analyze the obtained data and get the general picture about how the hospital performed during the past year. However, in those reports mostly the structural and quantitative components are emphasized (e.g. number of patients admitted by each department, types of services provided to them, discharges, mortality rates, financial aspects of care etc.). They do not get into the details exploring the issues related to quality and patient safety.

"It would be excellent to have access to systematic and reliable information about different aspects of care, about the patients, about the details of their care process, but currently we even have difficulties in having appropriately filled-in medical records. In lots of cases there are huge discrepancies in those medical records".

Hospital Administration representative, Hospital B

Most participants emphasized that they know the literature and are aware of evidence-based practices to collect information about the care processes from the patients. But they didn't seem to believe that evidence.

"We have tried to distribute survey questionnaires among them several times. But our surveys were not informative at all; we didn't get anything new from them. They do not complain to us; they rather get out of the hospital and then start complaining through some hot lines to other channels".

Hospital Administration representative, Hospital C

Real Situation

In sharing their perspectives and understandings of healthcare quality and patient safety in Armenia today, participants vividly described their experiences and perceptions of quality and safety. Their reflections converged in the *real situation*. Real situation is comprised of two inter-related subcategories. Those are: (1) blame, hierarchical control, and (2) nothing is done unless an error occurs. In the reality the culture of blame is quite dominant in the ICU settings, and it is the only thing that follows any kind of error. Many of the respondents reported that the vertical/ hierarchical control is very essential; in fact it was the main way of control. They were afraid of their supervisors, and higher level administration. Besides, in terms of quality and safety the system itself can be characterized as a reactive, rather than proactive one, because of the absence of any preventive measure. As with ideal situation, real situation was described by the different stakeholder groups differently. The differences in real situation as described by professional stakeholders and patients' family members were more marked than in the ideal situation.

According to the patients family members the access to high quality care is highly dependent on the patients' ability to pay. The latter, in turn, means that not all the people can afford high quality and safe care.

"If my elderly father relied only on his own financial resources, he couldn't afford this treatment."

Patients' family member, Hospital A

Patients' family members expressed that they do not feel protected against possible harms that can occur during care:

"If let's say I need immediate treatment, and if during the care something goes wrong, maybe the physician does something wrong, or something unpredictable happens, I will be alone in dealing with

the consequences of the situation: nothing, no organization, no one, except for my family and relatives, will stand next to me in order to protect me."

Patients' family member, Hospital B

The role of the physician is perceived by the patients' family members as the most, if not the only, important role. In fact, all family members explained that the most important thing is the physician, who is in charge of taking care of them, rather than ther hospital setting in which they receive care. Physicians are generally blamed by family members if the outcomes of care are poor. In such cases, patients or their family members might complain about the physician to the hospital administration or report that physician to the Ministry of Health hotline. However, there are no systematic procedures do address those complaints. According to the interview data, there are only few steps that might follow those complaints: the higher administration of the hospital might continue blaming on the clinician; the physician might get some sort of formal or informal notification, or the Ministry of Health might refer back to the hospital to place blame on the physician. In this context the vertical control is the only way of controlling and checking the situation in the hospitals included in the study.

"We don't have any norms, we just check and control, check and control all the time No standards, just common sense".

Hospital administration representative, Hospital B

From the nurses' perspective, the vertical control coming from the head nurse, physician, head physician, and higher administration becomes even more essential.

"Our job is acting in response to what our physicians tell us. We are not allowed to act based on what we think. Thinking is not our job. No rules or norms, only control of the physicians and the heads."

Nurse, Hospital A

Physicians and nurses share the opinion that quality is “everybody’s job”. However, unlike nurses who view themselves as passive actors in the situation, physicians emphasize the importance of using the literature and their knowledge.

“We do the best that we can, considering our resources; we do not have standards to follow, it is our knowledge and expertise that we use. We do not rediscover things that were discovered long ago; there is literature which we use, and of course, we are constantly supervised by the head of the department and the higher administration.”

Physician, Hospital C

Only the most serious adverse events, such as death or very severe life-threatening complications, are considered within hospitals as important to quality and safety. The less severe complications are not usually paid attention to. All the hospitals included in the study have a special group designated to discuss severe adverse events (in the participants’ words – all those events when they had a negative patient outcome, such a death, or severe complications). These groups usually include clinicians from various departments.

"We might come together once in three months, or more frequently depending on the need, to discuss “problematic cases”. We do not have our criteria to define which cases to discuss. We mainly rely just on common sense and our medical expertise".

Physician, Hospital A

Those groups are also discussing those cases, when the clinicians cannot find out the final diagnosis. However, there is no similar practice for less severe cases, which indicates that severity is considered as the most important issue to react to.

“Less severe case, is already a less severe case – nothing to discuss”

Nurse, Hospital A

Theme 2: What needs to be changed?

When sharing their understanding and perspectives on healthcare quality and patient safety the participants also touched upon different aspects/factors, which, in their opinion, need to be changed in order to achieve higher levels of healthcare quality and patient safety in the ICU settings. The second main theme, which emerged from the interview data is labeled as "What needs to be changed". The theme is represented by three main categories: financing (1), education (2), and the way the system functions (3), each of them consisting of a set of interrelated subcategories. The theme captures the stakeholders' opinions and thoughts, emerged from the interview data, about the problematic issues, barriers, and difficulties that the ICUs face in terms of quality and patient safety. According to the participants all those mentioned aspects need to be modified to see tangible results in the reality.

Financing

Study participants stressed the importance of paying attention to finances. Their reflections targeted various levels of financing, starting from the clinicians' salaries and hospital-level financing, to the financing of the healthcare system in general.

The importance of paying attention to the clinicians' salaries was particularly emphasized by clinicians and hospital administration representatives.

"When I was in the US, I was observing the physicians, they were even smiling, and they didn't have concerns about financial and social instability. Their thoughts during the working hours were about their patients. But the social issues particularly nowadays, distract the attention from the most important things. Our physicians and nurses cannot think and act professionally because of many concerns. They come to work, and, sorry that I am saying that, but they are thinking how to take (meaning steal) something and bring home to take care of their families."

Hospital administration representative, Hospital A

The hospital administration representatives got very concrete about the role of physician low salaries and emphasized how important it is to look at the situation as a whole.

"We blame the physicians all the time, but sometimes we need to look at the situation from their perspectives. They get AMD 100 000 (approx. USD 240 per month), and with that 100 000 this person has to try to live, to pay the communal fees, to pay for the children's education, to buy food. After that, they blame the doctors for corruption. Ok, let's imagine, the physicians do not take additional money, can you imagine a living with that much income? It is unacceptable."

Hospital administration representative, Hospital C

In this context the clinicians' thoughts were quite similar to those of hospital administration representatives. They also accented the point that in order to have a good performance one needs to be rewarded accordingly.

"The salaries of the clinicians are very low. We do our best and we need to be rewarded accordingly. In order for us to be fully devoted to our job, we need to be financially and socially protected. In other words, how are we going to take care of others if we are not protected? During our working hours we should only think about taking care of the patients, not about ways to "beg" for money".

Nurse, Hospital B

Another related aspect discussed by the physicians was that they do not feel comfortable to be concerned and informed about the payment details of their patients. They rather prefer to only think about their patients' treatment.

"I don't want to be aware of my patients' payment issues. This is not my job. I am here to take care of them. Don't make me a sales person, and in case if I am mistaken, punish me, disqualify me, use different sanctions, don't let me work for a year, for example. But assure the preconditions."

Physician, Hospital A

Interestingly, the patients' family members also seemed to be concerned about the low salaries of the clinicians. They were informed that clinicians get low salaries and seemed to

admit the fact that in order for the clinicians to perform well, they need to be paid accordingly.

"Sometimes I am thinking how unaffordable the healthcare is. There are certain services that one cannot have access to without paying a huge amount of money, and I am thinking that the services should be cheaper to be more affordable, but I really don't want that money to be cut from the physicians' and nurses' salaries, because I know that they are getting very little compared to the efforts they insert".

Patients' family member, Hospital B

Another important aspect of financing emphasized by the study participants is the hospital-level financing, or, in other words, how do the financial resources flow to the healthcare providers. The policy makers and hospital administration representatives were the ones who particularly emphasized the hospital level financing.

According to the hospital administration representatives, the Government should motivate the providers to compete for quality. The latter is not done nowadays in their opinion.

"Incentivizing the providers could help. Otherwise hospital gets from the Government the same money irrespective of the quality of the services provided. If the patient outcome was good - you get the same amount of money, if there were complications - you get the same money, if the patient dies- you get the same money. The providers do not have incentives to pay attention to their quality; they are not competing with each other for quality. This needs to be changed."

Hospital administration representative, Hospital A

The policy makers share the administrators perspectives about the need to incentivize the providers based on their performance. They also mentioned that sometimes they experience lack of certain medications, which are essential for assuring proper treatment. The latter is again a result of financing.

"We cannot keep 100% performance with such few financial resources. We are having many problems with availability of certain drugs, we are kind of trying to just be on surface, to keep existing, we are "trying to meet the ends", but this is not the right arrangement of the things."

Policy maker

Finally, the last aspect of financing discussed by the study participants is about general healthcare financing, or, in other words, how much the country spends on health care. All the stakeholders, while discussing the lack of finances, mentioned that the Government allocates very little money to healthcare.

From the patients' family members perspective the Government money allocated for certain healthcare services included in the Basic Benefit Package is either not enough or is not spent in a way it is supposed to be. They brought several examples from their experience when they were rejected to be treated under the BBP, because the allocated money for it has already been spent.

"I know that my mother can get certain treatments free of charge, but when we take her to the hospital, we are told that the money is used and they cannot give us treatment free of charge. But where does that money go? How it can happen that in the middle of the year the money is over? The Government should calculate and allocate proper amount of money, otherwise we are told that several services are free, but in the reality there is no money for the treatment."

Patient family member, Hospital B

Though all the stakeholders were mentioning that the Government should allocate more financial resources for healthcare, they were also discussing that there are other factors that prevent the Government from financing the healthcare system properly.

"The financial situation needs the biggest attention. I understand that we are a small, poor country, but if we need high quality healthcare, there is a need for investments. Well, we went through war, we had to maintain the army, and it is somehow understandable why we spend so little on healthcare."

Hospital administration representative, Hospital C

The opinion that the general situation in the country should improve in order to have improvements in the healthcare system was quite popular among the policy makers, too:

"Our country is a poor country, so to expect highest quality of care is not justified. The country needs to get better in order to improve the health system as well. The social-economic conditions have major role in everything, in order to improve the healthcare in general; firstly the socio-economic conditions should be improved".

Policy maker

While the majority of the study participants shared the same opinion that the general situation needs to get better in order to expect improvements in the healthcare system, several clinicians pointed out that healthcare system should be prioritized by the Government, and the Government should undertake specific actions and initiate changes in the sphere of healthcare.

"There are some spheres that need more Government attention. Health is a public good, and the state should regulate and finance it appropriately. This is one of the most, if not the most important sphere. Everyone deals extensively with healthcare system during their entire lifetime; starting from conception till death, humans encounter it."

Physician, Hospital A

Education

Medical education is the next major factor, which, according to the study participants, needs to be modified in order to see tangible improved results in terms of healthcare quality and patient safety. This category involves not only the education of clinicians, but also their continuous lifelong training. Though education, as a factor influencing on the quality of healthcare, was emphasized by all the stakeholders, the professional stakeholders gave much

more importance to and expressed more concerns about it compared to the patients' family members.

"The question of quality also involves the training of the specialists. The way how our specialists are trained and educated in the past 25 years is highly questionable. Who is educating them? How are they retrained later on? In the past, in order to become a good physician in Armenia, you needed to do a scientific work, to go and see what is done outside of your country (Kiev, Moscow, Leningrad), to work there, to pass that school, you needed to do a scientific work, you needed to see what is done elsewhere, and the return back to Armenia to work. Now we don't have that experience."

Hospital administration representative, Hospital A

The physicians expressed lots of concerns regarding the quality of the current medical education. They particularly mentioned that the teaching methods and materials are outmoded, that science develops and there are new methods, new ideas, which should be taught to the clinicians during their studies.

"In several years we will not have physicians who are really competent and can behave in terms of professionalism. We have very few good specialists nowadays, and the existing ones are migrating. In order for the physician to really provide high quality of care, s/he needs to be very knowledgeable, very educated, trained, and informed about the best practices. Do you know how poor the state of medical education is now?"

Physician, Hospital B

In this context, the patients' family members' perspectives differed from those of professional stakeholders. Unlike the clinicians, hospital administration representatives, and policy makers, the patients' family members were not that much aware of the problems of current medical education; they were rather focusing on their subjective perception, whether the clinician seems educated to them or not.

"When the nurse and the physician, who take care of my brother, talk to us in a polite, respectful manner, I understand from their words that they are knowledgeable and are masters in their field, and we can trust them and believe that they will provide safe and high quality care."

Patients' family member, Hospital C

The next important aspect of education discussed by the study participants was the lifelong training of the medical personnel. In the era of technological advancement and scientific progress new approaches and methods are developed, new evidence is generated, and the clinicians should be continuously trained to refresh and update their knowledge. In the Soviet times there was a practice when the physicians went to other Soviet countries, to different medical and research centers for training. The latter is not done anymore. There are cases when some physicians have the opportunity to go abroad for different exchange projects, conferences, and other events, which usually are very short and do not give opportunity for comprehensive training. According to the hospital administration representatives it would be very useful to establish connections with foreign advanced medical centers and give chance to their physicians and nurses to get trained.

Unlike the physicians, who might have different chances to participate in professional short trainings, conferences, and exchange projects, the nurses do not have such opportunities. All the nurses, who were included in the study, kept mentioning how important they find refreshing their knowledge.

"Sometimes, when I see the physicians going for trainings to other countries, I am thinking "Oh, lucky they, I wish I could be there, too". Particularly, I am interested in refreshing my knowledge, in learning new approaches, and it would be so nice if the nurses were also given the opportunity to improve themselves."

Nurse, Hospital B

The way the system functions

The next important aspect, which needs to be modified in order to achieve improved quality and safety in the healthcare, is the way the system functions. It refers to the policy processes, government regulations, as well as political will to initiate changes in the system. According to the study participants, for any system to function properly, setting priorities is essential. The hospital administration representatives and clinicians kept mentioning that in Armenian healthcare system no systematic prioritization is done. Moreover, the decision-making in the policy level is not evidence-informed, which is another thing to worry about according to the respondents.

"If you have scarce finances in your family, you plan on what to spend, you prioritize. But here (referring to the government), when a new minister comes, he adopts something new, without taking into consideration the evidence, and the money, like a wind, goes without any positive outcome/result. This means that the scientists should develop plans, and the ministers shout act accordingly independent of who is the minister, what party s/he represents. We should have such scientific programs in all the spheres in order not to waste the government's money on the wind, in order not to make stupid decisions, in order to be efficient. The key is, the clever people should think and develop a plan and give the implementers to act accordingly."

Hospital administration representative, Hospital B

Another idea, which was quite popular among the clinicians, was that they feel a huge gap between the policy and the clinical practice. The clinicians kept mentioning that the ones who are involved in policy making processes seemingly do not understand what is going on in reality. The clinicians seemingly do not find practical clinical implications to most of the decisions in the policy level.

"The overall organization and management of the system are inefficient. Who are sitting in the policy level, in the ministry? Those are people who don't know what is going on in the clinical field; they are

just sitting in their places, writing some papers, which are irrelevant to the practice. There is a huge gap between the policy makers and the clinicians. Besides, "not the right people have taken the positions in the policy level". The family connections still remain the major determinant of staffing policy. This needs to be changed."

Physician, Hospital A

In this context another major aspect emphasized by the study participants was the lack of relevant government regulations in the sphere of healthcare system. Interestingly enough all the hospital administration representatives, who participated in the study, stated that the hospitals are given too much freedom in terms of providing healthcare services to the population.

"The hospital administrations are given flexibility on many issues, whereas it would be better to regulate the situation systematically. It would be preferable if the Government had strict regulations on many important aspects of service provision."

Hospital administration representative, Hospital B

Physicians had similar reflections, too. While talking about the existing gap between policy and practice, clinicians shared their recommendations about how to change the situation.

"We lost our system starting from the moment when medicine became a business. We need to create a real system, we need more government regulation, and we need more collaboration with the government".

Physician, Hospital A

Though the study participants where openly sharing their understanding and perspectives on the healthcare quality, and patient safety, were discussing the challenges that the system faces, they didn't seem to be hopeful for the future positive changes in the field.

"Do you know why everything remains the same despite all the problems that we face? Because, no one is interested in change, no one (referring to higher level decision-makers) is eager to establish good quality of healthcare; they think it is not their business... It is not profitable for them to put the effort ..."

Physician, Hospital C

The way the system functions was highly emphasized by all the stakeholders. All of them kept mentioning that in order to achieve changes in the medical education and financing of the healthcare system, there is need to start changing the way of management of the healthcare system in general.

Quantitative Analysis

Eighty one participants in three Yerevan ICUs completed the Safety Attitudes Questionnaire (SAQ). The overall response rate was 73.6%. The mean age of the participants was about 33 years, ranging from 20 to 59 years. The clinicians' mean work experience in the ICUs was approximately 11 years, ranging from 2 to 35 years.

Table 2 represents descriptive data about the six domains of the SAQ administered in three hospital ICUs (See Appendix 3). The mean scores for teamwork climate, safety climate, job satisfaction, stress recognition, perceptions of management, and working conditions were respectively 79.7 (SD=9.2), 75.8 (SD=10.8), 93.1 (SD=12.9), 36.3 (SD=28), 82.4 (SD=19.4), and 92.7 (SD=13.3).

Table 3 shows mean scores for SAQ six scales organized by hospital. In all the scales, except for working conditions scale, there were no statistically significant differences among the three hospitals (See Appendix 3). The mean score for working conditions in the Hospital A was 90.3 (SD=14.9), in Hospital B it was 98.7 (6.1), in Hospital C it was 86.3 (SD=16.1). In

terms of the mean scores of working conditions scale there were statistically significant differences between Hospitals A and B (p=0.032), and between Hospitals C and B (p=0,005).

Table 4 shows descriptive data about the scale scores by the positions of the clinicians. According to the t-test of the equality of means, there were no statistically significant differences in the mean scores of the SAQ scales, except for job satisfaction scale, and working conditions scale (See Appendix 3). The mean score for job satisfaction scale among nurses and physicians is statistically significantly different (p<0,001): nurses - 95 (SD=8), and physicians - 79,5 (SD=26,5). The mean scale score for working conditions is also statistically significantly different between nurses and physicians (p=0,002): nurses – 95 (SD=9), physicians – 80,8 (SD=25,8).

Table 5 shows descriptive data for mean scores on SAQ scales among men and women clinicians. The results were not statistically significantly different between males and females, except for the working conditions scale (See Appendix 3). The latter was statistically significantly different (p=0,008) among male and female clinicians: women - 95 (SD=8,9), men – 81,3 (SD=21,9).

As there were no men among the nurses who participated, we decided to drop the nurses from the analysis in order to see whether the difference in mean scores of working conditions scale among men and women remain statistically significant after controlling for the position or not. It turned out that there is no statistically significant difference in the mean scores of working conditions scale between men and women. The same thing happened while comparing the mean scores of physicians and nurses. Since the nurse population was only presented by women, we dropped the men from the analysis to see whether the differences in the means scores of job satisfaction and working conditions scales remain statistically significant between physicians and nurses after controlling for gender. Here again, the

bivariate analysis showed that difference in mean scores of job satisfaction and working conditions scales are not statistically significant among physicians and nurses. While putting the position and the gender into the regression model, none of them show statistically significantly different results.

Discussion

The study results describe how healthcare quality and patient safety in the ICUs of Yerevan hospitals are perceived and defined by the different stakeholders of the system. The findings also delineate the cultural context of frontline clinicians' perceptions of quality and safety through investigation of safety culture existent in those ICU settings. To our knowledge, this project is the first attempt to explore the perceptions and understanding of healthcare quality and patient safety among different important stakeholders of the healthcare system in Armenia.

The respondents differentiated what healthcare quality and patient safety should be ideally, and what is the current situation regarding quality and safety in the Armenian healthcare system. In this context, one of the major findings is that there is a huge gap between so called ideal and real situations. The fact that the respondents naturally separated “real” and “ideal” situations from one another indicates that the expectations on quality of care and the current situation are very different. The findings show that hierarchical control, as the main way of quality assurance, and culture of blame are the main attributes of the real situation regarding healthcare quality and patient safety in the ICUs of Yerevan hospitals. Whereas, according to the results of the study there should be clearly defined criteria, quality standards and protocols along with transparent flow of information to judge about healthcare quality. Though the primary data collection was done in three different hospital ICU settings, all of them seemed quite similar in terms of clinicians', administrators', and patients' and their

family members' perceptions of healthcare quality and patient safety. The organizational culture in all of the targeted ICUs can be described as pathological[35], considering the fact that blame and hierarchical control are the main driving forces of quality and safety initiatives.

The way how patients perceive and define healthcare quality and patient safety goes in line with findings represented in the international literature. Patient-centered care, emotional support, access to care, communication and information, efficiency of care, are among the most popular dimensions of quality according to the patients and their family members cited in the peer reviewed literature.[36,37]

The next major finding driven from the study is that according to the stakeholders of the system in order to improve the quality of care and patient safety *financing, education* and the *way the system functions* need to be changed. This finding is also accordant to what the literature suggests.[5,10,11]

Our literature review showed that no studies on different perceptions of healthcare quality and patient safety in transitional countries are represented in the peer-reviewed literature, which makes it impossible to draw more precise comparisons between the findings that this study revealed with the existing ones.

The quantitative component of the research revealed the organizational culture of safety in the ICU settings through measuring six predetermined domains of safety culture: teamwork climate, safety climate, job satisfaction, stress recognition, perceptions of management, and working conditions among the frontline clinicians (physicians and nurses) in the ICUs. All the three included ICUs showed quite high scores in all the domains. Those scores are similar, or even higher, than the scores found in countries such as the USA, UK, New Zealand, Sweden, etc[17,38]. However, when the findings from the qualitative and quantitative components were combined, a controversial image of the reality regarding healthcare quality

and patient safety emerged. On one hand in the ICU settings of Yerevan hospitals there are basically no quality and patient safety assurance processes, no systems in place. Moreover, the understandings and perceptions of patient safety issues and medical error reporting are very personalized. Besides, the existing organizational culture of safety is overwhelmingly blaming one according to the qualitative interviews. On the other hand, the SAQ showed quite positive results in all the six domains of safety culture: teamwork climate, safety climate, job satisfaction, stress recognition, perceptions of management, and working conditions. This kind if dissonant representation of the reality makes it hard to synthesize the results from qualitative and quantitative parts. One of the possible explanations could be the fact, that while filling in the self administered SAQ, the respondents tried to make good impression while trying to hide the reality. Unlike the quantitative part, in the qualitative component the researcher had opportunity to go deep into the details, tried to understand the inner issues, revealing the real picture regarding healthcare quality and patient safety in the ICUs of Yerevan hospitals. Another reason could be the fact, that the terms *healthcare quality* and *patient safety* are quite new for the Armenian clinicians, and sometimes they do not deeply understand the real meanings of those or related terms and give quick and impressive responses without fully realizing.

Strengths and Limitations

To our knowledge this study is the first attempt to explore how the terms healthcare quality and patient safety are perceived and defined by the different stakeholders of the system. The study design gives opportunities to not only explore different perceptions and definitions of quality and safety in the ICUs of Yerevan hospitals, but also helps understand the cultural context of those perceptions and definitions. One of the strengths of this study is that it involves wide range of important stakeholders of the system, exploring quality and safety from different perspectives. The QUAL-quant mixed methods design attempts at getting into

the deep layers of the topic, at the same time not forgetting about the objective cultural context. Another strength is that the results were triangulated among different ICU settings and different stakeholders, which adds credibility to the findings. This study could serve as a basis for further exploration of healthcare quality phenomenon in Armenia in broader scale or setting.

One of the major limitations of the study is the lack of generalizability of the findings. This study is limited to Yerevan hospitals only, and does not describe the situation in Armenia in general. Another limitation is that the Safety Attitudes Questionnaire used as a data collection tool in the quantitative component, is not validated in Armenia.

Conclusion

This study is the first attempt to explore the stakeholders perceptions and understandings of healthcare quality and patient safety in the ICUs of Yerevan hospitals, as well as to measure the safety culture existent in those settings. Our findings suggest that there is a huge gap between the expectations of how quality and patient safety should be achieved and what we have in the reality. While the frontline clinicians and administration representatives accept that without clearly defined standards, criteria, and protocols, the quality and safety wouldn't be achieved, there is ambiguity, when we will have those in practice. The patients and family members' understandings of quality and patient safety are mostly based on the nice and caring attitude of the clinicians. The accessibility of care, patient rights, interests, and patient engagement in establishing quality of care are still to be achieved. Our findings also suggest that in order to achieve tangible results in terms of healthcare quality and patient safety, we need comprehensive strategies to modify healthcare financing, healthcare education, as well as both - hospital level and system level management.

References

1. Donabedian A. *An Introduction to Quality Assuarance in Health Care* New York: Oxford University Press; 2003.

2. Donabedian A. The quality of care. How can it be assessed? *JAMA.* Sep 23-30 1988;260(12):1743-1748.

3. de Jonge V, Sint Nicolaas J, van Leerdam ME, Kuipers EJ. Overview of the quality assurance movement in health care. *Best Pract Res Clin Gastroenterol.* Jun 2011;25(3):337-347.

4. *To Err is Human: Building a Safer Health System.* Washington DC: Institute of Medicine;1999.

5. *Crossing the Quality Chasm: A New Health System for the 21th Century.* Washington DC: Institute of Medicine;2000.

6. *An Organization with a Memory.Report of and Expert Group on Learning from Adverse Events in the NHS Chaired by the Chief Medical Officer.* London2000.

7. Hakobyan T, Nazaretyan M, Makarova T, Aristakesyan M, Margaryants H, E N. *Armenia: Health System Review. Health Systems in Transition*2006.

8. Leape L, Berwick D, Clancy C, et al. Transforming healthcare: a safety imperative. *Qual Saf Health Care.* Dec 2009;18(6):424-428.

9. Runciman W, Hibbert P, Thomson R, Van Der Schaaf T, Sherman H, Lewalle P. Towards an International Classification for Patient Safety: key concepts and terms. *Int J Qual Health Care.* Feb 2009;21(1):18-26.

10. Reason J. Human error: models and management. *BMJ.* Mar 18 2000;320(7237):768-770.

11. Tropello SP, Ravitz AD, Romig M, Pronovost PJ, Sapirstein A. Enhancing the quality of care in the intensive care unit: a systems engineering approach. *Crit Care Clin.* Jan 2013;29(1):113-124.

12. Bilawka E, Craig BJ. Quality assurance in health care: past, present and future. *Int J Dent Hyg.* Aug 2003;1(3):159-168.

13. Hudson P. Applying the lessons of high risk industries to health care. *Qual Saf Health Care.* Dec 2003;12 Suppl 1:i7-12.

14. Pronovost PJ, Sexton JB, Pham JC, Goeschel CA, Winters BD, Miller MR. Measurement of quality and assurance of safety in the critically ill. *Clin Chest Med.* Mar 2009;30(1):169-179, x.

15. Weingart SN, Wilson RM, Gibberd RW, Harrison B. Epidemiology of medical error. *BMJ.* Mar 18 2000;320(7237):774-777.

16. Westrum R. A typology of organisational cultures. *Qual Saf Health Care.* Dec 2004;13 Suppl 2:ii22-27.

17. Sexton JB, Helmreich RL, Neilands TB, et al. The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. *BMC Health Serv Res.* 2006;6:44.

18. Norden-Hagg A, Sexton JB, Kalvemark-Sporrong S, Ring L, Kettis-Lindblad A. Assessing safety culture in pharmacies: the psychometric validation of the Safety Attitudes Questionnaire (SAQ) in a national sample of community pharmacies in Sweden. *BMC Clin Pharmacol.* 2010;10:8.

19. *Patient Safety Research: A guide for developing training programmes*. Geneva: WHO; 2012.

20. Alberti C, Brun-Buisson C, Burchardi H, et al. Epidemiology of sepsis and infection in ICU patients from an international multicentre cohort study. *Intensive Care Med.* Feb 2002;28(2):108-121.

21. Valentin A, Bion J. How safe is my intensive care unit? An overview of error causation and prevention. *Curr Opin Crit Care.* Dec 2007;13(6):697-702.

22. Valentin A, Capuzzo M, Guidet B, et al. Patient safety in intensive care: results from the multinational Sentinel Events Evaluation (SEE) study. *Intensive Care Med.* Oct 2006;32(10):1591-1598.

23. *Assessing and tackling patient harm: A methodological guide for data-poor hospitals*: World Health Organization; 2010.

24. Armenia . Ministry of H, World B, World Health Organization. Regional Office for E. *Armenia : health system performance assessment, 2009*. Copenhagen: [WHO]; 2009.
25. Hovhannisyan SG. Health care in Armenia. *BMJ*. Sep 4 2004;329(7465):522-523.
26. Concept Paper on improvement and control of the quality of healthcare provided to RA Population. In: Armenia Go, ed. Vol 462002
27. Concept Paper for Assessment of the quality of healthcare services in Armenia and the list of concept paper introduction activities In: Armenia Go, ed. Vol 402010.
28. Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health Serv Res.* Aug 2007;42(4):1758-1772.
29. Pope C, Mays N. Reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research. *BMJ*. Jul 1 1995;311(6996):42-45.
30. Sofaer S. Qualitative methods: what are they and why use them? *Health Services Research.* 1999;34(5 Pt 2):1101-1118.
31. Khunlertkit A, Carayon P. Contributions of tele-intensive care unit (Tele-ICU) technology to quality of care and patient safety. *J Crit Care*. Nov 14 2012.
32. Pope C, Ziebland S, Mays N. Qualitative research in health care. Analysing qualitative data. *BMJ*. Jan 8 2000;320(7227):114-116.
33. Hsieh HF, Shannon SE. Three approaches to qualitative content analysis. *Qual Health Res.* Nov 2005;15(9):1277-1288.
34. Elo S, Kyngas H. The qualitative content analysis process. *J Adv Nurs.* Apr 2008;62(1):107-115.
35. Qualitative Health Research. http://qhr.sagepub.com/. Accessed 10.04.2013.
36. Sofaer S, Firminger K. Patient perceptions of the quality of health services. *Annu Rev Public Health.* 2005;26:513-559.
37. Larrabee JH, Bolden LV. Defining patient-perceived quality of nursing care. *J Nurs Care Qual.* 2001;16(1):34-60.
38. Camilla Göras FYW, Ulrica Nilsson, Anna Ehrenberg. Swedish translation and psychometric testing

of the safety attitudes questionnaire

(operating room version). *BMC Health Serv Res.* 2013;13(104).

Appendix 1

Consent Form: English and Armenian Versions

Hello, my name is __Lusine Musheghyan__. I am a student of the Master of Public Health program at the American University of Armenia and currently, in frames if my thesis project we are doing a study to better understand how healthcare quality and patient safety are perceived and defined by the different stakeholders of the system.

I am inviting you to participate in an interview for this project because you are an important stakeholder in terms of healthcare quality and safety and because you speak Armenian. Participating in the project only involves this interview today. It should take no longer than 45 minutes to complete. Your name will not appear in any presentation of the project. What you say will contribute to this project but what you say will be put together with what is said by other participants. Quotes from what you say may be used in reporting the final project findings but will not be identified by your name or any other personal and identifiable information. I will record the interview and take notes throughout the interview. Do you consent to the recording? My notes and the recording will be stored without any information that will identify you, and they will be destroyed at the end of the entire project after we finish the analysis.

Your participation in this study is voluntary. There is no penalty if you decline to take part in this project. You may refuse to answer any question or stop the interview at any time.
There is no financial compensation or other personal benefits from participating in the study and there are no known risks to you resulting from your participation in the study. Your participation will help us understand the perceptions of quality and safety in the ICUs of Yerevan hospitals.

If you have any questions regarding this study you can call the Associate Dean of the School of Public Health of American University of Armenia, Varduhi Petrosyan, at (37410) 51 25 92. If you feel you have not been treated fairly or think you have been hurt by joining the study you should contact Dr. Hripsime Martirosyan, the Human Subject Protection Administrator of the American University of Armenia (37410) 51 25 61.
Do you agree to participate? Please say YES or NO.
Thank you.

If yes, shall we continue?

Բարև Ձեզ, իմ անունը __Լուսինե Մուշեղյան__ է: Ես Հայաստանի Ամերիկյան համալսարանում հանրային առողջապահության մագիստրոի ծրագրում ուսանող եմ, և այժմ իմ մագիստրոսական թեզի շրջանակներում մենք հետազոտություն ենք իրականացնում ավելի լավ հասկանալու, թե ինչպես են առողջապահական ծառայությունների որակը և հիվանդների անվտանգությունը ընկալվում և սահմանվում համակարգի տարբեր շահագրգիռ կողմերի տեսակնյունից:

Ես հրավիրում եմ Ձեզ մասնակցելու հարցազրույցի այս ուսումնասիրության շրջանակներում, քանի որ Դուք հանդիսանում եք կարևոր շահագրգիռ կողմ առողջապահական ծառայությունների որակի և անվտանգության տեսնակյունից և քանի որ Դուք խոսում եք հայերեն:. Ձեր մասնակցությունը ենթադրում միայն այս հարցազրույցն այսօր: Այն չի տևի ոչ ավելի, քան 45 րոպե: Ձեր անունը ծրագրի արդյուքների ներկայացման ժամանակ ոչ մի տեղում չի երևա: Այն, ինչ Դուք կասեք, կնպաստի այս ծրագրին, սակայն, այն, ինչ Դուք կասեք, միասին կհամատեղվի այլ մասնակիցների ասածների հետ: Որոշ մեջբերումներ Ձեզ խոսքից հնարավոր է՝օգտագործվեն տվյալների ներկայացման ժամանակ, սակայն Ձեր անունը կամ անձնական որևէ տվյալ չի նշվի: Ես կձայնագրեմ և նշումներ կանեմ հարցազրույցի ընթացքում: Դուք դեմ չե՞ք ձայնագրելուն: Իմ նշումները և ձայնագրությունները կպահպանվեն առանց Ձեր մասին որևէ տեղեկատվության, և դրանք կոչնչացվեն ծրագրի վերջանալուն պես՝ վերլուծությունն ավարտելուց հետո:

Ձեր մասնակցությունն այց ծրագրի կամավոր է: Չկա որևէ տույժ, եթե Դուք մերժեք մասնակցել ծրագրին: Դուք կարող եք հրաժարվել պատասխանել այս կամ այն հարցին, ինչպես նաև կարող եք ընդհատել հարցազրույցը ցանկացած պահի: Չկա որևէ ֆինանսական փոխհատուցում կամ այլ անձնական շահ այս ծրագրին մասնակցությունից, և չկան հայտնի ռիկեր, որ կարող են առաջանալ Ձեր մասնակցությունից: Ձեր մասնակցությունը կօգնի մեզ հասկանալ Երևանի հիվանդանոցների ինտենսիվ թերապիայի բաժանմունքներում առողջապահական ծառայությունների որակի և անվտանգության մասին պատկերացումները:

Եթե ունենաք հարցեր այս ծրագրի մասին, կարող եք զանգել Հայաստանի Ամերիկյան համալսարանի հանրային առողջապահության ֆակուլտետի փոխդեկան Վարդուհի Պետրոսյանին (37410) 51 25 92 հեռախոսահամարով: Եթե զգաք, որ Ձեզ նկատմամբ անարդարացի են վարվել, կամ եթե կարծեք, որ Ձեզ վնաս է հասցվել այս ուսումնասիրության ընթացքում, կարող եք դիմել Հայաստանի Ամերիկյան համալսարանի գիտական էթիկայի հանձնաժողովի քարտուղար Հռիփսիմե Մարտիրոսյանին՝ (37410) 51 25 61 հեռախոսահամարով: Դուք համաձա՞յն եք մասնակցել: Խնդրում եմ ասել ԱՅՈ կամ ՈՉ:

Շնորհակալություն

Եթե այո, կարո՞ղ ենք շարունակել:

Appendix 2

Tools for Data Collection: English and Armenian Versions

In-depth interview guide for ICU frontline medical personnel (physicians and nurses)

As I already mentioned the main aim of this interview is to understand your perceptions about quality and safety in this ICU.

1. Would you please briefly describe this ICU?
2. What is your role in it?
3. Tell me, please, what do you understand when saying "quality of healthcare"?
4. What is quality here in the ICU?
5. How do you define patient safety?
6. In your opinion what is patient safety in the ICU?
7. Please, describe any special programs to assure quality and safety in your ICU.
    a. Any examples that you feel best exemplify these programs?
8. What is the importance of these programs of quality and patient safety?
9. Frontline clinicians, particularly in ICUs, deal with many stressful events. What do you think, how all those events influence your work?
10. What do you think are the major threats to quality and safety here in the ICU?
11. Describe, please, any standards for quality and safety that you have in this setting.
    a. Any examples of standards you feel are most important?
12. Who is responsible for quality and safety here in the ICU?
13. How are approaches to quality and safety structured here in the ICU?
14. What processes are used under normal circumstances?
15. How about processes when an adverse event occurs?
    a. Are there reporting procedures?
    b. Who is informed?

    (Possible probe: Does the severity of the adverse event influence the way the reporting proceeds? E.g. Less severe events might not be reported, whereas the severe ones are reported.)
16. Please, describe the general attitude towards adverse events in this ICU.

    (Possible probes: How the adverse events are perceived by the majority of clinicians of the ICU? Is the occurrence of errors considered as someone's fault?)
17. What about your personal professional attitude towards adverse events?

(Possible probe: In your opinion what should be done to prevent errors? Is it done?)

18. Now let's talk about the teamwork and cooperation between the physicians and nurses. How will you describe it?
19. What about your relationships with the managerial staff of the hospital?
    (Possible probe: What is their role in assuring quality and safety in this ICU and in the hospital in general?)
20. There is increasing interest in making patients and their families as part of the care process. In what ways do you engage patients and families in care and offer feedback? How do you receive their feedback?
    (Possible probe: Do you collect follow up data on patients? For example, do you monitor follow-up visits, use post-discharge telephone calls, or send surveys to your patients?)
21. Please describe any areas for improvement in terms of quality and safety in this ICU.
    (Possible probe: What about the barriers to assurance of quality and safety in this ICU?)
22. In the conclusion, as an experienced frontline clinician what would be your recommendations in terms of safety and quality assurance in the ICU settings particularly and for our healthcare services in general?

In-depth interview guide for hospital administration representatives

As I already mentioned the main aim of this interview is to understand your perceptions about quality and safety in this ICU.

1. Would you please briefly describe this ICU?
2. What is your role in it?
3. Tell me, please, what do you understand when saying "quality of healthcare"?
4. What is quality here in the ICU?
5. How do you define patient safety?
6. In your opinion what is patient safety in the ICU?
7. Please, describe any special programs to assure quality and safety in your ICU.
    a. Any examples that you feel best exemplify these programs?
8. What is the importance of these programs of quality and patient safety?
9. What do you think are the major threats to quality and safety here in the ICU?
10. Describe, please, any standards for quality and safety that you have in this setting.
    a. Any examples of standards you feel are most important?
11. Who is responsible for quality and safety here in the ICU?
12. How are approaches to quality and safety structured here in the ICU?
13. What processes are used under normal circumstances?
14. How about processes when an adverse event occurs?
    a. Are there reporting procedures?
    b. Who is informed?

    (Possible probe: Does the severity of the adverse event influence the way the reporting proceeds? E.g. Less severe events might not be reported, whereas the severe ones are reported.)
15. Describe, please, the general attitude of the administration towards adverse events/errors occurring in the ICU. (Possible probe: How the adverse events are perceived by the majority of the administration representatives?)
16. What about your personal professional attitude towards adverse events?
    (Possible probe: In your opinion what should be done to prevent errors? Is it done?)
17. Now let’s talk about your relationships with the frontline clinicians of the ICU. How will you describe it?

(Possible probe: Do they have their role in assuring quality and safety in the ICU of this hospital?)

18. Please describe any areas for improvement in terms of quality and safety in this ICU. (Possible probe: What about the barriers to assurance of quality and safety in this ICU?)
19. In the conclusion as an experienced representative of the hospital administration what would be your recommendations in terms of safety and quality assurance in the ICU settings particularly and for our healthcare services in general?

In-depth interview guide for policy makers

As I already mentioned the main aim of this interview is to understand your perceptions as a policy maker about healthcare quality and safety in the ICUs of Yerevan hospitals.

1. Please, briefly describe what you do as a policy maker in terms of healthcare quality and safety assurance? What are the main activities that this division carries out in terms of quality management?
2. Tell me, please, what do you understand when saying "quality of healthcare"?
3. What is quality here in the ICU?
4. How do you define patient safety?
5. In your opinion what is patient safety in the ICU?
6. Please describe any policies and programs to assure quality and patient safety of our healthcare services in general and for the ICUs particularly.
7. Please describe any protocols, criteria and standards of assuring healthcare quality and safety implemented nationwide. What about ICUs?

   (Possible probe: What about national goals, benchmarks for healthcare quality and safety indicators?)
8. Now let’s talk about the risks that healthcare may pose to the patients. It is known that there might be cases when the provision of care may result in adverse events/ complications. I wonder about the official statistics available about those adverse events. How is the data obtained, and what is done with the data?
9. In your opinion what are the areas for improvement at the policy level in terms of healthcare quality and safety of the ICUs?

   (Possible probe: What should be done in the policy level to prevent errors, particularly in the ICUs? What about the policy level barriers to assurance of quality and safety?
10. In the conclusion, as an experienced policy maker in the sphere of healthcare quality, what would be your recommendations to assure safety and quality for our healthcare services in general and for the ICU settings particularly? Let's link our discussion to the policy level.

In-depth interview guide for real-time ICU patients' family members

As I already mentioned the main aim of this interview is to understand how you perceive and define healthcare quality and safety.

1. I know that your family member is in this ICU now for treatment. Let's talk at first how it happened that you came to this ICU?
   (Possible probe: What is the main reason you chose particularly this ICU for your family member's treatment?)
2. How long is your family member in this ICU?
3. How have you been involved in the care that your family member has received during this hospitalization?
   (Possible probe: How are you informed about the care/treatment that your family member receives in this ICU? What is your relationship to/communication with the doctors and nurses who are caring for your family member? If you have any questions or concerns regarding the treatment of your family member, how do you raise them?
4. How would you describe your level of satisfaction with the healthcare services provided in this ICU?
   (Possible probes: In your opinion what are the areas for improvement in this ICU, which influence the quality of healthcare services provided here? If you or your family member needed treatment in future, would you revisit this ICU for the purposes of treatment again? Why or why not?)
5. Tell me, please, what does "quality of healthcare" mean to you?
   (Possible probe: What are the indicators of good quality of healthcare? How are you thinking of the quality of care during this hospitalization?)
6. Talk with me about what the phrase patient safety means to you? (Possible probes: Can you tell me what you think unsafe patient care involves? How have you thought about safe care during this hospitalization?)

Safety Attitudes Questionnaire

	A ***Disagree strongly***	***B*** ***Disagree slightly***	***C*** ***Neutral***	***D*** ***Agree slightly***	***E*** ***Agree strongly***	***X*** ***Not applicable***	*Please check **<u>one</u>** option*					
1	Nurse input is well received in this clinical area.						A	B	C	D	E	X
2	In this clinical area, it is difficult to speak up if I perceive a problem with patient care.						A	B	C	D	E	X
3	Disagreements in this clinical area are resolved appropriately (i.e., not *who* is right, but *what* is best for the patient).						A	B	C	D	E	X
4	I have the support I need from other personnel to care for patients.						A	B	C	D	E	X
5	It is easy for personnel here to ask questions when there is something that they do not understand.						A	B	C	D	E	X
6	The physicians and nurses here work together as a well-coordinated team.						A	B	C	D	E	X
7	I would feel safe being treated here as a patient.						A	B	C	D	E	X
8	Medical errors are handled appropriately in this clinical area.						A	B	C	D	E	X
9	I know the proper channels to direct questions regarding patient safety in this clinical area.						A	B	C	D	E	X
10	I receive appropriate feedback about my performance.						A	B	C	D	E	X
11	In this clinical area, it is difficult to discuss errors.						A	B	C	D	E	X
12	I am encouraged by my colleagues to report any patient safety concerns I may have.						A	B	C	D	E	X
13	The culture in this clinical area makes it easy to learn from the errors of others.						A	B	C	D	E	X
14	My suggestions about safety would be acted upon if I expressed them to management.						A	B	C	D	E	X
15	I like my job.						A	B	C	D	E	X
16	Working here is like being part of a large family.						A	B	C	D	E	X
17	This is a good place to work.						A	B	C	D	E	X
18	I am proud to work in this clinical area.						A	B	C	D	E	X
19	Morale in this clinical area is high.						A	B	C	D	E	X
20	When my workload becomes excessive, my performance is impaired.						A	B	C	D	E	X
21	I am less effective at work when fatigued.						A	B	C	D	E	X
22	I am more likely to make errors in tense or hostile situations.						A	B	C	D	E	X
23	Fatigue impairs my performance during emergency situations (e.g. emergency resuscitation, seizure).						A	B	C	D	E	X
24	Management supports my daily Efforts.						A	B	C	D	E	X
25	Management doesn't knowingly compromise patient safety.						A	B	C	D	E	X
26	Management is doing a good Job.						A	B	C	D	E	X
27	Problem personnel are dealt with constructively by our:						A	B	C	D	E	X

28	I get adequate, timely info about events that might affect my work, from management.	A	B	C	D	E	X
29	The levels of staffing in this clinical area are sufficient to handle the number of patients.	A	B	C	D	E	X
30	This hospital does a good job of training new personnel.	A	B	C	D	E	X
31	All the necessary information for diagnostic and therapeutic decisions is routinely available to me.	A	B	C	D	E	X
32	Trainees in my discipline are adequately supervised.	A	B	C	D	E	X
33	I experience good collaboration with nurses in this clinical area.	A	B	C	D	E	X
34	I experience good collaboration with staff physicians in this clinical area.	A	B	C	D	E	X
35	Communication breakdowns that lead to delays in delivery of care are common.	A	B	C	D	E	X

36. Position

37. Years in Specialty ----------

1. Physician

   38. Gender 1. Male 2. Female

2. Nurse

   39. Age ---------

   40. Date (day/month/year) ----------

Thank you for your participation!

Ինտենսիվ թերապիայի բաժանմունքի բուժանձնակազմի հետ խորին հարցազրույցի հարցաշար

Ինչպես արդեն նշեցի, այս հարցազրույցի հիմնական նպատակն է հասկանալ Ձեր պատկերացումները ինտենսիվ թերապիայի բաժանմունքում առողջապահական ծառայությունների որակի և անվտանգության մասին:

23. Խնդրում եմ հակիրճ նկարագրեք այս բաժանմունքը:
24. Ո՞րն է Ձեր դերն այս բաժանմունքում:
25. Ասացեք խնդրեմ, ինչ եք հասկանում «առողջապահական ծառայության որակ» ասելով:
26. Ի՞նչ է որակն այստեղ՝ ինտենսիվ թերապիայի բաժանմունքում (ԻԹԲ):
27. Ինչպե՞ս կսահմանեք հիվանդի անվտանգությունը:
28. Ձեր կարծիքով ի՞նչ է հիվանդի անվտանգությունը ինտենսիվ թերապիայի բաժանմունքում:
29. Նկարագրեք խնդրեմ որևէ հատուկ ծրագիր/ծրագրեր այս ԻԹԲ-ում հիվանդի անվտանգությունն ապահովելու համար:
    a. Կնշե՞ք որևէ օրինակ, որ կարծում եք լավագույնն է նկարագրում այդ ծրագրերը:
30. Ո՞րն է առողջապահական ծառայությունների որակի և հիվանդի անվտանգության ապահովման ծրագրերի կարևորությունը:
31. Բուժանձնակազմը, հատկապես ԻԹԲ-ում, գործ է ունենում բազմաթիվ սթրեսային իրադարձությունների հետ: Ի՞նչ եք կարծում, ինչպե՞ս են այդ իրադարձություններին անդրադառնում Ձեր աշխատանքի վրա:
32. Ի՞նչ եք կարծում որո՞նք են ԻԹԲ-ում որակին և անվտանգությանը սպառնացող հիմնական վտանգները:
33. Նկարագրեք խնդրեմ, որակի և անվտանգության ստանդարտները, որոնք առկա են այս բաժանմունքում:
    a. Կնշե՞ք ստանդարտների օրինակներ, որ կարծում եք ամենակարևորն են:
34. Ո՞վ է պատասխանատու որակի և անվտանգության համար այս ԻԹԲ-ում:

35. Ինչպիսին են որակի և անվտանգության նկատմամբ մոտեցումներն այս բաժանմունքում:
36. Ինչպիսի՞ գործընթացներ են կիրառվում նորմալ պայմաններում:
37. Ինչպիսի՞ գործընթացներ են կիրառավում, երբ անցանկալի իրադարձություններ են տեղի ունենում:
    a. Կա՞ն արդյոք հաշվետվության ընթացակարգեր:
    b. Ո՞վ է այդ մասին տեղեկացվում:

(Լրացուցիչ: Արդյոք անցանկալի իրադարձության լրջությունը նպատում է հաշվետվության ընթացակարգի վրա: Օրինակ՝ մեղմ իրադարձությունների դեպքում հնարավոր է հաշվետու չլինել, միչդեռ լուրջ իրադարձությունների մասին հաշվետու լինում եք:

38. Նկարագրեք խնդրեմ անցանկալի իրադարձությունների հանդեպ հիմնական վերաբերմունքը այս բաժանմունքում:

    (Լրացուցիչ: Ինչպե՞ս են անբարենպաստ իրադարձություններն ընկալվում այց բաժանմունքի հիմնական բուժանձնակազմի կողմից: Արդյո՞ք տեղի ունեցող սխալները դիտարկվում են որպես ինչ-որ մեկի մեղքը:)
39. Ի՞նչ կասեք անցանկալի իրադարձությունների հանդեպ Ձեր անձնական մասնագիտական վերաբերմունքի մասին:

    (Լրացուցիչ: Ձեր կարծիքով ինչ է անհրաժեշտ անել սխալները կանխարգելելու համար: Արդյո՞ք դա արվում է:)
40. Այժմ եկեք խոսեք բժիշկների և բուժքույրերի միջև թիմային աշատանքի և համագործակցության մասին: Ինչպե՞ս կնակարգրեք այն:
41. Ի՞նչ կասեք հիվանդանոցի ղեկավարության հետ Ձեր հարաբերությունների մասին:

    (Լրացուցիչ: Ո՞րն է նրանց դերը մասնավորապես ԻԹԲ-ում և ընդհանուր առմամբ ողջ հիվանդանոցում որակի և անվտանգության ապահովման հարցում:)
42. Գոյություն ունի աճող հետաքրքրություն հիվանդներին և նրանց ընտանիքներին առողջապահական խնամքի մասը դարձնելու առումով:

Ի՞նչ ուղիներով եք Դուք հիվանդներին և նրանց ընտանիքներին ներառում խնամքի գործընթացում և արձագանքում նրանց: Ինչպե՞ս եք ստանում նրանց արձագանքը:

(Լրացուցիր: Արդյոք հավաքագրում եք հետագա տվյալներ հիվանդների մասին: Օրինակ՝ հետևում եք նրանց դուրս գրումից հետո, դուրս գրումից հետո զանգահարու՞մ եք նրանց կամ ուղարկու՞մ եք հարցումներ ձեր հիվանդներին)

43. Նկարագրեք խնդրեմ բարելավման ենթակա ոլորտները այս ԻԹԲ-ում որակի և անվտանգության տեսնակյունից:

(Լրացուցիչ: Ինչ կասե՞ք այս բաժանմունքում որակի և անվտանգության ապահովման հարցում առկա խոչընդոտների մասին:)

44. Եվ վերջում, որպես փորձված բուժաշխատող որո՞նք են Ձեր առաջարկությունները որակի և անվտանգության ապահովման համար ԻԹԲ-ներում մասնավորապես և առողջապահական ծառայություններում ընդհանուր առմամբ:

Հիվանդանոցի ղեկավարության ներկայացուցիչների հետ խորին հարցազրույցի հարցաշար

Ինչպես արդեն նշեցի, այս հարցազրույցի հիմնական նպատակն է հասկանալ Ձեր պատկերացումները ինտենսիվ թերապիայի բաժանմունքում առողջապահական ծառայությունների որակի և անվտանգության մասին:

20. Խնդրում եմ հակիրճ նկարագրեք այս բաժանմունքը:
21. Ո՞րն է Ձեր դերն այս բաժանմունքում:
22. Ասացեք խնդրեմ, ինչ եք հասկանում «առողջապահական ծառայության որակ» ասելով:
23. Ի՞նչ է որակն այստեղ՝ ինտենսիվ թերապիայի բաժանմունքում (ԻԹԲ):
24. Ինչպե՞ս կսահմանեք հիվանդի անվտանգությունը:
25. Ձեր կարծիքով ի՞նչ է հիվանդի անվտանգությունը ինտենսիվ թերապիայի բաժանմունքում:
26. Նկարագրեք խնդրեմ որևէ հատուկ ծրագիր/ծրագրեր այս ԻԹԲ-ում հիվանդի անվտանգությունն ապահովելու համար:
    a. Կնշե՞ք որևէ օրինակ, որ կարծում եք լավագույնն է նկարագրում այդ ծրագրերը:
27. Ո՞րն է առողջապահական ծառայությունների որակի և հիվանդի անվտանգության ապահովման ծրագրերի կարևորությունը:
28. Ի՞նչ եք կարծում որո՞նք են ԻԹԲ-ում որակին և անվտանգությանը սպառնացող հիմնական վտանգները:
29. Նկարագրեք խնդրեմ, որակի և անվտանգության ստանդարտները, որոնք առկա են այս բաժանմունքում:
    a. Կնշե՞ք ստանդարտների օրինակներ, որ կարծում եք ամենակարևորն են:
30. Ո՞վ է պատասխանատու որակի և անվտանգության համար այս ԻԹԲ-ում:
31. Ինչպիսին են որակի և անվտանգության նկատմամբ մոտեցումներն այս բաժանմունքում:
32. Ինչպիսի՞ գործընթացներ են կիրառվում նորմալ պայմաններում:

33. Ինչպիսի՞ գործընթացներ են կիրառվում, երբ անցանկալի իրադարձություններ են տեղի ունենում:
    a. Կա՞ն արդյոք հաշվետվության ընթացակարգեր:
    b. Ո՞վ է այդ մասին տեղեկացվում:

    (Լրացուցիչ: Արդյոք անցանկալի իրադարձության լրջությունը նպատում է հաշվետվության ընթացակարգի վրա: Օրինակ՝ մեղմ իրադարձությունների դեպքում հնարավոր է հաշվետու չլինել, միչդեռ լուրջ իրադարձությունների մասին հաշվետու լինում եք:
34. Նկարագրեք խնդրեմ ղեկավարության հիմնական վերաբերմունքը ԻԹԲ-ում տեղի ունեցող անցանկալի իրադարձությունների հանդեպ:

    (Լրացուցիչ: Ինչպե՞ս են անցանկալի իրադարձություններն ընկալվում ղեկավարության ներկայացուցիչների մեծամասնության կողմից:)
35. Ի՞նչ կասեք անցանկալի իրադարձությունների հանդեպ Ձեր անձնական մասնագիտական վերաբերմունքի մասին:

    (Լրացուցիչ: Ձեր կարծիքով ինչ է անհրաժեշտ անել սխալները կանխարգելելու համար: Արդյո՞ք դա արվում է:)
36. Այժմ եկեք խոսենք ԻԹԲ բուժանձնակզմի հետ Ձեր հարաբերությունների մասին:

    (Լրացուցիչ: Ո՞րն է նրանց դերը այս հիվանդանոցի ԻԹԲ-ում որակի և անվտանգության ապահովման հարցում:)
37. Նկարագրեք խնդրեմ բարելավման ենթակա ոլորտները այս ԻԹԲ-ում որակի և անվտանգության տեսնակյունից:

    (Լրացուցիչ: Ինչ կասե՞ք այս բաժանմունքում որակի և անվտանգության ապահովման հարցում առկա խոչընդոտների մասին:)
38. Եվ վերջում, որպես հիվանդանոցի ղեկավարության ներկայացուցիչ որո՞նք են Ձեր առաջարկությունները որակի և անվտանգության ապահովման համար ԻԹԲ-ներում մասնավորապես և առողջապահական ծառայություններում ընդհանուր առմամբ:

Քաղաքականություն մշակողների հետ խորին հարցազրույցի հարցաշար

Ինչպես արդեն նշեցի, այս հարցազրույցի հիմնական նպատակն է հասկանալ Ձեր պատկերացումները ինտենսիվ թերապիայի բաժանմունքում առողջապահական ծառայությունների որակի և անվտանգության մասին:

11. Խնդրում եմ հակիրճ ներկայացրեք, թե ինչով եք զբաղվում Դուք որպես քաղաքականություն մշակող առողջապահական ծառայությունների որակի և անվտանգության ապահովման տեսանկյունից: Որ՞ոնք այն հիմնական գործունեությունները, որոնք իրականացում է բաժինը որակի կառավարման տեսանկյունից:
12. Ասացեք խնդրեմ, ի՞նչ եք հասկանում «առողջապահական ծառայության որակ» ասելով:
13. Ի՞նչ է որակն ինտենսիվ թերապիայի բաժանմունքում (ԻԹԲ):
14. Ինչպե՞ս կսահմանեք հիվանդի անվտանգությունը:
15. Ձեր կարծիքով ի՞նչ է հիվանդի անվտանգությունը ինտենսիվ թերապիայի բաժանմունքում:
16. Նկարագրեք խնդրեմ քաղաքականությունը և այն ծրագրերը, որոնք առկա են որակի և անվտանգության ապահովման հարցում ընդհանուր առմամբ մեր առողջապահական ծառայություններում և մասնավորապես ինտենսիվ թերապիայի բաժանմունքներում:
17. Նկարագրեք խնդրեմ առողջապահական ծառայությունների որակի և անվտանգության ապահովման համար առկա այն հատուկ ուղեցույցները, չափանիշները և ստանդարտները, որոնք ներդրված են համազգային մակարդակում: Ի՞նչ կասեք ԻԹԲ-ների մասին:

    (Լրացուցիչ: Ի՞նչ կասեք առողջապահական ծառայությունների որակի և անվտանգության ցուցանիշների վերաբերյալ ազգային նպատակների, չափանիշների/benchmark մասին:)
18. Այժմ եկեք խոսենք այն ռիսկերի մասին, որ կարող են ստեղծել առողջապահական ծառայությունները հիվանդների համար: Գաղտնիք չէ, որ լինում են այնպիսի դեպքեր, երբ առողջապահական ծառայությունների

տրամադրումը բերում է անցանկանլի իրադարձությունների/ բարդությունների: Ինձ հետաքրքրում է այդ անցանկալի իրադարձությունների մասին առկա ազգային վիճակագրությունը: Ինչպե՞ս են տվյալները ստացվում, ի՞նչ է արվում տվյալների հետ:

19. Ձեր կարծիքով որոնք են ԻԹԲ-ներում ոռողջապահական ծառայություննրեի որակի և անվտանգության ապահովման հարցում բարելավման ենթակա ոլորտները քաղաքականության մակարդակում:

    (Լրացուցիչ: Քաղաքականության մակարդակում ինչ պետք է արվի հատկապես ԻԹԲ-ներում սխալները կանխարգելելու նպատակով: Ի՞նչ կասեք որակի և անվտանգության ապահովման հարցում քաղաքականության մակարդակում առկա խոչընդոտների մասին:)

20. Եվ վերջում, որպես փորձված քաղաքականության մշակող առողջապահական ծառայությունների որակի ոլորտում, որո՞նք են Ձեր առաջարկությունները որակի և անվտանգության ապահովման համար ԻԹԲ-ներում մասնավորապես և առողջապահական ծառայություններում ընդհանուր առմամբ: Եկեք քննարկումը կապենք քաղաքականության մակարդակին:

Ինտենսիվ թերապիայի բաժանմունքում հիվանդների ընտանքների անդամների հետ խորին հարցազրույցի հարցաշար

Ինչպես արդեն նշեցի, այս հարցազրույցի հիմնական նպատակն է հասկանալ Ձեր պատկերացումները ինտենսիվ թերապիայի բաժանմունքում առողջապահական ծառայությունների որակի և անվտանգության մասին:

7. Ես գիտեմ, որ Ձեր ընտանիքի անդամը հիմա բուժման համար գտնվում է այս ինտենսիվ թերապիայի բաժանմունքում (ԻԹԲ): Եկեք պարզենք, թե ինչպե՞ս եղավ, որ դուք եկաք հենց այս ԻԹԲ:
   (Լրացուցիչ: Ո՞րն է Ձեր ընտանիքի անդամի բուժման նպատակով հենց այս ԻԹԲ-ն ընտրելու հիմնական պատճառը:)
8. Ինչքա՞ն ժամանակ է Ձեր ընտանիքի անդամը գտնվում այս բաժանմուքնում:
9. Ինչպե՞ս եք դուք ներառվել Ձեր ընտանիքի անդամի ստացած բուժօգնության գործընթացում:
   (Լրացուցիչ: Ինչպե՞ս եք տեղեկացվում այս ԻԹԲ-ում Ձեր ընտանիքի անդամի ստացած բուժօգնության մասին: Ինչպիսի՞ն են Ձեր հարաբերությունները այն բժիշկների և բուժքույրերի հետ, ովքեր խնամում են Ձեր ընտանիքի անդամին: Եթե Դուք ունենում եք Ձեր ընտանիքի անդամի բուժման գոծընթացի հետ կապված հարցեր և մտավախություններ, ինչպե՞ս եք դրանք բարձրացնում:)
10. Ինչպես կնկարագրեք այս ԻԹԲ-ում տրամադրվող առողջապահական ծառայություններով Ձեր բավարարվածության մակարդակը:
    (Լրացուցիչ: Ձեր կարծիքով որո՞նք են այս ԻԹԲ-ում բարելավման ենթական ոլորտները, որոնք ազդում են այստեղ տրամադրվող առողջապահական ծառայությունների վրա: Եթե ձեր ընտանիքի անդամը ապագայում բուժման կարիք ունենար, արդյոք բուժման նպատակով կրկին կայցելեիք այս ԻԹԲ: Ինչո՞ւ այո կամ ինչու՞ ոչ:)
11. Ասացեք խնդրեմ, ի՞նչ է «առողջապահական ծառայության որակը» նշանակում ըստ Ձեզ:

(Լրացուցիչ: Որո՞նք են առողջապահական ծառայության լավ որակի ցուցանիշները: Ինչպե՞ս եք մտածում առողջապահական ծառայության որակի մասին այս հոսպիտալիզացիայի ընթացքում:)

12. Ասացեք խնդրեմ, ի՞նչ է «հիվանդի անվտանգություն» բառակապակցությունը նշանակում ըստ Ձեզ:

(Լրացուցիչ: Կարո՞ղ եք ասել, թե հիվանդի համար վտանգավոր առողջապահական խնամքն ինչ է ներառում: Ինչպե՞ս եք մտածել անվտանգ խնամքի մասին այս հոսպիտալիզացիայի ընթացում):

<u>Անվտանգության նկատմամբ վերաբերմունքի հարցաշար</u>

	A *Ընդհանրապես համաձայն չեմ*	***B*** *Ավելի շուտ համաձայն չեմ*	***C*** *Չեզոք*	***D*** *Ավելի շուտ համաձայն եմ*	***E*** *Միանգամայն համաձայն եմ*	***X*** *Կիրառելի չէ*	*Խնդրում եմ նշել **<u>մեկ</u>** տարբերակ*					
1	Բուժքրոջ ներդրումը լավ է գնահատվում այս բաժանմունքում:						A	B	C	D	E	X
2	Այս բաժանմունքում դժվար է բարձրաձայնել, երբ հասկանում եմ, որ հիվանդի խնամքի հարցում խնդիր կա:						A	B	C	D	E	X
3	Տարաձայնություններն այս բաժանմունքում պատշաճ կերպով են լուծվում (օր., ոչ թե *ով* է ժիշտ, այլ *որն է լավագույնը* հիվանդի համար):						A	B	C	D	E	X
4	Ես ունեմ անձնակազմի այլ անդամների կողմից ինձ անհրաժեշտ աջակցությունը հիվանդների խնամքի համար:						A	B	C	D	E	X
5	Անձնակազմի համար այստեղ հեշտ է հարցեր տալ, երբ որևէ բան կա, որ նրանք չեն հասկանում:						A	B	C	D	E	X
6	Այստեղ բժիշկներն ու բուժքույրերը աշխատում են միասին, ինչպես լավ համակարգված թիմ:						A	B	C	D	E	X
7	Ես ինձ անվտանգ/ապահով կզգայի, եթե որպես հիվանդ այստեղ բուժում ստանայի:						A	B	C	D	E	X
8	Բժշկական սխալներն այս բաժանմունքում պատշաճ կերպով/համապատասխանաբար/ են ընդունվում:						A	B	C	D	E	X
9	Ես տեղյակ եմ ճիշտ ուղիների մասին, որոնցով կարելի է հիվանդների անվտանգության մասին հարցեր ուղղել այս բաժանմունքում:						A	B	C	D	E	X
10	Ես համապատասխան արձագանք եմ ստանում իմ կատարողականության մասին:						A	B	C	D	E	X
11	Այս բաժանմունքում դժվար է սխալները քննարկելը:						A	B	C	D	E	X
12	Իմ կոլեգաներն ինձ խրախուսում են հայտնել հիվանդների անվտանգության վերաբերյալ իմ ունեցած բոլոր հնարավոր մտավախությունները						A	B	C	D	E	X
13	Մշակույթը, որն առկա է այս բաժանմունքում, հեշտացնում է ուրիշների սխալներից սովորելը:						A	B	C	D	E	X
14	Հիվանդների անվտանգության մասին իմ առաջարկությունները կընդունվեն, եթե ես դրանց մասին հայտնեմ ադմինիստրացիային:						A	B	C	D	E	X
15	Ես սիրում եմ իմ աշխատանքը:						A	B	C	D	E	X
16	Այստեղ աշխատելը նման է մի մեծ ընտանիքի մասը կազմելուն:						A	B	C	D	E	X
17	Սա լավ վայր է աշխատելու համար:						A	B	C	D	E	X
18	Ես հպարտ եմ, որ աշխատում եմ այս բաժանմունքում:						A	B	C	D	E	X

19	Բարոյական վիճակն այս բաժանմունքում բարձր է:									A	B	C	D	E	X
20	Երբ իմ աշխատանքը ծարնաբեռնվում է, իմ կատարողականությունը տուժում է:									A	B	C	D	E	X
21	Ես ավելի քիչ արդյունավետ եմ աշխատում, երբ հոգնած եմ:									A	B	C	D	E	X
22	Ես ավելի հակված եմ սխալներ գործելու լարված կամ հակասական իրավիճակներում:									A	B	C	D	E	X
23	Հոգնածությունը վնասում է իմ կատարողականությանը անհետաձգելի/արտակարգ իրավիճակներում (օր. վերակենդանացում, seizure).									A	B	C	D	E	X
24	Ադմինիստրացիան խրախուսում է իմ ամենօրյա ջանքերը.	**Բաժանմունքի** ադմինիստրացիա	A	B	C	D	E	X	**Հիվանդանոցի** ադմինիստրացիա	A	B	C	D	E	X
25	Ադմինիստրացիան մտածված կերպով չի անտեսում հիվանդների անվտանգությունը.	**Բաժանմունքի** ադմինիստրացիա	A	B	C	D	E	X	**Հիվանդանոցի** ադմինիստրացիա	A	B	C	D	E	X
26	Ադմինիստրացիան լավ աշխատանք է կատարում:	**Բաժանմունքի** ադմինիստրացիա	A	B	C	D	E	X	**Հիվանդանոցի** ադմինիստրացիա	A	B	C	D	E	X
27	Ադմինիստրացիան լավ աշխատանք է կատարում կոնֆլիկտային անձանց հետ.	**Բաժանմունքի** ադմինիստրացիա	A	B	C	D	E	X	**Հիվանդանոցի** ադմինիստրացիա	A	B	C	D	E	X
28	Ես ադմինիստրացիայի կողմից ստանում եմ ադեկվատ, արդիական տեղեկատվություն այն իրադարձությունների մասին, որոնք կարող են ազդել իմ աշխատանքի վրա:	**Բաժանմունքի** ադմինիստրացիա	A	B	C	D	E	X	**Հիվանդանոցի** ադմինիստրացիա	A	B	C	D	E	X
29	Այս բաժանմունքում անձնակազմը բավարարում է տվյալ թվով հիվանդներին սպասարկելու համար:									A	B	C	D	E	X
30	Այս հիվանդանոցը լավ աշխատանք է կատարում նոր կադրերի պատրաստման հարցում:									A	B	C	D	E	X
31	Ողջ ինֆորմացիան, որն անհրաժեշտ է ախտորոշման և բուժման մասին որոշումների կայացման համար, կանոնավոր կերպով հասանելի է ինձ:									A	B	C	D	E	X
32	Ուսանողները իմ ոլորտում պատշաճ կերպով վերահսկվում են:									A	B	C	D	E	X
33	Այս բաժանմունքում ես ունեմ լավ համագործակցություն բուժքույրերի հետ:									A	B	C	D	E	X
34	Այս բաժանմունքում ես ունեմ լավ համագործակցություն բժիշկների հետ:									A	B	C	D	E	X
35	Այս բաժանմունքում ես ունեմ լավ համագործակցություն դեղագործների հետ:									A	B	C	D	E	X
36	Հաճախակի են հաղորդակցման դժվարությունները, որոնք հանգեցնում են հիվանդի խնամքի հետաձգման:									A	B	C	D	E	X

Պաշտոնը

1. Բաժանմունքի վարիչ
2. Բժիշկ
3. Ավագ բուժքույր
4. Բուժքույր
5. Այլ ----------

Աշխատանքային փորձը ----------

Սեռը 1. Արական 2.Իգական

Տարիքը ---------

Ամսաթիվ (օր/ամիս/տարի) ----------

Շնորհակալություն մասնակցության համար

Appendix 3

Tables and Figures

Table 1: Characteristics of healthcare quality according to IoM

Safe	Avoiding injuries to patients from the care that is intended to help them.
Effective	Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse, respectively).
Patient centered	Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
Timely	Reducing waits and sometimes harmful delays for both those who receive and those who give care.
Efficient	Avoiding waste, including waste of equipment, supplies, ideas, and energy
Equitable	Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

Table 2: Descriptive data about the six domains of the SAQ in 3 hospitals

Descriptive Statistic				
	Minimum	Maximum	Mean	Std. Deviation
Teamwork Climate	50	100	79.7	9.2
Safety Climate	46	100	75.8	10.8
Job Satisfaction	25	100	93.1	12.9
Stress Recognition	0	100	36.3	28.0
Perceptions of Management	29	100	82.4	19.6
Working Conditions	25	100	92.7	13.3

Table 3: Mean scores for SAQ six scales organized by hospital

Descriptive Statistics						
Scale	Hospital	Mean	SD	SE	95% CI	
Working Conditions	Hospital A	90.3	14.9	2.7	84.7	95.8
	Hospital B	98.7	6.1	1.1	96.4	100.9
	Hospital C	86.3	16.1	3.9	78.0	94.6
	Total	92.7	13.3	1.5	89.7	95.7

Multiple Comparisons							
Bonferroni							
Dependent Variable			Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Working Conditions	Hospital A	Hospital B	-8.37814*	3.19654	.032	-16.2060	-.5503
		Hospital C	4.00327	3.78896	.882	-5.2754	13.2819
	Hospital B	Hospital A	8.37814*	3.19654	.032	.5503	16.2060
		Hospital C	12.38140*	3.76679	.005	3.1571	21.6057
	Hospital C	Hospital A	-4.00327	3.78896	.882	-13.2819	5.2754
		Hospital B	-12.38140*	3.76679	.005	-21.6057	-3.1571

Table 4: Descriptive data about the scale scores by the positions of the clinicians

Group Statistics				
Scale	Position	Mean	SD	SE
Job Satisfaction	Physician	79.5	26.5	8.4
	Nurse	95.0	8.1	1.0
Working Conditions	Physician	80.8	25.8	8.2
	Nurse	95.1	9.2	1.2

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Job Satisfaction Scale	Equal variances assumed	52.612	0.000	-3.733	69.000	0.000	-15.500	4.153	-23.784	-7.216
	Equal variances not assumed			-1.835	9.275	0.099	-15.500	8.445	-34.518	3.518
Working Conditions	Equal variances assumed	33.686	0.000	-3.303	69.000	0.002	-14.249	4.314	-22.854	-5.643
	Equal variances not assumed			-1.730	9.377	0.116	-14.249	8.235	-32.764	4.267

Table 5: Descriptive data for mean scores on SAQ scales among men and women clinicians

Group Statistics				
Scale	Gender	Mean	SD	SE
Working Conditions	Men	81.3	21.9	11.0
	Women	95.3	9.0	1.1

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Working Conditions	Equal variances assumed	15.418	.000	-2.744	67	.008	-14.006	5.103	-24.193	-3.820
	Equal variances not assumed			-1.272	3.062	.291	-14.006	11.014	-48.661	20.648

Figure 1: Attributes of healthcare quality according to A. Donabedian [1]

1. EFFICACY

   The ability of the science and technology of health care to bring about improvements in health when used under the most favorable circumstances.

2. EFFECTIVENESS

   The degree to which attainable improvements in health are, in fact, attained.

3. EFFICIENCY

   The ability to lower the cost of care without diminishing attainable improvements in health.

4. OPTIMALITY

   The balancing of improvements in health against the costs of such improvements.

5. ACCEPTABILITY

   Conformity to the wishes, desires, and expectations of patients and their families.

6. LEGITIMACY

   Conformity to social preferences as expressed in ethical principles, values, norms, mores, laws, and regulations.

7. EQUITY

   Conformity to a principle that determines what is just and fair in the distribution of health care and its benefits among members of the population.

Figure 2: Swiss cheese model of quality assurance[10]

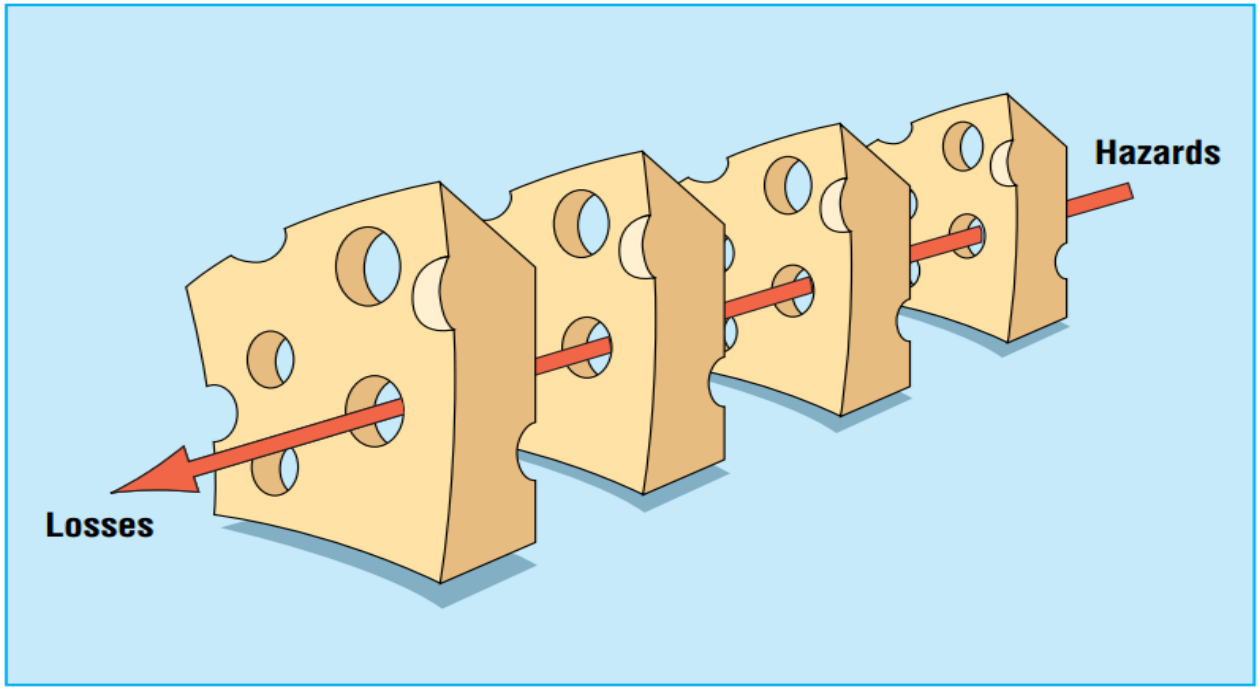


Figure 3: Cultural maturity model of organizational safety culture[13]