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**Research proposal for Assessing Patient Safety Culture in Public Hospitals under the
Essential Package of Hospital Services (EPHS) in Afghanistan**

by

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A Capstone Submitted to the Graduate Faculty of Georgia State University
in Partial Fulfillment of the Requirements for the Degree

MASTER OF PUBLIC HEALTH

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ABSTRACT

Patient safety is an issue of global concern, which is sometimes missed due to the complexity of the healthcare systems. There is an increasing concern for negligence of patient safety in developing countries, especially countries with poor healthcare systems and less reliable data. In 2005, the Ministry of Public Health in Afghanistan developed the Essential Package of Hospital Services (EPHS) in order to promote quality of care in Afghan Hospitals. Patient safety, as one of the key objective of the EPHS, appears to need additional attention and evaluation. The main purpose of this research proposal is to develop a validated patient safety culture instrument and to evaluate the use of the instrument in Afghan Hospitals. The proposal introduces a framework for sampling hospitals followed by a plan for conducting a cross-sectional study using the survey instrument. The proposal also includes an assessment of the psychometric properties of the instrument. The findings achieved from the administration of the survey are intended to compare 12 dimensions of patient safety culture among different groups of providers, categories of hospitals under EPHS and the overall grade of patient safety culture within Afghanistan and with results from use of the instrument in other countries. The proposed research will have important implications for both the hospital management systems and policy making. The findings will help hospital managers and decision makers understand different dimensions of patient safety. Results should assist hospitals and health departments redesign strategies and policies that are focused on attitudes, behaviors and practices to improve the overall culture of safety. Additionally, hospitals will recognize their weak and strong points and will contribute in exchange of experiences and share their best practices.

CHAPTER I

INTRODUCTION

Patient safety is the central theme and ultimate objective of health care quality. Health care organizations around the world have lately been observed to pay more attention to the importance of establishing a culture of safety. To achieve a culture of safety, it is necessary to understand the principles, attitudes, and standards related to an organization and what attitudes and behavior related to patient safety are expected and appropriate.

There are numerous studies on hospital (secondary) care in developed countries indicating a noteworthy percentage (10%) of medical errors, which means one out of every ten patients admitted to hospital, suffers an adverse event. There is some evidence about other settings such as primary care, long term care and mental care, indicating a similar rate of patient safety issues (“WHO | Global Priorities for Research in Patient Safety,” 2008, p. 5). Although medical errors happen in countries at all levels of development, there is a fear that developing countries may be impacted disproportionately.

In 2005, the Afghan Ministry of Public Health started to monitor and evaluate the performance of provincial hospitals in Afghanistan. The assessment involved workshops, focus group discussions and critical reviews by hospital managers. The process took 18 months and a report of findings was released in 2007. (“Report of the Provincial Hospital Performance Assessment,” 2007, pp. 2–3). The instruments mainly assessed resources, processes and outcomes of provincial hospital. There were groups of questions which evaluated 8 areas of hospital activities including; 1-Management and Administration, 2-Financial Systems, 3-Human

Resources, 4-Capacity for Service Provision, 5-Quality and Safety, 6-Functionality, 7-Patients and Community, and 8-Ethics and Values.

The Quality and Safety in provincial hospitals were measured by three categories of indicators that included Quality, Health Workers Interaction and Hospital Safety. The results, displayed by Balanced Scorecard (BSC) method, indicated that, overall, the quality and safety scores were poor. Among the provincial hospitals, the minimum score for the quality and safety was 28.7 and the maximum score was 58.2 out of 100. In the southwest region, Kandahar had a score of 46.9, Helmand 38.8 and Urozgan 28.7, which was comparatively lower than other regions of the country. The report links this to instability in the area (“Report of the Provincial Hospital Performance Assessment,” 2007, pp. 78–83). The following table displays the scores for all indicators of quality and safety across the 3 provincial hospitals in Kandahar, Helmand and Urozgan:

Figure 1: Results for provincial hospitals in Kandahar, Helmand and Urozgan on all indices of quality and safety:

Domain E: Quality and Safety	KDH	HMD	URG
E1: Enabling Environment			
Quality Improvement	100	100	0
QI Organizational Activities	58.8	34.2	20.2
Infection Prevention Committee	89.6	54.2	57.4
Death Committee	50.0	0	0
Written Clinical Guidelines	100	50.0	100
Archived Inpatient Records	86.5	75.7	38.5
Active Inpatient Records	98.2	63.3	48.0
TB Registers	-	100	-
Record-Keeping System	78.6	66.7	81.0
E2: Health Worker Interaction			
Health Worker Skills	51.6	72.1	38.9
Health Worker Communication	39.5	62.9	31.5
Length of Consultation	58.3	12.5	13.6
Prescription of Antibiotics	-	0	0
Routine ANC	33.3	66.7	0
E3: Safety			
Physical Precautions	69.2	50.0	52.9
Security	79.1	89.5	73.4
Posted Decontamination Procedures	66.7	100	80.0
Prevention of Hospital Hazards	80.9	32.4	36.8
Prevention of Biohazard	92.3	53.6	68.8

Medical errors are not necessarily the result of just one simple factor. A British study, for example, examined the complex array of medical mistakes within the National Health Service (NHS) hospitals. Some of the contributory factors they found included errors in diagnoses frequently made by inexperienced clinicians, poor medical records, poor communication between professional providers, insufficient input by consultant physicians into day-to-day care, and lack of thorough evaluation of patients before discharging them out of hospital. All of those are considered organizational factors, which if measured and monitored by administrations, could result in change to a hospital safety climate (Neale, Woloshynowych, & Vincent, 2001, p. 322).

Patient safety and Patient Safety Culture

The World Health Organization defines patient safety as, "the absence of preventable harm to a patient during the process of health care" ("WHO | Patient safety," n.d.). Generally, this implies a discipline of coordinated efforts to avoid patient harm, caused during or by the process of health care itself. During the past two decades, patient safety has been increasingly accepted as an issue of global importance, but the complexity of healthcare has made it even challenging to measure and, therefore to design and to implement programs to address deficits in patient safety. The new emerging term, patient safety culture, could probably better explain this phenomenon. The Agency for Healthcare Research and Quality (AHRQ) explains the safety culture of an organization as, "the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management" ("AHRQ | Introduction," 2004). Organizations with all the above mentioned positive characteristics of a safety culture should then be considered truly committed to the value of patient safety.

Leape (2009) summarizes findings from the Institute of Medicine (IOM) report, “To Err is Human” which sparked medical and public attention to medical errors. He largely attributes failure in system organization, processes and procedures to patient harm and suggests more focus on system errors than human errors such as slips, lapses and mistakes. He suggests six principles that he believes are necessary for a change in the culture of patient safety. First, that we see errors as a result of a poorly designed system rather than individual mistakes. Second, that a safe culture should take the place of punitive environment. His other suggestions include transparency, patient-centered care, collaboration and teamwork and finally that accountability should be shared (pp. 1–2).

In 1995, a 6-month study that involved 11 medical and surgical units in two tertiary care hospitals found 344 medical errors, 78% of which were attributed to system failure. For example, physician orders were responsible for 39% of the errors and nurse administrations were responsible for 38% of them. The study also found that almost half of the errors made by physicians were intercepted either by nurses (86%) or pharmacists (12%). Generally, 16 factors of system failure were identified. The most common factor was lack of knowledge about the drug. After an investigation of the factors, the study found that 264 out of the total 344 errors were preventable (Leape LL, Bates DW, Cullen DJ, & et al, 1995, pp. 35–40). Medication errors have been confirmed in several other studies. For instance, a prospective cohort study assessed the rates of medication errors in 1120 pediatric patients. The study reviewed 10,778 orders, from two facilities that used hand-written medication orders. The results indicated a (5.7%) error rate or 55 medication errors for every one hundred admissions. The study concluded that 19% of those errors was preventable. The study reviewed errors by two physicians independently and found that 93% of the potential medication errors were potentially preventable by physician

computer order entry with clinical decision support and 94% by ward-based clinical pharmacists (Kaushal R, Bates DW, Landrigan C, & et al, 2001, pp. 2115–2117).

Bates, Cohen, Leape, Overhage, & al (2001) have explained another good example of system change they feel necessary in the US healthcare system. They mention numerous areas of the US healthcare where information technology is not used sufficiently or efficiently. For example, they point out miscommunication between laboratory systems and pharmacy systems to be faulty. They also call attention to the role of information technology in accurate reporting and eventual reduction of error. They reported a study in which large majority of administrators had been unaware of the high frequency of medication errors in their facilities (pp. 301–305). Other dimensions of systems such as teamwork, staffing, organizational learning and supervision are equally important to be evaluated for their role in medical error.

A retrospective study of patient safety that was performed in some developing Middle-eastern and African countries assessed the frequency and nature of medical errors in hospitalized patients. The study found that the proportion of preventable error was significantly high at 83%, while previous studies showed 50% preventable error. The authors suggest that previous studies might have confused causation and preventability and misclassified some errors (Wilson et al., 2012, p. 5). It is evident that patient safety is even more vulnerable and misunderstood in developing countries and therefore, it is important to explore the perception and level of awareness of health professionals about different dimensions patient safety.

Public Hospitals in Afghanistan

Unlike other developing countries, Afghanistan has suffered long years of conflicts and wars, which has severely damaged not only the political, social, and economic infrastructures in

Afghanistan but also the health system. While there are very few reliable statistics, it is clearly evident that people's health status is very poor. Despite a completely collapsed health system, the Ministry of Public Health (MoPH) in Afghanistan was able to establish a new healthcare system, which included the hospital management system as well.

Figure 2: Afghanistan (Administrative Divisions)

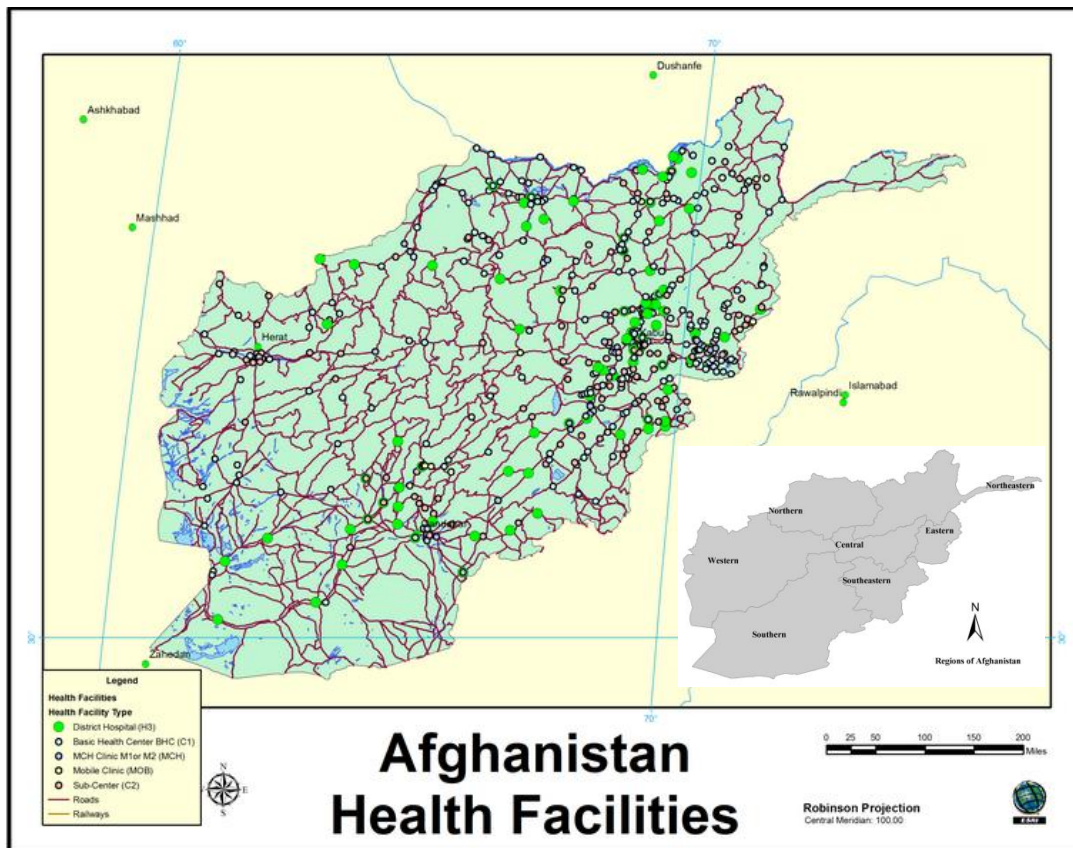


The MoPH Hospital System has categorized all public hospitals into four levels of facilities; District Hospitals, Provincial Hospitals, Regional Hospitals, and National Specialty Hospitals. In each of the first three levels of hospitals, collectively called as the Essential Package of Hospital Services (EPHS), four core clinical functions exist: medicine, surgery, pediatrics, and obstetrics/gynecology. Mental health and dental health are mainly provided as

outpatient services at each of these levels, however inpatient mental care may only be available at the regional hospitals (Ministry of Public Health, 2011, p. 5). The Essential Package of Hospital Services (EPHS) was developed by the Hospital Management Task Force (HMTF) generally to promote quality of care and with the following three particular purposes:

1. Identify a standardized package of hospital services at the first three levels of hospital.
2. Provide a guide for the MoPH, private sector, nongovernmental organizations (NGOs), and donors on how the hospital sector should be staffed, equipped, and provided with materials and drugs.
3. Promote a health referral system that integrates the primary care Basic Package of Health Services (BPHS) with hospitals.

The EPHS also classified all the essential services, staff, facilities, equipment, and medicines for the district, provincial, and regional hospitals. For example, the standardized provision of services to be offered by a district hospital include, “30-75 beds, serving population of 100,000-300,000 in 1-4 districts, basic surgery, medicine, obstetrics and gynecology, pediatrics, mental health, dentistry, plus support services for nutrition, pharmacy, physiotherapy, laboratory, radiology and blood bank” (Ministry of Public Health, 2011, p. 5). A provincial hospital should have 100-200 beds with all the services provided at district hospital, plus rehabilitation services and infectious disease control. Similarly, a regional hospital should have 200-400 beds with all the services of a provincial hospital, plus surgery for ENT, urology, neurology, orthopedics, plastic surgery; and medicine to include cardiovascular, endocrinology, dermatology, lung and chest, oncology, forensic medicine and expanded support services (Ministry of Public Health, 2005, p. 25)

Figure 3: Afghan Health Facilities (BPHS)

The Afghan Ministry of Public Health measures the quality of prevention and care mainly by clinical inspection. However, a more comprehensive quality improvement program will require assessment of patient safety. To align the quality of services with the recommended international standards, it is essential to look at both at national risk factors and at the same time learn from experience of other countries (Ministry of Public Health, 2005, p. 58). One important aspects of quality and safety measurement is the Patient Safety Culture (Nieva & Sorra, 2003, p. ii 17). In the following section we introduce one of the most widely used and very reliable instruments of assessing patient safety culture.

Hospital Survey on Patient Safety Culture

In 2004, the Agency for Healthcare Research and Quality (AHRQ) designed a Hospital Survey on Patient Safety Culture, which is completed by hospital staff. The survey collects data on their perception of the culture of safety in their organizations. So far, hundreds of US and international hospitals have successfully implemented the survey (“AHRQ | Hospital Survey on Patient Safety Culture,” 2014). Later in 2006, the Agency funded the development of a comparative database on the survey so that hospitals, which had requested such a database, would be able to compare their results on safety culture to other hospitals. The database only contains data from hospitals that voluntarily participated in submitting their data. The database reports are available from 2007 to 2012 (“AHRQ | Hospital Survey on Patient Safety Culture,” 2014). The data entered into the database are only from US hospitals; however the survey form, its related tools and the database are available for public use both inside United States and for international users. The users are allowed to translate the survey to any other language or apply any modification if needed to fit the local context.

CHAPTER II

LITERATURE REVIEW

Background

While patient safety might appear to be a new and emerging issue, historical evidence shows a concern for patient safety that existed long before modern medicine. Hippocrates, for example, had known the possible harm that arises from the well intentioned actions of healers. In the 4th Century B.C., Greek healers wrote the Hippocratic Oath , in which they indicated their commitment for the good of their patients according to their ability and judgment and to avoid patient harm (“Greek Medicine - The Hippocratic Oath,” 2002). However, it is true that patient safety has become a prominent topic recently, especially ever since President Bill Clinton introduced a nationwide system of reporting for medical errors in response to the Institute of Medicine report of 44000 to 98000 American deaths each year from medical mistakes. He also required all 50 states to adopt the error reporting systems (Charatan, 2000, p. 597).

In 2008, Palmieri, DeLucia, Peterson, Ott, & Green studied healthcare errors and explained patient safety as a “distinct healthcare discipline supported by an immature yet developing scientific framework”. They used a trans-disciplinary approach to explain the contribution of health care leaders in addressing error. According to their trans-disciplinary theory, patient safety knowledge constantly informs improvement efforts in different areas like business and industry, innovative technologies, health literacy and enhancing error reporting systems. Thus, health care leaders can play an important role using their organizational skills and health care safety principles to improve patient safety (para. 1).

In October 2004, the World Alliance for Patient Safety was founded in Washington, DC, to bring together the heads of agencies, health policy-makers, representatives patients' groups

and the World Health Organization in order to promote the patient safety goal of "First do no harm", and minimize the risk of unsafe health care ("WHO | World Alliance for Patient Safety," 2004).

In 2008, the World Alliance for Patient Safety released a report of evidence on patient safety in which the positive characteristics of a patient safety culture were explained as open communication about safety problems, effective teamwork, and support by local and organizational leaders who make safety a priority. Beside the healthcare organizations, other high-hazard industries were also considered essential to have a positive safety culture and that they should measure and report safety culture with standardized instruments to develop safety. The report also suggested that due to the multidimensional nature of safety culture and for a better understanding of the factors related to patient safety culture, we need further research, especially in developing countries and countries with economies in transition. ("WHO | Summary of the Evidence On Patient Safety," 2008, pp. 7–8).

Patient Safety Research

In 2006, the World Health Organization gathered a group of international experts to identify priority areas for patient safety research. Its main objective was to present research commissioners and funding institutions with general guidance on these priorities so that new research will contribute to patient safety. The group included specialists in patient safety, health-care and health services research, researchers, policy-makers, patient advocates and research commissioners from a wide range of countries and socioeconomic contexts. After a thorough literature review, assessment and consensus building, a list of priority areas were identified in mid-2007. Because of the local need for knowledge, the group of experts recommended that countries use the global priorities as a starting point but expand them and set their own priorities

(“WHO | Global Priorities for Research in Patient Safety,” 2008, p. 4). The group basically classified the priority areas into four different categories; 1- Research priorities for developing countries, 2- Research priorities for countries with economies in transition, 3- Research priorities for developed countries and 4- Research priorities common to countries at different levels of development (“WHO | Global Priorities for Research in Patient Safety,” 2008, pp. 5–6).

Most of the high priorities for the developing countries were patient safety issues that are associated with high mortality and disability. However, the top priority for research in developing countries was to help with the design and testing of locally effective and affordable solutions. This largely refers to the assessment of already identified and existing solutions and strategies, which are designed in most developed contexts and see if they are cost-effective and feasible (“WHO | Global Priorities for Research in Patient Safety,” 2008, pp. 5).

In this proposal, we develop a research plan for the assessment of patient safety culture in Afghan hospitals by using the Hospital Survey on Patient Safety Culture, developed by the Agency for Healthcare Research and Quality (AHRQ). It is a standard, effective and applicable instrument for Afghan Hospitals. It will be the first validated instrument to assess patient safety climate in Afghanistan.

Relevance of AHRQ’s Hospital Survey

In 2004, the Medical Errors Workgroup of the Quality Interagency Coordination Task Force (QuIC) responded to the need for a measurement tool to assess the culture of patient safety in health care organizations and funded the development of a hospital survey on patient safety culture. The survey was developed by a private research organization under contract with the Agency for Healthcare Research and Quality (AHRQ). It can be applied in different institutional contexts. For example, it can be implemented in a hospital setting as a whole, or in specific units

within hospitals. Besides, it can track changes and assess the effectiveness of interventions in patient safety culture if repeated over time. The survey was pretested with hospital staff and later pilot tested with more than 1,400 hospital employees from different US hospitals. The pilot data was analyzed and also checked for the reliability and validity of the questionnaire. Finally, the survey was adjusted by keeping only the most accurate items and scales with strong psychometric properties (“AHRQ | Introduction,” 2004, sec. 2).

Considering WHO’s priorities for developing countries on patient safety research, the AHRQ’s Hospital Survey on Patient Safety Culture is both effective and totally applicable in the local context of a developing country like Afghanistan. Similarly, all other aspects of the survey including required resources, the organizational culture, the ethos and values of the population groups, users and beneficiaries of the research and the cost implication are matching and already tested in several countries. (“WHO | Global Priorities for Research in Patient Safety,” 2008, pp. 4–6). Out of the top twenty research priority areas recommended by WHO for developing countries, the AHRQ’s Hospital Survey on Patient Safety Culture matches on the following ten priorities either directly or indirectly (“WHO | Global Priorities for Research in Patient Safety,” 2008, sec. Appendix 3):

1. Identifications, design and testing of locally effective and affordable solutions
2. Inadequate competence, training and skills
3. Extent and nature of the problem of patient safety
4. Lack of appropriate knowledge and its transfer
5. Poor safety culture and blame-oriented processes
6. Lack of communication and coordination
7. Inadequate regulations

8. Latent organizational failures
9. Lack of adequate reporting on patient safety
10. Inadequate safety indicators

The AHRQ website provides very helpful resources with the survey to assist hospital administrators with information and tools needed for a safety culture assessment and how the data could be used. The survey is general enough to be used in most hospitals, however, users who might feel the need for changes in the language and terms of the survey are allowed to do so. Some might even feel necessary to add or remove questions according to their relevance with the local context. It helps researchers adopt the survey to the local settings to be better understood. Therefore, AHRQ has also provided modifiable formats of the survey and the feedback report templates (“AHRQ | Introduction,” 2004).

International Use of the AHRQ’s Hospital Survey

So far, the Hospital Survey on Patient Safety Culture has been translated into 24 languages and used in 45 different countries to measure patient safety culture in their hospitals (AHRQ, 2012). In some cases, researchers have tried to conduct the studies across different countries to compare their results. For instance, Wagner, Smits, Sorra, & Huang (2013) conducted a study that involved 45 hospitals in the Netherlands, 622 in the United States and 74 in Taiwan, considering the similarities of their well-developed healthcare systems, educated professional groups and a focus on improving patient safety. Using their existing data of the AHRQ’s hospital survey, they compared the results and revealed the similarities and differences within and between the three countries. The three countries indicated similar positive results on Teamwork within units. The average positive responses supporting one another in a unit was the highest (Netherlands: 92%; Taiwan: 88%; USA: 85%), however, communication openness

appeared to be different among them. Compared to USA and Taiwan, respondents in Dutch hospitals showed higher commitment (82%) to speak up against patient harm and to question the decisions or actions of higher authorities (56%). The results overall found strong teamwork within units but weak culture dimension handoffs and transitions for all three countries (p. 213-216). Such studies will help healthcare systems learn and share best practices of patient safety within each country and with other countries.

Because, the AHRQ hospital survey has been implemented in many developing countries, the available data from the surveys let other developing countries compare their survey results on any dimension that affect patient safety. The best example that Afghanistan's survey results could be compared with, is its neighboring country Iran. They both share a long border with similar ethnic groups living on both sides. They also have many cultural, religious and linguistic similarities. Furthermore, they have mutual cooperation agreements and are expected to expand their scientific and educational exchanges (Ruttig, 2013).

The AHRQ hospital survey was conducted in 2013 in three hospitals affiliated with Islamic Azad University in Tehran, Iran. The results indicated that the hospitals did not meet a proper level of patient safety and that a punitive culture dominated the workplace. Mutual respect among unit employees was the highest positive (56 %), while employees' concern that their faults were being recorded was the lowest positive (6%). The study had some constructive suggestions related to the number of employees, the distribution of the employees, work hours, and communication (Moussavi et al., 2013, p. 668).

In another Iranian study, a modified version of AHRQ hospital survey was implemented across 21 randomly selected health centers, which basically offered primary healthcare services. This study's findings indicated that patient safety culture had been relatively neglected in the

outpatient facilities. However, the overall patient safety score of these health centers was (57), which was better in comparison to the patient safety score from other Iranian hospitals and Turkish primary services. The score for “non punitive response to error” was the lowest (8.3%) for physicians. The study did not find any significant relationship between gender or working years and total patients safely culture. The results show that adverse events and errors are being under-reported (50%) (Tabrizchi & Sedaghat, 2012, pp. 508–509). Other comparable good examples from the region include same hospital surveys from China and India.

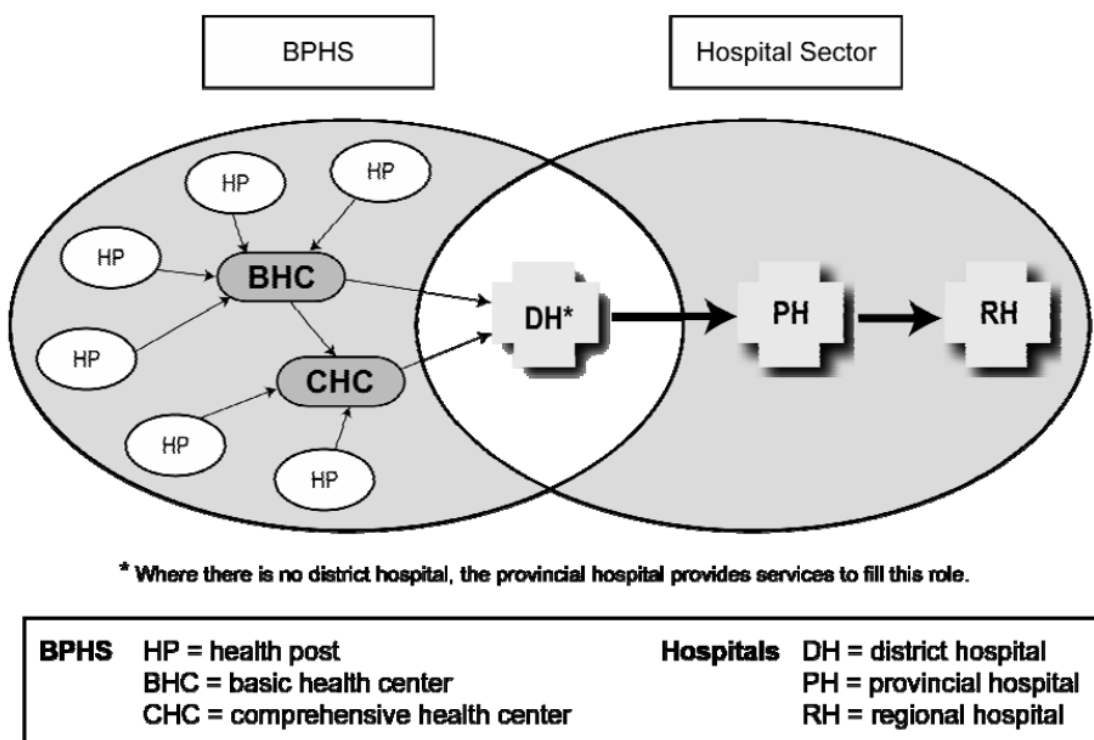
Afghanistan’s Context

Basically, there are four main reasons why we recommend the AHRQ survey to assess patient safety culture in Afghanistan. First of all, Afghanistan lacks data from medical records to provide information on patient safety. Even if the data were available, it is not likely to be accurate and reliable. For example, in 2013 a study was conducted to assess the accuracy of medical records in three maternal health facilities. Two of the facilities were selected from within Kabul and a third facility was selected from a closer province to Kabul, all of which should be considered more organized compared to facilities from rural areas. The researchers compared their own recorded observation of vaginal deliveries to the data recorded in patient medical records and facility registers. They found that the medical record accuracy in these facilities, where data play a vital role, was generally poor (Broughton, Ikram, & Sahak, 2013, pp. 1–2).

Secondly, the AHRQ hospital survey is designed to be quite general and is applicable in both primary care and secondary care settings; therefore, it is very appropriate for assessing patient safety culture in all three levels of hospitals within the Essential Package of Hospital Services (EPHS), as it consists of both primary care and secondary care hospitals. Among the

three levels of hospitals of EPHS, the District hospitals are included in both of Basic Package of Health Services (BPHS) and as well as Essential Package of Hospital Services (EPHS), thus they make a referral system between the two (“MoPH | EPHS,” 2005, pp. 3–4).

Figure 4: Link between the BPHS and Hospital Sector



Thirdly, Afghanistan has very limited resources and low funds (0.2% of the health budget) for research and development in health sector (“MoPH | National Health Accounts,” 2011, p. 24). In consideration of this fact and as well as the priorities of patient safety research recommended by WHO for developing countries, the most economical approach to assess patient safety culture would be the AHRQ hospital survey, which has been already tested in many other countries and proven to be efficient. A future large scale or countrywide application of this survey would be more enlightening and possible with limited resources.

Fourth, the concept of patient safety was introduced by WHO in Afghanistan in 2009 and in 2012, WHO signed a pledge with the Ministry of Public Health on "Patient Safety/Clean Care is Safer Care" ("WHO EMRO | Afghanistan | Countries | Patient safety," n.d., para. 1–2). The Ministry of Public Health mainly uses clinical indicators, such as the safe surgery checklist, to assess quality and patient safety, however, there is a need to introduce and develop patient safety culture among hospital employees in Afghanistan as one element of a strategy to improve patient safety in the country.

CHAPTER III

RESEARCH METHODS

Study Design

The AHRQ Hospital Survey on Patient Safety Culture, which is already used in various countries, will be used to ask hospital staff about patient safety issues, medical error and event reporting. For the proposed study, the survey was translated into a local language (Pashto) using forward translation technique. To confirm the linguistic validity and contextual relevant to target population, the translated version will be assessed by cognitive interview method and further pre-tested before administration.

The survey totally has 51 items out of which 42 items measure the following 12 dimensions of patient safety culture:

1. Supervisor/manager expectations & actions promoting patient safety.
2. Organizational learning-continuous improvement.
3. Teamwork within units.
4. Communication openness.
5. Feedback & communication about error.
6. Non-punitive response to error.
7. Staffing.
8. Hospital management support for patient safety.
9. Teamwork across hospital units.
10. Hospital handoffs & transitions.
11. Overall perceptions of safety.
12. Frequency of events reported.

Seven of the above mentioned safety dimensions assess safety culture at the unit/department level (1-7), three dimensions measure safety culture at the hospital level (8-10), and two dimensions are outcome measures (11-12). We include all 12 safety culture dimensions so that the results can be compared on all dimensions to other hospitals in other countries that have used the same survey. The survey also has two additional outcome items that ask about the patient safety "grade" that respondent would assign to their work area/unit and the number of adverse events the respondent has reported in the previous 12 months ("AHRQ | Introduction," 2004).

Respondents will be asked to rate each item of a dimension on a five-point Likert scale of agreement (strongly disagree, disagree, neutral, agree and strongly agree) or frequency (never, rarely, sometimes, most of the time, always). The instrument includes 6 items that ask respondents to provide limited background information related to their work/profession. The survey places most of its emphasis on safety culture at the unit level, because staff will be most familiar with safety culture at this level.

Respondents are also given the opportunity to provide written comments at the end of the survey. These open-ended comments can be used to obtain direct quotes for feedback purposes. To analyze the data from the comments section, the responses will be coded according to the type of comment that was made. For example, staff may respond with positive comments about patient safety efforts in their unit. Or, they may comment on some negative aspects of patient safety that they think need to be addressed. Code numbers will be assigned to similar types of comments and later the frequency of each comment type will be counted. The comments will be coded only after the data has been entered electronically.

Sampling

Hospitals will be selected based on convenience sampling from three provinces (Kandahar, Helmand and Urozgan) in the Southwest region of the country where Pashto is the main spoken language. One regional hospital will be selected from Kandahar province, 2 provincial hospitals will be selected from Helmand and Urozgan provinces and 4 district hospitals will be selected from Kandahar and Helmand. Selecting all samples of hospitals from these three provinces will be important, in that they share similar opportunities and challenges. For example, the Southwest region is generally more affected by insurgency and conflicts compared to other regions of Afghanistan, eventually impacting many development programs including healthcare (UNGA, 2014, p. 4). On the other hand, a random selection of hospital will also need a Dari translation of the survey, because both Pashto and Dari are official languages of Afghanistan and are spoken in different regions.

The study will include physicians, nurses, lab technicians and management staff from all units of the hospital. Participants should be full-time current employees. Hospital staff who are on extended leave at the time of survey distribution will be excluded from the list. The sample list will be compiled from the management of each participating hospital. The list will include the first and last name, hospital area/unit and job title for each participant. This will help us track the distribution and collection of the survey.

To have sufficient number of participants from each of the three levels of hospital, we need to look at the average number of staff at each facility. Since higher-level hospitals have larger number of staff compared to lower levels, we include one regional hospital (200-400 staff), two provincial hospitals (each 100-200 staff) and four district hospitals (each 30-70 staff) in this study, totally reaching to 7 hospitals. If we take the average number of staff from each of

the 7 facilities, all 7 facilities together will have 800 staff. The following table shows the number and type of participating hospitals and their estimated number of staffing.

Table 1: Estimated number of participating hospitals and their staffing

Category/Level of Hospital	Estimated Number of staff	Number of hospital(s)	Total estimated number of staff
Regional Hospital	300	1	300
Provincial Hospital	150	2	300
District Hospital	50	4	200
Total	-	7	800

Considering an estimated 100 ineligible from the total 800 staff, we will remain with 700 eligible participants. AHRQ suggests a consideration of 50% response rate. Based on our initial sample size of 700 participants from all 7 hospitals, we estimate a minimum response goal of 350 completed surveys, which is sufficiently large sample to give us statistically significant result.

Data collection

The survey instrument could be implemented either in paper format or online. We choose the paper format for two reasons. First, it is a more feasible method in Afghanistan because many people in Afghanistan do not have access to internet to complete the survey and second, because AHRQ recommends paper format for a highest possible response rate.

The surveys will be distributed at a single location inside hospital where hospital employees check in at the beginning of a working day. The first step in data collection process will be to develop a tracking log, which will have a list of unique study IDs. Each unique study ID will also be printed on the survey cover letter. A research assistant will facilitate the

distribution of the surveys, meanwhile asking participants to write their names in the tracking log sheet. The assigned study ID in the log should match the ID on the survey cover letter received by the participant. This will help us track non-respondents and redistribute them the survey and also explore any possible differences between respondents and final non-respondents.

The distribution of survey inside hospital emphasizes hospital administration's support for the data collection effort. Although the survey takes only 10-15 minutes to complete, respondents will be given enough time to think about responses and not be distracted during their work hours. They will be asked to return the completed surveys in the following 2-3 days to the research assistant while checking into hospital. The list of sample will be used to track the returning completed surveys as well as other staff members who might have not received the survey either because they were on night duty or on leave.

Each hospital will be assigned a point of contact with the project team, who will facilitate the entire process of data collection and address any questions or concerns employees might have about the survey. To remove concerns regarding confidentiality of the survey, hospital staff will be assured that no one at their hospital will have access to their completed surveys. The contact information for the hospital point-of-contact including phone number and E-mail address will be provided in the survey cover letter.

A valid generalization needs a high response rate and therefore maximum effort will be put to clarify any doubts participants may have and make the process easy for them. The survey will include a supporting cover letter with clear instructions for completing and returning the survey (Appendix-A). In the cover letter the staff will be asked to complete the survey within 3 days, however a specific deadline date will not be given because, data collection might get delayed or rescheduled. If for any reason they fail to complete survey by the deadline date or

there are a large number of non-respondents, a second survey will be distributed a week later to the non-respondents. The data collection will be held open for at least 1 week after the second survey or a second follow-up reminder, so that we receive as many responses as possible. The data collection in one hospital should take approximately 2 weeks.

Data Management

Each survey will be examined for completeness, prior to entering the survey responses into the data set. A complete survey is one in which every item or most items have a response. The AHRQ's recommended criteria on identification of incomplete surveys suggest excluding responses from a survey form if the respondent answered:

- Less than one entire section of the survey.
- Fewer than half of the items throughout the entire survey (in different sections).
- Every item the same (e.g., all "4"s or all "5"s). If every answer is the same, the respondent did not give the survey their full attention. The survey includes reverse-worded items that exercise both the high/positive and low/negative ends of the response scale to provide consistent answers (AHRQ, 2004).

If a respondent has not answered most of the items in at least one section of the survey, we will be missing relevant data on too many items. This will become problematic when calculating the safety culture composite scores. We will probe surveys for missing items and will exclude a scale if more than 2 items have not been answered.

Before entering data into an electronic file we need to determine the coding for illegible, mismarked, and multiple-marked responses. Using the AHRQ's recommendation, the unreadable responses or inappropriate responses will be marked as missing and in case we have multiple-marked responses, we will choose the highest number among selected responses.

Proposed Analysis

Most of the items in the questionnaire use a Likert 5- point response scale such as scale of agreement (strongly disagree=1 to strongly agree=5) or scale of frequency (never=1 to always=5). Each of the five responses would have a numerical value (1-5), in which the highest two scoring answers (4-5) are perceived as positive response answers, while the lowest three scoring answers (1-3) are considered other response answer. A “positive response” is, therefore, the percent on a scale. There are 18 negatively worded items in the survey, which will be reverse coded to ensure that positive answers indicate a higher score. The data will be entered into an electronic file and analyzed using statistical software program SPSS (version 22.0, Illinois, United States).

The background characteristics of the respondents will be reported by frequency and percentage for the three levels of hospitals separately (Table-2, Appendix A). It is important to present frequency information about the background characteristics of all the respondents as a whole, for example, the units to which they belong, how long they have worked in the hospital or their unit, their staff position, etc. This information will help the audience better understand whose opinions are being represented in the data. The responses at the open-ended comment section will be summarized into major categories of recurrent themes. Any identified patterns or trends will be reported in the form of descriptive text (“UWM | Steps for Analyzing Responses to Open-Ended Survey Questions,” 2011). The findings from the open-ended comment section will help us with further clarification of the quantitative results.

A list of non-respondents, which can be compiled from the original reference list, will be compared to respondents to know if they differ based on the provided information from the

hospital administrations. Since the 3 levels of hospitals have only four units/wards in common, all remaining sections will be reported under a separate category (*Other*).

Comparison of safety culture dimensions

The survey items will be grouped into dimensions of safety culture, so it can be useful to calculate one overall frequency for each dimension and to determine differences and similarities between hospital levels and groups of profession.. Each scale item will be transformed into a numeric scale, where “1” is the least desirable state and “5” is the most desirable state. A scale score will be computed as the mean of the scales’ item scores. Descriptive statistics will be computed with 95% confidence intervals to compare safety culture dimensions across the three categories of hospitals and among different groups of professions. We will also compute the percent of “positive” or “desirable” scores on a scale. This will be computed as the mean of the ratio of items with a positive score (equal to 4 or 5, including rescored items) to the items scored otherwise. For example, if a 3 item scale has scores of 4, 5, and 3, then the percent “positive” score is 66.7% (e.g. $(1+1+0)/3*100$).

To assess the significance of any difference we might observe among different levels of hospitals or among different groups of professionals, it is necessary to conduct further statistical analyses. In this case, we will conduct one-way between-groups Multivariate Analysis of Variance (MANOVA), which will let us know if the observed difference(s) are statistically significant. In case we find significant difference, a post-hoc analysis using the Tukey HSD test will be performed to find out where these significant difference(s) occur (Appendix A, Table-3 & 4). On each scale, we will be comparing scale means across 4 categories of healthcare roles (physicians, nurses, lab technicians and management staff), and 3 categories/types of hospital (regional, provincial and district). The null hypotheses are:

$$H1(o): \mu_p = \mu_n = \mu_l = \mu_m$$

$$H2(o): \mu_r = \mu_p = \mu_d$$

Where μ represents the mean scale score by role (p=physicians, n=nurses, l= lab technicians, m=management staff) or by level of hospital (r=regional, p=provincial, d=district). The alternative hypotheses (i.e. H(a)) is that there are significant differences. Because we do not have sufficient a priori evidence as to the magnitude or direction of differences, we will rely on the evidence as to whether or not the null hypotheses are rejected; and, if so, what other evidence supports possible reasons for the statistically significant differences.

The overall score for each of the 12 dimension of safety culture will also be compared to the findings of the same survey from other countries. This will give us a general picture of Afghan hospitals being compared to regional and international standards. Iran is both geographically and culturally the closest country that has implemented the AHRQ's hospital survey in several settings. Therefore, on regional level Iran makes a good equivalent for Afghanistan to compare its survey findings with. On the other hand, the wide scale implementation of the survey in American hospitals makes their results more reliable and standard, so the study will also compare its findings with the finding from American hospitals.

Reliability and Validity of the Translated Survey

The internal consistency of items in each scale will be evaluated using the most commonly used psychometric tool, Cronbach's alpha coefficient. An internal consistency value of (Cronbach's $\alpha \geq 0.70$) is recommended by AHRQ for the newly developed scales. The internal consistency of the 12 dimensions of patient safety culture individually and the overall Cronbach alpha of the scale will be reported and compared to that of the original scale in English as well as the Persian translated version (Appendix A, Table-5).

The calculated scale scores for every item will be used to compute the Pearson correlation coefficients between the scales scores (Appendix A, Table-6). This will help us assess the validity of the scales by examining the strength of the relationship between each pair of scales. In addition, the means and standard deviations for each of the scale will be reported

Ethical Consideration

Health-related research always needs to be highly formalized, regulated and considerate of ethical issues. The rights and safety of every participant of a research needs to be a top priority. Fortunately, we live in an era that has recognized all such rights. A good example is, the Belmont Report. For the first time it was announced in 1979 by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. It was basically designed as, "the ethical framework for ensuing human participant research regulations and still serves as the basis for human participant protection legislation" ("Five principles for research ethics," 2003, sec. 5).

Being aware of the issue of protecting privacy of the participants as an ethical responsibility, all key ethical principles such as respect, beneficence, sincerity and justice are considered in the design of this study. Ethical approval will be obtained from the management of the participant hospitals and the Ministry of Public Health in Afghanistan before data collection. Participation in this survey will be voluntary and therefore a waiver of the consent form will be requested. The Survey will have a cover letter that will state the purpose of the survey, the expected time for survey to be completed, description of the topic and content of the survey, statements about confidentiality, anonymity, and about how the participant may obtain additional information (Appendix-B).

To protect the confidentiality of the participants, the questionnaire does not include any question or section seeking personal information that would disclose their identity. Similarly, categories with less than 5 participants will not be reported separately. The paper surveys will be stored in a secure place and will be accessed only by researchers until the data is transferred into an electronic file. Participants will be assigned a random identification code. After the data collection and data entry is completed, the paper surveys will be destroyed and previous ID numbers will be replaced by new randomly assigned ID numbers. Each hospital will receive a final report identifying the results for that particular hospital in comparison to all other hospitals while keeping other hospitals de-identified.

CHAPTER IV

Management Plan

Patient safety culture is a critically important aspect of healthcare. The high rate of adverse events needs a closer attention and careful evaluation. The ultimate goal of this research proposal is to assess the underlying organizational factors of patient safety in Afghan hospitals. The research project will begin with acquiring ethical approval from both the Afghan IRB Committee and related Hospital administrations. This is normally a slow process and may take approximately 2 months. The next step would be to hire research personnel who will assist with the collection, management and analysis of the data. Project staff will be hired based on their research skills. A basic training program to each staff member will ensure that they understand the project and their role in project activities. The whole process of hiring and training research personnel is estimated to take two months. The project staff will include one principal investigator and three research assistants. The principal investigator will be responsible for obtaining ethical approval, hiring and training research personnel, supervising research personnel, analyzing the data and writing the research report. The research team will also constitute an advisory committee of 4-5 members from the Ministry of Public Health. The advisory committee will help to ensure close collaboration between the research staff and participating hospitals. The findings of the survey will be shared with the advisory committee; however, hospitals will be de-identified in their report to protect the confidentiality of the hospitals.

Time Scale

The estimated time for the duration of this research study, from the beginning of the ethical approval process to the end of report writing, is 9 months. Table-6 displays each phase of the research process with the anticipated time scale.

Table 2: Sequence and anticipated time scale of each phase of the research project

Principal Investigator	1 st month	2 nd month	3 rd month	4 th month	5 th month	6 th month	7 th month	8 th month	9 th month
Ethical approval from IRB Committee and Hospitals' management	X	X							
Hire Personnel			X						
Train personnel				X					
Supervise personnel					X	X	X		
Analyze data								X	
Write research report									X
Research Assistants									
Collect data				X	X				
Enter data						X			
Analyze data							X		

Dissemination

The proposed study will produce significant evidence for improving policies and procedures related to patient safety in public hospitals working under the Essential Package of Hospital Services. The study findings can be used by the Ministry of Public Health and the Local Departments of Public Health in Afghanistan. Additionally, the results will help clinical and technical workers in the healthcare industry to not only understand the dimensions of patient safety, but also actively participate in shaping policies. The unique and initiative nature of the proposed research on patient safety in Afghan hospitals should warrant its publication in a scientific journal. The potential publisher of this article could be the *Afghanistan Journal of Public Health*, which uses international standards for publications. The expected audience

includes healthcare providers, hospital management staff and policy makers in health sector. The findings may also encourage public health researchers to further investigate patient safety in Afghan Hospitals.

Conclusion

This research proposal developed a plan of a cross-sectional hospital survey on patient safety culture to be administered in all three categories of public hospitals working under the Essential Package of Hospital Services (EPHS) in Afghanistan. A highly validated and widely used survey instrument, originally developed by the Agency for Healthcare Research and Quality (AHRQ) in US, was translated into the local language, Pashto. The survey will be the first of its kind to assess patient safety culture in Public Hospitals in Afghanistan.

A range of safety culture dimensions will be used to compare hospital units, professional roles and the three levels of public hospitals. The survey dimensions identify organizational factors that can be changed. Since a convenience sampling method will be used, the results cannot be generalized to all Afghan Hospitals. If results indicate suboptimal results in a dimension, the local departments of public health and hospital administrations will have information for taking action to improve hospital safety climate and patient safety. The results from Afghan Hospitals will also be compared with the results from use of the survey in other countries. Furthermore, the translated survey will be assessed for its psychometric properties. This research project could be referred to in the future as a pilot study for a countrywide randomized survey. A countrywide hospital survey will have potential implication in integration of a policy framework into the Essential Package of Hospital Services (EPHS) that would address patient safety culture, especially areas with low scores. The survey might be repeated over certain period of time to track changes in patient safety culture.

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Appendix A: Tables**Table 3:** Background characteristics of the participants

Characteristics	Categories	Level of Hospital		
		District Hospital Freq (%)	Provincial Hospital Freq (%)	Regional Hospital Freq (%)
Staff position	Physician			
	Nurse			
	Lab technician			
	Management Staff			
Experience in hospital	<1 year			
	1-5 years			
	6-10 years			
	> 11 years			
Working hours /week	< 20 hours			
	20-39 hours			
	40-59 hours			
	> 60 hours			
Work area/unit	Medicine			
	Surgery			
	Pediatrics			
	Obstetrics and Gynecology			
	Other			
Work experience in the relevant unit	<1 year			
	1-5 years			
	6-10 years			
	> 11 years			
Direct contact with patients	Yes			
	No			

Table 4: Comparative results on safety culture dimensions across district, provincial and regional hospitals:

Dimensions of Safety Culture	Mean Scale Scores (95% confidence interval)						
	District Hospitals	Provincial Hospitals	Regional Hospitals	Overall Afghan Hospitals	p-value	US Hospitals	Iranian Hospitals
Supervisor/manager expectations & actions promoting patient safety							
Organizational learning-continuous improvement							
Teamwork within units							
Communication openness							
Feedback & communication about error							
Non-punitive response to error							
Staffing.							
Hospital management support for patient safety							
Teamwork across hospital units							
Hospital handoffs & transitions							
Overall perceptions of safety							
Frequency of events reported							

Table 5: Comparative results on safety culture dimensions across different professions:

Dimensions of Safety Culture	Mean Scale Scores (95% confidence interval)				
	Physicians	Nurses	Lab Technicians	Management Staff	P-value
Supervisor/manager expectations & actions promoting patient safety					
Organizational learning-continuous improvement					
Teamwork within units					
Communication openness					
Feedback & communication about error					
Non-punitive response to error					
Staffing.					
Hospital management support for patient safety					
Teamwork across hospital units					
Hospital handoffs & transitions					
Overall perceptions of safety					
Frequency of events reported					

Table 6: Comparison of internal consistency between the translated version and the original instrument

Dimensions of Safety Culture	Number of items	Cronbach's alpha (Pashto survey)	Cronbach's alpha (English Survey)	Cronbach's alpha (Iranian Survey)
Supervisor/manager expectations & actions promoting patient safety	4			
Organizational learning-continuous improvement	3			
Teamwork within units	4			
Communication openness	3			
Feedback & communication about error	3			
Non-punitive response to error	3			
Staffing.	4			
Hospital management support for patient safety	3			
Teamwork across hospital units	4			
Hospital handoffs & transitions	4			
Overall perceptions of safety	4			
Frequency of events reported	3			
Total	42			

Table 7: Inter-item correlations of the 12 dimensions

Dimensions of Safety Culture	1	2	3	4	5	6	7	8	9	10	11	12	Total
1. Supervisor/manager expectations & actions promoting patient safety		-	-	-	-	-	-	-	-	-	-	-	
2. Organizational learning-continuous improvement			-	-	-	-	-	-	-	-	-	-	
3. Teamwork within units				-	-	-	-	-	-	-	-	-	
4. Communication openness					-	-	-	-	-	-	-	-	
5. Feedback & communication about error						-	-	-	-	-	-	-	
6. Non-punitive response to error							-	-	-	-	-	-	
7. Staffing.								-	-	-	-	-	
8. Hospital management support for patient safety									-	-	-	-	
9. Teamwork across hospital units										-	-	-	
10. Hospital handoffs & transitions											-	-	
11. Overall perceptions of safety												-	
12. Frequency of events reported													

Notes:

- 1) Means and Standard Deviations of each scale will appear in the diagonal.
- 2) Pearson correlation between paired scales will appear in the off-diagonal cells.

Appendix B: Survey cover letter:**Hospital Survey on Patient Safety Culture**

This survey is part of a research effort for a better understanding of patient safety in public hospitals in Afghanistan. The questionnaire is intended only for physicians, nurses, lab technicians and management staff who are fulltime current employees with either a district hospital, provincial hospital or a regional hospital. The survey, which takes 10-15 minutes to complete, asks about your opinion on different aspects of patient safety in your Hospital. Please complete your survey and return it within the next 3 days to the same person and location when you are signing in to hospital.

Instructions:

- Do not write or sign your name on the questionnaire.
- Answer each question by selecting the response that best applies to you or best represents your opinion.
- If for any reason you do not want to answer a question, leave it blank.

Important!

- No staff member at your hospital including the manager will ever see or have access to your questionnaire.
- Questionnaires will be destroyed after the data have been entered into a computer file.
- Only authorized staff from the research team will have access to the survey data.
- Data results will be presented in a manner so that neither individuals nor small groups can be identified.
- Results may be published; however, no individuals or small groups will be identified.

The scientific value of the survey:

- Depends upon the reliable and accurate representation of the individual views of practitioners.
- Requires a high participation rate to be scientifically meaningful.

Therefore, your participation is very important and greatly appreciated.

Please contact [*contact name and job position*] if you have any questions.
[*Phone number and E-mail address*]

Thank you in advance for your participation in this important effort.

Appendix C: English version of Hospital survey on Patient safety culture**Hospital Survey on Patient Safety Culture: Items and Dimensions**

In this document, the items in the Hospital Survey on Patient Safety Culture are grouped according to the safety culture dimensions they are intended to measure. The item's survey location is shown to the left of each item. Negatively worded items are indicated. Reliability statistics based on the pilot test data from 21 hospitals and more than 1,400 staff are provided for the dimensions.

1. Teamwork Within Units

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

A1. People support one another in this unit.

A3. When a lot of work needs to be done quickly, we work together as a team to get the work done.

A4. In this unit, people treat each other with respect.

A11. When one area in this unit gets really busy, others help out.

Reliability of this dimension--Cronbach's alpha (4 items) = .83

2. Supervisor/Manager Expectations & Actions Promoting Patient Safety¹

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

B1. My supervisor/manager says a good word when he/she sees a job done according to established patient safety procedures.

B2. My supervisor/manager seriously considers staff suggestions for improving patient safety.

B3. Whenever pressure builds up, my supervisor/manager wants us to work faster, even if it means taking shortcuts. (negatively worded)

B4. My supervisor/manager overlooks patient safety problems that happen over and over. (negatively worded)

Reliability of this dimension--Cronbach's alpha (4 items) = .75

3. Organizational Learning—Continuous Improvement

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

A6. We are actively doing things to improve patient safety.

A9. Mistakes have led to positive changes here.

A13. After we make changes to improve patient safety, we evaluate their effectiveness.

¹ Adapted from Zohar (2000). A group-level model of safety climate: Testing the effect of group climate on microaccidents in manufacturing jobs. *Journal of Applied Psychology*, (85) 4, 587-596.

Reliability of this dimension--Cronbach's alpha (3 items) = .76

4. Management Support for Patient Safety

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

- F1. Hospital management provides a work climate that promotes patient safety.
- F8. The actions of hospital management show that patient safety is a top priority.
- F9. Hospital management seems interested in patient safety only after an adverse event happens. (negatively worded)

Reliability of this dimension--Cronbach's alpha (3 items) = .83

5. Overall Perceptions of Patient Safety

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

- A15. Patient safety is never sacrificed to get more work done.
- A18. Our procedures and systems are good at preventing errors from happening.
- A10. It is just by chance that more serious mistakes don't happen around here. (negatively worded)
- A17. We have patient safety problems in this unit. (negatively worded)

Reliability of this dimension--Cronbach's alpha (4 items) = .74

6. Feedback & Communication About Error

(Never, Rarely, Sometimes, Most of the time, Always)

- C1. We are given feedback about changes put into place based on event reports.
- C3. We are informed about errors that happen in this unit.
- C5. In this unit, we discuss ways to prevent errors from happening again.

Reliability of this dimension--Cronbach's alpha (3 items) = .78

7. Communication Openness

(Never, Rarely, Sometimes, Most of the time, Always)

- C2. Staff will freely speak up if they see something that may negatively affect patient care.
- C4. Staff feel free to question the decisions or actions of those with more authority.
- C6. Staff are afraid to ask questions when something does not seem right. (negatively worded)

Reliability of this dimension--Cronbach's alpha (3 items) = .72

8. Frequency of Events Reported

(Never, Rarely, Sometimes, Most of the time, Always)

D1. When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported?

D2. When a mistake is made, but has no potential to harm the patient, how often is this reported?

D3. When a mistake is made that could harm the patient, but does not, how often is this reported?

Reliability of this dimension--Cronbach's alpha (3 items) = .84

9. Teamwork Across Units

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

F4. There is good cooperation among hospital units that need to work together.

F10. Hospital units work well together to provide the best care for patients.

F2. Hospital units do not coordinate well with each other. (negatively worded)

F6. It is often unpleasant to work with staff from other hospital units. (negatively worded)

Reliability of this dimension--Cronbach's alpha (4 items) = .80

10. Staffing

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

A2. We have enough staff to handle the workload.

A5. Staff in this unit work longer hours than is best for patient care. (negatively worded)

A7. We use more agency/temporary staff than is best for patient care. (negatively worded)

A14. We work in "crisis mode" trying to do too much, too quickly. (negatively worded)

Reliability of this dimension--Cronbach's alpha (4 items) = .63

11. Handoffs & Transitions

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

F3. Things "fall between the cracks" when transferring patients from one unit to another. (negatively worded)

F5. Important patient care information is often lost during shift changes. (negatively worded)

F7. Problems often occur in the exchange of information across hospital units. (negatively worded)

F11. Shift changes are problematic for patients in this hospital. (negatively worded)

Reliability of this dimension--Cronbach's alpha (4 items) = .80

12. Nonpunitive Response to Errors

(Strongly Disagree, Disagree, Neither Agree nor Disagree, Agree, Strongly Agree)

A8. Staff feel like their mistakes are held against them. (negatively worded)

A12. When an event is reported, it feels like the person is being written up, not the problem.

(negatively worded)

A16. Staff worry that mistakes they make are kept in their personnel file. (negatively worded)

Reliability of this dimension--Cronbach's alpha (3 items) = .79

Patient Safety Grade

(Excellent, Very Good, Acceptable, Poor, Failing)

E1. Please give your work area/unit in this hospital an overall grade on patient safety.

Number of Events Reported

(No event reports, 1 to 2 event reports, 3 to 5 event report, 6 to 10 event reports, 11 to 20 event reports, 21 event reports or more)

G1. In the past 12 months, how many event reports have you filled out and submitted?

Note: Negatively worded questions should be reverse coded when calculating percent "positive" response, means, and composites.

Appendix D: Pashto version of Hospital Survey on Patient Safety Culture

د ناروغانو د خونديتوب د کلتور په هکله د روغتون سروې: توکی او بعدونه

په دې سند کې، د ناروغانو د خونديتوب د کلتور په هکله د روغتون د سروې توکی د خونديتوب د کلتور د هغه بعدونه له مخې یوځای شوی کوم چې دوی به یې اندازه کوي. د هر توکی نښې لوری ته د هغه موقعیت په سروې کې ښودل شوی دی. په معکوس ډول بیان سوی توکی هم په نښه شوی دي. د ۲۱ روغتونونو او له ۱۴۰۰ زیاتو کارکوونکو څخه د ازمایښتی سروې له مخې د هر بعد د باوری توب (Reliability) شمېری هم ښودل شوی دي.

1. دروغتون په څانگو/وارډونو کې دننه گډکار

(په کلکه ناموافق، ناموافق، نه موافق نه هم ناموافق، موافق، په کلکه موافق)

A1 - په دی څانگه کې خلگ د یو بل نه ملاتړ کوي.

A3 - کله چې زیات کار ته اړتیا وي، موږ په گډه د یوه ټیم په شکل کار کوو ترڅو کار پای ته ورسوو.

A4 - په دی څانگه کې خلگ یو او بل ته د درناوی په سترگه گوري.

A11 - کله چې په دې څانگه کې یوه برخه ډیره بوخته شي، نو نور یې مرسته کوي.

د دی بعد باوری توب (Reliability): Cronbach's alpha (۴ توکی) = ۰.۸۳.

2. د مدیر/سرپرست هیلې او کړنې د ناروغانو د خونديتوب د پرمختگ لپاره

(په کلکه ناموافق، ناموافق، نه موافق نه هم ناموافق، موافق، په کلکه موافق)

B1 - کله چې زما مدیر/سرپرست د ناروغانو د خونديتوب د تأسیس سوو کړنلارو سره موافق یو کار

ووینی نو د هغه ستاینه کوي.

B2 - زما مدیر/سرپرست د ناروغانو د خونديتوب په هکله د کارکوونکو وړاندیزونه په جدي توکه په

نظر کې نیسی.

B3 - کله چې د کار فشار زیات شي، زما مدیر/سرپرست غواړي چې موږ ژر ژر کار وکړو، آن که دا د

لنډو لارو څخه د استفادی په مانا هم وي. (په معکوس ډول بیان سوی)

B4 - زما مدیر/سرپرست د ناروغانو د خونديتوب پر هغه ستونزو چې بیا بیا رامنځته کیږي سترگی

پتوي. (په معکوس ډول بیان سوی)

د دی بعد باوری توب (Reliability): Cronbach's alpha (۴ توکی) = ۰.۷۵.

3. اداری زده کړې - پرله پسې اصلاح

(په کلکه ناموافق، ناموافق، نه موافق نه هم ناموافق، موافق، موافق، په کلکه موافق)

A6 - موږ په فعاله توګه اجراءات کوو ترڅو د ناروغانو په خونديتوب کې ښه والی راسي.

A9 - تیروتنې دلته د مثبتو بدلونونو د رامنځته کېدو سبب شوی دی.

A13 - وروسته تر دې چې موږ د ناروغانو د خونديتوب لپاره بدلونونه رامنځته کړو، موږ د هغوی

اغېزه ارزوو.

د دې بعد باوری توب (Reliability): Cronbach's alpha (۳ توکي) = ۰.۷۶.

4. د ناروغانو د خونديتوب لپاره د ادارې ملاتړ

(په کلکه ناموافق، ناموافق، نه موافق نه هم ناموافق، موافق، په کلکه موافق)

F1 - د روغتون اداره د کار یوه داسې فضا برابروي کوم چې د ناروغانو خونديتوب لږ ښه کوي.

F8 - د ادارې د کړنو څخه داسې بریښي چې د ناروغانو خونديتوب یو د لوړو لومړیتوبونو څخه دي.

F9 - د روغتون اداره یوازې هغه وخت د ناروغانو د خونديتوب سره علاقه ښيي کله چې یوه ناوړه پېښه

رامنځته شي. (په معکوس ډول بیان سوی)

د دې بعد باوری توب (Reliability): Cronbach's alpha (۳ توکي) = ۰.۸۳.

5. په عمومي توګه د ناروغانو د خونديتوب په باب پوهه

(په کلکه ناموافق، ناموافق، نه موافق نه هم ناموافق، موافق، په کلکه موافق)

A15 - د ناروغانو خونديتوب هیڅکله هم د زیات کار د تر سره کولو لپاره نه قربانی کېږي.

A18 - زموږ کړنلاری او سیستمونه د تېروتنو په مخنیوي کې ښه دي.

A10 - دا یواځې زموږ بخت دی چې دلته جدي تېروتنې نه رامنځته کېږي. (په معکوس ډول بیان سوی)

A17 - موږ په دې څانګه کې د ناروغانو د خونديتوب ستونزې لرو. (په معکوس ډول بیان سوی)

د دې بعد باوری توب (Reliability): Cronbach's alpha (۴ توکي) = ۰.۷۴.

6. د تېروتنو په اړه معلومات او خبرې اترې

(هیڅ کله نه، ډېر لږ، کله ناکله، ډیرې وخت، تل)

C1 - موږ ته د هغه بدلونونو په اړه معلومات راګول کېږي کوم چې د پېښو د رپوټونو پر بنسټ رامنځته

سوی وی.

- C3 - موږ ته د هغه تېروتنو په باب خبر راكول كيږي كوم چي په دې څانگه كې رامنځته كيږي.
 C5 - په دې څانگه كې، موږ د داسي لارو چارو په هكله خبرې اترې كوو ترڅو د تېروتنو د بيا پيښيدو مخه ونيسو.

د دې بعد باوري توب (Reliability): Cronbach's alpha (٣ توکي) = ٧٨،.

7. د خبرو اترو څرگندوالی/آزادی

(هېڅ کله نه، ډېر لږ، کله ناکله، ډیرې وخت، تل)

- C2 - کارکوونکي په پوره آزادی سره خپل نظر څرگندوی که چیری داسی څه ووینی چی د ناروغ مراقبت ته زیانمن وي.

- C4 - کارکوونکي په پوره آزادی سره د هغو پرېکړو او کړنو په هكله پوښتنه کولای شی کوم چی د لوړو مقاماتو له خوا تطبیقېږي.

- C6 - کارکوونکي له دې ډارېږي چې د هغه څه په هكله پوښتنه وکړي کوم چی سم نه ښکاري. (په معکوس ډول بیان سوی)

د دې بعد باوري توب (Reliability): Cronbach's alpha (٣ توکي) = ٧٢،.

8. د رپوټ شوو پېښو شمیر

(هېڅ کله نه، ډېر لږ، کله ناکله، ډیرې وخت، تل)

- D1 - کله چی یوه تېروتنه پېښه شی، خو ناروغ ته تر زیان رسولو مخکی وموندل شی او اصلاح شی، نو څومره په دې هكله خبر ورکول كيږي؟

- D2 - کله چی یوه تېروتنه پېښه شی، خو ناروغ ته د زیان رسولو توان ونلری، نو څومره په دې هكله خبر ورکول كيږي؟

- D3 - کله چی داسی یوه تېروتنه پېښه شی چی ناروغ ته زیان رسولای شی، خو زیان ونه رسوی، نو څومره په دې هكله خبر ورکول كيږي؟

د دې بعد باوري توب (Reliability): Cronbach's alpha (٣ توکي) = ٨٤،.

9. دروغتون د بیلابیلو څانگو/واړو نونو تر منځ گډ کار

(په کلکه موافق، ناموافق، نه موافق نه هم ناموافق، موافق، په کلکه موافق)

- F4 - دروغتون د هغو څانگو تر منځ چی گډ کار ته اړتیا لري ښه همکاري شته.

- F10 - دروغتون څانگی یو د بل سره په ښه ډول گډ کارکوی ترڅو د ناروغانو ښه مراقبت وشي.

F2 - د روغتون څانګې یو د بل سره ښه همغږي نه دي. (په معکوس ډول بیان سوی)

F6 - د روغتون د نورو څانګو له کارکوونکو سره کار کول زیاتره خواتورونکی وي. (په معکوس ډول

بیان سوی)

د دی بعد باوری توب (Reliability): Cronbach's alpha (۴ توکي) = ۰.۸۰.

10. د کارکوونکو ګومارنه

(په کلکه ناموافق، ناموافق، نه موافق نه هم ناموافق، موافق، په کلکه موافق)

A2 - موږ په کافي اندازه کارکوونکي لرو چې د کار حجم سمبال کړي.

A5 - په دې څانګه/وارډ کې کارکوونکي تر هغه وخت زیات کار کوي چې د ناروغ د مراقبت لپاره غوره

ګڼل کیږي. (په معکوس ډول بیان سوی)

A7 - موږ تر هغه اندازې زیات موقتي/قراردادی کارکوونکي لرو چې د ناروغ د مراقبت لپاره غوره ګڼل

کیږي. (په معکوس ډول بیان سوی)

A14 - موږ د (بحرانی حالت) په څیر کارکوو تر څو ډیر کار ډیر ژر تر سره کړو. (په معکوس ډول بیان

سوی)

د دی بعد باوری توب (Reliability): Cronbach's alpha (۴ توکي) = ۰.۶۳.

11. تسلیمی او لېږدونی

(په کلکه ناموافق، ناموافق، نه موافق نه هم ناموافق، موافق، په کلکه موافق)

F3 - د روغتون د یوې څانګې څخه بلې ته د ناروغانو د لېږد په وخت کې بې پروایي کیږي. (په معکوس

ډول بیان سوی)

F5 زیاتره دکاری وخت یا دوری د بدلون په ترڅ کې د ناروغ مهم معلومات ورکیږي. (په معکوس ډول

بیان سوی)

F7 - د روغتون د څانګو تر منځ د معلوماتو د تبادلې پر مهال زیاتره ستونزې رامنځته کیږي. (په

معکوس ډول بیان سوی)

F11 - په دې روغتون کې د دکاری وخت یا دوری بدلون د ناروغانو لپاره ستونزمن وی. (په معکوس

ډول بیان سوی)

د دی بعد باوری توب (Reliability): Cronbach's alpha (۴ توکي) = ۰.۸۰.

12. د تېروتنو په وړاندې غیر جزائې / غیر تنبیهې غبرگون

(په کلکه ناموافق، ناموافق، نه موافق نه هم ناموافق، موافق، په کلکه موافق)

A8 - کارکونکې داسې احساسوي چې د دوی سهوی د دوی د ملامتولولپاره کارول کېږي. (په

معکوس ډول بیان سوی)

A12 - کله چې د یوې پېښې رپوټ ورکول کېږي، کارکونکې داسې احساسوي چې د پېښې پر ځای د

شخص راپور لیکل کېږي. (په معکوس ډول بیان سوی)

A16 - کارکونکې دا اندېښنه لري چې د دوی تېروتنې د دوی په دوسیو کې ساتل کېږي. (په معکوس

ډول بیان سوی)

د دی بعد باوری توب (Reliability): Cronbach's alpha (۳ توکي) = ۰.۷۹.

13. د ناروغانو د خونديتوب درجه

(عالي، ډېر ښه، د منلو وړ، ضعیف، ناکام)

E1 - مهرباني وکړي په دې روغتون کې ستاسو کارې څانگې/واړه ته د ناروغانو د خونديتوب یوه

عمومي درجه غوره کړي.

14. د رپوټ شوو پېښو شمېر

(د پېښې هېڅ رپوټ، ۱ تر ۲ د پېښې رپوټونه، ۳ تر ۵ د پېښې رپوټونه، ۶ تر ۱۰ د پېښې رپوټونه، ۱۱ تر ۲۰ د

پېښې رپوټونه، ۲۱ یا ډیر د پېښې رپوټونه)

G1 - په تیرو ۱۲ میاشتو کې، څومره د پېښو رپوټونو تاسو پوره کړي او سپارلي دي؟

نوټ: په معکوس ډول بیاني شوی پوښتنی باید هغه مهال معکوس کوډ (Reverse code) شی کله چې د مثبتو

جوابونو فیصدي، اوسط او مرکب محاسبه کېږي.