

## RESEARCH ARTICLE

# The Secrets of High Performing Health Care Organizations - The Development of a Patient Safety System at a Hospital Network, Turkey

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## ABSTRACT

Health care organizations are at a critical crossroad in the challenge to provide safe and high quality care for their patients. Most of the current evidence on adverse events comes from hospitals. Many patients suffer increased pain, disability and psychological trauma or staff may experience shame, guilt and depression after making a mistake, with litigation and complaints imposing an additional burden. Safety is the basic principle and a critical component of quality management. Patient safety has become a major preoccupation in health care systems; it is often measured through rates of adverse events. Despite the magnitude of the problem, understanding and knowledge of the epidemiology of adverse events, frequency, causes, determinants and impact on patient outcomes, and effective methods for preventing them are limited or the existed best practices are changed from country to country, from culture to culture.

For this purpose we developed a Patient Safety Program (PSP) based on AHRQ quality indicators and Joint Commission 2015 National Patient Safety Goals. Ba kent University was founded in Ankara, Turkey in 1993. The initial organization started in 1985, with a 50-bed hospital. Since then, our organization has rapidly expanded its medical activities, and today it encompasses eight satellite hospitals located in various provinces across the country. The mission of the Ba kent University Hospital network (BUH) is to provide high-quality patient care and support the research and educational programs of the university's Faculty of Medicine. We believe that errors in hospital processes occur due to built-in problems with the system. It follows that achievement of real improvement in quality depends on understanding and revising the processes based on relevant data.

In line with these patient safety and inpatient quality guidelines, we adopted our programs and developed our guidelines including all indicators, definitions and data sources. Some figures between the years 2013-2015 are; 1.5, 1.6 and 3.8 % for decubitus ulcer 0.8,1.5 2.7 % for patient fall and 3.4,4.5,5.3 % for transfusion reactions at the wards while these are 1.6,2.5,4.6 % for decubitus ulcer, 0.1 % for patient fall and 1.0, 1.8 and 6.8 % at intensive care units in the main hospital during the same period.

**Key Words:** Patient Safety, Nosocomial Infection, Infection Control, Quality of Health Care

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## Introduction

**H**ealth care organizations are at a critical crossroad in the challenge to provide safe and high quality care for their patients. The achievement of quality

depends on the basic principle of reducing error, which has always been a great problem in health care. Safety is the basic principle and a critical component of quality management and patient safety has become a major preoccupation in health care systems. It is often measured through rates of adverse events. Indeed the problem of adverse events in health care is not new. Studies as early as the 1950s and 1960s reported on adverse events, but the subject is neglected. For instance, The Institute of Medicine (IOM) report estimated that "medical errors" cause between 44 000 and 98 000 deaths annually in hospitals in the USA more than car accidents, breast cancer or AIDS.<sup>1-3,6</sup>

Despite growing interest in the safety of patients today,

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there is still widespread lack of awareness of the problem events. Capacity for reporting, analyzing and learning from experience is still seriously hampered by lack of methodological uniformity in identification and measurement, inadequate adverse event reporting schemes, weak information systems, insufficient data and fear of professional liability.<sup>4</sup>

Most of the current evidence on adverse events comes from hospitals. Based on these findings, almost every tenth patient suffers from adverse effects related to care in hospitals, and those halves of these problems are preventable.<sup>5,6</sup>

Many patients suffer increased pain, disability and psychological trauma or staff may experience shame, guilt and depression after making a mistake, with litigation and complaints imposing an additional burden. The consequences of adverse events in health-care systems are therefore huge. Several important initiatives in the past five years underline the increasing attention being paid to patient safety. However the problem is widespread that it should include nearly all health-care disciplines and actors and thus requires a comprehensive, multifaceted approach. Its improvement demands on involving a broad range of actions in performance improvement, environmental safety and risk management, including infection control, safe use of medicines, equipment safety and safe clinical practice. In addition, despite the magnitude of the problem, understanding and knowledge of the epidemiology of adverse events, frequency, causes, determinants and impact on patient outcomes, and effective methods for preventing them are limited or the existed best practices are changed from country to country, from culture to culture.<sup>6,7</sup>

There is a need for international standardization of terminology in definition, common methods for measurement and compatible reporting of adverse events. There are some international agencies such as “National Patient Safety Foundation and “Agency for Health Care Research and Quality (AHRQ) in USA or “Quality in Australian Health Care Study” were created awareness among politicians that influenced the implementation of a comprehensive patient safety programme in Australia or in the UK. However research has not been limited to establishing the prevalence of adverse events or medical errors so AHRQ agenda now states that we need more information in topics such as:<sup>8</sup>

- The epidemiology of errors, for instance the types and rates of errors in different health-care settings;
- The infrastructure to improve patient safety, for example the analytic capacity and organizational culture required;
- Information systems, for instance development of common definitions of a reporting system and how to evaluate its success
- Knowledge about which interventions should be

adopted and how to encourage adoption of patient safety practices.

## Objectives

Within this context, we, as a hospital network in Turkey developed a patient safety system covers these aforementioned dimensions. Başkent University was founded in Ankara, Turkey in 1993. The initial organization started in 1985, with a 50-bed hospital. Since then, our organization has rapidly expanded its medical activities, and today it encompasses eight satellite hospitals located in various provinces across the country. The mission of the Başkent University Hospital network (BUHN) is to provide high-quality patient care and support the research and educational programs of the university’s Faculty of Medicine. We believe that errors in hospital processes occur due to built-in problems with the system. It follows that achievement of real improvement in quality depends on understanding and revising the processes based on relevant data.

For this purpose we developed a Patient Safety Program (PSP) based on AHRQ researches and Joint Commission International Patient Safety Goals in 2001.<sup>6,8</sup> In the planning phase we decided to have a good information system in order to understand the epidemiology of errors and current situation, knowledge to select the most appropriate indicators.

## Methods

The organization-wide patient safety program is designed to reduce medical errors and hazardous conditions by utilizing a systematic, coordinated and continuous approach to the improvement of patient safety through the establishment of mechanisms that support effective responses to actual occurrences; ongoing proactive reduction in medical errors; and integration of patient safety priorities in the design and redesign of all relevant organizational processes, functions and services.<sup>1,2,3</sup> The scope of our program could be summarizing as below;

- Activities & functions relating to patient safety
- Participating sites, settings, and services
- Structure
- Management of the Program
- Components (safety-related committees, functions)
- The main steps that were accomplished in our PSP are ;
- Definition of terms
- Routine safety-related data collection and analysis
  - Incident reporting
  - Identification, reporting, and management of sentinel events
  - Medication error reporting
  - Infection surveillance

- Facility safety surveillance
- Staff perceptions of, and suggestions for improving patient safety
  - Staff willingness to report errors
- Patient/family perceptions of, and suggestions for improving patient safety
- Safety improvement activities
- Prioritization of improvement activities
- Proactive risk reduction
- Reporting of results
  - To the Patient Safety Program
  - To organization staff
  - To executive leadership and the governing body
- Mechanisms for coordination
  - Among components of the Program
  - Among the departments
  - Across the organization
- Communicating with patients about safety
  - Patient education
  - Informing patients about their care
- Staff education
  - Safety-related orientation & training
  - Team training

As for the first step for definition of the terms and indicator selection, the university’s Quality Management Department reviewed the literature that were being used worldwide than we decided to follow AHRQ Patient

Safety Indicators set and their guidelines for our patient safety and in-patient quality programs. In line with these guidelines, we adopted our programs and developed our guidelines including all indicators, definitions and data sources.<sup>8</sup>

We firstly tested our indicator sets, definitions and the reliability and accuracy of our data sources-we have ICD-10 coding system since 1997 in our hospitals- as well as the implementation of the indicator sets and the guidelines at the main hospital then adopted the same indicators sets and guidelines through eight hospitals attached to the main hospital.

The Patient Safety Indicators that are recommended for implementation are; complications of anesthesia, patient falls, decubitus ulcer, iatrogenic pneumothorax, infection due to medical care, postoperative hip fracture, transfusion reaction, postoperative hemorrhage or hematoma, postoperative respiratory failure, postoperative sepsis, transfusion reaction, birth trauma and obstetric trauma in vaginal delivery with and without instrumentation and cesarian delivery. Some figures from our network between the years 2013-2015 are presented in **figure 1-2**. As seen in the graphics these are; 1.5, 1.6 and 3.8 % for decubitus ulcer 0.8,1.5 2.7 % for patient fall and 3.4,4.5,5.3 % for transfusion reactions at the wards while these are 1.6,2.5,4.6 % for decubitus ulcer, 0.1 % for patient fall and 1.0, 1.8 and 6.8 % at intensive care units in the main hospital during the same period.

In-patient quality indicators measured from administrative data can provide an indirect measure of in hospital quality and can be used to help us to identify

potential problem areas that might need further study. Therefore we include 13 mortality indicators for conditions or procedures. In addition to mortality rates, we also measure 9 utilization indicators and 7 volume indicators of AHRQ Quality Indicators in our program.<sup>8,13</sup> Some of our figures of these indicators for the same period are; 15 % for acute myocardial infarction, 5.7 % mortality rates for congestive heart failure, 12 % for hip fracture, 8.1 % for pneumonia and 5.2 % for stroke in 2015. Some indicators that we are collecting regarding mortality rates for procedures are; mortality rates from abdominal aortic aneurysm repair, which was determined as 16.6 %, mortality rates determined after coronary artery bypass graft, which was 5.3 % in 2015 at the main hospital. The others can be listed as mortality rates for craniotomy, esophageal resection, hip replacement and pancreatic resection.

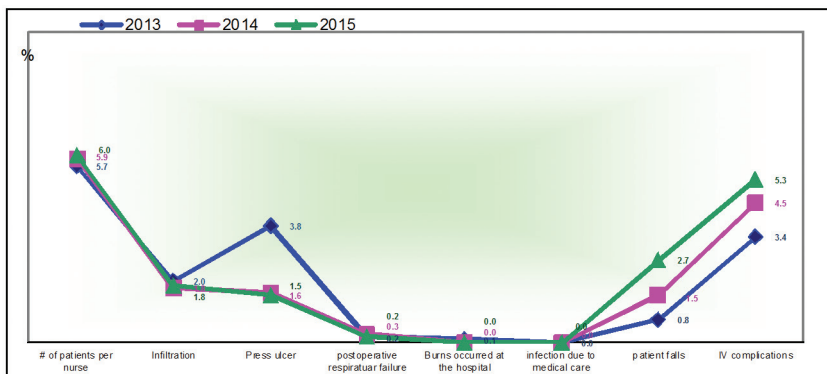


Figure 1. Distribution of Some patient safety indicators at wards, Baskent University Hospitals Network, 2013-2015

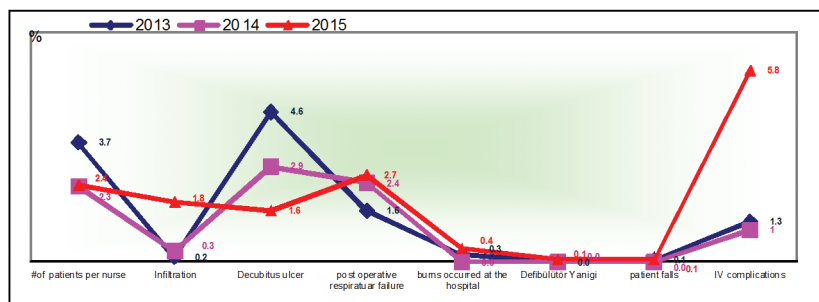


Figure 2. Distribution of the selected patient safety indicators at intensive care units, Baskent University Hospitals Network, 2013-2015

In addition to our routine incident reports in adult patients admitted to medicine and surgery departments in general hospitals, we are also reviewing the records of the patients at eight teaching hospitals in our systems. We are checking the quality of the patient assessment such as the documentation of the patient's medical assessment be recorded within the first 24 hours after patient's entry or whether the assessment included; health history, physical examination, psychological and social status, nutritional status, the assessment of pain, the daily reassessment status by a physician, the monitoring of patient's physiological status during his/her stay or not or if a surgical care is planned, we review the documentation status of the anesthesia and surgical care, the appropriateness of patient and family education, the existing of any adverse events and the completeness of discharge protocols.

Based on these findings we decided some strategies for the implementation of some interventions at the hospitals network. The aim is to creating new designs in order to prevent simple errors of processes, which are emerging to harm patients and to take precautions to recognize and correct these errors before they can reach the patients.<sup>12,14</sup>

We firstly built a patient safety committee in line with the activities of the quality management department. It is responsible from;

- Reviewing reports on occurrences typically ranging from “no harm” frequently occurring near misses” to sentinel events with serious adverse outcomes, claims and identified risks, which are gathered in accordance with BUN continuous quality improvement activities.
- Providing performance of corrective and preventive studies by primarily analysis of present and potential risks regarding patient safety..
- Conducting proactive and reactive risk decreasing studies, applying / ensuring the appliance of related quality techniques in the field. Identifying the improvement projects assessed by these techniques, pioneering the establishment of the project teams, providing the continued education of these teams.
- Providing recommendations concerning identified risks and where appropriate shall request and approve plans for corrective action and evaluate the implementation of corrective actions taken.
- Taking part in assessing the patient safety targets by negotiating / providing the negotiation of them in the Risk management Committee or other committees and making plans and investigations in the direction of the assessed targets.

### International Patient Safety Goals

Then we focused on patient safety goals. The purpose of the International Patient Safety Goals is to promote specific improvements in patient safety. The goals highlight

problematic areas in health care and describe evidence and expert-based consensus solutions to these problems. Recognizing that sound system design is intrinsic to the delivery of safe, high-quality health care, the goals generally focus on system-wide solutions, wherever possible. The list of the international goals is;<sup>9,12,17</sup>

Goal 1 Identify Patients Correctly

Goal 2 Improve Effective Communication

Goal 3 Improve the Safety of High-Alert Medications

Goal 4 Ensure Correct-Site, Correct-Procedure, Correct-Patient Surgery

Goal 5 Reduce the Risk of Health Care–Associated Infections

Goal 6 Reduce the Risk of Patient Harm Resulting from Falls

Under each patient safety goal implemented the following activities;

#### 1. Identify Patients Correctly

At BUHN Identifying and Confirming Patient Identity is implemented;

- Prior to any test, intervention or treatment
- Prior to administration of medicine and blood/blood products
- Prior to sample taking for clinical tests
- At patient transfers

Basic rule for all staff is to be sure of that the correct patient receives the correct service.

Within this context our main identity confirmer is “patient identification wristband”

In our wristband the PROTOCHOL NR (bold and big letters), patient name, family name and birth-date (day-month-year) is written clearly. In our hospitals the fields that we are using patient identification wristband are;

- All inpatient wards
- Labor room
- Baby room
- Outpatient operation theatre
- Emergency service
- Outpatient clinics where conscious sedation is applied (Gastroenterology, IVF, Neuro-angiography, cardiology)
- Interventional procedures or procedures with compulsory patient consent
- Outpatient fields where chemotherapy, infusion, blood/ blood products are used

The wristband could be used after the name on the wristband has to be confirmed by asking the patient or relatives the exact full name of the patient, the birth date.

If the information collected by asking is coherent with the wristband, it can be attached to the wrists. If there is a difference, the band is not attached to the patient and a new wristband according to the correct information is prepared and attached to the patient.

When the wristband is removed we do the followings;

- The identification data of the patient on the newly prepared wristband has to be confirmed by asking the patient or relatives the name, family name and birth dates of the patient and compare them to the same data and protocols number of the patient file.
- If there are no relatives present and the patient is unable to confirm his identity, two members of the health care staff will perform the identification according to the patient file .

If the patient refuses to wear the wristband, we inform the patient about the potential risks of refusing to wear the wristband and if the patient still resists refusing, it has to be recorded to the patient file.

If the information on the wristband is unreadable; the “Patient Identification Wristband” has to be always readable and wearied by the patient so the wristbands has to be checked and confirmed at the daily visits of the head nurse or the responsible nurses.

The “Patient Identification Wristband” has to be removed by the responsible nurse right before the discharge however the “Patient Identification Wristbands” of exitus patients should not be removed.<sup>14,15</sup> Additionally an “exitus name tag” has to be attached to the food site and the top site of the patient.

- In our hospitals network; in known allergic patients a “red” wristband has to be used. The name of the allergen substance has to be noted on the wristband before attachment.
- For the identification of isolated patient a “yellow” wristband has to be used. And the type of isolation has to be noted on the wristband before attachment.

## 2. The effectiveness of communication between care givers

### 2a. “Verbal / phone instructions”

The Verbal Transmission of Patient Information

If we have to transmit a test result, doctor’s instruction or clinical status patient information by phone or verbally, the general principles that are followed in our network system are can be grouped under three headings;

- Rules of taking instructions
- Conditions to use it
- Conditions to avoid it. The details of our applications can be summarized as following;

### Which Conditions are Appropriate to use verbal Instructions?

- During sterile interventions
- In conditions where emergent medication is required

When the responsible doctor is not present the responsible nurse will take the verbal instructions.

### How to Take Verbal Instructions?

- The name, dose of the medicine, and way of application has to be clearly described during taking a verbal instruction.
- The taken instruction has to be repeated and confirmed by the instructor.
- If necessary the instructed medicine can be repeated by coding the word.

### How to Record Verbal/Phone instructions?

- The Name of the instructor, date and time of the instruction has to be recorded on the “Doctor Instruction Form”.
- The instruction has to be signed as “verbal instruction” or “phone instruction”.
- The “Doctor Instruction Form” has to be signed by the instructor within 24 hours.
- If the instructor will be not available within 24 hours the present responsible doctor has to confirm the order on the “Doctor Instruction Form”.
- The verbal instructions had to be flagged with special signs in order to let them identified easily by the doctor.

## Communication Effectiveness Between Care Givers

### “Abbreviations to Avoid” and Handover communication “The Transmission of Critical Test Results”

“Critical Test Results Immediately to Transmit” The responsible laboratory staff had to transmit critical test results immediately to the doctor or nurse in charge together with the name, protocol number of the patient.<sup>9,16</sup>

### 2b. Hand-off communication

It is the standardized interactive process of passing patient specific information from one caregiver to another, or from one team of caregivers to another for the purpose of ensuring the continuity and safety of the patient’s care. The process includes the opportunity to ask and respond to questions. Using the hand-off communication tools along with the patient profile and the chart ensures the continuity and safety of the patient’s care. The process needs to include all caregivers to assure they have access to information. For example, when a patient comes from the ED to the unit, there is a form developed. The problem comes in when the patient does not go directly to the unit, and goes to Radiology or to the OR. The process breaks down, and the hand-offs are not as smooth. To ensure standardized critical content is communicated between health care providers during handovers of patient care, we developed a form based on a common briefing model

SBAR, which means. S-Situation – B-Background – A-Assessment – R-Recommendation. It is a structured communication tool that helps us to set up expectations for what is communicated and how communication is handled by team members and promising results shown in high-risk health care settings.

### 3. Patient Safety Targets Medication Safety

#### 3a. “Removal of High Electrolyte Concentrations from Patient Cards”

We remove all stocks from the emergency trolleys, bags, and floors and identify all high-risk medicines in order to ensure compliance of this target with our implementation

“Standardize all Medicine Concentrations”

#### 3b. “Prepare Lists for Similar Medicines and Check Them Once A Year”

##### *Patient Safety Targets JCAHO-2005 Medicine Safety*

#### 3c. Take Care of Similar Spellings and Pronunciations of Drugs! Look Alike/Sound Alike (LA/SA) Medication Names

WHO selected Look-Alike, Sound-Alike Medication Names as one of the nine problems to be addressed by Patient Safety Solutions.<sup>4,9,17</sup> As medical technology increases, so does the need for new medications. We also identified some drugs in our system that when ordering these drugs we want from our staff to spell them carefully and state their aim of usage!

We followed some strategies to reduce the risk of LA/SA errors include:

- Requiring that all prescriptions and medication orders include the brand name and generic name, dosage form, strength, directions, and indications
- Storing LA/SA medications in separate areas from one another and NOT using an alphabetic storing system in the Pharmacy
- Using “tall man” lettering in order to emphasize the spelling differences
- Providing regular LA/SA education to staff
- Reviewing each new medication closely in order to ascertain that it will not pose a LA/SA risk before adding it to the formulary
- Placing different colored labels or using different colored syringes for medications which can only be given one route - e.g. oral medications, so that a staff member does not inadvertently give the medication intravenously
- Printing clear alert messages for staff when dispensing medications from the Pharmacy
- Limiting the practice of accepting verbal or telephone orders to emergent situations only, as this is an area that

is high risk for a sound-alike error being made in transcription

- Labeling each medication with both the brand name and generic name
- Providing patients with detailed education regarding their medications so that they are alert to the possibility of a LA/SA error

Figure 3 shows some looks alike, sounds alike drug names<sup>17</sup> that when ordering these drugs the staff should be careful.

Lasix	Losec
CIPRALex	CIBADRex
Sekrol	Ceclor
Zantac	Zyrtec
FLOmax	FOSAmx
Lamisil	Lacipil
Pritor	Lipitor
Trileptal	Trivastal
Insidon	Incidal
Xorox	Zocor
DOPamin	DOBUTamin
HOLoxan	ENDoxan

Figure 1. Examples of Look Alike/ Sound Alike Drugs List, Baskent University Hospitals Network, 2013-2015

### 4. Prevention of Wrong Site, Region, intervention, and Patient Surgery

#### 4a. Prevention of Wrong Site, Region, intervention, and Patient Surgery” Identification of the Process”

We developed some form and nursing staff is responsible to fill these checklist before surgeries

#### 4b. “Marking of the Correct Site

### 5. Reduce the Risk of Health Care–Associated Infections

Although the contribution of infection control programs to high-quality patient care has long been recognized, the importance of these programs for an increasingly complex patient population has become even more prominent. Hospital acquired or nosocomial infections pose a major threat of excess morbidity and mortality to patients hospitalized for management of other diseases.<sup>7,10-12</sup> The detection of such infections, surveillance of their frequency and identification of their predisposing factors are essential prerequisites for the design and implementation of cost effective control and preventative measures.

The components of an infection control programs are surveillance, relevant policies and procedures, in-service training programs, hospital employee programs, and selection of the most appropriate antibiotic in order to prevent resistance, and systematic monitoring and evaluating of infections. Within these efforts, some activities of designing, measuring, assessing, and improving organizational performance in the surveillance, prevention, and control of infections should be also performed in infection control unit. Information about infection control indicators

should be collected through a well-established computerized system and through the concurrent medical record review function, and then summarized and should be used for further evaluations.

The principal goal of the infection control program is the prevention of nosocomial infection in patients, personnel, and visitors. In order to provide a safe environment for patients and personnel, the health care organizations should adopt a program of infection control designed to involve and affect every member of the hospital in the surveillance, prevention and control of nosocomial infection.

The objectives of the program are:

- To objectively and systematically monitor and evaluate the quality and appropriateness of all activities as they relate to infection control for patients, staff, and visitors
- To assure that infection control policies and procedures are consistently being followed throughout the hospital
- To measure the effectiveness of procedures for patient and healthcare providers
- To monitor implementation of corrective actions taken to address identified problems
- To review and/ or update infection control policies at least every two years.

A hospital infection control committee was established which is chaired by an infectious disease specialist and which also includes a microbiologist, a representative from medical and surgical staff, someone from hospital administration, the chief quality officer, and representatives from the nursing department, housekeeping and pharmacist.. Within this program to improve the hand washing practices among the hospital staff is the main activity so we revise our regulations and instructions. We provided much training to the staff on the importance of hand washing. We prepared some leaflets, brochures, and training kits for the staff and determine the current status by our checklists especially developed for this purpose.

### 5a. Hand Hygiene

Hand Hygiene is the single most important means of preventing the spread of infection and hospital-acquired infections.<sup>1,3,5,9</sup> The purpose of a hand hygiene program is to minimize cross-infection by the removal of transient organisms from the skin of healthcare personnel as a result of effective hand-washing and to prevent the transmission of potentially pathogenic organisms.

With the exception of urgent situations in which hand hygiene cannot be achieved, at BUHN, staff shall always cleanse their hands as follows:

- On arrival for duty at the hospital, to remove microorganisms from outside.
- On completion of duty, before leaving the hospital, to

avoid taking hospital germs at home.

- Before entering and leaving a patient's room.
- Before and after each personal bodily function, e.g., eating, blowing nose, urination/defecation, combing hair or scratching
- Whenever hands are obviously soiled.
- Before and after any physical contact with a patient.
- After contact with a patient's mucous membranes, blood, body fluids, secretions or excretions or other potentially infectious materials, i.e., regulated waste and cultures.
- After touching equipment or surfaces that are likely to be contaminated with virulent or epidemiologically important microorganisms, e.g., urine measurement jugs, suction, equipment, sarinals, and bedpans.
- Before and after wearing gloves
- Before and after collecting specimens from a patient.
- Before preparing or serving food to a patient.
- Before and after handling patient care devices such as intravascular catheters, urinary drainage systems and respiratory equipment currently being used.
- After leaving a contaminated area such as a soiled utility room.
- As a general rule, when in doubt, health care workers should always wash their hands.

Hand Washing is the vigorous rubbing together of lathered hands for at least 10 to 15 seconds, followed by thorough rinsing under stream of clean water: and in a hospital setting it is achieved using antimicrobial products.

Hands must be washed before applying and following the removal of disposable gloves. Standard Precautions indicate the use of disposable gloves when in contact with:

- Blood or body fluids
- Secretions
- Excretions
- Mucous membranes or non-intact skin.

### 6. Reduction of Risks Caused by Falling

We developed some specific tools in order to assess of patients regarding risks of falling so we immediately start our prevention activities. We continuously monitor the patient falls, which is our main indicator in our patient safety program and we see that by assessing the risks before and taking the appropriate interventions,<sup>1,9</sup> the rate of patient falls dramatically decreased in our network between 2006-2015.

We have some other patient safety implementations in our hospitals. For instance we have a specific program for the patients who are restricted and taking specific care or a

safety storage system has been developed for emergency medicines.<sup>12</sup> Some of our applications for this group are as follows;

### 7. Care and Safety of Patients Under Restriction

- Patients has to be checked at least every second hour for their comfort and safety.
- Check the condition of the restriction area (dermal continuity, circulation etc.).
- Provide toilet and hygiene requirements.
- Remove the restrictions every second hour and help the patient by active and passive exercise. Massage the restricted site with moisturizing ointments.
- Observe the patients while they are eating and help them if necessary.
- In case of emergency remove the restrictions carefully and transport them into a safe place.

If the patient had received any harm by the restriction; the responsible care giver should fill out a “Unexpected Case Formula” or should use the “Risk Management Software” and sent the findings to Quality Management Department for assessing

### Conclusion

The success of the program in the start-up period was also measured with many patient safety indicators disclosing whether goals had been met, and whether planned start-up activities had been initiated. In addition, success was measured very objectively on the basis of the level of acceptance and understanding within staff and senior management.

We are benchmarking the results within the hospitals as well as evaluating the trends between the years for each hospital and indicator reports are compiled and submitted to the peer review group/departments/top management.

**Conflict of Interest:** None declared

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