Acknowledgement

*All praise is to **ALLAH** and all thanks. He has guided and enabled me by His mercy to fulfill this thesis, which I hope to be beneficial for people*

*I would like to express my deepest gratitude and sincere appreciation to **PROF. DR SAHAR M. SABBOUR**, Professor of Community Medicine, Faculty of Medicine, Ain Shams University for her continuous encouragement, her generous supervision and kind guidance to make the realization of this work much easy .*

*I would like to express my deepest gratitude and sincere appreciation to **PROF. DR. HANAN S. EZ-ELARAB** , Assist. Professor of Community Medicine, Faculty of Medicine, Ain Shams University for her continuous encouragement, kind support and appreciated suggestions that guided me to accomplish this work.*

*I am also grateful to **DR. WALEED SALAH EL-DIN** , Lecturer of Community Medicine, Faculty of Medicine, Ain Shams University who freely gave his time, effort and experience along with continuous guidance throughout this work.*

*All the love and appreciation to all my **Family** members especially my dear **Wife & Parents** who were always supporting and encouraging me.*

Hitham Abdel Kader Ali

Compliance of health care providers with perioperative patient safety guidelines in a general hospital in Cairo

Thesis
Submitted for Partial Fulfillment of the
Master Degree in Quality of Health Care

By
Hitham Abdel Kader Ali

M.B., B.Ch.,2008
Faculty of Medicine,
Cairo University

Under Supervision Of

Prof. Dr. Sahar Mohammed Sabbour
Professor in Community MedicineDepartment
Faculty of Medicine,
Ain Shams University

Assist.Prof.Dr. Hanan Said Ez-elarab
AssistantProfessor in Community Medicine Department
Faculty of Medicine,
AinShamsUniversity

Dr. Waleed Salah El-din Ahmed

Lecturer in Community MedicineDepartment
Faculty of Medicine,
AinShamsUniversity

Faculty of Medicine

AinShams University

2015

Abstract

Background: Perioperative patient safety became an utmost priority all over the world. Commitment of the health care providers to patient safety guidelines can decrease the rate of perioperative morbidity and mortality. **Objective:** This work aims to assess the degree of compliance of health care providers - in Police hospital in Cairo- with the patient safety guidelines. This can help delivering a safe medical service to the patients decreasing the rate of patients harm. **Subjects and Methods:** A descriptive study was conducted on 305 patients who had undergone surgeries in 3 operating rooms of Police hospital in Cairo during duration 3 months from 16-4-2014 till 14-7-2014.WHO safe surgery checklist was used to check if health care providers were compliant to its items or not. The WHO safe surgery checklist divides the operations into different phases. **Results:** Health care providers in operation rooms of Police hospital in Cairo showed compliance of the WHO safe surgery checklist items as the following : mean compliance of the Sum "Total score" is (73.85 %) while the stage of the highest mean was stage I "sign in" with mean (81.66%) and the stage with the lowest mean was stage II "SSI bundle" with mean (52%). Stage III "time out" & stage IV "sign out" show mean compliance (74.94 %) & (67.05 %) respectively. **Conclusion:** Patient safety during the perioperative period became a very important topic worldwide to decrease the rate of mortality and morbidity. Health care providers working in the operation rooms of police hospital in Cairo show some aspects of low compliance with the WHO safe surgery checklist , they need to be aware of the importance of following the patient safety guidelines and to put a plan to increase the compliance of the health care providers in Police hospital in Cairo with the WHO safe surgery checklist ,this can help decreasing the rate of mortality and morbidity in the hospital.

Key Words: Patient Safety, Compliance, Who Safe Surgery Checklist.

Contents

List of abbreviations

AHRQ	Agency for Healthcare Research and Quality
AIMS	Australian Anesthetic Incident Monitoring Study
ASA	American Association of Anesthesia
atm	Atmosphere
CDC	Centers for Disease Control and Prevention
FDA	Food And Drug Administration
HCUP	Healthcare Cost and Utilization Project
IOM	Institute of Medicine
ISMP	Institute of Safe Medication Practices
NIS	Nationwide Inpatient Sample
NNIS	National Nosocomical Surveillance System
NQF	National Quality Forum
ºC	Degree Celsius
PSO	Patient Safety Organization
QHCA	Quality of Health Care in America
SENIC	The Study On The Efficacy Of Nosocomial Infection Control
SSC	Safe Surgery Checklist
SSI	Surgical Site Infection
UK	United Kingdom
US $	United States Dollar
USP	United States Pharmacopeia
WHO	World Health Organization

List of figures

List of tables

Introduction

Surgery is defined as an invasive operative procedure in which skin or mucous membranes and connective tissue is incised or an instrument is introduced through a natural body orifice. ***(National Quality Forum, 2006).***

Phillips, 2004 defined 'Perioperative' period as it refers to the total surgical experience and includes pre-, intra- and postoperative phases of the patient's surgical journey , the perioperative period is from the minute the patient arrives in through the operating theatre doors to the moment they leave through those same doors post-procedure **(*Aspden et al., 2004).***

Patient safety is defined as avoidance and prevention of patient injuries or adverse events resulting from the processes of health care delivery. Various definitions of patient safety have been published, and probably the shortest description is to do no harm to patients' ***(Gaal et al., 2011).*** Patient safety is a global issue affecting all countries at all levels of development. So understanding the magnitude of the problem and the main contributing factors is essential in order to devise appropriate solutions ***(WHO, 2008).***

The safety culture of an organization acts as a guide of how employees will behave in the workplace. Of course their behavior will be influenced or determined by what behaviors are rewarded and acceptable within the work place ***(Glendon et al., 2006).*** Safety culture is defined as the collective product of individual and group values, attitudes and patterns of behaviors in safety performance. The characteristics of a strong and proactive safety culture include the commitment of the leadership to discuss and learn from errors, to document and improve patient safety, to encourage and practice teamwork, to spot potential hazards, to use systems for reporting and analyzing adverse events and to celebrate workers as heroes improving safety rather than as villains committing errors ***(AHRQ, 2004).***

Data from 56 countries showed that in 2004 the annual volume of major surgery was an estimated 187–281 million operations, or approximately one operation annually for every 25 human beings alive ***(Weiser , 2008).***This is a large and previously unappreciated volume with significant implications for public

health. It is almost double the annual volume of childbirths— in 2006, there were approximately 136 million births (***Population Reference Bureau, 2006)***—and is at least an order of magnitude more dangerous. While the rates of death and complications after surgery are difficult to compare since the case mix is so diverse, in industrialized countries the rate of major complications has been documented to occur in 3–22% of inpatient surgical procedures, and the death rate 0.4–0.8% ***(Gawande et al., 1999; Kable et al., 2002)***.

Studies in developing countries suggest a death rate of 5–10% associated with major surgery ***(Bickler and Sanno-Duanda, 2000; BYii and Ng, 2002; McConkey , 2002),*** and the rate of mortality during general anesthesia is reported to be as high as 1 in 150 in parts of sub-Saharan. Africa Infections and other postoperative complications are also a serious concern around the world ***(Ouro-Bang'na Maman et al., 2005)***.

Avoidable surgical complications thus account for a large proportion of preventable medical injuries and deaths globally. Adverse events have been estimated to affect 3–16% of all hospitalized patients, and more than half of such events are known to be preventable ***(Brennan TA, et al., 1991; Wilson et al., 1995; Leape LL et al., 1991; United Kingdom Department of Health, 2000).*** Despite dramatic improvements in surgical safety knowledge, at least half of the events occur during surgical care ***(Gawande et al., 1999; Kable et al., 2002)***. Assuming a 3% perioperative adverse event rate and a 0.5% mortality rate globally, almost 7 million surgical patients would suffer significant complications each year, 1 million of whom would die during or immediately after surgery. Surgical safety has therefore emerged as a significant global public health concern. Just as public health interventions and educational projects have dramatically improved maternal and neonatal survival (***Ronsmans, 2006)***

Checklists are routinely used in high-reliability organizations such as aviation and the nuclear power industry ***(Hales and Pronovost, 2006).*** Checklists counteract human failures of omission that are likely to occur with information overload, multiple steps in a process, or departures from routine procedures. Interruptions and distractions are also causal factors in errors of omission (***Reason, 2002; Catchpole et al., 2007).*** Checklists have been used successfully in a number of health-care specialties, such as intensive care, anesthesia and surgery. Their use

in health care has met with some skepticism, and resistance to their use stems in part from the perception that they undermine the professional autonomy of clinicians ***(Hales and Pronovost, 2006)***.

In a study of the WHO *Surgical Safety Checklist* developed as a practical tool for implementing these guidelines, complications were reduced by over one third and deaths cut by nearly 50% in eight pilot hospitals representing a variety of economic circumstances and diverse patient populations ***(Haynes et al., 2009).***

Aim Of The Work

The Goal: to reduce patient harm at general Hospital's operation rooms .

Specific aims:

1- To assess the compliance of the health care providers of Police hospital in Cairo with the standards reducing patient hazards during perioperative period.

2- To evaluate team work and communication among health care providers dealing with surgical cases.

Patient safety

A-Definitions.

Patient safety is a healthcare discipline that emphasizes the reporting, analysis, and prevention of medical error that often leads to adverse healthcare events. The frequency and magnitude of avoidable adverse patient events was not well known until the 1990s, when multiple countries reported staggering numbers of patients harmed and killed by medical errors. Recognizing that healthcare errors impact 1 in every 10 patients around the world, the World Health Organization calls patient safety an endemic concern ***(WHO, 2008)***.

Patient safety has emerged as a distinct healthcare discipline supported by an immature yet developing scientific framework. There is a significant trans disciplinary body of theoretical and research literature that informs the science of patient safety. The resulting patient safety knowledge continually informs improvement efforts such as: applying lessons learned from business and industry, adopting innovative technologies, educating providers and consumers, enhancing error reporting systems, and developing new economic incentives ***(Palmieri et al., 2008)***.

Approximately 98,000 people die each year in US hospitals from preventable medical errors, and these errors cost $30 billion in lost income and increased health expenditures ***(Kohn et al., 2000)***.

The impact of these errors has led hospitals and regulatory agencies to focus on reducing the number of deaths and adverse events attributed to unintended and preventable medical errors ***(Jha et al., 2007)***.

It would be wrong to attribute these preventable adverse events solely to inadequate physician oversight. In most instances, these events are the result of systemic problems, including communication and technology infrastructures that are inadequate to support care processes, inadequate training, and insufficient resources. Even injuries resulting from provider error are usually the result of predisposing system factors (also termed latent factors) that make error all but inevitable ***(Forster et al., 2004)***.

B-The Six Domains of The Safety attitude *(Pizzi et al., 2001)*.

***Domain 1:** Contribute to a Culture of Patient Safety: A commitment to applying core patient safety knowledge, skills and attitudes to everyday work **.**

***Domain 2:** Work in Teams for Patient Safety: Working within interprofessg6tional teams to optimize both patient safety and quality of care**.**

***Domain 3:** Communicate Effectively for Patient Safety: Promoting patient safety through effective health care communication **.**

***Domain 4:** Manage Safety Risks: Anticipating, recognizing and managing situations that place patients at risk **.**

***Domain 5:** Optimize Human and Environmental Factors: Managing the relationship between individual and environmental characteristics in order to optimize patient safety.

***Domain 6:** Recognize, Respond to and Disclose Adverse Events: Recognizing the occurrence of an adverse event or close call and responding effectively to mitigate harm to the patient, ensure disclosure, and prevent recurrence **.**

C-Historical Context.

Patient safety issues are documented early in the literature. In 1846, Semmelweiss compared infection rates in post-natal wards in Vienna and found that mortality was three or four times higher in medical wards than in midwifery wards ***(Semmelweiss, 1983)***.

In the late 1800s, Florence Nightingale, arguably the founder of nursing, was tireless in her campaign to promote hand washing in an effort to further prevent harm to the sick ***(Clancy et al., 2005)***. It appears, however, that the real impetus for changing the health system did not come about until the mid to late 20th century ***(Baker et al., 2004)***.

In *To Err Is Human: Building a Safer Health System report*, the Institute of Medicine (IOM) called for reevaluation of health professions education and the incorporation of patient safety into the curriculums of all health professions ***(Kohn et al., 2000)***.

In *Crossing the Quality Chasm report*, the Institute of Medicine emphasized the need for healthcare professional educators to create new approaches in developing patient safety and quality improvement skills in their students. In a follow-up report, *Health Professions Education: A Bridge to Quality*, the IOM clarified their vision, recommending that "all health professionals should be educated to deliver patient-centered care as members of an interdisciplinary team, emphasizing evidence-based practice, quality improvement approaches, and informatics" ***(Thompson and Tilden, 2009)***.

Educators in medicine, nursing, and other health professions are challenged to develop learning experiences that provide the foundation for professional identity and enable graduates to deliver patient-centered care as members of an interdisciplinary team while emphasizing evidence-based practice, quality improvement approaches, and informatics ***(QHCA, 2001)***.

D-Goal of patient safety.

Patient safety as a discipline began in response to evidence that adverse medical events are widespread and preventable, and as noted above, that there is "too much harm." The goal of the field of patient safety is to minimize adverse events and eliminate preventable harm in health care. Depending on one's use of the term "harm," it is possible to aspire to eliminate all harm in health care ***(Hollnagel et al., 2006)***.

E-Nature of patient safety.

Patient safety is a relatively new discipline within the health care professions. Graduate degree programs are currently being introduced in recognition of patient safety as a discipline. It is a subject within heath care quality. However, its methods come largely from disciplines outside medicine, particularly from cognitive psychology, human factors engineering, and organizational management science. That, however, is also true of the biomedical sciences that propelled medicine forward to its current extraordinary capacity to cure illnesses. Their methods came from biology, chemistry, physics, and mathematics, among others. Applying safety sciences to health care requires inclusion of experts with new source disciplines, such as engineering, but without any divergence from the goals or inherent nature of the medical profession ***(Hollnagel et al., 2006)***.