Reflections

HEALTHCARE-ASSOCIATED INFECTIONS IN THE CONTEXT OF PATIENT SAFETY: PAST, PRESENT AND FUTURE

INFECÇÕES RELACIONADAS AO CUIDAR EM SAÚDE NO CONTEXTO DA SEGURANÇA DO PACIENTE: PASSADO, PRESENTE E FUTURO

INFECCIONES RELACIONADAS AL CUIDADO DE LA SALUD EN EL CONTEXTO DE LA SEGURIDAD DEL PACIENTE: PASADO, PRESENTE Y FUTURO

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Submitted: 27/03/2012 Approved: 12/12/2012

ABSTRACT

This theoretical paper aimed at presenting landmarks in the history of healthcare-associated infections (HAI), contextualizing the interface between healthcare-associated infections and patient safety and identifying the challenges and prospects for patient safety. It should be noted that the multifactorial approach to the control of HAIs can be enabled through effective monitoring of the infection, hand hygiene and adherence to safety measures, emphasizing individual and collective behaviour. This paper reiterates the responsibility of each individual regarding patient safety, "Zero Tolerance" policy against unsafe conduct and practices that endanger patients and professionals' health; it contributes to the reflection of the professional co-responsibility on the quality of individual, collective and institutional practices, as well as a "new look" on doing, thinking and acting.

Keywords: Hypertension; Obesity; Health Promotion; Food Habits; Public Health.

RESUMO

Neste ensaio teórico, buscou-se discutir os marcos históricos na área da infecção relacionada à assistência em saúde (IRAS), contextualizar a interface entre a infecção relacionada ao cuidar em saúde e a segurança do paciente, além de apontar os desafios e as perspectivas para a área de segurança do paciente. Destaque-se que a abordagem multifatorial para o controle das IRAS pode ser favorecida por meio da vigilância contínua e efetiva da infecção, da monitoração da higienização de mãos e de recursos para a adesão às precauções, enfatizando o comportamento individual e coletivo. Reafirma-se a responsabilidade de cada um, com vista à segurança do paciente na estratégia "Tolerância zero" (resposta aos comportamentos e práticas inseguras que colocam em risco a saúde de pacientes e profissionais). Contribui-se, assim, para a reflexão dos profissionais sobre a corresponsabilização na qualidade das práticas individuais, coletivas e institucionais, bem como para um "novo olhar" sobre o fazer, o pensar e o agir.

Palavras-chave: *Infecção Hospitalar; Segurança do Paciente; Qualidade da Assistência à Saúde.*

RESUMEN

En este trabajo teórico se ha buscado discutir los hitos en el área de infecciones relacionadas a atención de la salud, contextualizar la interfaz entre dichas infecciones y la seguridad del paciente, además de señalar los retos y perspectivas en el área seguridad del paciente. Cabe señalar que el enfoque multifactorial para el control de infecciones relacionadas con el cuidado de la salud puede ser facilitado mediante el control eficaz de las infecciones, control de higiene de las manos y de recursos para el cumplimiento de las precauciones, haciendo hincapié en el comportamiento individual y colectivo. Reafirmamos la responsabilidad de cada uno con miras a la seguridad del paciente en la estrategia " Tolerancia Cero " (respuesta a la conducta y prácticas inseguras que ponen en peligro la salud de pacientes y profesionales). Se contribuye así a la reflexión sobre la responsabilidad de los profesionales en la calidad de las prácticas individuales, colectivas e institucionales y también a echar una "nueva mirada" en el hacer, pensar y actuar.

Palabras clave*: Infección Hospitalaria; Seguridad del Paciente; Calidad de la Atención de la Salud.*

INTRODUCTION

Healthcare-associated infections (HAIs) have been considered an important public health problem for centuries; it is one of the most predominant adverse events affecting patients in the health care process[1].

The limits of the quest for better health care and patient safety skim over history, known by different names throughout the times. However, based on research the World Health Organization established that quality of health care and patient safety share the same agenda, i.e. adverse events is a failure in patient safety; it can happen in 5% to 17% of the cases and among them 60% are preventable. Patient safety is a set of strategies/interventions that could prevent/reduce the risk of patient harm resulting from health care[2].

Based on such considerations and on the serious consequences of adverse events the authors decided to revisit the history of health care through different perspectives, reflecting on two vital questions: "When did concerns over the harmful effects of health care appear?"; "Does the control of healthcare-associated infections meet patient safety norms?"

Such analysis and reflections are necessary because health care complications have been repeatedly recorded throughout health care history; it is accepted that the broadening of terminologies *care quality* and *patient safety* is not recent but a concern of practitioners and researchers that precedes that proposition.

This study aims at presenting historical landmarks in health care-associated infections, contextualizing the interfaces *infection* and *patient safety* and pointing out the challenges and prospects in patient safety.

Given such considerations the authors formulate the argument in essay form for its problem-solving, reflective and anti-dogmatic characteristics without dispensing with logical and methodological rigor, consistency of argumentation and critical thinking[3]. This paper will discuss the two fundamental pillars of quality of care: harm arising from health care and the interface between healthcare-associated infection and patient safety, discussing past and present challenges, projecting the future and rethinking ideas and actions to take a relook at health care practice.

The prospect of bringing to light a reflection on the ethical and safe practice of professionals, institutions, and above all, the commitment to quality patient care motivated the analysis of relevant aspects of current challenges in patient safety.

The authors expect to introduce to healthcare professionals a new perception on care, to interpret the reality and the limitations that surround them; to understand their thinking, acting, and, especially, the need for co-responsibility for the quality of individual, collective and institutional practices.

HARM ARISING FROM HEALTH CARE: MILESTONES

Answers to when concern about the harms caused by health care began depend on the historical moment considered.

A myriad of different historical perspectives could introduce the discussion, therefore the present essay chose to consider Semmelweiss' initiatives that, around 1847, had a strong impact on the health care process of that period and brought in evidence issues that still trouble health care institutions to this day: health care-associated infections[4].

Semmelweiss, empirically, without knowledge of germ theory or any form of disease transmission and using deductive methods verified that the rate of morbidity and mortality among women attended by medical students was greater than the rate among those attended by midwives. That happened because medical students were heading directly from the autopsy room to the delivery rooms without disinfecting their hands after handling viscera from patients who had died of puerperal fever; this did not occur with the midwives that did not attend the autopsy rooms[4, 5].

Based on these facts, the Hungarian physician deducted that puerperal fever was caused by "cadaverous particles" transmitted by the hands of physicians and students[6, 7]. At that time the search for the causes of high puerperal fever mortality rates deriving from health care gained greater evidence[4].

Semmelweis' reputation as the Father of Epidemiology, is due in part to the implementation of actions recognized today as the first steps to patient safety, such as the compulsory washing of hands before contact with the patients, the placing of a bowl at the ward entrance and boiling of surgical instruments[4].

Almost parallel initiatives are those of English nurse Florence Nightingale; around 1865 during the Crimean War she instituted patient care routines such as hygiene, environmental cleaning, feeding, statistical record of cause of death; she declared that a hospital should not harm the patient, but it should provide the best care and attention for a speedy recovery[8].

Through history, several other episodes draw attention: the development of the germ theory of disease transmission, the discovery of antimicrobials, a significant advance in scientific knowledge that stimulated the adoption of new technologies and interventions such as asepsis, antisepsis, disinfection, sterilization and antibiotics… then it stopped.

The discovery of antimicrobials led to a period of great euphoria for it was believed that infections had been contained. Drugs misuse was often observed at that period. In this context, bacterial resistance spread through the United States, moving quickly to Europe and other continents[9-11].

From 1960 onwards, there were increasingly strong recommendations for the creation of committees for the control of

hospital infection (HICC) in order to notify, voluntarily, cases of infection and the establishment of guidelines for disinfection and sterilization procedures, monitoring environmental contamination and detection of carriers of Staphylococcus *aureus* among the professionals and, especially, the adoption of monitoring methods and the implementation of educational activities.

Microbial resistance began to gain greater visibility around the world as a serious public health problem, especially when associated with HAIs. The seriousness of the matter is due to the ability of microorganisms, especially bacteria, to grow *in vitro* in a concentration of antimicrobials that normally would not lead to toxicity in human serum levels, but that would suffice to inhibit the growth of those sensitive microorganisms[12].

The fast progress of bacterial resistance worldwide meant a major limitation of antibiotics available to treat patients with healthcare-associated infections, given the new microorganisms' mechanisms of resistance to the lethal action of antimicrobials agents more commonly used. An increase in cases of contamination, associated complications and mortality related to these microorganisms in HAIs cases was observed.

The first lawsuit related to quality of care happened when an 18 year old broke his leg during a football match; when admitted to Charleston Memorial Hospital he was diagnosed with a fractured leg. After immobilization in plaster cast the patient complained of pain and an unpleasant smell. These complaints were ignored and the patient discharged. The youth's condition did not improve and he was admitted to another hospital where his leg was amputated due to necrosis and secondary infection. This case was a key event due to the lawsuit that followed – jury returned a verdict in favour of the plaintiff – making clear the impact of an adverse event in healthcare[11].

After this, the American Hospital Association recommended more emphatically the creation of HICC (Hospital Infection Control Committees) in American hospitals in a curious way: first proposals aimed at improving health care but attempted, particularly, to minimize the risk of lawsuits against American hospitals.

Thus, the history of infection control began consistently, even if differentiated according to each context.

In Brazil, the first initiatives began in the 1970s, when the former National Institute of Social Security (in Portuguese, INPS) suggested the creation of HICC in hospitals accredited by it. However, only in 1984, after the demise of newly elected president Tancredo Neves de Almeida caused by surgical infection, the first legislation on the subject was made public; some ordinances were promulgated recognising hospital infection as an undesirable event and reiterated by Ordinance No 2616 in effect from May 12, 1998[13].

The president's death gave undoubtedly more prominence to the theme; media and society turned their attention to the care provided, until then, only in hospitals; training of health professionals and focus on diagnostic criteria and active patients' surveillance methodology began to draw attention.

In that context health care processes were attached to fundamental patient safety actions and especially to the reduction of adverse events rates.

Frequent complaints about medical errors were made public: patients undergoing mistaken surgical procedures; surgical instruments left in surgical cavities; patient mix-up due to lack of identification; accidental administration of medication due to similar packaging leading to death, especially of children – a series of failures not previously exposed were revealed in newspapers and general media.

The WHO heeded these incidences and started campaigns, made proposals and recommendations to state members in order to raise awareness, to seek solutions and join efforts to treat patient safety as a common goal. The issue is considered a high priority on the political agenda of member countries.

INTERFACE BETWEEN THE HEALTHCARE-ASSOCIATED INFECTION AND PATIENTY SAFETY: CHALLENGES AND PERSPECTIVES

The scale of the problem to the WHO is based on reports of the Institute of Medicine (U.S.A.), which indicates that the number of healthcare-associated infections is unacceptably high – 1.4 million people are infected annually; in developing countries the risk can be four times higher; 4% of patients suffer some kind of harm in hospital, 70% of adverse events cause a temporary disability and 14% are fatal[14].

Therefore, the WHO proposed in 2004, the World Alliance for Patient Safety, establishing six international goals:

a. patient identification;
b. effective communication;
c. drug safety;
d. right patient – right care – right time – right place;
e. reduction of risk of injury from falls;
f. reduction of the risk of infections associated with health care.

These set of goals is intended to promote patient safety, regardless of the procedure being performed; it ranges from identification of the patient when administering medication or for surgical procedures, to the notification of adverse events such as falls and the occurrence of healthcare-associated infections; it aims to analyse the causes of such events in order to minimize their incidence[14].

Regarding the target of reducing the risk of healthcare-associated infection, three global challenges were established in order to focus on some of the adverse events most commonly

associated with such infections through the following international campaigns: *Clean Care is Safer Care, Safe Surgery Saves Lives* and *Antimicrobial Resistance: a priority*[14].

These challenges alter preconceived ideas about infection control being the front-line of the health care process; they come to be seen instead as one item of the *patient safety program*. Healthcare-associated infections cannot singly do the job of preventing risks to the patient; they should be considered as an important aspect of the broad term *patient safety*, i.e. the WHO proposal is to integrate patient safety actions that can have an impact on the reduction of HAIs[15].

HAIs are a growing international problem; there are more severe patients with longer rates of survival; low adherence of health professionals to biosecurity recommendations (as hand hygiene, asepsis of invasive devices) leading to the spread of resistant microorganisms in the health care environment, amongst others[16, 17].

The WHO strategy via global challenges is to support countries in the implementation of actions aiming at reducing mortality, strengthening basic competencies of care providers to manage essential emergency care and surgical procedures[15].

Therefore, the main elements of this strategy are supporting the development of national policies on education and training of health care professionals; these are the current challenges to put into practice "zero tolerance" strategy as a response to unsafe practices that jeopardize the health of patients and professionals[18-20].

FINAL CONSIDERATIONS

Patient safety is an issue that runs through events that challenged researchers in the past and still do and possibly, even after further scientific advance, will carry on challenging researchers in the future.

To ensure quality care, the professional must have a holistic view of care; patient safety must be the focus and issues related not only to health care, but also to education and research must be addressed. Accordingly, the control of healthcare-associated infections should not be considered in isolation but in the context of quality care and, therefore, patient safety.

Education, training of professionals and researches on the subject favour the dissemination of patient safety culture to minimize adverse events and therefore unsafe practices that threaten the health of patients and professionals; that is, when talking about patient safety changing the professionals conduct is essential.

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