safety. Nevertheless, patient safety at the level of students, faculty, and the clinical training settings should also be considered. This study shows that efforts to entrench patient safety learning in health professional education and training may be hindered by fairly profound inadequacies that persist in the culture of the clinical teaching settings in which we educate new healthcare providers.

http://dx.doi.org/10.1016/j.jiph.2015.04.007

Biosafety knowledge and perceptions of clinical laboratory science educators in Shaqra University
Charlie P. Cruz*, Jonas P. Cruz, Saleh A. Abu Bakr, Suhas K. Thazha

Shaqra University, Shaqra, Saudi Arabia
E-mail address: charlie@su.edu.sa (C.P. Cruz).

Background: Educators recognize the importance of biosafety in handling pathogenic microorganisms in teaching laboratories as well as minimizing the risk to students and the community. As facilitators of learning, educators play a key role in influencing their students to strictly comply with existing institutional and national biosafety regulations and improve their related policies and practices. Sufficient educator knowledge of standard biosafety practices contributes to ensuring safer teaching laboratories.

Method: This cross-sectional study determined the knowledge of biosafety regulations and perceptions about occupational risk and biosafety training among the 31 Clinical Laboratory Science (CLS) educators in Shaqra University (SU). Biosafety-specific knowledge was also measured among the respondents. A pre-designed questionnaire was administered among the five professors, 10 assistant professors, and 16 lecturers in the Departments of Clinical Laboratory Sciences at the campuses of Dawadmi, Quwayiyah, and Shaqra.

Results: The results revealed that the respondents had moderate knowledge of biosafety regulations, and they identified gaps in knowledge, such as a lack of attendance at biosafety trainings and seminars, awareness of the existence of laboratory-acquired infections, and poor dissemination of national and institutional safety regulations. In terms of biosafety-specific knowledge, the respondents needed to improve their knowledge in several aspects such as the use of a biosafety manual, responsibility for the adherence to biosafety regulations, personal protective equipment, biosafety containment level, and protection in the daily laboratory work.

Conclusion: Recommended measures were suggested to address the identified gaps and include behavioral-based biosafety training, one or two short talks or seminars, and the revision of institutional safety guidelines.

http://dx.doi.org/10.1016/j.jiph.2015.04.008

Perspectives of healthcare professionals on reasons for medication errors: A cross-sectional study
Menyefah Al Anazi*, Majed Al-Jeraisy

Drug Policy and Economic Center, Ministry of National Guard Health Affairs, Riyadh, Saudi Arabia
E-mail address: AniziM1@ngha.med.sa (M.A. Anazi).

Background: Patient safety is a central concern of current health-care delivery systems, and several recent studies initiated by the Institute of Medicine have reported the high incidence of medication errors (MEs). Unfortunately, identification and reporting are often incomplete. The objective was to evaluate healthcare professional perspectives on reasons of ME occurrence and what are the most common reasons for under reporting MEs at King Abdulaziz Medical City (KAMC) in Riyadh.

Method: A cross-sectional study conducted at KAMC in Riyadh. Two self-administered paper-based surveys were used to collect information.

Result: The response rate was 82%, and the study cohort was composed of 62 (42.18%) pharmacists, 45 (30.61%) physicians, and 40 (27.21%) nurses. Healthcare professional perceptions towards contributing factors of ME occurrence results showed a significant difference in the perception of healthcare professionals (physicians, pharmacists, and nurses) with respect to the underlying factors of MEs. The main differences were limited to interruptions while writing the order, clarity of physicians order, caring for many patients using the same medications, no double-checking of the doses, inefficient double-checking (p ≤ .0001), lack of information about medication (p = 0.0001), hospital computer system (p = 0.0007), and knowledge of allergies (p = 0.018).

The reasons for not reporting MEs across healthcare professional results showed a significant difference among healthcare professional (physicians, pharmacists, and nurses) perceptions towards reasons for not reporting medication errors, which
were attributed to work environment \((p = 0.0008)\), handling errors internally \((p = 0.0005)\), relationship among health care professionals \((p = 0.0001)\), avoidance of potential publicity in the media \((p = 0.003)\), focus of the administration on the person rather than the system as the potential cause of the error \((p = 0.018)\), unfamiliarity with the ME reporting system \((p = 0.016)\) and lack of time \((p = 0.035)\).

**Conclusions:** There is a need to explore both the individual and systematic safeguards against MEs and to focus on the reported causes and underreporting of MEs.

http://dx.doi.org/10.1016/j.jiph.2015.04.009

**Improving resuscitation care at the bed side by the introduction of standardized Code Blue team response for coding patients in a tertiary level hospital using failure to rescue methodology**

Schwarzboeck Angela∗, Pasiya Gcobisa Joy, White David

*Critical Care Department, King Abdulaziz Medical City, Ministry of National Guard Health Affairs, Riyadh, Saudi Arabia*

**E-mail address:** schwarzboecka@ngha.med.sa (S. Angela).

**Background:** Several clinical incidences led to a review of resuscitation care to patients in a tertiary level university hospital. The organization’s ability to respond effectively to a sudden cardiac arrest of patient was hampered by multi-system challenges. Although resuscitation guidelines provide a logical, sequential algorithmic approach, they have mainly emphasized technical tasks performed by individual rescuers but do not address issues regarding the complex nature of hospital resuscitations. Part of this complexity relates to the fact that in a healthcare environment, resuscitations are usually performed by teams of responders, not by isolated rescuers.

**Methods:** An organization-wide review of resuscitation care was undertaken by a multidisciplinary team of clinicians and organizational leaders. Nursing Executive Services established a quality improvement taskforce utilizing Failure to Rescue methodology. Variations in resuscitation care, equipment, personnel, skill, and knowledge were identified. A systemic review of training, education, equipment, processes, products, and supplies was undertaken. The taskforce developed training and monitoring programs, a Code Blue Nurse Coordinator role was established, and First Responder roles and use of the Automated External Defibrillator (AED) by certified Code Blue Nurses from Critical Care, if physician are not present, was emphasized.

**Results:** Nursing Services in collaboration with other health professionals established a rigorous resuscitation care system across the hospital. Bedside resuscitation care, early defibrillation, staff assertiveness, closed loop communication, staff morale, and mutual respect dramatically improved. All resuscitation equipment is standardized throughout the hospital.

**Conclusion:** The process of team building, occurring in the early and most vulnerable phase of resuscitation, is of particular importance. The results of a simulation-based resuscitation program for nurses with focus on role clarity demonstrated a faster coordinated response to patients requiring resuscitation care, greater efficiency in the provision of advanced life support, and a more effective multidisciplinary resuscitation response team.

http://dx.doi.org/10.1016/j.jiph.2015.04.010

**Provision of safe and specialized stroke care using an inter-professional learning approach: A novel stroke service improvement**

Elmer Catangui∗, Jeanette Malan, Anne Morrow

*King Abdulaziz Medical City, Riyadh, Saudi Arabia*

**E-mail address:** Catanguiel@ngha.med.sa (E. Catangui).

**Introduction:** The King Abdulaziz Medical City (KAMC) in Riyadh has reconfigured stroke services by creating a novel stroke model whereby all suspected stroke patients are admitted directly to the high dependency stroke unit (HSDU) in order to provide specialized multidisciplinary care to all stroke patients. Before the launch of this new stroke model, training for all nurses is imperative to ensure they will deliver safe and specialized care.

**Method:** A core faculty group from professionals with expertise in stroke care developed a Specialized Stroke Nursing Program (SSNP) aimed at all nurses. The goal is for specialists from all members of the stroke team to teach acute care nurses involved in stroke patient care using an interprofessional learning framework with optimization of clinical practice sessions (CPS). The CPS consists of task training simulations that allow participants to practice assessing patients using the Glasgow