

Background Safety of patients in tertiary care hospitals in India was found to be a big problem. 62.9% of unsafe injections are administered every year¹ in India. Estimated risk of HCAI is up to 20 times higher than industrialised countries and is approx 10% and 15–30% in acute care. 77% of all reported cases of counterfeit and substandard drugs are from developing countries. **Methods** A longitudinal study on patient safety practice in 12 (6 public+6 private) multi-specialty hospitals* was conducted by DGHS from 2005–2011 with objective of identifying, analysing and improving the gaps in hospital patient safety system, so that it is compliant to WHO guidelines on patient safety 2005. The study took up safety practice for hand hygiene, surgery, injection, medication, blood transfusion, infection control and hospital waste management as core areas of hospital patient safety system. Data were collected & analysed annually and at the end of study. It provided for annual gap identification and introduction of corrective measure in each core area and also for system development at end of study in areas of advocacy, infrastructure, capacity building and funding for practice of patient safety in hospitals.

Results This study created a patient safety unit in DGHS, a patient safety committee in the hospitals, a targeted advocacy programme, guidelines for survey and root cause analysis, protocols for safety practice in hospitals, training manuals, standard reporting format for adverse events, supportive monitoring system, and annual and study- end evaluation of outcome in terms of mortality and adverse events. Policy and practice changes like introduction of auto-disable syringe in public health (2009), revision of guidelines for disposal and syringe/needle under bio-medical disposal rules (2010), introduction of antibiotic policy in tertiary hospitals, strengthening of pharmaco-vigilance programme took place during this period. Success stories, reports of hospital, study report and technical report were documented. **Conclusions** The study was able to showcase relevance of patient safety system in tertiary hospitals for better quality outcome.

*Safdarjang Hospital, Ram Manohar Lal Hospital, AIIMS, Kalawati Saran Hospital, G. B. Pant Hospital, and GTB Hospital in public Health Sector – 6 National Accreditation Board for Hospital and Healthcare Providers approved private hospitals of Max group

MoHFW – Ministry of Health & Family Welfare
HCAI – Hospital Care Associated Infections

- (CLEN Program Evaluation Network (IPEN) for Department of Family Welfare, MoHFW)

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FACTORS THAT IMPROVE THE SAFETY OF PATIENT CARE AS EXPERIENCED BY EMERGENCY MEDICAL CARE PROVIDERS

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Background An increasing number of acutely ill patients are not transported to hospital but treated in their homes or another location. Special attention should be paid to factors that affect patient safety (Ministry of Social Affairs and Health 2014.)

Methods The study describes factors that promote the safety of patient care in out-of-hospital emergency medical care, as experi-

enced by care providers. The data were collected by semi-structured interviews (n = 15) with care providers selected by discretionary sampling. The material was analysed using inductive content analysis.

Results Patient safety improves with successful consultation with the emergency physician and with holistic consideration of all factors that affect the patient's coping. Safety is further promoted by the emergency care provider's theoretical, practical and attitudinal competencies and co-operation skills. Situational sensitivity is an important factor intertwined with the care provider's personality, emotional intelligence and discretion. Moreover, safety can be improved by making certain that individual procedures are carried out safely and by ensuring continuity of care and coping with home care. Finally, management practices that aim at workers' wellbeing at work increase patient safety.

Conclusions A study of factors that improve or impair patient safety can help care providers anticipate threats and prevent risks.

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PATIENT SAFETY IN THE OPERATING ROOM: NURSES' EXPERIENCE AND ATTITUDES IN CYPRUS

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Background Effective communication skills in the operating room (OR) promote team behaviour and usually result in good patient outcomes. Communication and collaboration constitutes an integral role during this process both with patients and with inter-professionals when working in such a highly specialised setting as an OR. Patient and staff safety in the OR has never been investigated in Cyprus before.

Methods One of the most often used tools to assess safety culture in an organisation is the Safety Attitudes Questionnaire (SAQ) (The Evidence Centre, 2011 & Sexton et al, 2006). SAQ is a psychometric instrument used for evaluating healthcare providers and especially operating nurses' attitudes regarding patient safety and climate. Six major factors are measured through the use of modified SAQ: teamwork climate, job satisfaction, management perception, safety climate, working conditions and stress recognition. A random sample of 112 OR nurses was studied from Makarios III Hospital which is one of the two major public hospitals in Nicosia.

Results The sample was comprised of 30 males and 82 females: the majority was working as permanent staff in the hospital and their experience varied from 0–25 years both in total as well as in the specific hospital. Overall participants believed that issues related to guidelines, teamwork and patient safety need further improvements. Males have significantly higher scores regarding experience with safety issues in the OR compared to their female counterparts. Interestingly, the lowest scores regarding nurses' notions and opinions regarding OR safety were expressed by the most experienced participants, who had more than 25 years of work experience. This is an indication of the need for further improvements in the in-service training which currently takes place in the Cyprus health system.

Conclusions More experienced staff might be in need for education regarding more recent safety procedures and techniques followed in the OR.

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PERCEPTION'S OF FUTURE PHYSICIANS ABOUT HOMOPHOBIA

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Background Lesbian, gay, bisexual, transgender and intersex (LGBTI) persons represent an underserved-population susceptible to health-care inequalities. Homosexuality is now accepted as a normal variant of human-sexuality, but homophobia among health-care professionals is not well documented. Establishment of trustful doctor-patient relationships is impossible in the presence of homophobia. Therefore in this study, it is aimed to determine whether homophobia existed and how it is effected in a sample of the first and last year medical students (FLYMS), future doctors.

Methods In this descriptive study data is collected with a questionnaire on socio demographics, Hudson and Ricketts Scale (HRHS), some experiences with LGBTI individuals from FLYMS in a university via their internet groups.

Results Out of 802 students, 28,9% participated (56,0% last year). Average age is $22,0 \pm 0,9$ and $24,0 \pm 1,0$, and share of the female students is 47,8% first year and 50,4% last year respectively. 52,8% of the students read a book, 62,7% watched a movie, and 53,6% educated on LGBTI before the survey. Frequency of a LGBTI member in the family is 3,3%, and 43,3% (repeated cases) among friends. 3 student declared their sexual identity as LGBTI. Average score of HRHS is $81,06 \pm 30,6$ (comparatively high-indicating homophobia). There is no difference between classes in terms of HRHS score medians. Female students' scores is high ($p < 0.001$) than males, 45,9% declared LGBTI patient will not affect their service provision, 36,4% are not sure how to communicate with LGBTI persons. When a student have t interpersonal contact with LGBTI friends, watched movie and read a book about LGBTI persons and untied to traditions, HRHS score decreases ($p < 0.001$) ie, these are associated with positive attitudes.

Conclusions Medical students' homophobia if left unchallenged, will hinder care provided to LGBTI patients. Physician homophobia may disallow a health doctor-patient relationship and may cause a decrease in patient's ability to disclose sensitive issues. Students should be trained on to respect and conscious about LGBTI person's health rights, and equity to health service access. Activities of student groups on sexual orientation and sexual identity should be supported.

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PATIENT SAFETY: LAST YEAR MEDICAL STUDENTS' KNOWLEDGE ABOUT INFECTION CONTROL IN A UNIVERSITY HOSPITAL-2014, TURKEY

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Background Health-care-associated infections/hospital-acquired-infection-HAI affects patients in a hospital or other health-care facility, and is not present or incubating at the time of admission. These infections are commonly transmitted when health care providers become complacent and do not practice correct hygiene

regularly. Moreover, some medical procedures bypass the body's natural protective barriers. Since medical staff moves from patient to patient, the staff themselves serves as a means for spreading pathogens. Essentially, the staff acts as vectors. In the United States, it is estimated roughly 1.7 million HAIs, cause or contribute to 99,000 deaths, in Europe, the category of Gram-negative infections are estimated to account for two-thirds of the 25,000 deaths each year. In this study it is aimed to investigate last year medical students' (LYMSs) basic knowledge on contamination, basic rules and merits of prevention on HAIs.

Methods A questionnaire was administered to LYMSs containing questions on their sociodemographics and some questions about HIA (knowledge, practice and prevention of contamination). Of the LYMSs, 70% participated in this descriptive study.

Results Of the respondents, 65,8% were male, 55,9% experienced work accident, 59,6% had knowledge about HIA from various sources. Average score of knowledge questions was 17.4 (min 5, max 25). No association was found between the score and gender, formal training on HIA. Significant relation was found between knowledge score and hospital infection control program awareness (Mann Whitney U, $p = 0.001$), work accident history (Mann Whitney U, $p = 0.029$).

Conclusions Changes in undergraduate medical training mean that students have direct patient contact from an early stage of their training. These results raised concerns about medical students' knowledge about infection control. In spite of the vigorous efforts of the Hospital Infection Control Committee since 1984 in this hospital, HIA is moderately frequent. The study is shared with the Faculty. Therefore faculty should consider the need for a more structured model for the teaching and assessment of infection control for medical-students.

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DESIGN RESEARCH TOWARDS RESILIENT CYBER-PHYSICAL EHEALT SYSTEMS

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Background eHealth systems are cyber-physical systems (CPS) making safety-critical decisions based on information from other systems not known during development. To achieve the trust of users, measures of safety have to be taken into consideration in accordance with the "privacy by design" approach. This requires secure storage of information and guaranteeing safe exchange of data preventing unauthorised access, loss of data and cyber-attacks.

Methods In this design research, a proof-of-concept for eHealth CPS is built utilising 1) general principles of information security, 2) principles of building of cyber trust and 3) Hevner & Chatterjee's theory of complex software-intensive system.

Results Resilient CPS consists of two sub-systems: the proper resilient system and the situational awareness system (main prerequisite towards cyber security). In a system of CPS, three networks are composed: hardware, software and social network. Trust should be systematically built up at all layers. The resilient hardware network is the basis on which the information sharing between different stakeholders could be created via software layers. However, the trust inside social networks quantifies the pieces of information that will be shared - and with whom.

Conclusions From citizens' point of view, eHealth is wholeness in which sectors of information security (availability/confidentiality/integrity) hold true. Present procedures emphasise confidentiality