4th Symposium on Patient Safety
One Aim with Shared Responsibilities

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Patient safety has emerged as an important theme in clinical practice and research priority, as well as in modern undergraduate and postgraduate medical and nursing curricula. Over the past few years, an increasing awareness on the part of health care consumers, the demand for safe care, the documented high rate of medical errors, along with legal, economic and ethical demands on the health care system, have resulted in the issue of patient safety being included in all quality assurance systems. Sultan Qaboos University Hospital (SQUH) has achieved ISO 9000:2001 certification and has embarked on the journey to accreditation by the Joint Commission International (JCI). Patient safety symposia have been held in the past at SQUH. Selected abstracts from the 4th Patient Safety Symposium are reproduced below.

Infection Control: A Patient Safety Issue

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Hospital-acquired infections have long been considered the greatest risk the hospital environment poses to patients. These infections are considered by many to be the most common type of adverse event in health care; they are certainly by far the most common complication affecting hospitalised patients. Between 5 and 10% of patients admitted to acute-care hospitals acquire one or more infections. These infections result in significant morbidity and mortality and are of considerable economic burden to any health care system. Recently, the Agency for Healthcare Research and Quality released a report that reviewed the evidence in favor of 79 patient-safety practices, of which 22 (28%) are involved in infection control. Five of the eleven practices that were judged worthy of widespread implementation involved infection control, further illustrating the common ground shared by these two disciplines. Infection prevention and control in hospital-settings are critical components of patient safety. Modern patient safety practices can enhance the field of infection-control and the patient-safety movement can also learn much from the traditions of infection-control in hospitals. The concept of patient-safety in the practice of hospital infection prevention and control has resulted in new approaches in the practice of hospital-based infection-control programmes. The premise that "many hospital-acquired infections are inevitable; although some can be prevented" has become "each hospital-acquired infection is potentially preventable unless proven otherwise". Infection-control could also benefit by adopting several approaches (such as root-cause analysis) advocated by patient-safety adherents. However, it is not practical (or even useful) to perform a root-cause analysis of every hospital-acquired infection. Infections that cause substantial harm or are implicated as a cause of death should be reviewed and, when preventable causes are suspected, a root-cause analysis should be considered to identify those factors in the system or processes of care that contributed to the errors. In turn, applying infection control based practices could enhance patient safety. Such practices include instituting evidence-based intervention programmes, and relying on skilled professionals to promote ongoing improvements in care amongst others. Clinical triggers (also called "signals" or "alerts") are elements drawn from patients' electronic medical records that suggest ongoing or potential adverse events, including infections. Continuous, real-time scanning of such records facilitates cost-effective surveillance and active interventions aimed at preventing or ameliorating adverse events, including infections. These practices are now being widely adopted by infection-control programmes in many hospitals worldwide. The importance of the patient-safety movement in revitalising hospital infection-control programmes is evident.

Health Care Acquired Infections as Indicator of Infection Control

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Health care professionals and facilities should be accountable to patients for strict adherence to key evidence-based infection prevention recommendations, and they should also be accountable for reducing rates of infections. 'Getting to Zero' is a concept that was introduced by the quality-improvement community and was avidly embraced by most stakeholders. This means that the aim of

eliminating hospital-acquired infections (HAIs) is believed to be attainable, and, therefore, all HAIs are preventable. Furthermore, this supports the claim that all HAIs must be the fault of someone. 'Getting to zero' has now been translated into 'zero tolerance' for HAIs and for any practices leading to HAIs. There are some infection prevention programmes which have almost succeeded in eliminating HAIs altogether. The strategies that these successful programmes adopted to eliminate HAIs are: 1) they set their goal at zero (for BSI, VAP, SSI, and MRSA); 2) strong leadership, physician support and departmental champions were engaged; 3) the "bundle" approach to evidence-based prevention measures for all patients at risk from HAIs was used by all; 4) real-time root cause analysis was performed even when only one infection occurred; 5) HAIs were personalised with the information given concerned with the people involved rather than rates; 6) data management was reliable and shared routinely with front line staff; 7) they communicated persistently with key staff and the leadership team; 8) teamwork was made a priority and team success was celebrated; 9) the value of infection-prevention was marketed to executive leadership. By setting up partnerships between patients, families and health care teams and researchers, educators, standards- and law-makers, industrialists and innovators, reliable systems that prevent HAIs can be established. We must continue to negotiate effectively to get the resources needed to prevent HAIs, and then we can 'pay it forward'. This presentation covers the role of infection-control and prevention programmes in patient safety and examines the elements needed to eliminate/reduce the risk of HAIs in our health-care facilities.

Risk Management In Health Care

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The term "risk management" usually refers to self-protective activities aimed to prevent real or potential threats of financial loss due to accident, injury or medical malpractice. It provides strategies, techniques and an approach to recognising and confronting any threat faced by an organisation in fulfilling its mission. The gold standard method of risk management is risk assessment. A risk assessment is simply a careful examination of what, in your workplace, could cause harm to people, so that you can weigh up whether you have taken enough precautions to prevent harm befalling others. There are two principles which should always be borne in mind when approaching a risk assessment: 1) to structure the assessment to ensure that all relevant hazards and risks are addressed; and 2) when a risk is identified, to begin assessment from first principles by asking whether the risk can be eliminated entirely. There is a five steps approach to risk assessment: 1) identifying hazards and those at risk: looking for those things in the workplace that have the potential to cause harm, and identifying those workers who may be exposed to the hazards; 2) evaluating and prioritising risks: estimating the existing risks (the severity and probability of harm) and prioritising them; 3) deciding on preventive action: identifying the appropriate measures to eliminate or control the risks; 4) taking action: putting in place the preventive and protective measures through a prioritisation plan; 5) monitoring and reviewing: the assessment should be reviewed regularly to ensure that it remains current. In conclusion, risk management is a retrospective strategy in managing risks. It is part of the quality assurance process that requires change and deciding which changes needed to be studied.

Medication Errors

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Medication errors are one of the public health concerns associated with significant morbidity and mortality. The cost burden in both human and economic terms is immense. The aim of this presentation is to outline the various causes of medication errors. The five most common causes include incomplete patient information, unavailable drug information, miscommunication of prescription orders, environmental factors, and labelling and packaging problems. Information about patients' diagnoses and allergies are very important to determine that the prescribed drugs are correct and that there are no contraindications. Furthermore, information about other medications patients are already taking is essential to avoid duplicating prescriptions and to prevent adverse drug interactions. Miscommunication of prescription orders is one of the most important and frequently encountered causes of medication error in practice. Examples include poor handwriting, look-alike names, sound-alike names, misuse of decimal points and zeroes, inappropriate abbreviations, dose miscalculations, incorrect drug administration and ambiguous or incomplete orders. Environmental factors and distractions include noise or interruptions, transcription errors, multitasking, fatigue, poor lighting, stocking and storage problems. Factors that patients themselves bring to the situation may lead to medication error. An example would be a lack of education on the part of the patient. Factors that reduce the occurrence of these errors are also discussed.

Creating a Patient-Safety Culture: An SQUH Initiative of Measuring to Improve

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Introduction: Patient safety has emerged as an important research priority in health care. The World Health Organization (WHO) addressed this challenge by launching the World Alliance for Patient Safety in October 2004. This alliance aimed to reduce the number of preventable illnesses, injuries and deaths experienced by patients in health care. Many hospitals worldwide are implementing patient safety programmes, systems and activities with the cooperation and compliance of the staff. Equally important is the involvement of the patient. Sultan Qaboos University Hospital (SQUH) is an ISO certified organisation (re-certified May 2008) on the journey toward hospital accreditation. This requires comprehensive compliance to international standards developed by and for health care professionals from many parts of the world. *Objectives:* This presentation will discuss the JCI guidelines and look at the SQUH patient safety improvement strategy based on data trends at SQUH for the period January 2006 to December 2008. In addition, it will explore the innovative quality activities aimed at developing a patient safety culture at this hospital as part of our compliance with international standards in patient safety and quality care. The purpose of this presentation is to share some SQUH experiences and raise awareness about the importance of improving the quality and safety of health care. *Methods:* As an initial step, SQUH identified all hospital staff

whose roles link with patient care directly or indirectly, and who considered themselves as eligible to participate in the initial awareness campaign and follow through with the improvement strategy initiated by the SQUH Patient Safety Team. Understanding the status of patient safety through gathered information and aggregated data is an important first step towards achieving safer care, giving the hospital the full perspective and an accurate tool for identifying where problems exist and furthermore, enabling the monitoring and tracking of improvements in the patient care provided. Therefore, as part of the aim at SQUH to create a patient safety culture, a baseline was formed by examining the issues raised from numerous audits and walkabouts conducted in the hospital between 2006 and 2008. These included quality audits, health and safety audits, risk assessments, incidence reporting, quality rounds, Infection Control team rounds and a hospital-wide patient safety gap analysis. These findings were classified to highlight the trends in Patient Safety, or rather, the events or near-misses which have occurred and considered dangerous to the patient. A SQUH Patient Safety team has recently been formed to plan the strategies necessary for improvement in the hospital.

Patients Safety Training Materials Developed, Best Practices In Patients' Safety - Web-Database

Recio Miguel, Spain

Objectives: The main objective of this programme is to improve professionals' knowledge of, skills in and attitudes towards risk management. For this reason, an on-line training course in risk management (RMC) and patient safety (PS) improvement was designed which included an electronic platform of the teaching programme (TP). This platform was developed using all the tools necessary to enable participants to know their progress at any point, and to communicate effectively with their tutors. *Methodology:* The TP of the Spanish Patient Safety Strategy uses a multi-faceted methodology to promote a national patient safety culture. The RMC includes theoretical content on risk management processes as well as practical risk management tools. Implementation is facilitated by the provision of templates and clear formats. This 120 hour course is aimed at managers and clinical professionals who are grouped in teams of 3-4 to develop a final PS improvement project for their working area. The participants use the methodology and tools covered in the course. A freely available database was designed to analyse the projects. Reports could be produced by using a variety of filters. An analysis has been done with the data so far retrieved to identify which are the most important risks and what the most efficient actions are to manage and prevent each. *Results:* In the period 2005-2008, nine RMC editions were completed with the participation of 480 health professionals from 18 Spanish Health Regions. There were also 120 participants from seven Latin-American countries. The most valued aspects of the course were: satisfaction with the clarity of the materials and the effective communication with the tutorial team. The most recurrent health areas were identified as emergency, the hospital as a whole and surgery. Education, patient information and attention, surgical complications, and intensive care were the most recurrent PS topics. A database has been developed that summarises the use of risk management tools. As a result of the analysis, a 'good practices' report has been generated. Five sessions of the course are planned in 2009, including the first English edition.

Technology And Confidentiality

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Technology has been a boon both to the nursing community and patient care. However, its use in the health care system should never compromise patient care and patient safety. Nursing professionals need to understand their responsibilities in relation to the use of technology both within and outside the setting of their practice. Some situations raise issues related to the conduct of professionals outside the practice setting. The main issues are confidentiality, privacy, consent, nurse-patient relationships and professional conduct. As self-regulating professionals, registered nurses are expected to maintain confidentiality and to uphold the profession by demonstrating honesty, integrity and respect. Nurses have a high level of public trust and are expected to maintain high standards of professional conduct. This may have an impact on the profession itself as conduct outside the practice setting may affect public perceptions of the nursing profession. If nurses do not handle information carefully and with professional judgment, they may disclose confidential information about their patients. Listed are some of the ways technology-use may pose a threat to patient confidentiality: 1) by sharing information about clients on the website "MySpace". It is not appropriate for professionals to share client information unless it is with other members of the health care team, and for the sole purpose of providing care for which the client has given consent. Even though a client's name may not be shared directly, there can be identifying features that could make the client recognisable to someone browsing this particular website. Withholding the client's name is not sufficient to maintain confidentiality. Nurses must safeguard information learned in the context of the professional relationship and ensure that if it is shared outside the health care team, it is only done so with the patient's consent when legally required or when failure to disclose would cause significant harm (according to the Canadian Nurses Association); 2) by nurses blogging on websites. Nurses sometimes share their frustrations about self, workplace, over-capacity and workload through blogging. These frustrations are often shared as s/he feels that it is her obligation to do so as a registered nurse. It is important to note that expressing thoughts and feelings through a public domain such as this is akin to talking on the corridor where anyone can eavesdrop on what is being said. Instead, nurses' concerns about their workplace or client safety need to be expressed using an appropriate channel of communication; 3) by nurses having patients as e-mail friends. It is not appropriate for nurses to relate to their clients in an informal way as the nurse-patient relationship is developed within a certain context which requires nurses to make a clear distinction between the professional and personal relationships. It is the nurse's responsibility to initiate, maintain and terminate the professional relationship in an appropriate manner; 4) by photographing clients using phone cameras. Photographs contain confidential information which belongs to the client. Prior consent is therefore needed from the client for any sharing of photographs between members of the health care team. They should only be used to enhance patient care. Obtaining and sharing confidential client information without consent for purposes unrelated to health care is a breach of patient confidentiality.

Evidence Based Practice: Use of Ventilator Bundle to Prevent Ventilator Associated Pneumonia In Nizwa Hospital (Oman).

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Objectives: To determine the impact of "ventilator bundle" in the prevention of ventilator associated pneumonia (VAP) and other outcome variables in patients admitted to our adult intensive care unit (AICU). Preventing nosocomial infections is a very important aspect in improving patient safety. Implementing "ventilator bundle" has shown to reduce the incidence of VAP. Encouraged by this fact, we at Nizwa hospital have implemented this bundle in our AICU. *Methods:* All the adult medical and surgical patients who were intubated and ventilated in our AICU from January to September in the years 2005 and 2006 were included in this study. Patients who expired within 24 hrs of admission, were transferred to tertiary care unit within 48hrs, were diagnosed with pulmonary embolism or had gastrointestinal bleed prior to admission were excluded from this study. The concept of " ventilator bundle' was introduced after educating the nursing staff, respiratory therapists and the medical personnel through group discussions and presentations during infection control and staff development symposia. "Ventilator bundle" is a package of evidence-based interventions that include: 1) elevation of the patient's head of bed to 30-45 degrees; 2) daily sedation vacation and daily assessment of readiness for extubation; 3) peptic ulcer prophylaxis, and 4) deep vein thrombosis (DVT) prophylaxis. Demographic data was collected from the computer database. VAP was diagnosed when it met the (clinical, non-invasive) diagnostic criteria. The incidence of VAP was calculated separately amongst the medical and surgical patients. *Results:* Introducing the concept of "ventilator bundle" reduced the incidence of VAP by 24.2% in the surgical patients and by 12% in the medical group. It also significantly reduced the incidence of upper gastrointestinal bleeding. The mean age of patients who developed VAP in 2006 was significantly higher in both the medical and the surgical groups. The length of stay decreased significantly in the surgical group, while it increased in the medical group. In those patients who developed VAP, the mean duration of ventilation was reduced by 29.1% in the medical group and by 55.12% in the surgical group. In patients who did not develop VAP, a decrease of 9.9% in the mean duration of ventilation was seen in the surgical group, but increased by 14.2% in the medical group. *Conclusion:* Introducing the concept of "ventilator bundle" helped us to reduce the incidence of VAP as well as the incidence of upper gastrointestinal bleeding. It reduced the mean duration of ventilation in both the medical and surgical patients who developed VAP. The effect of decreasing the length of stay was seen amongst the surgical patients only.

Audit of Medication Practices in Maternity Wards at Sultan Qaboos Hospital, Salalah

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Objectives: To audit medication practice in patients admitted to maternity wards to find out medication errors with the aim of decreasing or eliminating medication errors according to their category for better care and patient safety. *Methods:* Sultan Qaboos Hospital is a secondary cum tertiary hospital with 100 inpatient beds for obstetrics and gynaecology (80-90 % bed occupancy rate) and a delivery rate of 4,500 babies per annum. This study was done on a daily basis over a period of one year from November 2007 to October 2008. Data were collected from medication charts, staff and doctors reports, patient complaints, pharmacy complaints and any adverse events. In order to audit prescription documentation, 500 randomly collected prescription sheets were studied over a period of 6 months (January to June 2008). The standard used accorded with Ministry of Health policy. *Results:* Our hospital uses handwritten records and medicines are prescribed using a standard yellow sheet. Errors were categorised into 3 types: prescription errors, made mainly by doctors; dispensing errors made by pharmacy staff; and end-user errors made by patients. Prescription errors: from a total of 500 prescription sheets reviewed, 42% of cases revealed a problem in legibility of hand writing. In 80% of cases, medicine names were not written in block letters. There was confusion in the name of the drug, in administration (oral or injectable) and in duration. Dosage was frequently under prescribed because many of our patients are obese. IV fluids were often written collectively and the duration was frequently not stated. Incomplete details concerning medication on the discharge summary lead to errors. Dispensing errors: a combination of a lack of experience of new staff and bad hand writing on the part of many doctors often has unfortunate consequences. The following errors were noted: wrong medication; medicines not given on time; not stopping medication as advised; drugs left unattended at a patient's bedside; unavailability of medicine due to lack of stock and doctors not being informed to indicate a substitute; interchange of drug sheets, wrong stickers etc. Some of these errors were due to staff shortages, others to unnecessary drugs left on trolleys. User errors: These occurred when patients had their own beliefs about pregnancy; patients did not take their medication on time; medications were thrown away; the over-use of drugs, especially analgesics; refusing medicines during Ramadan (which affects care during pregnancy especially for diabetic and hypertensive patients leading to repeated admissions and unnecessary interventions); incorrect or inadequate information given to patient at the time of discharge. *Conclusion:* Medication errors are few in Oman, but not uncommon. They also tend to be under reported. Appropriate knowledge and experience, good hand writing, the taking of proper safety precautions (such as the cross-checking of records and medicine) could prevent a number of medication errors. Protocols and guidelines should be followed especially in emergency situations. Supervision of new staff should be mandatory. For good patient compliance, health education regarding disease and medication is most important.

Transfusion Medicine And Patient Safety

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Introduction: Safe transfusion therapy depends upon an interconnected series of processes that begin with the donor and end with the patient. Blood safety is concerned with the safety of the component which is the primary responsibility of the blood bank. Transfusion safety focuses on the overall process that results in the delivery of transfusion therapy to the patient and includes blood

safety. ***Objectives:*** This presentation addresses the important points in the transfusion process that are potentially unsafe: the collection of patient samples, the medical decision to transfuse and the administration of blood components at the bedside. It will also deal with some solutions to current problems in hospital transfusion safety like newer technologies, computerised blood utilisation reviews and nanotechnology. ***Methodology:*** Patient sample collection: errors in this first step can lead to an acute haemolytic transfusion reaction due to ABO incompatibility. Acute haemolysis continues to be an important cause of morbidity and mortality. Although the majority of ABO errors occur at the time of blood administration, a significant percentage occurs at the time of specimen collection. Mislabeling of specimens: this accounts for a very high percentage of high-severity events which have a potential for patient harm. The mislabelling could be a minor one - misspelled name, truncated name or number, or a major one, also known as WBIT (wrong blood in tube), in which the error is an unlabelled specimen or an AB/Rh not matching the blood bank record. Attention to the prevention of such errors represents an area where quality improvement efforts could have a major impact in improving transfusion safety. Decision to transfuse: like decisions associated with commonly prescribed antibiotics, it is quite often seen that many transfusion decisions are incorrect. Transfusion is associated with potential risks to the patient; hence, prescribers of transfusions must be aware of the clinical setting where their use is appropriate. There must be adequate justification for a transfusion and local hospital transfusion committees can play a vital role in overseeing transfusion practices to ensure optimal use of blood/component therapy. Bedside administration of blood: the Serious Hazards of Transfusion (SHOT) programme documents that mistransfusion is the most common serious hazard of transfusion. A hospital must have in place patient safeguards to prevent mistransfusion. A variety of technologies exist that can be used to improve transfusion safety: bar codes, machine-readable patient identification bracelets and radio-frequency chips. ***Conclusion:*** This presentation will also deal with solutions to current problems in hospital transfusion safety. It is important that hospitals form professional groups whose responsibility would be to set performance standards in key areas of the transfusion process. Newer technologies designed to improve patient safety should be explored.

Simulation-Based Teaching Enhances Patient Safety

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Background & Objectives: Quality and safety education in health care has changed practice expectations. Quality and safety education can ensure safe and competent health professionals. The three guiding steps to patient safety are developing safety lessons, learning and sharing safety lessons and implementing solutions to prevent harm (NPSA 2004, NPSA 2005). The 'Quality and Safety Education for Nurses' project team recommended the use of simulation-based teaching to enhance patient safety on a systems level. Simulation develops a more relaxed relationship between student and teacher, and makes the student feel more valued and confident (Alinier, 2003). Both teachers and students believe that simulation makes it easier for students to transfer skills and helps to reduce the gap between theory and practice. ***Methods:*** Quasi experimental one group post test design. Population: SQU students who were registered for Maternal Health Nursing in autumn 2008. Sample: 39 students (11 male, 28 female). Tools: Objective Structured Clinical Examination (OSCE), a questionnaire and an observation checklist. All students were exposed to three weeks of skill laboratory training. This was followed by an OSCE, and then they were given three weeks of clinical posting. At the end of the third week of their posting, their safety practices in caring for newborns were observed. Questionnaires were distributed to get feedback on how skill laboratory training had helped them to gain confidence and to practice safety while caring for newborns. ***Results:*** The average OSCE score was 85%. Knowledge about patient safety in the care of newborns was tested by multiple choice questions and the average score was 83%. Skill laboratory training helped them to develop skills in safety issues. 75% of students expressed confidence in handling newborns at the end of their first week of posting. This increased to 95% by the end of the posting. 88% could correctly distinguish and identify different newborns reducing the risk of error in assessment and documentation. Overall, skill laboratory training enabled the students to transfer learning better, to organise care and to master the skills that eventually ensure patient safety. Using a check list, the observation of students in the clinical area found 98% of students cared for newborns safely especially in areas of injury and fall prevention as well as universal precautions. ***Conclusion:*** Simulation-based teaching prepares students to practice safely and effectively to the extent that safety can be assured. Skill laboratory training offers alternative methods of assessment such as OSCE, sparing the need for patients to be at risk. Simulation-based teaching is highly beneficial in the nursing curriculum especially in the training of novices, and in areas where it may be culturally and ethically inappropriate to practice on patients, such as male students practising in the maternity ward.

A Novel Method to Improve Knowledge, Attitude and Practice of Hand Washing Among Staff in the Clinical Setting

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Introduction: Hand washing and hand hygiene are important in preventing nosocomial infection in hospital settings. Compliance to proper hand washing technique is vital. ***Method:*** A study was conducted using a self-administered questionnaire to determine the knowledge, attitude and practice of hand washing in the inpatient care setting of Ibri Regional Hospital. ***Results:*** The main findings were as follows: 171 staff participated in the study with representation from all wards, ICU, Special Care Baby Unit etc. The average length in practice among participating nurses was 8.17 years (SD = 3.8). In the 5 questions pertaining to the practice of hand washing, a score of only 84% was obtained on self-reporting of hand washing practice. A score of 91.7% was obtained relating to their knowledge of hand washing. In response to the factors that led to poor adherence to hand washing, 84% reported lack of adequate staff, 54% reported unsuitable location of wash basin, 78% reported skin irritation due to frequent washing and 32% reported that the hand washing procedure was lengthy. ***Intervention:*** In order to improve attitudes towards hand washing and to encourage better practice thereof, we conducted a caption contest and prizes were offered for the best entries among various categories of staff. 72 captions were received indicating a high level of interest. Caricature pictures based on the interesting captions were prepared. These were laminated and put up in different wards as a reminder. Staff who participated were delighted to see their own captions on display in various wards. The

follow-up indicated significant improvement in the attitude and practice of hand washing by hospital staff. *Conclusion:* Attitude and practice of hand washing can be improved through motivation, involvement and incentives.

Nosocomial Infections in a Tertiary Hospital: A One-YearSurveillance at SQUH

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Introduction: The nosocomial infection rate in patients in any hospital is an indicator of the quality and safety of care. The development of a surveillance process to monitor the rate is an essential step in identifying local problems and priorities, and in evaluating the effectiveness of infection control activity. In August 2006, the infection control programme at Sultan Qaboos University Hospital (SQUH) launched a hospital-wide, targeted surveillance for nosocomial infections. *Objectives:* The main aim was to reduce nosocomial infection rates. *Methods:* All patients admitted to SQUH between August 1 and December 31 2006 and the corresponding period in 2007 were observed for the development of nosocomial infections during hospitalisation. Prospective identification of nosocomial infections using microbiology reports was carried out daily and this was the primary basis for the diagnosis of nosocomial infections. Daily reports from the infection control link nurses in each ward were also used to identify patients with nosocomial infections. Electronic patient records were examined when in doubt as to the presence of colonisation or true infection. A monthly report addressing overall infection (attack) rates, clinical unit infection rate, site of infection and isolated pathogens was produced and circulated amongst all wards. *Results:* A total of 6,984 patients were admitted during the first period (2006) and nosocomial infections were noted on 243 occasions from 135 patients. The attack rate of nosocomial infection during this period was 19.3/1000 patients and 1.8 infections per patient with nosocomial infection. During the corresponding period in 2007, a total of 7,744 patients were admitted and nosocomial infections were noted on 169 occasions from 105 patients. The attack rate of nosocomial infection during this period was 13.6/1000 patients and 1.6 infections per patient with nosocomial infection. Blood stream infections (BSI) were the leading site of nosocomial infections during both periods. Of the total infections noted, 43% were BSI, 20% were pneumonia, 20% were urinary tract infections (UTI), 11% were surgical site infections (SSI) and 6% were infections in other sites. The gram-negative bacilli were the primary pathogens accounting for 70% of the pathogens isolated. *Staphylococcus epidermidis* and *Staphylococcus aureus* were the predominant gram-positive isolates. Candida species were the only fungal pathogens seen and accounted for 8% of pathogens isolated. *Conclusion:* There was a significant drop in the number of nosocomial infections at SQUH from 19.3/1000 patients to 13.6/1000 hospitalised patients (a rate reduction of 29%). This was attributed mainly to the feedback and dissemination of surveillance results to the clinical staff, as well as the improvement in hand hygiene practices. Nosocomial infections cannot be totally eradicated, but they can be reduced. This study will form the basis for more in-depth studies on the details of the multiple aspects and problems of nosocomial infections.

Nurses Knowledge of Decontamination and Identification of Training Requirements

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Introduction: In the UK, the national audit office estimated that in 2005 1 in 9 inpatients acquired an infection while in hospital resulting in 5,000 deaths and an estimated cost of 1 billion pounds. Improved standards of cleanliness and reduced infection risks have since halved the rates of methicillin resistant *Staphylococcus aureus* (MRSA). As part of this process, many reusable items have been replaced with single-use items, but such items are only now being considered in Oman. Inadequate decontamination of reusable items contributes to health care associated infections (HCAIs), patient mortality and morbidity. Manufacturer's guidelines do not always explain the principles of disinfection and sterilisation, and the practical application of these is poorly understood and often not seen as important by nursing staff. *Objectives:* The aim was to establish the degree of nurses' knowledge about decontamination procedures and to identify training requirements. *Methods:* In this pilot study, a supervised questionnaire was administered to an opportunistic sample of 24 Intensive Care nurses working in a 16 bedded ICU in a tertiary university hospital in Oman. The questionnaire covered processes commonly carried out by nurses in this area. *Results and Conclusion:* The results are being used to inform the contents of a short training programme and a repeat questionnaire. Compliance with key performance indicators will be used to evaluate the course outcomes.

SQUH Takes on Joint Commission International Patient Safety Goals

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Introduction: As an important step towards improving patient safety at Sultan Qaboos University Hospital (SQUH), the hospital made the decision to follow the Joint Commission International (JCI) International Patient Safety Goals and produce a poster to raise awareness about them. *Objectives:* The purpose of the poster was to introduce some of the most common types of adverse events: incorrectly identifying patients, health-care-acquired infections and confusion in communication between caregivers. The focus was on improving patient safety. The goals were designed to provide clear priorities and offer solutions for improvement that could be implemented in a practical and cost-effective manner in any health care organisation regardless of size or location. *Methods:* This poster introduced the six International Patient Safety Goals and described the importance of each one and how it applied to different areas of the hospital. Goal 1: Identifying patients correctly. This goal helps to identify the individual as the correct person for whom treatment is intended and to match the care to that person. Goal 2: Improving effective communication. Ineffective communication is the root cause of all adverse events. It is the most frequently identified cause of adverse events such as wrong-site surgery, medication errors, delay in treatment, and ventilator events. Goal 3: Improving the safety of high alert medications. Preventing tragic deaths and serious injuries from the mistaken use, incorrect storage and dispensing of medications as well as errors in dosage calculation of high alert medications, such as concentrated electrolytes and multiple concentrations. Goal 4: Eliminating wrong-site, wrong-patient, wrong-

procedure surgery. Common causes of these avoidable adverse events include issues such as breakdowns in communication and lack of verification checklists in the operating room. Goal 5: Reducing the risk of health care-acquired infections. These standards focus on reducing the risk of infections and recognising that knowledge and hand hygiene are the most effective ways to reduce the spread of infections such as catheter associated urinary tract infection, blood stream infections (usually associated with intravascular devices) and pneumonia (often associated with mechanical ventilation). Other frequent types of infections are surgical site infections, and skin and soft tissue infections. Goal 6: Reducing the risk of patient harm resulting from falls. By thoroughly assessing and reassessing a patient's risk, the hospital can include fall prevention as part of the process of planning and providing care. Moreover, hospitals can take action to prevent potential falls from occurring. ***Conclusion:*** Frequently asked questions about International Patient Safety Goals are included for a better understanding of implementation and compliance, with reference to Joint Commission International Patient Safety and Joint Commission Resources.