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FUTURE LEAN HOSPITALS (INTRODUCTION OF THE CONCEPT OF LEAN HOSPITALS TO GCC)

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It is about time to try to transfer the concept of 'lean management' to the GCC. All healthcare organisations are challenged to put performance excellence into practice through being as safe, thorough, productive, cost-effective, efficient and accurate as possible. That is really a challenge and, while many organisations are striving to achieve this goal, how they get there differs a lot from one healthcare organisation to the next. Lean management – Kaizen – and Toyota principles have managed to spread across many world-class hospitals which have tried different means to address the issue of quality-cost-delivery. Many projects undertaken in our hospitals fail or do not achieve results because they depend on sustainability, top management commitment, resource availability and staff culture. The good thing about the lean concept is that we can reduce the impact of these factors and still establish the lean processes. We present the principle of lean management in healthcare and how we expect future lean hospitals to look in practice i.e. how they deal with lengthy waiting lists, inefficient processes for discharging in-patients, delayed admissions, bottle necks between urgently needed surgeries, limitations of operating theatres and long waits at the pharmacy, or the challenge of enhancing bed occupancy rates for one day surgery. We will also discuss the importance of mapping and understanding and observing the process through teams. Elements of lean thinking were combined with this map to help identify "muda" (a Japanese word for waste). To understand which steps were not contributing to timely discharge, aspects of the existing process are categorised as value-added, non-value-added and waste.

FALLS - A KEY PERFORMANCE INDICATOR

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Falls in healthcare settings are among the serious risk management issues facing the healthcare industry. Prevention of falls among patients and residents in acute and long term care healthcare settings requires a multifaceted approach and challenges healthcare providers to create a safe environment. In 2005, the incidence of falls in Sultan Qaboos University Hospital SQUH was found to be the second highest amongst incidences reported. A survey was done and presented to Nursing Management in February 2006. A reduction target of reduction in falls by 10% by December 2006 was set and an action plan implemented. A re-survey was carried out in early 2007 and a comparison was done for the years 2006 and 2007. Findings revealed a reduction in falls in 2006 by 12.5% compared to 2005. In-depth analysis showed that in 2005 there were 24 falls out of 17,239 total admissions with a percentage of 0.14 % and in 2006 there were 21 falls out of 18,491 total admissions with a percentage of 0.11%.

OUTCOME AS A MEASURE OF QUALITY OF CARE IN ONCOLOGY: SQUH EXPERIENCE

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Measurement of outcomes is increasingly been employed not only in clinical practice but also as an indicator of quality of clinical care. The most commonly measured outcome in oncology practice remains overall survival rate. SQUH is on road to achieving excellence through quality and has already received ISO 9001:2000 certification. In an effort to seek continual improvement, quality measurement exercises have been initiated through out the hospital. The section of Medical Oncology is an integral part of the Department of Medicine, and endeavours to promote teaching, research and clinical service in accordance with the vision and mission of the University Hospital. Herein, we present the overall survival of four of the ten most common cancers diagnosed in the Sultanate of Oman. These include, in the order of occurrence, non-Hodgkin's lymphoma (NHL), breast cancer, stomach cancer and Hodgkin's lymphoma (HL). The studies were all retrospective in nature. The overall survival was compared with studies both from within the region, and with bench-mark studies. For NHL, with a median follow-up of 8 months, the 2-year survival was 64%; 90% for the low risk, 55% for the intermediate risk, and 15% for the high risk groups according to the International Prognostic Index (IPI). For HL, the 2-year overall survival was 64% according to the International Prognostic Factor Project (IPFP), the survival was 76% for 0-2 risk factors and 32% for three or more risk factors. For breast cancer, the 5-year survival rate was 67%; were 88%, 75% and 59% for stages I, II, and III respectively. For gastric cancer, the 5-year survival rate was 16.5 %; 24% for the non-metastatic group. The long-term outcomes of patients with NHL, HL, breast cancer and gastric cancer are generally comparable with published reports.

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MONITORING CLINICAL CARE WITH INDICATORS

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Quality improvement is not a goal it is a continuous process and requires planning, control and teamwork. Monitoring clinical care with indicators offers an opportunity for improvement in clinical care given to patients. The objective of initiating this programme in the Department of Obstetrics & Gynaecology in Khoula Hospital was to monitor care in an efficient and systematic manner and to match care with the standards that were set. Our aim was to assess the trends and traits of indicators before and after implementation of a specific intervention. Indicators were selected from the American College of Obstetrics and Gynaecology Manual of Obstetric care. Every indicator had a standard against which it was matched. These indicators were presented in the departmental meeting and consensus was obtained regarding implementation of this programme. The programme was initiated in January 2002 and results up to 31 January 2003 are presented. Avoidable factors were ascertained, guidelines were reviewed and a plan of management was formulated. Main outcome measures were trends of clinical indicators and the effect of educational measures, presentations and discussions on clinical care. Improvement in clinical care resulted in the following indicators: 1) In hospital maternal red blood cell transfusion rate; 2) In hospital initiation of antibiotics 24 hours or more so after term vaginal delivery; 3) Unplanned readmissions within 14 days of discharge; 4) Rate of caesarean section showing an increase; 5) Repeat caesarean section rate increased from 17.5% to 20%; 6) Post-partum unplanned return to operation theatre or delivery room showing a downward trend; 7) Laparoscopic surgery performed during this period monitored with indicators. An effective quality improvement can be established and implemented in a clinical department with existing resources. The observed changes presented were a direct result of monitoring clinical care with indicators on an ongoing basis. Commitment to the cause is important.

'WALK-IN' PATIENTS - A PARADIGM SHIFT IN MEETING CUSTOMER NEEDS: A STUDY ON PATIENTS WHO "WALKED-IN" WITHOUT APPOINTMENTS AND PATIENTS WHO DEFAULTED ON THEIR APPOINTMENTS

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The Psychiatric Outpatients Clinic at Sultan Qaboos University Hospital (SQUH) Oman, is a referral clinic and operates on all five weekdays. All new and follow-up patients are given appointment dates for consultations and review, however, the increasing number of patients walking-in without appointments and the high number of patients not attending the clinic as per appointments was causing disruption to the effective implementation of the appointment system where resources could be planned and managed according to expected workload to provide quality patient-care. A 12-month retrospective study was carried to measure the prevalence of patients who 'walk-in' for consultation and patients who did not keep their appointments. The objectives were to identify any trend or pattern of patients who 'walk-in' without appointments and non-compliant behaviour of patients who did not attend given appointments. The accumulated data could be used to understand and possibly initiate a customer friendly outpatient's consultation system without compromising on quality customer service. The study was carried from 1 January to 31 December 2006. The study revealed that 33.2% of patients walked-in without prior appointments and 34.4 % patients did not keep their appointments. The number of 'walk-in' appears to be related to the number of patients who did not keep their appointments. It is postulated that patients who did not turn-up for the appointments most probably turned up later as walk-ins. Psychiatric patients by virtue of their illness do relapse and need immediate interventions to prevent exacerbation of their illness. Accommodating 'walk-in' patients enables patients to have consultations at their own convenience with little disruptions to their work and social obligations. Clinics must meet customer needs or else these patients may default on medication and relapse or may seek alternative care elsewhere. The Department of Behavioural Medicine in SQUH in initiating a process for accommodating 'walk-ins' contributes positively towards meeting customer needs. A paradigm shift amongst health care managers is imminent.

REQUIREMENTS OF ADVERSE EVENTS REPORTING SYSTEM: A PATIENT SAFETY CHALLENGE IN OMANI HOSPITALS

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Reporting adverse events is an essential component of patient safety enhancement. The present cross-sectional study examined the perspectives of physicians and nurses working in two Omani hospitals regarding the requirements of reporting adverse events. Data were collected using a pre-tested self-administered anonymous questionnaire that included doctors' and nurses' opinions regarding the preferred model and requirements of an adverse events reporting system. Most respondents (67.65%) confirmed the presence of a reporting system of adverse events in their department. Nearly 60% did not accept the anonymous model, whereas the majority (91.5%) preferred the confidential one. Most respondents wished the recipient to belong to their own profession and over half (51.4%) admitted that they were reluctant to provide information about adverse events. The highest percentages claimed they did not report adverse events so as not to appear incompetent or incur negative consequences on their future career. Most respondents (71.8%) expected to receive a rebuke face to face and be closely watched in the future by their leader if they made an error. The majority of respondents mentioned that it is important to give the patient an expression of regret and an explanation of why the error happened (90.6%) as well as the hospital acknowledging its responsibility. The majority (more than 93%) perceived that it is important to offer support and professional help to colleagues who have been involved in adverse events. Nearly two-thirds strongly agreed that their wards are good at learning from errors, whereas about half stated that their wards are careful and thorough when giving information to patients after events. More than half confirmed that the mistake makes them try never to leave risky and demanding tasks to their colleagues or inclines them to change their work, whereas, only 39.6% expressed that it is distressing them. The study recommended confidentiality, protection of reporters and discretionary reporting of adverse events with guidelines, as well as an open and participative climate in which education is emphasised. The hospital should acknowledge its responsibilities and offer support, feedback and professional help to the staff who have been involved in adverse events.

TOTAL QUALITY STRATEGY IN HEALTH CARE: OMAN EXPERIENCE

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Over the last three decades, the Sultanate of Oman has achieved exponential strides in health development, reflected in the widely acclaimed rapid improvement in health indicators and the building of a comprehensive modern health infrastructure. However, the challenge facing the Omani Health System is to sustain its success and continue improvement. Therefore, the issue of health care quality assurance/improvement assumed a pivotal importance for future health development prospects and is placed high on the Omani Ministry of Health agenda. The presentation will highlight the practical methodology for establishing Quality Management Systems (QMSs) in public healthcare (PHC) facilities and the different strategies, challenges and future perspectives of the National Quality Assurance/Improvement Program in PHC in Oman.

GUIDELINES FOR TOTAL QUALITY MANAGEMENT IN HEALTH CARE

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Quality of healthcare is a concern in any health organisation. Quality is defined as best practice or customer satisfaction when the patients get what they need within the available facility. It is a broad management philosophy ensuring quality and leadership commitment which provide the energy and the rationale for the implementation of the process of continuous quality improvement. The quality system has three important areas: system improvement, system control and system development. The main component of each system will be discussed. A quality system is team-work for planning, implementing, monitoring and evaluating what we do in each department. All staff must be consulted and there must be the use of incentive and motivation. Quality is detailed procedures requiring top management commitment and system control by job description and policy procedures guidelines based on statistics. Benchmarking and self-assessment are important factors to improve the system. A blame free reporting culture should exist. Finally, quality is the responsibility of every staff member.

HEALTHCARE ACCREDITATION IN A CORPORATE ORGANISATION

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We have just finished the long trip toward (JCI) Joint Commission International accreditation and achieved this important goal at the National Guard Health Affairs (NGHA), Saudi Arabia (a corporate four hospital, 2,000 bed organisation). This process was full of challenges (systematic i.e. structural, and process challenges) as NGHA is uniquely a corporate organisation rather than a single hospital. The presentation will cover the following topics: experience of a corporate 4 hospital, 2,000 bed organisation in JCI accreditation; understanding; structure; process per set of standards/team/function; timeline; other activities.

HEALTH TECHNOLOGY ASSESSMENT & MANAGEMENT IN IRAN

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In this study, first the definition and history of health technology assessment (HTA) and the stages of HTA development around the world are explained. Then the different uses of HTA in healthcare systems are studied. The methodology of HTA is explained then a model of HTA in medical equipment offered. The following topics are covered: 1. Assessment and selection of health technology (a) what is HTA? (b) developing stages of HTA (c) HTA methodology (d) application of HTA in different levels of healthcare systems (e) management of health technology (medical equipment management). 2. Study methods (a) study specification (b) method of data gathering and analysis. 3. Results: review of existing state of selection and use of medical devices; stakeholders in medical devices field; new technologies; model of medical devices acquisition; main participants in acquisition of medical devices; planning and financing. 4. Need assessment. 5. Selection. 6. Safety and performance. 7. Standardization. 8. Procurement. 9. Vendors and supply. 10. Importation. 11. Installation and commissioning: utilising quality assurance. training; safety; maintenance and repair. 12. Optimized model of HTA. 13. Conclusion.

MULTIDISCIPLINARY APPROACH TO CRITICAL ANALYSIS OF HOSPITAL OUTPATIENT APPOINTMENT SYSTEM BY UTILIZING ISHIKAWA (FISHBONE, CAUSE-EFFECT) DIAGRAM

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Our objective was to analyse critically the outpatient appointment system, identify areas for improvement and recommend solutions to the management. In a hospital, outpatient patient appointments form a significant part of the system. A system may be defined as, "A set of functions or activities within an organisation that work together for the aim of the organisation". Consequently, the main focus of this case study is how a quality tool, 'cause - effect diagram' is utilised for critical analysis of the outpatient appointment system. A multidisciplinary group (doctor, nurse, receptionist, outpatient department (OPD) manager) was formed that brainstormed and used the cause - effect diagram to pursue the following: 1a) Problem identification: we analysed the data of customer complaints received at the hospital related to outpatient services and found that 70% of patients complained about the inefficiency of the OPD appointment system and were dissatisfied with it; 1b) Identification of root causes: after discussion the team agreed to examine six main factors: resources, people, environment, equipment, policies, procedure; 1c) Causes identified after identifying the main factors: a detailed brainstorming to discover possible causes related to each factor. 2. Results of brainstorming: (a) policies - 18 out of 20 policies had not been updated; ambiguous job descriptions resulting in confusion and conflicts etc; (b) procedures, old patient file retrieval system; inadequate queuing system etc; (c) people: training - 8 out of 10 frontline staff were not fully computer literate causing data entry delay; language barriers - 7 out of 10 receptionists knew only Arabic resulting in miscommunication, transaction delays between patient and receptionist etc; (d) equipment (lack of addressograph machine; no token system etc; (e) resources: lack of staff (doctors, porters, clerks), lack of sitting space; (f) environment: housekeeping - no written schedule for cleaning resulted in erratic cleaning and thus the whole place appeared untidy; designated smoking area - none for visitors who smoke, exposing

non-smokers and children to passive smoking; 3. Urgent and non-urgent recommendations to the hospital management. 4. Conclusion: This study helped to confirm that (a) there were numerous correctable causes plaguing the appointment system; (b) the project was able to achieve its objective of identifying causes using the Ishikawa diagram and make evidence-based recommendations; (c) the project proved that the multidisciplinary approach and usage of quality tools can help to improve quality in healthcare and may be used in problem solving for other healthcare issues as well.

STRATEGIC MANAGEMENT AND QUALITY

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In pursuit of excellence, today's managers are challenged to manage and improve the existing system at the same time as rebuilding and renovating towards the future system. This is a difficult, but not impossible, task given pro-active thinking, strategic planning and good management of their organisations. Making the right decisions at the right time is vital. Following through on those decisions is the challenge. Strategic management, through its different phases, is the right approach for managers to make the right decisions at the proper time (planning ahead), following through on them (operating and measuring performance), and guiding their organisations to success (monitored through the balanced scorecard). In short, 'strategic management' is the proper management approach and technique for policymakers, executives, and managers seeking excellence.

WAYS TO IMPROVE PATIENT SAFETY

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Healthcare providers have always considered the provision of safe patient care essential. Now, however, there is an increased emphasis on looking at the processes of care, and how healthcare organisations can identify patient safety risks and reduce the occurrence of medical errors. Studies of adverse patient incidents have heightened our awareness of the need to redesign processes to prevent human errors. It is time for organisations to use cognitive ergonomics and increase focus on human factors analysis to make health care services safer for patients. We will focus on the following questions: "How can safety be improved? Are there other mistake-proofing techniques? Can barriers or safeguards prevent untoward events? Where are patients at risk? Where to start?" We will also emphasise: everyone has a role in patient safety; proactive and reactive actions to be taken to reduce risk; sharing safety improvement ideas with example of a sentinel event; examining the safety of processes; redesigning the process for safety improvement and how to test the redesigned process.

PATIENT SAFETY AND NURSING EDUCATION

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The challenge of achieving significant improvements in patient safety is one of the key tasks facing healthcare at the start of the 21st century. Patient safety is the foundation of healthcare practice and education internationally. Quality education is essential to ensure the continuous provision of safe and competent health professionals entering the workforce. The role of education in creating a safety culture through the inclusion of issues such as human factors theory from the outset of the practitioner preparation programme is explored. A patient safety incident was defined by the National Patient Safety Agency (NPSA), in 2004 as, "Any unintended or unexpected incident which could have or did lead to harm for one or more patients receiving NHS funded care". NPSA issued a Seven Steps to Patient Safety Guide: 1. Build a safety culture. 2. Lead and support your staff. 3. Integrate your risk management activity. 4. Promote reporting. 5. Involve and communicate with patients and the public. 6. Learn and share safety lessons. 7. Implement solutions to prevent harm. Steps 1, 6, 7, are relevant to healthcare education. Concerns about the quality and safety of health care have changed practice expectations and created a mandate for change in the preparation of health care professionals. Quality and Safety Education for Nurses (QSEN) derived 6 core quality and safety competencies as follows: patient-centred care; teamwork and collaboration, evidence-based practice; quality improvement; safety, and informatics. The new emphasis on patient safety demands attention to both individual and system errors. Individual errors are of concern regarding nursing education and patient safety. Educators are encouraged to engage in a culture shift whereby student error is considered from an education systems perspective. Educators and schools are challenged to look within and systematically review how programme structures and processes may be contributing to student error and undermining patient safety. Training students by simulation based teaching and objective structured clinical evaluation reduces the risk and assures patient safety. Educators must address discontinuities between education and practice. Structures and processes for student supervision in clinical learning include: legislation of nursing; regulatory structures within health sectors and educational institutions; communication, collaboration and adequate preparation of staff to supervise students. Safe and competent practice is reliant on clearly articulated structures and operationalising processes between the health sector and higher educational institutions that can assist staff and students to meet the requisite standards of practice.

INNOVATIVE QUALITY HEALTH CARE ACTIVITY BY QUALITY IMPROVEMENT COMMITTEE OF AL NAHDHA HOSPITAL, OMAN

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The Quality Improvement Committee of Al Nahdha Hospital, Oman, conceived and conducted an innovative healthcare activity in 2007. A comprehensive preventive health check up of 100 Omani health care personnel from 25 departments/sections of Al Nahdha Hospital for body mass index, blood pressure, fasting blood sugar and cholesterol was done. The results were: 90% of staff tested was between 20 and 40 years of age. Twenty-eight % were obese and 30% were overweight; 28% had hypercholesterolemia; 20% had prediabetes and 3% were diabetics; 35% had prehypertension and 10% had hypertension. A synopsis of this study was distributed to the Director General, the Executive Director and all the Heads of department. "Are you waiting for the first heart attack to change your lifestyle? Change your lifestyle today!" was the clear

message to all. This innovative activity helped the staff understand the concept that 'quality of healthcare begins with me'. It also established a feeling (inexplicable in words) that the Hospital Committee cares for the health of its staff.

LEARNING FROM ADVERSE CLINICAL OUT COMES – ROOT CAUSE ANALYSIS

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The objectives of the study were to learn from root cause analysis of adverse pregnancy outcome cases and to improve the quality of service and patient safety. The study was done at Sultan Qaboos Hospital, Salalah, from May to October 2007. Root cause analysis is a part of clinical risk management done in cases of patient complaints, critical events, near misses and poor neonatal out comes or still births. We present the results of important problems over a period of 6 months where we could make reasonable changes. Problems which were studied were either very serious or repetitive. As reported in earlier studies, communication was the biggest factor especially over the weekends. In high risk cases, especially in diabetes with still birth/shoulder dystocia, noncompliance was an important factor. This was dealt with more aggressively by providing dedicated clinic and health educators. Wound infection morbidity was dealt with by doctor and staff training in aseptic techniques. Management of massive obstetric haemorrhage was dealt with by putting stricter guidelines of blood loss management along with the audit for correct estimation of blood loss. We conclude that vigilance about adverse outcomes gives us feedback on our services. We can learn from our mistakes and take appropriate measures to prevent or dilute their effects on patients' conditions. This also gives us guidelines to improve services and patient safety. Stress is put on team work, good communication and adequate supervision of new or junior doctors. Reminders are given to doctors and staff to follow guidelines and to consult senior doctors whenever required. High-quality healthcare requires a balance of risks, benefits, and patients' preferences, not necessarily rigid adherence to clinical guidelines.

TECHNOLOGY IMPACT ON PATIENT SAFETY AND QUALITY IMPROVEMENT: OPPORTUNITY COSTS VERSUS OPPORTUNITIES LOST

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Opportunity cost is defined as the value of foregone opportunities or alternatives unable to be achieved because of time or money utilised or dedicated towards some other option. Ultimately, it is the net balance or total of opportunity costs sustained, either tangible or intangible, in not taking certain opportunities and the costs of making alternative decisions. Because of the increased demand on limited resources, healthcare providers are increasingly required to make choices among competing claims. Opportunity cost as applied to healthcare also raises the issue of the quality or quantity of life. Part of the opportunity cost in resisting investment in technology solutions for healthcare organisations is increased patient safety. How is that measured? Number of lives? Number of near misses (*if* they are reported)? The bottom line? The universal existence of patient safety initiatives indicates that patient safety is an issue at the forefront of healthcare organisations and that priority of investment needs to be taken to address it. Clear communication and appropriate decision-making among clinical staff - often aided by technology and computer systems - are crucial elements to delivering the right care to the right patient at the right time. In the 2003 Healthcare Information and Management Systems Society (HIMSS) Patient Safety Survey, nearly all respondents indicated that technology can address at least one patient safety issue and 93% reported that technology is likely to play a significant role in reducing medication errors. Other areas of potential improvement cited included: the reduction of excessive time spent on administrative tasks; the improvement of the quality of care provided, and the increased consistency of care provided. These survey findings support what might be expected in any industry: information technology (IT) improves both quality and efficiency. Healthcare industry leaders and policy experts report that rapidly adopting information technology is the most effective cure for costly and harmful medical errors and increased patient safety. It is important for healthcare executives to recognise the importance of linking IT strategy and patient safety strategies. Like clinical expertise, IT expertise and the investment in IT solutions is required to produce the best patient safety solutions.

THE EFFECT OF DOUBLE - CHECKING OF FILLED-PRESCRIPTIONS IN REDUCING POTENTIAL DISPENSING ERRORS AT OUTPATIENT PHARMACY IN SULTAN QABOOS UNIVERSITY HOSPITAL, OMAN

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Sultan Qaboos University Hospital (SQUH) is a government funded tertiary care teaching hospital. Outpatient pharmacy dispensing is one of the major activities at the SQUH Pharmacy. It dispenses an average of 350 outpatient prescriptions daily. In 2005, a total of 146,989 prescriptions containing 353,336 items were dispensed to outpatients. It is policy to double check all prepared prescriptions before handing the medications to the patient. The policy's aims are to minimize dispensing errors, optimise pharmacotherapy and comply with good pharmacy practice. At SQUH, no previous study had looked into the number and types of dispensing errors detected by the double-checking of filled-prescriptions in the outpatient setting and whether there is any association with time of dispensing. This study was part of the continual improvement process in the Pharmacy and will be used for educational purposes. The objectives were: 1. To establish data on number and types of potential dispensing errors detected while double checking and identify if there is any relationship between dispensing errors and time of dispensing. 2. To identify the factors leading to dispensing errors and propose solutions. 3. To evaluate the clinical significance of the documented dispensing errors. A four week prospective interventional study was conducted at the Outpatient Pharmacy in SQUH from 11 November - 11 December 2006. The study included all prescriptions prepared by the pharmacy staff members and found to have a dispensing error. Data was captured in the data collection form. Two clinical pharmacists independently evaluated the clinical significance. During the study period, 180 potential dispensing errors were discovered. Seventy-four percent of these errors were in adult patients' prescriptions and 26% in paediatric patients' prescriptions (<12 years old). Seventy-eight percent of the errors took place between 10:00 hr and 14:30 hr. In 34% of the cases, the error was dispensing of inappropriate quantity of medicines to patients. Errors due to improper labelling of medicines were found in 15% of the prescriptions. In 11% of the cases, a wrong medicine was prepared, 6% of them were due to similar sounding names and the other 5% were due to similar looking medicines. Thirteen percent of the errors were due to dispensing a medicine of a wrong strength. Eighty-four percent of the dispensing errors were detected by pharmacists responsible for double checking prescriptions before handing medicines to patients and 16% were detected by pharmacy technicians. The potential clinical significance showed reduced effectiveness in 43% of the cases,

increased toxicity in 27%, reduced effectiveness and/or increased toxicity in 14% and unknown in 16%. The grading of clinical significance showed that the double-checking prevented potential fatality or end organ damage in 2% of the cases and were of major clinical significance in 45%, moderate in 31%, minor in 6% and unknown in 16%. The double-checking of filled-prescriptions led to the correction of prescriptions with different dispensing-related problems. It contributed positively to the quality of pharmacotherapy and also prevented potentially fatal or end-organ damage in 2% of cases.

THE EFFECTIVENESS OF ESTABLISHING A PATIENT SAFETY CENTER IN THE MINISTRY OF HEALTH, SAUDI ARABIA

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It is very important to establish a patient safety centre (PSC) in Saudi Arabia to help all hospitals to promote the patient safety concept and reduce medical errors, through submitting sentinel reports. Indeed, without a PSC, we can not plan for health care services, especially for reducing medical errors. The PSC also encourages training, research, continuous quality improvement and communication among hospitals. The target clients in this survey were governmental, private and military hospitals and Ministry of Health staff. The objectives were: 1. To measure the feasibility of a PSC. 2. To find factors that support the patient safety culture in the Saudi health care system. 3. To assess the commitment of leadership toward a PSC. 4. To find major barriers to prevent the establishment of a PSC in the Ministry of Health. 5. To know the impact of communication among hospitals. 6. To determine the relationship between the types of reporting systems (voluntary, mandatory) and the success of a PSC. 7. To find factors that help and sustain the PSC structure. 8. To specify a suitable structure for the PSC. 9. To determine systematic surveillance for potential hazards through the PSC. We used a stratified sample from five regions in Saudi Arabia in order to receive various suggestions, ideas and comments from different respondents regarding feasibility, appropriate structure and leadership commitment to a PSC to reach our goal. The data collection tool was a questionnaire to study the impact of some factors in establishing a PSC: 1. Staff safety culture. 2. Communication among hospitals. 3. Chain of command and hiring new staff 4. Implementing computerized physician order entry. 5. Use of the incident reporting system. Many outcomes, comments and recommendations were extracted to help in establishing a PSC in Saudi Arabia such as strengthening communication among health care providers and setting up a database to enhance accurate decision making.

DELIVERING HIGH QUALITY CARE: WHOSE RESPONSIBILITY?

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Quality refers to the characteristics of and the pursuit of excellence. Excellence, on the other hand, is established by determining whether the outcomes of whatever we do favourably compare to the standards that we set. Within healthcare settings, quality is defined as the degree to which the provisions of our health services meet the needs and expectations of our patients and clients. In other words, it is the degree to which the services we offer for the individuals and population increase the likelihood of desired health outcomes and are consistent with current professional knowledge, standards and research evidence. But whose responsibility is it to deliver a high standard of care? Is it the government, professional agencies, structure, healthcare organisations, groups or individual healthcare workers? In this presentation, the aim is to define and highlight the importance of high quality care from the perspectives of various stakeholders and to present the role and responsibility of all concerned in the delivery of high standards of care. Furthermore, the presentation addresses issues or challenges within Omani society that could hinder the delivery of high quality care.

MANAGING CHANGE IN HEALTHCARE

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One of the key concerns in healthcare management is the management of change. With healthcare professionals obligated to acquire and maintain the necessary professional expertise. Change occurs continuously around us. We may want to support it, be indifferent to it, and be passive or participate in it. Managing change is about handling the complexity of the process: evaluating, planning and implementing operations, tactics and strategies and making sure that the change is worthwhile and relevant. Effective change has been characterized as unfreezing old behaviours, introducing new ones, and re-freezing them. Change may be continuous, sporadic, or rare and either predictable or not. The only sustainable competitive advantage today is the ability to change, adapt, and evolve - and to do it better than the competition. Failure comes from lack of vision and commitment from senior management, limited integration with other systems and processes in the organisation, and ill-conceived implementation plans. Employees want to understand why change is happening and how they will be affected. Promoting change is both demanding and fatiguing, needing a proactive attitude. Bringing about change requires: challenging precedents, persevering against established habits, focussing on key valves and time. Organisations will not perform well if they become overly bureaucratic and hierarchical as they will be less flexible, less amenable to change and less likely to empower staff. Leaders need to understand the change process, overcome obstacles and cope with chaos in order to have the capability to lead and manage change effectively. Leaders should help employees and other stakeholders structure and build effective teams. Establishing a clear vision about the direction of the change process as well as measuring and monitoring are key elements for assuring successful change. Changes in healthcare practice are welcome if they improve quality and safety, or save money. However, it is important to tailor healthcare delivery to the needs of the local population so awareness programmers and clear communication between the public and the organisation is essential.

LEARNING ORGANISATION AND HEALTH CARE EDUCATION

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The learning organisation is a concept first described by Peter Senge as an organisation where people continuously learn and enhance their

capabilities to create. It consists of five main disciplines; team learning, shared vision, mental models, personal mastery and systems thinking. These disciplines are dynamic and interact with each other. Systems thinking is the cornerstone of a true learning organisation and it is describes as the discipline used to implement the disciplines. In a learning organisation, health care education aims to educate their members with up to date knowledge to produce competent and safety conscious personnel who could promote quality in healthcare services. In addition, there are some educational concepts and theoretical models which are of relevance to the learning organisation and can provide a framework for managerial decisions. Stages required to achieve the principles of a learning organisation are described in detail. Moreover, in a proper culture which supports the learning organisation, members continuously learn to improve the environment and never remain passive recipients

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SQUH JOURNEY TOWARDS ACCREDITATION

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Sultan Qaboos University Hospital (SQUH) is regarded as the Sultanate of Oman's model healthcare institution, after having in 2005 been internationally recognised with ISO 9001:2000 certification, which stimulated the country's interest and participation in quality healthcare. It is known as the national leading tertiary teaching hospital in the Sultanate of Oman. SQUH aims to provide continual improvement in health service provision and delivery. This presentation explores the preliminary approach SQUH is taking towards introducing hospital accreditation as a quality improvement approach and how the successful achievement of a certified quality management system (QMS) and its contributing factors influence and positively support this process.

AN ANALYSIS OF SQUH STAFF PERCEPTION ON INTRODUCING HOSPITAL ACCREDITATION

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SQUH is a national leading tertiary teaching hospital in the Sultanate of Oman, internationally recognised with ISO 9001:2000 certification. It is an institution which provides quality patient care, education and research. This paper focuses on the willingness and readiness of SQUH to consider introducing hospital accreditation. The initial survey questionnaire seeks perceptions of staff (clinicians, administrators, nurses, technicians and top management) to identify the aspects of accreditation that are considered important, timely and relevant to the hospital, and where they may not be. Combined with a Strengths Weaknesses Opportunities and Threat (SWOT) analysis drawn up by the quality team, in addition to contextual information, it then analyses the data to decide if or if not SQUH is willing and prepared to consider introducing hospital accreditation. Furthermore, following an accreditation workshop recently held at SQUH, an additional survey questionnaire attempts to capture the respondents' view on the reasons for participation, but also what benefits are hoped to be gained by implementing hospital accreditation, as well as anticipated difficulties SQUH may face.

CONFIDENTIALITY OF PATIENTS' INFORMATION

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Confidentiality, defined as the principle which protects personal writing and all other personal productions, not against theft and physical appropriation, but against publication in any form, is in reality not the principle of private property, but that of an inviolate personality. Duties of confidentiality arise when a person discloses information to another in circumstances where it is reasonable to expect that the information will be held in confidence. Protecting patient information is the duty of each individual working in a health organisation, and it is the organisation's role to set policies to protect the confidentiality of patient information. Confidentiality has become as a major aspect in health care organisation because of the following points: a) Privacy is the right of individuals to control disclosure of their personal information; b) It is a key element in the quality of a health service; c) It creates trust in the clinical relationship; d) It builds reflect patient satisfaction and trust; e) Confidentiality is an ethical concept; f) Data security is an key to quality healthcare.

ETHICAL PRINCIPLES APPLIED TO ELECTRONIC PATIENT RECORDS

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Advances in health care technology have raised big concerns about medical ethics. Many discussions were held prior to implementing electronic patient records (EPR). Some people are in favour of implementing this technology and others are against because of ethical issues. This presentation will draw an attention to the following points: 1. The importance of EPR (supporting medical ethics). 2. Ethical Requirements for implementing EPR: a) maintaining confidentiality; b) consumer consent and control of records; c) security and authentication; d) messaging and communication; f) telecommunications; g) imaging and audio standards; h) protecting integrity; i) ensuring availability; j) demonstrating accountability. 3. Recommendations.

TELEHEALTH AS A NEW INNOVATION FOR OMAN

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Telehealth is an electronic audio-visual contact between a patient and healthcare practitioner relating to the healthcare diagnosis or treatment of the patient. Telehealth is a new innovation in healthcare services in the Sultanate of Oman. The presentation covers anticipated government involvement in supporting telehealth, evaluation efforts to date for such technology and, finally, concerns that need to be addressed in designing an affordable Internet-based technology and economic-based framework to evaluate the use and benefit of information and communication technology (Internet, mobile phones and wireless communication) especially to rural communities. Telehealth could be of major

benefit to Oman given the problems of rural areas: limited physical access to primary health care and recruitment and retention of healthcare personnel.

PARAMOUNT IMPORTANCE OF HEALTH INFORMATION SYSTEMS IN HEALTHCARE

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Changes in the demand and supply sides of healthcare information and communications technologies (ICT) have been gathering momentum in recent years in most parts of the world and promise to be more vibrant in future. A hospital information system (HIS) is an organised procedure or method to collect and store data. It can be an electronic (software) system and/or paper based. Hospital information systems are the driving force in healthcare organisations. A radical shift in the HIS market is expected which, according to new research, will result in stronger and more prolonged growth. For example, according to HBS-TekPlus consultants in healthcare and IT, "the European HIS market is predicted to grow by a compound annual growth rate of 4.5 percent, from \$2.69 billion in 2001 to \$3.2 billion in 2005". The major drivers in the hospital information systems market include: a) The public's demand for politicians and hospitals to improve healthcare quality; b) Hospitals beginning to understand the concept of return on investment; c) HIS becoming part of a wider healthcare IT integration. The success or failure of a new HIS depends on some components including: change management; failure to take account of the local healthcare culture; understanding the complexity of healthcare processes; staff turn-over; failure to learn lessons from past projects; staff shortages; responsibility of professional staff, etc.

A REVIEW STUDY OF THE EFFECTIVENESS OF BIOMEDICAL ENGINEERING STANDARDS IN INCREASING PATIENT SAFETY

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Biomedical equipment and devices are often identified as contributors to patient safety. A literature review was conducted for the role of biomedical engineering standards in increasing patient safety. Implementation of these standards was assessed in critical clinical areas to find out how these standards are contributing to increasing patient safety. This evaluation study indicated a need for further improvement in periodic preventive maintenance programmes, equipment safety standards awareness and introducing error recovery systems. This study highlighted the role of biomedical engineering standards in increasing patient safety.

A MODEL OF INTEGRATING THE RADIOLOGY INFORMATION SYSTEM AND CARDIOLOGY EQUIPMENT WITH THE HOSPITAL INFORMATION SYSTEM, BASED ON AN INTEGRATING HEALTHCARE ENTERPRISES APPROACH

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Integrating healthcare enterprises (IHE) is an initiative by healthcare professionals and industry to improve the way computer systems in healthcare share information. The IHE approach models were established to integrate radiology and cardiology equipment with the SQU hospital information system (HIS). It was suggested that by using a Health Level Seven (HL7) interface the communication and data transfer between the radiology or cardiology information system and the HIS is achievable. However the study evaluated the difficulties in implementing such integrations.

JOB SATISFACTION OF HEALTH CARE PROFESSIONALS IN OMAN

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Job satisfaction among health care professionals has become a pertinent issue because of its relationship with three major concerns of health administration: absenteeism, turnover and performance. This study aimed to measure the level of job satisfaction of primary healthcare (PHC) staff in Oman and to determine factors influencing it. A cross sectional study was conducted among PHC staff (390 respondents) in two regions in Oman. Data were collected using a pre-tested, self-administered and anonymous questionnaire sheet that included personal data, overall staff satisfaction with the profession and working in their facility and staff rating of 10 domains of the job: resources, pay, work content, autonomy, supervision, opportunity for advancement, job security, status/prestige, professional relationships and patient relationships. The overall staff satisfaction with their professions was 79.44%. Staff satisfaction scores were lower regarding availability of supplies and equipment for their practice (69.28%); pay and incentives (66.9%); opportunity to learn new skills and abilities (66.05%); amount of proper work (64.62%); workload (68.21%); their input in to organisational decisions (70.51%); opportunities for promotion and further studies (58.23%); job security (66.56%) and relationships with patients (68.2%); They expressed higher scores regarding safety and cleanliness of the working environment (80.87%); the importance of their work (85.64%) and status/prestige in belonging to the job (82.65%); The overall job satisfaction scores were significantly higher among nurses than physicians, among expatriates than the nationals, among females, older and married staff and among those who had graduated more than 10 years ago. The following recommendations are suggested to improve job satisfaction: provide the necessary supplies and equipment for proper practice; implement an appointment system in PHC facilities to help in managing the workload; ensure administrative support, job security and clinical autonomy; encourage staff input in organisational decisions; provide incentives, recognise and acknowledge good work; and provide the opportunity to learn new skills and abilities and develop basic communication skills to improve provider-user relationships.

DISCUSSION ON PRACTICAL APPLICATIONS OF MEDICAL INFORMATICS

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This presentation will discuss the pros and cons of using Multiuser Medical Clinic Software. This particular interface module, which was created by the presenter, can be used in a private local area network of computers. Its use in the fields of medical statistics and its research and

economic benefits, data accuracy and durability and protection of patient privacy will be discussed.

A STUDY ON OUTPATIENT SATISFACTION AT AL NAHDHA HOSPITAL, OMAN IN 2006

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A study on outpatient satisfaction at Al-Nahdha Hospital, Muscat, Oman, was conducted by its Quality Improvement Committee in 2006. A total of 500 patients were studied for patient satisfaction from the Dermatology, ENT, Eye, Dental and Medical outpatient departments (100 each) by way of questionnaires in Arabic and English. They were analysed with the EPI Info software package. The results were as follows: the male to female ratio was almost equal; 62% of patients were in their 20s and 30s; 49% had secondary school education and 13% were uneducated; 55% were employed and almost 45% unemployed (including females and children); 42% of patients waited for less than 29 minutes after the scheduled appointment time; 52% of patients spent 10 minutes or more with doctor; 33% of patients spent between 5 and 9 minutes and the rest less than 5 minutes. There were three main reasons for the visits: a) follow up (28%); b) chronic illness (24%); c) surgery (14%). In conclusion, the total overall patient satisfaction among outpatients was 94% of which 54% were highly satisfied and 40% were satisfied. The two main recommendations to improve patient satisfaction were a further reduction in the waiting time of patients after the scheduled appointment time and an increase in the time spent with doctor, from less than 10 minutes to more than 10 minutes for all patients.

CLINICAL RISK MANAGEMENT IN OBSTETRICS

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Clinical risk management (CRM) is one approach to improve the quality of care, which places special emphasis on care episodes with unexpected outcomes where patients may have been harmed or disturbed. This approach to risk management entails doing a detailed study of adverse events to promote reflective practice and improve subsequent care rather than the litigation management approach. Obstetrics is the highest risk area and generates the most adverse events. The leading causes of litigation in maternity services are mental handicap, intrapartum stillbirth, Erb's palsy and missed congenital anomalies. Risk management can, therefore, be seen as the identification, analysis and control of risk. Clinical risk management, if practised, will be useful in giving highest possible quality care. CRM includes not only cases with a poor outcome, but also the near miss incidents where, despite good outcomes, more effective clinical management would have prevented a potentially dangerous situation developing in the first place. This strategy helps to change the focus from, "Why an error was made" to, "Why the relevant procedures did not prevent the error".

ANTICIPATING AND RESPONDING TO OBSTETRIC EMERGENCIES

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Improving emergency obstetric care is critical to improving global obstetric safety. High quality emergency obstetric care is the most important strategy to reduce global maternal mortality dramatically. In last 10 years, international attention has focused on the importance of medical errors and safety. Effective and efficient care is essential for good outcomes and safety. Obstetrics has the lowest rate of serious adverse events due to errors (1.5%), but the highest rate of negligent care (38.3%) as seen in the Confidential Enquiries in to Stillbirths and Deaths in Infancy (CESDI) survey. Suboptimal care leads to two thirds of intrapartum foetal deaths. Mothers and infants at risk is a global safety issue. The labour room is a complex and dynamic place: highly trained professionals of many disciplines all work in a fast-paced, unpredictable environment. Time, critical decision making, team communication and cooperation can make the difference between life and death. Quick identification of obstetrical emergencies and a rapid coordinated response is essential to good outcomes. Awareness, knowledge, and training for responding to obstetric emergencies is essential for anyone who cares for pregnant women. Rapid coordinated teamwork can save lives in obstetrics emergencies. Simulation can help to retain and enhance knowledge and skill that are not used frequently, see www.obsafety.org. Obstetric emergencies are the leading cause of maternal mortality and morbidity. Expect the unexpected. Fire drills are recommended to improve effectiveness and efficiency in response to obstetric emergencies. Clinical team drills may improve care process, guideline adherence and clinical outcomes.

SATISFACTION SURVEY OF PATIENTS ATTENDING SULTAN QABOOS UNIVERSITY HOSPITAL PHARMACY, OMAN

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Sultan Qaboos University Hospital (SQUH) is a government-funded tertiary care teaching hospital. The outpatient pharmacy in SQUH dispenses an average of 350 prescriptions daily. In the year 2005, a total of 146,989 prescriptions containing 353,336 items were dispensed at the outpatient pharmacy. A 1998 survey showed an 80% patient satisfaction rate. The objectives of this survey were: 1. To assess the patients' satisfaction rate. 2. To evaluate the clarity of written and verbal information. 3. To identify current strengths and weaknesses. A two week survey was conducted in May 2006 by a structured questionnaire to all patients presenting their prescriptions. A total of 328 filled questionnaires were returned, out of which 316 (96.3%) could be included in the analysis. Fifty percent of the participants were male. The age distribution was 63% between 15-35 years and 29% between 36-64 years. The majority (75%) were of secondary school or university level. The analysis showed 92% found that they were treated professionally and respectfully by the pharmacists. Twenty one percent of the participants reported they were notified about the approximate waiting time, while 19% reported that this was never done. The pharmacy waiting area was evaluated as comfortable by 64%, not comfortable by 23%. The waiting time in the pharmacy was considered intolerable by 17%, long by 51% and reasonable by 27%. Eighty-six percent of the participants said they got information and clear answers to questions about their medications, while 1% said they never got answer to their queries. Eighty eight percent reported difficulties in reading the instructions written on the medicines. Seventy-three percent of the participants reported satisfaction with the pharmacy services. Current strengths are professionalism and respectfulness and clarity of written and verbal information. Areas needing improvement are: advance notification on waiting time, reducing waiting time

and making waiting area more comfortable.

OUTPATIENT PHARMACISTS' INTERVENTIONS IN SULTAN QABOOS UNIVERSITY HOSPITAL, OMAN

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Sultan Qaboos University Hospital (SQUH) is a government-funded tertiary care teaching hospital. The outpatient pharmacy in SQUH dispenses an average of 350 prescriptions daily. In the year 2004, a total of 144,807 prescriptions containing 343,222 items were dispensed. Through their interventions, pharmacists ensure the accuracy of prescriptions and collaborate with doctors to optimise pharmacotherapy. However, no previous comprehensive study has attempted to determine the number and types of pharmacist interventions in an outpatient setting. A two week prospective interventional study, conducted at outpatient pharmacy in SQUH in 2004, established data on: 1) Number and types of interventions in the outpatient area; 2) Time involved in such interventions and 3) Clinical significance of the interventions. The study included all prescriptions received at the outpatient pharmacy with an intervention. During the study period 2,475 prescriptions were received, of which 103 required an intervention. In these 103 prescriptions, 201 interventions were made. Fifty-one percent of the interventions were administrative and 49% were clinical. In 52% of the administrative interventions the doctor's contact number was not on the prescriptions and 4% of the prescriptions were without doctor's signature. Seventy-six percent of the clinical interventions were problems in the drug's regimen and 24% due to the choice of drug. The pharmacist had to call the prescribers in 61% of the cases, another pharmacy colleague in 16%, and to consult the patient in 15%. The prescriptions were corrected and finally dispensed in 83% of the cases. Sixty percent of the interventions took < 10minutes, while 17% took > 20 minutes to be solved. The total time spent on interventions during the study period was 39 hours which exceeds the weekly working hours (37 hours) of a full-time pharmacist. The potential clinical significance showed improved effectiveness in 58% of the cases, reduced effectiveness in 2%, avoidance of toxicity in 32%, increased toxicity in 1% and unknown in 7%. The grading of clinical significance showed that interventions prevented potential fatality or end-organ damage in 4% of the cases and were of major clinical significance in 34%, moderate in 48% and detrimental in 1%. Pharmacist interventions therefore led to modifications of prescriptions for different drug-related problems and contributed positively to the quality of pharmacotherapy. They prevented potentially fatal or end-organ damage in 4% of the cases. If a pharmacist were posted in clinics, most of these problems could have been averted 76%.

LEARNING FROM OUR OWN MISTAKES: TENOXICAM AND TAMOXIFEN

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A computer-generated prescription was received in the pharmacy department for a 64 year old female. She was prescribed tenoxicam tablets 20mg once daily. The pharmacy technician prepared the prescription and it was checked and dispensed by another technician. The patient discovered that tenoxicam tablets were missing and tamoxifen tablets 20mg were dispensed instead of tenoxicam. She did not take any of the medications since she was fully aware of her disease, condition and medications and returned them to the pharmacy where the error was corrected. Medication error has occurred between tenoxicam and tamoxifen despite their use to treat different conditions and different storage shelves in the pharmacy. From our perspective, the similarities between the names, in addition to similarities in the route of administration, dosage form and dosage quantity may further increase the risk of confusion between tenoxicam and tamoxifen, particularly if healthcare providers are not educated concerning this potential for confusion. Clearly, patients with rheumatic disease or breast cancer who mistakenly receive an incorrect medication could experience severe health consequences, in addition to not receiving the appropriate life saving medication. A study reported that 83% of errors are discovered during counselling and corrected before the patient leaves the pharmacy. Medication errors caused by similar drug names may result in adverse events that cause harm to the patient, especially when two products have different uses. People who are especially vulnerable are the old, those on polypharmacy or those with concomitant medical conditions. However, few procedures exist to ensure safety. Therefore drug appropriate solutions must be identified to reduce the potential for confusion between products with similar names. Patient counselling plays an important role in preventing and reducing medication errors.