THE REFLECTION

Wilayat Muscat Health Services Newsletter
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For Health Care Workers

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"We just ignore them. They never harm living people!"

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Messages to the Editor

Dear Dr. Al-Lawaty,

I would like to express my deep thanks and appreciation for sending me a copy of your newsletter entitled "The Reflection". I see it is a valuable document that should be circulated to all the member states in the Gulf as well as other interested agencies or bodies. Best of your luck in your endeavor.

With kindest regards. Sincerely.

Dr. Tawfik A M Khoja
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Dr. Hassan Ahmed Jawad Al-Lawaty
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Terms for Participation in *THE REFLECTION*

THE REFLECTION welcomes your participation in the quarterly published issues. To streamline the participations, please note the following:

1. Items intended for participation in *THE REFLECTION* must be related to medicine or health care issues. This includes issues that 'affect' human health or health care like some environmental issues.
2. All participations must be typed in a MS-word. Use the following formatting: portrait page orientation, page margins 1.5 cm on each side, Tahoma font, font size 10, 1.5 spacing.
3. Items can be emailed to the editor or sent on a digital storage means (preferably a recordable compact disk).
4. Maximum item size is one page using the formatting mentioned in term 2. Items longer than that will have to be reformed to suit this term.
5. Items can include graphics. All photos must be either in GIF or JPEG formats and maximum graphic digital size is 30 KB.
6. Items must include a title; writers full name, place of work, designation, email, and contact details.
7. Items must be written by the contributor. Items including major amounts of copied sections from other published or printed material will be not be accepted.
8. All references must be included. Citations should follow one of the internationally accepted styles.
9. Whenever abbreviations are used, the full-hand terms are to be mentioned once at least.
10. Any item may get edited by The Editor.
11. Items may be accepted or rejected by The Editor. Reasons for so may not get disclosed to the contributor of the item.
12. Items sent for participation will not be returned to the contributors whether they are accepted or rejected.
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14. *THE REFLECTION* is a non-profit-making publication, hence all participations are accepted as voluntary contributions.
15. Articles, graphics, photos, content& items must not bear any financial, commercial or family interest in pharmaceutical or biomedical companies or the medical industry or in organizations providing health care with the intention or purpose of promoting their products.

Occupational Hazards in Health Care

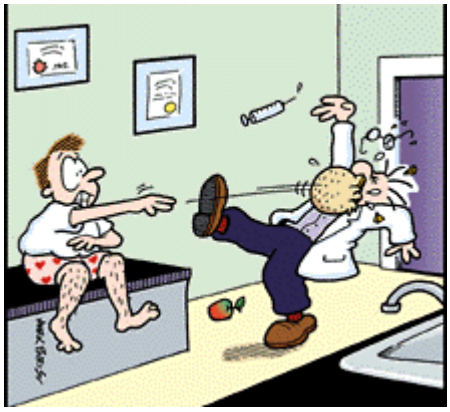
68 cases of homicides were inflicted in the health care services in USA in the period 1996-2000 according to the figures by the Bureau of Labor Statistics. Considering the fact that homicide is the extreme of the hazards, this figure would represent the tip of the iceberg. In 2000 the incidence of injuries resulting from assaults to health care workers in the states was 9.3 cases per 10,000 full time workers. The incidence was 15 for social workers and 25 for nurses.

The National Crime Victimization Survey (1993-1999), conducted by The Department of Justice in states listed the average annual rate for non-fatal violent crime for different occupations. These are some of these figures (per 1000 workers):

- All populations: 12
- Physicians: 16.2
- Nurses: 21.9
- Mental health workers: 68.2

With the outpouring of mental health patients into the primary health care centers, we can expect the figure to increases steeply. Keep in mind that these figures are very likely to be lower than the actual situation due to the underreporting of these incidences. And although these figures are from the USA institutions, the problem of workplace violence and crime is global and crosses all boundaries simple because the it's risk factors are

more related to the nature of the health care environment than to the specific geographic area where it is given. Now, if we are –and we are indeed– thinking of the quality of health care services to



the patients and clients of this dynamic, busy and vital industry and service, the issue of workplace safety becomes vehemently and inescapably crucial. We cannot expect a physician or a nurse to care much about the issue of quality assurance or quality improvement when he/she have deep concerns about their safety. We cannot lay complicated plans for 5 years or 10 years to upgrade the services and meet or beat clients' expectations of quality health care services when the simplest building blocks of those plans –namely the human resources- are demotivated and demoralized due to the lack of measure reasonably ensuring their workplace safety.

Safety costs money, but lack of safety costs more money and more than money. Professional safety requires more human resources, but lack of safety decreases the effectiveness and efficiency of the existing human resources. From a Management Information System point of view, it is not only the number of personnel in the workplace that matters, but the average yield of those human resources. It would become a near certainty that a reasonable investment in the workplace safety would have significant qualitative and quantitative revenues for the health care system anywhere and anytime.

Dr. Hassan Al-Lawaty

"That's our new mission statement."

"My husband won't need an anesthetic. Just show him an estimate of the charges before the operation."

"Doctor, doctor, will I be able to play the violin after the operation?"

"Yes, of course..."

"Great! I never could before!"

*****

A man speaks frantically into the phone, "My wife is pregnant, and her contractions are only two minutes apart!"

"Is this her first child?" the doctor queries.

"No, you *idiot*!" the man shouts. "This is her *husband*!"

*****

"The doctor said he would have me on my feet in two weeks."

"And did he?"

"Yes, I had to sell the car to pay the bill."

*****

Patient: I always see spots before my eyes.

Doctor: Didn't the new glasses help?

Patient: Sure, now I see the spots much clearer

*****

Doctor: "I've got very bad news - you've got cancer and Alzheimer's"

Patient: "Well, at least I don't have cancer"

Family Unit System

Muscat Health Center Experience

Muscat Governorate is privileged to have 27 primary health care centers run by the Ministry of Health as well as many others run by other governmental bodies and private sector. However, the concept of looking after the whole family as a unit instead of individuals was not introduced into this system until the last quarter of 2005. Several health centers in the capital area (Muscat) were chosen to pilot the Family Unit System. Muscat Health Center was among these few. The following is a brief account of our experience with this system. The Family Unit System was put into function at the beginning of November 2005. This was preceded by customizing the electronic medical records' system to allow grouping patients into clusters of families and hence units. The database used the house number to identify clients in each family. The first digit of the house number was used a randomization key to cluster the families into the pre-allocated units (A, B, and C) using a simple mathematical algorithm. This allocation was arbitrary and it could be changed by the master user upon request or need. This procedure divided our clients population into three clusters of A, B, and C. Similarly, the crew of doctors in the health center was divided into three corresponding units. Educational campaigns were launched locally to advertise for this system and prepare the clients for the shift.

To ensure the continuity of services and to offer smooth, and uninterrupted services in the morning time, one doctor of each unit was made available. Therefore, no matter which unit you belong to, there will be a doctor from your own unit available to see you in the morning time. This shift necessitated removing the previous system of specialty clinics, therefore, there were no more diabetes or hypertension clinics on specified days. Patients with diabetes, hypertension or any other chronic disease, could be seen in any of the working days. This also meant that the same doctor could see a wider variety of patients at the same day, instead of seeing all diabetic or all hypertensive patient for one day. The antenatal clinic (ANC), which was running every working day, was continued to be run on all working days as much. The only change in ANC was to have the different units alternatively running it in a regular manner, so if unit A run the ANC today, unit B will run it tomorrow and C thereafter, and A thereafter. Obviously, a simple ANC calendar could be prepared in advance to extrapolate which unit is in ANC at which day. In this way, even if a patient who belongs to a specific unit is seen by another unit (as a walk in), she could be re-streamlined to follow up the subsequent visits with her proper unit.

Other services were offered in much the same way as before. However, the focus now in each service was on the family as well as the individual. Since each unit of three doctors looked after only one third of the population, doctor-patient bonding and rapport was made easier and better. Doctors found it easier to know more about their patients and their families. Patients knew which doctors to refer to for emerging needs. The concept of follow up was given a good momentum and the long-term care was improved. Tracing the defaulters for follow up was made easier when the whereabouts of patients were more readily available with their units. Even the Continuous Medical Education (CME) was improved by the sense of unit-unit competition for cumulative test scores.

The pitfalls of this system included doctor-to-doctor variation in the consultation time. This led to a variation of the pace at which the different queues of each unit where mobilized while waiting for the consultation. This issue was considered trivial and was solved by a bit of flexibility and "doctor-loan" between units whereby units helped each other when the patient load was considerable unequal. Our impression is that this system is successful and we recommend it for the rest of the primary health care centers.

Dr. Hassan Al-Lawaty

New guidelines for emergency cardiovascular care by American Heart Association

Dr. Abdul Kader Mansour, Sr. Specialist Anesthesia
Al Nahda Hospital

The objective of these revised recommendations is to improve survival from sudden cardiac arrest and acute life threatening cardiopulmonary problems. Some of the most significant new recommendations are as follows:

1. The lay rescuer no longer needs to assess signs of circulation before beginning chest compressions but should instead be taught to deliver 2 rescue breaths to the unresponsive victim who is not breathing and to then begin chest compressions immediately.

2. Instructions for rescue breaths are simplified: all breaths should be given over 1 second with sufficient volume to achieve visible chest rise.

3. A single (universal) compression-to-ventilation ratio of 30:2 is recommended for single rescuers of victims of all ages except for newborn infants.

4. For application of pediatric basic life support guidelines for healthcare providers, the definition of pediatric victim is modified to pre-adolescent victim. However, there is no change to the lay rescuer application of child CPR guidelines (1 to 8 years).

5. The importance of chest compression is emphasized. Rescuers will be taught to "push hard, push fast" (at 100 compressions per minute), to allow complete chest recoil, and to minimize interruptions in chest compressions.

6. For unwitnessed arrest, Emergency Medical Services providers may consider provision of about 5 cycles (or about 2 minutes) of CPR before defibrillation, particularly when the interval from the call to the Emergency Medical Services dispatcher to response at the scene is more than 4 to 5 minutes.

7. During treatment of pulseless arrest, about 5 cycles (or about 2 minutes) of CPR should be provided between rhythm checks. Instead of checking the rhythm or a pulse immediately after shock delivery, rescuers should immediately resume CPR, beginning with chest compressions, and they should check the rhythm after 5 cycles (or about 2 minutes) of CPR.

8. All rescue efforts, including insertion of an advanced airway, administration of medications, and reassessment of the patient should be performed in a manner that minimizes interruption of chest compressions. Pulse checks should be limited during the treatment of pulseless arrest.

9. For treatment of ventricular fibrillation or pulseless ventricular tachycardia, there should be only 1 shock, instead of 3 stacked shocks, followed immediately by CPR (beginning with chest compressions). This change is based on the high first-shock success rate of new defibrillators and the knowledge that if the first shock fails, intervening chest compressions may improve oxygen and glucose delivery to the myocardium, making the subsequent shock more likely to result in defibrillation.

10. For resuscitation of newborn infant, there is greater emphasis on the importance of ventilation and less emphasis on the importance of using high concentrations of oxygen.

The guidelines reaffirm that intravenous administration of fibrinolytics (tPA) can improve outcome in patients with acute ischemic stroke who meet the National Institute of Neurological Disorders and Stroke eligibility criteria. This should be done by physicians following a clearly defined protocol, as a part of a knowledgeable team, and at an institution committed to stroke care. To summarize: rescuers should push hard, push fast, allow full chest recoil, minimize interruptions in compressions, and defibrillate promptly when appropriate. The most important determinant of survival from sudden cardiac arrest is the presence of a rescuer who is trained, willing, able, and equipped to act in an emergency.

Murder by Grapefruits

Dr. Hassan Al-Lawaty

As much hospitality and generosity it may reflect, grapefruit juice, can be a murder weapon. Joke? No, it is not. Grapefruits juice is known to have ingredients (thought to be a psoralen compound, 6'7'-dihydroxybergamottin) which is responsible for inhibiting a liver enzyme called Cytochrome P-450 isoenzyme 3A4 (CYP3A4), which is responsible for metabolizing a wide range of compounds and drugs in the body. When the cytochrome is inhibited (either by other drugs or by grapefruit juice) the drugs and compounds which are to be "broken down" by it "escape the execution" and have a longer lifespan and float around the body for longer times. This leads to prolonged activities and heightened responses of these drugs. Now some of these drugs have serious side-effects in the body given a longer time to act or higher doses in the serum. Recently, reports were published in The New England Journal of Medicine (NEJM) about the risks of sudden death in patients taking oral Erythromycin due to the prolonged QT syndrome. The list of drugs which are known to exhibit increased serum concentrations upon inhibition of the Cytochrome is long and the drugs which prolong QT are numerous. It would be an imperative part of history taking to know if your patient tends to consume grapefruits or the juice. In fact, the next time someone offers you a glass of grapefruits juice (with an apparent nice smile on his/her face), give it a second thought. The hospitable gestures might be masking cold-blood intentions to murder you with a subtle, traceless, and an ingenious way, by grapefruits!!

Malnutrition Due to Infection and Infestation

Annie Abraham, Nurse, Muscat Health Center

The term malnutrition can be applied to any disorder that prevents an individual from achieving an optional nutritional state. Today, infections and infestations are major factors causing severe malnutrition among preschool and school children consuming ill-balanced diet. Some of the ille effects of infection and infestation include decreased food intake due to poor appetite and decreased food absorption due to vomiting and diarrhea.

The nutritionally relevant infections and infestations include:

1– bacterial infections: these increase the requirements for proteins and several other nutrients.

2– viral infections: children who suffer from repeated attacks of influenza are prone to develop malnutrition.

3– parasitic infections: hookworm cause loss of blood. Ascariasis reduces absorption of nutrients.

Effects of malnutrition on immune mechanisms include reduction of antibody production, reduction of phagocytic activity, and a change in the intestinal flora. The individual loses many advantages of food in the infections and these include calories, vitamins, and minerals and trace elements. The key to prevent infection-related malnutrition is to improve the individuals and family's awareness of the ways to prevent infections, improve food handling hygiene and public health and sanitation.

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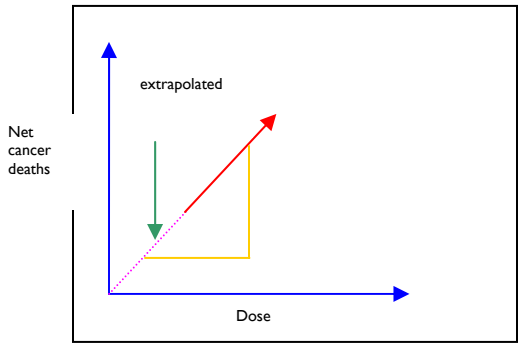
Ionizing Radiation

Asma Aziz, Radiographer, Muscat Health Center

It is well known that radiation is potentially harmful to living systems as it can directly interact with molecular structure and cause damaging changes. Experiments have repeatedly shown that exposure to large doses of ionizing radiation results in elevated risks of cancer, thus radiation is considered a known human carcinogen. The experimental data suggest a (non-threshold, dose-response relation ship) (figure-1)



Extrapolation of effects at higher doses using a straight line predicts that very small radiation doses have corresponding small risk of causing cancer. This straight line assumption is called linear non-threshold, dose-response relationship (LNT). The slope of this straight line can be used as a risk coefficient to compare radiation risks with other hazards. The LNT hypothesis implies that any amount of radiation will increase an individuals risk of cancer. Therefore, all radiation doses should be minimized or kept As Low As Reasonable Achievable (ALARA). ALARA means making every reasonable effort to maintain exposure to ionizing radiation as far below the dose limits as practicable . Medical exposure to ionizing radiation should only be carried out if it is justified clinically. **We recommend that medical authorities in health care institutions carry out regular clinical-radiological audits to ensure that all procedures requested by the clinicians are well justified.**

Managing Migraine

Dr. Nadia Hassan Al-Lawaty

Migraine headaches are major public health problem, it occur mainly in persons of working age. The impact on patients and their families can be tremendous. Patients with migraine headaches often present family physicians with diagnostic and therapeutic challenges.

Definition:

Migraine defined as hereditary paroxysmal disease with its origin in the brainstem nuclei.

Classification:

The classification of migraines is based on the clinical features of the headache. It classified into the form with aura [15%] , in which the attack is preceded by prodromal symptoms , aura (e.g visual disturbance) before the headache. Without aura [85%] , which begins directly with the headache.

Precipitating factors:

1-disturbance of the sleep –wake rhythm.

2-hypoglycaemia and changes in amount of stress.

3-hormonal changes, certain food type ,sensory stimuli(e.g. lighet,smells).

4-missed meals.

Symptoms:

Prodromal symptoms :on the day before the attack :yawning ,desire for sweets ,tiredness ,and change of personality. Aura symptoms: enlarging visual disturbance ,zigzag-shaped line ,numbness ,speech disturbance for 5-60 min. At the end of the aura: unilateral severe or moderate headache begins, which is followed by nausea and vomiting. A migraine without aura begins with the headache. A migraine aura can also occur without the following headache (temporal lobe epilepsy).

Diagnostic criteria for migraine with aura:

The patient has had at least two attacks during which

the following symptoms have occurred: The aura symptoms. The duration of the aura is more than 4 min. The aura is followed by a headache within 60 min.

Diagnostic criteria for migraine without aura:

The patient has had at least 5 headache attacks lasting for 4-72 hrs with at least two features from group A and at least one feature from group B associated with it .

A- Symptoms

The headache is pulsating, unilateral, moderate or severe and interferes with normal daily activity. Physical activity aggravates the headache.

B– Symptoms

Nausea and vomiting. Photophobia and phonophobia.

Goals of migraine treatment:

1-Reduce migraine frequency and severity.
2-Reduce disability.
3-Improve quality of life.
4-Prevent headache.
5-Educate and enable patients to manage their disease.

Treatment of migraine attack

Various approaches exist for the management of migraine headaches. In the 'step-care' approach ,patients with acute migraine attack are initially treated with the safest ,least expensive therapies and progress to the more expensive migraine –specific therapies when the initial treatment fails. In contrast, 'stratified –care' approach assigns treatment based on the severity of migraine –related disability. In a recent randomized trial ,the stratified –care approach was found to be superior to the step-care approach (JAMA 2000).

1-Non-medical treatment:

1. Rest in a quite ,dark room.
2. During a migraine attack ,drugs are best absorbed rectally or as effervescent tablets or in powdered form.
3- combining metoclopramide to other migraine drugs improves their absorption.

2-medical treatment:

Nnonspecific therapy: analgesics/NSAIDs and metoclopramide

Specific Abortive Migraine Therapy:

1-Ergotamine and it's derivatives: Ergotamine ,a 5-hydroxytryptamine (5-HT1) non-selective agonist, was the standard abortive migraine therapy. It now has limited use because of its potential for causing medication-overuse headaches and increasing the frequency of headaches, ergot poisoning and negative effects on migraine prophylactic medications.

The effectiveness of ergotamine depends on its administration at the onset of migraine pain.

2-TRIPTANS: Effective class of medications for migraines headaches, is the 5-HT1 ,Receptor –specific agonists. Triptans are usually reserved for use in patients that are unresponsive to analgesics or NSAIDs.

Contraindication to their use: ischemic vascular conditions, vasospastic coronary disease ,un-controlled hypertension.

Medications during Pregnancy and Lactation:

1-Paracetamol can be used throughout pregnancy. Tolfenamic acid and naproxen can be used in early pregnancy.

2-Triptans and ergotamine are contraindicated. Sumatriptan is known to be excreted in breast milk ,as probably also other triptans.

Preventive Therapy:

1. Maintaining a steady sleep-wake rhythm and taking meals regularly, avoiding precipitating factors.
2. Consider preventive medication if there are 4 or more attack in a month.
   A- Beta-blockers.
   B- Amitriptaline.

Staff of Month

May 2006 (Muscat Health Center)

Mr. Mohammed Saleemuldin, Assistant Pharmacist

June 2006 (Muscat Health Center)

Mr. Mahmood Said Hedaib Al-Ghammari, Receptionist

July 2006 (Muscat Health Center)

Ms. Marykutty Thomas, Nurse

June 2006 (Yeti Health Center)

Shinu Anie Eapen, Nurse

June 2006 (Seefa Health Center)

Saif Al-Jabri, Nurse

One Step Forward

Dr. Ahdab Abdil Hafidh

MRCOG-I

Obstetrics and Gynecology (June 2006)

Dr. Safia Satti M. Zeyada

Canadian Evaluating Exam (June 2006)