

Baby Care: Worldwide

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The birthing process and the delivery of a baby is one of the most emotional events in the life of a family. Although the objective of ensuring a healthy outcome is universal, the kind of care given to a healthy newborn varies from one culture to another. Modern hospital practices coupled with understanding the benefits of ideas and customs from pre-industrial cultures in "baby care" may provide optimal health for infants. Significant scientific and psychological advances have been achieved in infant feeding practices, mother-infant relationship, bonding, attachment and family participation in hospital care for parturient mothers and their infants. Combined efforts by the public and health care personnel are required to reduce both infant mortality and morbidity further.

#2 Thursday, July 4 9:00 A.M.

Comparison of CT and Chest Radiographs in Evaluation of Post-Therapy Lymphoma Patients

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Successful treatment of lymphoma is dependent both on precise staging at initial diagnosis and assessment of residual or recurrent disease. Early detection of relapse is of paramount importance for effective therapy and cure. Serial chest radiographs are routinely used for follow-up of the lymphoma patients in order to assess treatment response or recurrent disease. We compared the efficacy of thoracic CT with chest radiograph for detection of complete response to treatment, residual or recurrent disease in post-therapy lymphoma patients. 37 CT scans were performed in 28 patients (21 Hodgkins, 7 non-Hodgkins). The CT and chest radiographs were reviewed independently and graded at 3 levels of confidence for evaluation of intrathoracic recurrence. In 10, CT corrected the misinformation provided by the chest radiograph, leading to significant alteration in the management of patients. The CT increased the level of confidence over chest radiographs by a scale of one in 13 and by a scale of 2 in two instances. Additional morphologic information was obtained in all the CT scans. Since CT scan is readily available in the United States we recommend thoracic CT for the post treatment follow-up of lymphoma patients.

#3 Thursday, July 4 9:15 A.M.

Effect of Antibacterial Drugs on Antibiotic-Sensitive and Resistant Clinical Isolates

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The present study has been basically a two-dimensional experimentation. One, the isolation and characterization of a number of Gram-negative strains from clinical source were processed. Characteristically, the selected clinical isolates, belonging to *E. coli*, *K. pneumoniae*, *Ps. aeruginosa*, and *P. vulgaris* Sp., were resistant to four antibiotics/drug — Ampicillin, Chloramphenicol, Streptomycin, and Sulfanilamide. Each strain harbored selftransmissible intercalating-agent curable R plasmids. Curing of each strain yielded its sensitive (R-) isogen. Secondly, the effect of chelating agents—EDTA, CDTA, HDTA, and other surface perturbants/drugs on R+ and R- cells and their isolated cell envelopes were recorded.

The parameters, identified during the investigational schedule, depicted that the cell-chelator interaction resulted in an increase in antibiotic-susceptibility, leakage of 260 nm-absorbing material, and a decreased viability. Pre-treatment with chelators facilitated more pronouncedly the release of periplasmic proteins, enzymes, and membrane phospholipids. *P. aeruginosa* and R- isogens were drastically affected. CDTA proved to be the most active chelator, followed by EDTA and HDTA.

The quantification of extent of lysis, readily extractable lipids, and divalent cationic release in R+ and R- cell envelopes, treated with chelators, testified the CDTA superiority with invariable susceptibility of R- isogens.

Computing the data, it is tentatively inferred that specific difference between resistant (R+) and their sensitive (R-) counterparts could be attributed to the intrusion/replacement of a newer protein into the R+ cell envelopes.

Evaluation of Malignant Brain Tumor by Serial Computed Tomography (CT) and Angiography in Pre and Post Blood Brain Barrier Disruption-Chemotherapy

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Sixty-five blood brain barrier disruption (BBBD) procedures on fifteen patients were performed to treat the advanced malignant tumor. These patients had a complete course of radiotherapy and single or multiple surgery. These later approaches could not alter the course of the neoplasm. As a last resort intra arterial administration of the chemotherapeutic agent after osmotic BBBD was initiated. All of these patients had thorough evaluation of the extent, scope, vascularity and aggressiveness of the tumor by means of CT and cerebral angiography as pre and post BBBD protocol. These imaging modalities definitely revealed the change in the natural history of the brain tumor so facilitated the appropriate modification of the treatment planning. A detailed discussion of the role of CT and selective angiography is presented in this paper.

#5 Thursday, July 4 9:45 A.M.

Calcium Blockers and Mixed Angina

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Concepts regarding the pathogenesis of myocardial ischemia and resultant angina have evolved remarkably over the past decade. Previously fixed stenosis of one or more coronary arteries was considered the sole cause of angina. Now, there is well-established evidence that dynamic coronary obstruction due to excessive vasomotor tone (spasm) may play an equally important role. "Mixed angina," a term coined by Maseri (*British Heart Jr.*, 43:648, 1980) to describe patients who have angina caused by a combination of an atherosclerotic lesion and coexisting vasoconstriction is being recognized with increasing frequency in cardiology practice.

The calcium-channel blockers are to the 80's what the beta-blockers were to the 60's and 70's. The three calcium antagonists currently available (Diltiazem, Nifedipine, and Verapamil) have the unique property of inhibiting or "blocking" influx of calcium ions into the muscle cell during the plateau phase of the action potential. It is believed that this rise in intracellular calcium concentrations is the initiating factor for interactions of the myo-filaments resulting in contraction. The calcium blockers are the first group of agents which relieve myocardial ischemic pain both by increasing the supply of blood as well as reducing the demand by the myocardium. They have been shown to produce excellent therapeutic responses in patients with mixed angina.

#6 Thursday, July 4 10:00 A.M.

Macular Degeneration: A Common Blinding Disease

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Senile macular degeneration (SMD) is the leading cause of blindness in the United States today. At least 80% of patients with macular degeneration are legally blind by the age of 70 years. The atrophic form is more common and consists of drusen and retinal pigment disturbance causing blindness in 12% of the patients. The exudative form consists of subretinal neovascular membrane (SRN) which causes subretinal bleeding and exudation with eventual subretinal and retinal scar formation causing blindness in 88% of patients. The diagnosis is established by direct and indirect ophthalmoscopic examination, Goldman contact lens examination, Amsler grid, and Fluorescein angiography test.

A recent SMD study of photocoagulation treatment showed that 60% of untreated eyes, as opposed to 25% of treated eyes, progressed to severe visual loss. Treated eyes had SRN 200 microns or more from the center of the foveal avascular zone (FAZ). Patients with SRN less than 200 microns from the center of FAZ (Juxtafoveal) pose an especially difficult problem because of: A. Xanthophyll pigment, B. Hemoglobin of the parafoveal capillaries, C. Photoreceptor cells. Blue laser (475.5mm) absorbed by A, B, and C, and Green laser (514.5mm) absorbed by B and C may be dangerous. Red krypton (647.2mm) is the best because it is not absorbed by A and B and causes very negligible damage to C, as its effect is in the choroid where the subretinal neo is located. Advantages of red krypton include: red wavelength is not absorbed by hemoglobin, red wavelength is scattered less by opacities in ocular media, red wavelength has negligible absorption by xanthophyll in fovea, and improved uptake by choroid. The disadvantages include: increased uptake by choroid which may increase choroidal hemorrhage and edema causing discomfort, poor uptake in hypopigmented eye, and poor uptake by HB in acute hemorrhage during photocoagulation.

Hypoplasia of Optic Disc and Systemic Changes

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Hypoplastic optic disc is a congenital abnormality in which the size and the function of the optic nerve are drastically deficient. It may occur as an isolated anomaly, but in other cases may be associated with serious systemic, neurologic, and endocrinic disorders. Hence, retarded growth, deficiencies of several trophic hormones, lack of growth hormone, diabetes mellitus, absence of septum pellucidum, partial or total agenesis of corpus callosum (called septo-optic dysplasia or de Morsier syndrome), and dysfunction hypothalamic-pituitary axis have been recorded. In addition to a loss of sight, the systemic changes in infants and children with hypoplasia of the optic disc may require urgent attention. Conversely, some patients may be subjected to craniotomy and other serious and expensive treatments if hypoplasia of the optic disc is not recognized. Authors give examples of a patient with de Morsier syndrome who underwent craniotomy for seizures under the erroneous impression of having brain tumor. The patients with optic disc hypoplasia should have endocrinic and neurologic evaluation unless strong clinical evidence exists against doing so.

The Theory of Limitations

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This is an original and revolutionary theory. The author has developed this theory based on certain Qur'anic revelations. This Theory of Limitations proposed that everything — all animate and inanimate objects, space, time, and energy, have limitations. Albert Einstein and Heisenberg proposed the limitations of some physical quantities such as the speed of light and location of a body in space and time or the uncertainty principle respectively. Based on this theory of limitations the following startling predictions are made:

1. The concept of zero is relative.
2. There is no such thing as infinity — positive or negative.
3. Matter, both animate and inanimate will die, decay or disintegrate.
4. Absolute vacuum does not exist in space, on earth or in the laboratory.
5. The Universe cannot expand indefinitely. It should come to a stop due to either the limit of space or the limit of time.
6. Time cannot go forever. Because there is a limit, there is no such thing as eternal, eternity or immortality.

Applying the Theory of Limitations to medicine and health, it is easy to prove that there is no perfect medicine, drug or health. The Theory of Limitations could be applied not only to man's life, longevity, health, and well-being, but also to such diverse areas as knowledge, history, matter, space, and energy.

Serum Copper and Ceruloplasmin Changes in Cases of Stable and Unstable AnginaM. R. Ajmal, M.D. and Aslam Khan, M.D., Department of Medicine,
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Recent work on cardiovascular ailments has revealed that there exists an experimental, clinical, and statistical evidence of diagnostic significance of trace elements in cardiovascular diseases. Statistically significant rise in serum copper and ceruloplasmin levels following acute myocardial infarction is now well established and this is thought to result from secondary systemic response rather than from tissue damage. These observations prompted us to carry our serial estimation of serum copper and ceruloplasmin in patients of stable and unstable angina.

In the present study we included eleven cases of stable angina, seven cases of unstable angina, and twenty-five healthy subjects as control group. Serum copper and ceruloplasmin levels were estimated on first, third, fifth, and seventh day following chest pain in all these patients. In cases of unstable angina, serum copper and ceruloplasmin underwent a transient but statistically significant rise on third day, reached a peak value on fifth day, and returned to normal on seventh day. In cases of stable angina, the levels of serum copper and ceruloplasmin were no more different from the control.

These observations suggest an immense role of serum copper and ceruloplasmin estimation in the diagnosis of unstable angina.

Ten Commandments of Good Sleep

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A good night sleep is essential for effective functioning during the day. The following general guidelines are suggested to get a restful sleep:

1. Thou shalt not stay in bed too long.
(Most insomniacs spend too much time in bed waiting for sleep.)
2. Thou shalt avoid daytime naps.
(Daytime naps usually cause poor sleep at night.)
3. Thou shalt maintain the circadian cycle.
(Waking up at the same time daily helps in maintenance of circadian rhythm.)
4. Thou shalt avoid stimulants after lunch.
(The stimulant effect of caffeine and colas may remain for hours.)
5. Thou shalt not take a toddy before bedtime.
(Alcohol helps in sleep onset, but causes frequent awakenings and reduces amount of total sleep time.)
6. Thou shalt not go to bed hungry.
(Tryptophan-containing food like milk or tuna may be helpful.)
7. Thou shalt not smoke.
(Cigarette smokers and people trying to quit have poor sleep.)
8. Thou shalt exercise regularly.
(Vigorous exercise now and then may cause insomnia.)
9. Thou shalt keep the bedroom at a comfortable temperature.
(Extremes of temperature disturb sleep.)
10. Thou shalt keep the noise down.
(Snoring spouses and airplanes disturb sleep.)

Lung Cancer

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Lung Cancer is the leading cause of cancer deaths in males and is expected to replace breast cancer as the leading cause of cancer deaths in females. A number of risk factors are involved in the etiology of lung cancer, but cigarette smoking is by far the most important and dwarfs all others. In recent years, adenocarcinoma has become the most common cell type, replacing squamous cancer. Bronchogenic carcinoma, because of its initial stringy nature, does not usually become a well circumscribed coin lesion until it reaches a size of around one centimeter. Other factors which may point to a benign nature of the solitary nodule are sharply circumscribed margins, central diffuse or laminated configuration of calcium deposition, and lack of significant enlargement for a period of two or more years. Use of doubling time in estimating growth rate may be of value in differentiating benign from malignant nodules in individual patients. Utilizing thin section CT slices from the nodule and a diagnostic lung nodule phantom it is now possible to identify calcifications in some lesions that may not be seen on conventional linear tomography. Treatment for lung cancer is contingent on TNM staging. Apparently, none of the non-invasive staging procedures, singly or collectively, can totally replace mediastinoscopy for accurate preoperative staging of lung cancer. Surgical resection, whenever possible, is the treatment of choice for non-small cell carcinoma. Small cell carcinoma, generally speaking, is inoperable by cell type alone and is managed with chemotherapy in conjunction with radiation therapy. Laser bronchoscopy using the Nd-Yag laser has proved to be an effective palliative tool for nonresectable endoscopically visible tumors in major bronchi with subtotal obstruction. Symptomatic benefit is immediate and the complications of the procedure can be minimized by effective preoperative imaging techniques including nuclear magnetic resonance which separates the vascular densities from solid masses so that laser can be aimed selectively.

Recent Advances in Orthopaedic Surgery

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In the last few years, great strides have been made towards better management of difficult musculoskeletal problems. The most exciting and promising is the area of "Free Tissue Transfer" using micro vascular surgical techniques. Toe to hand transfer for the reconstruction of thumb is now a practical and fairly common procedure. Distant transfer of vascularized skin flaps and motor muscle units hold great promise for major reconstruction and functional rehabilitation of the extremities. Similarly, Living Bone Graft is being used to bridge large bone defects secondary to trauma or tumor resection. A revolutionary and very practical concept is the use of induced electrical field for the treatment of recalcitrant non-unions and congenital pseudoarthrosis of the long bone. Arthroscopic techniques have advanced from purely diagnostic to highly sophisticated surgical repair of meniscal and ligamentous injuries of major joints. Total replacement arthroplasty of the major joints have slowly shifted from the use of acrylic cement to biological fixation of implants constructed out of more biocompatible materials. A major research effort is underway in the use of fixation devices made of controlled "Biodegradable" materials for the use in osteosynthesis, so that by the time bone heals, the implant is disintegrated and resorbed, thus eliminating secondary surgical intervention.

Molecular Genetic Strategies in Neurologic Diseases of Undetermined Etiology

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In many genetically transmitted neurological diseases, the responsible metabolic or structural defect is unknown.

Molecular genetic strategies employing recombinant DNA techniques are being utilized to overcome this problem. Linkage analysis of restriction fragment length polymorphisms (RFLPs) allows increased accuracy of carrier detection and prenatal diagnosis. Gusella et al¹ using RFLP linkage analysis have been able to map the gene for Huntington's disease to chromosome 4. Similar work by many groups have localized the Duchenne muscular dystrophy gene to Xp21 region of the X chromosome.^{2,4} Roses et al are searching for RFLPs that will serve as flanking markers to the myotonic muscular dystrophy gene which has been localized to chromosome 19.

Gene cloning can be accomplished by chromosome walking from DNA markers tightly linked to the gene in question. This will allow the identification of faulty gene products and lead to the designing of rational gene therapy.

1. Gusella, J.F., et al: A polymorphic DNA marker genetically linked to Huntington's disease. *Nature* 306:234-238, 1983.
2. Francke, U., et al: Minor Xp21 chromosome deletion in a male associated with expression of Duchenne muscular dystrophy, chronic granulomatous disease, retinitis pigmentosa, and McLeod syndrome. *Am. J. Hum. Genet.* 37:250-267, 1985.
3. Martinville, B. de., et al: Localization of DNA sequences in region Xp21 of the human X chromosome: Search for molecular markers close to the Duchenne muscular dystrophy locus. *Am. J. Hum. Genet.* 37:235-249, 1985.
4. Bakker, E., et al: Prenatal diagnosis and carrier detection of Duchenne muscular dystrophy with closely linked RFLPs. *The Lancet*, March 23, 1985.

Serologic Diagnosis of Rheumatic Diseases

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Immune aberrations are a major clinical and pathogenetic component of several rheumatic disorders. Serologic markers can thus be used to aid the diagnosis and follow-up of these diseases. Current discussion will address some commonly used tests.

Test	Rheumatic Disorders Associated	Specificity	Follow-up value
1. Rheumatoid Factor	Rheumatoid arthritis - 70%	+	+
2. Anti-nuclear AB. (4 patterns)	S.L.E. 95%, Drug-induced L.E.-100% Scleroderma 40%, R.A.-25%, other	Variable	++
3. Anti-DNA AB.	S.L.E. 60-80%	+++	+++
4. SS-B	Sjogren's syndrome-70%	++	
5. Complement components	in immune-complex (IC's) mediated disorders	±	++
6. Circulating IC's	in IC' mediated disorders	±	++

These tests are not adequately standardized. Reference to normal values established at each laboratory is critical for intelligent interpretation.

Plague, Politics and Profits

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A modern day epidemic of death and disease has been linked to tobacco use. The scientific evidence has clearly implicated smoking as a primary cause for coronary artery disease, chronic pulmonary disease and a variety of cancers. What is less well established or recognized, is the vector for the spread of this habit. During the past ten years, in the United States, we have seen a leveling off of tobacco use. During the same time period, there has been an alarming increase in third world smoking, including some countries with large Muslim populations.

The epidemiology of this problem is directly tied to the efforts by the major tobacco companies to market their products. This marketing involves sophisticated advertising campaigns which sell cigarettes as a key to seductive lifestyles. The effectiveness of these marketing tools is clearly apparent by the recent increase in tobacco consumption in third world populations. This fact dispels the tobacco industry's assertion that advertising is responsible only for brand preference and not for an increase in tobacco use.

The international tobacco story frequently reveals collaboration with national governments. These governments provide favorable commerce and trade environments for tobacco production and sales. Governments receive tobacco sales taxes and sacrifice the health of their people.

Sudan now leads the world in a responsible approach to this problem. All cigarette packaging must contain health warnings; no tobacco advertising is permitted and smoking is prohibited in closed public places.

Towards an Understanding of the Healing Effect of The Quran

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The first phase of the study was concerned with whether the Quran has any effect on the functions of the organs of the human body. A definite stress reducing effect was found and recorded by means of computerized electronic physiological monitors. This was reported to this association in 1984. The second phase of our research was to determine whether the sound or the meaning of the Quran was responsible for its healing effect. In 210 trials, healthy non-Muslim non-Arabic speaking volunteers listened to Quranic readings and non-Quranic Arabic readings (as a placebo) without being able to recognize or identify the test. The effect of these readings on muscle tension and electrical potentials within skeletal muscles was recorded as in the first phase. The third phase of our studies was to determine the difference between the effect of Quranic verses carrying good news and promising rewards (TARGHEEB) and the effect of those verses carrying bad news and promising punishment (TARHEEB). In 233 trials, Muslim Arabic speaking volunteers listened to alternating sessions of the two varieties of Quranic verses while their electromyographic response was recorded. The results of the second phase trials showed that the sound of the Quranic words by itself has a stress reducing effect although not as pronounced as when sound and meaning are combined, as was determined during the first phase studies. The third phase trials showed that verses carrying good news and promising rewards were more effective in producing the desired stress reduction. Based on the available limited information, we may assume that the healing effect of the Quran is achieved, at least in part, through its stress-reducing effect on the autonomic nervous system and on various other organs of the body, and possibly by stimulating the body's immune mechanism.

#17 Friday, July 5 9:15 A.M.

An Analysis of the Typical Diet of Selected Indian/Pakistani Adult Muslims in North America

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This study documents the total calories, fiber and sodium content of food consumed by 32 participants in five states. Participants recorded the actual size of the servings for each meal consumed for a week. Incentives were offered for participating in the survey. Total calories, fiber, and sodium content of food items were calculated from the recipes provided by the participants. The results of limited survey indicate a radical departure from the traditional diet and also incredibly huge portions were being consumed. Sixty-five percent of those surveyed were eating much more than the recommended intake of 2,500 calories a day. But, the most astounding statistic to come from the survey shows that the sodium intake is 2400-6900 mg. Diet was generally low in fiber. More red meat is consumed than fish. Vegetables were generally over cooked. Traditional meals of boiled rice, meat dish with/without vegetables and homemade bread was only served by 60% and that too was usually for supper or evening meal. At least one meal was bought from the ubiquitous fast-food establishment offering such American cuisine as hamburger, fried chicken, donuts, pizza, hot dogs, pancakes, and even Tex-Mex tacos.

#18 Friday, July 5 9:30 A.M.

Toward a Better Understanding of Hospital Feeding Formulas

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Recent advances in the science and technology of Human Nutrition and Human Health have made possible the development of a variety of Hospital Feeding Formulas tailored to meet the growing demands for total or supplemental nutrition for prevention, management or treatment of a disease. The use of a great variety of ingredients of plant, animal or chemical origin for their functional or nutritional qualities to fabricate an anti-diarrhetic, economically feasible, hypoallergenic, isotonic, long shelf-life, palatable, stable Hospital Feeding Formula with electrolyte balance, low renal solute load, and osmolality, makes the task all the more challenging and rewarding.

In this paper the author has outlined major nutritional rationale and functional considerations in the fabrication of a versatile, Hospital Feeding Formula designed to meet over 90 percent of the needs of any health care facility fit for total or supplemental gavage or oral feeding. Data on ingredients, additives, and sources are presented and need for the commercial production in the developing countries, particularly the Muslim countries, which are under invasion or occupation is emphasized.

Cigarette Smoking and the Eye: Toddler's Eye-Smoking Syndrome (TESS)

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Smoke from cigarettes causes irritation of mucous membranes including the conjunctiva, loss of sense of smell, allergic reactions, and well known, but rare toxic amblyopia. Another entirely ignored, potentially blinding complication of smoking in need of urgent attention, is ocular burns in toddlers caused by the lighted cigarettes in the hands of adults. The typical situation is that of a smoking adult, usually a mother or a grandmother, while in the company of other adults gets involved in conversation, forgetting the lit cigarette in her hand. A toddler is left on his own. Before anyone knows, the toddler runs toward the unattentive smoking adult and jabs his eye into the lit cigarette. Author has treated 19 cases of cigarette ocular burns in toddlers. In two cases child abuse was involved. It is stressed that the best preventive measure for Toddler's Eye-Smoking Syndrome is awareness by the physician and dissemination of information to the public about the syndrome.

#20 Friday, July 5 10:00 A.M.

Pursed Lips Breathing (PLB) in Chronic Obstructive Pulmonary Diseases (COPD)

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PLB in patients with COPD often gives immediate symptomatic relief from dyspnea. We decided to study the mechanism of this phenomenon in ambulatory COPD patients.

Six adult COPD patients, 4 men and 2 women, age range 50-83 years (mean 64 yrs), with an FEV₁ range of 15-68% of predicted (mean FEV₁ 34%), DLCO 15-70% predicted (mean 54%) were studied during PLB, timed frequency breathing (TFB) which was a rate comparable to the PLB rate and the non pursed lip breathing (NPLB). The following parameters were recorded: a) subjective relief from dyspnea graded from mild, moderate to maximal; b) breathing pattern including respiratory rate (RR), tidal volume, total expiration (TE); c) specific airway conductance (SGAW); d) airway pressures in cm H₂O (RA); e) lung volume including Functional Residual Capacity (FRC); f) volume of trapped gas. The results are tabulated.

		RR/min	TE in sec	FRC/L	RA	SGAW	Subj. Imp.
NPLB	Range	9-24	1.41-3.08	3.43-4.95	.05-.68	0.21-.117	—
	Mean	19	2.04	3.78	.26	.07	
TFB	Range	7-18	1.73-2.65	3.59-5.20	-	-	No change
	Mean	13	2.37	4.09			
PLB	Range	7-21	1.80-5.16	3.34-4.56	2.13-10	0.23-0.76	2 - Mild
	Mean	14	3.23	3.61	5.64	.05	3 - Moderate 1 - Maximal

*Statistically significant P .05

Our study confirms that PLB in COPD patients gives a) symptomatic relief from dyspnea, b) the breathing pattern was more efficient, c) airway pressures are increased, d) unlike the previous studies there was a significant drop in FRD during PLB, e) the respiratory muscle length/tension inappropriateness may be altered by the lower FRC leading to the relief from dyspnea.

Impact of the Peer Review Program (PRO) on Hospitals and Physicians

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Prospective Payment System DRGs are designed to limit the amount of payment to a hospital for any particular diagnosis, and the Peer Review Organizations are to police the hospital activities. Almost all state PROs now have a contract with the Health Care Financing Administration to perform the following functions: (1) Review of reasonableness, necessity, and appropriateness of hospital admissions. (2) Validation of diagnosis for determination of Medicare reimbursement. (3) Review of completeness and quality of care provided. (4) Review of completeness and appropriateness of outlier cases.

I will discuss the first and the third functions. This is done by performing preadmission review and retrospective review of all Medicare admissions. The result has been a decline in the number of Medicare admissions to hospitals. Getting a patient admitted to the hospital isn't as easy as it used to be, and it is going to become more and more difficult. A doctor must obtain approval from the PRO before admitting Medicare patients for certain surgical or diagnostic procedures.

On a retrospective review, the charts are reviewed several months after the patient has been discharged from the hospital. If the documentation was not adequate and/or the services provided were not necessary, that case is denied. This leads to a hospital's losing money. In some of the rural areas in the State of Missouri, the denial rate in rural hospitals has been up to 18 percent. Small rural hospitals are already in financial difficulty. Retrospective review of charts for quality of care also points out some problems for physicians. Where poor quality is identified by review of the chart, a process is set in motion which may ultimately lead to sanctions against physicians or hospitals. Discussion will focus on the recommendation for physicians of "How to survive under the Prospective Payment System and the PRO program."

#22 Friday, July 5 10:30 A.M.

Management of Diabetes Mellitus in Patients Undergoing Open Heart Surgery

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At St. Vincent Hospital, Indianapolis, between July 1974 to June 1980, a total of 3879 open heart procedures were performed of which 2,566 (66.15%) were myocardial revascularization (CABG) for coronary artery disease (CAD). There were 510 (19.9%) patients with CAD who had known diagnosis of diabetes (402 males 78% and 108 females 22%). Of these 510 patients, 158 (31%) were on Insulin, 315 (60%) were on oral agents, and 47 (9%) on diet alone preoperatively. Postoperatively 425 (83.13%) required Insulin at least for the first four days for control of diabetes. Twenty-seven such patients were very difficult to manage and showed initially, insulin resistance. They were treated by continuous infusion of Insulin for 12-14 hours at rates varying from 4-8 units per hour. At the time of discharge 250 (49%) patients were on Insulin, 164 (32%) on oral agents and 96 (18%) on diet alone. Infection rate in diabetic patients with satisfactory blood glucose control was 12% as compared to 6% in non-diabetics. Length of hospital stay was 14.5 days in non-diabetics as compared to 17.0 days in diabetics.

It is concluded that diabetes is very common in patients with coronary artery disease, becomes more Insulin dependent postoperative, and postoperative management may be challenging sometimes necessitating use of continuous infusion of Insulin. It is also concluded that diabetics, in spite of good postoperative blood glucose control, have higher infection rate and longer duration of stay.

#23 Friday, July 5 10:45 A.M.

An Experimental Study of the Effect of Periosteal Stripping on Limb Length in Rabbits

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Equalization of limb length involves either a shortening of the longer limb or a lengthening of the short leg. The lengthening of the short leg can be achieved by direct lengthening of the bone or by stimulation of the epiphyseal growth. Periosteal stripping has been suggested to stimulate bone growth. We have performed experiments on the hind limbs of 40 rabbits in an attempt to emphasize the importance of periosteal stripping as a useful and an easy method in attaining an increase in limb length. Three-month-old rabbits were divided into five groups of eight rabbits. Group A served as the control. In Group B, two vertical incisions of the periosteum down to the bone in the anteromedial aspect of the metaphyseal region were made. In group C, vertical incisions and stripping of the periosteum between the incisions was done. In Group D, the periosteum was incised circumferentially. In Group E, circumferential incision and elevation of the periosteum was done. The initial and final length was measured from medial condyle to medial malleolus of tibia with a vernier calliper. After eight weeks, there was no increase in Group A, 0.24% increase in Group B, 1.24% increase in Group C, 2.36% increase in Group D, and 3.21% increase in Group E limbs as compared to the other limbs. There was 43% increase in weight of these limbs after eight weeks. All these changes were statistically significant. The mechanisms of this overgrowth are not clear and may include circulatory changes, decompression of growth plate, and changes in electrical potentials of bone.

**Maternal and Cord Blood Glycosylated Hemoglobin, and
Protein Levels in Normal and Diabetic Pregnancies.
Relation to Maternal Blood Glucose Levels and Birthweight**

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A newly introduced affinity chromatographic method permits the measurement of total glycosylated fraction of both hemoglobin (GHB) and plasma proteins (GPR) and permits a true quantitation of the total glycosylated fraction of Hb in cord blood. Using this technique, we measured GHB, and GPR in maternal blood (during labor), and cord blood of 20 normal, 17 Class A, and 8 overt diabetics. The fasting, and two hour postprandial blood glucose levels (FBG, 2 hr. pp BG), during the last 20 weeks of pregnancy were recorded.

The groups were comparable as regards the maternal age, gravidity and gestational age at delivery. Maternal GHB was significantly higher in overt — but not in Class A diabetics — than in the controls ($8.9 \pm 0.9\%$ vs $7.0 \pm 0.6\%$). Maternal GPR was slightly but insignificantly increased in diabetics than in controls. Cord blood GHB and GPR was significantly higher in overt — but not in Class A diabetics — than in controls ($6.2 \pm 0.7\%$ and $13.4 \pm 3.7\%$ vs $4.7 \pm 0.7\%$ and $8.8 \pm 1.6\%$ respectively), indicating the presence of fetal hyperglycemia in overt diabetics.

The birth weight ratio was higher in the diabetics. Using linear regression, there was no correlation between BWR, and either the maternal or cord blood GHB or GPR. These results indicate that maternal/ fetal hyperglycemia is (are) not the only factor(s) contributing to fetal overgrowth in diabetes.

Maternal GHB and GPR levels were correlated with the average FBG, and 2 hr. PPBG levels over the previous 20 weeks of pregnancy to find the best indicator of the degree of metabolic control.

#25 Friday, July 5 11:15 A.M.

The Recent Advances in Cerebral Protection

Benjamin M. Rigor, M.D., Professor and Chairman, Department of Anesthesiology,
School of Medicine, University of Louisville, Louisville, Kentucky

Cerebral resuscitation or reanimation is the process of preventing additional damage and maximizing the recovery of normal function after an insult or injury. The fundamental approach to cerebral resuscitation is the utilization of pharmacotherapeutic intervention. Experimental results in the past have been difficult to interpret because of the lack of consistent objective criteria for therapeutic efficacy making comparison extremely difficult. Neurological deficit scores have the double disadvantage of inter-rate variability in subjective assessment and inter-patient variability in responses. Objective measures of cerebral perfusion and/or function like intracranial pressure, evoked potentials, and EEG analysis must be correlated with subjective neurologic or behavior indices to attain clinical relevance.

Most of the recent studies show that metabolic modifiers such as barbiturates, membrane stabilizers such as calcium entry blockers, vasolytic drugs such as beta blockers, anticoagulants, selective inhibitors of prostaglandin synthesis, and other therapeutic modalities including physical means such as hyperthermia can produce experimental salvage not only in animals, but in many human studies.

#26 Friday, July 5 11:45 A.M.

Brain Death: Religious Aspects

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The question of the time of death has been the concern of religious and medical experts for years. In Islamic jurisprudence, there is no statement specifying the exact time of death. However, there is an abundance of information regarding the Islamic view of the components of a person, i.e. NAFS (self), ROOH (spirit), and QALB (spiritual heart or mind), and the features and functions of these components. There is also ample description of the physical manifestations of death in Islamic jurisprudence. Review of the above mentioned information shows that the functions of all the components of a person coincide with the functions of the brain and no other organ. The review also shows that the physical manifestations of death, as detailed in Islamic jurisprudence, are present only with brain death and with the death of no other organ. It can be therefore concluded that, from an Islamic point of view, the time of death of a human person is the time of brain death.

What Defines Death in Islam?

Faroque A. Khan, M.B., F.A.C.P., Chief, Pulmonary Medicine,
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Islam abundantly stresses the sanctity of life. Quran 2:195, 4:29, 17:31. The inevitable occurrence of death and the respect for the dead has also been stressed, Q 3:185, 39:30, 3:145. While the broad issues of life and death are made clear, the exact definition of the moment of death is not clearly identified. Traditionally death has been equated with the cessation of easily identifiable life functions such as breathing and heart beat. This interpretation serves well when death occurs at home. However, in USA 80 percent of all deaths occur in institutions where the use of advance life support can artificially prolong a heart beat or breathing while the rest of the body "dies." Is this life? On the other extreme, there are situations where the breathing may be absent in the presence of preserved brain and other vital functions. Are such individual's "dead"? Obviously not, since many such patients are alive with the assistance of medications, artificial breathing devices, diaphragmatic pacemakers, etc. Alternatively does the absence of a natural heart beat define death? Patients are quite "alive" with absent natural heart beat such as with cardiopulmonary bypass, mechanical heart, etc. Obviously, the traditional definition of death would not apply in such individuals. Therefore, the traditional definition of death cannot be used as a *sole* criteria of death. I have previously reviewed some aspects of this complex problem (JIMA 15:105-109, 1983).

I feel, in Islam, the exact moment of death has not been defined on purpose and this allows the Muslim physicians to define death in accordance with accepted medical standards. While the classic definition of cessation of cardiac and respiratory function is still valid as a broad outline it is inadequate if death occurs in an institution. Thus this old standard needs to be re-evaluated in view of the availability of advanced life support systems. I feel that equating Brain Death with death does *not* violate any Islamic guideline and hence can be accepted as Death.

#28 Saturday, July 6 8:00 A.M.

The Qur'an and Human Reproduction

Keith L. Moore, M.D., Department of Anatomy, Faculty of Medicine,
University of Toronto, Toronto, Canada

Several verses in the Qur'an refer to fertilization, implantation, and early development of the human embryo. Although the terms used are not part of modern nomenclature, the embryological concepts are amazingly accurate considering they were revealed in the 7th century A.D.

The Qur'an describes clearly-defined stages in reproduction, e.g., the *nutfah* or drop stage (now called the zygote stage); the *alica* or leech stage (days 14 to 25); and the *mudga* or chewed lump stage (the somite period.)

Sura 39:6B states, "He makes you in the wombs of your mothers, in stages, one after another, in three veils of darkness." The first recorded and illustrated account of human development, known to us, was in the 15th century A.D. After the microscope was developed in the 17th century A.D., descriptions of the early stages of the developing chick were reported. The staging of human embryos was not well established until the 1940s. The current staging system was adopted in the 1970s.

Although Aristotle wrote what is believed to be the first book on Embryology in the 4th century B.C., many of his ideas about human development were inaccurate. Statements in the Qur'an about the developing human, revealed before the microscope was discovered, are unexpectedly detailed.

#29 Saturday, July 6 9:00 A.M.

A(l)Razy [Rhazes] (842-932 AD)

Farid Sami Haddad,* M.D., F.A.C.S.
Veterans Administration Medical Center, Phoenix, Arizona

In the words of Sarton, A(l)Razy was perhaps the greatest clinician of all times. Originally from Rayy, he became the Chief Physician of the famous Bagdad Hospital.

His contributions in the basic sciences include his description of the recurrent laryngeal nerve, the reaction of the pupil to light, the conditioned reflex theory, congenital contagion, mercurial ointment and the investigation of mercurial purgatives.

In clinical medicine he was the first to differentiate between measles and small pox, he described brain abscess following otitis, incompetence of the aortic valve, neuropathic bladder due to spinal cord tumor, allergic rhinitis and scrotal gangrene.

In management, he was the first to mention non-metallic catheters, the use of catgut in surgical operations, patellectomy for comminuted fractures of the patella and hot moist compresses to cover the intestines in abdominal surgery.

He left 237 works which include the following:

The book on small pox and measles; translated into Latin at least six times, the latest being the Gottingen edition of 1781; also into Greek, French and English.

Medical Treatise "al Mansury" (Nonus ad Almansoris); went into at least 10 Latin editions — was still part of the medical curriculum of the University of Frankfurt in 1588.

A medical encyclopedia "Al Hawy" (Continens); was translated into Latin in 1280 and had at least five Latin editions.

The FMG's Odyssey: From Open Arms to Slammed Doors

Eusebio S. Inocencio, Ph.D.
Instructional Dean of Montgomery College, Rockville, Maryland

This presentation traces the evolution of the FMG's role in the changing American health care market from the '60s to the present.

- I. Before offering some ideas to consider in order to alleviate the serious situation now confronting FMGs in America, the presenter examines:
 - A. The need which brought the FMGs to America.
 - B. Conflict at the workplace.
 - (i) The essence of American culture and how it clashes against the culture of the typical FMG.
 - (ii) The changes that have taken place in the American health care market.
 - (iii) The FMG as an economic commodity.
 - (iv) The AMA as protector of AMGs against FMGs.
- II. Some ideas to consider in the interest of FMGs:
- III. The bottom line:
 - (i) The problem is not going to go away as long as FMGs are perceived as serious economic threats to AMGs.
 - (ii) The best defense may very well be to go on the offensive.

#31 Saturday, July 6 9:30 A.M. - 12:30 P.M.

The Future of FMGs in America

Benjamin M. Rigor, M.D., Professor and Chairman, Department of Anesthesiology,
School of Medicine, University of Louisville, Louisville, Kentucky

Is there a future for FMGs in America? This is a very esoteric question during troubled times. There might not be a very good answer, but I will expound on it knowing the knowledge base is tremendous but not only obvious but ominous. It is a topic that is beaten to death and heavily argued but rhetorics and good speeches don't provide food for the family and a career ladder to the professional. It is usually good for lawyers and politicians! But we as physicians are not good politicians. We cannot even manage our financial affairs without turning into a *flop!* We have so many ventures, we talk too much and we are always splintered with a "to each his/her own" goal. Sometimes, we are even envious about the great accomplishment of another FMG which we must emulate and utilize as example, but we ridicule it and its importance fades to oblivion!

During the time when the constraints and restraints are tremendous and overwhelming, the future or options for FMGs can be briefly summarized as follows: A. *Licensed and Established FMGs*: 1. Status quo, 2. Displacement from present practice, 3. Shift to institutional practice, 4. Fight for survival, 5. Transfer to non-medical venture, 6. Retire early, 7. Go back home. B. *Unlicensed, In-Training & Recent Arrivals*: 1. Go back home, 2. Opportunities in other developed countries, 3. Opportunities in other developing countries, 4. Opportunities in research, scientific and other scholastic endeavors, 5. Institutional practice, 6. Lower entry-level jobs, 7. Entrepreneurship in other non-medical ventures and pursuits, 8. Enter another professional school, 9. Join voluntary and/or philanthropic organizations, 10. Volunteer as a mercenary! Join the military!

The future is gloomy and very dim and would remain so if we don't do something about it.

PLEASE NOTE

The following Abstracts will not be presented.

#32

**The Glioblastoma and the Undifferentiated Neoplasm of the Spinal Cord:
Incidence, Diagnosis, and Prognosis**

J. Devkota, M.D.

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Among the various intraspinal and spinal cord lesions, glioblastoma and undifferentiated tumors of the spinal cord are rare. The complaint and symptomatology of the patient suggest intraspinal lesion but accurate diagnosis is only possible by myelography, computed tomography, angiography, and magnetic resonance imaging. At times all of these diagnostic modalities may be appropriately used but still a conclusive diagnosis cannot be made. The surgery and the neuropathology study may finally identify the true identity of the tumor. But undifferentiated tumor still poses uncertainty of the diagnosis.

Three glioblastoma and one undifferentiated malignant tumor of the spinal cord were diagnosed utilizing above stated diagnostic modalities.

Two glioblastoma patients died within a year and two are under treatment.

These tumors are aggressive and malignant so bear a grave prognosis and are invariably fatal. A brief account of such lesion as encountered in our practice and a review of the literature will be presented in this paper.

#33

Pathogenesis of Diabetic Retinopathy — Present Concepts

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Retinal vascular cell tissue cultures, animal model studies, and application of modern sophisticated techniques in human subjects have significantly added to the understanding of the pathogenesis of diabetic retinopathy. In diabetic retinal microangiopathy hypoxia remains the major stimulus and a selective loss of pericytes of retinal microvasculature the main histopathologic finding. Hyperglycemia is probably the initiator of their changes and a good control of blood sugar levels is beneficial for diabetic retinopathy. The excess glucose is converted to intracellular sorbitol which is responsible for edema and death of pericytes of the retinal vessels. This edema of endothelial cells may also contribute to narrowing of lumens and, hence, add to hypoxia. The basement membrane also shows great thickening and it has been linked to activity of enzyme aldose reductase. In vitro studies suggest that insulin stimulates and hyperglycemia inhibits the proliferations of retinal pericytes. Hormonal factor also appear implicated in the later stages of retinopathy; hence, sex hormones (female hormones appear to exert a beneficial influence), insulin-like growth factors, growth hormone play some role. Platelets become hyperagglutinative and red blood cells lose their pliability. These and other hematologic factors affect circulation. An angiogenic factor is produced by the hypoxic retinal tissue that may be responsible for proliferation of neovessels in the retina. (It is one of the reasons why hypoxic retina is destroyed by photocoagulation in the treatment of proliferative diabetic retinopathy.) The primary biochemical change may lie in the retinal glial cells or neuronal cells, with the retinal blood vessels only secondarily involved. Despite all these advances, the fundamental change in diabetic retinopathy still eludes the researchers, and as long as this remains so, diabetic retinopathy will remain a leading cause of blindness in the world.

#34

**A Study of Electrophoretic Pattern of Hydrocele Fluid and Its Correlation with
Histological Changes in Tunica Vaginalis**

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Fifty-seven samples of hydrocele fluid were obtained from fifty-four patients for study of electrophoretic pattern. Three were bilateral and were clinically diagnosed as "idiopathic hydrocele." From the first 20, patient blood samples were also collected for estimation of serum protein and its electrophoretic fractionation. Biopsy from tunica vaginalis were also taken from all the patients for histopathological examination. On histological examination varying grade of inflammation was found in 78.95% cases, in only 21.05% there was no evidence of inflammation. Mean value of total protein of hydrocele fluid was 6.483G%. The electrophoretic pattern of hydrocele fluid showed all the protein fractions like that of serum. The albumin and globulin ratio in hydrocele fluid was found to be lower due to relative increase in globulin fraction. Probably the cause of the high protein content in hydrocele fluid is the impaired lymphatics of tunica due to low grade inflammation.

A Novel Approach to Nutrition Education

Syed A. Hussain, Ph.D.

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For too long nutrition education has been denied its proper role in American medicine. Billions of dollars are spent on the treatment of disease each year, but very little is spent in nutrition education which can help in the prevention of disease. Few doctors have the time or the inclination to teach those aspects of diet which are essential to their patients' well-being. Despite the fact that this society is supposed to be "calorie conscious" it is remarkable that America's number one dietary problem is caloric excess. If public health is to be served best by educating people regarding the role of nutrition and health, then, for maximum impact, such education should be at the point where people choose what they will eat. A good example of this approach was successfully tested in a University cafeteria setting, where food selection behavior was influenced by an American Heart Association nutrition education game "Food for Thought." During promotion of the game, patrons selected healthful foods and reduced their caloric intake. The changes in patrons' choices persisted even after the game ended. This paper documents the "Food for Thought" game (in the form of slides/pictures) used for marketing nutrition and counter marketing non-nutritious food promotion at the point-of-purchase.

#36

Contributions to Surgery by Muslims

Dr. Mohd. Amanullah Khan, M.S. and (Mrs.) Shahjahn Bano, M.D.,

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William Osler has very appropriately described the Muslim period (732-1250 A.D.) as the strongest branch of river which preserved and carried Greek medicine into modern medicine. After the Muslim forces captured the eastern world (620-650 A.D.) they turned their attention to the progress of science and medicine, in contrast to the purely destructive influence exerted on science by conquerors of Rome. Like other branches of medicine, surgery owes a good deal to the contributions made by Muslims over the centuries. Western writings on the history of medicine, however, project a very distorted picture. The contributions of Muslim surgeons are tremendous both quantitatively and qualitatively in almost all sections of surgery like general, orthopedic, urology, gastroenterology, plastic, ENT, dental, ophthalmic, obstetric and gynecology, oncology, neurosurgery. The west stands greatly indebted to the Muslim medical masters, though this indebtedness is hardly acknowledged.

#37

Radiation Bioeffects on the Developing Human Embryo and Fetus

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A woman in the child bearing age could be exposed to preconception irradiation during radiological examinations (radiography, fluoroscopy, computerized tomography, digital subtraction radiography, angiographic catheterization, etc.), nuclear medicine procedures and therapeutic radiological or radiation oncology procedures. Some studies have found a significantly higher incidence of Down's syndrome in mothers who were exposed to preconception irradiation. One study found an increase in the rate of childhood leukemia associated with preconception exposure of mothers. In one study the National Center for Device and Radiological Health (NCDRH) of the Food and Drug Administration (FDA) found the mean gonad dose to be 903 mrad and the maximum to be 9,218 mrad. There is a large body of data reporting the effects of ionizing radiation on the developing organism in the laboratory animals. However, the observation of human effects have been clinical and epidemiological. The developing embryo and fetus are highly sensitive to radiation as well as other chemical, physical and viral agents. This sensitivity is dependent upon the specific state of development and differentiation at the time of exposure as well as on the dose, dose rate, and Relative Biological Effectiveness (RBE) of radiation. As research has progressed over the past decade, the effects at doses as low as 5 to 10 rads have been reported. In epidemiologic studies, doses as low as 200 millirads have been associated with an increased risk of postnatal malignancies. Recommendations of American College of Radiology, Nuclear Regulatory Commission to eliminate or minimize radiation dose to human embryo and fetus will be presented.