LEHIGH VALLEY
HOSPITAL

Medical Staff Progress Notes

Volume 7, Number 7
August, 1995

From the President

Perhaps no issue excites as much angst among members of the medical staff than that of the medical manpower plan. A detailed discussion of this issue took place at the Medical Staff/Administrative Exchange Session on Thursday, June 15, 1995. Here are some of the highlights.

The medical manpower plan was developed initially in 1982 to identify those specialties and sub-specialties faced with inadequate supply of physicians, or in which a supply of physicians was likely to exceed the resources available within the hospital. Input was solicited from 36 Division/Section meetings. The result was an adjustment driven plan in 1982 which had many problems. By September of 1986, the plan was developed to include a semi-annual needs survey where physicians could "semi-annually" submit their requests for additional manpower through a formal process. Specification statements, including the two-year rule, capitations, stipulations and compatibility statements, were made at that time. "Brainstorming" groups which included all the Chairpersons, the CEO, Medical Staff President, the Senior Vice President for Medical and Academic Affairs, the Senior Vice President of Lehigh Valley Health Services Division, and the Vice President for Medical Staff Services met to review and discuss these needs which were then debated by the Medical Executive Committee who remained involved in the review and approval process. The Board of Trustees had the final action in all requests at that time as it does now.

In 1993, the Med Exec created a separate body to consider manpower needs and removed itself from the process of slot approvals, denials and revisions. This was done after a prolonged and thorough discussion by members of the Medical Executive Committee who concluded they had an ethical obligation to refer this material to a separate board due to increasing conflict of interest which tainted them from making unbiased decisions. A new process of assessing staff development was created by instituting a formal poll of the medical staff which requests their objective assessment of manpower needs. In this survey, every member of every division has the opportunity to comment on whether

(Continued on Page 2)

In This Issue . . .

(Continued from Page 1)

they feel that their neighboring divisions and departments are meeting their needs in the care of patients. This single summary source of the medical staff proves to be the most objective and important document in the assessment of manpower needs.

Currently, members of the medical staff may submit their request for increased manpower semi-annually during the time periods from August 15 through September 14, and again from February 15 through March 14. Department Chairpersons solicit input and formal recommendation from the Division/Section Chiefs and carry those recommendations to the monthly meeting of the TROIKA/ Chairpersons Committee, which consists of 12 department Chairpersons, the CEO, the COO, the Senior Vice President of Clinical Services, the Vice President for Medical Staff Services, the Medical Staff President, Past President of the Medical Staff, and the Medical Staff President-Elect. Recommendations from the Combined TROIKA/ Chairpersons Committee are presented to the Performance Improvement/ Staff Development Committee of the Board of Trustees, which then submits the final recommendation to the Board of Trustees. A report from the Combined TROIKA/Chairpersons Committee is given to Med Exec for information purposes only. The Board of Trustees ultimately makes the final decision on the request for that additional medical manpower based on recommendations forwarded to them by these groups.

Currently, the Hospital Staff Development Plan retains "a two-year rule" given to physicians who are voluntarily terminated from practice prior to a two year date. It reads as follows:

"Immediately upon the receipt of notification from a private practice group that an individual has been involuntarily terminated from his group, or when an individual is no longer employed under a contract with the hospital, the individual would lose medical staff privileges and membership. These individuals would, however, be permitted to request a slot within 60 days of such notification requiring immediate consideration by the TROIKA/Chairpersons Committee, the Staff Development Committee of the Board of Trustees, and the Board of Trustees at their next scheduled meeting. Voluntary termination from either private practice group or hospital contracts will be reviewed only during the normal semi-annual needs survey cycle."

There remains some common misconceptions of the Hospital Staff Development Plan which I thought would be worth restating here:

- Slots are automatically granted when an individual leaves the group or retires.

This statement is false. Even when a senior member of a group retires, that slot is not automatically granted to the group and needs to be requested and moved through the process from

(Continued on Page 3)

(Continued from Page 2)

Division to Department Chairperson to the Board. While it is usually the case that replacement slots are granted, it is not automatic and in some instances planned attrition of divisions would require that replacement slots not be filled.

● Division/Section should vote on slot requests.

The plan mandates Division/Section Chiefs give a formal recommendation and it is encouraged that discussion of manpower needs in general take place at Division/Section meetings. However, votes on individual slot requests in these meetings should be avoided as they are a violation of federal anti-trust laws. This prevents small divisions with perhaps a single group from unfairly stamping out competition by preventing new members to join their group, even when it is felt it is needed by the manpower survey and the TROIKA/Chairpersons Committee to meet patient care needs.

● Division/Section Chief recommendations are automatically approved by the Chairperson, the TROIKA/Chairperson Committee and the Board of Trustees.

The Division/Section Chiefs recommendations are taken very seriously and carry a great deal of weight. They are also weighed with the individual need of a particular group, particularly a group that has provided loyal service to this hospital and its patients or has been intimately involved in the teaching program.

● Hospital slots are equivalent to Lehigh Valley Physician Group employed physicians.

Often Chairpersons will identify "hospital slots" and these are mistaken as slots for members employed by the Lehigh Valley Physician Group. The term "hospital slot" simply means it is a generic slot which can be filled by any member of the division or LVPG, and is not given to one specific group. For example, if the need for a pediatric surgeon was identified as a hospital slot, that slot could be filled by any member of the private practice groups or by LVPG during the search process.

● Approved slots are good for two years.

Slots are approved for a period of one year and an opportunity exists to make a request to have the slot renewed for an additional second year. This approval is by no means automatic and all requests for renewal will be considered in the same manner as original slot requests. An excerpt from the plan follows, which deals with the Board of Trustee's right to eliminate existing slots:

"While the Board recognizes its ultimate right to consider the appropriate number of medical specialists and sub-specialists to provide optimal care to patients the hospital serves, it envisions that this will be regulated through access to the medical staff via the staff development plan process rather than retrospective elimination of slots. However, because

(Continued on Page 4)

(Continued from Page 3)

of constant and frequent changes in health care delivery system, it may be counter productive to the hospital's well being to continue certain existing vacant unfilled slots. Therefore, the Board of Trustees reserves the right to eliminate already approved slots."

● Slots can be requested at any time.

Slots for a group can only be requested during the semi-annual needs survey, during the time periods from August 15 through September 14, and again from February 15 through March 14. Hence, this requires some planning by everyone on the medical staff.

● Slot requests are necessary for active staff only.

This is not true. Slot approvals are required for all active staff and currently courtesy staff in the Department of Surgery. The Plan has been amended from time to time to permit inclusion of staff categories other than active to be included in the approval process of the plan.

● The dissolution of a group entitles the resulting separate entities to new or existing open slots.

This issue is obviously complex and one which again is poorly understood. It evokes the two-year rule for members that leave prior to two years with a group, hence losing their slot, and those that have been with a group over two years to carry their slot with them. Other than that, existing open slots are not carried away from the original group from which they have been awarded.

The July 20, 1995 Medical Staff/Administrative Exchange Session was dedicated to the discussion of the Lehigh Valley Physician Group which employs the full-time physicians here at the hospital. The results of that discussion will be shared in a future issue of *Medical Staff Progress Notes*.

The re-design of the medical/surgical floors under the concept of "patient centered care" is progressing at the expected pace with 7A being complete and 7B and 7C almost complete at this time. The nurses on 6B and medical directors of that floor have been involved with planning the future of that endeavor as well. We appreciate many of your helpful comments, and anticipate that each time we build a new floor we will incorporate these suggestions into the new floor and again improve on it. One clear cut improvement which is necessary is additional writing space for physicians. On 7A, 7B and 7C, we will move the computers off the writing space that is provided for the physicians and we will also provide foldout writing carousels at each of the doors to hold the charts. We anticipate that these carousels will have the ability to be "flagged" when orders on charts are written. Please don't hesitate to forward your suggestions to me in order to make these areas as useful to physicians and nurses as possible.

I hope you all are enjoying the beautiful summer weather.

John E. Castaldo

John E. Castaldo, M.D.
President, Medical Staff

Director of Emergency Services Named

Elizabeth Brennan, RN, EdD, CCRN, has been named Director of Emergency Services and MedEvac.

In her new position, Dr. Brennan will be responsible for the Emergency Department at both Cedar Crest & I-78 and 17th & Chew and the MedEvac team.

Previously, Dr. Brennan was manager of the Emergency Department at Albert Einstein Medical Center in Philadelphia. She has done extensive consulting in facility and systems redesign related to emergency services.

Dr. Brennan received her nursing degree from Delaware County Community College and a doctorate in Health Education from Temple University.

New Telephone Numbers for Patient Centered Care Units

Patient related phone calls should be directed to the Patient Team area phone extension identified below which corresponds to the patient's room number:

7B
Team Area 1 - Rooms 1-5 - #8761
Team Area 2 - Rooms 6-10 - #8792
Team Area 3 - Rooms 11-14- #8793
Team Area 4 - Rooms 15-18- #8794
The phone extension for calls not related to a specific patient is 8795.

7C
Team Area 1 - Rooms 1-5 - #1981
Team Area 2 - Rooms 7-10- #1982
Team Area 3 - Rooms 11-15-#1983
Team Area 4 - Rooms16-19- #1974
The phone extension for calls not related to a specific patient is 8755.

REMINDER

When a patient expires, it is the responsibility of the family/significant other to contact the funeral director. If a patient does not have any family/significant other, contact the Social Service Department for assistance.

It is extremely important that this be communicated during your interactions with the family/significant other of the deceased patient as they may otherwise assume that the hospital will contact the funeral director.

LVDI Diagnostic Results Now Available through PHAMIS

Effective June 28, Lehigh Valley Diagnostic Imaging (LVDI) began using PHAMIS for their diagnostic reporting. You may now access LVDI results via Ancillary Transcription Review within the MPI command. This implementation includes all outpatient studies and Cedar Crest inpatient mammographies.

However, as orders may not be placed on PHAMIS for LVDI, please continue to call LVDI at 435-1600 for an appointment. LVDI will enter the necessary information for you. In addition, LVDI will continue to perform procedures on a walk-in basis as well.

Admitting Protocol Changes at 17th & Chew

Effective July 2, responsibility for admitting patients was shifted to the Emergency Department Registrar beginning at 8:30 p.m., Monday through Friday, noon on Saturday, and all day on Sunday. This change allows for enhanced service to patients during peak volume times. The Emergency Department Registrar is located on the ground floor at 17th & Chew, just off the Emergency Department waiting area.

However, please continue to call 402-2217 during these times to contact an Admitting registrar regarding admissions or any other admitting related questions.

Helwig Diabetes Center Receives State Recognition

The Helwig Diabetes Center staff recently received notification from the Pennsylvania Department of Health that their outpatient diabetes education program meets national standards for diabetes patient education.

Recognition is a voluntary but formal process of identifying hospital-based diabetes outpatient education programs in Pennsylvania that meet national standards. Recognition provides continuing assurance that an education program merits the confidence of the community it serves.

For more information about services provided by the Helwig Diabetes Center, please contact Kim Sterk, Nurse Coordinator, at 402-9885.

Guidance Program Opens Bethlehem Office

Lehigh Valley Hospital's outpatient mental health service, the Guidance Program, recently opened an office in northern Bethlehem to serve persons in eastern Lehigh, Northampton, and Monroe counties.

The office is located at 3005 Brodhead Road, Suite 20, where therapists will provide marriage and family therapy, conduct art and play therapy with children, and treat adolescents and adults for depression, anxiety, and mood disorders. Appointments are available Monday through Friday, afternoons and evenings. Psychiatric evaluations and medication monitoring will continue to be performed at the Guidance Program's main office at 1255 S. Cedar Crest Blvd., Suite 3800, Allentown.

The Guidance Program opened in 1993 to provide short-term mental health services to children, adolescents, adults, and families. Patients are treated for depression, anxiety, marital and interpersonal problems, psychosomatic disorders, hyperactivity, school difficulties, and the effects of trauma and abuse.

For more information or to make an appointment, please call the Guidance Program at (610) 402-5900.

News from Research

Research Advisory Committee - Request for Proposals

The Research Advisory Committee (RAC) meets bi-monthly to review clinical/epidemiological research proposals (requests for funding) submitted by the Medical and Professional staff of Lehigh Valley Hospital. All proposals must be submitted to the Research Department for review three weeks before the next scheduled RAC meeting. The next meeting of the RAC is Thursday, August 17.

For more information or proposal guidelines, please contact James F. Reed III, PhD, Director of Research, at 402-8889.

Call for Abstracts

A call for abstracts has been issued by the following:

- The American College of Cardiology for the 45th Annual Scientific Session to be held on March 24, 1996 in Orlando, Fla. Submission due date is September 8, 1995.

- The Institute of Applied Physiology Medicine for the 1996 Cerebral Hemodynamics Symposium to be held on January 22, 1996 in Dallas, Texas. Submission due date is September 8, 1995.

- The Society of Critical Care Medicine for the 1996 Annual Meeting to be held on February 5, 1996. Submission due date is September 1, 1995.

For instructions, forms, and further information, contact Kathleen Moser in the Research Department at 402-8747.

Congratulations!

George F. Carr, DMD, prosthodontist and Vice Chairperson, Department of Dentistry, was elected President of the Pennsylvania Prosthodontic Association at its annual meeting held in June in State College, Pa.

Pragnesh A. Desai, DO, urologist, was recently notified by the American Osteopathic Board of Surgery that he successfully completed and passed the required examinations for certification in Urological Surgery.

Richard M. Herman, MD, otolaryngologist, recently received notification of his certification as a Diplomate of the American Board of Otolaryngology.

Ronald A. Krisch, MD, psychiatrist, was recently elected to Fellowship in the American Psychiatric Association.

Catharine L. Shaner, MD, pediatrician, was recently notified by the American Board of Pediatrics that she has met the requirements for renewal of certification in the specialty of general pediatrics.

Papers, Publications and Presentations

National Emergency Medical Services Week was celebrated at Lehigh Valley Hospital with a lecture series and light dinner for over 150 EMTs and paramedics on May 12. Hospital staff members who served on the faculty included **Robert O. Atlas, MD,** Department of Obstetrics and Gynecology; and **Jerome C. Deutsch, DO,** and **John F. McCarthy, DO,** Department of Emergency Medicine. **Alexander M. Rosenau, DO,** also from the Department of Emergency Medicine, was the moderator for the evening.

"Endarterectomy for Asymptomatic Carotid Artery Stenosis," a report detailing the Asymptomatic Carotid Atherosclerosis Study in which Lehigh Valley Hospital was a participant, was published in the May 10, 1995 issue of *JAMA*. **John E. Castaldo, MD,** Medical Staff President, neurologist, and a member of the Executive Committee for the Asymptomatic Carotid Atherosclerosis Study, was one of the co-authors of the report.

Jay S. Cowen, MD, Division of Pulmonary Medicine, was one of the co-authors of an article, "Recognition, Assessment, and Treatment of Anxiety in the Critical Care Patient," which appeared in the May, 1995 issue of ***Disease-a-Month***. In addition, Dr. Cowen was among the writing panel who developed the **Guidelines for Resident Training in Critical Care Medicine** which were approved by the governing Council of the Society of Critical Care Medicine.

(Continued on Page 9)

(Continued from Page 8)

Thomas B. Dickson, MD, orthopedic surgeon, attended the 18th National Conference and Exhibition of the National Strength and Conditioning Association from June 21 to 24. At the conference, held in Phoenix, Ariz., Dr. Dickson gave the keynote address and a presentation on "Drug Use and Testing in Athletics."

"Preparing For and Managing the Podiatric Office Emergency," written by **Marna R. Greenberg, DO,** Department of Emergency Medicine, was published in the June 1995 edition of *The Lower Extremity*.

Peter A. Keblish, MD, chief of the Division of Orthopedic Surgery, was an invited guest and keynote speaker on knee replacement at the Societe D'orthopedie-Traumatologie de l'est de la France (SOTEST) in Metz, France. Dr. Keblish addressed the topic of the basis for total knee replacement in surgery of the knee. SOTEST is one of two major orthopedic societies in France with attendance of over 300 orthopedic surgeons from the region. Dr. Keblish also participated in group discussions on various aspects of total joint arthroplasty.

Indru T. Khubchandani, MD, colon-rectal surgeon, was invited to give a named oration at the Fifth Asian Congress of Coloproctology at Seoul, Korea, on June 1 to 4. The title of the presentation was "Coloproctology -- Has Cinderella finally met her Prince Charming?" He also spoke about "Complex Fistula in Ano" at another session. The meeting was attended by 1,299 registrants, largely from the East Asian/Pacific basin countries.

Lester Rosen, MD, Program Director, Colon/Rectal Surgery Residency, participated in the American College of Surgeons (ACS) Advisory Council meeting in Chicago, Ill., on June 7. The ACS Advisory Council consists of representatives of each of the surgical specialties. The purpose of the meeting was to gather consensus of reporting of surgical outcomes. Dr. Rosen was invited to this meeting as a consultant to discuss how Mediqual software, which is legislated for use in Pennsylvania, can be used to study outcomes.

A joint hospital - extended care facility - paramedic roundtable conference was held at Lehigh Valley Hospital on May 9. **Alexander M. Rosenau, DO,** Department of Emergency Medicine, lectured and moderated the panel discussion as participants identified problems and proposed solutions concerning the interfacing of these three types of caregivers.

Joseph E. Vincent, MD, chief, Division of Pulmonary Medicine, and **Stephen E. Lammers,** Ethics Consultant, co-authored Chapter 58 -- **Ethics and Patient Care** of *Comprehensive Respiratory Care*.

Steven L. Zelenkofske, DO, cardiologist, was recently informed that his abstract, "The Effect of Rate Modifying Agents on the P-Wave Signal Average Electrocardiogram," has been accepted for oral presentation at the 10th World Symposium on Cardiac Pacing and Electrophysiology to be held in Buenos Aires, Argentina from October 22 to 26.

Health Promotion and Disease Prevention News

Camp HealthRock

This summer, Lehigh Valley Hospital provides the perfect antidote for the summertime blues: Camp HealthRock, a cool, five-day adventure exclusively for children. There will be plenty for kids to yabba-dabba-do including activities that will mix fun with learning in the areas of fitness, nutrition, and safety, among others. Call today to find out how you can help your children improve their health, take on new challenges and responsibilities, and have a lot of fun in the process. All educational materials, daily lunches and snacks at the HealthRock Cafe, along with a Camp HealthRock tee-shirt, are included in the program fee. Registration is limited to 30 children per weekly session.

Remaining sessions will be held from July 31 through August 4 (ages 10 to 12) and August 21 through 25 (ages 7 to 9). Daily camp sessions are held from 8:30 a.m. to 4:30 p.m., with drop-off beginning at 7:30 a.m., and pick-up until 5:15 p.m. All sessions are located at Lehigh Valley Hospital Wellness Center on Fish Hatchery Road.

For more information or to register, call Health Promotion and Disease Prevention at 402-5960.

Stand Up to Osteoporosis

Osteoporosis, which affects over 25 million Americans, is also known as "The Silent Thief," because it progresses without any symptoms or pain. But through minor lifestyle changes including a healthier diet and regular, weight-bearing exercise, individuals can dramatically reduce their chances of developing the disease.

A two-part program regarding Osteoporosis and steps to combat this disease will be held on August 9 and 16, from 1:30 to 3 p.m., at 1243 S. Cedar Crest Blvd., Lower Level. For more information or to register, call 402-5960.

Smoking Cessation Hypnosis

A one-time, hour-long, inexpensive program ideal for those quitting for either the first time or after many tries. Led by a certified hypnotherapist and psychologist, this program may be used in conjunction with other smoking cessation programs to increase the participant's ability to quit.

Sessions will be held on Tuesday, July 25, from 7 to 8 p.m., and Friday, August 11, from 3 to 4 p.m., both in Classroom 3 of Lehigh Valley Hospital, Cedar Crest & I-78.

For fees or additional information, call 402-5960.

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These and many other programs for nutrition and weight control, stress management, fitness, and nicotine dependence services are available through the Health Promotion and Disease Prevention Department.

For more information on any of these programs, call 402-5960.

Upcoming Seminars, Conferences and Meetings

Medical Staff/Administrative Exchange Session

The August Medical Staff/ Administrative Exchange Session will be held on Thursday, August 17, beginning at 5:30 p.m., in Conference Room 1, Side B, of the John and Dorothy Morgan Cancer Center.

It is of paramount importance that as many physicians as possible attend these sessions to participate in the exchange of information about important topics in a timely manner.

Topics to be discussed will be posted throughout the hospital prior to the session.

For more information, contact John E. Castaldo, MD, Medical Staff President, through Physician Relations at 402-9853.

Psychiatry Grand Rounds

Borderline Personality Disorder will be presented by Suzanne Lego, RN, PhD, CS, FAAN, private practitioner in Pittsburgh, Pa., and Kent, Ohio, on Thursday, August 17, beginning at noon in the Auditorium at 17th & Chew.

As lunch will be provided, pre-registration is requested. For more information or to register, contact Lisa Frick in the Department of Psychiatry at 402-2810.

Hill Burton Program

Hill Burton funding is available to qualifying indigent patients who require hospital-based services provided by Lehigh Valley Hospital. Services such as those provided by Lehigh Magnetic Imaging Center, Lehigh Valley Diagnostic Imaging, Affinity, and others which are not hospital-based, are NOT included inthe Hill Burton Program. Patients who require but are unable to pay for these services should deal directly with these ancillary departments.

If you have questions regarding this issue, contact Sandra Colon, Director of Finance/Patient Accounting, at 402-9461.

Who's New

The Who's New section of *Medical Staff Progress Notes* contains an update of new appointments, address changes, newly approved privileges, etc. Please remember that each department or unit is responsible for updating its directory, rolodexes, and approved privilege rosters.

Medical Staff

Appointments

Eugene Alexandrin, MD
Lehigh Valley Pathology Associates
(Dr. Shane)
Cedar Crest & I-78
P.O. Box 689
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Department of Pathology
Division of Clinical and Anatomic Pathology
Provisional Active

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Division of General Dentistry
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(Drs. Buchanan and Oliver)
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(610) 433-2021
FAX: (610) 433-7856
Department of Surgery
Division of Ophthalmology
Provisional Active

Steven J. Perch, MD
Allentown Radiation Oncology Associates
(Dr. Risch)
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Department of Radiation Oncology
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(Continued on Page 13)

(Continued from Page 12)

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Department of Surgery
Division of Orthopedic Surgery
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(610) 433-6045
FAX: (610) 433-3605
Department of Surgery
Division of Orthopedic Surgery
Provisional Active

Additional Privileges

Kenneth P. Skorinko, MD
Department of Medicine
Division of Cardiology
Direct Coronary Atherectomy
Privileges

Address Changes

Mishkin Rappaport Shore Rentler
Internal Medicine
Mark H. Mishkin, MD (Effective August 4, 1995)
Russell J. Rentler, MD (Effective August 21, 1995)
Stephen R. Shore, MD (Effective August 4, 1995)
1251 S. Cedar Crest Blvd.
Suite 112
Allentown, PA 18103-6244

Brian L. Fellechner, DO
Good Shepherd Rehab Hospital
501 St. John Street
Allentown, PA 18103-3296
(610) 776-3278
FAX: (610) 776-3172

Telephone Number Change

Yasin N. Khan, MD
Lehigh Valley Pain Management
(610) 366-9000
FAX: (610) 366-9229

Leave of Absence - Additional Year

Harry W. Stephens, MD
Department of Surgery
Division of Neurological Surgery
Emeritus Active/LOA

Resignation

Ralph H. Scott, MD
Department of Pathology
Division of Clinical and Anatomic Pathology

Allied Health Professionals

Additional Privileges

Diana A. Searfoss
Physician Extender
Technical
(Dr. Buchanan)

Change of Supervising Physician

Sandra J. Vitello, PNP
Physician Extender
Professional - PNP
(Hospital)
Change from Charles F. Smith, MD to Robert W. Miller, MD

P & T HIGHLIGHTS

The following actions were taken at the June 21, 1995 Pharmacy and Therapeutics Committee Meeting - Maria Barr, Pharm.D., Barbara Leri, Pharm.D.

H_2 ANTAGONIST 48 HOUR STOP

Overuse of H_2 antagonists is well documented in the literature. The committee discussed the current use at LVH and raised many concerns. The potential side effects including CNS and hematologic abnormalities appear to out weigh the benefits of routine use in hospitalized patients. One service has already addressed this issue. The trauma service stress ulcer prophylaxis protocol reserves H_2 antagonist therapy for patients at high risk only and utilizes sucralfate first line therapy. This protocol realized an annualized savings of approximately $10,000.

In an effort to eliminate unnecessary and prolonged therapy with H_2 antagonists for stress ulcer prophylaxis, a **48 hour automatic stop** has been approved and will begin **July 24, 1995**. Physicians MUST reorder H_2 antagonist therapy for continuation.

GLUCOPHAGE...THE SUCCESSOR OF PHENFORMIN IS HERE AT LVH

A recently approved agent, Glucophage (Metformin[R], Bristol-Myers Squibb), has been approved for addition to the formulary. It is a non-sulfonylurea which may be used alone as an adjunct to diet or in combination with a sulfonylurea which is not adequately controlling blood sugars in NIDDM. Glucophage improves glucose tolerance in NIDDM patients by lowering both the basal and postprandial plasma glucose. Glucophage works differently compared to the sulfonylureas through a decrease in hepatic glucose production, a decrease in intestinal absorption of glucose and improvement of insulin sensitivity. Hypoglycemia does not result from glucophage therapy, adding to the advantage of this agent.

Concerns related to the potential adverse effects of glucophage, especially lactic acidosis was addressed by endocrine. Lactic acidosis, though rare, can occur secondarily to accumulation of glucophage. When it occurs, it is fatal in 50% of the cases. Reported cases have occurred primarily in diabetic patients with significant renal insufficiency. The risk of lactic acidosis increases with the degree of renal dysfunction and the patient's age. Due to impaired hepatic function, the body may not be able to adequately clear lactate. Patients should be cautioned against excessive alcohol intake while receiving metformin due to alcohol's ability to potentiate the effect of glucophage on lactate metabolism.

Glucophage is considered to be contraindicated in patients with renal disease or renal dysfunction, suggested by a serum creatinine of $\geq$ 1.5mg/dl. The drug should be temporarily withheld (at least 48 hours prior to and 48 hours after procedure) in patients undergoing radiologic studies involving parenteral contrast dyes due to the possibility of acute changes in renal dysfunction with the use of these agents. Finally, the drug should be withheld in patients with any type of hypersensitivity to metformin or have an underlying chronic metabolic acidosis including diabetic ketoacidosis with or without coma.

Many precautions exist for glucophage, some of which include the monitoring of renal function, concomitant use of other medications which alter renal function, hypoxic states, alcohol intake and impaired hepatic function.

In addition to lactic acidosis, other potential adverse effects include gastrointestinal reactions, alteration of taste and asymptomatic subnormal vitamin B_{12} levels.

The usual starting dose for glucophage is 500mg PO BID administered with the morning and evening meal with dosage increments of one tablet every week to a maximum of 2550mg/day. The usual maintenance dose is 850mg PO BID.

Monitoring of glycosolated hemoglobin should occur approximately every three months. Fasting plasma glucose should be used to determine the therapeutic response to glucophage.

The expected costs of this agent will range from $0.70 to $1.95/day.

An educational chart memo is in development to assist physicians with monitoring and managing patients on glucophage while hospitalized.

NO MORE PHONE CALLS.... EXPANSION OF THE THERAPEUTIC SUBSTITUTION LIST

By popular demand, we have revised the therapeutic substitution list at LVH to include frequently ordered non-formulary medications. Historically, a physician would receive a phone call for every non-formulary medication ordered to change it to an available formulary agent. A list was developed of the most frequent non-formulary medications orders to eliminate the need for phone calls. A therapeutic substitution including dosages for the listed agents will automatically occur with an order change sent from pharmacy.

Physicians may continue patients personal supply from home, with a written order stating "patient may use own supply" next to the medication order. The list of agents is on the next page:

DRUG DISPENSED	SUBSTITUTED FOR
lisinopril (Zestril, Prinivil)	benazepril (Lotensin) quinapril (Accupril)
chewable ASA 81mg	enteric coated ASA 81mg
azithromycin (Zithromax)	clarithromycin (Biaxin)
enalapril (Vasotec)	ramipril (Altace)
lovastatin (Mevacor)	fluvastatin (Lescol) pravastatin (Pravachol)
amlodipine (Norvasc)	felodipine (Plendil) isradipine (Dynacirc)
metoprolol (Lopressor)	metoprolol XL (Toprol XL)
acetaminophen 650mg and propoxyphene 100mg (Darvocet N 100)	tramadol (Ultram)
cefuroxime axetil (Ceftin)	cefaclor (Ceclor) capsules
oxycodene 5mg and APAP 325mg (Percocet)	- hydrocodone bitartrate 5mg and APAP 500mg (Vicodin) - hydrocodone bitartrate 7.5mg and APAP 750mg (Vicodin ES)
calcium carbonate (Titralac)	calcium carbonate (Tums)
cholestyramine powder (Questran)	colestipol granules (Celestid)
cephlalexin (Keflex)	cefadroxil (Duricef)
isosorbide mononitrate (Ismo)	isosorbide mononitrate (Imdur)
guaifenesin (Robitussin plain)	guaifenesin LA (Humibid LA)
nitrofurantoin (Macrodantin)	nitrofurantoin SR (Macrobid)
glipizide (Glucotrol)	glipizide XL (Glucotrol XL) (QD orders only)

A NEW TWIST FOR OLD DRUGS...AMINOGLYCOSIDES EXTENDED- DOSING INTERVAL

Many institutions have adopted an extended-interval dosing regimen for aminoglycosides. The relatively novel approach to administering aminoglycosides is based on two important properties of these drugs. First, aminoglycosides have concentration-dependent activity. The higher the concentration, the better killing activity of the aminoglycosides. Secondly, aminoglycosides possess a "post-antibiotic" effect. Even though there may be an undetectable amount of aminoglycoside in the patients system, suppression of the bacteria can still be achieved.

The dosing of either gentamicin or tobramycin would be achieved through using 5mg/kg (based on ideal body weight) administered once daily in patients with normal renal function i.e. estimated CrCl $\geq$ 50ml/min. The dosing interval would be extended to Q36 hours for patients with estimated CrCl between 30-49 ml/min and Q48 hours for 20-29 ml/min, respectively. Patients with CrCl < 20ml/min or with ARF should receive a single dose of 2mg/kg (IBW) and the dose should be adjusted based on levels and dialysis schedule, if applicable.

Monitoring of extended-interval aminoglycosides is less complex than the present recommendations. Renal function needs to be assessed a minimum of Q3 days while receiving aminoglycosides. Only a random level 16-20 hours post-dose needs to be assessed. The latter offers the advantage of having the random level available prior to the next dose. It would allow for extension of the dosing interval, if necessary. The random level should be < 1mg/dl to prevent accumulation of the drug. If the random level is less than 1mg/dl, DO NOT shorten the dosing interval. This level is meant to monitor for avoidance of toxicity rather than interpretation for therapeutic effect. The specific time of monitoring a random level should be indicated on the physicians order. Random levels between 16-20 hours after the dose can be checked following the first dose and Q5-7 days, thereafter, if necessary, assuming renal function is stable. More frequent monitoring may be necessary for rapidly changing renal function. Peak levels do not need to be monitored utilizing the extended-interval dosing. The high serum concentrations achieved by this dosing regimen negate the need to check peak concentrations for aminoglycosides.

Certain patients may not be candidates for extended interval. These populations include:

- neutropenic patients (ANC < 1000)
- suspected or documented treatment of endocarditis
- patient with cystic fibrosis, cirrhosis, ascites or myasthenia gravis
- pregnant patients or nursing mothers
- patients on dialysis or ARF patients
- patients treated for staphylococcal or enterococcal infection when aminoglycosides are used for synergy
- patients with a h/o drug-induced ototoxicity

Dosing:

A. Calculate Creatine Clearance

Males: $\frac{(140\text{-age}) \times \text{IBW}}{\text{Scr} \times 72}$

Females: CrCl(males) x 0.85

IBW = ideal body weight (See chart on next page)

B. Dose as follows

Est. CrCl	Dose
$\geq$ 50ml/min	5mg/kg/24 hrs
30-49ml/min	5mg/kg/36 hrs
20-29ml/min	5mg/kg/48 hrs
< 20ml/min	2mg/kg x 1, then dose by levels

Ideal Body Weight			
Males		Females	
Ht (in)	Wt (kg)	Ht (in)	Wt (kg)
60	50	60	46
61	52	61	48
62	55	62	50
63	57	63	52
64	59	64	55
65	62	65	57
66	64	66	59
67	66	67	62
68	68	68	64
69	71	69	66
70	73	70	69
71	75	71	71
72	78	72	73
73	80	73	75
74	82	74	78
75	85	75	80
76	87	76	82
77	89	77	85
78	91	78	87
79	94	79	89
80	96	80	92

For dosing weight, actual body weight may be used if patient is not obese. If patient is obese (>20% ideal body weight), take 40% of the excess weight and add to IBW i.e. obese patient dosing weight = 0.4 x (actual body weight - ideal body weight) + ideal body weight.

In published data regarding extended-dosing regimens for aminoglycosides, a greater incidence of adverse effects have not been demonstrated, specifically looking at oto- and nephrotoxicity.

If you have any questions regarding appropriate dosing of extended-interval aminoglycosides please contact the pharmacy.

P.S. - If extended-interval dosing of aminoglycosides is not appropriate for your patient, a nomogram exists to assist you in selecting therapeutic doses. Please refer to the following nomogram:

HULL & SARUBBI NOMOGRAM
FOR GENTAMICIN and TOBRAMYCIN DOSING

1. Select loading dose in mg/kg (LEAN WEIGHT) to provide peak serum level desired. Approximate peak levels from commonly used loading doses are indicated below:

LOADING DOSE	EXPECTED PEAK SERUM LEVEL BASED UPON ONE-HOUR IV INFUSION
2.0 mg/kg	6-8 ug/ml
1.75 mg/kg*	5-7 ug/ml
1.5 mg/kg	4-6 ug/ml
1.25 mg/kg	3-5 ug/ml
1.0 mg/kg	2-4 ug/ml

*(Recommended for most moderate to severe systemic infections.)

2. Select Maintenance Dose (as percentage of chosen loading dose) to continue peak serum levels indicated above according to patient's creatinine clearance and desired dosing intervals.

PERCENTAGE OF LOADING DOSE REQUIRED FOR DOSAGE INTERVALS SELECTED:			
Cr. Clear.	8 hrs.	12 hrs.	24 hrs.
90	90%	—	—
80	88	—	—
70	84	—	—
60	79	91%	—
50	74	87	—
40	66	80	—
30	57	72	92%
25	51	66	82
20	45	59	83
15	37	50	75
10	29	40	64
7	24	33	55
5	20	28	48
2	14	20	35
0	9	13	25

(Shaded areas indicate suggested dosage intervals.)

$$\text{CrCl (males)} = \frac{(140 - \text{Age}) \times (\text{Weight})}{\text{SCr} \times 72}$$

or

$$\text{CrCl (males)} = \frac{(140 - \text{Age})}{\text{Scr}}$$

CrCl (female) = 0.85 × either of above values

CrCl = creatinine clearance in ml/min

Scr = serum creatinine in mg/dl

Age is in years • Weight is in kg.

Hull & Sarubbi. Annals of Internal Medicine 85.183-189. 1976

PLEASE NOTE: For patients who have an estimated **CrCl < 50ml/min** or whose **age ≥ 70 years**, a **Q12 hours** rather than Q8 hour dosing interval should be selected to allow for the drug to be adequately cleared and prevent accumulation.

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