NATIONAL INSTITUTES OF HEALTH

Pharmacy Update

July/August 2002

Drug Information Service
Pharmacy Department
Warren G. Magnuson Clinical Center
National Institutes of Health
Bethesda, Maryland 20892-1196
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In This Issue

Welcome, New Medical Staff Fellows

The staff of the Pharmacy Department welcomes you and would like to introduce you to the variety of services we offer in support of patient care and biomedical research.

Inpatient Pharmacy

The Inpatient Pharmacy provides medications for hospitalized patients. All medication orders are reviewed by pharmacists before they are dispensed to the nursing units. Using patients' medication profiles, pharmacists evaluate orders for potential allergies, appropriateness of dosing regimen, drug interactions, and drug incompatibilities. The Unit Dose staff prepare nonparenteral medications for patient use, with all dosage forms individually packaged and labeled. Parenteral preparations, including injectable investigational drugs, are prepared under rigorous standards for sterility and quality control by the Intravenous Admixture Unit or by the Oncology Satellite. Inpatient services are available on a 24-hour basis from the central pharmacy on the first floor.

Clinical Pharmacy

Pharmacists with advanced clinical training and experience are assigned to patient care services. Their functions include provision of patient-specific drug-use recommendations, participation in drug selection, monitoring patients' response to therapy, serving as IRB members, counseling patients, and participating in experimental drug protocol design and implementation.

Outpatient Pharmacy

The Outpatient Pharmacy dispenses prescriptions and provides medication counseling for outpatients, patients on pass, and discharged patients. Medications provided by the Outpatient Pharmacy must be protocol related and are typically limited to a 90-day supply. The Outpatient Pharmacy is open from 8:30 a.m. to 6 p.m., Monday through Thursday, 8:30 a.m. to 8 p.m. on Friday, and 8:30 a.m. to 12:30 p.m. on weekends and holidays. Only emergency outpatient prescriptions are filled after hours.

Drug Information Service

The NIH Drug Information Service (DIS) is available to assist clinicians with patient-specific pharmacotherapy management. The DIS also responds to queries regarding medications, biologics, and nutrients, and is equipped with numerous CD-ROM, print, and online information resources.

Additionally, the DIS is the principal resource to the Pharmacy and Therapeutics Committee for evaluating new medications, adverse drug reactions, drug-delivery systems, and medication-related policies and procedures. The DIS assists clinical investigators with study design, protocol development, drug safety monitoring, and parenteral nutrition management.

Procurement and Control

The purchase and quality control of drugs used for patient care are the responsibilities of the Pharmaceutical Procurement and Control Section. This unit procures all commercial drugs and pharmaceutical supplies authorized for use at the Clinical Center, and is responsible for maintaining the formulary of approved drugs.

Pharmaceutical Development

The Pharmaceutical Development Section (PDS) provides research-related support, including registration and control of all investigational drugs used for patients, formulation of unique dosage forms of commercially available and investigational drugs, assaying investigational drugs and providing summaries of these data to support the submission of investigational new drug (IND) applications, conducting quality control and stability studies for all products manufactured by the Department, aiding investigators in designing blinded studies, and providing information on investigational drugs undergoing study at the NIH. Investigational drugs must be registered with PDS before they are administered to Clinical Center patients.

Clinical Pharmacokinetics

The Clinical Pharmacokinetics Research Laboratory (CPRL) of the PDS assists clinical investigators in the design, analysis, and interpretation of pharmacokinetic studies. The CPRL supports investigators in several major areas of pharmacokinetics research, including modeling of drugs and/or metabolites, examination of concentration-effect relationships, drug interaction studies, and characterization of drugs with nonlinear disposition. In addition, the CPRL provides consultations on individual patients regarding pharmacokinetic aspects of drug therapy.

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A Few Facts

Outpatient, Discharge, and On-Pass Prescriptions

Physicians should enter discharge or *on-pass* medication orders for their patients into the MIS on the day before the event, or during the morning hours on weekends and holidays. Outpatient prescriptions, discharge medication orders, and prescriptions for patients on pass will only be filled during the Outpatient Pharmacy's scheduled hours of operation.

Prescribing Restricted Antimicrobials

When prescribing restricted antimicrobials from the MED INDEX in the MIS, the following message will appear:

> *You have selected a restricted antimicrobial. The Pharmacy Department will not act on this order until it is approved by an ID consultant via a telephone call to the Pharmacy.*

Prescribers are obliged to...

- Complete the order in the MIS.
- Contact the ID fellow directly or through the Clinical Center page operator (496-1211).
- If the ID fellow is unavailable or does not respond, the prescriber should contact the assigned ID attending physician (page operators have the most current coverage schedule).

Note:

The Pharmacy Department will not dispense a first dose of a restricted antimicrobial without ID approval.

Orders for restricted antimicrobials which are included as adjunctive therapies in NIH studies, must be entered into the MIS by physicians authorized to prescribe restricted agents for their patients. Otherwise, ID approval is required.

Although ID approval may have been granted for a restricted antimicrobial during a patient's prior admission, retreatment with the same restricted antimicrobial is contingent upon ID reapproval.

The following antimicrobials have been designated as restricted:

- Abelcet® and AmBisome®
- Ceftazidime
- Ciprofloxacin (i.v. formulation only)
- Fluconazole (i.v. formulation only)
- Imipenem/cilastatin
- Levofloxacin (i.v. formulation only)
- Linezolid
- Meropenem
- Moxifloxacin
- Piperacillin/tazobactam
- Vancomycin (oral formulation only)

Scheduled (CII) Drugs

All "TAKE HOME" orders for Schedule II drugs for outpatients must be accompanied by the prescriber's signed order. This signature must be received by the Outpatient Pharmacy before the medication can be dispensed.

Prescription Blanks

Blank prescription forms are available in the Outpatient Pharmacy (1st floor). They are dispensed only to physicians, nurses, and pharmacists. Persons requesting prescription blanks must present their Clinical Center identification and sign for the forms.

Parenteral Nutrition (PN)

All orders for parenteral nutrition received in the Pharmacy Department by 2 p.m. will be delivered to the patient care unit by 6 p.m. Orders for outpatients or patients who will be discharged on PN should be entered before 11 a.m. so they can be ready for pick-up after 3 p.m.

DEA Registration

Section 1301.25 of the Federal Controlled Substance Act Regulations provides that all physician practitioners employed by the Public Health Service may use their service number (i.e., Social Security number) and branch of service or service agency

on all prescriptions issued in lieu of a DEA registration number (*Note:* you do not need to provide your Social Security number for controlled substances filled by the Clinical Center Outpatient Pharmacy). For additional information, contact a pharmacist in the Pharmacy Procurement Section (496-9358) or write or call:

Drug Enforcement Agency
Registration Board
P.O. Box 28033
Central Station
Washington, DC 20005
Telephone (800) 882-9539

Pharmacy Residency Appointments for 2002-2003

Judy T. Chen, Pharm.D.
University of Illinois at Chicago
Primary Care Resident
Frank Pucino, Pharm.D.
Program Director

Mary Roach, Pharm.D., M.S.
Howard University
Oncology Pharmacy Practice Resident
Barry R. Goldspiel, Pharm.D.
Program Director

Pharmacy Phone Numbers

Drug Information Service	6-2407
Intravenous Admixture Unit	6-6551
Office of the Chief	6-4363
Oncology Satellite	6-8092
Outpatient Pharmacy	6-2866
Pharmaceutical Development Section (PDS)	6-1031
Pharmaceutical Procurement and Control	6-9358
Unit Dose Distribution Unit	6-1914

Clinical Pharmacy Specialists

Paul Jarosinski, Pharm.D.	NCI/Pediatric Oncology and HAM Branch (Pediatrics)	104-2220-7
David Kohler, Pharm.D.	NCI/Medicine Branch, HAM Branch, and Neuro-Oncology Branch (Adults)	104-2243-7
Thomas Hughes, Pharm.D.	NCI/Medicine Branch, HAM Branch, and Neuro-Oncology Branch (Adults)	301-285-2276
Reem Abo-Zena, Pharm.D., BCOP	NHLBI/BMT	104-4651
Christine Chamberlain, Pharm.D., BCPS	NIDDK/Solid Organ Transplantation	301-285-2426
Gerald Overman, Pharm.D., BCPP	NIMH	104-5267
Scott Penzak, Pharm.D.	Pharmacokinetics/NIAID	301-285-1499
Brad Moriyama, Pharm.D.	MICU	301-285-1018
Frank Pucino, Pharm.D., BCPS	Ambulatory Care Services	104-3043-7
Alice Pau, Pharm.D.	NIAID	104-4150-7
Karim Calis, Pharm.D., M.P.H., BCPS, BCNSP	NICHD	301-285-5274
	NIDDK/Endocrinology & Digestive Diseases	
	NIH Drug Information Service	104-5264

Restricted Medications

The following is a list of non-antimicrobial drugs for which some form of restriction has been placed by the Pharmacy and Therapeutics Committee:

- **Alprostadil (Muse®)**
  Restricted to the NCI Surgical Urology Branch
- **Amiodarone (Cordarone®)**
  Initiation of therapy outside the Medical Intensive Care Unit requires approval by the Cardiology Consult Service
- **Argatroban (Acova®)**
  Use of this medication requires approval by the Clinical Hematology Service
- **Clonidine Injection (Duraclon®)**
  Restricted to the Anesthesiology Service
- **Clozapine (Clozaril®)**
  Restricted to use by physicians from NIMH and NINDS
- **Dornase Alfa (Pulmozyme®)**
  Restricted for use in patients with cystic fibrosis (inpatient use only)
- **EMLA® Cream**
  This is a eutectic mixture of lidocaine and prilocaine which is used in pediatric or adult patients to reduce the pain associated with venipuncture, intravenous cannulation (especially in children in whom intravenous access is difficult), lumbar puncture, and certain dermatologic procedures. This drug should not be routinely used on mucous membranes or prior to subcutaneous or intramuscular injections.
- **Epoetin Alfa (Epogen® or Procrit®)**
  Drug use is evaluated through queries in MIS order screens
- **Filgrastim (Neupogen®)**
  Drug use is evaluated through queries in MIS order screens
- **Granisetron (Kytril®)**
  Usage guidelines were described in the May/June 1997 issue of *Pharmacy Update*
- **Lepirudin (Refludan®)**
  Use of this medication requires approval by the Clinical Hematology Service
- **Ondansetron (Zofran®)**
  Usage guidelines were described in the May/June 1997 issue of *Pharmacy Update*
- **Mexiletine (Mexitil®)**
  Restricted to the Pain Management Service (for neuropathic pain)
- **Tacrolimus Ointment (Protopic®)**
  Use requires approval by the NCI Dermatology Consult Service
- **Tizanidine (Zanaflex®)**
  Use requires approval by the NINDS Neurology Consultation Service
- **Tramadol (Ultram®)**
  Use requires approval by the Pain & Palliative Care Service

FDA Safety Alerts

- You can access the latest safety information from the Food and Drug Administration website. To access "Dear Health Professional" letters, other safety notifications, and labeling changes related to drug safety, just point your browser to *www.fda.gov* and click on "MedWatch." MedWatch is the FDA's medical products reporting program.
- You can receive immediate e-mail notification of new material as soon as it is posted on the MedWatch website. Just send a subscription message to *fdalists@archie.fda.gov.* In the message body enter: *subscribe medwatch* and your e-mail address.

Drug Information Service

- Patient-specific pharmacotherapy evaluation and management
- Comprehensive information about medications, biologics, and nutrients
- Critical evaluation of drug therapy literature
- Assistance with study design and protocol development
- Clinical trial drug safety monitoring
- Investigational drug information
- Parenteral nutrition assessment and management

301-496-2407
Pager 301-285-4661
Building 10, Room 1S-259