

XXVII.

Warren Grant Magnuson Clinical Center

INTRODUCTION

As the research hospital for the National Institutes of Health (NIH), the Warren Grant Magnuson Clinical Center supports clinical investigations conducted by the Institutes. The Clinical Center was specifically designed to bring patient care facilities close to experimental laboratories, to facilitate and expedite the testing and application of basic research findings in the treatment of patients. The 14-story, 290-bed facility employs 600 nurses, 570 allied health professionals, and 1,242 credentialed physicians, dentists, and doctorate-level researchers.

HIGHLIGHTS OF RECENT SCIENTIFIC ADVANCES RESULTING FROM INTERNATIONAL ACTIVITIES

During fiscal year 1999 (FY 99), Clinical Center staff presented research findings at numerous international conferences on subjects such as the ethics of international clinical research; hepatitis C viral infection; laboratory errors; use of magnetic resonance imaging (MRI) in multiple sclerosis; infection control; effects of low-level radiation exposure; palliative care and pain management; medications for treatment of acquired immunodeficiency syndrome (AIDS); compliance of AIDS patients with therapy regimens; and analysis of human movement.

Staff also were involved in the formulation and distribution of investigational medications and in collaborations with international researchers in diverse fields of clinical investigation.

DEPARTMENT OF CLINICAL BIOETHICS

International Research

In October 1999, representatives from EthOx, a bioethics group in Oxford, England, visited the Department of Clinical Bioethics to learn about bioethics consultation at the Clinical Center, for adaptation into the organization's program in England.

This visit may lead to further collaboration on evaluating bioethical consultation.

International Training

The Department has an ongoing collaboration with the Fogarty International Center (FIC) for development of training programs to enhance bioethics knowledge and skills in developing countries. These programs focus on the ethics of clinical research.

International Meetings

Personnel from the Department of Clinical Bioethics participated in various capacities at international meetings during FY 99:

- speaker on the ethics of clinical research, at the meeting on the Multinational Initiative on Malaria, in Durban, South Africa, in March 1999;

- speaker on the ethics of clinical research, at the International Training and Research Program in Population and Health, sponsored by FIC and held at NIH, in Bethesda, Maryland, in March 1999;

- member of the panel on teaching the ethics of international research, at the meeting on Public Responsibility in Medicine and Research, in Bethesda, Maryland, in May 1999;

- member of the bioethics advisory group and speaker at the meeting on ethics in clinical research, sponsored by the Pan American Health Organization (PAHO) and held in Washington, D.C., in June 1999;

- presenter of a series of lectures on the ethical issues of managed care and end-of-life care and participant in a conference hosted by the Norwegian Medical Association, both at Bergen Medical School, Norway, in August 1999;

- speaker on ethical issues related to human immunodeficiency virus (HIV) infection, at a meeting of the Chinese National Commission on AIDS, in Beijing, in September 1999;

- representative at meetings with scientists and public health officials to combat

the HIV epidemic in Chongqing, Shanghai, and Wuhan, China, in September 1999; and

- speaker on Ethical Research in the International Setting, at a meeting sponsored by the National Institute of Child Health and Human Development (NICHD) and held in Bethesda, Maryland, in September 1999.

CLINICAL PATHOLOGY DEPARTMENT

Clinical Chemistry Service

International Research

Members of the Clinical Chemistry Service, Clinical Pathology Department, collaborated with investigators at the University of Amsterdam, the Netherlands, in a comparison of devices to measure ionized magnesium in serum. An article on the study, entitled "Serum ionized magnesium: Comparison of results obtained with three ion-selective analyzers," was published in *Clinical Chemistry and Laboratory Medicine*, in April 1999.

International Meetings

The Acting Chief, Clinical Chemistry Service, was an invited speaker on laboratory errors, at an International Congress on Laboratory Medicine, in Padua, Italy, on October 26–27, 1998.

Immunology Service

International Research

A physician from the AIDS and Clinical Immunology Research Laboratory, Tbilisi, Georgia, spent 1 month in the Immunology Service, Clinical Pathology Department. In addition, a Dutch physician came to the Immunology Service as a Visiting Associate and worked in the Flow Cytometry Section during FY 99.

Microbiology Service

International Research

In FY 99, a Fogarty Fellow from Denmark worked in the Microbiology Service, Clinical

Pathology Department, (a) on developing a procedure for continuous axenic culture of sufficient quantities of *Pneumocystis carinii* to allow genetic, antigenic, and biochemical studies of this pathogen, and (b) on use of fluorescence-based detection of *P. carinii* in quantitative analysis by polymerase chain reaction.

A scientist from Argentina spent 3 days in the laboratory learning molecular diagnostic techniques and routine diagnostic bacteriology methods. On a fellowship from PAHO and WHO, a Malaysian scientist worked in the Mycology Section for 1 month. A scientist from Nigeria spent 3 days learning laboratory methods for staining *P. carinii*, *Cryptosporidium* species, mycobacteria, and fungi.

CRITICAL CARE MEDICINE DEPARTMENT

International Research

Eight Visiting Fellows performed research in the areas of pulmonary disease, HIV, and sepsis in the Critical Care Medicine Department. Seven of the Visiting Fellows, from Chinese institutions, performed research in the following areas:

- Beijing Union Medical College—the genomic control of proteins that regulate arachidonate metabolism in epithelial cells;
- Chinese Academy of Medical Sciences, Beijing—(1) mechanisms of nitrogen oxide control of gene expression and (2) sepsis and lung injury;
- Hunan Medical University, Changsha—development of a rapid diagnostic test for *P. carinii*;
- Chongqing University—evaluation of mutations in genes of *P. carinii* that are targets of drug therapy, to determine whether resistance to therapeutic agents is related to mutation;
- Dalian Medical University—responses of lung epithelial cells to inflammatory mediators; and
- Tongji Medical University, Wuhan—nitric oxide synthase signal transduction.

One of the Visiting Fellows, from the Hospital General Universitario Gregorio Marañon, Madrid, Spain, studied mechanisms of cell migration in acute lung inflammation.

DIAGNOSTIC RADIOLOGY DEPARTMENT

International Research

The Diagnostic Radiology Department hosted a neurosurgeon from Tokyo, Japan, who served as a Special Volunteer and participated in efforts to improve functional MRI studies and stereotactic localization of brain tumors. He became active in the Department's research activities.

The Department also hosted a radiologist from Ankara, Turkey, who served as a Special Volunteer and was involved in the analysis of spectroscopic imaging. He participated in the interpretation sessions of the diagnostic studies performed in the Department.

International Meetings

Personnel from the Diagnostic Radiology Department were invited to speak at the following international meetings during FY 99:

- 8th World Congress of Ultrasound, in Edinburgh, Scotland, on November 1–5, 1998, on the Effects of Tamoxifen on the Ovaries;
- '99 Garmisch MRI, in Munich, Germany, on January 27–31, 1999, on MRI in the New Millennium;
- meeting of the Mexican Radiology Society, in Mexico City, on February 5–7, 1999, as a distinguished guest lecturer, on Radiology in the New Millennium; and
- 5th International Conference on Mapping of the Human Brain, in Düsseldorf, Germany, on June 22–26, 1999.

LABORATORY OF DIAGNOSTIC RADIOLOGY RESEARCH

International Meetings

In FY 99, the Chief, Laboratory of Diagnostic Radiology Research, participated in international meetings in the following capacities:

- invited speaker at the 123rd Annual Meeting of the American Neurological Association, in Montreal, Quebec, on October 17–21, 1998;
- invited participant in the Multiple Sclerosis Symposium, in Naples, Italy, on February 10–15, 1999; and
- invited participant at the Joint Congress of the European and American Committees for Treatment and Research in Multiple Sclerosis, in Basel, Switzerland, on September 15–18, 1999.

Staff of the Laboratory of Diagnostic Ra-

diology Research participated in the following capacities at international meetings:

- invited speaker at the meeting entitled Ultrafast MRI in Medicine: Burst Imaging, in Kyoto, Japan, on January 23–31, 1999;
- invited speakers and poster presenters at the International Society of Magnetic Resonance in Medicine, 7th Scientific Meeting, in Philadelphia, Pennsylvania, on May 22–28, 1999; and
- invited participant at the European Congress of Biotechnology, 9th Bi-Annual Meeting, in Brussels, Belgium, on July 11–16, 1999.

HOSPITAL EPIDEMIOLOGY AND QUALITY ASSURANCE SERVICE

International Research

Investigators in the Hospital Epidemiology and Quality Assurance Service continue to collaborate with physicians and nurses in four university hospitals in Japan on a study designed to accomplish the following purposes:

- evaluate and compare nurses' knowledge of epidemiology, pathogenesis, occupational risks, and appropriate prevention strategies in relation to infection with blood-borne pathogens;
- compare self-reported levels of compliance with recommendations for infection control;
- compare self-reported frequencies of cutaneous exposures to blood; and
- evaluate the effect of educational interventions on nurses' perceived compliance with recommendations and on the frequencies of self-reported exposures to blood.

Surveys have been administered and collected, data analysis is under way, and the preliminary findings have been presented to the Japanese co-investigators.

International Meetings

During FY 99, the hospital epidemiologist, Hospital Epidemiology and Quality Assurance Service, was an invited speaker at the State-of-the-Art Symposium on HIV Therapy, sponsored by the International AIDS Society, in Rome, Italy, on September 13–15, 1999. His plenary presentation was on Postexposure Chemoprophylaxis for HIV Exposure.

NUCLEAR MEDICINE DEPARTMENT

During FY 99, the Nuclear Medicine Depart-

ment said goodbye to the Clinical Center's first Clinical Fogarty Scholar (June 22–November 30, 1999), who previously was the Director of the Institute of Medicine, Jülich, and Chairman of the Nuclear Medicine Department, University Hospital, Düsseldorf, Germany. While at NIH, the Clinical Fogarty Scholar's major activities included the following:

- interacting with the Nuclear Medicine Department group examining the Auger effect on DNA damage and DNA repair and the nuclear cardiology research group using positron emission tomography (PET);

- arranging the meeting on the effects of low-level radiation exposure, sponsored by the U.S. Department of Energy and NIH and held at NIH, in Bethesda, Maryland, on April 27–30, 1999;

- participating in the combined meetings of the European Association of Nuclear Medicine and the World Federation of Nuclear Medicine and Biology, in Barcelona, Spain, on October 13–19, 1999; and

- consulting in Bethesda, Maryland, in October 1999, with officials in the General Accounting Office who had been asked by Congress to review U.S. policies on radiation exposures.

International Research

Four Fogarty Fellows (one from China, one from Japan, and two from Korea) worked in the Monoclonal Antibody Laboratory, Nuclear Medicine Department, on development of radiolabeled variable antibody (Fv) fragments and pretargeted antibody therapy as diagnostic imaging agents for cancer. This research resulted in presentations at the 46th Annual Meeting of the Society of Nuclear Medicine of the Federation of American Societies of Experimental Biology, in Los Angeles, California, on June 6–10, 1999, and in publication of six articles in four peer-reviewed journals: *Bioconjugate Chemistry* (January and March 1999); *Cancer Research* (January 1999); *Journal of Nuclear Medicine* (May and August 1999); and *Nuclear Medicine and Biology* (January 1999).

International Meetings

Four members of the Imaging Physics Laboratory, Nuclear Medicine Department, attended and presented reports on scientific research, at the Nuclear Science Symposium and Medical Imaging Conference of the In-

stitute of Electrical and Electronic Engineers, in Toronto, Ontario, on November 8–14, 1998.

A senior staff member of the Imaging Physics Laboratory gave an invited presentation at the meeting on Frontiers in Nuclear Medicine Technology, in Mol, Belgium, on May 6–7, 1999.

In addition, a senior staff member of the Imaging Physics Laboratory cosponsored, co-organized, and participated in a meeting on High Resolution Imaging in Small Animals With PET, Magnetic Resonance, and Other Modalities, in Amsterdam, the Netherlands, on September 27–29, 1999.

NURSING DEPARTMENT

International Meetings

On October 23–24, 1998, a Nursing Department staff member made presentations on (1) Palliative Care in the U.S.A., (2) Pain Management, and (3) Home Care: From Hospital to Home, at an oncology conference entitled Jornadas de Enfermería Oncológica, which was sponsored by Catholic University of Chile, Santiago, and was held in Santiago.

Intramural Programs and Activities

In FY 99, the Nursing Department hosted 10 international colleagues and students, providing them with learning opportunities in clinical care, research, education, and informatics. These visitors included the following:

- A physician from the North Atlantic Treaty Organization and two nurses, all from the Czech Republic, received an overview of the Nursing Department, nursing research, and protocol mapping.

- Through the University of Maryland, Baltimore, two British undergraduate nursing students from Bournemouth, England, received an overview of the Department and the role of the nurse in psychiatric research.

- A visiting nurse from England received an overview of the Department and the role of the nurse in psychiatric research.

- Four nurses from Ireland spent 1 week in the Department learning more about oncology nursing, as part of an agreement of the National Cancer Institute with Ireland and the Comprehensive Cancer Center of Galway, Ballinafloe, and Castlebar, Ireland.

These activities provided an opportunity for sharing expertise and experience across

a wide spectrum of issues. The Nursing Department is frequently consulted, through contacts at international conferences and courses or through the Internet, about its standards of practice for nursing and standards of care for patients.

In addition, the Department serves as a host site for the International Oncology Nursing Fellowships sponsored by the International Union for Cancer Care. Nurses from Eastern European countries apply to receive training related to cancer prevention and early detection, teaching of patients, safe administration of cytotoxic agents, pain management, quality-of-life issues, and research. In FY 99, the Nursing Department accepted 2 of the 10 applications received for this program, but the International Union for Cancer Care did not provide the necessary funding for the training.

PHARMACY DEPARTMENT

International Research

The Pharmacy Department supported formulation and distribution of investigational medications to Argentina, Chile, China, Thailand, the United Kingdom, and Vietnam, as part of ongoing studies with NIH-based investigators. The Department also collaborated with investigators in NICHD to establish sites for study of shigella vaccine, at Cape Verde Islands and in Mozambique.

International Meetings

Staff members of the Department were invited to make presentations at two meetings: the regional meeting of the International Society of Oncology Pharmacy Practice, in Orlando, Florida, on March 18–22, 1999, and the annual meeting of the International Pharmaceutical Federation, in Barcelona, Spain, on September 9–14, 1999. In addition, personnel from the Pharmacy Department reported research activities in presentations at the International 39th Interscience Conference on Antimicrobial Agents and Chemotherapy, in San Francisco, California, on September 26–29, 1999.

NIH Campus Activities

Activities of the Pharmacy Department on the NIH campus in Bethesda, Maryland, included the following:

- Guests from Colombia, Italy, Japan, Russia, Slovenia, and Syria visited for 1-day

programs to learn about pharmacy practice or pharmaceutical research.

■ A guest pharmacy fellow from Singapore General Hospital spent several weeks in the Pharmacy Department learning advanced concepts concerning drug information.

■ Educational programs on use of medications and compliance were provided for the Infectious Disease Society of America Training Program in AIDS, to registrants from Argentina, Bulgaria, India, and Malaysia.

■ Pharmacy Department staff chaired the Pharmacokinetics–Pharmacodynamics Practice and Research Network of the American College of Clinical Pharmacy—a worldwide network of pharmacokineticists.

POSITRON EMISSION TOMOGRAPHY DEPARTMENT

International Research

Members of the Positron Emission Tomography Department continued joint efforts with a major European laboratory, KFA, in Jülich, Germany, to develop and analyze muscarinic receptor ligands.

REHABILITATION MEDICINE DEPARTMENT

International Research

The Chief, Biomechanics Section, Rehabilitation Medicine Department, continued to support a collaborative research effort of the National Institute of Neurological Disorders and Stroke, NIH, with the National Research Institute on Aging, Florence, Italy. In addition, the Section Chief continued to serve on the board of directors of the Commission for Motion Laboratory Accreditation. The Chief is also a member of an international team of scientists and clinicians that has the task of developing guidelines for future editions of software for analysis of human movement. The Biomechanics Laboratory software for

motion analysis continues to be licensed through material-transfer agreements to scientists in Australia, Canada, England, Ireland, Italy, and the Netherlands.

International Meetings

The Chief, Rehabilitation Medicine Department, attended the 7th International Conference on Osteogenesis Imperfecta, in Montreal, on August 29–September 1, 1999. She made a presentation on Rehabilitation of Children and Infants With Osteogenesis Imperfecta and made a joint presentation on Temperament in Relation to Gross Motor Function in Children With Osteogenesis Imperfecta.

The Rehabilitation Medicine Department Research Coordinator was an invited speaker at the International Assessment of Motor and Process Skills Symposium, in Auckland, New Zealand, on April 12–16, 1999.

Staff of the Physical Therapy Section made scientific presentations at the World Confederation of Physical Therapy, 13th International Congress, in Yokohama, Japan, on May 23–28, 1999. They addressed (1) Lymphedema Management: Training of United States Physical Therapy Students and (2) Living With Cancer: Challenges and Opportunities.

DEPARTMENT OF TRANSFUSION MEDICINE

International Meetings

The Chief, Department of Transfusion Medicine, served in the following capacities:

■ invited to participate on the committee, at the National Blood Authority Research Review Committee Meeting, in London, England, to discuss the research programs of the Bristol and Cambridge/Colindale Centres and to review existing project grants, on January 30–February 2, 1999; and

■ invited to accompany and assist NIH's delegation from the National Heart, Lung,

and Blood Institute to conduct training seminars on blood transfusion and hematology at Hanoi University, Vietnam, on March 7–10, 1999, and at the Blood Transfusion and Hematology Seminar, in Ho Chi Minh City, Vietnam, on March 12–13, 1999.

The Chief, Infectious Diseases Section, served in the following capacities:

■ invited participant at the Consensus Conference on Hepatitis C, sponsored by the European Association for the Study of the Liver, and 1 of 15 experts to address major questions involving hepatitis C at the conference, in Paris, France, on February 23–March 1, 1999;

■ invited speaker on Molecular Aspects of Viral Infections, at the 5th International Meeting of the Groupe Français d'Etudes Moléculaires des Hépatites, in Paris, France on June 17–20, 1999;

■ invited speaker on The Natural History of Hepatitis C Viral (HCV) Infection, at the Hepatitis Conference at the University of Palermo, Italy, on June 21–22, 1999; and

■ recipient of the James Blundell Award and invited speaker at the meeting of the British Blood Transfusion Society, in Edinburgh, Scotland, on September 17–19, 1999.

As a former visiting professor of the Blood-Borne Virus Foundation, at the University of Barcelona School of Medicine, Spain, a staff member of the Infectious Diseases Section was invited to participate in a meeting on Medicine and Humanity, sponsored by the Blood-Borne Virus Foundation and held in Madrid, Spain, on April 20–26, 1999.

NIH Campus Activities

In FY 99, nine Visiting Fellows (one from Australia, two from China, one from Germany, two from Italy, and three from Japan) and two Special Volunteers (one from Germany and one from Korea) worked with staff of the Department of Transfusion Medicine.