Commemorative 50th Anniversary Edition Inside

July 2003

Clinical Center News

In this issue:

•*Preview CRC furniture*
•*Team NIH races for a cure*
•*Bourn retires after 33 years*

Family Lodge director appointed

Five years ago, The Edmond J. Safra Family Lodge was merely an idea. Today the idea is a reality and one person who played a key role in developing the project has been appointed as executive director.

Jan Weymouth, former Space and program management officer, was appointed by Clinical Center Director Dr. John Gallin, to the position last month. Weymouth said she is expecting the Family Lodge to be a major contributor in the lives of families who are supporting loved ones being treated at the Clinical Center.

"My goal and vision for the Family Lodge is to provide a comfortable, nurturing environment for the caregivers and families of the patients who partner with NIH in clinical research," said Weymouth. "When families enter the Lodge, either from a long day of being in the Clinical Research Center or from the long trip just to reach NIH, we want them to immediately feel a sense of comfort and reassurance."

The Edmond J. Safra Family Lodge is designed to provide "a home away from home" on the NIH campus for caregivers of Clinical Center patients. Residents will find amenities that reflect the comforts of home as well as the support and companionship of others facing similar challenges.

The 34-room lodge, currently under construction near the corner of Center and Convent Drives, grew out of the NIH Guest House Program that was piloted by the Clinical Center in 1996. The Guest House was temporarily quartered in the old Apartment House (Building 20), and provided short-term lodging for patients' families. With the demolition of Building 20 in 1998 to make way for the Mark O. Hatfield Clinical Research Center, Weymouth assumed oversight of the program and arranged for the 6-unit Guest House to be moved to a nearby apartment building on Battery Lane in Bethesda, and continues today in a

See **Weymouth**, page three

NATIONAL INSTITUTES OF HEALTH
CLINICAL CENTER
FIFTIETH ANNIVERSARY
'50
1953 - 2003

A program for patients and staff celebrating the 50th anniversary of the opening of the Clinical Center will be held on July 9 at 1 p.m. in Masur Auditorium.

The ceremony will include remarks by NIH Director Dr. Elias Zerhouni; Dr. Steven Katz, director, NIAMS; Jerry Sachs, member of the Clinical Center's Patient Advisory Group; Howard Drew, long-time Clinical Center blood donor; and Julie Kohn, Clinical Center nurse. Dr. Harvey Alter, chief, Infectious Diseases Section, and associate director of research in DTM, will provide reflections on his years at the Clinical Center, and Clinical Center Director Dr. John Gallin will discuss research advances of the past 50 years. The program will end with a 50th anniversary video presentation.

A tent reception on the South grounds of the Clinical Center will be held immediately following the program. All guests, patients and staff are invited.

Poster presentations depicting the history of the individual Clinical Center departments will be displayed on the first floor of the Clinical Center. The July 9 program is one of several 50th anniversary events planned for the coming year. A scientific symposium will be held on Oct. 14, and a special Grand Rounds series will begin in September. The events will culminate with the opening of the Mark O. Hatfield Clinical Research Center next summer. For more information visit www.cc.nih.gov/50th.

New CRC furniture will be safe and easily maintained

Everyone needs it. Everyone will use it. But few will realize how daunting it was to choose more than 5,000 pieces of furniture required for the patient care, public and office areas of the Clinical Research Center.

For that demanding task, the Furniture Work Group was established as a subcommittee of the Hospital Activation Management Team. Co-chaired by Lawrence Eldridge, assistant to the Chief Operating Officer of the Clinical Center, and Ann Ellis, administrative officer, Office of Facilities Management, the work group was charged with recommending the furniture that would go into the CRC's public and patient areas and offices. Its members reflect the complexity of this issue and included staff from the Housekeeping and Fabric Care Department, the Patient Representative, Nursing and Patient Care Services, the Safety Officer, Space Management Officer, Rehabilitation Medicine Department, a representative from the Division of Engineering Services and a representative from Gilbane, the activation consultant for the Clinical Research Center.

The group's mission was to create criteria for choosing furniture that would not only look good and last long, but also be "state-of-the art." Furniture had to be safe, cleanable, easily maintained, and readily useable by patients and their guests.

"We wanted to use fabrics and types of construction specifically designed to perform well in a health care setting that would make the furniture more durable and easier to repair. What we'll have in the CRC will be up to date," said Eldridge. "We also wanted to have furniture that would be manufactured by companies with a great track record for quality and service and who offered a long-term guarantee," he added.

The furniture ultimately chosen from these criteria had to be both practical and attractive.

Standardization a key

To achieve their mission, group members put forth the concept of "standardization." This is reflected in terms of color—each floor will have its own color of furnishings; and style—a blend of traditional and modern design that provides a soft appearance with rounded edges.

The color themes are drawn from three signature colors: forest green, eggplant purple and russet brown. Each floor will have its own signature color and units on that floor will have a variation of that color. These colors will be worked into various textures and designs, including geometric shapes and nature patterns such as leaves.

"Within each patient care unit, we limited the use of solid colors. We had patterns, and we played off the color on each floor," said Ellis.

Since wayfinding was also important, the color theme on each floor will serve that need as well.

Assuring practicality

Safety and function were critical ingredients for furniture that would be used by patients and their visitors. Furniture could not tip or move in ways that would be dangerous for people who found it difficult to negotiate movement. Seat height, seat depth and chair arm position also had to accommodate a range of patient needs, allowing for differences in a person's strength and balance.

Site visit helpful

When presented with these rigorous criteria, the CRC design team at the Zimmer Gunsul Frasca Partnership Architectural Firm recommended the health-care furniture manufacturer Nemschoff, based in Sheboygan, Wisc. This company also has a track record with the Clinical Center, having supplied

see **Furniture**, page three

Some of the furniture that will be placed in the CRC can be seen in the lobby area outside of the second floor cafeteria.

Clinical Center News

Editor: Tanya Brown
Contributing Writers: Dianne Needham, John Iler, Wendy Schubert, Pat McNees

Clinical Center News, National Institutes of Health, 6100 Executive Blvd., Suite 3C01, Bethesda, MD 20892-7511. (301) 496-2563. Fax: (301) 402-2984. Published monthly for Clinical Center employees by the Office of Clinical Center Communications.

News, article ideas, calender events, letters, and photographs are welcome.

Clinical Center News online: www.cc.nih.gov/ccc/ccnews/current/

Weymouth appointed executive director of Family Lodge

combination of local hotel rooms and two apartments.

However, plans moved ahead to find a permanent, home-like facility for families while their loved ones received care. Weymouth spearheaded the project and worked with the programming and design of the Family Lodge while the NIH Foundation raised funds to build a permanent facility. Organizations such as Merck Company Foundation, the Bristol-Myers Squibb Foundation, GlaxoSmithKline, along with many others, gave generous contributions in support of the Family Lodge. However, a $3 million donation from The Edmond J. Safra Philanthropic Foundation was the catalyst to begin construction. An additional $1 million has been pledged from The Edmond J. Safra Philanthropic Foundation for the exterior garden. The Foundation for NIH hosted a ceremony marking the naming of The Edmond J. Safra Family Lodge on April 17, 2002 at the Russell Senate Office Building in Washington, D.C. A groundbreaking ceremony was held on Oct. 29, 2002, which signaled the start of construction that began in February 2003.

Jan Weymouth

The Family Lodge is expected to be completed in summer 2004, to coincide with the scheduled opening of the new Mark O. Hatfield Clinical Research Center, a state-of-the-art clinical research hospital currently under construction and only a short distance from the Family Lodge.

"The Clinical Research Center will be a state-of-the-art facility," said Weymouth, "but the Edmond J. Safra Family Lodge will be state-of-the-heart."

A rendering of the Family Lodge.

Hard work, cooperation pays off for furniture workgroup

continued from page two

some of the Clinical Center's furnishings throughout the years.

To give members an opportunity to see Nemschoff furniture in-person, three members of the work group visited Nemschoff 's Wisconsin factory last September. They met with the designers, saw different kinds of furniture and narrowed down their selections.

Bonnie Thornton contributed her knowledge as an occupational therapist with the Rehabilitation Medicine Department to help choose the furniture design. "As an occupational therapist, I am familiar with the physical, mental, cognitive symptoms, and subsequent challenges of many of the populations studied here at the Clinical Center. I was also able to evaluate some of the barriers of the furniture designs and suggest better designs, such as anti-tip suggestions, which were actually incorporated by the furniture manufacturer," said Thornton.

Passing crucial tests

While the furniture's design was paramount, so was its upholstery. Furniture had to survive a variety of spillage from items such as food, coffee and strongly colored substances like the antiseptic, Betadine. In this regard, the expertise of the Housekeeping and Fabric Care Department was pivotal.

"One of the biggest factors for me and my department was to be able to clean the furniture easily and completely. We were able to test many of the materials before they were chosen," said Henry Primas, chief of the Housekeeping and Fabric Care Department.

The results of this testing helped choose upholstery that was not only attractive, but also durable.

Staff input valued

Clinical Center staff had a voice in the patient furniture selection as well. To facilitate their input, the work group hosted a "chair fair" in the Clinical Center during which manufacturers showed their products for hands-on evaluation. Treatment chairs, guest chairs, patient high-back chairs, recliners, and sleeper chairs were among the items displayed. Additional demonstrations of other equipment, such as computer keyboards, were held to enable staff to voice their preferences for office furniture.

Mission accomplished

Hard work and multidisciplinary cooperation paid off handsomely. The work group's painstaking evaluations and the close collaboration with the interior design team assured that the furniture chosen would be physically and emotionally supportive to Clinical Center patients and guests as well as complement the architectural style of the CRC.

"The style, the standardization, the colors, the design, all of what the work group proposed was accepted by senior management with little or no modification," said Eldridge.

For Ann Ellis, serving on this committee was very rewarding. "I was happy to be involved in creating specifications that would be used not only in the CRC but throughout the entire hospital."

–Wendy L. Schubert, Sc.M.

Nutrition chief retires after 33 years

When Alberta Bourn, chief, Nutrition Department, first came to NIH in 1970 she had only planned to stay for one year and then move on. Thirty-three years later she is retiring from the Clinical Center -- a place she said exceeded all of her expectations.

"The management was very nurturing for one who was beginning a career," said Bourn. "There was room for growth, the salary and compensation was among the best and the work was interesting and had a national and international impact."

Bourn began her career here as a clinical dietitian after moving to the Washington area from upstate New York with her husband. Upon graduating from college in Alabama, her home state, she went to Poughkeepsie for a dietetic internship sponsored by New York State.

"My husband's company transferred him to the Washington area and one day we were traveling down Rockville Pike and my husband said to me 'maybe you could get a job there,'" said Bourn. "I looked at my husband as if he had gone crazy. I said 'me, work there? I can't imagine.'"

Eventually, she placed her name on a register for federal jobs and received a call to come in for an interview. "I told them I would come for the interview, but I wasn't interested in the job," said Bourn. "Needless to say, I came and the director had a whole day mapped out for me. It was a pleasant experience. So I left the interview with the plan to return as an employee, but only for one year."

By year 13, Bourn had moved up from a clinical dietician to mid-level management and then promoted to chief of the Nutrition Department.

Under her leadership, the department has developed and evolved. Bourn was successful in managing the computerization of food production, the diet office and nutritional analysis functions. She also redeveloped the role of the clinical dietitian to be more focused on patient care and research support, and established a successful dietetic internship. Yet with all of her accomplishments, Bourn said the highlight of her career was being trusted with the management of the nutrition department, and serving in the U.S. Public Health Service as Chief Dietitian Officer under Surgeon General C. Everett Koop.

Alberta Bourn

"The Clinical Center is really a good place to work. There are so many things," said Bourn. "The resources are great; there is never a dull day. The research brings such variety and all kinds of experiences in my profession, whether it be management, people relationships, or working with the technical part...those are the things that keep you here."

During her retirement years, Bourn said she plans on taking graduate courses and using her nutrition background in some capacity. She also hopes to spend more time with her crafts –particularly quilting – and probably take a quilting course and join a club.

"I will miss many of my wonderful co-workers and friends," said Bourn. "And I will probably miss the daily challenges of managing and leading people to perform their best for medical research and patient care."

ClinPRAT program accepting applications

The Clinical Pharmacology Research Associate Training is a three-year postdoctoral research fellowship training program sponsored by the Warren G. Maguson Clinical Center and the National Institute of General Medical Sciences. This program emphasizes the application of laboratory pharmacology, biostatistics, pharmacokinetics, and chemistry to the study of drug action in humans. Postdoctoral training positions are available beginning July 1, 2004 and in subsequent years.

Candidates must have a M.D. degree. In general, they will have completed three years of residency training and will be board eligible in a primary medical specialty when entering the program. Candidates must be U.S. citizens or permanent residents of the United States. Candidates' qualifications are evaluated by the Clinical Pharmacology Steering Committee. Selection is highly competitive and preference will be given to applicants with outstanding potential. Most successful candidates either have had Ph.D. degrees in addition to their M.D. degree or substantial prior research experience. The stipend is determined by the candidate's educational and professional experience. ClinPRAT fellows have the opportunity to participate in the NIH General Loan Repayment Program. For additional information visit http://www.cc.nih.gov/OD/clinprat/ or contact Donna L. Shields at 301/435-6618.

COMMEMORATIVE 50TH ANNIVERSARY EDITION

July 2003

NATIONAL INSTITUTES OF HEALTH
CLINICAL CENTER
FIFTIETH ANNIVERSARY
'50
1953 - 2003

Inside:

• Dedication of first NIH hospital
• Nurse discovers blood separation method
• Rich history of research advances

Gaithersburg farmer becomes first clinical patient

He was 67 years old—a white-haired farmer who owned about 150 acres near what is now Gaithersburg, Md. According to the late and renowned NCI researcher Dr. Roy Hertz, the farmer was a "wonderful person" and a close friend. But to the NIH Clinical Center, he was also patient number 000-00-01.

"He lived on the farm and worked the farm," Hertz later said. "We became very good friends, beyond the usual doctor-patient relationship."

The farmer, Charles C. Meredith, was admitted as the Clinical Center's first patient on July 6, 1953, with prostate cancer. He shared space on 12-East with four other patients who were admitted with him.

"There were more doctors than patients when the Clinical Center first started out," Hertz recounted. He had begun work at NIH on Dec. 8, 1941—the day after the attack on Pearl Harbor—and found the conditions "very, very limited." And, he added, "we had very poor control of the patients."

Hertz had been involved in a clinical program at the National Cancer Institute that began at what is now the D.C. General Hospital, a grueling 40-minute drive through the city. The program subsequently moved to the George Washington University, offering 28 beds and the ability to monitor the patients with the help of a trained staff.

But the going was not easy. Teaching hospitals throughout the country objected to sharing allocated funds rather than intramural research. "It was an uphill battle," Hertz said. But it was one that was ultimately won. And the move signaled the end to the fragmented and far-flung efforts to develop intramural research.

When the patients were moved to the Clinical Center, Hertz explained to Meredith that treatments and investigations would be carried on as usual, but under better controlled conditions. "We all worked very closely together and worked out a research facility which was ready to be transferred to the Clinical Center."

During the first few months, however, Hertz described the conditions a bit differently. Although the investigations themselves continued according to protocol, Hertz described Clinical Center operations during those first few months as "total chaos."

"All interactions had to be worked out," he said. "Procuring lab work, securing x-rays, and performing autopsies," among other things. But an underlying desire to help the sick persevered. At the heart of patient referrals during those years was the protective concern of private physicians—many of whom would accompany their patients to the first interview. "It was very touching," said Hertz.

Dr. Roy Hertz, admits the first patient Charles C. Meredith.

The patients' collective contributions to the quest for new knowledge exceeded textbook procedures of doing things. "Patients taught me how to live and, I might say, how to die," Hertz said.

That aspect of clinical care remains the foundation of how the Clinical Center operates today. Besides state-of-the-art technology and equipment, patients routinely interact with diverse therapies ranging from hypnosis and massage to music and art. "New things will be tried—some things that we do not understand very well. Certain risks will be undertaken."

see **First patient**, page three

Summer heat of '53 fails to hinder dedication of NIH hospital

Before the first patient was admitted, more than 1,500 people had written asking to be a part of the studies at the Clinical Center.

Record-breaking heat suffocated the Washington area on July 2, 1953. By noon the temperature had reached 94 degrees with the mercury still rising.

Yet that didn't stop nearly 1,500 guests from converging at a $64 million facility that was touted by Oveta Culp Hobby, Secretary of Health, Education and Welfare as "far more than simply another federal hospital," during a dedication ceremony that officially opened the doors of the NIH Clinical Center.

"It's a tool of steel and stone," said Hobby of the facility, "to be used in improving and testing the results of medical research by relating those results directly to patients suffering from the diseases under investigation." Hobby described the new building to reporters as "a set of laboratories wrapped around a 500-bed hospital."

Newspaper accounts praised the new building's features–"a revolving chapel to accommodate various denominations, showerheads in hallways outside of the labs, air conditioning and elevators all over the place."

Dr. Jack Masur, the first Clinical Center director, noted that the facility's remarkable design not only surrounded patients with labs, but also allowed interaction of health specialists from different disciplines. "A term of reference in the design of the Clinical Center was our desire for laboratory people to be in proximity to the patient care people. In other words, we wanted to have a physical situation in which specialists in many disciplines in the several institutes would be thrown into contact with each other in the elevators, at the luncheon table, at seminars, and meetings."

The need for a facility such as the Clinical Center was initially voiced by Surgeon General Walter Wyman in 1911 when he wrote: "The time has now come when, in order to obtain the best results from laboratory work, there should be available a hospital attached to the laboratories." Such a facility topped the Public Health Service's list of postwar construction projects in 1944. Congress approved the initial funding for the building several years later. Construction began in 1948.

The Clinical Center quickly became recognized as a unique resource for the nation and the world.

The late 1980s sent an average of 20,000 children and adults from around the world to the Clinical Center for treatment. These patients accounted for nearly 65,000 inpatient visits and more than 70,000 outpatient visits each year, with participation in nearly 1,000 ongoing protocols.

Although the initial vision for the Clinical Center was being met, time and technology were slowly overburdening the building, once called a state-of-the-art facility. It became apparent that the Clinical Center's ability to provide ongoing patient care and research was being threatened by overcrowding and an inadequate utility infrastructure needed to support the advances in medical equipment.

By 1994, after several reviews and independent analyses, an external advisory committee concluded that the Clinical Center's needs could be met more efficiently by building a new facility adjacent to the existing facility.

A Fiscal Year 1998 appropriation from Congress authorized the construction of what is now known as the Mark O. Hatfield Clinical Research Center. The 870,000 square-foot facility is scheduled to open in summer 2004 with 240 beds and 90 day-hospital stations. This arrangement can be easily adapted to allow more inpatient beds and fewer day-hospital stations or vice versa, as the new facility's design is highly flexible. The facility is designed to facilitate interaction and collaboration among the clinicians and researchers. Their work will clearly benefit from this new structure. The ultimate beneficiaries, however, are undoubtedly the patients and families who receive the compassionate care and cutting-edge medical technology that is the expected signature of the National Institutes of Health. ■

First clinical patient

continued from page one

Hertz himself passed away on Oct. 27, 2002, at 93, but he always remembered the importance of hope. The patients, he said, "have been led to believe that nothing further can be done for them. They come with hope that something new can be tried."

At the center of the Clinical Center's operations have always been the clinicians and nurses who fought to nurture that hope and absorb patients' fear as diligently as they worked to end disease. During his years, he said, "We had marvelous, wonderful nurses," a trend that patients laud to this day. "They were initially more immediately involved in actual patient care and executed the protocols we devised. Many protocols required procedures to be carried out hourly. We had to have reliable, skilled individuals to take our place during the time we weren't there, which in those days wasn't very often." ■

Clinical Center boasts history of research advances

The opening of the Clinical Center in1953 took biomedical science out of the laboratory, launching a new era of clinical research. The idea of conducting research on human patients was far from universally accepted, but the idea that a scientist could work in a clinic as well as lab was compelling, attracting many of the best and brightest physician scientists in the country to the NIH Clinical Center complex.

Writing about clinical research on the Bethesda campus, the physician-scientist Lewis Thomas wrote in 1984: "The National Institutes of Health is not only the largest institution for biomedical science on earth; it is one of this nation's great treasures. As social inventions for human betterment go, this one is a standing proof that, at least once in a while, government possesses the capacity to do something unique, imaginative, useful, and altogether right." Thomas and others applauded the program both as a training ground for the nation's leaders in academic medical science and for its long list of scientific achievements. It was the institutes who did most of the basic science; it was in the Clinical Center that they, in collaboration with Clinical Center staff, translated basic science into clinical science with practical medical applications. Listed below are only a few of the research advances that took place in the Clinical Center:

- First cure of a solid tumor with chemotherapy
- First chemotherapy for childhood leukemia and Hodgkin's disease
- First use of immunotherapy to treat cancer
- Evidence of a genetic component in schizophrenia
- First successful replacement of a mitral valve
- Use of nitroglycerin for acute myocardial infarction
- First controlled trials of lithium's effect on depression
- Analysis of the disorders of lipid metabolism and the pathogenesis of arteriosclerosis
- Immunosuppressive therapy for nonmalignant diseases (lupus, Wegener's granulomatosis, midline granuloma)
- Enzyme replacement to treat Gaucher's disease
- Use of hydroxyurea to treat sickle cell anemia
- First computerized hospital information system designed to facilitate clinical research
- Use of AZT as the first treatment for AIDS
- Description of the pathogenesis of AIDS
- Blood tests for AIDS, hepatitis
- Reduction of transfusion-transmitted hepatitis from 30% to near zero.
- First gene therapy (for adenosine deaminase deficiency)
- Use of magnetic resonance imaging (MRI) to rapidly diagnose coronary artery disease in emergency room settings
- Immunosuppressive therapy for aplastic anemia

These advances just tap the surface of clinical research achievements at the Clinical Center. ■

— Pat McNees

(Writer Pat McNees is currently preparing a brief history of the Clinical Center. Additional stories and accomplishments will be added to the published history. If you have a story or accomplishment to share, please contact the Clinical Center Office of Communications at 301-496-2563.)

"The remarkable thing at NIH, from a patient's perspective, is that you not only have the best and the brightest and the best possible medicine that you can have but you have the best care that you can have, and that is largely the responsibility of the nurses. The nurses are incredibly intelligent and responsible and happy to be there. What I learned in my many, many conversations is that many of these nurses have taken a pay cut to come work at NIH–which is not good; NIH should give them more money–but they did it because they are given a great deal of responsibility and respect.

What a wonderful institution for the people who are taken care of there, for the families of the people who are taken care of there, and for the patients themselves. But also what a wonderful institution for the people who work there. It is a place that trains and respects and listens to the people who are in there every day trying to literally save the world."

–Cokie Roberts, ABC commentator, and a patient at the Clinical Center

Technology brings profound changes to Clinical Center work

Since its opening in July 1953, biomedical technology has profoundly changed how the Clinical Center does its work. For example, blood samples that were once tested manually are now scanned by faster and more accurate machines, and simple x-rays are accompanied by more graphically precise radiological techniques such as magnetic resonance imaging and positron emission tomography.

Clinical Center departments have kept pace with such developments and use them to enhance the hospital's role in biomedical research.

Critical Care Medicine Department (CCMD)

CCMD was formed in 1978 to take advantage of new life-support systems.

This department was formed in 1978 to take advantage of new life-support systems. In 1980 Dr. Joseph Parrillo was recruited from Cornell-New York Hospital to form a multidisciplinary critical care team that could provide sophisticated critical care services for the complex needs of patients being studied in NIH programs. The department currently cares for a wide array of patients admitted for stem cell transplantation, cancer chemotherapy or immunotherapy, HIV/AIDS, and sickle cell anemia, as well as many other disorders.

In the past 20 years, technology transformed the CCMD's clinical program. The technology of life-support machinery enables staff to better care for critically ill patients—staff can now do more accurate, non-invasive blood studies to maximize cardiac function and more effectively care for patients who cannot breathe on their own. Instrumentation technology has allowed the department to become a leader in applying the emerging fields of genomics and proteomics to the study of life-threatening illness. The department has developed active programs in basic science and translational research, and is nationally and internationally recognized for its research programs in sepsis, HIV medicine, lung inflammation, and sickle cell anemia. In CCMD's highly regarded training program in critical care medicine, trainees can learn how CCMD uses technology and science in new ways to fight disease.

Rehabilitation Medicine Department (RMD)

Rehabilitation Medicine has revolutionized treatment for patients with cancers that affect the bones.

Technology in instrumentation have has allowed CCMD to become a leader in the study of life-threatening illness.

The progression of science has helped cancer patients avoid amputation and still have improved function of their limbs.

From improvements in the fabrication of lightweight prosthetics and orthotics to sophisticated imaging techniques and the installation of the biomechanics lab, technology has enabled RMD to advance the science of the study of human motion and the treatment of motion disorders. Over the past decades, the department has pioneered the concept of including functional outcome measures in research. These measures enabled investigators to think not only about a patient's prognosis, but also about the patient's valued life activity—adding life to years, not only years to life.

One example is RMD's research into the question of the benefit of limb-sparing surgery versus amputation, which revolutionized treatment for patients with cancers affecting the bones and tissues of the extremities. In the early 80s, these patients faced the dismal choice of either losing a limb or enduring a painful course of treatment that made it difficult to use that limb afterwards. As science progressed, advances were made in radiation techniques and ports as well as in surgery, resulting in an improved functional outcome of the group that had the limb-sparing procedure—whole segments of bone on either side of an affected joint could now be removed and an artificial joint could be put in, eliminating the need for an external prosthesis. Thus, the limb was preserved without a major loss of muscle; and just as importantly, mobility and good sensation were preserved so that these cancer survivors could maintain a high quality of life.

But patients receiving this treatment needed a totally new kind of rehabilitation. This presented a fresh challenge for the department's chief, Dr. Lynn Gerber, and her staff.

To meet this challenge, the department worked hand-in-hand with the surgical team to devise novel splints and exercise regimens. RMD also installed a laboratory designed specifically to study human motion. The "biomechanics lab" shed light on how patients compensated for losing body structures. This valuable information enabled the clinical staff to provide therapies that enhanced a patient's strength, physical awareness and mobility. In addition, RMD pioneered by measuring these patients' oxygen consumption after surgery. These data allowed RMD staff to design treatments to help restore a patient's optimal activity level.

Department of Laboratory Medicine (DLM)

Technicians used to analyze samples by hand.

This department evolved along with the discipline of laboratory medicine, from analyzing samples by hand to using highly automated instruments that produce very precise results. With the advent of increasingly sensitive testing technology, the department launched innovative diagnostic tests to address specific needs in the Clinical Center.

While performing the usual testing that supports research such as blood counts, blood chemistries and urinalysis, the department also focuses on providing testing for Institute-specific initiatives such as bone marrow transplantation and opportunistic infections in immuno-compromised hosts. The department has developed new tests or modified existing ones to suit the needs of specific research studies.

Among its achievements, DLM developed a new test and more accurate test to identify *Pneumocystis carinii*, which is now used as the standard approach. Also modified was a research test now used to evaluate and diagnose chronic granulomatous disease. Most laboratories evaluating

Today, technicians use highly automated instruments that produce very precise results.

patients with this disease currently use that method.

As the field of clinical immunology expanded, a separate immunology laboratory was organized. This was realized, in part, because of the flexibility and freedom to pursue interesting questions that is a signature feature of the Clinical Center and the NIH environment.

Nursing and Patient Care Services

The role of nurses has not only changed in the Clinical Center, but nationwide.

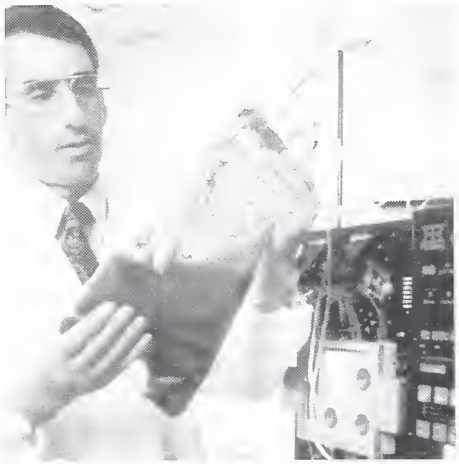
Clinical Center nurses now function as clinical research nurses and primary and associate investigators.

In the past 50 years, the role of the nurse at the Clinical Center has expanded, as it has in the nation as a whole. Clinical Center nurses now function as clinical research nurses and primary and associate investigators. Nurses have assumed leading roles in data and resources through advanced software and computer systems. As technology advances, nurses adapt to better ways of providing patient care, managing research data and resource utilization through advanced software and computer systems.

For example, during its first two-and-a-half decades, the Clinical Center did not have a unit dedicated to medical intensive care. Critically ill patients were treated on their inpatient units and cared for by the nurses on that unit, without the benefit of today's specialized machinery to monitor vital functions. Today, a medical intensive care unit houses a battery of high-tech monitoring machinery, enabling specially trained nurses, physicians and technologists to more effectively treat the critically ill.

The opening of the Ambulatory Care Research Facility (ACRF) in 1981 also affected nursing practice. Before then, outpatient clinics were limited and located in various parts of the hospital. They were small and had limited resources. The new design of the ACRF's treatment areas and exam rooms enabled nurses to care for patients in a more coordinated way. ACRF clinics now accommodate complex procedures such as endoscopy, bronchoscopy and chemotherapy infusions in specialty outpatient settings.

Department of Transfusion Medicine (DTM)



Originally called the Blood Bank, DTM had no component laboratory, cell processing laboratory, or apheresis facility.

DTM became a key player in the field of gene therapy by preparing cells for the first human gene therapy trial in 1990.

Growing more than three-fold since its establishment as part of the Laboratory of Biologics Control under the National Microbiology Institute, DTM has expanded not only its staff, but also in terms of technology and function. Originally called the Blood Bank, the department had no component laboratory, cell processing laboratory or apheresis facility. The HLA laboratory did not exist. In 1983, the department changed its name to the Department of Transfusion Medicine to reflect the broad medical,

educational and research functions described in an editorial by the department chief in the Journal of the American Medical Association. *It became the first of many such departments in the United States.*

Technology, combined with the scientific gifts of its staff enabled the department to gain an international reputation as a leader in research and teaching within several areas: DTM scientists defined several new blood group antigens and collaborated in identifying the Duffy blood group as a receptor for a malarial parasite (the first reported function for a blood group antigen); studies of transfusion-transmitted disease conducted by Dr. Harvey Alter and his collaborators defined the natural history of transfusion-transmitted hepatitis and contributed to its near-eradication, defined the serologic "window period" of HIV transmission following transfusion, and were the first to show transfusion transmission of HIV in a primate model.

By building on the milestones in knowledge and technology achieved in transfusion science over the past decades, DTM made seminal contributions to the field of therapeutic apheresis, progenitor cell collection, blood cell radiolabelling for diagnostic purposes, sequencing of HLA molecules for platelet transfusion therapy, and cellular vaccine research. The department became a key player in the fledgling field of gene therapy, by preparing cells for the first human gene therapy trial in 1990. DTM's cell processing facility has since become the national model for bringing novel cellular therapies from the research laboratory to the bedside.

Graduates of the department's several clinical and research training programs learn how DTM blends technology with scientific inquiry, becoming national and international leaders in transfusion science and blood policy.

Diagnostic Radiology Department

The Radiology Department used to use bulky films that were stored in cumbersome warehouses.

Diagnostic radiology uses cutting-edge technology to enable researchers and physicians to see the body's actual functions.

This department's growth reflects the exponential growth of imaging sciences as a whole. From electrons to positrons to sound waves to magnetic waves, the high-tech tools of diagnostic radiology use cutting-edge technology to enable researchers and physicians to see more than the body's structures—they can see the body's actual functions.

When this department merged with the positron emission tomography (PET) and nuclear medicine departments, clinical investigators had a full array of technologies to enhance their protocols. Building a facility to house cyclotrons moved research into radioisotopes, bringing even more research opportunities.

Innovation is no stranger to the department. A former head of the department, Dr. John Doppman, helped found a new field unknown in 1953: interventional radiology. His skill at threading small catheters into draining veins allowed doctors to do more than diagnose disease; they could also develop treatments. Using interventional radiology, doctors could actually administer treatments via catheters, a much less invasive technique for patients than a major surgical incision.

Together with image-guided therapy, this technology adds to the arsenal that physician-researchers have to combat disease. It even extends into the Clinical Center's operating rooms—unlike the Clinical Center's operating rooms 50 years ago, today's operating theaters are equipped with sophisticated imaging equipment that provides real-time MRI images to guide a surgeon's hands.

Recording those images can now be computerized to an exquisite degree. Gone will be the bulky films that were stored in even more cumbersome warehouses. The Picture Archiving and Communication System/ Radiology Information System (PAC/RIS), a multi-million dollar program initiated in 2000, will allow images to be automated and displayed at workstations and desktop computers across NIH. ■

— Wendy Schubert

In all these areas—critical care, rehabilitation, laboratory, and transfusion medicine; diagnostic radiology; or nursing and patient care services—the Clinical Center will continue to optimize technology in its pursuit of biomedical science.

Nurse develops revolutionary blood separation technique

In 1966, Wanda S. Chappell, chief nurse in the NIH Clinical Center blood bank, came up with a simple but ingenious method for separating blood platelets (the smallest blood cells) from blood plasma.By using this technique, the hospital could use platelets for transfusion to leukemia patients and could use the rest of the blood with other patients, including patients undergoing open heart surgery.

In 1967, Mrs. Chappell received an "Economy Champion" citation from Civil Service Commissioner John Macy and a check for $1,645. Her idea for concentrating platelets was saving 3,700 pints of blood a year at the Clinical Center blood bank and many more at other hospitals throughout the country. At the time, the Clinical Center was administering 10,000 to 12,000 platelet transfusions a year. Platelets play an important part in clotting.

A Public Health Service official who screened the award recommendation before it went to the Surgeon General said, "A number of researchers with advanced degrees and qualifications were working on the problem. Mrs. Chappell thought of something practical that can be used by everybody. It was the application of common sense to a difficult problem."

Until 1966, platelets were transfused while still mixed with most of the blood's plasma. The red cells that remained could be used for ailments such as anemia, but if the platelets could be concentrated, the saved plasma could be remixed with the red cells—to provide whole blood. The trouble was, platelets separated from plasma would stick together and be useless.

In 1965, Dr. Richard Aster, formerly at the blood bank, had explained that platelets could be kept from sticking together by adding extra acid used normally to keep stored blood from clotting, but this created other problems. Mrs. Chappell remembered that plastic blood bags were manufactured with a little more acid than was needed to prevent clotting. She suggested some of this acid be pushed from the main blood bag through a connecting tube to a smaller bag that would hold the platelets.

After using Mrs. Chappell's method on a trial basis for the first six months in 1966, the blood bank fully adopted it. "A large amount of money is being saved," said Paul J. Schmidt, chief of the blood bank. "However, it is more important that blood is an irreplaceable human resource from which multiple uses must be obtained. Mrs. Chappell's idea advances us and the country as a whole toward that goal."

Transfusion, the official journal of the American Association of Blood Banks, reported on the method in the July-August 1966 issue, and the procedure was readily adopted by other blood banks. It required only standard equipment. An associate professor at the University of Michigan Medical Center wrote, "I am sure many people must have thought, 'Why didn't I think of that?'"

Mrs. Chappell had earned her RN at Massachusetts General Hospital. ■ — Pat McNees

clinical center online

Scheduled Power Outage

The Clinical Center's Data Center will have a scheduled power outage from 3:30 pm to 7:30 pm on Saturday, July 26. During that time an input power cable will be replaced on the Data Center's Uninterruptible Power System or UPS.

The Clinical Center purchased the UPS in 1986 and it has been in continual service since that time. During the last service of the UPS, it was discovered that one of the electrical cables that recharge the three banks of batteries needed replacement. To accomplish this, electrical power to the UPS must be shut off.

A decision had to be made to shutdown all the computers in the Data Center. This will impact the e-mail servers, CITRIX servers, file and print servers, the lab system, the transfusion medicine system and the Medical Information System or MIS along with other clinical IT systems.

All in all, more than 100 systems will be involved during the scheduled July 26 Data Center power outage. To efficiently orchestrate a scheduled outage or 'down' of this magnitude a Clinical Center IT group met with department representatives to discuss when would be the best time to schedule this event and how to best communicate the down to the entire Clinical Center community. The IT group meets every Friday until the scheduled down.

Clinical Center IT representatives will be available to all system owners to ensure that their systems are powered off in the correct manner and restarted so all systems are correctly 'talking' to each other. For information about the July 26 Data Center scheduled power outage, contact Steve Groban at sgroban@cc.nih.gov.

Updated Web Information

In preparation for the October 2003 Joint Commission on the Accreditation of Healthcare Organizations or JCAHO survey visit, the Clinical Center's JCAHO Work Group provides current information at: http://intranet.cc.nih.gov/od/jcaho/. The Clinical Center celebrates 50 years of clinical research in 2003-04. To learn more about the 50th Anniversary schedule of events visit: www.cc.nih.gov/50th, or contact Elaine Ayres at eayres@cc.nih.gov.

Send news items and ideas for Clinical Center Online to dneedham@cc.nih.gov.

New drug prevents fungal infections

A new antifungal drug developed by the National Institute of Allergy and Infectious Diseases has been found to effectively prevent fungal infections in children suffering from chronic granulomatous disease, or CGD, an inherited disorder that frequently leaves its sufferers with severe bacterial and fungal infections.

"The addition of prophylactic antifungals to the standard regimen of antibiotics should markedly reduce a significant cause of death from this rare disease," said Clinical Center Director Dr. John Gallin, who is a researcher at NIAID and lead author of the paper published in last month's edition of The New England Journal of Medicine.

The drug, itraconazole, is well tolerated and effectively prevents fungal infections in children who have CGD, report NIAID scientists. About 25,000 people worldwide have the disease, which frequently leaves sufferers prone to severe bacterial and fungal infections.

This 10-year-long study is the latest contribution by NIAID researchers to a better understanding of CGD. Forty years ago, Dr. Gallin noted, children with CGD rarely lived past adolescence. More than 20 years ago, doctors began administering prophylactic antibiotics to prevent bacterial infections, and the number of annual hospitalizations for the average CGD patient dropped greatly.

Then, in 1991, Dr. Gallin and his colleagues in NIAID's Laboratory of Host Defenses published clinical trial results showing that an immune-boosting substance called interferon gamma reduced serious bacterial infections in CGD patients by 70 percent. Prophylactic interferon gamma was soon added to the treatment regimen for children with CGD, and the quality of their lives improved further, said Dr. Gallin. "Now people with this disease are living long enough to marry and start families of their own. In fact, I'll soon be attending the wedding of a patient whom I've followed for 30 years."

Over the term of the study, the investigators recorded 12 cases of fungal infection, seven severe and five superficial. When the study was "unblinded," researchers saw that 11 cases occurred in patients who were receiving a placebo medication when the infection arose. One case of severe fungal infection occurred during itraconazole treatment; however, that patient, according to Dr. Gallin, was probably not taking the drug daily.

Including the 12 cases of fungal infection in their data analysis, the scientists found that patients on itraconazole had a statistically significant reduction of fungal infection risk. "We suggest that itraconazole prophylaxis should be added to the treatment regimens for all patients over five years of age who have chronic granulomatous disease," concluded the paper's authors.

NIAID Director Dr. Anthony S. Fauci said, "In their laboratory and clinical research, Dr. Gallin and his colleagues combine excellence in basic science and medicine. The dedication and skill of these researchers has led directly to healthier lives for the children they treat."

Team NIH members gather on the Mall.

River of rain couldn't stop Team NIH

Nearly 400 people supported Team NIH in the National Race for the Cure

Even the rainmaker couldn't deter the 400-member Team NIH from participating in the 14th edition of the National Race for the Cure. As one runner put it, June 7 event participants met with a "river of rain" as water fell from the sky. The steady downpour presented challenges in the form of puddles, umbrellas and plastic coverings for all runners and walkers as they made their way through the 5K, or 3.1 mile, race course on the Mall in Washington, D.C.

Members of the Department of Health and Human Services staff led by HHS Deputy Secretary Claude Allen bolstered Team NIH or what everyone began calling "Team Umbrella." At least 50 individuals from DHHS joined Team NIH at the corner of 15th and Constitution Avenues before the race start.

With more than 60,000 people signed up, at least 40,000 turned out on race day. The National Race is the largest such event of its kind in the world growing from one race in Dallas in 1989 that attracted some 7,000 runners to this year's 1.4 million entrants in races held nationwide. These events raise awareness of, and support for, research of breast cancer and related women's health diseases.

Teams represented schools, embassies, corporations, government offices, congressional offices, and churches. Team NIH members' comments when asked why they were doing this were representative of all Race participants–"a friend, a relative, someone they knew or were close to had been affected by breast cancer."

–by Dianne Needham

HHS Deputy Secretary Claude Allen and Clinical Center Director Dr. John Gallin stand ready for the start of the National Race for the Cure.

(top left)
Umbrellas were *de rigueur* at the June 7 event.

(top right)
NIAID and NCI staff members and family at pre-race start.

(left)
Six-year old Brady Cusack by the pink Team NIH signs 'melted' by rainy downpour on race day.

CRIS implementation begins in Nutrition Department

Department members looking over a bulletin board that's part of new system training for staff are (from left) Robin Bell, Alberta Bourn, Judith Bowman, Shaololing Eddie, and Amanda Krawchuk.

The Nutrition Department introduced phase one of its new information system on July 16. It is one of the ancillary systems that will be part of CRIS, the Clinical Research Information System now in development.

Nutrition's first phase is a Food Services Suite that will handle such tasks as purchasing, inventory management and food-production management. "This new system will support streamlined and more efficient purchasing and inventory control," explained Alberta Bourn, department chief. That's important in a department responsible for more than 2,700 meals a month. Nutrition's Food Services Suite, which will handle such work as menu selection, tray service, nutrient analysis for patient care and research, and internal and external requisitions for foods and supplies, will debut in October.

The CRIS project is in high gear this summer, and work over the next few months will focus on designing, building and testing the largest component of CRIS, the core that replaces MIS. Two priorities drive core development: to provide a new system that will keep the hospital running smoothly during the CRC move and beyond and to make sure it is a system that will encourage and support innovation and future growth. For more information, go to http://cris.cc.nih.gov.

Healthy volunteers

Healthy adult volunteers are needed to study the effects of calcium supplementation over a two-year period. Compensation provided Call 800-411-1222 (TTY 866-411-1010).

Ovarian function study

Healthy females are needed to participate in an ovarian function study. Call 800-411-1222 (TTY 866-411-1010).

Balance study

Individuals who have experienced leg weakness after a stroke may qualify for a balance study. One visit required. Call 800-411-1222 (TTY 866-411-1010).

Juvenile Rheumatoid Arthritis study

Volunteers are needed to test a new drug treatment for Juvenile Rheumatoid Arthritis. Call 800-411-1222 (TTY 866-411-1010).

Muscular leg pain study

Individuals who have experienced muscular leg pain due to blocked arteries, which occurs with activity but improves with rest should call 800-411-1222 (TTY 866-411-1010) to participate in this study.

High blood pressure study

Volunteers are needed for a study about uncontrolled high blood pressure due to blocked kidney arteries. Call 800-411-1222 (TTY 866-411-1010).

Trauma survivors study

NIMH seeks volunteers for research studies that look at how people respond to and cope with traumatic experiences. Studies for people over 18 years of age may include: brain imaging, measurement of stress hormones, and a free trial of commonly used medications for eligible participants. Compensation provided for select studies. Call 866-627-6464 (TTY 1-866-411-1010).

Smallpox vaccine study

Volunteers who plan to be vaccinated against smallpox in the Clinical Center's Office of Medical Services are needed to participate in a study that will measure the immune responses to the smallpox vaccine. The study will consist of nine visits. At each visit there is a blood draw, and at some visits cultures are taken. Compensation provided. Call Trish Hohman at 301-496-8412.

NATIONAL INSTITUTES OF HEALTH
CLINICAL CENTER
FIFTIETH ANNIVERSARY

50
1953 - 2003

Schedule of Events

Wednesday, July 9, 2003
"A Salute to Staff and Patients on the 50th Anniversary of the Opening of the Clinical Center"
1:00 PM - Ceremony
Masur Auditorium
2:00 PM to 4:00 PM - Reception
Tent Reception on the South Grounds of the Clinical Center

Tuesday, October 14, 2003
"The Past, Present and Future of Clinical Research"
8:30 AM to 5:30 PM
The Clinical Center 50th Scientific Symposium
Masur Auditorium

September 2003—June 2004
"Clinical Center Grand Rounds—50th Anniversary Series"
Wednesdays 12:00 PM to 1:00 PM
Lipsett Amphitheater

September—October 2003
"2003 Medicine for the Public"
7:00 PM to 8:00 PM
Tuesdays (9/16, 9/23/, 9/30, 10/7, 10/21, 10/28)
Masur Auditorium

Summer 2004
Scheduled Opening, Mark O. Hatfield Clinical Research Center