

2010

ANNUAL REPORT

**DEPARTMENT OF CLINICAL
RESEARCH SERVICES**

**MEDICAL CITY DALLAS HOSPITAL
MEDICAL CITY CHILDREN'S
HOSPITAL**

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Executive Director
Department of Clinical Research

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CLINICAL RESEARCH MEDICAL CITY DALLAS HOSPITAL/MEDICAL CITY CHILDREN'S HOSPITAL

INTRODUCTION

In 1988, Medical City Dallas Hospital (MCDH) established the Advanced Surgical Institutes in response to the need to develop areas of highly specialized surgical techniques such as craniofacial surgery, pediatric neurosurgery, and pediatric orthopedics. Many of the skilled physicians recruited to MCDH under these specialties desired to continue with their respective research programs. In order to accommodate this need, a medical research department was established that provided an animal research facility and basic statistical support. Over the next decade the department grew to include as many as 18 individuals. However, due to rising costs of maintaining an animal facility and limited research fund availability from the investigators, the animal facility was closed in 2007. The department was then converted to the Department of Clinical Research (DCR) to focus on the increasing number of research studies being performed at MCDH. Today, the DCR Services is housed in the C Building and consists of 4 fulltime individuals that work closely with the investigators and the Institutional Review Board (IRB) to insure all clinical research performed at MCDH is conducted under the highest ethical and legal standards. The MCDH clinical research department and IRB also serve to provide research support to the other facilities comprising the North Texas Division hospitals including Denton Regional Medical Center, Las Colinas Medical Center, Lewisville Medical Center, Medical Center of Arlington, Medical Center of McKinney, Medical City Dallas Ambulatory Surgery Center, and Green Oaks Hospital. In 2009, the Medical Center of Plano created its own IRB and operates independently.

The department started the year with a staff of 4 but the director went to part-time in preparation for retirement in March. The department operated under this arrangement until August, 2010 when a new director was hired for the vacated position. The 3 remaining individuals (engineer/biostatistician, research nurse, and administrative specialist) remain on the staff. The expertise of the staff covers a wide range of disciplines including: biostatistics, cardiopulmonary

physiology, electrical engineering, life sciences, medical biophysics, nursing and research administration.

The mission of the DCR is to provide complete research support services to all individuals interested in developing research projects that will lead to improvements in the prevention, diagnosis, and treatment of diseases. Some of these support services include:

- Assistance with research project development and design
- Assistance with completion of IRB documents
- Research grant preparation and budgetary management
- Database development and management
- Biostatistical support
- Poster and slide preparation for scientific presentation

PERFORMANCE SUMMARY

New and open protocols. During 2010, the IRB reviewed and approved 82 new human clinical research projects. This is a 12.3% increase over last year but is still below the 5 year running average of 100 new protocols per year (**Figure 1**).

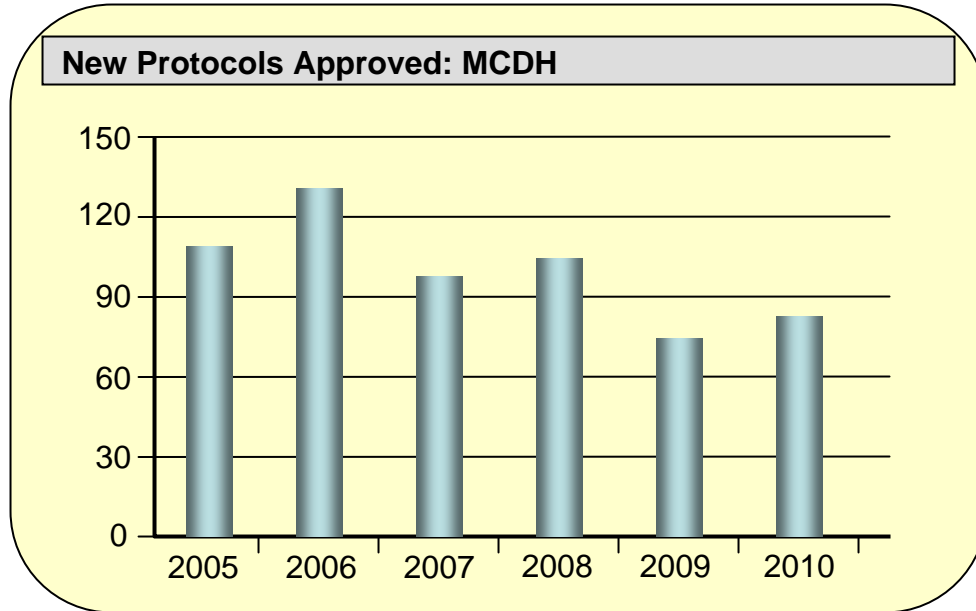


Figure 1. Number of new protocols approved for study by MCDH IRB

At year end, there were 254 active research protocols at MCDH and the North Texas Division Hospitals (**Figure 2**). As can be seen from

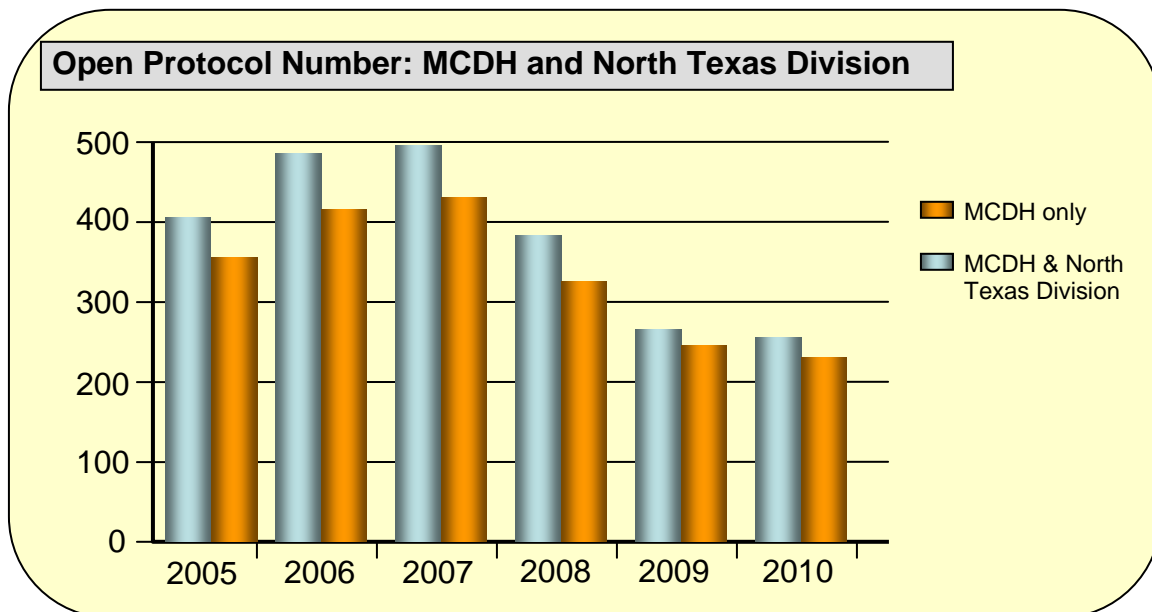


Figure 2. Number of currently open protocols approved by MCDH IRB

Figure 2, MCDH has consistently represented between 85 and 93% of all open protocols. There has been a substantial decline in the total number of open research protocols over the last two years. This reflects a below average number of new protocols submitted while closure rate has remained fairly constant. The sharp decline in total number of protocols commencing in 2008 is related to Plano Medical Center utilizing its IRB.

Figure 3 summarizes the open protocol number for the North Texas Division hospitals, only. With the exception of Plano Medical Center, the average number of open research protocols from the North Texas Division of hospitals has averaged 23 protocols per year for the last 5 years.

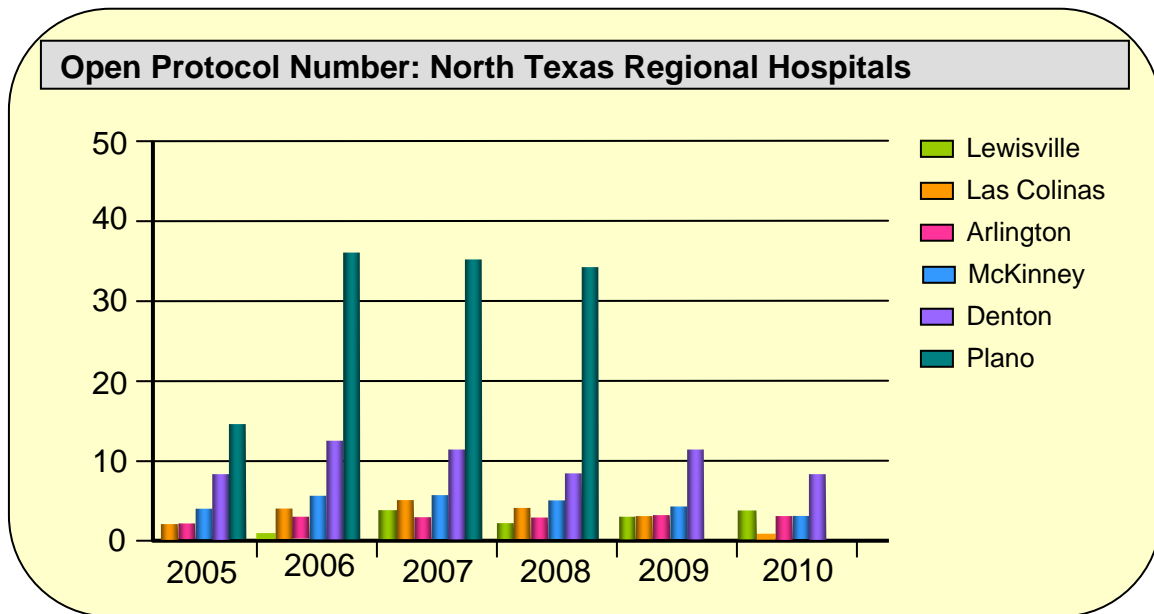


Figure 3. Open protocol number of the North Texas Region hospitals utilizing MCDH IRB

In addition to these numbers, the MCDH IRB reviewed 383 adverse event reports, 49 protocol deviations, 103 active protocol amendments, 41 informed consent revisions, approved 187 1-year continuations, and 97 study closures. The number of study closures this year is down from the running 5-year average of 128 study closures.

Protocol distribution by specialties. Figure 4 summarizes the percent distribution of currently active protocols at MCDH. Pediatric hematology/oncology represented the greatest percentage of open protocols at 36.3%. Cardiovascular research, represented by cardiothoracic surgery and cardiovascular disease specialties, represented 24.5% of the open protocols. Together, these two research areas comprise greater than 60% of all open protocols and are consistent with the trend observed for the last 2 years. Nursing and adult hematology/oncology were the next two major specialties with currently open protocols at 11.3 and 12.2%, respectively. The remainder of the specialties is represented by craniofacial surgery (1.4%), general and vascular surgery (3.3%), neurology (1.4%), pediatric allergy and immunity (1.9%), pediatrics (0.9%), anesthesiology (1.9%), and breast surgery (1.4%).

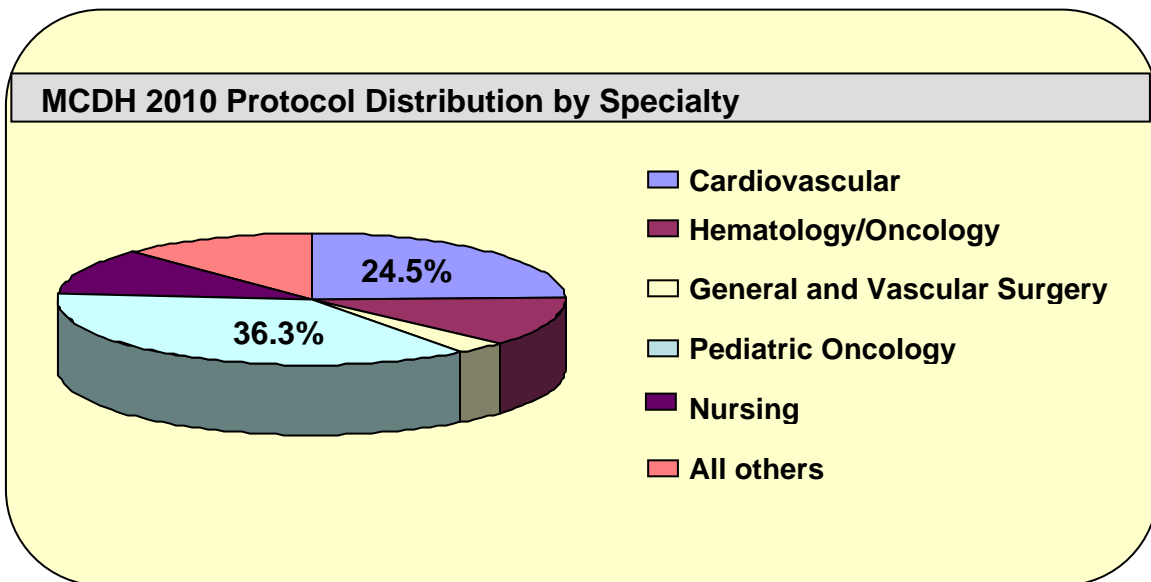


Figure 4. Distribution of currently open protocols at MCDH by specialty

It is anticipated that this trend will continue as shown by the specialty distribution of the newly approved protocols for 2010 (**Figure 5**). Cardiovascular specialties continued to lead with 25.6% of new protocols. This is followed by nursing at 18.3% and adult and pediatric hematology/oncology at 17.1%. The remaining 39% of all new approved protocols is represented by various specialties including craniofacial surgery, neurology, anesthesiology, physical medicine and rehabilitation, breast surgery, orthopedic surgery, pediatric allergy and immunity, and general pediatrics.

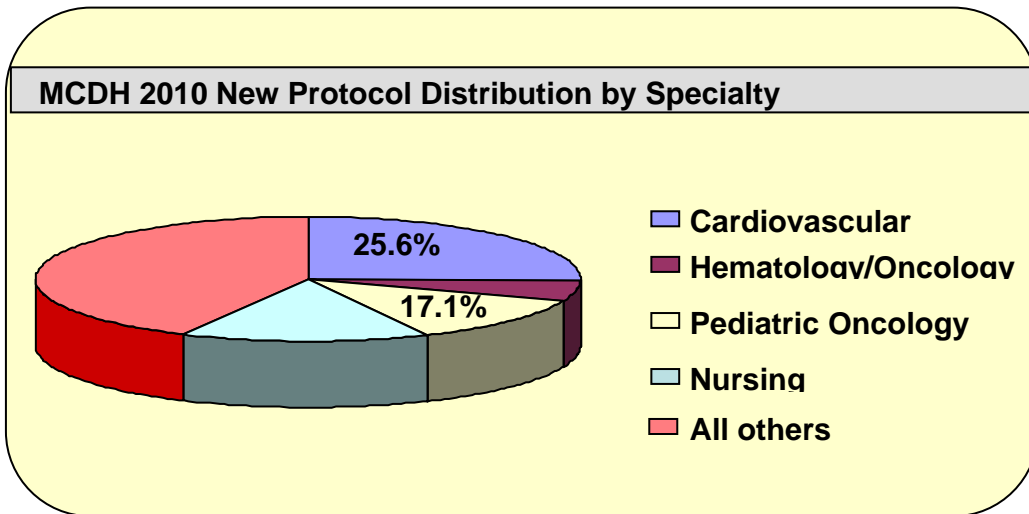


Figure 5. Distribution of newly approved protocols at MCDH by specialty

Nursing research. Nursing research protocols continued to represent a significant proportion of the open research protocols despite a reduction in number by nearly 50% for 2010 (**Figure 6**). This reduction in total nursing protocol number may reflect closure of previously open studies.

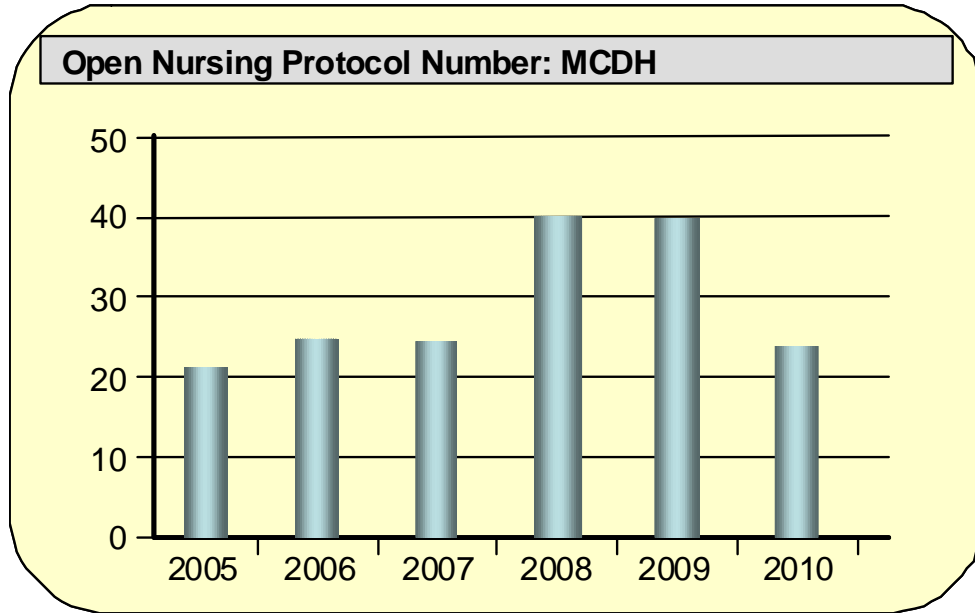


Figure 6. Number of open nursing protocols at MCDH

The number of new nursing research protocols approved last year (15) remained near the all time record number of nursing protocol submissions of 16 observed for 2008 (**Figure 7**).

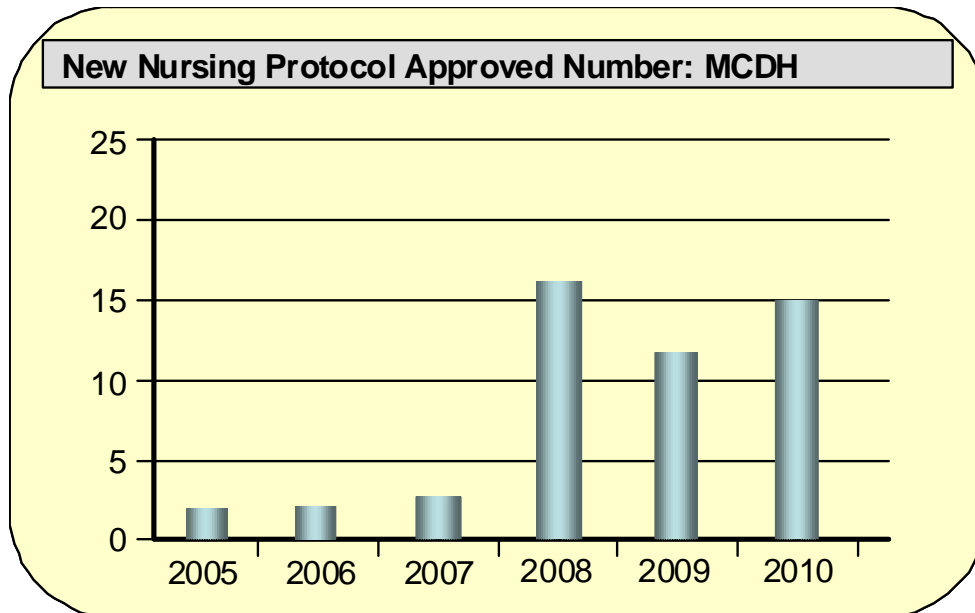


Figure 7. New approved nursing protocol number for MCDH

BUDGET

Figure 8 summarizes the operating expenses and revenue generated for the Clinical Research Department for the last five years. The major sources of revenue to the department are the IRB fees charged to all studies funded by outside entities such as device companies and pharmaceutical companies. While helpful, this source of revenue is far from sufficient to cover operating costs. A more significant source of income lies in collecting indirect costs from funded NIH applications. However, until this year, there has been no new NIH grant submission. Investigators are encouraged to seek outside funding and the department is available to help with budget preparation for these funding requests. Annual cost to operate the department over the past 12 months was \$583,144 while reimbursement from IRB fees, pharmaceutical and device companies totaled \$94,156. It is important to note that nearly 71% of the open research protocols derived some form of financial support. In addition, many of the protocols generated ancillary revenue through their utilization of hospital resources. This value-added revenue is not included in the current cost analysis. Of the 82 new protocols approved last year, IRB submission fees were waived for all but 16 submissions due to the lack of extramural funding for these trials.

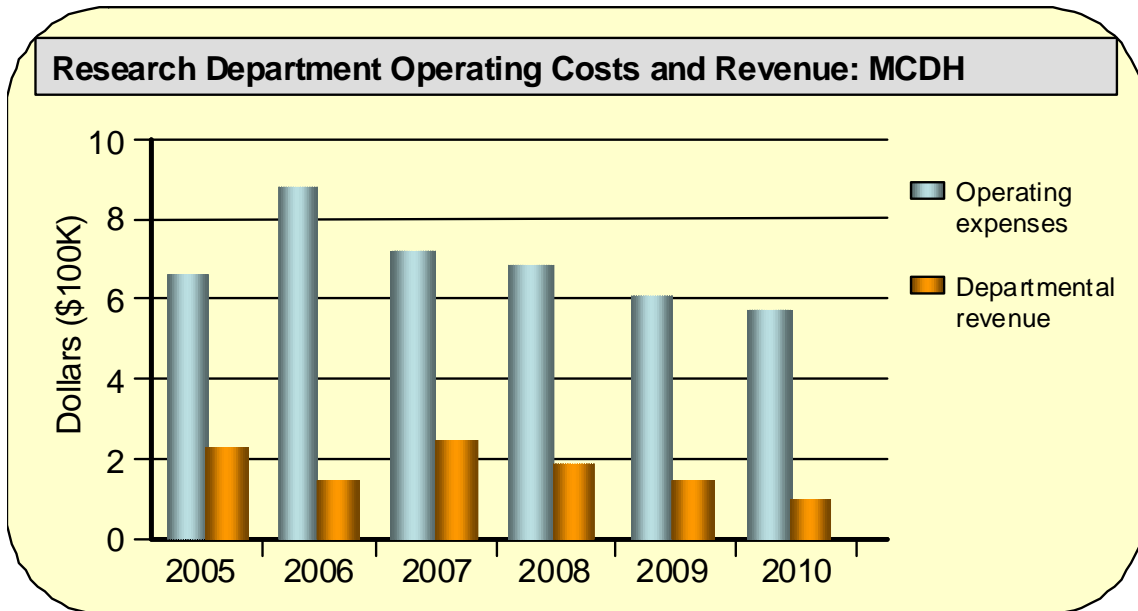


Figure 8. Annual operating expenses and revenue received for MCDH clinical research department.

PERSONNEL

Joseph E. Zerwekh, Ph.D., Executive Director

Dr. Zerwekh joined the MCDH DCR in August of 2010. Prior to that he was Professor of Internal Medicine at the University of Texas Southwestern Medical Center where he participated as principal investigator or co-investigator on several NIH and NASA-funded studies. He has published over 150 scientific articles in scientific journals and has written several chapters for scientific text books. He has extensive experience with protocol development and in working with the IRB. Dr. Zerwekh received his BS in chemistry from the University of Illinois and his Ph.D. in biochemistry from the University of Arizona. Dr. Zerwekh directs the day-to-day operation of the DCR, attends all IRB meetings, and has recently helped with a major NIH grant submission for the cardiovascular research group at MCDH.

Christelle Yvette King, CRRA, IRB Supervisor

Ms King is the Executive Research Coordinator and Administrative Assistant to the Department Director. She is the contact person for all matters dealing with IRB submissions and serves as the Recorder for the IRB. She is responsible for all communications, paperwork, and files pertaining to the IRB. She also maintains the IRB database of open/closed protocols, specialties represented, and all financial issues concerned with the DCR. She has over 11 years of clerical and secretarial experience involving accounting and data management. She is a Certified Clinical Research Administrator.

Morley A. Herbert, Ph.D., Supervisor/Biostatistician

Dr. Herbert is the biostatistician for the DCR. He plays an invaluable role in helping multiple investigators set up databases for their studies and performs most of the statistical analyses on completed studies. He also served as the Chairman of the Institutional Animal Care and Use Facility (IACUC) until its closure in 2007. Dr. Herbert also assists investigators with biomechanical testing studies in the bench lab of the DCR. His scientific background includes orthopedic research, biocompatibility testing, and device design. Dr. Herbert received a B.Sc. in mathematics and physics and both a M.Sc. and Ph.D. in medical biophysics from the University of Toronto.

Nancy Nardelli, RN, BSN, CCRA, Research Nurse

Ms Nardelli is the Clinical Research Nurse for the department. In this role she interacts closely with the hospital nursing staff to help them design and prepare appropriate nursing research studies. She has also served as the principal investigator on 3 nursing research studies of her own design. Ms Nardelli received her BSN from St. Joseph's School of Nursing, Syracuse, New York and is a Certified Clinical Research Administrator.

BENEFITS OF THE RESEARCH PROGRAM

On a budget last year of \$583,144, the DCR assisted MCDH physicians, nurses, and supported seven HCA North Texas Division facilities with the continuation, completion, or starting the 254 open research protocols. Following are some examples of the research projects either completed or underway at MCDH and the benefits to patients at MCDH.

a. Clinical studies

The active research projects mainly consisted of studies of new pharmaceuticals, investigational new devices, or new procedures. One of the most significant studies from last year was the PARTNER trial. This multi-site study recruited elderly patients in need of a new aortic valve but who represented extremely poor surgical risks. Their aortic valve was replaced by a new technique that does not require the chest to be opened. The study demonstrated the efficacy and safety of this new transcatheter technique and the results were published in the prestigious New England Journal of Medicine in September 2010. Clinical research studies such as this and others in the area of treatments for breast and ovarian cancer and other adult cancers ultimately lead to new and improved standards of care for the patients. Several additional studies also brought new medications to MCDH to be used by the patients at reduced or no cost.

b. Data resource services

In 2010, the DCR was actively involved in providing data resource services to many investigators and clients within MCDH. More specifically, the DCR provided statistical consultation, database development, database management, and reporting services for the research and non-research related needs of physicians and hospital departments. These projects and services included: performance improvement analyses and reporting, completion of statistical portions of managed care applications, regular data audits of internal and external databases including the Society of Thoracic Surgeons database maintained by the Cardiopulmonary Research Science and Technology Institute (CRSTI), biannual clinic volume analyses, quarterly resource utilization analyses, and preparation of graphs, tables, and figures for both written and oral presentations by the investigators. Through such careful data collection and analysis, the results can sometimes be directly applicable to the care and treatment of patients. For example, a recent data analysis of patients undergoing coronary artery bypass grafting disclosed that pre- and post-operative use of beta-blockers afforded no short-term improvement in outcomes despite this being a recommended standard of care.

c. Nursing research support

MCDH nursing has been awarded the distinction of being recognized as a Magnet Certified Facility. This honor has, in turn, resulted in an increased interest in nursing research over the last 3 years (see Figure 7). The DCR continues to play an instrumental role in facilitating nursing research within MCDH. For example, educational materials and expertise are frequently provided at the monthly Journal Club meetings. Other areas of assistance included presentations on conducting nursing research and assistance with preparation of poster materials for presentation at local and national nursing meetings.

d. Publications

During the past 12 months, MCDH physicians, staff, and nurses were active in preparing articles for publications, developing poster exhibitions and presenting at state, national, and international medical, nursing, and specialty scientific meetings and conferences. Many of the articles were published in major, prestigious biomedical/scientific journals including among others:

American Journal of Cardiology
Circulation
Clinical Oncology
Clinical Transplant
JAMA
Journal of Craniofacial Surgery
Journal of Pediatric Hematology and Oncology
Journal of Thoracic and Cardiovascular Surgery
New England Journal of Medicine

e. Grants

The DCR in collaboration with CRSTI submitted a fellowship grant for Dr. William Brinkman to the Thoracic Surgeons Foundation for Research and Education (TSFRE) for his study proposing to examine the association of neurocognitive deficits in patients following standard aortic valve replacement versus that of the newer transcatheter procedure. We also submitted our first grant to the NIH in February 2011. Although this represents the current year, both of these submissions point to the importance of securing outside funding for the support of large investigator originated clinical studies.

FUTURE PLANS

The DCR is reviewing possible strategies for increasing revenue. Possible mechanisms include increasing IRB fees for protocol review and charging investigators and/or study sponsors for DCR services such as statistical support, database development, and poster and slide preparation for subsequent presentation. These and other options will be considered this year.

The monthly newsletter contribution will continue to provide a synopsis of a study in progress or one recently approved to the MCDH medical staff. In addition, the physician outreach staff will provide quarterly summaries of 2 ongoing research studies for physicians not on staff at MCDH and MCCH. Through these mechanisms, we propose to raise physician engagement in the research program as well as community involvement through external marketing efforts.

We also propose to continue to encourage physicians and nurse researchers alike to apply for grant support, be it NIH or private provider. The research department is available to help with such grant submissions and with obtaining indirect costs from the funded applications. Indirect costs can further help with increasing department revenue and diminishing the overall financial reliance on MCDH.

Lastly, we anticipate several new clinical trials to be launched this year including the PARTNER II trial, outcomes in severe chronic mitral regurgitation, and surgical interventions for moderate ischemic mitral regurgitation.