

Outcomes Need Apply

RESEARCH BEING CONDUCTED by faculty in the UB Department of Family Medicine may not be “basic science” in the classic sense, but it’s about as basic as it gets when it comes to the realities of health care in our country today.

FAMILY MEDICINE RESEARCHERS TRANSLATE DATA INTO IMPROVED PATIENT CARE

While other medical specialties have garnered attention in recent decades by ushering in a steady stream of technological advancements, family physicians have been scrambling to hold their own on the frontline of health-care delivery. From their vantage point, this frontline could more accurately be described as a seismic fault line, where cracks, fissures and liquefaction define the ground on which they and too many of their patients stand.

Their idea of research—which more and more people are now paying attention to—focuses not so much on finding technological answers, per se, but on examining hard, bothersome questions that go to the heart of our fragmented health-care system, questions such as: Are our patients living longer, and are they feeling better? Equally important, the term “our patients” in this context refers to the entire population, not just those individuals fortunate enough to have health-care insurance.

STORY BY S. A. UNGER

ILLUSTRATION BY SANDRA DIONISI

PHOTOGRAPHY BY DOUGLAS LEVERE

THOMAS ROSENTHAL, MD '75, chair of the Department of Family Medicine, isn't particular about how such research is labeled—"you can call it 'applied research,' or 'evidenced-based research,' or 'translational research,'" he proffers—but the bottom line "is that it pertains to all those things that matter most to patients."

Nomenclature aside, the studies he describes are conducted under the auspices of the UB Family Medicine Research Institute (FMRI), a transdisciplinary unit that is dedicated to improving health, patient care and medical education by encouraging scholarship in primary care. In addition to family physicians, its members include epidemiologists, statisticians, anthropologists and psychologists.

The major areas of focus for the institute read like a list of symptoms for our ailing health-care system: (1) elimination of health disparities, (2) integration of primary care and mental health, (3) enhanced patient safety, (4) development of biopsychosocial care models, (5) improved treatments for substance-use disorders, (6) uninsured access, and (7) distribution of the health professional workforce.

Currently, funded projects include those that look at geriatric drug safety in underserved practices, alcohol detoxification aftercare, early markers for chronic kidney disease and health care for patients with dual diagnoses

(physical and mental illness).

A steering committee made up of funded principal investigators from the institute meets monthly to review potential new projects to undertake. Once they decide that a project is "a good fit," the physician who proposed the study works with John Taylor, the institute's vice chair for research and development, whom Rosenthal refers to as "an artist" when it comes to grant writing.

Whenever possible, the investigators look to collaborate on their studies with other primary care specialists or subspecialists locally, regionally or nationally.

"The faculty who conduct this research really have a passion for the work they do and want to explore the frontier of generating new knowledge," explains Rosenthal. "And we are always looking for people to collaborate with because, inherently, family medicine physicians are collaborators."

Historic Precedence

A BRIEF LOOK at the history of the UB Department of Family Medicine goes a long way toward explaining how its faculty have obtained the momentum—and reputation—they have for their clinical-research efforts.

Rosenthal explains that the department is one of the oldest departments of family medicine in the United States. Its residency program was established in 1969, shortly after the American Board of Medical Specialties approved the formation of the American Board of Family Practice. Buffalo family physician Max Cheplove, MD '26, was one of a handful of individuals who initiated planning efforts in the 1960s that eventually led to the establishment of the specialty.

Currently, the UB department is the largest family medicine department in New York State and ranks in the top ten nationally for research and external funding related to studies in their specialty.

Each year, 16 residents enter the department's three-year training program, making it the largest family medicine residency program in New York State.

Furthermore, the department has trained more departmental chairs than any other in the country. Eight current chairs of family medicine in the U.S. are graduates of the UB School of Medicine and Biomedical Sciences, or its family medicine residency or fellowship programs.

One such person is Carlos Jaen, MD '89, PhD '88, professor and chair of the Department of Family and Community Medicine at The University of Texas Health Science Center at San Antonio.

Jaen co-founded the FMRI with Rosenthal in the mid-1990s, when the entity under which he was conducting research—the Center for Urban Research in Primary Care—was merged with the entities under which Rosenthal was conducting his research—the Office for Rural Health and the New York State Center for Rural Health Research.

"Basically, we realized that these were parallel research efforts in primary care, and we saw that we had a need



ROSENTHAL

KIM GRISWOLD, MD '94, MPH



RESEARCHER:

Kim Griswold, MD '94, MPH, Associate Professor of Family Medicine, Psychiatry, and Social and Preventive Medicine

EDUCATION:

- ◆ BARD COLLEGE, ACTING, BA 1972
- ◆ SUNY AT SYRACUSE, UPSTATE MEDICAL CENTER, RN, AS, 1977
- ◆ YALE UNIVERSITY, MPH, 1984
- ◆ UB SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES, MD, 1994
- ◆ UB SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES, RESIDENCY IN FAMILY MEDICINE, 1997

RESEARCH INTERESTS:

- ◆ SERIOUS MENTAL ILLNESS AND CHRONIC HEALTH PROBLEMS
- ◆ ACCESS TO PRIMARY CARE FOR PEOPLE LIVING WITH SERIOUS MENTAL ILLNESS
- ◆ CULTURALLY COMPETENT PRIMARY CARE
- ◆ REFUGEE HEALTH AND ACCESS TO CARE
- ◆ MEDICAL STUDENT TRAINING AND CULTURAL COMPETENCE

NEED:

Individuals living with mental illness suffer excess medical morbidity and mortality compared to the general population, and for many reasons they may not access primary medical care. Inappropriate utilization of care results not only in poor physical and mental health outcomes, but in higher health-care costs. Studies have shown that patients with psychiatric disorders can be linked effectively to both primary and mental health care and that collaborative efforts can lead to improved outcomes.

SAMPLE STUDY:

Griswold was principal investigator of a recently completed study titled "From Psychiatric Crisis to Primary Care: An Intervention for Patients Presenting to the Psychiatric Emergency Room." It was funded

by a four-year, \$300,000 grant from the Robert Wood Johnson Foundation Generalist Physician Faculty Scholars Program.

OVERVIEW:

This randomized controlled study focused on patients who had recently experienced a psychiatric crisis and did not have a primary care provider. It tested the hypothesis that, following a psychiatric emergency visit, patients who receive assistance navigating the community-based health-care system are more likely to connect to primary care than those patients who receive usual care.

The study also examined variables that might facilitate or deter patients from seeking primary care, including insurance status, whether they were admitted to the hospital at the time of psychiatric crisis and linkages to community mental-health care.

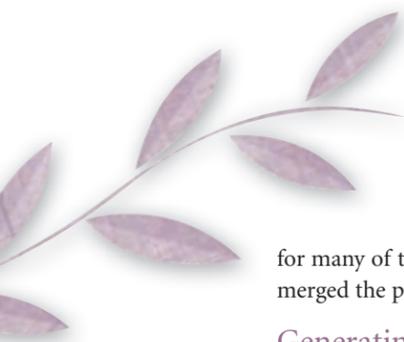
Preliminary results (based on the first 101 patients who enrolled in the trial) show that within three months, 57 percent of participants in the intervention group were successfully linked to primary care, compared to 16 percent of participants in the usual-care group. Based on literature in the field, there is a higher likelihood that the patients who connected with

primary care will follow up with mental-health care visits, successfully obtain health insurance and be admitted to inpatient hospital stays less frequently.

Griswold is planning future studies that will address primary care retention and the effects of health care on quality of life and mental and physical health outcomes.

—S. A. UNGER

EDITOR'S NOTE: Griswold is also currently the principal investigator of a five-year, \$600,000 grant from the National Heart, Lung and Blood Institute, titled "Medical Training in Diversity: Disparity across Cultures." The objective of the study is to develop and test new experiential instructional models for teaching cultural competence. To read more about this study, visit the UB NewsCenter website at www.buffalo.edu/news and search "cultural competence."



for many of the same sorts of skills and resources, so we merged the programs,” recalls Rosenthal.

Generating Knowledge

SINCE THE FMRI was established, researchers working under its auspices have made a number of notable discoveries and are continuing to conduct innovative studies that challenge some of the most basic tenets of our health-care delivery system.

For example, in the mid-1990s, Jaen and epidemiologist Laurene Tumiel-Berhalter, PhD '00, vice chair for research at the institute, were the first to look at the relationship of asthma to people living in cockroach-infested apartments. They were also the first to show that asthma patients who see a primary care physician on regular basis—or who can even name a primary care physician—have fewer hospital and emergency room visits for their asthma.

Similarly, Kim Griswold, MD '94, MPH, has gathered data showing that if patients with serious mental illness see a primary care physician on a regular basis, they have fewer hospitalizations for any cause (see related sidebar on page 6).

“Primary care physicians tend to normalize mental-health issues, not isolate them,” says Rosenthal. “We recognize that if a patient has a dual diagnosis—for example, schizophrenia and hypertension—you can’t put one [disease] over here and the other over there. They *interact*. Every day that the patient gets up, he or she has both schizophrenia and hypertension.”

A comparable disconnect applies to how our health-care system treats “behavioral” problems in relation to “physical” problems, according to Rosenthal. At the FMRI, Richard Blondell, MD, an addiction medicine specialist, is looking at ways to move addictions care into the primary care office in order to provide treat-

ment to people at as early a stage in their disease as possible. In relation to this, he is also studying how primary care physicians can become more adept at detecting which people have an abuse problem, as well as how to prevent people from becoming addicted to prescription drugs. Currently, he is conducting an NIH-funded study that looks at ways to improve abstinence rates following alcohol detoxification (see sidebar below).

Rosenthal further explains that Buffalo was the first community in the U.S. to report a measurement called glomerular filtration rate (GFR) on routine lab values as a way to begin to stratify people with mild kidney dysfunction, thereby providing an early marker for renal disease before it progresses to end-stage failure.

“The faculty who conduct this research really have a passion for the work they do and want to explore the frontier of generating new knowledge,” explains Rosenthal. “And we are always looking for people to collaborate with because, inherently, family medicine physicians are collaborators.”

“This is a great example of how nephrologists and primary care physicians working together have changed and improved the care of patients with diabetes and chronic kidney disease—not just in Western New York but everywhere, because labs around the world now report GFR,” he explains.

A related issue pertains to the fact that patients today are often on multiple medications, many of which can damage the kidneys when taken alone or together.

Currently, Chester Fox, MD, is examining whether the implementation of evidence-based chronic kidney

RICHARD BLONDELL, MD

EDUCATION AND TRAINING:

- ✦ STATE UNIVERSITY OF NEW YORK AT GENESEO, BS, 1974
- ✦ UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE AND DENTISTRY, MD, 1978
- ✦ UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE, RESIDENCY IN FAMILY MEDICINE, 1981

INTERESTS AND EXPERTISE:

- ✦ ADDICTION MEDICINE
- ✦ TRAUMATIC INJURIES
- ✦ PAIN MANAGEMENT
- ✦ DETOXIFICATION OUTCOMES
- ✦ CLINICAL AND TRANSLATIONAL RESEARCH

THE NEED:

For individuals with an alcohol-use disorder, the decision to seek detoxification treatment often represents a desire or willingness to change drinking behavior. As a result, inpatient alcohol detoxification treatment offers an opportunity to prepare them for and link them with aftercare treatment.

A limited number of published studies suggest, however, that a majority of these patients are not linked to aftercare following inpatient detoxification treatment and return to drinking within a few weeks of hospital discharge.

There is little recent published information to guide the development of evidence-based pharmacological or psychological practices or interventions in detoxification settings, so clinicians, in turn, have little to guide them on how the current standard of care for alcohol detoxification might be improved. As a result, alcohol detoxification treatment has changed little over the past 25 years.

There is some evidence to suggest that interventions performed while the patient is hospitalized could encourage patients to initiate involvement in aftercare and to decrease drinking or initiate abstinence. Motivational Enhancement Therapy and Twelve-Step Facilitation are two interventions that show promise and merit testing.

SAMPLE STUDY:

Blondell is the principal investigator of a \$1.28 million grant from the National Institute of Alcohol Abuse and Alcoholism to conduct a study titled “Helping Alcoholics Link to Substance Abuse Treatment Programs After Being in the Hospital for Detoxification.”

OVERVIEW:

This study compares three approaches to encourage alcoholics to stop using alcohol and to enter a rehabilitation or self-help program after leaving the hospital detoxification unit. The interventions involve a total of 150 patients and take place while patients are in the hospital. (A typical detoxification hospital stay is three to five days.)

Participants are assigned randomly to one of three groups: a usual-care group; a professional-counseling group; and a group that participates in a novel Peer-Delivered Twelve-Step Facilitation led by trained volunteers who are recovering from alcoholism.

“Usual care” in this detoxification unit involves a physical exam, medical treatments, an interview with a case manager to plan for aftercare and twice-a-day group discussion sessions.

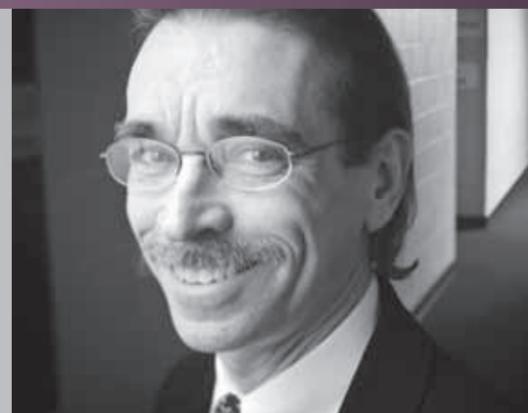
Patients randomized to the second protocol receive usual care plus a 60-minute “Motivational Enhancement Therapy” (MET) intervention, a well-established program used with alcohol abusers delivered by a paid professional trained in the method. Based on a therapist-patient relationship, MET includes discussion of the pros and cons of drinking and factors that brought the patient to treatment. The therapist provides feedback, addresses long-term consequences of alcohol abuse, makes a plan

with the client for aftercare and attempts to generate motivation to change.

The third and novel intervention employs pairs of volunteers who provide a Peer-Delivered Twelve-Step Facilitation. This interpersonal approach calls for volunteers to approach the patient as a friend. They talk about their own experiences with alcohol problems and describe how they changed their lives. They refer to alcoholism as a fatal illness, express the difficulty of overcoming it without help, attempt to instill hope and discuss a spiritual aspect of recovery without discussing religion. Data on the interventions are being collected at admission and at one, three and six months.

—LOIS BAKER AND S. A. UNGER

EDITOR'S NOTE: *Blondell is also conducting a clinical trial for individuals with both a well-documented pain disorder and clear evidence of a substance-use disorder (opiate dependency). The objective of the study is to determine if adding the drug Suboxone to usual care will improve clinical outcomes for these individuals. To read more about this study, visit www.ClinicalTrials.gov and search trial #NCT00552578.*



RESEARCHER:
Richard Blondell, MD,
Professor of Family Medicine

disease guidelines that involve the careful modulation of medications and treatment for hypertension, diabetes and cholesterol levels can result in better outcomes for patients with early-stage renal disease, or if these individuals are inevitably going to progress toward late-stage renal failure, regardless of this monitoring (see sidebar below).

“Nobody really knows this,” says Rosenthal. “But what we do know is that we have a lot of very good research showing how to treat late-stage renal disease.”

Upside-Down Health Care

WHEN ROSENTHAL DESCRIBES the need for the type of research that is being conducted at the FMRI, he points to differences in the way health care is delivered in the United States as compared to other industrialized countries in the Western world. These differences, he emphasizes, not only affect patient care, but also impact directly on whether or not quality applied research can be conducted.

“All you really need to do is look toward England to see how much they think in terms of taking care of their entire population, whereas in America, we tend to think in terms of individual patients,” he says. “And because they think in terms of population, they do much more applied research, where you look at how all of today’s medications and technologies actually affect patients.”

A key reason why England is able to conduct applied research on the scale that it does, Rosenthal adds, is because it has amassed a large database that can be mined by physician-researchers. This database, he says, has proven to be a mother lode for many research endeavors, including those that look at drug safety and effectiveness.

As an example, Rosenthal describes how our current understanding of the side effects of birth control pills grew out of the studies conducted in the 1970s by the Royal College of General Practitioners (the equivalent of our Family Medicine Academy), which looked at large pools of data that revealed the pills can cause blood clots.

“Isolated events that would have otherwise been difficult to piece together took coherent shape because of this data,” he says.

If this sounds a lot like what the Food and Drug Administration (FDA) is responsible for in our country, Rosenthal counters with two points. First, he says the FDA does not look at drugs in terms of populations, but instead focuses its efforts on how the drugs affect individuals. Second, to support this focus, patients with more than one condition are often excluded from drug studies.

Another aspect of this same dilemma is the sheer number of medications patients can be prescribed for just one condition. As is the case for patients with kidney disease, it’s not uncommon for a person diagnosed with heart disease today to be put on five or six different medi-

cations at once, according to Rosenthal. “And while there’s a lot of literature on each of those medications that shows how each, individually, improves long-term outcome, there are no studies published yet that look at what happens when you put all five or six into a patient.”

This dilemma of “polypharmacy” as it relates to patient safety is an area of focus for Ranjit Singh, MD, whose studies through the FMRI target the geriatric population, in particular (see related sidebar on page 14).

“Dr. Singh’s work goes right to this issue,” notes Rosenthal. “If you do one study looking at how high-blood pressure medications keep you from having a stroke and do another study that looks at how diabetes medications keep you from going blind, the question still remains: What happens when you put all these medications together? Is it safe? How aggressively do you treat each one? Where does the curve fall off as far as benefit?”

Physicians who practice general internal medicine, general pediatrics and family medicine work in the three specialty areas that are looking at many of these questions, says Rosenthal. He explains that the research they

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conduct naturally meshes with the goals outlined by the National Institutes of Health’s Roadmap Initiative, which, according to the NIH web site, seeks to “catalyze changes that must be made to transform our new scientific knowledge into tangible benefits for people.”

“Dean [Michael] Cain brings a great deal of skill in this phase of investigation, where you really begin to look at ‘How does this affect a patient?’” says Rosenthal. “In family medicine, we hope to be able to take that into the practice community where we can start looking at a thousand patients who have more confounding variables and be able to produce quicker data.”

Bring on the Data

IF ROSENTHAL SOUNDS like a man who is not afraid to take on “confounding variables”—in fact, even welcomes them—that’s because analysis of data that is replete with such variables is a cornerstone function of the FMRI and one of its highly prized areas of expertise.

The institute became involved in data evaluation over a decade ago when Rosenthal realized that, while there was much work to be done in family medicine research

CHESTER FOX, MD



RESEARCHER:
Chester Fox, MD,
Professor of Clinical Family Medicine

EDUCATION AND TRAINING:

- ◆ SUNY AT ALBANY, BS IN CHEMISTRY, 1972
- ◆ ST. LOUIS UNIVERSITY MEDICAL SCHOOL, MD, 1976
- ◆ SUNY UPSTATE SYRACUSE, RESIDENCY IN FAMILY MEDICINE, 1979

INTERESTS AND EXPERTISE:

- ◆ TRANSLATING RESEARCH INTO PRACTICE
- ◆ PRIMARY CARE PRACTICE BASED RESEARCH
- ◆ PRIMARY CARE OFFICE SYSTEM REDESIGN AND QUALITY IMPROVEMENT
- ◆ PREVENTION AND TREATMENT OF EARLY STAGE CHRONIC KIDNEY DISEASE
- ◆ STEERING COMMITTEE OF THE FEDERATION OF PRACTICE-BASED RESEARCH NETWORKS

THE NEED:

Chronic kidney disease (CKD) is a worldwide public health issue. It is two to four times more likely to burden minority populations. Primary care providers are largely unaware of evidence-based CKD guidelines.

SAMPLE STUDY:

Fox is currently principal investigator on a pilot study titled “Making Chronic Kidney Disease Guidelines Work in Underserved Practice.” It is funded by the U.S. Department of Health and Human Services’ Agency for Healthcare Research and Quality.

OVERVIEW:

This translational-research-into-practice pilot study tests implementing CKD guidelines using practice-enhancement assistants* and computer-decision support. It uses a randomized trial to evaluate the effect of site-level interventions in a sample of practices in medically underserved communities within the Upstate New York Practice Based Research Network (see sidebar on page 12).

The specific aims of this study are (1) to measure how the implementation of CKD guidelines affect patient outcomes, and (2) to assess the effec-

tiveness of using practice-enhancement assistants to implement CKD guidelines in primary care settings.

Outcomes measured include improved recognition of CKD and anemia, a greater use of medications known to improve CKD, and a discontinuance of harmful medications. Secondary outcome mea-

asures include change in the control of diabetes, hypertension, proteinuria, dyslipidemias and anemia.

The information gathered will serve as the basis for an ongoing translational research program that will lead to an RO1 application.

—S. A. UNGER

*Practice-enhancement assistants are individuals with nursing degrees or master’s degrees in health promotion sciences or related fields. They develop a relationship with a group of practices over a period of time, generally eight practices per assistant, in order to help them to evaluate and improve their quality of care. This is accomplished through such methods as practice audits and feedback, patient-satisfaction surveys, staff training, “cross fertilization” (sharing of ideas among the eight practices), coordination of quality-improvement initiatives, and provision of specific materials and resources (flow sheets, computer training, etc.).

and allied endeavors, it would be very difficult to fund the institute strictly on grant dollars, given the up-and-down cycles of such support.

During a visit to a health policy research center in North Carolina called the Cecil G. Sheps Center, he learned how it confronted this problem by establishing a data evaluation unit that generates a steady stream of revenue through contracts with outside groups in need of this service.

Following this model, Rosenthal established an Evaluation Unit in the FMRI, which is currently led by Linda Kahn, PhD, director of evaluation; Laurene Tumiel-Berhalter, PhD, vice chair of research (who worked with Carlos Jaen on the early asthma studies); and Reva Fish, associate director of program evaluation.

The Evaluation Unit provides not only services to the Department of Family Medicine, but also to its many collaborative partners and programs, such as the New York State Area Health Education Center system (see article on page 16) and the Gold Choice program.

Gold Choice is a physician case-management program established in 1996 by the Department of Family Medicine in collaboration with the Erie County departments of Social Services and Mental Health. Its aim is to integrate the delivery of health care for Medicaid recipients who suf-

fer from chronic and persistent mental illness and/or who are undergoing substance abuse treatment and who have a history of poorly coordinated care. Currently the program has close to 5,000 enrollees, with approximately 200 new applications being processed each month.

Using the services of the Evaluation Unit, Rosenthal and his colleagues have been able to show that this innovative program—which many people said would never work—in fact saves a million dollars for every 1,000 people enrolled in it.

“We have published papers showing that because Erie County primary care physicians take a holistic approach to their care, patients enrolled in Gold Choice have fewer hospitalizations for all causes than they would have if they weren’t enrolled the program,” explains Rosenthal.

“That’s translational research,” he adds.

In addition to helping document the viability of programs such as Gold Choice, the Evaluation Unit also enhances the ability of groups or programs to obtain funding.

For example, the unit evaluates data for the P2 Collaborative of Western New York, a nonprofit organization established in 2002 that is dedicated to improving the health of Western New York.

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PROFESSORSHIP IN HEALTH DISPARITIES

ESTABLISHED WITH A GIFT FROM ADELAIDE AND BRENDAN GRISWOLD

The UB Department of Family Medicine has received a \$500,000 gift from The Reverend and Mrs. Brendan Griswold to provide funding for faculty to conduct primary care research in health disparities.

The gift, which is the largest in the department’s history, creates the Adelaide and Brendan Griswold Professorship in Health Disparities. It will provide the foundation for a future faculty position; more immediately, it will support a part-time faculty member, as well as medical student research and scholarly activity.

“The UB School of Medicine and Biomedical Sciences is grateful to the Griswolds for their generosity,” says Michael E. Cain, MD, dean of the school. “Endowed faculty positions enable UB to attract and retain the best and brightest physicians, strengthen our recruitment efforts, provide seed money to enhance the development of new technologies and research trials, and help the school to realize its goal of being recognized as a top-tier, nationally ranked medical school.”

The Griswolds, of Vero Beach, Florida, made the gift after becoming aware of the shortage of family medicine physicians and

after learning about the role family physicians play in the care of underserved populations.

“We want to encourage medical students interested in working with the underserved to consider family medicine as a career choice, and we hope this will help,” they said.

Their daughter, Kim Griswold, MD ‘94, MPH, an associate professor in family medicine, psychiatry and social and preventive medicine at UB, helped found the Family Medicine Research Fund, which has been integrated into the new professorship.

—CYNTHIA MACHAMER

FROM LEFT: LAURENE TUMIEL-BERHALTER, PHD '00; JOHN TAYLOR; LINDA KAHN, PHD; AND REVA FISH.

TUMIEL-BERHALTER, KAHN AND FISH ARE WITH THE EVALUATION UNIT, AND TAYLOR IS VICE CHAIR FOR RESEARCH AND DEVELOPMENT AT THE FMRI.



The Practice of Networking

FAMILY MEDICINE RESEARCHERS ARE NATURAL COLLABORATORS

Family medicine researchers will be the first to tell you that they are team players—collaborators who gravitate toward highly sophisticated and intricately coordinated study groups aimed at discovering knowledge and translating it into patient care as quickly as possible.

The natural tendency of these scientists to self-organize into collaborative units was given formal structure 30 years ago with the establishment of what are called primary care practice-based research networks (PBRNs). These networks are defined as the coming together of at least five ambulatory practices—academic as well as community based—for the purpose of engaging in the scientific study of primary care.

The American Academy of Family Physicians placed its imprimatur on this concept in 1997, when it established the Federation of Practice-Based Research Networks to advocate for and foster the building of PBRNs.

The U.S. Department of Health and Human Services, through its Agency for Healthcare Research and Quality (AHRQ), has since emulated this model by developing its own PBRN initiative.

A statement on the AHRQ website reads: “Increasingly, PBRNs are recognizing their potential to expand their purpose and are supporting quality improvement activities within primary care practices and the adoption of an evidence-based culture

in primary care practice. Many PBRN leaders have begun to envision their networks as places of learning, where clinicians are engaged in reflective practice inquiries and where [they], their patients, and academic researchers collaborate in the search for answers that lead to the improved delivery of primary care.”

At UB, family medicine researchers are members of a PBRN called the Upstate New York Practice-Based Research Network, or UNYNET.

The network, which is housed in the UB Department of Family Medicine, includes 60 full-time clinicians who practice at 42 family medicine sites in the eight counties of Western New York.

The patient population of UNYNET is about 230,000. An estimated 40 percent of these patients are residents of rural areas and 28 percent are members of racial or ethnic minority groups experiencing disparities in health outcomes. Physicians affiliated with the network are currently focusing on projects such as asthma, cardiovascular risk reduction, chronic kidney disease, diabetes mellitus and patient safety.

“UNYNET is registered with both the AHRQ and the NIH Inventory and Evaluation of Clinical Research for Networks, so we are a nationally recognized practice-based research network for translational research,” says Chester Fox, MD, professor of clinical family

medicine at UB, and an expert on PBRNs (see sidebar on page 10).

Fox further explains that funding for primary care studies is often contingent upon whether or not the proposed study will be conducted under the auspices of a PBRN. “You can’t even apply for a lot of grants if you aren’t working in a network,” he says.

Also important are the affiliations a PBRN has established, which further enhances its viability. For example, Fox points out that UNYNET is only one of 11 networks that are part of the electronic Primary Care Research Network (ePCRN). Administered by the Federation of Practice-Based Research Networks and funded by the Roadmap Initiative of the NIH, the

ePCRN allows primary care physicians to link with researchers conducting clinical research elsewhere in the United States. This is accomplished through a sophisticated electronic infrastructure designed to support the performance of randomized clinical trials and facilitate translational research.

“Practice-based research networks draw on the expertise and insight of practicing clinicians to identify and frame research questions,” concludes Fox. “By linking these questions to rigorous research methods, the network can produce research findings that are immediately relevant to the clinician and, in theory, can be more easily translated into everyday practice.”

—S. A. UNGER

In January 2007, the Robert Wood Johnson Foundation awarded the P2 Collaborative a \$600,000 grant and, in doing so, singled out the organization's partnership with the FMRI's Evaluation Unit as a factor that led to their decision to provide the funding.

"When the Robert Wood Johnson Foundation looked at this grant proposal, not only did they say 'What's happening there [with the P2 Collaborative] is exciting,' but they also said that our Evaluation Unit's evaluation plan was the best they had seen for any of their pro-

posed programs," explains Rosenthal. "So we are able to enhance the situation for other programs, because so often an awful lot of money is spent on an awful lot of programs and, in the end, you don't know what actually works and what doesn't."

Simplifying the Complex

AS ROSENTHAL LOOKS to the future, he sees family medicine researchers playing a lead role in the discovery of knowledge that will contribute to our country's

ability to provide more effective health care to its population.

In discussing this potential, he pauses a moment to explain that the world-renowned biologist E. O. Wilson—whom Rosenthal

describes as "one of my heroes"—reached this same conclusion in a short book he published in 1998, titled *Consilience*.

"Consilience is the act of bringing together information to tease simplicity out of complexity," says Rosenthal. "In his book, Wilson talks about how he feels the family physician can play a role in accomplishing this in the context of health-care delivery—that we are uniquely positioned to take complexity and bring order and simplicity to it in a way that makes sense for individual patients."

Given the seemingly endless complexity of our country's health-care system today, there's little doubt that the vast majority of Americans eagerly await any measure of consilience family medicine researchers can bring to this system and its many confounding variables. **EP**

Rosenthal further explains that Buffalo was the first community in the U.S. to report a measurement called glomerular filtration rate (GFR) on routine lab values as a way to begin to stratify people with mild kidney dysfunction, thereby providing an early marker for renal disease before it progresses to end-stage failure.

UB DEPARTMENT OF FAMILY MEDICINE
www.fammed.buffalo.edu

UB PATIENT SAFETY RESEARCH CENTER
www.fammed.buffalo.edu/safety

UPSTATE NEW YORK PRACTICE BASED RESEARCH NETWORK (UNYNET)
www.fammed.buffalo.edu/unynet

P2 COLLABORATIVE OF WESTERN NEW YORK
www.p2wny.org

AGENCY FOR HEALTHCARE RESEARCH AND QUALITY (AHRQ), U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
www.ahrq.gov

NIH ROADMAP FOR MEDICAL RESEARCH
http://nihroadmap.nih.gov

NIH INVENTORY AND EVALUATION OF CLINICAL RESEARCH NETWORKS
www.clinicalresearchnetworks.org

ELECTRONIC PRIMARY CARE RESEARCH NETWORK (ePCRN)
www.epcrn.bham.ac.uk

RANJIT SINGH, MD, AND GURDEV SINGH, PHD



RESEARCHERS:

Father-and-son team, Gurdev Singh, PhD, right, Director of the Patient Safety Research Center, Family Medicine Research Institute, Department of Family Medicine; and his son, Ranjit Singh, MD, Assistant Professor of Clinical Family Medicine, Associate Director, Patient Safety Research Center

EDUCATION AND TRAINING:

Gurdev Singh

- ◆ ALIGARH UNIVERSITY, INDIA, BScENG IN CIVIL ENGINEERING WITH ARCHITECTURE, 1961
- ◆ UNIVERSITY OF BIRMINGHAM, ENGLAND, MScENG IN CIVIL ENGINEERING, 1964
- ◆ UNIVERSITY OF BIRMINGHAM, ENGLAND, PhD IN CIVIL ENGINEERING, 1968

Ranjit Singh

- ◆ UNIVERSITY OF CAMBRIDGE, ENGLAND, MA IN MANAGEMENT STUDIES, 1992
- ◆ UNIVERSITY OF CAMBRIDGE SCHOOL OF CLINICAL MEDICINE, MBBChir, 1994
- ◆ UB SCHOOL OF MEDICINE AND BIOMEDICAL SCIENCES, RESIDENCY IN FAMILY MEDICINE, 1999
- ◆ UB, MBA, 2004

INTERESTS AND EXPERTISE:

- ◆ SYSTEMS APPROACH TO PATIENT SAFETY
- ◆ SYSTEMS MANAGEMENT OF RISK AND RELIABILITY

- ◆ MULTI-OBJECTIVE MULTI-RESOURCE OPTIMIZATION
- ◆ STOCHASTIC SIMULATION

THE NEED:

Medication errors are one of the most serious problems occurring in doctors' offices and outpatient clinics, and older persons with chronic conditions are the most vulnerable.

SAMPLE STUDY:

Gurdev and Ranjit Singh are currently conducting a study titled "A Systems Engineering Approach: Improving Medication Safety with Clinician Use of Health IT." It is funded by a \$1.2 million, three-year grant from the U.S. Department of Health and Human Services' Agency for Healthcare Research and Quality.

OVERVIEW:

The study is an experimental information technology (IT) intervention designed to

help reduce medication errors. It will begin in spring 2008 in eight ambulatory medical offices throughout Western New York.

Physicians and office staff at the sites will be assigned randomly either to conduct business as usual or to implement an IT-based Team Resource Management tool embedded in the ACORN office quality management system developed by Dendress Corporation of Buffalo, in collaboration with the Patient Safety Research Center in the Family Medicine Research Institute.

Gurdev Singh developed the study in consultation with his research team and clinicians affiliated with Upstate New York Practice Based Research Network (UNYNET) who already are using electronic medical records and who were interested in identifying useful and affordable error-reducing approaches for their offices (see sidebar on UNYNET on the bottom of page 12).

Outcome assessment will be based on medication safety among geriatric patients and on office staff use of the IT-based tool.

The study will focus on patients 65 or older who are being treated for cardiovascular disease.

The first aim will be to determine the impact of the intervention on reducing injuries such as falls or internal bleeding resulting from the use of a drug. Data will be gathered by reviewing patients' records obtained at baseline and at 12 months post-baseline.

Second, the study team will assess physicians' compliance with recommended laboratory testing of patients taking specific cardiac medications. The chart review for this outcome measure will

include recording whether the medication was prescribed (for at least six months during the preceding 12 months), whether the recommended lab test was ordered (at least once during the measurement year) and whether the lab results were recorded in the patient's chart.

The final aim of the study will be to determine if the IT tool is practical in a primary care office setting and if it is embraced by office staff.

This demonstration project will provide pilot data for a larger study on the usefulness of the specific IT software.

—LOIS BAKER

WEB LINK

UB Patient Safety Research Center
www.fammed.buffalo.edu/safety