



Department of Internal Medicine
A 360° View



James E. Calvin Jr., MD, FACC
Section Director

A View from the Top

Get the patient beyond security, into the emergency room, past the paperwork, through an evaluation, up ten stories, into a cath lab suite, on the table, under anesthesia, and implanted with a balloon across a blocked artery. This is the race to save a chest pain patient, and at Rush University Hospital, it all happens within ninety minutes. This efficient door-to-balloon time is just one of many outstanding measures the Section of Cardiology has implemented at Rush University Medical Center. Based on this and other qualifications, Rush was named the first accredited academic chest pain center in Chicago area. Expanding upon this success, Rush went a step further to create what Section Director James Calvin Jr. MD, FACC describes as “a virtual ambulatory chest pain center.” Within forty-eight hours of a request, in an out-patient setting, consulting cardiologists provide a complete assessment of patients’ risks for coronary disease.

The achievements of the Section of Cardiology lift Rush to the top of quality rankings and place Rush on lists of firsts. Rush was the first accredited academic chest pain center in the Chicago area. It was the first to create a women’s heart center to address the unique issues of coronary disease in the female population. The section’s success in treating heart attacks and heart failure contribute to Rush’s superior Leap Frog and UHC rankings.

Collaboration on the Climb

“Everybody is winning.” Dr. James Calvin’s voice rings with satisfaction as he says this. He is enjoying the just reward for a section that has navigated a long journey. In the last year, the Section of Cardiology has completed a merger with the private practice, Associates in Cardiology. The merger brings an enhanced teaching program, reengineered offices and a singular voice for cardiology at Rush. The new partnership combines depth and breadth of knowledge. It serves patients and the hospital by offering an accessible and complete set of resources in the field of cardiology. Dr. Calvin, impressed by these results, declares “collaboration is trumping competition.”

Explorations

The Section of Cardiology maintains an active research program. Using the latest science, faculty are probing tantalizing questions in the field. Can medicine manipulate stem cells to grow new blood vessels and heart muscle? Can we develop genetic profiles or use carotid scanning to identify patients at risk for atherosclerosis? What can we do to prevent cardiac dysfunction in patients with metabolic syndromes? Can we improve techniques for percutaneous valve replacement? But even as faculty probe and publish, Dr. Calvin never loses sight of the bigger goal- the active and engaged practice of medicine. “I’ve realized as I’ve gotten older,” he says “that it’s not about the trophy, it’s about the hunt.”

Forging Ahead

With one of the largest fellowship programs in the Midwest, the section is committed to the training of the next generation of cardiologists. The program supports eighteen general cardiology fellows, two interventional fellows and two electrophysiology fellows. The recent merger with Associates in Cardiology brings five new faculty members into the program.

Looking to the future, Dr. Calvin sees Rush physicians taking a more preventive role in heart disease. Advances in genetic profiling and non-invasive imaging allow cardiologists to identify at-risk patients and to diagnose early disease. The Section of Cardiology at Rush is at the forefront of these changes. And it’s not just the technology or the research that’s leading the way. Dr. Calvin explains that it’s also the people. “We like what we do here. We’re committed to excellence. And that’s a commitment we make to ourselves. Effort, drive, passion... Those are the things that push you down the road.”

Above and Beyond
To earn chest pain center accreditation status, Rush implemented a wide set of stringent criteria certified by an independent review team:

- 1 Emergency Department Integration with the Emergency Medical System
- 2 Emergency Assessment of Patients with Symptoms of Possible ACS - Timely Diagnosis and Treatment of ACS
- 3 Assessment of Patients with Low Risk for ACS and No Assignable Cause for their Symptoms
- 4 Process Improvement
- 5 Personnel, Competencies, and Training
- 6 Organizational Structure and Commitment
- 7 Functional Facility Design
- 8 Community Outreach



Carlos F. Mendes de Leon, PhD
Section Director

Illuminating Issues in Aging

One tenth of the Chicago population is over the age of sixty-five. These seniors come from all walks of life. They are rich and poor. They are African, Irish, German, Italian, Mexican, English, Bulgarian, Greek, Chinese, Lithuanian, Polish, Romanian, Serbian, Swedish, Ukrainian, Dutch and Puerto Rican. Despite this rich diversity of backgrounds, these people have at least one thing in common. Every day they, like all of us, get older.

It is the mission of the Section of Community Epidemiologic Research to study the issues of aging and the ways that those issues affect quality-of-life in seniors. Drawing on the diverse population of Chicago, the section conducts epidemiologic research grounded in local communities. Researchers take a hands-on approach to every aspect of the work. They design the studies, collect the data, analyze the results and publish the conclusions. From the grassroots to the loftiest publications, the section brings aging related issues to light.

The last year has been incredibly active for the section. Faculty initiated a research project on air pollution and its relation to late-life cognitive function. Liesi E. Herbert, ScD and Judy J. McCann, RN, DNSC began an analysis of the nature and intensity of health care utilization in managing end-of-life care issues. XinQi Dong, MD published his findings linking elder self-neglect and elder abuse to an immediate increased mortality risk.

Powering the Research

It was March of 2009 when the federal government announced the availability of research funds as part of the American Reinvestment and Recovery Act. By June 1st, the Section of Community Epidemiologic Research had prepared and budgeted six grant applications. By September, they had won four of them. Section Director Carlos Mendes de Leon, PhD says that in the scramble for funds "the administrative challenges were enormous." He adds, "it was a unique situation and everyone had to adapt on the fly... I am very proud of how well we did... We have been very successful in this section in that regard."

Through its mentorship program, the section shares its expertise in research planning, budgeting, funding and process. The section reaches out to junior faculty who are just beginning their clinical and academic careers. These faculty primarily come from the Departments of Internal Medicine at Rush University Hospital and at the John H. Stroger Jr. Hospital of Cook County, but the section has hosted mentees from as far away as Denmark.

Lighting the Way Forward

As it looks to the future, the section plans to hone its focus on health disparities research. In examining the chronic problems of late adulthood, faculty seek to identify risk factors unique to specific minority populations. Utilizing complex modeling techniques and advances in genetic research, the section will study the interaction between physiology and environment as it relates to issues of aging. The hope is to understand how specific problems develop and to develop protocols for medical intervention. Dr. Mendes de Leon sums up this vision. "It's about good aging. How can one age well and retain their quality of life? ...We wish to provide communities with information on how to age well."

Community: Catching the Spark

“Our goal is to not only answer important scientific questions about aging, but to do so while collaborating with the diverse communities of the city of Chicago. Our work not only reflects on our own scientific success, but it also reflects on Rush as an institution. We are part of Rush and when we collaborate with the communities in our research, we represent Rush. It is important for us that we represent them well. In our community engagement, we contribute to the overall mission of the medical center.” Section Director Carlos F. Mendes de Leon, PhD



David Baldwin, MD
Section Director

Taking In Every Angle

Diabetes is a complicated disease managed by complex medical regimens. Endocrinology Section Director David Baldwin, MD describes the challenge of managing diabetes patients:

“You have to think about all aspects that a different patient presents. Some patients eat more, eat less, have a certain schedule. Some patients work different hours of the day, eat their meals at different times of the day, exercise at different times of the day, or not exercise. And if they’re in the hospital, that presents its own set of unpredictable factors. Patients are going for tests, they’re going to miss meals, they’re going to go to surgery tomorrow. They may get steroid medications to treat some other condition and it’s going to impact their blood sugars. They may need special feedings, either intravenous or via a tube into their stomach. It’s going to be unpredictable. And yet, you have to be responsible for protecting the patient from blood sugars that are either too high or too low.”

Faculty in the Section of Endocrinology see both the big picture and the small details. They take a patient-centered approach to diabetes care and to the management of other endocrine conditions. The section offers a full range of services, including inpatient consult services, outpatient provocative endocrine testing, thyroid biopsy and intensive diabetes management and education.

Outpatient Clinical Activities: Working in Parallel with Patients

“Diabetes is a chronic disease,” notes Dr. Baldwin. “You often need to talk to your doctor. Things come up.”

The Section of Endocrinology at Rush is available for its patients twenty-four hours a day, every day. “The patients always come first,” says Dr. Baldwin.

The section offers expertise and resources for the unique needs of its patients. Patients with type 1 and type 2 diabetes not only receive medical care, they also have access to support services.

“Since diabetes is so dependent on patients taking care of themselves, often for decades at a time, teaching them about that is very important,” explains Dr. Baldwin.

“We have programs for diabetes self-management education. All doctors are welcome to send their patients here for diabetes education.”

While most of the practice is devoted to the care of patients with diabetes, every physician treats other endocrine conditions. “We all see every type of patient,” says Dr. Baldwin.

In the area of thyroid disease, patients receive a clinical evaluation frequently supplemented by thyroid ultrasound examination and ultrasound guided fine needle aspiration. Rush endocrinologists collaborate with Rush colleagues in general surgery, ENT surgery, pathology and nuclear medicine.

Inpatient Clinical Activities: Intersecting with Points of Care

On any given day, about 1/4 of the patients at Rush University Hospital are diabetic. The Section of Endocrinology maintains four inpatient consult services to manage these patients as well as to provide general endocrine consult services to any medical unit. Consult services include:

- Diabetes management of transplant and general surgery patients.
- Diabetes management of orthopedic, general surgery, neurology and rehabilitation patients.
- Diabetes management of cardiovascular surgery, vascular surgery, thoracic surgery and neurosurgery patients.
- General endocrine consult service for patients on any medical unit, all patients with diabetic ketoacidosis, patients in the surgical ICU and non-diabetes consults elsewhere throughout the hospital.

Education: New Planes of Knowledge

The section has between two and four medical residents and up to two medical students rotating on the Rush consult service each month. These rotations provide exposure to diabetes treatment, both in the clinic and in the hospital.

Faculty also conduct a teaching session each day during the months of July through December. Taking two first year medical residents at a time, faculty provide intensive training in diabetes management.

“Insulin is both an effective and a dangerous drug,” says Dr. Baldwin. “There is a narrow therapeutic range. An individual patient’s needs and patterns are completely different from the next patient. The only way you can understand it is by looking at it in hundreds of patients over and over. So you’ve got to give residents that opportunity. There’s a lot of nuance and art to it.”

At the post-graduate level, the section participates in a two year fellowship training program jointly based at Rush and at the John H. Stroger Jr. Hospital of Cook County. Four fellows spend six months per year on the inpatient consult services, three months per year in ambulatory rotations at Stroger and three months per year working on clinical research projects mentored by endocrine faculty from either Rush or Stroger. All endocrine faculty and fellows participate together in a clinical conference weekly, and in a journal club, in a research conference and in basic science conference monthly. The fellows also have elective rotations in the neurosurgery (pituitary) clinic, pediatric endocrine clinic and high-risk obstetrics clinic.

Research: Drawing Connections

The section maintains an active research program which runs three to four clinical research projects at a time. Most clinical trials have focused on the management of diabetes in the hospitalized patient. Recent studies have included:

- The use of insulin to manage diabetes while patients are in the Emergency Room.
- A quality-of-care assessment of residents treating diabetes in an outpatient setting
- An evaluation of the impact of the St. Anthony’s Project, a project to train community physicians in diabetes management techniques.
- Approaches to treating diabetic ketoacidosis.
- A trial looking at different ways of dosing insulin to patients who are in kidney failure.

This pursuit of more effective diabetes management builds, step-by-step, on foundations of knowledge. “One thing leads to another,” says Dr. Baldwin. “Every study opens up two or three more questions.”

“I was born here. My dad was a physician here for 47 years. Like many Rush physicians, I’ve spent my career here and consider this home.”

Section Director
David Baldwin, MD



Martin J. Gorbien, MD,
FACP, AGSF

Section Director

Associate Director, The Johnston
R. Bowman Health Center

Beyond Limits

The fields of geriatric medicine and palliative care are areas where physicians routinely come up against the limits of what can be done. But where others see constraints, Section Director Martin J. Gorbien, MD finds options and opportunity. It is this commitment to service and to quality of life that draws patients to the Section of Geriatric Medicine and Palliative Care at Rush University Hospital.

“I think that even very senior, sophisticated clinicians don’t always recognize that these fields are not just about holding hands,” Dr. Gorbien explains. “There is a science to both specialties. There is a scientific basis to the way we practice... People come here because their problems won’t be trivialized. They won’t be dismissed.”

Partners on the Journey

In the area of geriatric medicine and palliative care, there are unanswered, and often unasked, questions. Is this normal? Do we test? What do we test for? What do we treat? Is there something that can be done? Is there something that should be done? Rush patients and their families have the security of facing these questions under the guidance of leaders in the field. They have the peace of mind that comes from access to the most sophisticated medical expertise.

Yet, even as the section offers cutting-edge services, Dr. Gorbien is proud of the fact that the physicians and nurses still practice “very old fashioned medicine.”

“We spend lots of time with our patients. There are not layers of others between patients and faculty. Patients have incredible access to us. That is what has made us so successful,” Dr. Gorbien says.

Multi-Faceted Care

In the practice, patients not only have easy access to physicians, they have easy access to an entire range of services. Part of the department’s philosophy is that no one person can serve all the needs of a geriatric or palliative care patient. Patients might need podiatrists, anesthesiologists or psychotherapists. They might need the support of clergy, the advice of nutritionists or referrals from social workers. The section of Geriatric Medicine and Palliative Care makes these resources available to every patient. Dr. Gorbien

describes it as a “truly interdisciplinary approach,” and is proud that the section can provide “one-stop shopping” for patient care.

Breaking Barriers

Until recently, geriatric issues in the gay, lesbian and transgendered community have been shrouded in darkness. Often, these aging patients are not comfortable discussing their lifestyle with their doctors. Many face their medical problems without the legal and social support provided to their straight peers. Magda Houlberg, MD is shining a light on these issues and developing a curriculum to train nurses on the unique needs of these patients. This is part of a plan to develop a comprehensive outreach program to be run out of Howard Brown Health Center in partnership with Rush and three other organizations.

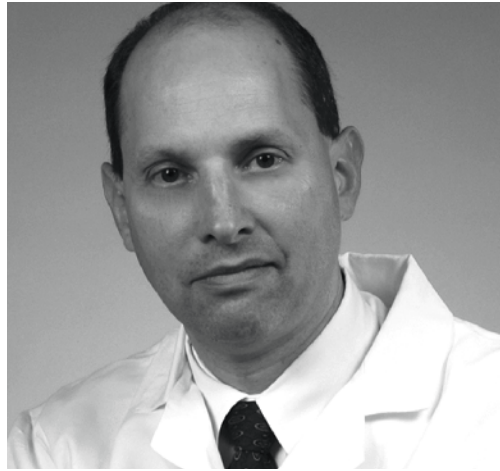
Education: Dismantling Assumptions, Building Up Knowledge

Through its educational programs, the section passes its depth of understanding to the next generation of physicians. The Rush fellowship in geriatric medicine was the first of its kind in Illinois. In the last 11 years, the program has trained over forty fellows to become leaders in the field. The section also provides training to residents and students, exposing them to clinic, in-patient, and nursing home environments. Residents come from the Rush Department of Internal Medicine as well as from other hospitals. Through Gerontology and Palliative Care Grand Rounds, the Section reaches out to an interdisciplinary audience. These bi-monthly lectures cover a wide range of topics related to the unique needs of gerontology and palliative care patients.

Frontiers of Service

The section will be expanding its commitment to Palliative Care through the addition of new faculty and through a departmental reorganization that will promote wider access to palliative care specialists.

The faculty remain active in community outreach. They give lectures to seniors’ groups, serve as consulting experts for nursing homes and lead community-based research on issues such as elder-abuse and self-neglect.



Robert A. Balk, MD
Division Director

Meeting Challenges Finding Opportunities

All hospitals develop emergency plans- contingencies for pandemics and crises. This past year at Rush, those plans got put into action. As the H1N1 outbreak swept across Chicago, a number of physicians and community hospitals referred their most serious cases to the medical intensive care unit at Rush University Medical Center. During the recent H1N1 pandemic the MICU was a center for critical care excellence employing the latest forms of ventilatory and critical care support for critically ill patients from all over the midwest. The intensivists worked closely with their colleagues in pulmonary medicine, as well as other medical disciplines, nursing, respiratory therapy, and other ancillary and support staff to produce the best possible outcome for these critically ill patients.

"None of us actually had the experience of being involved in a pandemic," says Pulmonary and Critical Care Division Director, Robert A. Balk, MD. "This was the first time that we needed to put our advance planning into real action." H1N1 patients needed a great deal of attention. They required unique management on state of the art equipment. "A crisis like this challenges your resources," explains Dr. Balk. "Personnel management and utilization became a big issue. You need manpower around the clock."

Physicians, fellows, residents, nurses and ancillary staff rose to meet the challenges. Dr. Balk takes pride in his team's commitment. "Everyone pitched in and gave the effort that we needed to get through this. Working together we were able to produce good outcomes."

Serving Patients

This commitment to excellent patient care is evident in the activities of the entire division. In addition to its responsibilities overseeing the medical and surgical intensive care units, the division provides outpatient and inpatient evaluation and management for a variety of adult patients with acute and chronic lung diseases. The division also sponsors a highly respected fellowship training program in pulmonary and critical care medicine. The division engages in active clinical, basic, and translational research. It is committed to meeting the highest standards in the management of both pulmonary and critical care. In addition to inpatient services, the division runs a general pulmonary clinic for consultation and clinical management as well as subspecialty clinics in the areas of adult cystic fibrosis, interstitial lung disease, pulmonary hypertension, difficult to control asthma, and oxygen.

Faculty partner with other divisions in disease-specific clinics. In 2009, the division began a partnership with Rush allergists provide services to the asthma center. Starting in January 2010, Rajive Tandon, MD will begin a joint program with the Division of Cardiology for the treatment of pulmonary hypertension.

"That particular problem is a problem with both the heart and the lungs," notes administrator Gerald King. "Now patients in that clinic will be able to see both the cardiologist and the pulmonologist without leaving the exam room."

The division outpatient office also contains the adult pulmonary function laboratory for the hospital. The lab performs basic pulmonary function testing, arterial blood gas analysis, methacholine bronchoprovocational testing, high-altitude simulation testing, oxygen desaturation testing, oxygen prescription determination, impulse oscillometry determination of airways resistance, timed walk distances, and cardiopulmonary exercise testing.

Research: Gaining Ground

The Division of Pulmonary and Critical Care has an active research program. The majority of the projects are clinical, however, there are some basic investigations and opportunities for translational research through relationships with the Department of Allergy and Immunology and the Department of Pharmacology. Recent research highlights include:

- A study examining the use of vasopressors in managing patients with septic shock. Results of the study will be published in the journal *Shock* in April of 2010.
- A partnership with Northwestern University Hospital and the John. H. Stroger Jr. Hospital of Cook County to study community acquired pneumonia in the Chicago area. This study is funded by CDC.

Learning from Experience

Faculty bring a diverse set of experiences and expertise to the division. Fellows and residents draw on this depth and breadth of knowledge. Their success reflects the division's commitment to excellence.

"We're very proud of the people we train," says Dr. Balk. "I think they come out as high-quality and very competent pulmonary and critical care physicians."

The Division of Pulmonary and Critical Care Medicine has an ACGME approved three year fellowship training program. The program has a full array of educational conferences, offers training experiences and instruction in the procedures of pulmonary and critical care medicine and has opportunities for research.

In partnership with the John H. Stroger Jr. Hospital of Cook County the fellowship offers a combined core curriculum and clinical conferences. Fellows participate in collaborative training experiences with fellows in surgery (and the surgical sub-specialties), anesthesia, neurology and sleep medicine.

This training program turns out accomplished physicians and lays the groundwork for a life in medicine.

"Medicine is one of those disciplines in life where you can't get all the knowledge and experience that you'll ever need from just a book or a training program," says Dr. Balk. "We want to teach our fellows how to be life-long learners—how to always assess the situation, to weigh the risks and benefits of the various interventions they think are necessary, and then to react to what happens after they employ them."



Robert A. McNutt, MD
 Section Director
 Professor of Medicine
 Assistant Chairman

Improvement from the Ground Up

It was an international conference on other side of the world. The panel included representatives from major regulatory agencies and government health organizations. The question of the day was “how do you do quality?” Everyone had an answer. But the answer that most interested the audience came from the Rush Department of Internal Medicine Section of Patient Safety Research.

“Everybody else gave that big top-down approach. We gave a bottom-up approach,” says Section Director Robert A. McNutt, MD. “The audience really liked our model. It is a very in-the-trenches, clinically oriented model of patient safety not a centralized regulatory model. They like that a lot.”

Dr. McNutt believes that this grassroots approach is the most effective way to improve quality of care. “Measurements don’t matter,” he says. “Talk to people. Argue. Debate. Do things better. Show that it gets better at the bedside.” It is in empowering clinicians to identify, study and address problems that hospitals improve patient safety.

Steps on the Ladder

At Rush, the process for improving quality of care begins on the hospital floor and then works its way up until it touches the entire field of medicine.

Step 1: Discuss and Flag Adverse Events

Physicians, nurses, pharmacists and administrators come together in weekly quality assurance meetings. At these meetings, staff review reports of patients suffering adverse events. They attempt to identify causes for these events; they discuss potential solutions; they select issues for further research.

Step 2: Research

After assessing adverse events, the section spearheads research projects to evaluate the causes of those events and to identify opportunities for quality improvement. Past research has studied issues with delays in care, excess testing and the administration of dangerous medications. This past year, the section began a pilot project to assess the impact of stopping certain drugs upon admission to the hospital.

Step 3: Develop Techniques for Intervention

Based on research results and feedback from the quality assurance team, the section develops techniques to intervene in problem areas and to improve patient care. In the last year, the section has implemented a safety checklist. Administrators circulate this twelve item list as a daily reminder to hospitalists and nursing staff.

After identifying difficulties in the treatment of hypoglycemia and pain, the section developed a training simulator for residents. All new residents complete a one month safety course which drills them on the use of narcotics in diabetic patients.

Step 4: Share Results

When the improvements come, when the section identifies techniques to improve care, faculty share the results. They present at conferences. They offer services. They publish.

“Nobody here had published a paper seven years ago,” says Dr. McNutt. That has changed. Today, the section’s projects have resulted in over thirty publications, four grants, a safety hospitalist program and a research mentoring track for quality of care and safety research.

Onward and Upward

The expertise of the section serves far flung corners of the institution. Representatives of the section make safety rounds on the ward. They train residents. They advise administrators in risk management. They consult for the legal department. They make recommendations on health policy.

“We have a relentless desire to improve,” says Dr. McNutt. “Never say quit. We will keep going. We will not let anything slip through the cracks.”

Safety Checklist

Every day, the section circulates this safety checklist to critical care units.

- ✓ Aspirin
- ✓ BID Heparin
- ✓ Warfarin
- ✓ LMWH SubQ
- ✓ Plavix
- ✓ Potassium Supplement
- ✓ PPI
- ✓ SAID
- ✓ >2 Narcotics
- ✓ Pain Score >4 Two or More Times
- ✓ Blood Sugar <70
- ✓ Creatinine >2



Philip Bonomi, MD
Division Director

Clearing the Way

At a focus group, cancer patients were comparing notes on their experiences at different medical centers. Many complained about slow response times and a seemingly endless shuffle between doctors. One patient had a different experience. He reported that when he went to his doctor, he got CT scan results the same day and left the physician visit with a full report.

“Oh,” said one of the group participants, “you must go to Rush.”

Disease-specific, comprehensive clinics are a unique feature to the cancer program at Rush University Medical Center. Physicians from the Division of Hematology/Oncology/Cell Therapy participate in these clinics along side surgical and radiation oncologists, psychologists and social workers. Division Director Philip Bonomi, MD describes the process:

“Patients come, they get their test results, the vast majority of them- the same day. They come to our multi-disciplinary clinic, they walk away with a pretty good comprehensive assessment and comprehensive opinion about what their treatment options are.”

Clearing the Line

The efficiency and patient-centered approach of the multi-disciplinary clinics fits with Dr. Bonomi’s vision. “We actually have two things that are our mantra,” he says. “One is, we want to become the most accessible hematology/oncology academic physicians. The second is, we want to be the best at providing real time information to our patients and collaborating physicians.”

To this end, the Division is about 90% complete in its work on a physician directory. “The goal is to give referring physicians and patients a direct line to who they really need to talk to,” says Division Administrator, Leo Correa.

The directory will include photos, cell and academic office phone numbers, e-mail addresses, fax numbers and mid-level provider contact information. Users will be able to

search by name, location, clinical research interest, clinical interest, multi-disciplinary clinic affiliation or location. The division will make the directory available on the internet as well as publish printed copies for distribution.

“We want people to be able to reach us. We want to personalize it,” says Mr. Correa.

As it clears communication into the Division, Dr. Bonomi and Mr. Correa are also working on ways to facilitate communication coming out. The Division is developing processes to ensure timely responses to referring physicians. This includes compiling a contact information database for referring physicians and developing an interactive desktop application to share information.

Research: Forging A Path From Bench to Bedside

“In order to build programs, it can’t be just clinical,” says Dr. Bonomi.

“And it can’t just be research,” adds Leo Correa

Dr. Bonomi nods and continues, “you need to put them together. So the ideal thing is that you have a program that has all the aspects that you need. We’re trying to do things to move the field forward.”

The Division of Hematology/Oncology/Cell Therapy oversees a number of clinical trials. It works in collaboration with other Departments in the medical center to promote awareness of cancer clinical trials, to facilitate accrual to active protocols, and to participate in education and training regarding good clinical practices for the execution of trials.

Last year, in collaboration with Northwestern University in Evanston, the Division published the results of a study evaluating the use of anti-angiogenic therapy in combination with chemotherapy in the treatment of advanced lung cancer. The promising results have led to a nationwide study on the potential effectiveness of these treatment combinations.

Previously, faculty member Melody Cobleigh, MD co-authored a paper in *The New England Journal of Medicine* which evaluated the same anti-angiogenic therapy in relation to advanced breast cancer. Her research showed a positive effect of anti-angiogenic therapy when combined with chemotherapy. This has set a new standard of the care in the field.

With the arrival of Howard L. Kaufman, MD, SACS as Director of the Rush Cancer Program and faculty member in the Section of Medical Oncology, the division gains a thought leader in the field of melanoma. As Cancer Center Director, Dr. Kauffman plans to enhance cross disciplinary collaboration and to develop more disease-focused programs of excellence.

Under the guidance of the new Cancer Center Director, the Division foresees more translational research projects which study molecular profiles in patients’ tumors and serum. The hope is to develop predictive molecular profiles of disease. “It’s targeted therapy for targeted patients,” says Dr. Bonomi.

Guiding Others: Education & Outreach

Faculty in the Division of Hematology/Oncology/Cell Therapy train residents, fellows and postdoctoral candidates. In addition to clinical and research experiences on the Rush University Medical Center campus, the division is developing a collaborative educational relationship with the John H. Stroger Jr. Hospital of Cook County. Faculty and fellows participate in joint hematology/oncology/Cell Therapy grand rounds and disease oriented tumor conferences. These collaborations will expand students’ educational experiences. Trainees will have the opportunity to see a more diverse set of cases and to study a wider variety of therapeutic approaches.

The Division also plans teleconferences for community-based physicians. “For the community based oncologist, one of the most difficult things is that there is so much information, so many diseases to take care of,” says Dr. Bonomi. “Keeping up with that is a major, major struggle.”

Opening Into New Spaces

The work of the Division of Hematology/Oncology/Cell Therapy is expanding. This past year, the Division opened a new clinic in Oak Park. Mr. Correa considers this a first step towards expanding services west down the Route 88 corridor.

Having outgrown its out patient facility on the eighth floor, the division will soon relocate the clinic to the tenth floor of the Professional Building. The new outpatient cancer center will more than double the number of patients that the practice is able to see.



Gordon M. Trenholme, MD
Section Director
Fellowship Program Director

On the Scene

Chicago Magazine

In 2009, Gordon Trenholme, MD and Beverly Sha, MD were again recognized as top doctors in the area of Infectious Disease by *Chicago Magazine*. *Chicago Magazine* annually publishes their profiles of the Chicago's Top Doctors in 56 specialties, listing those that have won the confidence of their fellow colleagues.

Oprah

On October 15th, 2009, Kimberly Smith, MD, MPH made another appearance on the *Oprah Winfrey Show* where she spoke on the topic of heterosexual transmission of HIV and the risk to older women.

New Release

Dr. Smith recently co-edited a book titled *HIV/AIDS in U.S. Communities of Color* which was published by Springer in 2009.

Evidence of Success

"We are the type of people who like to read detective novels." This is how Section Director, Gordon Trenholme MD describes the physicians who enter his field.

"Basically, an Infectious Disease Specialist is a diagnostician," he says. "We have to sort through a myriad of problems many of which may not be infectious disease-related in order to arrive at a correct diagnosis. We don't have a procedure that we do. All we have is our brain."

At Rush University Medical Center, there's not just one mind tackling these mysteries, there are almost thirty.

"We have one of the largest programs in the whole country," says Dr. Trenholme. Section faculty serves both Rush University Medical Center and The John H. Stroger Jr. Hospital of Cook County.

Great Minds

Effective education in Infectious Disease is not just a task of training medical skills. The education must also cultivate a particular mental attitude.

"I try to teach medical students, residents and fellows the logical approach to problems that if you have a logical approach to a problem, then it will lead you to the solution," says Dr. Trenholme. All training from the section builds off of this philosophy.

The Rush/Stroger Hospital Infectious Diseases (ID) Fellowship Training Program utilizes the resources of Rush University Medical Center, the CORE Center and Stroger Hospital of Cook County to provide a well-rounded and diverse educational experience in the clinical, didactic, and research training of ID fellows. Five positions are available each year. At present, the program requires a mandatory two year training period with an option to complete a third year for those fellows who wish more extensive training in research activities in preparation for an academic career in infectious diseases. The section currently has one third year fellow, five second year fellows, and five first year fellows.

The two hospitals provide environments for both inpatient and outpatient clinical experiences and didactic training (lectures and conferences). Fellows divide their time equally between the two hospitals and may undertake laboratory research projects at either institution.

Investigations & Discoveries

The Rush University Medical Center Section of Infectious Disease is doing federally supported research in a number of areas: HIV therapy, women with HIV, HIV immunology, HIV solid organ transplant, and healthcare epidemiology. Infectious Disease's attending physicians are currently the principal investigators on 48 active research protocols.

The Section of Infectious Disease's AIDS Clinical Trials Unit (ACTU) performs research in conjunction with a variety of sponsors. The Rush ACTU is a site for the AIDS Clinical Trials Group, the largest and oldest HIV/AIDS research group, and for the Women's HIV Interagency Study Consortium. Beverly Sha, MD is the site's principal investigator for both the ACTG and WIHS.

Kimberly Smith, MD, MPH was appointed to the Executive Committee of the ACTG as of June 1, 2008. She is also Chair of the Underrepresented Populations Committee of the ACTG. Dr. Smith continues to mentor an additional clinical research site to expand the research opportunities to communities of color. She was instrumental in obtaining an American Recovery and Reinvestment Act funding to develop a program to increase awareness of HIV research opportunities among minority populations. Dr. Smith also received the "Heroes in the Struggle Award" from the Black AIDS Institute in February 2009.

David Simon, MD, PhD is the principal investigator at Rush for the multi-site Solid Organ Transplantation in HIV protocol, studying the effects of kidney and liver transplants in patients with HIV/AIDS.

Toyin Adeyemi, MD, an Associate Professor on the Stroger faculty, has long been involved in studying the non-infectious complications of HIV disease and HIV therapy which have become increasingly disabling as HIV-infected persons age. Recently she received federal stimulus funding to study the frequency and consequences of vitamin D deficiency among women with HIV across the United States. In addition, she was awarded a large grant to study the effects of HIV and its therapy on bone health among older HIV-infected men and women.

Rush, Cook County and the University of Illinois at Chicago were recently funded to establish a Developmental Center for AIDS Research. These infrastructure grants were awarded by NIH to institutions which demonstrate excellence in clinical, behavioral and basic science AIDS research. Audrey French, MD, an Associ-

ate Professor on the Stroger faculty, and Director of Research at the Ruth M. Rothstein CORE Center is the Director of the Clinical Core of the DCFAR. The Clinical Core, which aims to increase the impact of clinical HIV research in the Chicago area, includes the many Rush and Stroger infectious disease faculty involved in cutting edge HIV research.

Numerous faculty at Stroger and Rush are involved in one of the five national federally funded CDC EpiCenters. Current research projects include: antimicrobial utilization, MRSA source control, regional evaluation of the legislation mandate to screen patients for MRSA, randomized evaluation of decolonization versus universal clearance to eliminate MRSA, surveillance and control of KPC producing enterobacteriaceae with a region, electronic surveillance of BSI, clostridium difficile-associated disease, and surgical site infection. Robert Weinstein, MD, a professor based at Stroger, is the principal investigator and Director of the Epicenter.

Lab Results

Section members Mary Hayden, MD and Kamaljit Singh, MD run the clinical microbiology laboratory at Rush University Medical Center. This is a unique arrangement one that is advantageous for patient care.

"If someone has a question about a result from the clinical micro lab, they're not talking to a technician or a PhD clinical microbiologist. They're talking to an MD who is an infectious disease specialist," explains Dr. Trenholme. "It's quite helpful to discuss lab results with someone who knows how to interpret them in the context of infectious disease."

Residents, medical students and fellows also get the benefit of this expertise. Faculty run daily clinical micro rounds in the lab.

Safe Journeys

The Section of Infectious Disease continued to expand its Travel Medicine and Immunization Clinic. Travel patients are seen two days a week by appointment. The clinic offers comprehensive services for travelers, from immunizations and counseling before the trip to follow-up and after care. The Travel Medicine and Immunization Clinic staff includes three nurses who administer immunizations and medications and are directed by Kamaljit Singh, MD, an infectious disease specialist who has extensive experience in travel medicine.



Nora Flint, Pharm.D,
FASHP, BCPS
Section Director

Covering the Hospital

There are currently thousands of prescription drugs approved by the FDA. But when a physician at Rush wants any one of those drugs delivered to a patient, the Section of Pharmacy Practice gets it there. Section Director Nora Flint, Pharm.D describes the scope of the job: “If you think about it, probably 99.999% of all patients admitted to the hospital get a drug. So, our department is responsible for that, in every shape and form. We’re responsible for the way it’s ordered. We’re responsible for the way it’s prepared, how it is delivered, how it is stored, how it’s safe. We have some impact on the ease of administration and, to some extent, the outcomes of a drug being given- whether it works. So any time a drug is used, we have to be knowledgeable about how, what, why, and where.”

Depth of Field

Even as it orders, inventories, stores, distributes, evaluates and makes recommendations for the use of critical drugs for the hospital, the Section of Pharmacy Practice also trains pharmacy students, pharmacy residents, other healthcare professionals, engages in research activities, and partners with physicians and nurses to provide optimal patient care.

The Post-Graduate Program in Pharmacy Practice attracts top students in the field from around the country. The department accepts four students into its Post-Graduate Year 1 (PGY1) Residency Program, two PGY1 residents into its Post-Graduate year 2 (PGY2) Specialty Residency Program in critical care, and one PGY1 resident into its PGY2 Specialty Residency in Infectious Disease. Rush has had a PGY1 program for over 25 years, but the PGY2 programs are new and currently funded by Northwestern University’s Chicago College of Pharmacy. In addition, the department has partnered with Northwestern University to create a Pharmacy Fellowship in Infectious Disease. The first Fellow started in July of 2008 and will complete the program this year.

In addition to the teaching, Dr. Flint is particularly proud of the smooth working relationship that the pharmacy practice has developed with the rest of the hospital. She describes the department as having a “collaborative relationship with physicians and

nurses,” one which allows pharmacists to have a positive impact on nearly every facet of the institution.

In collaboration with hospital staff, the department has recently developed and instituted policies for anticoagulant use, conducted research on the timing of antibiotics to treat sepsis, improved medication history-taking for patients with HIV, and revised medication protocols to create significant cost savings. These are just some examples of the projects that the section has undertaken.

Close Up on Patient Care

Pharmacists interact with other healthcare professionals and patients every day, whether it is on patient care rounds, providing input on appropriate drug selection, performing medication reconciliation or discharge education to patients on medications. In the last year, members of the pharmacy force have relocated onto select patient floors. It is the beginning of a larger initiative to expand the role of the pharmacist in the clinical environment. Pharmacists know drugs and how they can best be used in patients with any number of co-morbidities or complications. That knowledge makes them an invaluable resource when taking patient medication histories, providing medication recommendations, monitoring medication therapy, managing medication reconciliation, or counseling patients on medication administration and compliance. Dr. Flint is proud that Rush has the vision to utilize its pharmacy experts for a role beyond remote order verification. She looks forward to the contributions that pharmacists can make as they move into new areas of the hospital.



Pharmacy personnel working in a pharmacy satellite.

Ask A Pharmacist

Pharmacists get all sorts of questions from all over the hospital. Here are just a few:

The patient has renal failure and requires antibiotics for pneumonia, but has several drug allergies. What would be an appropriate antibiotic to use to treat pneumonia in this patient?

My patient has cancer and requires adjustments in his current pain regimen to get his pain under control. What adjustments and/or additions should be made to optimize pain control?

Our H1N1 patient isn’t responding to Tamiflu, can you contact the FDA about bringing in an investigational drug?

Ever since I started taking this pill, I’ve been waking up with night sweats. Is that normal?

The government has issued a new terror alert. Are we prepared to treat victims of a biological attack?

How will this pill affect my diabetes?



Joel A. Block, MD

Section Director

Professor of Rheumatology

Professor of Medicine and Biochemistry

Taking the Field

In the Section of Rheumatology, the shelves of the conference room hold medical textbooks, journals, and pile of proudly displayed softballs. The softballs are souvenirs of past section picnics. But, the truly important thing about the softballs are the names of the people who have signed them.

“Everyone plays,” says Laura Wright, the Administrator for the Section of Rheumatology. Her statement reflects a dynamism and spirit of camaraderie that carries over into the section’s professional work.

Service: A Team Effort

With over two dozen faculty, conjoint faculty and fellows, the Section of Rheumatology draws from a deep bench of medical knowledge and provides comprehensive patient care. Faculty consult on patients with complex autoimmune diseases such as lupus and rheumatoid arthritis. They manage patients with musculoskeletal disorders such as osteoarthritis, bursitis and tendonitis. They support a center for the diagnosis and treatment of osteoporosis.

In 2009, with the addition of Antoine Sreih, MD, the section offers new expertise in vasculitis. The section recruited Dr. Sreih from Yale where the American College of Rheumatology funded his vasculitis research. Now at Rush, Dr. Sreih will set up the first vasculitis clinic in the Chicago area.

“Vasculitis is an important and not uncommon rheumatologic condition,” says Section Director Joel A. Block, MD, “in a metropolitan area of seven million people, there was no one with a serious interest in vasculitis, either academically or clinically. There was a great need and we mean to fill that need.”

Research: Touching all the Bases

The section has a world class research infrastructure and supports a wide range of projects.

Meenakshi Jolly, MD, has developed innovative methods for measuring the quality of life of patients with lupus. Dr. Block believes this is a long-neglected area of inquiry. “As doctors have spent a great deal of time trying to improve organ function and to prolong life expectancy among lupus patients, they’ve ignored the quality of life issues,” he says. “Dr. Jolly has developed the first validated lupus-specific measures for quality of life and pioneered research on using those measures to improve quality of life. Now she’s sharing that tool and those techniques with people on all continents.”

The section has an international reputation in the area of osteoarthritis. Dr. Block explains the impact of the section’s work. “We have one of the largest and best respected groups that studies osteoarthritis and one of the only groups anywhere in the world that is looking into the actual physiology of osteoarthritis pain.” Specific research projects include:

- The development of innovative techniques to relieve osteoarthritis of the knee using bio-mechanical methods.
- A study of the contributions of certain types of immune cells to inflammatory arthritis.
- An examination of the inflammatory component of osteoarthritis.

Education: Developing Talent

Over 60% of primary care visits in the United States are for musculoskeletal complaints but less than 10% of a normal medical school curriculum deals with the musculoskeletal system. With its fellowship program, the Section of Rheumatology steps into this knowledge gap. Fellows work under the supervision of faculty members in a clinically oriented program at the office-based private rheumatology practice at Rush. There, they develop assessment skills of patients with musculoskeletal and connective tissue diseases, formulate diagnoses and suggest care plans. Fellows provide additional consultation to inpatient and outpatient services at Rush and the John H. Stroger Jr. Hospital of Cook County.

True Connective Tissue Diseases: Coming Home

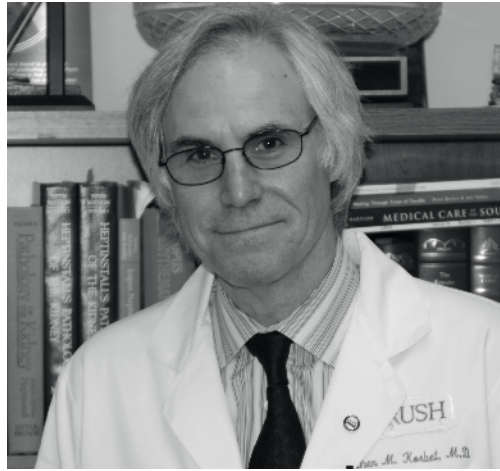
The section has obtained funding for the development of a sub-specialty clinic in the so-called “True Connective Tissue Diseases” such as osteogenesis imperfecta and Ehlers-Danlos Syndrome. Many children born with these genetically based diseases now survive into adulthood. Yet very few adult rheumatologists are equipped to deal with their unique medical issues. The Section of Rheumatology will partner with The Shriner’s Hospital and the Osteogenesis Imperfecta Society to provide transitional care and a medical home for these adults.

No Pain, All Gain

The Section of Rheumatology is home to an infusion center for patients suffering from systemic inflammatory diseases.

“A patient comes in; they’re in pain; they can get immediate relief with an injection or an infusion. With the relief they have, they tell their friends. They tell their doctors.”

Section Administrator
Laura Wright



Stephen M. Korbet, MD
Division Director

History in the Making

Sitting in the office of Stephen M. Korbet, MD, you can follow the history of nephrology at Rush University Medical Center all the way back to 1957. There, on Dr. Korbet's shelf, is a copy of *Lupus Nephritis*, a groundbreaking work on immunology and renal disease written by former Section Director Robert M. Kark. Holding the book, Dr. Korbet says "these really are the shoulders of the giants upon which we stand."

Half-a-century later, the work that Dr. Kark began has evolved along side modern medicine. Under the leadership of Dr. Korbet and Edmund Lewis, MD, the modern Division of Nephrology has made some of its own history:

Glomerulonephritis: "This is the place to come."

The section has had a major focus on the management of patients with glomerular diseases. Pioneering work on the classification and therapy of lupus nephritis and focal segmental glomerulosclerosis have given the department a national and international reputation.

Collaborative Study Group: Changing the World View of Nephrology

Unique in the world of nephrology, the Collaborative Study Group is a research association spanning thirty years, two hundred clinics and twenty different countries. Headed by Dr. Lewis, the group has made major breakthroughs in the fight to slow the progression of renal disease in diabetic patients. After demonstrating the effectiveness of angiotensin converting enzyme inhibitors in slowing renal disease in patients with Type 1 diabetic nephropathy and the effectiveness of angiotensin receptor blockers in slowing renal disease in patients with Type 2 diabetic nephropathy, these treatments have become standard practice for the management of diabetic renal disease. "It's like the aspirin of renal disease," explains Dr. Korbet. Now "everyone gets put on it because it's thought to have such a beneficial effect."

Lupus Nephritis: The Next Chapter

Four decades after the publication of Dr. Kark's original work, Dr. Lewis spearheaded an effort to create a modern clinician's guide to lupus nephritis. The first edition was published in 1999. The updated second edition will be published in 2010. This new edition of *Lupus Nephritis* is a clinically usable book directed to practicing nephrologists who take care of complex patients with lupus. By discussing the various lesions that are associated with lupus nephritis and synthesizing the most up-to-date literature on treatment therapies, the book gives practicing nephrologists a workable approach to treating renal disease associated with lupus nephritis.

Patient Care: Expanding Horizons

"How is this going to affect my life?" It is the most common question asked by patients diagnosed with renal disease. The nephrology practice works with patients to provide education and to support independence. With a thorough pre-dialysis educational program and support for dialysis options such as peritoneal dialysis and daily home hemodialysis, the practice empowers patients to manage their disease.

Education: A Look to the Future

Passing on this tradition of success, the section of nephrology is training the next generation of subspecialists. The nephrology fellowship program at Rush University Medical Center is a comprehensive program focusing on clinical nephrology and clinical research. The internationally known faculty trains fellows for all aspects of a career in clinical nephrology and prepares them for leadership roles in the field.

For over fifty years, the section of nephrology has confronted the challenges of and launched investigations into kidney disease and kidney failure. Looking to the future, the need will only become greater. "With the diabetes epidemic in this country, more and more patients will require end-stage renal care," says Dr. Lewis.

To address this crisis, Dr. Korbet and Dr. Lewis foresee the section expanding on its expertise in renal protection to find new ways to slow down the progression of renal disease. Dr. Korbet sees this as the holy grail of his field: "It's the ultimate goal of any nephrologist- to try and slow down if not halt the progression of the disease so that patients don't need renal replacement therapy."

"I think many people are surprised at how much so few people do. It's a small section—there are only eight of us. But it's a very active section, it has national and international prominence."

Division Director
Stephen M. Korbet, MD

The Department of Internal Medicine gratefully acknowledges those who made this report possible: Tulay Nalbant, Project Manager, Rush University Medical Center; Marissa Strassel Design, Layout and Graphic Design; Penny Penniston, Copwriting; Steve Gadomski, Rush Photo Group.





**Department of Internal Medicine
Annual Report 2008 – 2009**

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