November 6–7, 2003
Geisinger Health System
Danville, PA

NATIONAL HEALTH POLICY FORUM

Site Visit Report

Rural Health Care in the Electronic Age

THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON DC

CONTENTS

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NHPF is a nonpartisan education and information exchange for federal health policymakers.

ACKNOWLEDGMENTS

The Forum is indebted to consultant Janet Shikles for suggesting Geisinger Health System (GHS) as a potential site visit destination and for making the necessary introductions. H.W. "Skip" Weider, GHS's site visit ambassador and enabler, made sure that agenda and logistics came together seamlessly. Glenn Steele Jr., MD, was a gracious host and compelling keynote speaker. NHPF thanks all the GHS physicians and executives who so unstintingly shared their time and knowledge with site visitors.

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November 6–7, 2003 / Geisinger

Rural Health Care in the Electronic Age

OVERVIEW

Up and down the rolling hills of central Pennsylvania and along the scenic Susquehanna River, well-tended fields and quaint towns abound. As one approaches the small community of Danville, an unfamiliar site emerges. A collection of large buildings—a virtual city on a hill—entices the visitor to come closer. The physical structures of the Geisinger Health System (GHS) are just the first indication that something different is happening here.

From its earliest beginnings in 1915, Geisinger has offered state-of-the-art medical care to its rural neighbors. Founded by Abigail A. Geisinger in memory of her husband, the George F. Geisinger Memorial Hospital was designed to offer comprehensive and specialized medical care to people in the rural areas of central and northeastern Pennsylvania, comparable to what would be available to them in a metropolis such as Philadelphia. Unlike many hospital-focused environments, Geisinger's tradition has always been physician-led and physician-driven.

Today, GHS offers a wide variety of health care services to residents of 38 of Pennsylvania's 67 counties, with a significant presence in the central and northeastern areas between Pittsburgh and Philadelphia. The core of its delivery system is a sophisticated, multispecialty group practice that employs more than 600 physicians and operates one of the largest ambulatory care programs in Pennsylvania. Other components include the Geisinger Medical Center, a large tertiary care teaching hospital; Geisinger Wyoming Valley Medical Center, a secondary acute care hospital; a women and children's hospital; a new heart hospital; and 42 community practice sites across 17 counties. Geisinger also sponsors one of the largest rural managed care organizations in the country, Geisinger Health Plan, which has nearly 245,000 members.

The unwinding of an ill-fated merger with Penn State's Hershey Medical Center in 1999 has caused Geisinger to refocus on its strength as an integrated delivery system in a rural environment. In 2001, Glenn Steele Jr., MD, PhD, was recruited from the University of Chicago to be GHS's president and chief executive officer. His vision and considerable charisma have helped shape the health system's direction. Geisinger's mission statement has been distilled into four words: "Heal. Teach. Discover. Serve."

GHS has recently gained recognition for its enormous investment in information technology. Dubbed one of the country's "most wired" health care companies, GHS relies upon e-mail, Web technologies, and digital image capabilities to facilitate care delivery in its rural environment. Its electronic medical record (EMR) is

one of the most sophisticated in the country, linking physicians and patients to information that can improve quality and save time.

NHPF chose Geisinger as a site visit destination because the system offers a unique opportunity to see what health care can be like if certain conditions are in place. GHS serves a population that is stable, largely rural, aging, and marked by a high incidence of chronic disease. Committed to technology, research, and innovative approaches to care, GHS provides a model worthy of emulation.

PROGRAM

Site visitors traveled by chartered bus to Danville on Thursday, November 6. Two GHS executives accompanied the group and provided background briefings en route. Upon arrival, GHS's president shared his experience and vision for the system's ongoing need to adjust its strategies to reflect market conditions and still achieve the missions to which it has always been dedicated. A reception and dinner followed, during which site visitors were able to chat with GHS physicians and other officials. The evening was capped by a presentation on GHS's disease management initiatives.

The second day got off to an early start with a discussion of GHS's sophisticated EMR and its use in clinical management and patient communication. Electronic outreach to physicians in the community was also spotlighted. Radiologists presented a case study on the use of technology to enhance the delivery and quality of health care in a rural environment. Other specialists drew attention to the special needs of population subsets in the rural context, describing programs designed to address stroke, aging, and obesity.

GHS's executive vice president and chief medical officer welcomed the group with remarks over lunch, followed by a continuation of the morning's EMR discussion. Site visitors then divided into two groups, to observe, in turn, demonstrations of the emergency department's Sim-Man (a simulated patient programmed to illustrate various injuries and symptoms for training purposes) and the EMR as used in a clinical outpatient setting.

IMPRESSIONS

Site visitors left GHS with a positive general impression of its commitment to use technology to better serve its rural patient population and distinguish the system from its competitors. Specific impressions centered around GHS's disease management program and the EMR and are summarized as follows:

GHS has incredible resources—both financial and human—that the chief executive officer (CEO) has ignited to create a dynamic vision.

"Can-do, will-do" attitudes are infectious. The combination of money, setting, market dominance, and visionary leadership make emulation an unlikely proposition, but GHS demonstrates how health care can look when the right resources are carefully deployed.

IMPRESSIONS

Conscious that reimbursement drives care, the CEO is committed to creating incentives to promote quality.

Changing attitudes to promote chronic care management over high-return, procedure-based care is still a difficult task, even in a physician-led organization. Demonstrating vision and flexibility, GHS dedicates a portion of operating revenue to experiment with pay-for-performance initiatives.

GHS leadership believes that Medicare is the linchpin in redesigning payment incentives.

Geisinger is aggressively seeking opportunities, such as demonstration projects, for the market to reward and, therefore, encourage a shift from acute to chronic care. The CEO is also eager to show skeptics that Medicare managed care can continue to operate successfully in a rural environment.

GHS positions itself in the market as a high-quality choice.

GHS clinicians feel they are held to a higher level of quality than their competitors—which they view as a good thing, except insofar as everyone is receiving the same reimbursement from health insurers and government programs.

In a shift of strategy as its payment mix has changed, GHS has begun a build-up of ambulatory sites offering both primary and specialty care, as well as ancillary services—while simultaneously reducing the number of primary care–only sites.

GHS sees an opportunity to capitalize on the volume-quality correlation in the specialty facilities. Yet, in a rural environment, a delicate balance between the interests of the overall system and the stability of community hospitals must be achieved.

Geisinger Health Plan's disease management program is part of GHS's overall chronic care management strategy.

GHS leaders have tried to overcome physician resistance by selling the program as a means of offering the physician more time to practice medicine, while other health professionals take care of patient education, prescription renewals, and the like. The program has demonstrated both quality improvement and cost savings. By definition, however, the economic goals of the disease management program and GHS hospitals remain in conflict.

Disease management may prove a provisional strategy.

GHS leaders caution that the level of savings generated in early years may not be sustainable as population management becomes the norm. Site visitors wondered whether disease management is the next generation of managed care, unrealistically expected to improve quality and reduce costs simultaneously.

IMPRESSIONS

GHS has made an enormous financial and intellectual commitment to the EMR, with a nearly $70 million investment in hardware, software, and personnel.

GHS physicians have made the EMR an integral part of their practice. To be more broadly accepted around the country, GHS leaders suggest, the return on investment must be quicker and more explicit than Geisinger's experience demonstrated. Innovators liken themselves to Henry Ford, "on the road from $5,000 to $500," in building a more affordable model.

When used to its full capacity, the EMR serves as the critical underpinning of evidence-based care, best practices, and seamless continuity of care across providers and settings.

While GHS's EMR is sophisticated and in broad use, physicians acknowledge they still have a long way to go to be able to manage smoothly the hundreds of quality indicators available today and the customized user preferences that accompany them. They stress the importance of the EMR's role in practice management that is driven by clinicians whose priority is patient care rather than research. The EMR also plays an important role in patient education and empowerment; GHS patients have been enthusiastic users of the "MyChart" module, which allows them access to portions of their EMR.

GHS's investment in technology has increased its radiological capabilities and broadened access in rural communities.

Electronic transmittal and real-time reading of images enable faster diagnosis across distances; the ability to manipulate images may result in more accurate diagnosis and treatment. While automation of reports, results, and treatment guidelines yield higher physician productivity, concerns linger about the extent to which it may supplant clinical judgment.

Because the central Pennsylvania population is stable, aging, and marked by prevalent chronic disease, it is a natural setting for targeted health initiatives.

Research is currently underway in the areas of stroke, aging, and obesity. The static population combined with the system's high market penetration are conducive to GHS researchers' ability to measure outcomes and define best practices.

Care delivery models must be modified to work in geographically distant areas.

A shortage of specialists, such as neurologists, creates a need to train primary care practitioners (including nurses and paramedics) to deliver emergency care. Likewise, postacute care must center on home health, since rehabilitation facilities are in very short supply. Long distances and transportation difficulties can be a barrier to follow-up care and patient compliance. GHS technology and disease management are intended in part to counteract these problems.

IMPRESSIONS

Treating obesity is challenging in the rural environment.

Seventy percent of the elderly served by GHS are overweight or obese, defying the stereotype of "frail elderly." Obesity in adolescence has also become an epidemic, creating multiple complications associated with a two-fold increase in mortality in adulthood. The success of GHS's clinic-based treatment program has been limited by a lack of reimbursement by most insurance plans for weight management programs as well as the distance and transportation issues referenced above.

AGENDA

Thursday, November 6

1:00 pm Bus departure from Union Station *(Box lunch provided)*

OVERVIEW OF GEISINGER HEALTH SYSTEM *[Bus presentation]*

Nancy L. Rizzo, *Senior Vice President, Community Provider and Business Relations,* Geisinger Health System (GHS)

Walter "Buzz" Stewart, PhD, *Director,* Center for Health Research and Rural Health Advocacy, GHS

- What is the history of the Geisinger Health System?
- What are the system's component parts? What is the corporate and organizational structure? How widely dispersed are the system's affiliated entities throughout Pennsylvania?
- What range of services is provided? How integrated are they? How do the physician practice group, health plan, and provider facilities relate to each other?
- What demographic trends are shaping the population that GHS serves (for example, age, income, population mobility, ethnicity, and health status)?
- What delivery system challenges does GHS face due to its rural location?
- What is the relationship between clinical practice and outcomes research?

4:30 pm Arrival and check-in *[Pine Barn Inn, Danville, PA]*

5:15 pm Shuttle departure for Foss Home

5:30 pm ADJUSTING STRATEGIES TO ACHIEVE MISSIONS

Glenn Steele Jr., MD, PhD, *President and Chief Executive Officer,* GHS

- What is the overall mission of GHS?
- What is the breakdown of funding sources (Medicare, Medicaid, private, uncompensated)? Of fee-for service and managed care? Have these profiles changed over time?
- What environmental factors affect the market for the system's services? Demographics? Location? Economic conditions? Competition? Managed care penetration? State and federal payment policies?
- What strategies has the system adopted to achieve its missions? Which ones have been successful? Which have been unsuccessful?

6:30 pm Reception and dinner

Thursday, November 6, 2003 (cont.)

7:30 pm DISEASE MANAGEMENT

Jaan Sidorov, MD, *Medical Director, Care Coordination,* Geisinger Health Plan

- What was the rationale for locating disease management/care coordination programs in the health plan rather than making them part of clinical management on the provider side?
- What incentives are in place to encourage physicians to work with the nurses who coordinate care? Do patients need similar incentives?
- What has been the impact of disease management/care coordination on patient outcomes? On costs?
- What expansions or refinements of disease management programs are contemplated?

8:30 pm Shuttle departure for Pine Barn Inn

Friday, November 7, 2003

7:30 am Breakfast available *[Pine Barn Inn]*

8:00 am Shuttle departure for Medical Center

8:15 am LINKING PATIENTS AND PHYSICIANS ON THE WEB: GEISINGER'S ELECTRONIC MEDICAL RECORD

James M. Walker, MD, *Chief Medical Information Officer,* GHS

Joan E. Topper, *Associate Vice President, e-Health,* GHS

- Is GHS's electronic medical record (EMR) a completely home-grown product, or is it based on a commercially available model? To what extent was interoperability with other systems a consideration?
- How is patient information shared with providers outside the Geisinger system?
- How enthusiastic were Geisinger physicians about the EMR? Has this changed over time? Do they use clinical decision support tools?
- What were the system's expectations about return on its investment in technology? Has this return been measured?
- Has the EMR had a measurable impact on the productivity of physicians and other clinicians?

AGENDA

Friday, November 7, 2003 (cont.)

- How have patients responded to MyChart access to their medical record? Can you document patients' reasons for accessing MyChart? How does patient access influence clinical encounters? Patient satisfaction?
- Does MyChart raise additional HIPAA concerns?

9:15 am COMMUNITY OUTREACH: CONNECTING PROVIDERS, PATIENTS, AND CLINICS

Steven Pierdon, MD, MMM, *Associate Chief Medical Officer,* Clinical Operations, GHS

- What tools does Geisinger offer physicians practicing in outlying areas of the health system's market to improve access to information and quality of care? What investment in technology is required on the part of the physician?
- What options are available to patients to minimize travel to physician offices, clinics, and ancillary care sites?
- What educational programs are offered to providers and patients?
- How are providers recruited for rural sites of care?
- To what extent is outreach conducted toward non-Geisinger providers?

10:15 am LEVERAGING SPECIALIST EXPERTISE IN RURAL SETTINGS: RADIOLOGY AS A CASE STUDY

David Weiss, MD, *Clinical Section Head,* Imaging Informatics, Division of Radiology, GHS

Joseph Scopelliti, *IT Director,* Imaging Informatics, Division of Radiology, GHS

- Does the current supply of radiologists meet the demand in rural Pennsylvania? Has this trend changed over time?
- How has the delivery of radiology services changed as the result of advances in information technology? Has utilization increased?
- How do radiologists communicate with generalists in the field?
- What system expansions are planned for the future?

11:00 am Break

11:15 am TARGETING HIGH-RISK POPULATIONS

- How well prepared is GHS's workforce to care for these populations?
- What initiatives has GHS undertaken to address the special needs of these populations?

Friday, November 7, 2003 (cont.)

- How are these programs financed? Are they expected to show a return on investment?
- To what extent do they incorporate patient self-management?

STROKE

Jonathan P. Hosey, MD, *Director,* Department of Neurology, and *Co-Director,* Neuorsciences Service Line

AGING

Valerie D. Weber, MD, *Chair,* General Internal Medicine, and *Director,* Geisinger Aging Institute

OBESITY

Christopher Still, DO, *Director,* Obesity Clinic

William Cochran, MD, A*ssociate,* Pediatric Gastroenterology

12:30 pm Lunch, with speakers in attendance for informal discussion *[Administrative Conference Room]*

Bruce Hamory, MD, *Executive Vice President and Chief Medical Officer,* GHS

1:30 pm Observation of Emergency Department Sim-Man and EMR outpatient applications

John Skiendzielewski, MD, *Director,* Emergency Department

Douglas F. Kupas, MD, *Associate,* Emergency Medicine, and *Director,* EMS Training

John Bulger, DO, *Associate,* General Internal Medicine

3:00 pm Bus departure for Washington, DC *(refreshments provided)*

6:30 pm Arrival at Union Station (*stop en route at Shady Grove Metro)*

Federal Participants

Mara Baer
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U.S. Senate

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Consultant

Biographical Sketches — Speakers

John Bulger, DO, is director of inpatient services and an associate in the Department of General Internal Medicine at Geisinger Health System (GHS), where he also serves as director of osteopathic medical education. He holds academic appointments at Penn State College of Medicine and Philadelphia College of Osteopathic Medicine. He holds a BS from Juniata College (Huntington, PA) and a DO degree from Philadelphia College of Osteopathic Medicine.

William Cochran, MD, an associate in pediatric gastroenterology, has been with GSH since 1987. Earlier, he held clinical and teaching positions with Baylor College of Medicine in Houston. Cochran is a clinical associate professor with Jefferson Medical College. He received a BA degree from Franklin and Marshall College (Lancaster, PA) and his MD from Penn State.

Bruce Hamory, MD, is executive vice president and chief medical officer of GHS. Previously, he was executive director of Penn State's University Hospitals and chief operating officer of the University's M. S. Hershey Medical Center. During his service at Hershey, Hamory was also a professor of medicine and associate dean for clinical affairs. He earned an undergraduate degree from the University of Tennessee and a medical degree from Baylor College of Medicine in Houston.

Jonathan P. Hosey, MD, is director of the GHS Department of Neurology and co-director of the Neurosciences Service Line. Before joining GSH in 1994, he held appointments at several Pennsylvania hospitals and on several teaching faculties. Hosey spent more than ten years as an officer in the U.S. Army Medical Corps. He earned his BS from Kings College (Wilkes-Barre, PA) and his MD degree from M. D. Hahnemann University (Philadelphia).

Douglas F. Kupas, MD, is director of EMS programs and an associate in emergency medicine as well as a medical command physician. He served as medical director of GHS's medical command facility from 1994 to 2000; during that time, he chaired the system's emergency preparedness committee and a five-county interhospital disaster committee. Kupas holds a BS degree from Indiana University of Pennsylvania and an MD from Jefferson Medical College.

Steven Pierdon, MD, MMM, is associate chief medical officer, clinical operations, and system vice president for community practice at GHS, as well as an attending pediatrician and an instructor at Jefferson Medical College. He holds a BS degree from Michigan State University, an MD from Wayne State University, and a master's degree in medical management from Tulane University.

Nancy L. Rizzo is GHS's senior vice president for community provider and business relations. She develops, communicates, and manages system strategy for clinical market growth and development. Earlier, she was senior vice president and chief administration officer for the system's north central region. Rizzo joined GHS from the Lahey Clinic Foundation in Massachusetts, where she held a series of management positions. She earned a bachelor's degree from Tufts University and a master's from Lesley College. Rizzo served as a fellow with the U.S. Senate Labor and Human Resources Committee in 1984.

Biographical Sketches — Speakers

Jaan Sidorov, MD, is the medical director who oversees care coordination for the Geisinger Health Plan. He is also an associate in general internal medicine with Geisinger Medical Center and a clinical professor of medicine at Penn State College of Medicine. Earlier, he held teaching appointments at the M. S. Hershey Medical Center and Thomas Jefferson University. Sidorov earned a BS degree from Villanova University and an MD from Penn State.

John J. Skiendzielewski, MD, is director of the Emergency Department at GHS. He has been with the system since completing his emergency medicine residency there in 1978. He is active in the American College of Emergency Physicians. Skiendzielewski received his undergraduate degree from St. Joseph's College in Philadelphia and his MD from Temple University.

Glenn Steele Jr., MD, PhD, has been president and chief executive officer of GHS since March 2001. Previously at the University of Chicago, he was a professor of surgery, vice president for medical affairs for the university, and dean of the Biological Sciences Division and the Pritzker School of Medicine. Earlier, Steele was a professor of surgery at Harvard and chairman of the Department of Surgery at New England Deaconess Hospital. He received his bachelor's degree from Harvard and his medical degree from New York University School of Medicine. Recognized for his investigations into the treatment of primary and metastatic liver cancer and colorectal cancer surgery, Steele is past chairman of the American Board of Surgery. He is a member of the Institute of Medicine of the National Academy of Sciences.

Walter ("Buzz") Stewart, PhD, is director of GHS's Center for Health Research and Rural Health Advocacy, where he oversees efficiency and effectiveness research. Before joining GSH, Stewart was vice president of research and development at AdvancePCS. He also directed the Center for Work and Health, which focused on increasing awareness of the impact of illness in the workplace. Stewart founded Innovative Medical Research, a clinical trials and survey research company, which was acquired by AdvancePCS in 1998. Stewart earned a bachelor's degree from the University of California at Riverside, a master's in public health from the University of California at Los Angeles, and a PhD in epidemiology from Johns Hopkins.

Christopher Still, DO, is director of the Center for Nutrition and Weight Management in the Department of Gastroenterology and Nutrition at GHS. He also serves as medical director of the North Central Secured Adolescent Treatment Center in Danville and as an adjunct assistant professor in Penn State's Department of Nutrition. Still holds an undergraduate degree from Penn State, a master's from Columbia University College of Physicians and Surgeons' Institute of Human Nutrition, and a DO from the Philadelphia College of Osteopathic Medicine.

Joan E. Topper is associate vice president, e-Health, at GHS. She previously served as the senior system director responsible for the selection, implementation, and maintenance of decision support applications necessary to meet GHS's clinical and financial needs. Topper has held a series of management positions with GHS and its component organizations, going back to 1986. She is a graduate of Penn State.

Biographical Sketches — Speakers

James M. Walker, MD, is chief medical information officer as well as an associate in general internal medicine at GHS. He came to Geisinger in 2001 from the M. S. Hershey Medical Center and Penn State College of Medicine, where he served as attending physician, assistant professor of medicine, and senior clinical information architect. During this tenure, he led the implementation of a lab results reporting system and conceived a novel design for order entry for a major software vendor. Walker earned his medical degree from Penn State.

Valerie D. Weber, MD, is director of the Department of General Internal Medicine and director of the Institute on Aging in the Center for Health Research and Rural Advocacy at GHS. She also holds assistant professor appointments at Thomas Jefferson University School of Medicine and the University of Pennsylvania School of Medicine. She came to GSH in 2000 after having served since 1996 as the medical director of the J. Edwin Wood Clinic in Philadelphia. She holds a BA degree from Washington and Jefferson College and an MD from the University of Pennsylvania School of Medicine. She currently is a principal investigator under grants from both the Agency for Healthcare Research and Quality and the Society of General Internal Medicine–Hartford Centers for Collaboration in Geriatrics.

David Weiss, MD, is clinical section head in Imaging Informatics in the Division of Radiology. He joined GSH in 2002, having previously served as chairman of the radiology department at Chestnut Hill Hospital in Philadelphia. He completed a Penn State–Jefferson Medical College program that awarded him a BS and an MD in five years.

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