

Geisinger

2016 Annual Report

Enhancing the patient experience



Caring

Purpose

Everything we do is about caring — for our patients, our members, our Geisinger family of physicians and employees, and our communities.

At Geisinger we value:

- **Kindness** – We strive to treat everyone as we would hope to be treated ourselves.
- **Excellence** – We treasure colleagues who humbly strive for excellence.
- **Learning** – We share our knowledge with the best and brightest to better prepare the caregivers of tomorrow.
- **Innovation** – We constantly seek new and better ways to care for our patients, our members, our communities and the nation.

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When you opened this annual report and looked inside the front cover, you saw Geisinger Health System's purpose and values printed there.

They are words on a page that are meaningful and significant, but still — how do you bring them to life?

Last fall, I joined hundreds of my GHS colleagues to learn how to do just that. Our gathering was a first step toward building a culture of purpose and values that will continue. We can print and point out these words over and over again in reports and on walls, but until they are represented in every encounter with our patients and between our employees across GHS, they remain just words.

You'll find, however, that our commitment to truly live our purpose and values is strong. The year 2016 was full of examples, which you'll see unfolding in the pages of this report. Next year at this time, I am certain we will be able to list even more.

Everything we do is about caring, and we value kindness, excellence, learning and innovation. Those words look pretty good on a page, after all.

Take care,
David

David T. Feinberg, MD
President and CEO
Geisinger Health System



A story with purpose

Stories are powerful tools that we can use to inspire and illustrate. At Geisinger, we use stories to celebrate who we are and those we serve. We also use stories to communicate our purpose.

Recently, one such story came to Dr. Feinberg through email. Caroline Graham, CRNP, who has worked in cardiology at Geisinger Wyoming Valley Medical Center since 2009, was diagnosed with breast cancer in June. Whether she knew it or not, this provider's letter reinforced Geisinger's purpose: that everything we do is about caring.

Dr. Feinberg was touched by the kindness that this individual received and know that we can provide this type of compassion and caring to *all* of our patients, members and Geisinger family.

Here are some excerpts from her letter:

What makes my story so challenging is that I have little family — my father died when I was 3 years old, and my mother died when I was in high school. I was raised in a foster home in the Philadelphia area from the age of 11. I have some contact with my foster family, but they are 100 miles away.

Caroline Graham, CRNP, talks with a patient.



Caroline was stunned by her diagnosis, in part because she works diligently to care for sick patients — how could it be that she was now the one needing care? She voiced her concern to her boss, Dr. Martin Matsumura. She didn't know how she would face cancer alone.

My last day of work, the day prior to my surgery, as I walked into the heart hospital, Judy Carter, who works at the registration desk, greeted me with a big hug, a card and a "Think Pink" button. As I walked into my office, I realized, everyone was wearing pink, and there were two tables set up loaded with food for breakfast and lunch. I was so overwhelmed — it was all done by the staff of the cardiology clinic.

The day of my surgery, Deanna Mahon, RN, who works in the ED, spent her day off by my side. When I awoke from my surgery, Gerry Lacey, PA-C, Dr. Faiz Subzposh and Deanna were there. I was not alone — my Geisinger family was there. The next day, I was discharged. I said to myself, "How will I get home?" Not a moment later, Dr. Eileen Rattigan texted me asking the same question. Eileen drove me home.

Over the weeks that followed, Caroline's colleagues from Cardiology called her, sent cards and came over to help out by cutting her grass, taking her to the grocery store, doing housework and dropping off meals.



Caroline Graham is shown with her cardiology team, holding a newspaper article covering her story.

On Aug. 19, I had a follow-up appointment. My Oncotype was high — three months of chemo ahead, in addition to the radiation. Dr. Martin Matsumura came with me to this appointment as my advocate. As we left, I cried, “How will I get through this alone?” He put his hand on my shoulder and said, “We will get you through this!”

Yesterday, Kara Levandoski went with me to purchase a wig — something no one should do alone. Today is my first chemo treatment. My Geisinger family will be checking in on me during the treatment. Gerry Lacey, after a long day in the EP clinic, will drive me home this evening.

Everything is not perfect here at GWV cardiology. There have been many potholes and speed bumps along the way. There were many days that I looked up at the sky and said, “Abigail, give me strength,” but I can honestly tell you that we all work very hard. Patients get excellent care — the providers work very hard to maintain this. We put

countless hours in many weeks. And here I am, facing the fight of my life — overwhelmed with the love and support from my colleagues that I can never repay. And yes, Dr. Martin Matsumura is right. I am not alone. My Geisinger family will get me through this!

“...here I am, facing the fight of my life — overwhelmed with the love and support from my colleagues that I can never repay.”

A health system that cares

It sounds like such an obvious concept. Yet in today's world of rules and regulations, operating margins and overwhelmed staff, the idea of truly caring for patients, employees and even one another can sometimes get lost.

At Geisinger, we know that to be great we have to care. This means that every idea, innovation and initiative that we consider must ultimately benefits those whom we serve. For us, caring isn't a word that we throw around loosely. It's a guiding principal and a promise.

Rhonda Morgantini of Guest Services greets a patient.



Getting back to basics

We at Geisinger took an important step for our future when we set out to redefine our core purpose and priorities earlier this year. Thousands of employees, representing both clinical and ancillary professions, joined with board members and the senior leadership team to offer input in this process.

The end result was Geisinger's two-year strategic plan, which was released in August 2016. This plan maps out the challenges and vulnerabilities that Geisinger faces in the current healthcare market. These range from regulatory and economic issues to increasing demands on Geisinger's employees and declining operating margins.

The plan also highlights the overwhelming desire of respondents to get back to the basics of Geisinger's core purpose: caring compassionately for patients and serving our members.

"We are returning the patient, the member and clinical excellence to the center of everything we do," said Geisinger President and CEO David T. Feinberg, MD, of the plan. "When we do this, strong financial performance will follow."

According to the plan, Geisinger's strategic priorities focus largely on enhancing care for the patients and members that we serve. This means:

- Improving the care that we provide patients and members
- Improving physician and employee engagement
- Taking advantage of Geisinger's ability to offer the highest quality healthcare together with the Geisinger Health Plan
- Growing Geisinger's post-acute care services to meet the expanding market
- Achieving a profit large enough to sustain our mission of caring



Nilufer Goyal, MD, a pediatrician at Geisinger Holy Spirit, examines a patient.

Each strategic area is accompanied by an ambitious performance target for 2019.

"This strategy allows us to take ownership of our future by prioritizing the improvements and investments we make," explained Dr. Feinberg. "It's true that we have a lot of work ahead of us. I'm confident, however, that we are positioning Geisinger for success in the next chapter of its storied history."

Geisinger Commonwealth to advance medical education in region



Steven J. Scheinman, MD, and David T. Feinberg, MD, consult with a GCSOM student.

Education plays a vital role in Geisinger's commitment to its community. For more than a century, the organization has been empowering the next generation of clinicians and healthcare professionals through novel educational programs and enriching clinical experiences.

Geisinger took this commitment to the next level when it integrated The Commonwealth Medical College (TCMC) into our system. The new Geisinger Commonwealth School of Medicine (GCSOM) is a regional medical school, with campuses in Doylestown, Scranton, Sayre, Wilkes-Barre, Williamsport and now Danville.

There are multiple benefits to this partnership. In addition to filling a tremendous need for physicians in the

Geisinger community, the integration will allow both organizations to strengthen their educational mission by consolidating efforts in a single location within the medical school. It also builds upon both parties' shared commitment to improve the health and well-being of the region.

"This strong alliance sets Geisinger apart by allowing us the unique ability to offer medical students a fully integrated learning experience," says David T. Feinberg, MD, Geisinger president and CEO.

Steven J. Scheinman, MD, who served as TCMC's president and dean, now retains those titles in addition to being named chief academic officer and executive vice president at Geisinger. He said, "This agreement guarantees

the future of the college, expands its ability to create new educational programs and positions northeast and central Pennsylvania as a national hub for scientific discovery, particularly in genomics."

Under the agreement, the college's more than 1,200 volunteer clinical faculty members retain their faculty appointments. Additionally, Geisinger Commonwealth maintains existing partnerships with colleges, agencies, providers and others.

Geisinger will build upon existing collaborations with the college by providing students and faculty with expanded access to research and clinical opportunities throughout the health system's scientific network, including its MyCode® Community Health Initiative. Geisinger Commonwealth will also introduce new master's degree programs based on Geisinger's innovative technology and advanced research capabilities.

The college's new master's degree programs specific to genomics will include a master's in genetic counseling and a novel degree program in genomics information. This will help meet the increasing demands for scientists with expertise in genomic data analysis and the interpretation of complex genetic data.

"Educating tomorrow's doctors to be catalysts for positive change is a natural evolution of the patient-centric collaborations we've already fostered with the medical college," says Dr. Feinberg. "We are very excited by the opportunities that this deal presents."

Putting patient-centered care into practice

“We put patients first.”

Variations of this trendy tagline have popped up at health systems across the country in recent years. Problem is, few of the organizations making this promise can back it up with consistent and verifiable actions.

Count Geisinger as the exception.

Since joining Geisinger in 2015 as its president and CEO, David T. Feinberg, MD, has challenged leadership and employees to make Geisinger “the example of the right way to treat people — with dignity, respect, kindness and caring.”

The health system’s nearly 30,000 employees didn’t just embrace this task — they ran with it. In the process, they have ignited a healthcare revolution at Geisinger that is gaining remarkable traction and attention.

At the center of this movement are the more than 3 million people for whom Geisinger provides care each year.

Through their stories and feedback, these patients have inspired Geisinger to launch nearly a dozen transformational initiatives and innovations aimed at one single goal: enhancing the patient experience.

Expressing care through communication

The most recent of these initiatives is C.I.CARE, a proven communication program that was developed on the West Coast. Pronounced “See I Care,” the program is based on the premise that consistent and seamless communications emphasizing caring can positively enhance the experience of colleagues, patients and their families and visitors.

“C.I.CARE can be applied at every single point of care, from the way we answer the phones to the way we provide

discharge instructions or follow-up care,” says Sue Robel, RN, executive vice president, system chief nursing and patient experience officer for Geisinger.

C.I.CARE consists of six basic communication steps:

- C – Connect**
- I – Introduce**
- C – Communicate**
- A – Ask and anticipate**
- R – Respond**
- E – End with excellence**

In early 2016, Geisinger’s Patient Experience Team began training the organization’s leaders in C.I.CARE through “Train the Trainer” sessions held during standing leadership meetings. These were completed in May. By the

end of June, every Geisinger employee had completed live training and the online GOALS course.

Ms. Robel explains that employees who have completed C.I.CARE training are expected to use it in every interaction. She adds that the ultimate goal is to have employees use C.I.CARE not just consistently, but successfully.

“Throughout the year, the Patient Experience Team is conducting rounds on the floors to see how staff and clinicians are applying their training,” she says. “We use a formal C.I.CARE competency checklist to evaluate the employee’s progress and identify areas that need more work. This is a mandatory process that every employee must complete.”



Providers recognized for outstanding patient care

Geisinger Health System recognized 108 providers — including physicians, physician assistants and certified registered nurse practitioners — for ranking in the top 10 percent in patient experience nationally at the health system’s annual Top Patient Experience Clinicians Awards Dinner.

Recipients of the Victor J. Marks Award for highest patient experience scores were two Geisinger pediatricians: Jennifer M. Potter, DO, of Geisinger Shamokin Area Community Hospital, and Terrah Keck-Kester, MD, of Geisinger Bloomsburg Pediatrics. This award was established in 2002 to honor Victor Marks, MD, who served as Geisinger’s interim CEO from 2000 to 2001, and his commitment to making patients the primary focus of the health system. Monisa D. Wagner, PA-C, was the first recipient of the Appleman Award in recognition of receiving the highest patient experience score among all advanced practitioners in the system. This award was established in 2016 to honor Christina Appleman, CRNP, and her focus on outstanding patient care.

Recipients of both awards are identified by patients as “the best of our best.”



The different uniform colors of an emergency medicine physician and a registered nurse allow patients to identify at a glance who is caring for them.

“The goal of the uniform policy is to...add order to the complexity of the hospital environment.”

– Greg Burke, MD

According to Ms. Robel, the elements of the program are regularly reviewed and tweaked to ensure optimal results in all areas that affect the patient experience. An example of this process can be seen in the team’s partnership with Geisinger Health Plan.

“Together, we’re identifying the points where patients are having an issue with their experience, such as the phone system,” explains Ms. Robel. “We’re then working with the plan’s operations team, community practice clinic sites and leadership to ensure we have a strategy in place for how to correct the problem and define what that patient experience will look like.”

Ms. Robel shares that the end game is to have C.I.CARE ingrained in Geisinger’s culture.

“We’ll know we’ve reached that point when we’re all using these concepts 100 percent of the time — when 90 percent of patients are willing to recommend us to a friend or family member,” she says. “We’re not quite there yet.”

Appearances can be empowering

While verbal interactions are the focus of C.I.CARE, Geisinger’s recent implementation of a standardized dress code is successfully addressing variation in employees’ appearances.

This initiative was launched in early 2015 in response to patient feedback and an extensive literature review. “What we were reading matched what we were hearing,” says Ms. Robel. “Patients didn’t know who was coming into their room or who was caring for them.”

In response, Geisinger rolled out a new uniform policy that assigned each clinical profession its own scrub colors. The effort began with RNs, who make up about a fifth of Geisinger’s workforce. These individuals were assigned pewter-colored scrubs embroidered with the Geisinger logo.

Over the next few months, other healthcare professionals received their color assignments. The implementation will wrap up with physicians, who will be wearing new lab coats bearing the Geisinger logo.

“The goal of the uniform policy is to enhance the patient experience by adding order to the complexity of the hospital environment,” says Greg Burke, MD, chief patient experience officer for Geisinger. “So far, it’s working.”

“The reviews from patients have been great,” he continues. “They really like being able to tell at a glance whether it’s their nurse, physical therapist or environmental services representative entering the room. It’s empowering for them.”

Transparency in care

The theme of transparency and empowerment are continued with the launch of Geisinger’s own patient experience star ratings and comments. These are located on the [MyGeisinger.org](https://www.mygeisinger.org) website.

The ratings rank Geisinger’s physicians, nurse practitioners and physician assistants on a scale of zero to five stars for a range of attributes. These include friendliness and courtesy, concern for patient worries and the likelihood that patients would recommend them to others.

There’s no sugar-coating the truth with this system. The public ratings and comments include the good, the bad and the ugly about Geisinger’s providers. This gives patients the ability to really get to know the providers and choose who they want to see for their care.

According to Randy Hutchison, director of Patient Experience for Geisinger, the ratings are accurate, scientifically valid and very trustworthy.

“Patients are randomly selected by Press Ganey — an independent patient satisfaction survey company — to complete surveys following appointments,” he says. “We only post ratings once a doctor has at least 30 reviews. So far, ratings have been posted for 700 providers.”

Mr. Hutchison adds that comments are updated weekly and screened only to remove vulgarity, patient names, private health information and remarks about other practitioners.

But patients aren’t the only ones benefiting from the ratings. According to Jonathan Slotkin, MD, director of Spinal Surgery at the Geisinger Health System Neurosciences Institute, physicians are using them as well.

“The ratings harness the internal sense of competition we all feel to do our best,” he says. “We can learn a lot from people who walk away dissatisfied. This kind of transparency builds trust.”

Proving that patients really come first

Patient trust was also a driver for the launch of Geisinger’s popular — and somewhat controversial — ProvenExperience™ smartphone app.

The app, which has garnered mass media attention and industry scrutiny, lets patients give the health system immediate feedback about their care and request refunds for less-than-stellar service. In the first year, the health system spent around \$680,000 in refunds.

But the app is just part of Geisinger’s greater ProvenExperience patient satisfaction program, which places compassion, kindness and five-star service at the center of every patient experience.

“A patient who is dissatisfied with any aspect of their experience at Geisinger can request a refund,” says Ms. Robel. “While many patients are using the app for this, most refund requests are coming through emails, phone calls and face-to-face interactions.”

Refunds cover the elements of the bill which are a patient’s individual financial responsibility. This could be part or all of any copayment, coinsurance or deductible that a patient has been charged.

Ms. Robel stresses that the underlying goal of ProvenExperience isn’t to just hand out money. It’s about something much bigger.

“This is our promise to patients that they’ll get the best care possible, every time,” she says. “It’s proof that Geisinger isn’t afraid to back its words with actions.”

And that’s a proven fact.

Employee uniforms: by the colors

Care support assistants

Purple polo shirt

Physical therapy/ occupational therapy

Primary color: Teal

Respiratory care

Primary color: Navy blue
Secondary color: Khaki

Registered nurse

Primary color: Pewter gray
Secondary color: White

Pharmacy technician

Primary color: Hunter green

Licensed practical nurse

Primary color: Royal blue
Secondary color: White

Environmental services

Primary color: Wine

Radiology/imaging

Primary color: Caribbean blue
Secondary color: Black

Patient registration

Light blue shirt/black pants

Foodservice

Dark blue button-down shirt

Laboratory medicine

Primary color: Red
Secondary color: Black

Patient care support

Primary color: Turquoise
Secondary color: Black



Record participation and engagement among highlights of 2016 survey



It comes as no surprise that a record number of Geisinger employees completed the 2016 Employee Engagement Survey. After all, more than two-thirds of the 16,893 respondents expressed overall job satisfaction, and more employees fell into the “Actively Engaged” category this year than in 2015.

At AtlantiCare, A Member of Geisinger, 41 out of 44 questions scored the same or better than the previous year. Employees that dropped only dropped by 1 point each, and they were all best-in-class measures.

Overall, the survey found noticeable improvement in more than half of the 43 items employees were asked about. In fact, scores from six of the seven question categories increased two to five points this year.

Employees responded most positively to questions about job expectations and respect displayed by coworkers and supervisors. On these questions, Geisinger scored well above the national norms.

More than 11,000 written comments highlighted the best parts of the Geisinger employee experience and outlined areas for improvement. Employees described Geisinger’s workplace culture and opportunities for advancement as the best parts of their jobs. The survey results and written comments were used to guide the system’s Strategic Planning process. Examples of current initiatives spurred by these results include:

- Vigorously recruiting to fill staffing gaps: Geisinger hired 4,189* new employees. Of these, more than 1,000 were new positions, while more than 3,100 were replacements. Overall, the number of employees at Geisinger increased from 22,805 to 29,305 — an increase of 6,500 employees.
- Reducing turnover by more than 12 percent*.
- Speeding up hiring: We accelerated the speed with which we fill posted positions by almost 20 percent since March 2016.
- Increasing educational opportunities: In 2016, Geisinger conducted 364 classes with more than 4,400 participants.
- Increasing the amount of tuition assistance benefits each employee is eligible for.
- Launching social employee recognition through featured stories on Yammer and Shining Stars at our AtlantiCare campus.

*From July 1, 2015 to June 30, 2016

Research & education

As more and more physicians and researchers leverage the power of Geisinger’s vast data storehouses, the organization is seeing an explosion in new knowledge and clinical opportunity. Research studies exploring questions that range from medication adherence to the genetic relationships between two seemingly unrelated conditions are getting to the core of challenging medical issues and helping to advance patient care and outcomes.

Research across the Geisinger footprint is supported largely through external grant and contract research funding. Over the past 7 years, Geisinger has averaged a 14 percent annual growth rate in funding and an impressive total growth rate of almost 200 percent.

“It takes a concerted effort over many years to grow external research funding,” notes David Ledbetter, PhD, chief

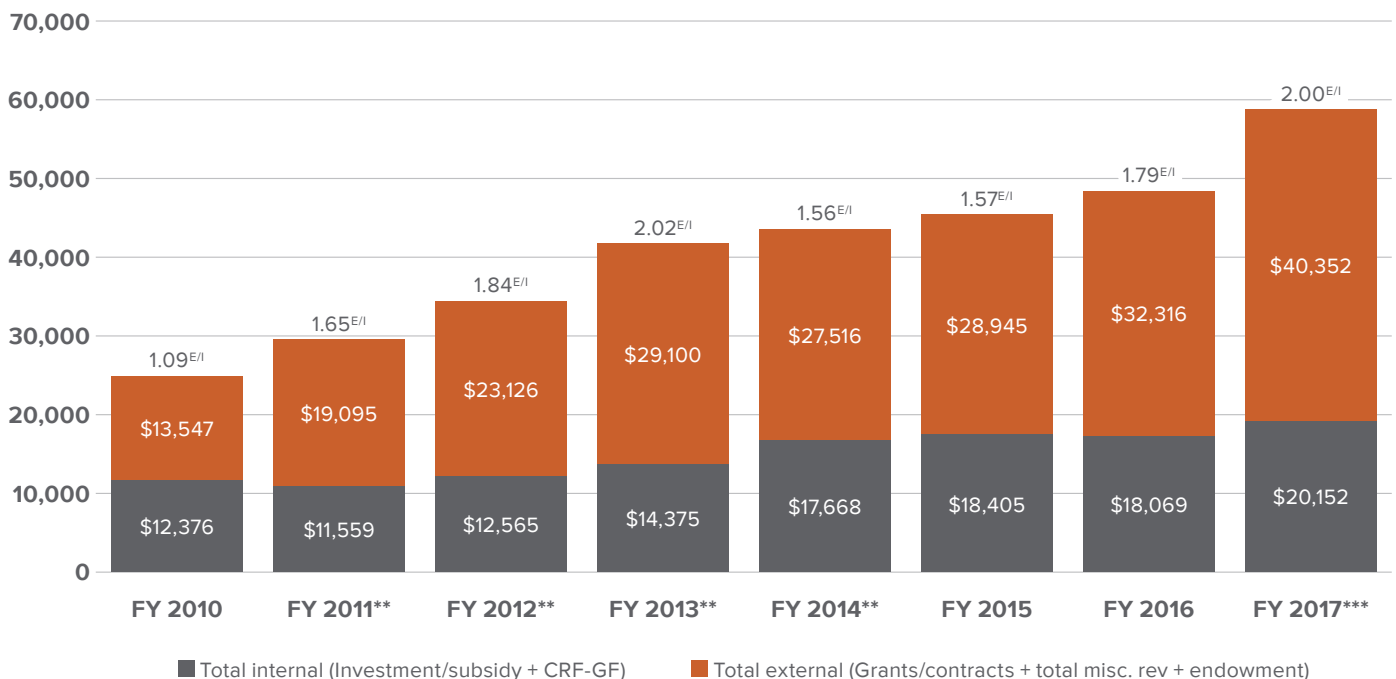
scientific officer for Geisinger. “During this time, we recruited world-class research and clinical faculty to join the outstanding researchers/investigators who were already here and we subsequently accelerated acquisition of external and contract funding.”

This external funding complements the internal “seed” funding provided by Geisinger.

Other highlights of 2016 include initial explorations of pharmacogenomic variants and the integration of The Commonwealth Medical College in Scranton, now known as the Geisinger Commonwealth School of Medicine (GCSOM).

Research grant funding on the rise

FY 2010 to FY 2017*



*This chart shows the substantial growth of external grant/contract research funding at Geisinger from \$13,547 in FY2010 to \$40,352 in FY2017.

**reflects additional funding due to Beacon Grant

***2017 projected, reflecting Precision Medicine Institute funding

A record presence at American Society of Human Genomics annual meeting

The DiscovEHR collaboration between Geisinger and Regeneron Genetics Center is yielding noteworthy genetic and clinical relationships. This is evidenced by the record number of poster and oral presentations that the two organizations had and presented to the 2016 American Society of Human Genomics Annual Meeting, the world's largest genetics meeting.

Posters with
Geisinger
co-author(s)

39

Platform/plenary
presentations
with Geisinger
co-author(s)

12

Geisinger among Precision Medicine Initiative's new class

Advances in DNA sequencing are making it more and more possible to provide the right care at the right time and in the right way. Now, this technology will be leveraged to provide personalized medicine to more Americans than ever before.

Geisinger has joined a national effort to engage 1 million or more U.S. participants in improving their ability to prevent and treat disease based on individual differences in lifestyle, environment and genetics.

Called *All of Us*, The Precision Medicine Initiative research program was launched in 2015 by then-President Barack Obama to give researchers access to the personalized information needed to prolong health and better treat diseases like cancer, diabetes and Alzheimer's disease.

This past October, Geisinger became one of a handful of healthcare provider organizations designated as an *All of Us* enrollment site. In this capacity, Geisinger researchers will

enroll interested individuals, gather participants' health information and biospecimens and help to develop the initiative's infrastructure and scope.

Many factors have converged over the past few years to make this the right time for such a large-scale program: Americans are increasingly engaged in improving their health and participating in health research, electronic health records have been widely adopted and genomic analysis has become less expensive and more sophisticated.

Years before the national spotlight fell on this growing field known as precision medicine, Geisinger launched its own in-house MyCode Community Health Initiative, a systemwide biobank of blood and other samples used to develop treatments tailored to the individual needs of patients. More than 125,000 participants have been enrolled in this program alone.

In addition to serving as one of the *All of Us* enrollment centers, part of Geisinger's work will be to help the National Institutes of Health (NIH) combine and analyze all the collected data, bringing to bear its early and substantial commitment to genomics and precision health.

Because Geisinger serves communities underrepresented in research, the health system also fits the PMI's *All of Us* goal of reflecting a broad range of social and ethnic populations living in a variety of geographies, social environments and economic circumstances.

"We are pleased that the NIH has selected us as a healthcare provider organization to share our lessons learned and to benefit our patient-participants."

*– David H. Ledbetter, PhD
Chief Scientific Officer*

Geisinger doubles down on MyCode goal



Dylan Cawley, a MyCode consentor at Geisinger Mt. Pleasant (Scranton), signs up a participant.

A leading organization doesn't just meet a goal — it surpasses it. At least, it's what you do if you're Geisinger Health System.

Three years ago, the organization accelerated the Geisinger MyCode Community Health Initiative and set its sights on consenting 100,000 participants. That goal quickly came and went. Now the team of research and healthcare professionals behind this initiative is aiming for at least 250,000 participants.

It's an attainable goal, according to David H. Ledbetter, PhD, chief scientific officer and co-principal investigator for MyCode at Geisinger.

"About 90 percent of patients whom we ask to participate have signed up," he says. "This is a very supportive community."

As one of the largest genomic research projects of its kind, MyCode has the potential to advance healthcare for millions of people around the world. It will do this by collecting and decoding participants' genetic information to identify their risk factors for a host of conditions, ranging from certain types of cancer and heart disease to diabetes, high cholesterol and many others. Using this information, healthcare providers can screen, and if necessary, treat patients long before they may experience their first symptoms.

AtlantiCare embraces MyCode

When AtlantiCare became part of Geisinger two years ago, its doctors and leaders were excited about the opportunity to take part in the MyCode Community Health Initiative. This fall, consentors began enrolling participants at AtlantiCare locations in Hammonton, Galloway, Northfield and Cape May County, N.J. In the first week, 100 AtlantiCare patients were enrolled at Hammonton and Northfield alone. By mid-November, over 1,000 patients were consented.

MyCode consentors signed up at AtlantiCare in 2016

| | |
|----------------------|--------------|
| Cape May Court House | 50 |
| Egg Harbor Township | 21 |
| Galloway-South | 381 |
| Hammonton | 572 |
| Linwood | 46 |
| Northfield | 430 |
| North Cape May | 32 |
| Somers Point | 163 |
| Wildwood Crest | 363 |
| Outcomes Research | 1 |
| Total | 2,059 |

Another advantage of MyCode is that it arms researchers with the information they need to discover why these conditions happen in the first place. This level of understanding could lead to significant medical breakthroughs for decades to come.

Clinically actionable results from MyCode bring swift payoff

Geisinger's MyCode Community Health Initiative began analyzing the DNA of its participants in 2014 in a partnership with the Regeneron Genetics Center

in Tarrytown, N.Y. Geisinger's primary interest is to examine 27 conditions associated with increased risks for cancer and heart disease. Since then, it

has returned results for these conditions to about 200 patient-participants. Results are delivered to patient-participants and to their primary care

MyCode results returned 166 patient-participants have received results*

Geisinger
mycode | **100,000+**
PARTICIPANTS

(October 2016)

| Condition | Patients per condition | Gene | Patients per gene |
|--|------------------------|--------|-------------------|
| Hereditary breast and ovarian cancer (early breast, ovarian, prostate and other cancers) | 84 | BRCA1 | 22 |
| | | BRCA2 | 62 |
| Familial hypercholesterolemia (early heart attacks and strokes) | 29 | LDLR | 17 |
| | | APOB | 12 |
| Lynch syndrome (early colon, uterine and other cancers) | 16 | MLH1 | 2 |
| | | MSH2 | 2 |
| | | MSH6 | 3 |
| | | PMS2 | 9 |
| Cardiomyopathy (diseases of the heart muscle with dangerous complications) | 14 | MYBPC3 | 6 |
| | | MYH7 | 2 |
| | | TNNI3 | 1 |
| | | TPM1 | 2 |
| | | TNNT2 | 2 |
| | | GLA | 1 |

*Number of patient-participants with returned results and the number per gene variant/condition may not be equal due to the possibility of a participant having more than one condition.

physicians through the Epic electronic health record with a link to information about the specific condition that is being reported. These conditions include well-known ones, such as the condition associated with the BRCA1/2 genes, and less well-known conditions, like familial hypercholesterolemia.

"We've been very surprised to see the testing payoff in terms of saving

patient lives so quickly," says Adam H. Buchanan, MS, clinical investigator for Geisinger Genomic Medicine Institute. "For example, several patients have been found to have early-stage — more treatable — cancer because of their genomic result.

"Soon we will be returning results for additional conditions and adding more material resources for primary care

providers and the patients who are often hearing about these risk factors for the first time," Mr. Buchanan adds. "The MyCode team is also working to make lab reports easier to understand so they can be shared with the patient in a meaningful way."

MyCode results returned (continued)

| Condition | Patients per condition | Gene | Patients per gene |
|--|------------------------|-------|-------------------|
| Long QT syndrome (irregular heartbeat with dangerous complications) | 6 | SCNSA | 4 |
| | | KCNQ1 | 1 |
| | | KCNE1 | 1 |
| Malignant hyperthermia (life-threatening condition usually triggered by exposure to certain drugs used for general anesthesia) | 3 | RYR1 | 3 |
| Arrhythmogenic right ventricular cardiomyopathy (disease of the heart muscle with dangerous complications) | 7 | DSP | 1 |
| | | PKP2 | 6 |
| Multiple endocrine neoplasia type 1 (early thyroid cancer) | 1 | MEN1 | 1 |
| Multiple endocrine neoplasia type 2 (early thyroid cancer) | 3 | RET | 3 |
| Tuberous sclerosis (multiple types of benign [non-cancer] tumors) | 1 | TSC2 | 1 |
| Hereditary pheochromocytomas and paragangliomas (specific tumors that can release extra hormones) | 2 | SDHB | 2 |
| Li-Fraumeni syndrome (early breast, soft tissue, brain, adrenal and other cancers) | 1 | TP53 | 1 |
| Familial adenomatous polyposis (early colon cancer) | 1 | APC | 1 |
| Totals | 168 | | 168 |

Bioethics team expands to address changes and challenges

The field of human genomics is exciting, yet uncharted territory for healthcare. Although it offers tremendous opportunity in terms of scientific discovery and the enhancement of care, the field is dotted with potential challenges. This is particularly true when it comes to things such as privacy of data, clinical oversight and patient consenting.

Geisinger's ability to confidently navigate these issues is crucial to the success of its MyCode initiative and greater research enterprise. For Dan Davis, PhD, director of bioethics, Geisinger, the answer to this challenge was obvious — bring in the experts.

Jennifer Wagner, PhD, associate director of bioethics research, Geisinger, was the first recruit. According to Dr. Davis, Dr. Wagner possesses a background in law and a keen interest in the thornier aspects of genomics: race, privacy of data and the consenting process. Her first task will be to help build Geisinger's infrastructure for bioethics research.

"A couple of years ago, Executive Vice President and Chief Scientific Officer David Ledbetter, PhD, led the effort to revise the organization's strategic research plan to embrace the concept of a learning healthcare system," shares Dr. Davis,

and, within that model, a priority emphasis on engaging patients in research, innovation and quality improvement. Dr. Wagner's recruitment has been essential to operationalizing this emphasis. She's playing a key role in developing the infrastructure so that it's the default, rather than the exception."

Dr. Davis' next recruit was Michelle Meyer, PhD, associate director of research ethics at Geisinger.

"With a law degree from Harvard and a PhD in religious studies from the University of Virginia, Dr. Meyer comes to this work with in-depth expertise and experience," he explains. She was specifically recruited to assist us with the challenges and opportunities for oversight in a maturing learning healthcare system and to conduct research on such key issues as consent — including the development and evaluation of alternative models of engaging and consenting prospective research participants."

One example of where Dr. Meyer's expertise will come into play is the interpretation of possible revisions to the "Common Rule."

"The Common Rule is the ethical and regulatory framework for research involving human participants in the U.S.," Dr. Davis explains. "There's a strong possibility that the Obama administration will be issuing revisions to this rule that will change components of the framework. Dr. Meyer's experience will be crucial in determining what a revised Common Rule means for Geisinger and other like institutions."

Beyond the expansion of his team, Dr. Davis shares that Geisinger will be extending its focus to include research in clinical care.

"Specifically, we're looking at ways to educate and inform patients regarding research and the consent process," he says. "We want to simplify and improve the consent process for research.

"Progress on this front could have beneficial implications for shared, informed decision-making in the clinical arena — for ensuring that patients are well informed about the potential benefits and risks of healthcare interventions, from surgical procedures to pharmacotherapies," continues Dr. Davis. "Indeed, as a learning healthcare system, Geisinger regards the research and clinical care as a continuum, rather than as two strictly separated domains. In both, an educated, informed patient-participant is the aim."



Michelle Meyer, PhD, associate director of research ethics, and Jennifer Wagner, PhD, associate director of bioethics research

COPD: A story of relationships

Marylyn Ritchie, PhD, senior investigator and director of Biomedical and Translational Informatics, isn't content to know that Geisinger is treating 40,000 people with chronic obstructive pulmonary disease (COPD). Rather, she believes that this number has the potential to tell a far more interesting story — one about relationships.

COPD and its relationship to other diseases is the focus of Dr. Ritchie's latest grant from the Pennsylvania Department of Health.

"We know that patients with COPD present with different symptoms," shares Dr. Ritchie. "What if we're not looking at one straightforward diagnosis, but one that is directly related to a second existing condition?"

Together with her team, Dr. Ritchie is analyzing the records of patients in

Geisinger's electronic health record to determine what other commonalities exist among those with COPD. The results have been compelling.

"We've taken these thousands of patients and discovered that they can be categorized into between four and six clusters," explains Dr. Ritchie. "About six of these clusters represent people with a common second disease such as depression or high cholesterol."

Of interest to Dr. Ritchie are people who have cardio/metabolic disease and COPD. "There are two groups where this relationship exists," she says. "From a clinical perspective, these people look very different from those who just have COPD."

The next step in this process, she says, will be to determine if patients respond to treatments differently based upon this secondary diagnosis. "My hunch is that we will need to better tailor our treatments for patients with a COPD diagnosis based upon these findings," she says.

In the future, Dr. Ritchie will be applying this predictive model to other conditions, including diabetes, polycystic ovarian syndrome and heart failure.



Geisinger senior investigator and director of Biomedical and Translational Informatics
Marylyn Ritchie, PhD

COPD and secondary diseases by the numbers*

2,000 COPD patients who also had higher BMI and LDL cholesterol

2,900 COPD patients who had high LDL cholesterol and low HDL cholesterol

18,000 COPD patients who also had hypertension

4,000 COPD patients with no cardio/metabolic traits

8,000 COPD patients with low pulmonary function score (DLVA)

1,000 COPD patients with low pulmonary function score (DLVA) and no cardio/metabolic traits

4,100 Other patients who didn't fall into the aforementioned clusters

*Findings from initial study clustering algorithms



Sharon Larson, PhD, acting chair of the Department of Epidemiology and Health Services Research at Geisinger

PaTH partnership paves way for diabetes research and more

Geisinger's Department of Epidemiology and Health Services Research and the Department of Biostatistics entered into an exciting partnership this year with the PaTH Clinical Data Research Network (CDRN). This network, which includes some of the top academic medical centers and schools of medicine in Pennsylvania and Maryland, as well as the University of Utah and University of Utah Health Care, strives to use patient-empowered research to address the questions and concerns that matter most in the communities that member organizations serve.

"We were brought into the PaTH CDRN because of what we are able to bring to the table," explains Sharon Larson, PhD, acting chair of the Department of Epidemiology and Health Services Research at Geisinger. "This includes access to well-established electronic health and claims records and our experience with using data in relevant ways through the MyCode initiative."

PaTH membership provides the infrastructure, rigorous security standards and regulatory support that the six participating organizations need to collaborate and learn from patients' experiences. Ultimately, this collaboration will help the members achieve greater impact by pooling one another's resources: electronic health record data, patients and clinicians.

"PaTH has already led to a couple of research grants," says Dr. Larson, "and is building the mechanism for us to secure additional ones in the future."

Understanding the barriers to diabetes treatment adherence

One of those grants aims to increase the understanding for barriers to treatment adherence among Type 2

diabetics. "About 45 percent of adults with Type 2 diabetes do not achieve glycemic control," Dr. Larson explains. "A major contributor to this is medication nonadherence.

"This affects between 15 and 35 percent of patients who have been on medications for 2 years or less," she adds.

Through this study, researchers aim to understand the impact of two recently enacted health policies that affect diabetes care on the Healthy People 2020 diabetes objectives:

- Health insurance expansion through the Affordable Care Act (ACA)
- Obesity counseling coverage by private and public health plans through the ACA and Centers for Medicare and Medicaid

Dr. Larson explains that the study is comparing diabetes outcomes in three states — one that adopted Medicaid expansion immediately (Maryland), one that delayed Medicaid expansion until January 2015 (Pennsylvania), and one that has not adopted Medicaid expansion (Utah).

"We'll be measuring the impact of these policy changes using EHR and claims data across the PaTH CDRN before and after these policies were implemented," she says. "Specifically, we'll be evaluating the impact of ACA on the Healthy People 2020 objective for diabetes among patients treated by PaTH CDRN members. We'll also look at the impact of preventive service coverage by both the ACA and Medicare on obesity screening and counseling in patients with diabetes or at high risk for diabetes."

The project will also evaluate the effect of the ACA implementation and CMS coverage of obesity counseling on diabetes service use.

A story behind every picture

Geisinger's Brandon Fornwalt, MD, associate professor at the Geisinger Institute of Advanced Application, loves to think about new ways to use cardiac imaging data.

His passion for the subject is evident both in conversation and in his work, which currently includes more than three active research studies. Aside from being dedicated to his field, the reason behind Dr. Fornwalt's affinity for cardiac imaging data is simple: there's so darn much of it.

"When you perform a cardiac MRI, the tendency is to take all the numbers that are produced and distill them down to one or two measurements," he says. "We do this because it's easy. The truth is that a single study produces 600 images and roughly 40 million data points. That's a lot of unused information.

"What we should be doing is using this data to build really big models that tell us exactly what is happening with the patient," he adds.

But what doctor or researcher has the time to analyze all of those numbers? They don't. This is where HeartTrack comes in.

"HeartTrack is a collaboration between researchers at Geisinger and Georgia Institute of Technology to develop novel machine learning technology," Dr. Fornwalt says. "HeartTrack would have the ability to automatically analyze imaging and electronic health record data and then use these findings to predict outcomes and optimal treatments based on 'learned' experience."

Dr. Fornwalt explains that the beauty of HeartTrack is that it would look at all of this underutilized data in a billion ways and find similarities between patients that humans would never be able to comprehend or recognize.

"Successful development of this technology could open up so many nuances for us as providers," he says. "For example, we may someday be able to identify all the variables for a disease that allow for treatment interventions to provide the greatest chance of survival. Think of what that could do for patient outcomes."

The team has just submitted its application for NIH grant funding, and HeartTrack development has already begun through a pilot grant program collaboration between Geisinger and the Georgia Institute of Technology.

Dr. Fornwalt's foray into healthcare technology comes on the heels of two newly published studies. The first, which appeared in the May 2016 issue of the *Journal of Cardiovascular Magnetic Resonance*, focused on the use of cardiac MRI to identify changes in heart composition and function in obese children.

"We know that in an adult, the heart can change shape, becoming progressively thicker, and that overall function can be impaired," says Dr. Fornwalt. "This increases the individual's risk of early death. There's also recent evidence that young adults who were obese as children have significantly increased risk of premature death in their 30s or 40s. Our goal was to determine whether heart remodeling and dysfunction that we see in adults occurs in obese children. This may ultimately link heart disease in obese children to the premature mortality that these kids suffer from in adulthood."

For this study, led by Fornwalt team member Linyuan Jing, PhD, researchers performed a complete assessment of cardiac structure and function using MRI on 41 obese/overweight and 29 healthy weight children between the ages of 8 and 17.



The Fornwalt team includes (left to right): Christopher Nevius, senior research assistant; Manar Samad, PhD, postdoctoral fellow; Brandon Fornwalt, MD; and Linyuan Jing, PhD, research scientist I. (Not shown: research assistant Arichanah Pulenthiran)

“We believe that this integration of genomics and advanced imaging will ultimately help identify patients who can benefit from lifesaving interventions.”

“The obese children showed evidence of significant cardiac remodeling and dysfunction, which began as young as age 8,” Dr. Fornwalt says. “Of great concern are the 25 percent of children who presented with a specific type of remodeling called concentric hypertrophy, which was also associated with impaired heart function. These children seem to be at particularly high risk and warrant further investigation.”

The second study, which was led by Christopher Haggerty, PhD, researcher at the Geisinger Institute of Advanced Application, focused on subjects who were identified through the MyCode initiative as being genetically at an increased risk to develop a disease called

arrhythmogenic right ventricular cardiomyopathy (ARVC).

“These are people with a genetic mutation that potentially puts them at risk of sudden cardiac death,” explains Dr. Fornwalt. “Our goal with this study was to determine whether any of the individuals in our sample demonstrated the supposed or likely pathogenic variants linked to ARVC.”

While the Geisinger ARVC study is not the first to look at this issue, it is the largest and most comprehensive investigation of individuals with supposed pathogenic variants for this condition.

“Our study analyzed 7 genes associated with ARVC in over 31,000 patients, which represents a significantly larger patient population to work with by orders of magnitude compared to prior studies,” says Dr. Fornwalt. “Moreover, the genetic data was linked to extensive longitudinal electronic health record data. This is an advantage of the MyCode initiative.”

Dr. Fornwalt explains that they did not expect to see full-blown ARVC in any of the study participants, but they did believe that there would be a

discernable characteristic, such as arrhythmias, in some people with the genetic mutation.

“What we found was that most of these individuals (with a genetic mutation) had no evidence of the disease,” he explains. “However, we need to bring these patients in for a complete workup, including advanced cardiac imaging.”

According to Dr. Fornwalt, this is being done through a large clinical “return of results” initiative by Geisinger’s Mike Murray, MD, director of clinical genomics, and Murugu Manickam, MD.

A key clinical question that will ultimately be answered by this effort will be which patients need potentially lifesaving interventions and in which patients are these treatments unnecessary. Dr. Fornwalt believes that advanced cardiac imaging will play an increasing role in helping to solve this problem in patients with a wide array of mutations that are linked to heart disease.

“With the clinical return of the results initiative at Geisinger, we are now opening the door to a genome-first approach, which will rely heavily on imaging,” he says. “We believe that this integration of genomics and advanced imaging will ultimately help identify patients who can benefit from lifesaving interventions.

“This is much different than a disease-first approach, where we wait for symptoms to appear and then use imaging to diagnose the problem,” Dr. Fornwalt continues. “Often it is too late to intervene with treatments by this point. A genome-first approach has the potential to flip the entire healthcare process on its head by initiating treatment earlier and more effectively.”

Brandon Fornwalt, MD, (right) reviews data with postdoctoral fellow Manar Samad, PhD.





Jamie Green, MD, a Geisinger nephrologist and clinical investigator, talks with a patient.

PCORI-sponsored study focuses on patient-centered kidney care

Patient engagement is a concept that spans both the clinical and research enterprise at Geisinger. It's a fact that has earned the organization several coveted grants from the Patient-Centered Outcomes Research Institute (PCORI), a nonprofit organization dedicated to funding research that addresses the questions and concerns most relative to patients. To be eligible for PCORI funding, research must involve all stakeholders, including patients, caregivers, clinicians, researchers and others.

Jamie Green, MD, a nephrologist and clinical investigator at Geisinger, is

among those participating in PCORI-funded research.

"We are working to improve the health and well-being of patients with advanced kidney disease," she explains. "This study promises to help patients and families better understand how to actively participate in their care and will build a stronger infrastructure to do that."

"Putting Patients at the Center of Kidney Care Transitions" is a Duke University-led study aimed at understanding how patient-centered health system interventions can help patients make

supported and informed decisions about kidney failure treatment. The study will develop new electronic health record tools, a disease registry, patient navigation and shared and informed decision-making to improve care.

The study is co-led by Dr. Green and Ebony Boulware, MD, chief of the Division of General Internal Medicine at Duke University, who serves as the study's principal investigator.

Patients the focus of inaugural symposium

Geisinger celebrated a milestone in June when it hosted the organization's first symposium on patient- and family-centered care. This event, which was free and open to the public, brought clinicians, researchers and the community together for two days to focus on a rather unusual subject: patients.

Since making a commitment to become a learning healthcare system in 2014, Geisinger has engaged in nonclinical interactions with its patients on several occasions, but nothing to this scale. It's a trend that Dan Davis, PhD, director of bioethics at Geisinger, sees continuing.

"When the Institute of Medicine created the learning healthcare system model, it strategically placed the patient and their families at the center of the picture," he says. "It's a no-brainer, when you think about it. Unfortunately, healthcare and research haven't always operated this way.

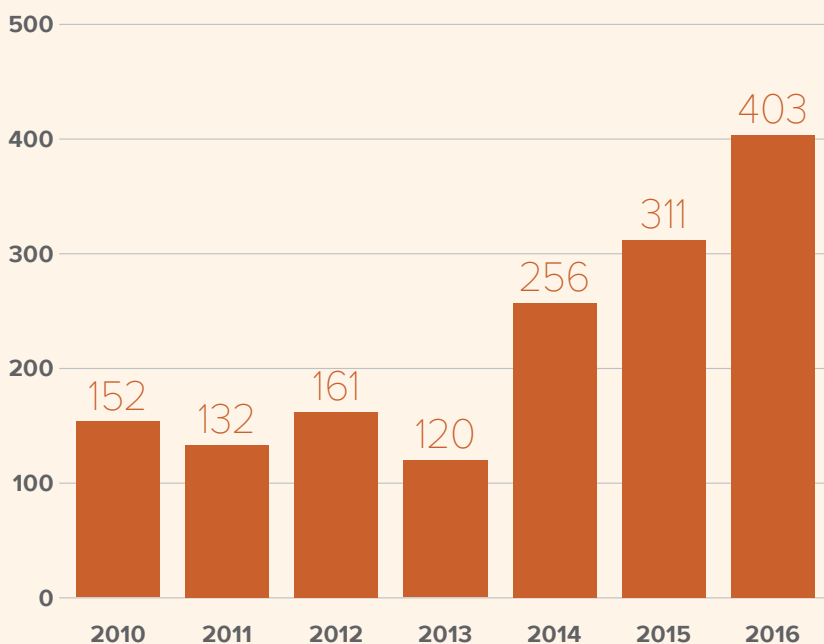
"Geisinger is now working to involve patients in every aspect of the care process — from their own care to initiatives in healthcare research and quality improvement," Dr. Davis continues. "It's hard to change a tiger's stripes, but we're making progress."

During the symposium, Geisinger's leadership, physicians and researchers discussed the overall vision for a patient-centered, patient-engaged organization, and the myriad of ways in which patients and their families and, indeed, the community at large will be involved in their healthcare and research moving forward. Presenters also discussed the challenges of growing and maturing as a learning healthcare system.

"Our size and geographic footprint are one of our greatest challenges in this regard," says Dr. Davis. "We are continually grappling with how to push patient engagement know-how out to all of our providers and investigators in the system.

"Another challenge is figuring out how to empower patients to function within this new model," he continues. "Healthcare has traditionally been a one-sided engagement, with the physician telling the patient what to do. Patients aren't necessarily used to providing feedback or sharing ideas with their healthcare providers. We're looking at training and other strategies for engaging patients in this process."

Guests had the chance to test-drive this new engagement model during workshops offered on the second day of the symposium. Through these activities, community members had the opportunity to provide facilitators with valuable feedback on a host of topics, including communication, patient engagement and the overall healthcare experience.



Research publications grow over past six years

Since David Ledbetter, PhD, assumed the role of chief scientific officer in 2010, the amount of work published by Research has increased by 62 percent. Other growth areas include research faculty, active research projects, and an overall focus on research collaborations between providers, researchers and outside industry focused on improving the quality and efficiency of the care we provide to patients.



Training the next generation of Geisinger researchers

Not every aspiring healthcare provider knows how to do research. This is where Sharon Larson, PhD, acting chair of the Department of Epidemiology and Health Services Research at Geisinger, and her colleagues come in.

Each summer, undergraduate students with a strong background in the sciences are encouraged to participate in the Geisinger Clinic Summer Undergraduate Research Institute (SURI). Through this program, participants have the opportunity to conduct research under the mentorship of Geisinger's nationally and internationally recognized scientists.

"Students do everything, including develop focus groups, write and analyze surveys and write up reports on the project," says Dr. Larson. "We want to provide students with real research opportunities, because someday they may want to come back to Geisinger and do it on a permanent basis."

SURI participants may also take part in the Susquehanna Valley Undergraduate Research Symposium, held this year at Bloomsburg University of Pennsylvania.

"We had six of our SURI students show their projects at this year's symposium," Dr. Larson shares. "This event is in its sixth year and drew nearly 100 students from Geisinger and Susquehanna, Bucknell and Bloomsburg universities."

Understanding and addressing provider knowledge gaps

It's virtually impossible for any doctor to stay completely up to date with the latest medical advances. This is particularly true for primary care physicians who are expected to maintain a reasonable clinical understanding for hundreds of varied conditions.

Researchers at Geisinger are now working to understand why these knowledge gaps exist and develop ways to help providers overcome them. In particular, they are looking at gaps related to palliative care, breast cancer prevention and medication nonadherence among diabetics.

"In each of these areas, there is distinct information that needs to be passed through the physician to the patient," says Dr. Larson. "We need to figure out the best way to make this happen."

Specifically, these knowledge gaps include limited understanding for:

- Breast cancer risk assessments and preventive medications
- Palliative care (including who should receive it and when)
- Underlying reasons for medication nonadherence among diabetics

"In some of these cases the provider isn't aware of the intervention," Dr. Larson says. "More often, though, the providers tell us that they don't understand the intervention well enough, so they're not bringing it up. This is a very fixable issue, in my mind."

Projects fell into one of four categories: social sciences and humanities, biological science, clinical and translational, and natural science and engineering. Many of the projects had application at the community level.

"We've had such success with the Susquehanna Valley Symposium that our SURI participants were invited to participate in an undergraduate research symposium in Indiana," Dr. Larson adds. "That will be a really nice honor for these young researchers."

A board of directors committed to caring

Fostering a culture of caring requires buy-in from all levels of the organization. At Geisinger, we are fortunate to have a board of directors that not only embraces our purpose and values, but also shares our vision for the future.

We are grateful for the leadership and oversight that these 25 individuals bring to the table, and we thank them for their time, wisdom and support.

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John Bravman, PhD
Geisinger Health Board Chairman

Geisinger/Bucknell partnership strengthens

In December 2016, the Geisinger Health Board of Directors elected Bucknell University President John Bravman as board chairman. He succeeds William Alexander, who served as board chair from 2011 to 2016.

Dr. Bravman's election to board chair underscores an already-robust partnership between Geisinger and Bucknell that includes numerous collaborations between doctors, researchers and students, spanning departments and academic disciplines at both institutions. One example is the Geisinger-Bucknell Autism & Developmental Medicine Institute. The Lewisburg-based research and treatment facility represents a unique partnership between an undergraduate institution and a major health system. Geisinger and Bucknell also have a history of being represented on each other's boards. Geisinger President and CEO David Feinberg, MD, was recently elected to Bucknell's board of trustees, and Dr. Bravman has served as a member of Geisinger's board since 2012. Both positions are uncompensated.

Heather Acker of Gentex Corporation is elected board vice chair



Heather Acker, MBA
Geisinger Health Board Vice Chair

Gentex Corporation Executive Vice President and Chief Financial Officer Heather Acker, MBA, has been elected vice chair of the Geisinger Health Board of Directors.

A board member since 2013, Ms. Acker also serves as vice chair of the Audit and Compliance Committee as well as a member of the Finance, Geisinger Family and Emergency Action committees. Additionally, she is a member of the Geisinger Health Plan, Geisinger Indemnity Insurance Company and Geisinger Quality Options boards of directors.

Ms. Acker has been chief financial officer at Gentex for 20 years and executive vice president since 2010, responsible for all financial and administrative activities. A graduate of Bucknell University, she earned a master's degree in business administration with distinction from the Wharton School of Business at the University of Pennsylvania.

Geisinger honors retiring 2016 directors

Geisinger Health System recently honored four long-standing members of the Geisinger Health 2016 Board of Directors for their many years of distinguished service.

- Frank M. Henry – 30 years of service (completed in September 2016)
- William H. Alexander – 18 years of service (completed in December 2016)
- E. Allen Deaver – 18 years of service (completed in December 2016)
- Richard A. Grafmyre – 9 years of service (completed in December 2016)



William Alexander receives a poster recognizing his Geisinger service from David Feinberg, MD.



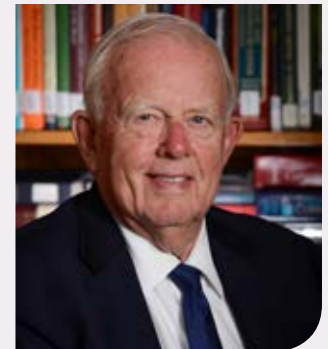
William H. Alexander



E. Allen Deaver



Richard A. Grafmyre



Frank M. Henry

New approach yields big results for health plan

Achieving positive healthcare outcomes in patients with special needs often requires organizations to rethink their strategy. This is just the situation in which Geisinger Health Plan (GHP) found itself and the clinical enterprise over the last two to three years.

Facing poorly coordinated care and significant gaps in care, the health plan, along with focused teams on the clinical

delivery side, decided to change its care management approach for three distinct, high-risk Medicaid patient populations:

- Young children with complex needs
- Patients who are high Emergency Department (ED) users
- Young adults transitioning to adult care

These groups account for between 8 and 10 percent of GHP's Medicaid population.

As part of this new approach, licensed social workers and community health associates were added to round out GHP's multidisciplinary care team. The health plan also emphasized better integration between these providers and Geisinger's pharmacy team.

The results of these seemingly simple changes were astounding, as witnessed below:

Young children with complex needs

Patients in the Emergency Department

Young adults transitioning to adult care

| Strategy | Strategy | Strategy |
|---|---|---|
| <ul style="list-style-type: none"> • Deploy RN case managers on site to Geisinger Janet Weis Children's Hospital to meet patients/caregivers, plan for home care needs and support educational training • Implement home visits with care management and/or community health assistants to assure safe transitions, help problem-solve and develop action plans | <ul style="list-style-type: none"> • Deploy two RN case managers to Geisinger Wyoming Valley Medical Center and Geisinger Community Medical Center to work in collaboration with hospitals' case managers • Implement an alert notification based on targeted symptoms; coordinate services with emergency physicians, the primary care provider and ambulatory case manager; assure exacerbation plan is in place; perform the handoff to on-call or outpatient case manager | <ul style="list-style-type: none"> • Provide patient and family with dedicated care team composed of general medicine physician, embedded RN case manager and part-time pharmacist • Joint physician and case manager visits in clinic • Frequent phone follow-up with family in between office visits |
| Results | Results | Results |
| <ul style="list-style-type: none"> • 22 percent reduction in hospital admissions • 36 percent reduction in 30-day readmissions • \$5 per member per month reduction | <ul style="list-style-type: none"> • 244 admissions avoided over approximately 18 months <ul style="list-style-type: none"> ◦ 40 percent coordinated direct SNF/rehab services ◦ 30 percent returned home with outpatient case manager follow-up ◦ 20 percent coordinated care with hospice | <ul style="list-style-type: none"> • 78 percent reduction in hospital admissions • 60 percent reduction in Emergency Department visits • 28 percent reduction in total cost of care |

Embedded quality liaisons pave way for compliance

Of Geisinger Health Plan's more than 500,000 covered lives, approximately one-half of them are noncompliant for at least one preventive service. This is the challenge that GHP's Quality and Innovations Department faces annually.

"When you look at the number of members that we need to outreach, and then consider available resources, the task of getting all of these people in for screenings, immunizations, well visits, etc., is daunting," says Yvonne Krashkevich, director of GHP's Quality and Innovations Department. The ultimate goal is to identify and remove the obstacles that stand in the way of the member completing needed services.

One approach that the health plan is using with great success is embedded quality liaisons. "Through this program, a number of our staff spend a few days per week at select large and small panel provider sites throughout the service regions," says Ms. Krashkevich. "Their main focus is to identify and assist with member care gaps. These liaisons work with the providers and staff to help get members scheduled for the necessary preventive care.

"At the end of the day," adds Ms. Krashkevich, "It's all about improving the member's experience and health outcomes."



After the Mammoth, GHP employees presented a check for \$4,610 to the American Cancer Society, representing the 461 women who received the potentially lifesaving screening, thanks to their outreach.

Mammoth raises money and member scheduling

Geisinger Health Plan's (GHP's) first-ever "Mammoth" landed two blows in the fight against breast cancer in April 2016. Nearly 200 GHP employees called over 4,500 members who were overdue for mammograms and helped schedule their appointments. And for each woman who set up her mammogram during the four-day Mammoth, GHP donated \$10 to the American Cancer Society.

There's no place like home

Lisa and Paul Robbins were just a few days into their vacation when the unthinkable happened.

"We were traveling through Florida on our motorcycle when we were hit by a car," recalls Lisa, a 13-year Geisinger employee. "I suffered a concussion and severe leg abrasions, but Paul's leg was severed. He had to be flown to the local hospital."

The care that she and Paul received at that local facility didn't look remotely like what Lisa had witnessed working

on the floors of Geisinger Medical Center. "It felt like no one could be bothered," she said.

Fortunately, a coworker from Environmental Services called Lisa to see how her vacation was going and learned firsthand about the accident. This set some very impressive wheels in motion.

"The next thing I know, plans are being made to fly us back to Danville," she says. "What's more, Steven Youso, president of Geisinger Health Plan, called me several times while I was in Florida to make sure I was okay," Lisa adds. "I felt like I was part of a great huge family."



Lisa and Paul Robbins

Technology increases access to specialty care

Improving communication between Geisinger's primary care physicians and specialists is an ever-present challenge, given that more than 250,000 communications occur each year between the two groups. Amidst such a high volume of communication, patients may be sent for unneeded consultations or not be seen quickly by a specialist.

Enter Ask-A-Doc, a telemedicine service designed to improve access, care handoffs and provider relations. More than half of all Geisinger primary care

providers use this tool, which allows them to query a Geisinger specialist through a web-based form in the electronic health record system known as Epic.

Physicians from 10 medical specialties and 4 surgical specialties receive the questions. Questions are answered simply, quickly and reliably within three days — in fact, most are addressed the same day.

Ask-A-Doc allows specialists to easily review the patient's case and speak to the primary care physician on the phone.

Beginning in 2017, some specialties will be able to receive patient images from the primary care provider.

"Since the program's inception in January 2014, more than 5,600 questions have been fully reconciled, leaving no important question unanswered," says Eric D. Newman, MD, vice chair for Clinical Innovations and chief of Specialty Care Innovation & Integration at Geisinger. "The tool has improved access to specialty care by more than 16 percent, saving numerous patients copays, travel costs and valuable time waiting to see a Geisinger specialist."

Ask-A-Doc has been so successful that it has expanded to include the inpatient setting and an outpatient Inform-A-Doc component.

In the inpatient setting, hospitalists and seven medical specialties will test Ask-A-Doc as an alternative to a traditional inpatient consult. The program is being piloted at Geisinger Bloomsburg Hospital and Geisinger Shamokin Area Community Hospital, a campus of Geisinger Medical Center.

In the outpatient setting, Inform-A-Doc allows specialists to communicate with the primary care physician who consulted with them. The primary care physician receives and attests to the specialist's care plan, ensuring consistency and smooth patient handoffs.

According to Dr. Newman, the Ask-A-Doc and Inform-A-Doc programs allow Geisinger specialists to improve the care of populations with more severe disease, increase access to care through outpatient telemedicine, improve provider relations and provide the right specialty care at the right time.

Eric D. Newman, MD, vice chair of Clinical Innovations and chief of Specialty Care Innovation & Integration





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Executive Vice President
Chief Medical Officer



David Tilton, MBA
Executive Vice President
Chief Integration Officer



Dominic Moffa, MBA
Executive Vice President
Chief Strategy Officer

Leadership team expands

Three seasoned healthcare executives recently joined Geisinger’s executive leadership team. Jaewon Ryu, MD, was appointed executive vice president and chief medical officer. David Tilton, MBA, was named executive vice president and chief integration officer. Dominic Moffa, MBA, was appointed executive vice president and chief strategy officer. The trio joins existing members Albert Bothe, MD, chief quality officer; Lynn Miller, MBA, executive vice president of clinical operations; David Ledbetter, PhD, executive vice president and chief scientific officer; Kevin Brennan, CPA, chief financial officer; Steven R. Youso, president and chief executive officer of Geisinger Health Plan, Geisinger Indemnity Insurance Company and Geisinger Choice, collectively referred to as Geisinger Health Plans; Susan M. Robel, RN, executive vice president, system chief nursing officer and system chief patient experience officer; and Amy Brayford, executive vice president and chief human resource officer.

Delivering quality, coordinated care to Medicare patients

Keystone Accountable Care Organization (ACO) was recognized in 2016 by the Centers for Medicare & Medicaid Services with a score of 94 percent for the quality of care that it delivers to Medicare patients. This is a 6 percent increase over the prior year.

The Keystone ACO is composed of 10 hospitals and 7 physician practices in central and northeast Pennsylvania. These members provide quality coordinated care that helps Medicare beneficiaries with chronic illnesses lead healthier lives and navigate between healthcare providers and facilities. A care coordinator — typically a registered nurse — works closely with primary care doctors to help ensure that Keystone ACO patients get the education, screenings and follow-up care that they need to maintain their health.

Lori Herndon named president and CEO of AtlantiCare

Lori Herndon, RN, assumed her duties as president and CEO of AtlantiCare, A Member of Geisinger Health System, on July 1. She succeeded David Tilton, who joined Geisinger’s corporate leadership team. Ms. Herndon also became an executive vice president for Geisinger Health System.

“Every patient we touch — everything we do at AtlantiCare — takes a team effort,” said Ms. Herndon. “I’m privileged to lead such a dedicated and committed team of people.”

Prior to her current role, she served as executive vice president of AtlantiCare and as president and CEO of AtlantiCare Regional Medical Center since 2011.



Lori Herndon, RN
President and Chief Executive Officer, AtlantiCare
Executive Vice President, Geisinger Health System

AtlantiCare urgent care centers update

AtlantiCare, A Member of Geisinger Health System, celebrated the launch of its newest urgent care center in early 2016 with a grand opening reception and a ribbon-cutting. AtlantiCare Urgent Care Center Clementon, at 1310 Blackwood Clementon Road in Clementon, N.J., also opened at that time. AtlantiCare's 10 urgent care centers serve communities' needs for urgent care in 5 counties of southern New Jersey. AtlantiCare plans to open five more urgent care centers by the end of 2017, including in Rio Grande in Cape May County; in Manahawkin and Barnegat in Ocean County; and in Marlton and Mount Holly in Burlington County.

"AtlantiCare has been a leader in the state in opening urgent care centers,"

said Jatin Motiwal, vice president of AtlantiCare Physician Group. "We do so as we work to improve access to care. We believe our urgent care team plays a tremendous role in helping us build healthy communities."

AtlantiCare opened its flagship urgent care center in Egg Harbor Township in 2002 in its first health park. The Clementon site is its third in Camden County. Other locations are Berlin and Sicklerville in Camden County; Galloway, Hammonton and Somers Point in Atlantic County; Marmora in Cape May County; Mount Laurel in Burlington County; and Little Egg Harbor in Ocean County.

AtlantiCare's urgent care teams have treated patients ranging in age from 12 days to 101 years, one of whom

hailed from as far away as Hille, Germany. In 2003, its first full year of operations, AtlantiCare urgent care had approximately 8,100 patient visits. AtlantiCare anticipates having more than 130,000 patient visits across its sites in 2016.

"Our urgent care team plays a tremendous role in helping us build healthy communities."

*– Jatin Motiwal
Vice President
AtlantiCare Physician Group*

The AtlantiCare Urgent Care Clementon team members include (left to right): Lisa McColgan, RN, nurse director, Sara Muff, X-ray technician, Michael Leff, RN, Jay Morros, MD, Karen Kramer, RN, and Glenn Merewitz, MD.





Catherine Foster, RN, is shown with pharmacist Susan Quinn.

When troubleshooting goes right

As a medical nurse auditor, Catherine M. Foster, RN, is no stranger to medical equipment. But when her new glucose monitor was giving her trouble, she turned to AtlantiCare’s Galloway pharmacy, which serves staff and Special Care Center patients.

Ms. Foster was warmly greeted by Susan Quinn, the pharmacist on staff that day. The two worked together to troubleshoot the glucose monitor to no avail. Every step of the way, Susan focused all her attention on Ms. Foster, reassuring her they would find a solution.

And that’s exactly what they did.

With Ms. Foster standing by, Susan reached out to the monitor’s manufacturer and resolved the issue over the phone. Then she went above and beyond by asking the company to send Ms. Foster extra test strips, at no cost to her, to replace the strips they had used during their troubleshooting. The company agreed.

Ms. Foster left the pharmacy in better control of her new glucose monitor and her health. Just as importantly, she left encouraged by Susan’s compassionate communication, integrity and respect.



Kyle Snyder, chief administrative officer at Geisinger Holy Spirit

Changes for Geisinger Holy Spirit under new leadership

Geisinger Holy Spirit, in Camp Hill, Pa., welcomed Kyle Snyder as its new chief administrative officer in 2016.

Previously, Mr. Snyder served as the hospital’s vice president of operations and integration.

In his new role, Mr. Snyder has made some significant facility changes at Holy Spirit. Major updates include renovations to the Emergency Department that preceded Holy Spirit’s upgrade to a Level II trauma center.

A two-story addition with a rooftop helipad was added to the John R. Dietz Emergency Center, and several treatment rooms, including a dedicated

behavioral health treatment area, were added to the department.

“We are proud to be designated a Level II trauma center,” Mr. Snyder says. “These upgrades help us save critical minutes for area patients suffering from severe, life-threatening injuries.”

Holy Spirit also launched Zocdoc last year. This technology provides real-time online appointment booking and verified physician reviews for a select group of Holy Spirit physicians and advanced practitioners in cardiology, endocrinology, general surgery, neurology, neurosurgery, OB/GYN, pediatrics, plastic surgery, urogynecology and vascular surgery.

Through this partnership with Zocdoc, patients can find and schedule appointments with participating Holy

Spirit doctors any time of day, even when the office is closed. In fact, 40 percent of appointments scheduled via Zocdoc are booked outside of typical business hours.





Peter Glinatsis reunites with Lisa Hassinger, RN, one of the nurses who cared for him during his stay at the Janet Weis Children's Hospital at Geisinger Holy Spirit.

Peter and the pediatric unit: A success story

Eleven-year-old Peter Glinatsis didn't know what to expect when he was admitted last year to the new pediatric inpatient unit at Geisinger Holy Spirit. He had developed a rare skin infection related to a broken arm and needed strong antibiotics, regular wound care and treatment from infectious diseases specialists.

"The doctors and nurses answered my questions and helped me when I didn't know what was going on," the Mechanicsburg seventh-grader says. "Everyone was really nice."

The staff even made Peter's younger siblings, Anthony and Litsa, feel included by having them cut bandages or apply cream to their brother's arm. This compassionate care was just as meaningful to Peter's father, Mike, as it was to his son.

"I honestly wouldn't have chosen to be anywhere else," Mike says. "To this day, when we drive by, Peter asks, 'Can we go to the hospital so I can see how everybody is doing?' It's rare to find a

child who felt so cared for that he wants to go back when he isn't hurt."

Peter is just one of many children who have benefited from Holy Spirit's expansion of its pediatric services.

When the hospital became a Geisinger affiliate in 2014, it lacked a dedicated unit for hospitalizing children from infants to age 18.

The new Janet Weis Children's Hospital at Holy Spirit opened after a year of planning, which included designing the inpatient unit, hiring nurses and pediatric hospitalists and renovating a section of the adult inpatient floor to focus just on kids.

Today, pediatric care includes inpatient and outpatient pediatric services and rehabilitation provided by physicians from Holy Spirit and Danville's Geisinger Medical Center.

"This is part of the wider plan to serve the community," explains Michael E. Ryan, DO, chairman of Geisinger Janet Weis Children's Hospital. "Now that we've gotten into the area and have had a chance to look around, we've seen ways we can help Holy Spirit meet the needs of local families."

When caring goes the extra mile

As a newcomer to nursing, Sherry Romanoskie, RN, was nervous when she was told she would be treating a patient who had fallen while hiking, sustaining substantial injuries and possible paralysis.

Little did she know when she entered Keith Shetter's room at Geisinger Medical Center's Hospital for Advanced Medicine that her new patient would impact her outlook on her profession, her health and her whole life.

"When I placed my hand in Keith's hand and introduced myself, I sensed a special kind of energy," Ms. Romanoskie says. "Amid such a tragic scenario, Keith and his wife, Dori, greeted me with smiles and displayed a faith-filled attitude."

Formerly an active athlete and outdoorsman, Mr. Shetter's positivity was challenged by the sudden physical and emotional changes he had endured. Over the next few days, Ms. Romanoskie and Mr. Shetter traded stories of training for endurance events — both had trained for and completed marathons.

That gave Ms. Romanoskie an idea.

"I was planning a long training run with a fellow nurse the next day," she says. "We decided to surprise Keith by dedicating our run to him and holding a banner for him to see below his window when we finished."

That's exactly what they did.

Ms. Romanoskie and her coworker, Heather Lechleitner, RN, ended their 19-mile run below Keith's window, only to find that Keith's medical team had arranged for him to leave his room and meet them outside. It was a relatively short journey, but one that had taken him months of treatment to complete.

"Heather and I were overjoyed to see Keith doing well enough to make it outside and enjoy the sunshine and our

surprise greeting," she says. "Keith and his wife said they felt warm, loved and cared for: mission accomplished!"

Later that year, Ms. Romanoskie and Ms. Lechleitner completed the Steamtown marathon together. It was Ms. Romanoskie's 50th marathon, but her first as an RN, so the two decided to once again dedicate their run to Keith.

"We called him after the marathon to remind him that he finished the marathon with us," she recalls. "Though he couldn't run it himself, Keith inspired us, like so many others have, with his strength. Now I use his story and his rehabilitation to inspire others — and myself — to keep the spirit of hope and strength alive, even if physical strength remains a challenge."



Sherry Romanoskie, RN, and Heather Lechleitner, RN

Woodbine facility brings convenient care to community

Making patients more comfortable and providing easier access to high-level health services is Geisinger's goal at facilities throughout the state.

This is especially evident at the Geisinger Woodbine Lane Outpatient Center, a service of Geisinger Medical Center (GMC), which expanded this year to 135,000 square feet and will house many services, including ophthalmology and optometry, when the entire facility is operational in early to mid-2017. Twelve services are already in place at the facility.

"Many of the services that patients once had to travel to Geisinger Medical Center for are now housed at Geisinger Woodbine Outpatient Clinic," says Tom Sokola, chief administrative officer for GMC at Geisinger Medical Center. "This reduces some of the hospital's traffic and makes visits to both facilities more convenient for our patients and their families."

Mr. Sokola says that the expansion at Woodbine Lane represents an approach

that Geisinger is taking across the health system to make it easier and more convenient for patients to access their doctors.

The Woodbine Lane location offers plenty of surface parking and a new 325-space garage. Most patients will be able to get in and out faster than if they had to go to the main hospital in Danville for all their appointments. The Woodbine location itself has also been upgraded, along with the surrounding roads and intersections.

Perhaps just as important, the Woodbine Lane expansion project has freed up space for inpatient and outpatient services at GMC.

"There are plans to rearrange and renovate facilities within the hospital complex, including a new tower, medical office building and parking garage," Mr. Sokola says. "Our patients and visitors will be able to more easily access the acute care services that remain in the main hospital."

"Many of the services that patients once had to travel to Geisinger Medical Center for are now housed at Geisinger Woodbine Outpatient Clinic. This reduces some of the hospital's traffic and makes visits to both facilities more convenient for our patients and their families."

*– Tom Sokola
Chief Administrative Officer
Geisinger Medical Center*

Spencer Onishi, DO, an ophthalmology resident, examines a patient.



Bloomsburg OB/GYN Department grows with the times

Families welcoming a new child at Geisinger Bloomsburg Hospital (GBH) benefit from numerous updates to the technology, staff and the maternity space itself.

Construction is in progress on eight postpartum rooms and a nursery. The OB/GYN Department's labor and delivery rooms will also be upgraded to offer families plenty of comfort and space.

"We strive to provide a warm and homelike environment that lets the entire family be together in one room to celebrate a birth," says Lissa Bryan-Smith, chief administrative officer for GBH. "Our goal is to have babies spend 23 hours a day in the same room as their mother and to encourage family members to spend time there to help the family bond."

In addition to the physical upgrades, new parents now benefit from a host of postpartum education opportunities offered in the maternity department.

Tablets in each patient room provide timely education about postpartum care for moms and babies. The department also offers live, in-person support on breastfeeding, detailed discharge care and instructions and a car seat safety check.

Recent staffing updates are helping to better meet the needs of expecting mothers and families at GBH.

"For the 400 deliveries we facilitate each year, we're proud to offer three OB/GYN doctors and a dedicated, experienced support staff of nurses," Ms. Bryan-Smith says. "And we have six licensed midwives on staff, as more and more families turn to these professionals for labor and delivery."

Food as medicine brings novel treatment to diabetic patients in Shamokin

In a world where fast food is often cheaper than fruits and vegetables, lower-income patients with chronic illnesses often struggle to eat healthfully without breaking the bank.

In fact, 20 percent of Shamokin residents live below the poverty line, and more than 14 percent of families are described as "food insecure" because they lack reliable access to affordable, nutritious food. Further compounding the problem is that this area is above regional, state and national averages for diabetes, with 12 percent of Shamokin adults officially diagnosed with diabetes and another 41 percent at risk.

Now, Geisinger is studying a new way to help. The Geisinger Fresh Food Pharmacy is a three-month pilot program being offered to a handful of select

diabetic patients at Geisinger Shamokin Area Community Hospital (GSACH), a campus of Geisinger Medical Center.

Through this innovative "food as medicine" program, Geisinger doctors prescribe a specific, healthy diet as a standard component of diabetes treatment. The Fresh Food Pharmacy gives patients the foods that will boost their health while teaching them about healthy eating habits, through an affiliation with Pennsylvania-based Weis Markets.

The "prescription" includes five dinners' worth of healthy groceries and consultations with a Geisinger dietitian, who creates a plan of simple, healthful recipes and provides helpful tools, such as measuring cups and a portion plate. Patients must also attend a six-week class on managing their diabetes, have their blood sugar checked regularly and pick up the food at GSACH in person.

After the pilot is finished and its effectiveness assessed, Geisinger hopes to roll out the Fresh Food Pharmacy program to another 188 Shamokin participants through a partnership with



The Fresh Food Pharmacy program focuses on eating well to boost health.

the Central Pennsylvania Food bank in Harrisburg, which will provide the groceries. The installation of a food bank at GSACH, where groceries will be stocked, is in the planning stages.



The Geisinger Lewistown Hospital's newly renovated Emergency Department improves patient privacy.

Renovations improve flow and alleviate stress

When it comes to changes made this year to Geisinger Lewistown Hospital's Imaging and Emergency departments, it's all about flow.

Previously, patients who came to the Emergency Department (ED) via ambulance were brought in through double doors near the registration desk. Then they were taken past a waiting-room door before entering the treatment area. This not only compromised the patient's privacy but also made the experience more stressful for other patients and families waiting to be seen.

The Imaging Department's registration desk was located across the hall from the rest of the department and next to a set of doors leading to the ED's patient treatment area. This caused the imaging registration line to sometimes block the doors to the emergency treatment rooms, creating congestion and privacy concerns.

This is no longer the case, thanks to a much-needed reconfiguration of the ED.

ED patients now come in an entrance that is already in the emergency room, which means they're no longer being paraded past the waiting room. The inpatients' Imaging Department entrance is now separate from the ED, easing the congestion in shared hallways.

Structural updates also included the addition of a bariatric treatment room, a new isolation room, larger patient rooms with more standardized supplies and a reconfiguration of the ED registration and waiting areas.



Ronald Beer, MHA
Chief Administrative Officer
Geisinger Northeast



Anthony Aquilina, DO
Regional President
Geisinger Northeast

New leadership at Geisinger Northeast

Anthony Aquilina, DO, has been promoted to regional president for Geisinger Northeast, which includes Geisinger Community Medical Center (GCMC), Geisinger Marworth Treatment Center, Geisinger Wyoming Valley Medical Center (GWV), Geisinger South Wilkes-Barre* (GSWB) and regional Geisinger hospital-based outpatient services.

A board-certified family practitioner and geriatrician, he joined Geisinger in 1993 practicing primary care medicine and has served as chief medical officer at GCMC; associate chief medical officer for Geisinger Northeast; medical director for health services, quality and performance at Geisinger Health Plan (GHP); and GHP regional medical director.

Ronald Beer, MHA, has been promoted to chief administrative officer for Geisinger Northeast. He joined Geisinger in 2013 as vice president of operations at GWV and was promoted to GWV and GSWB as chief administrative officer in 2014. Before joining Geisinger, he held executive leadership positions in healthcare organizations and served as a U.S. Army officer in the Medical Service Corps.

Dr. Aquilina and Mr. Beer will be responsible for coordinating resources, developing new programs and expanding service access within Lackawanna and Luzerne counties and surrounding regions.

**a campus of Geisinger Wyoming Valley Medical Center*

A voice in the community

It's been three years since Geisinger cardiac and thoracic surgeon Alfred Casale, MD, was asked to write his first "To Your Health" column. Since then, he has submitted upward of 150 articles for the Times Leader, a daily paper covering northeast Pennsylvania.

Dr. Casale's use of plain, direct language and real-life relatable stories have resonated with his audience and earned him a dedicated following in the community.

"My wife can't go to Wegman's without someone mentioning my latest article," he laughs. "I often talk about my daughter and granddaughter in these pieces, so people will ask after them by name: 'Why haven't you talked about Kate or Rowan lately?'"

What Dr. Casale doesn't talk about is Geisinger. "I don't want this to be a pulpit for Geisinger's services," he says. "People know me and know where I work. I think that readers like the fact that this isn't a marketing platform."

Over the years, Dr. Casale has used his column to educate readers about different diseases, extol the virtues of diet and exercise and rail against smoking and drunk driving. He's also used the column as an outlet for personal reflection.

One of his favorite — and most popular columns — talked about his dad's battle with lung cancer. Another focused on the day he became a grandfather.

"I used to struggle with these a bit and admittedly didn't realize how tough it would be to churn out 600 words a week," Dr. Casale

concedes. "But now that I've developed a formula for how they flow, I am actually having some fun."

Alfred Casale, MD, associate chief medical officer, chairman of cardiothoracic surgery and co-director of the Geisinger Heart & Vascular Institute





Scranton: Springboard for a healthier America

Springboard Healthy Scranton, introduced by David Feinberg, MD, during a November 2016 meeting with Scranton area businesses, nonprofits and academic leaders, is focused on coordinating the resources of community nonprofits with an international network of “social entrepreneurs” to eliminate hunger and preventable chronic disease, tackle issues like drug overdose-related deaths and eliminate preventable cancer and disease through genomic medicine.

Once developed, tested and implemented, projects will be optimized in order to create the most cost-effective and sustainable solutions to issues affecting a community’s health. And, once proven, they will be replicated in order to be shared both nationally and globally.

The goal? Healthier families. Stronger neighborhoods. Resilient communities.

“We want to use data to make sure Scranton is the healthiest place to be in the country,” said Dr. Feinberg. “And, then when we get it right, we’ll take it on the road to other places.”

Geisinger picked Scranton because it was the perfect test environment:

- Scranton is an optimal size — its 76,000 residents allow Geisinger to effectively test programs across an entire community.

- The city has a robust and collegial network of nonprofit organizations, such as the United Neighborhood Centers and the Moses Taylor Foundation
- Geisinger Commonwealth School of Medicine and the Wright Center for Graduate Medical Education, both located in Scranton, provide many hands to propel the project.

One of the unique aspects of the program is that it is designed to drive and promote changes in the community, such as improving access to fresh foods by increasing the number of grocery stores and providing transportation for shopping.

In addition, Geisinger will leverage its expertise in precision medicine to provide DNA sequencing to approximately 25,000 people in the Scranton area. These individuals will get information about any genetic propensities for serious conditions they may be genetically predisposed to, but might not be aware of, such as cancer and heart disease. Clinicians can then provide increased surveillance and prevention as well as early diagnosis and intervention, in the hope of significantly affecting health in the community over multiple generations.

Geisinger will use this information to provide population health scientists, clinicians, business owners, policy-makers, politicians and others with a comprehensive view of all dimensions of the community’s health.

GCMC renovations emphasize patient care, comfort and convenience

Though much of the construction on Geisinger Community Medical Center's (GCMC's) new five-story facility was completed last year, updates and renovations continued into 2016 to support new programs and services.

For example, the Post-Anesthesia Care Unit (PACU) was opened earlier this year to care for patients after surgery. Combining two existing PACUs into one brand-new facility allowed for improvements that advanced the use of technology and increased patient privacy and comfort.

In late April, GCMC also opened an interventional radiology suite, which allows doctors to conduct procedures while a patient undergoes

imaging studies. In this new suite, interventional radiologists can open blocked arteries and veins, perform biopsies and treat conditions like cancer and liver disease.


State-of-the-art imaging equipment offers more precise imaging for better diagnoses and more focused treatment. In many cases, patients treated with minimally invasive interventional radiology techniques are able to return home the same day.

Visitor comfort was also taken into consideration for easier physical access into commonly used areas of the hospital. A new, completely enclosed "sky bridge" connects the

free parking garage with the hospital, making entering and exiting the hospital easy, fast and comfortable in any weather.

"What is important to our patients is what is important to us as healthcare providers," said Anthony Aquilina, DO, regional president of Geisinger Northeast. "Our primary goal is, of course, to heal, but we also want patients to have a great experience during every interaction with GCMC, from the OR to the labs to our patient rooms to the café in the lobby. The new technology, significantly upgraded facilities and dedicated staff at GCMC make those goals more attainable than ever."

"Our primary goal is, of course, to heal, but we also want patients to have a great experience during every interaction with GCMC, from the OR to the labs to our patient rooms to the café in the lobby."



GCMC's "sky bridge" improves the patient experience from the outset, making it much easier to get to the hospital from the parking garage.

Financial overview

Over the years, Geisinger has developed a model of care based on innovation, quality and value. Our commitment to these three areas has allowed us to become a financially strong organization — a result which helps us carry forward our not-for-profit mission of care that reinvests every dollar back into the care we provide. Below is a snapshot of how our dollars were used in fiscal year 2016.

Financial summary FY 16

Geisinger ended fiscal year 2016 with an operating income, after interest expense, of \$127.9 million, a 2.3 percent return on \$5.5 billion of revenue. The economic benefit to Pennsylvania (from direct spending and an indirect ripple effect of spending) totaled \$9.9 billion, as reported by The Hospital and Healthsystem Association of Pennsylvania.

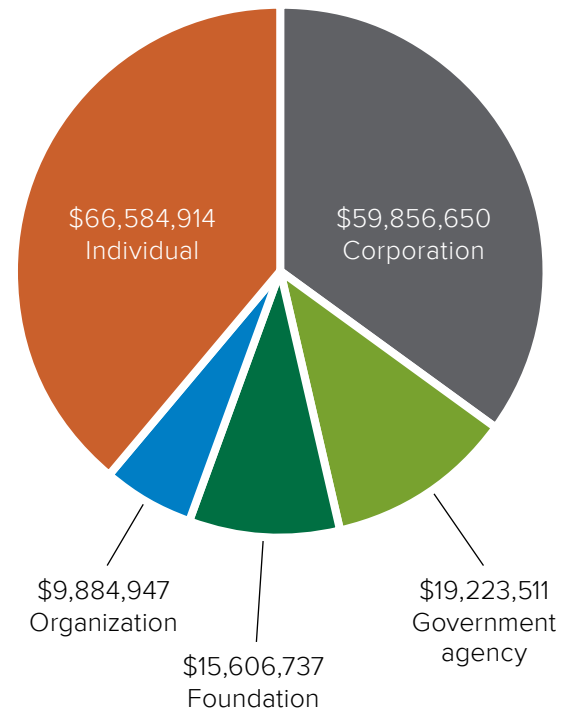
Despite the continuing challenges of a weak economy, the uncertainty of healthcare reform and ongoing reimbursement shortfalls, Geisinger provided \$580.2 million of community benefits, including uncompensated care and care provided under government programs at less than cost. Revenue grew by 21.4 percent over FY 2015, once again a remarkable achievement in the current environment and the highly regulated, competitive healthcare industry. In addition, Geisinger invested \$284.3 million in capital projects. The total economic impact to Pennsylvania and New Jersey was \$11.4 billion.

Funding by source

\$150 million goal

Total raised

\$171,156,760



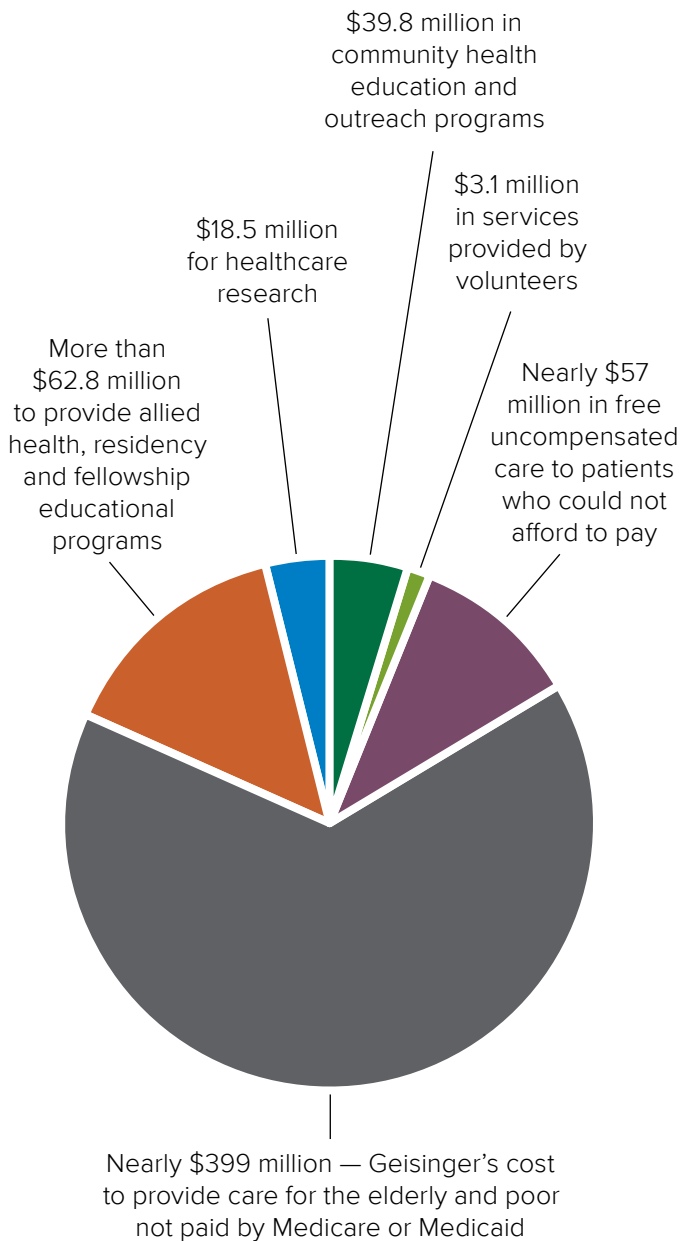
Programs and initiatives launched and expanded with philanthropic support in 2016

- Alec Ewing Healing Garden
- Autism and Developmental Medicine Institute
- Expansions to Geisinger Woodbine, Geisinger Lewistown Hospital Emergency Department and radiology renovations
- GenomeFIRST
- Henry Cancer Center at Geisinger Wyoming Valley
- KeyHIE expansion
- Multiple clinical and program expansions
- MyCode expansion
- ProvenWellness Neighborhood
- Steele Center for Innovation
- Tambur Neonatal Intensive Care Unit at Geisinger Wyoming Valley
- Treatment at Home Option
- Women's Heart Health Initiative

Geisinger community benefit at a glance (See pie chart below.)

Geisinger's nonprofit mission reaches from the shores of the Atlantic to the hills of the Alleghenies and beyond. Within these regions, Geisinger is working to meet residents' varied healthcare needs by providing charitable care, educational programs and outreach services.

FY2016, Geisinger invested \$580.2 million in community support in the form of free, uncompensated care for patients who could not afford to pay. This represents 14.6 percent of Geisinger's total operating expense and is nearly three times what is required to meet Pennsylvania's standards as a charitable mission.



Making movies accessible for the hearing-impaired



Lewisburg's historic Campus Theatre became deaf and hard-of-hearing accessible in August 2016, thanks to support from Geisinger.

Through the theatre's Open Caption series sponsored by Geisinger, each week's new release is screened at 5 p.m. every Saturday in digital Open Caption. These screenings contain content tailored for viewers with hearing disabilities who use listening devices, hearing aids, cochlear implants, sign language or lip reading.

Supplementing the film's regular sound and music, Open Caption screenings include readable text on the movie screen with descriptors of dialogue, sound effects and music, and even set design and costume.

"We are pleased to provide an opportunity for people with a hearing loss to enjoy movies that they otherwise might not attend," says Arthur Breese, director of diversity at Geisinger.

Geisinger at a glance

FY2016 statistics

Employees 29,504

Staffed beds** 2,027

Admissions

Geisinger Medical Center 28,380

Geisinger Shamokin Area
Community Hospital, a campus
of Geisinger Medical Center 1,760

Geisinger Bloomsburg Hospital 2,547

Geisinger Lewistown Hospital 4,696

Geisinger Wyoming Valley Medical Center 15,997

Geisinger Community Medical Center 12,531

Geisinger Holy Spirit Hospital 10,335

AtlantiCare Regional Medical Center,*
A Member of Geisinger Health System 21,077

Total **97,323**

Occupancy

Geisinger Medical Center 82.7%

Geisinger Shamokin Area Community Hospital 47.2%

Geisinger Bloomsburg Hospital 44.5%

Geisinger Lewistown Hospital 42.1%

Geisinger Wyoming Valley Medical Center 76.5%

Geisinger Community Medical Center 60.0%

Geisinger Holy Spirit Hospital 48.2%

AtlantiCare Regional Medical Center* 64.9%

Total **65.2%**

Length of stay

Geisinger Medical Center 5.0

Geisinger Shamokin Area Community Hospital 4.1

Geisinger Bloomsburg Hospital 3.7

Geisinger Lewistown Hospital 4.0

Geisinger Wyoming Valley Medical Center 4.4

Geisinger Community Medical Center 4.6

Geisinger Holy Spirit Hospital 4.7

AtlantiCare Regional Medical Center* 4.5

Total **4.6 days**

Outpatient visits

Geisinger Medical Center 896,780

Geisinger Shamokin Area Community Hospital 87,272

Geisinger Bloomsburg Hospital 39,115

Geisinger Lewistown Hospital 140,078

Geisinger Wyoming Valley Medical Center 769,863

Geisinger Community Medical Center 126,485

Geisinger Holy Spirit Hospital 243,418

AtlantiCare Regional Medical Center* 260,465

Total **2,563,476**

ED visits

Geisinger Medical Center 31,229

Geisinger Shamokin Area Community Hospital 20,008

Geisinger Bloomsburg Hospital 16,743

Geisinger Lewistown Hospital 26,821

Geisinger Wyoming Valley Medical Center 56,924

Geisinger Community Medical Center 45,069

Geisinger Holy Spirit Hospital 32,180

AtlantiCare Regional Medical Center* 78,823

Total **307,797**



Geisinger Community Medical Center

Surgeries

| | |
|--|---------------|
| Geisinger Medical Center | 26,014 |
| Geisinger Shamokin Area Community Hospital | 1,769 |
| Geisinger Bloomsburg Hospital | 3,007 |
| Geisinger Lewistown Hospital | 4,284 |
| Geisinger Wyoming Valley Medical Center | 12,224 |
| Geisinger Community Medical Center | 7,810 |
| Geisinger Holy Spirit Hospital | 8,982 |
| AtlantiCare Regional Medical Center* | 8,045 |
| Total | 72,135 |

Births

| | |
|--|--------------|
| Geisinger Medical Center | 1,828 |
| Geisinger Shamokin Area Community Hospital | n/a |
| Geisinger Bloomsburg Hospital | 286 |
| Geisinger Lewistown Hospital | 502 |
| Geisinger Wyoming Valley Medical Center | 1,546 |
| Geisinger Community Medical Center | n/a |
| Geisinger Holy Spirit Hospital | 1,170 |
| AtlantiCare Regional Medical Center | 1,483 |
| Total | 6,815 |

*AtlantiCare stats from 10.1.15 (acquisition date)

**Excludes nursery and skilled nursing and includes neonatal intensive care unit

Employees

Total population managed 1,273,215 (1,026,658 in 2015)

Finances

Revenue \$5.5 billion
 Capital expenditures \$284 million (\$228 million in 2015)

Life Flight®

Air transports 2,080
 Flights 2,224 (2,156 in 2015)
 Ground transports 135 ground transports

Geisinger Health Plan (GHP) membership: 551,518

Commercial 132,978
 TPA 143,415
 CHIP 10,072
 Medicaid (including Healthy PA) 175,597
 Geisinger Gold and Medicare Advantage 89,456

GHP retention rates

- Medicare members 93.5%
- Employer groups member retention 92.2%

GHP disease and case management programs

- Worked with over 60,600 members
- Completed 280,000 phone calls with members in that same group
- Closed over 260,000 care gaps

GHP employer-based programs

- Served over 40,000 in wellness intervention with employer groups
- Served another 9,000 non-GHP participants as part of our employer-based activity

GHP community events

- Held 300 community events in the last year; approximately 40 percent were school-based and 60 percent were community-based
- Worked with almost 13,000 community participants on community events
- 5,964 flu shots administered in 2015

Geisinger

Geisinger Health System

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