

“Telehealth to Digital Medicine: How 21st Century Technology Can Benefit Patients.”

Committee on Energy and Commerce *Subcommittee on Health*

May 1, 2014, 10:00 a.m. in 2123 Rayburn House Office Building, Washington, D.C. 20515

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Good Morning Chairman Pitts, Ranking Member Pallone and Distinguished Members of the House Subcommittee of Health. My name is Thomas Beeman, President and Chief Executive Officer, of Lancaster General Healthⁱ. Thank you for allowing me to represent our perspective and share how 21st century technologies can benefit patients. An integrated not-for-profit health system focused on population health, Lancaster General Health includes 690 beds with a separate Women & Babies Hospital, 40 outpatient sites, a free standing rehabilitation facility along with home care and infusion therapy. We employ over 7,100 employees, and are aligned with a medical staff of over 1,000 physicians. Additionally, we are positioned to prepare the healthcare worker of the future through the Pennsylvania College of Health Sciencesⁱⁱ, offering undergraduate and soon, graduate medical education, for over 1,600 students. The vertical integration of a comprehensive healthcare workforce, including care delivery services and training, allows us to deliver our promise of advancing the health and wellbeing of the communities we serve.

Building the Connections

Our leadership defines telehealth in a broad sense as the use of technology to connect the right people at the right time and place. We are building care capacity without building beds with our digital infrastructure. By connecting patients to providers and care teams, we enhance scalable solutions, for communications, quality, access and patient engagement across all settings of care.

Our current state of technologies includes an HIMSS Level 7ⁱⁱⁱ integrated platform that spans all care settings, extending into the home, workplace, and mobile health applications for ongoing care. We utilize Epic^{iv}, an electronic health record connecting providers with clinical evidence decision support

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tools, a patient portal and a data warehouse for reporting and analytics. Additionally, our health system participates in Healthway^v, connecting us with the national health information exchange.

We are presently leveraging innovative technologies to restructure care delivery by linking care-teams and providers with engaged patients to manage individuals and populations more effectively within and outside of traditional encounter based care. The use of digital medicine technologies expands our patients’ synchronous and asynchronous access to health information and care team decisions.

Empowering the Consumer

One third of our 300,000 managed lives are enrolled in MyLGHealth^{vi}, a patient portal that allows for ongoing patient engagement. The portal enables direct patient outreach for health reminders, electronic visits for minor illnesses, viewing of test results, secure messaging, access to electronic care plans and online scheduling and payment. The patient portal also provides access to WebMD® Health Manager, personalized to each member, allowing each person to privately assess their health, receive personalized reports and recommendations as well as use tools that are specific to their own issues and interests^{vii}.

Home monitoring allows patients to enter data such as glucose levels, blood pressures and weights into the health record as a patient level flow-sheet. We are piloting integration for fitness trackers, and advanced remote monitoring to directly collect biometric data.

Evolving Delivery Models

Our technologies empower operational leadership to develop and mature new care delivery models, demonstrated by seventeen of our primary care practices recognized as advanced Patient Centered Medical Homes^{viii} and by our capability to operate as an Accountable Care Organization, called the

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Lancaster General Health Community Care Collaborative^{ix}, to promote concurrent quality improvements, and reduce variations through evidenced based standards.

Advanced visit planning allows patients to electronically answer questionnaires for health histories prior to in-person care encounters. Availability of data across the continuum, such as recognized health conditions and socio-economic barriers to care, allow timely interventions from connected care managers.

Analytics from health technologies are fundamental for managing populations. Leveraging registries to summarize patient and practice-panel level data allow our providers to have real-time actionable data for wellness visits. Providers can identify care gaps for screening and preventive care as well as disease specific management.

National Challenges

Like many healthcare organizations, we face the same challenges with provider shortages, distribution of specialists, ability to manage patients out of state in a mobile world, and the changing behaviors of information empowered consumers. In order to address these challenges, we have, like others, leveraged technology with the following guiding principles 1) strive for providers working to the top of their licensure, 2) identify alternative, lower cost methods for care access, and 3) empower the patient in health decisions through enabling technologies.

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Managing the Highest Risk

LG Care Connections

One example, of which we are incredibly proud, is a pilot program we call LG Care Connections.

Several years ago, we learned that approximately 50% of all healthcare costs for were generated by 5%-10% of the population. Leveraging the information gleaned from data gathered from our electronic health records and billing department, we learned that at Lancaster General Health, 480 patients accounted for \$36 million charges between 2008 and 2009. With this in mind, in 2011, we launched a “Superutilizer Project” which incorporates a multidisciplinary team of a case manager, lawyer, medical care providers, pharmacists, psychologist and social worker to manage a group of 30 patients.

Since 2011, we have expanded this program to over 100 LG Care Connection patients, and our latest results show that inpatient visits for this group decreased by 67%, inpatient days in the hospital decreased by 84% and emergency room visits decreased by 26%. Limited available cost data reveals after enrollment per-member per-month (PMPM) spend decreases from \$3489 PMPM to \$2819 PMPM.

While this level of success requires great care and great effort on the part of the multidisciplinary care team, the foundation upon which the program is built is telehealth. We use technology to keep our providers linked with patients between visits. When the navigators are in the homes with the patients, they are using Microsoft Lync^x to have a visual ‘connection’ with the provider in the office to allow for telephonic communications, instant messaging, video conferencing and training. Workforce safety is enhanced with the use of Find My Friends^{xi} mobile app for identifying exact locations of our caregivers in the field.

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Additionally, our LG Care Connection teams are aggressively trialing MyLGHealth with this high risk population to encourage engagement and ‘ownership’ of their medical conditions in a population that, in general, is subject to a “digital divide” due to low computer literacy^{xii}.

Leveraging our organization’s significant investment in the Epic electronic health record, the LG Care Connections team can better connect and coordinate care for the patients in this program in all settings of remote care. The entire team is mobile with secure iPads, iPhones, and laptops. These mobile health tools have decreased our LG Care Connection program’s operational needs for physical space as most of our encounters are being done in the community and patients’ residences, away from the physical office practice space. Similarly, the care team receives alerts whenever any of these high-risk patients enter an emergency department in the area, whether at our system or elsewhere, so we can continue to monitor their care.

Our aim is to share the story of LG Care Connections because we believe it provides a snapshot of what is possible when we are able to blend the best of telehealth capabilities with the best of care delivery for one of our most vulnerable, high-risk populations.

Geriatric Services

Rigorous management of geriatric services is essential to drive quality outcomes and prevent avoidable readmissions thus reducing cost of care for the elderly. Presently, we have three geriatric offices, staffed with 19 providers (15 physicians and four certified nurse practitioners) who care for patients in office practices, nursing homes, acute care, and patients’ homes. In 2013, we provided over 24,000 geriatric patient visits in office settings alone. Our providers serve as Medical Directors at 14 area nursing homes. We also provide lab services in 12 area nursing homes with the ability to access real time results and

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support ongoing visits via our Epic Community Link^{xiii}, a structured method for extending a shared electronic record system to independent physician practices and community hospitals. We remotely monitor patients using our home health service. We provide medical supervision and care through over one hundred units in the community where we monitor weight and blood pressure to assess changes between nurse visits, thus providing ongoing and remote assessments. For example, if our geriatricians identify trends in weight gain in a cardiac patient, a clinical indicator of fluid retention from congestive heart failure, our providers can provide interventional care, potentially preventing admission to a hospital.

All of our strategic programs for geriatric services require enabling and connecting technologies in order to influence and improve geriatric care across the continuum. For example, we have the ability to provide consult service for all geriatric trauma patients; run a Physician House-call program to see patients who are at risk for being readmitted to the hospital or are too frail to leave their home without risk; and provide care and support at our Alzheimer's and Memory Care program. We are actively developing a “Hospital at Home” program and a mobile imaging service to remotely monitor patient encounters and feed images directly to our integrated electronic health record.

Oncology

In the summer of 2013, we opened the new Ann B. Barshinger Cancer Institute^{xiv}, a 100,000 square foot state-of-the-art facility that brings together a multispecialty team of providers, the most advanced technology in the region and an array of support services for patients and their families. Having all of our oncology specialists in one location makes it more comfortable and convenient for patients and

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families to receive care, and facilitates on-the-spot consultations among physicians, ensuring timely treatment that progresses at the right pace. Our oncology teams provided services for almost 2,500 cancer patients in the last year. Thanks to LG Health’s longstanding partnership with the Penn Cancer Network, our patients also have access to the academic expertise and resources of the Abramson Cancer Center—one of just 41 National Cancer Institute (NCI)-designated Comprehensive Cancer Centers in the country.

We utilize oncology configured modules called Beacon Oncology in our Epic health information technologies. Beacon lets physicians create treatment plans based on standard National Cancer Institute protocols and make treatment decisions guided by comprehensive decision support. Complicated treatment plans and chemotherapy cycles for cancer patients require multiple medications given at various intervals. The patient's complex schedule may require 6-12 months of pre-planning. The use of digital medicine provides longitudinal treatment care plans to follow the patient regardless of the exact location of disease intervention.

Kiosks are chosen by over 30 percent of patients at our state-of-the-art Ann B. Barshinger Cancer Institute to inform staff of their arrival for services. Patients can print their care itinerary, view appointment times and access personalized maps to direct them throughout the building. The kiosks allow patients to pay their co-pay and see any existing balances on their account. In the future, kiosks will assist with care delivery by allowing patients to request to speak to a chaplain, oncology navigator or other member of the care team. Requests will automatically route to their appropriate care team member.

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Mobile devices such as iPads are also used by patients prior to seeing their care team members to review personal and family medical history, track current symptoms, and respond to questions to uncover any unmet social or spiritual needs. Using technology to ask these questions allows the patient to reflect on the responses privately and elicits responses that patients may not have felt comfortable sharing face-to-face. Collecting this information enables the care team to help the patient proactively before issues become a significant problem

With permission, we take digital photographs of our cancer patients. This capability provides additional privacy and safeguards to patient identification prior to provision of services including administration of costly and specialty drugs and infusions.

Patient Safety

Lancaster General Health is a national leader in Smart Pump integration. Use of these integrated pumps ensures safety, efficiency, and accuracy through a bidirectional interface that links the patient, medication order, and pump channel. Everything that happens on the pump is available in the electronic health record, increasing the reliability of information for informed decision making by clinicians. Our processes significantly reduce the programming errors risks from traditional infusion pumps that require manual programming. The uses of these integrated technologies are essential for the delivery of potentially harmful cytotoxic and chemotherapeutic agents delivered to our oncology patients.

Cautionary Thoughts

As an organization that has committed hundreds of millions of dollars to connect and integrally link health information, telehealth and digital medicine infrastructures, we close with a few cautionary thoughts. Successful implementation of health technologies requires a compelling and measurable

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clinical or preventive health model for a defined population aligned with strong partnerships among information technology, operations, and leadership. Institutions should consider investments in pilots or proofs-of-concepts with strong evaluation metrics for success and return on investments, in order to identify potential scalability of telehealth tools. Disruptive innovations in healthcare using technologies must empower the consumer in managing their health and make better health decisions, rather than cause information overload, confusion and more health uncertainties.

Broader Trajectories

In summary, at Lancaster General Health, we are only beginning to realize the potential of telehealth in future delivery models. We are focusing the immediate enhancements of our telehealth portfolio on patient interactive tools such as video visits, interactive goal and care plans, and streamlining self-service preventive and screening exams. In the next five years, we expect to mature our use of digital health and customer relationship management technologies to advance our clinical contact centers to direct patients to the most appropriate and settings for care. We will require additional types of caregivers in our workforce to advance care management, such as navigators and health coaches, above and beyond those with the technical skills to maintain and sustain these complex technologies. Our aim is to maximize patient centric telehealth technologies to move to a new state of community health and well-being.

ⁱ [About Us - Lancaster General Health](#)

ⁱⁱ [Pennsylvania College of Health Sciences](#)

ⁱⁱⁱ [HIMSS Analytics - Structure and Stage Detail](#)

^{iv} [Epic: About](#)

^v [About Healthway](#)

^{vi} [MyLGHealth](#)

^{vii} [WebMD Health Manager - Personalize and Manage Your Health](#)

^{viii} [Patient Centered Medical Home - Lancaster General Health](#)

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ix [LG Health establishes ACO - Lancaster General Health](#)

x [Microsoft Lync – video conferencing and instant messaging](#)

xi [Find My Friends on the App Store on iTunes](#)

xii Kontos E, Bennett G, Viswanath K. Barriers and Facilitators to Home Computer and Internet Use Among Urban Novice Computer Users of Low Socioeconomic Position. *Journal Of Medical Internet Research* [serial online]. October 2007;9(4):3.

xiii [Epic: Connecting Independent Physicians](#)

xiv [Cancer Institute - Lancaster General Health](#)