Written Testimony:

Chairman Alexander, Ranking Member Murray and distinguished Senators serving on the Health, Education, Labor and Pensions Committee, thank you for the opportunity to testify before you today to help you address, "America's Health IT Transformation: Translating the Promise of Electronic Health Records Into Better Care." My name is Peter DeVault. I am Director of Interoperability for Epic and I would respectfully like to share my views on the State of Electronic Health Record adoption and interoperability as well as the success healthcare organizations have achieved using our software to engage patients in their own care. Additionally, I hope my testimony and answers to your questions today address any concerns you may have and demonstrate our commitment to advancing Interoperability for our nations' health care system.

Electronic Health Record – State of adoption

Over the last ten years, U.S. healthcare organizations have made major strides in Electronic Health Record adoption. According to data released from the ONC and the National Ambulatory Medical Care survey, nearly 80% of office-based physicians and about 60% of hospitals used an electronic health record (EHR) system.

The community of leading care organizations that use Epic have served as model of EHR Adoption Success. Epic has never had a customer fail to go live. No hospital has ever replaced Epic by choice and we have never lost a customer due to dissatisfaction with our software or services. Our customers serve patients in all 50 states and we estimate that when fully rolled out they will provide care for more than

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54% of the U.S. population and support efficient daily workflows for more than 300,000 physicians and many more nurses, physicians assistants, schedulers, front desk staff and others. They include the Majority of U.S. News and World Report's Top Hospitals and Top Pediatric Hospitals Honor Rolls as well as the clinical organizations affiliated with the top medical schools.

They represent a diverse cross section of the U.S. care industry, from the world's largest non-Government Electronic Health Record deployment at Kaiser Permanente, to Academic Medical Centers such as Stanford, Yale, Cleveland Clinic, and the Mayo Clinic, to faith-based organizations such as Mercy health and Providence, to the nation's "Safety Net" of organizations that run the FQHCs and Critical Access hospitals that provide access to care for the most vulnerable patient populations.

More eligible hospitals and professionals have attested for the first and second stages of Meaningful Use with Epic than any other system. The Healthcare Information and Management Systems Society (HIMSS) grades care organizations on a 7 point scale for Electronic Health Record adoption. More hospitals and clinics at the highest level, the HIMSS Stage 7 award, use Epic than every other Electronic Health Record put together.

We are very proud of what they have achieved with our software:

- In 2014 alone, groups using Epic handled nearly 400 million ambulatory visits, 34 million Emergency Department visits, 13 million hospital admissions and 48 million hospital outpatient visits.

- They are using our software to improve patient safety. Over 390 million medication warnings were presented in our system, and our customers used bar code administration workflows to

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avoid nearly a quarter of a million harmful or fatal events were prevented by stopping medication from being administered to the wrong patient.

- They are reducing the cost of care by avoiding duplicate tests, unnecessary clinical visits, and hospital readmissions due to complications. Most importantly, they are helping their patients live healthier lives and take active decision making roles in their own care – keeping patients out of the hospital, helping them manage chronic conditions effectively, and ensure important screenings are performed to catch minor issues before they become major.

It would be impossible to share everything our customers have done to use the Electronic Health Record to improve quality of care and reduce costs so I'll just touch on a few examples[1]:

- University of Iowa Hospitals and clinics saw a 159% return on investment in the first 5 years following implementation. UIHC has netted over $50 million from July of 2013 to June of 2014 attributable towards the use of information technology.

- Lakeland Healthcare achieved a 44% reduction in sepsis mortality rate in one quarter due to adherence to EHR-based clinical decision support order sets and analytical review of outcomes. They also achieved a 100% reduction in transcription-related adverse drug events.

- Children's Medical Center of Dallas reduced Emergency Department length of stay by 40%. They also used the system's Bronchiolitis and RSV pneumonia2 pathway3 to achieve:

[1] Customer statistics are taken from winning HIMSS Davies Award Case Studies. These Studies are available at http://www.himss.org/library/davies-awards

[2] Bronchiolitis and RSV Pneumonia is the number one cause of hospitalization in the U.S. and accounts for approximately 1,000 inpatient admissions every year at Children's.

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- 19% reduction in median length of stay for bronchiolitis (from 2.4 to 1.95 days).
- 34% reduction in chest x-rays (59 to 39%).
- 48% reduction in bronchodilator use (27 to 14%).
- 22% reduction in antibiotic use (32 to 25%).

Epic's background in innovative healthcare information technology

Epic is 100% focused on developing, implementing, and supporting industry-leading integrated software for a *small* client base composed of the world's top academic medical centers, children's hospitals and large integrated delivery systems. To ensure their success, our staff to customer ratio is over 20 times higher than our nearest global competitor. We have a relatively small client base, and our development priorities are driven by their goals and vision.

The first Epic software systems were created more than 30 years ago at an Academic Medical Center. Since our founding we have contributed a number of innovations to health information technology:

- Groups using Epic were the first in the industry to have access to a single system supporting both hospital and ambulatory clinical care, patient access (i.e. admissions, registration, scheduling), and medical billing.
- Their patients were the first to have a secure web portal that is part of the electronic health record. MyChart offers access to medical information such as lab results and immunization

[3] The Bronchiolitis and RSV Pneumonia Pathway was used for previously healthy children less than two years old with a primary or secondary diagnosis of bronchiolitis (ICD-9: 466.11 and 466.19).

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records along with self-service features for appointment scheduling, prescription renewal requests, and copays.

- Doctors using Epic were the first to be able to access patient information, prescription writing, visit notes, and related features on smartphone and tablet apps that are part of the same electronic health record they use in the hospital and clinic. They do it in way that does not store data on the smartphone or tablet, so that even if the device is lost or stolen their patients' confidential information is safe.

This level of innovation, coupled with a strong history of clinician and IT staff satisfaction with our software and services helped us become one of the most widely-adopted and well-respected health IT vendors. We support the goals and vision of our customer community with one of the industry's largest research and development commitments. Nearly 54% of our annual operating expenses are dedicated to development. We conduct all of our development in the United States, and we support all U.S. customers with U.S.-based staff.

KLAS Enterprises has ranked Epic the **#1 overall software suite** and **#1 overall practice management vendor** based on the results of thousands of surveys of U.S. healthcare organizations using major health IT vendors' software. Our enterprise products lead the industry in the following categories in the most recent *Top 20 Best in KLAS* report:

- #1 Acute Care EMR
- #1 Ambulatory EMR (75+ physicians)
- #1 Ambulatory EMR (11-75 physicians)

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- #1 Practice Management (75+ physicians)
- #1 Patient Accounting/Patient Management
- #1 Health Information Exchange
- #1 Patient Portal
- #1 Surgery Management
- #1 Lab

Over the past 10-15 years, we have helped drive the evolution of the Electronic Health Record from a system used primarily to document the care an organization has provided to one that actively supports the growth of medical knowledge and improves the health of diverse communities of patients. The Epic EHR underlies our customers' activities in:

- Medical Research and Discovery

  The majority of the top 20 National Institute of Health grant recipients use Epic, as do most of the nation's most well-respected Academic Medical Centers. Our software improves the speed and efficiency of areas including research participant recruitment and data analysis, allowing researchers to accelerate the pace of discovery and get new knowledge into practice faster and at a lower cost than was possible with older methods.

  Our vision is that a research-enabling EHR should not just empower the research department. It should empower the curious physician who wants to investigate a hunch to make the best decision for the patients. With Epic's self-service reporting, physicians can parse a large quantity

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of clinical data and view the results within seconds to find trends across patient populations or identify specific sets of patients for whom they need to take follow-up actions.

- Performance-based reimbursement models

  The healthcare industry is in the midst of a shift from volume-based payment models where care organizations are paid based on the number of services they provide to value based models that take their quality of care and the health of their patients into account. Epic's customers have used our software to pioneer models of care that have emerged to address this shift such as the Accountable Care Organization and the Patient Centered Medical Home.

- Business Intelligence and Population management

  Epic's software automatically collects data on each stage of the care process and the revenue cycle. This gives healthcare organizations a rich source of data for reporting and analytics. Our analytics tools do more than show what happened in the past. They include built in benchmarking so that each Epic customer can see how they are performing against national averages and against anonymized data from their peers in the Epic community. They also support predictive modeling that can help organizations anticipate and prepare for future trends.

  Healthy Planet, Epic's population health management module, is the nation's fastest growing population health system. More than 115 million patients have already been added to registries to help organizations manage their care. This makes it very easy for clinicians and care managers to address the unique needs of diverse groups of patients. The system helps them identify and engage patients at risk for specific conditions such as diabetes and events such as hospital

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readmissions. It helps them manage care longitudinally, whether the patient is seen in a hospital, clinic, post-acute care setting, retail clinic, or at home—and it provides tools to reach patients in new ways by taking advantage of emerging technologies for engagement and telemedicine.

Efforts to extend health IT adoption

Epic has taken an active role encouraging health IT adoption, serving with healthcare organizations, policy experts, and other healthcare software developers in government and industry groups dedicated to extending the benefits of the EHR nationwide. We have also been an early supporter of the Government's Meaningful Use program, becoming one of the first of the major Vendors to offer systems with Stage 1 and Stage 2 certification.

As a program to accelerate health IT adoption, we view Meaningful Use as a success. We saw a surge of interest from care organizations in making the move from paper to EHRs as well as groups looking to move beyond outdated and functionally limited systems.

One remaining challenge is encouraging health IT adoption among the smaller and single-provider practices that deliver care for a large percentage of the US population. These groups encounter higher barriers to EHR adoption than larger organizations. Even with incentives that offset costs of acquiring systems the investment of time and IT resources to install an EHR successfully can be prohibitive for these groups. Epic is collaborating with its community of customers to help address this challenge. Through the Connect program, organizations that use Epic can extend their software to other practices and hospitals. More than 70% of our customers are helping boost IT adoption among smaller practices and hospitals through the Connect Program – bringing thousands of new providers live on the system.

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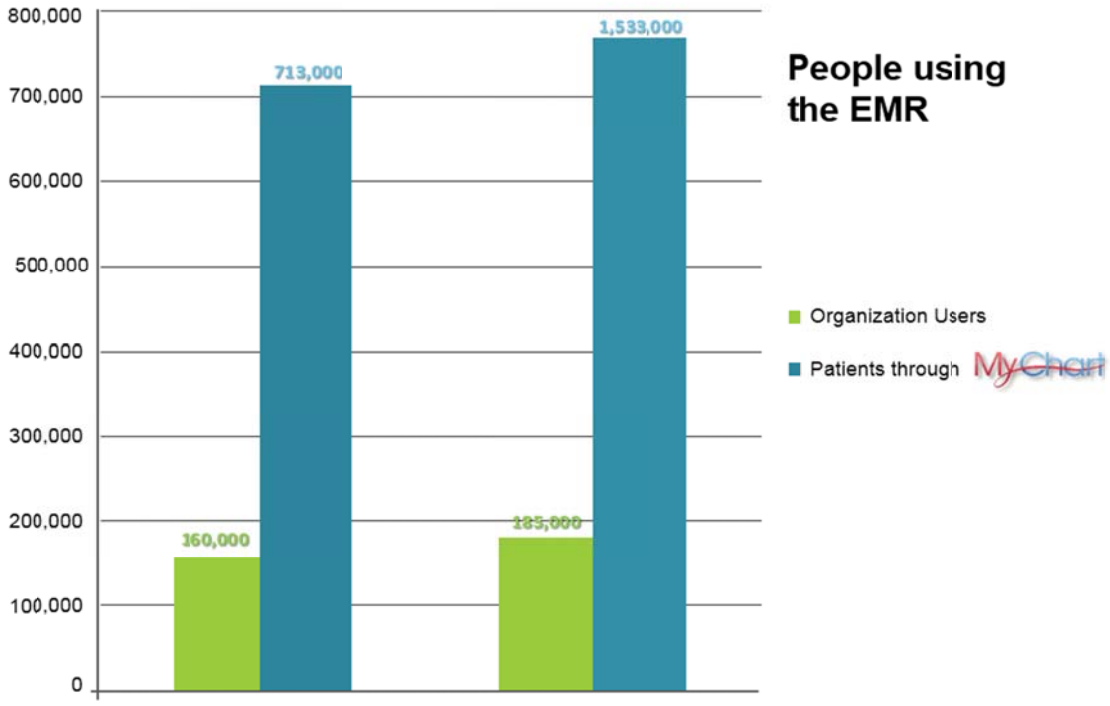
Engaging the Patient

Advances in telemedicine coupled with a proliferation of affordable consumer devices for healthcare monitoring continue to expand the reach of the healthcare organization beyond the walls of the clinic and hospital. This increases convenience for patients, allows them to receive services at convenient times and locations, and helps them take a more active role in managing their own care.

A survey of twelve large organizations using Epic showed that patients have become the #1 consumer of EHRs (graphic below), echoing what we see in the evolving healthcare industry, and we have aligned our vision with this trend. Top MyChart adopters are engaging 65-95% of their populations and reporting



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millions of dollars in savings.

MyChart gives patients access to data from same Epic chart used by clinicians. Patients can use MyChart to exchange secure messages with members of their care team, review goals and instructions recorded by their physicians, add data such as blood pressure readings to their charts, see their upcoming preventive care needs, and schedule appointments. Patients can access links to education materials curated for their specific health issues from MyChart.

Patients can update their Epic records with data from home blood pressure cuffs, glucometers, Fitbits, and other personal devices, helping clinicians monitor those patients' health and well being. Data taken from monitoring devices using Apple's HealthKit will populate Epic's medical record and similar integration will be available with Google Fit in the future.

For the hospital, we offer MyChart Bedside, a tablet-based system that helps improve the care experience for hospitalized patients and their families. It provides access to personalized information on the patient's treatment team, scheduled procedures, lab results, electronic requests for services, and educational materials with support for rich content such as streaming video, images and websites.

For the future, we are creating a MyChart dashboard will allow patients to monitor their progress towards their health goals and give them access to tools that help them meet their goals. We are also developing a “Companion” capability that will remind patients to take medications, exercise, track blood glucose, or perform other tasks according to post discharge instructions or their health maintenance/disease management plan.

The interoperable EHR

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The last concept I'll touch on is Interoperability. There's been a lot of focus on the need for interoperable electronic health records over last couple of years, and a lot of confusion and misinformation in terms of what Epic's software will support.

Epic does not own or claim rights to our customers' patient data. We do not interfere with their ability to access patient data and we do not re-sell patient data. We give our customers access to our source code and developer support. We also provide tools that support the free flow of information between different system and different organizations.

We have a patient record exchange platform called Care Everywhere to support the exchange of patient data between organizations. A library of interfaces helps keep Epic systems communicate with hundreds of other systems, transmitting billions of messages a year. And lastly, we have application programming interfaces or APIs that we freely publish along with testing tools on open.epic to support third party innovation and connection to Epic's EHR.

Our efforts have been validated by independent surveys of live customers conducted by KLAS. According to a KLAS survey of healthcare organizations in 2014, we were the only vendor to successfully balance success and depth of interoperability. We also had the highest ability to support interfacing and keep interfacing costs low.[4]

There are three major components that make up an interoperable Electronic Heath Record:

Secure health information exchange between healthcare organizations

[4] Source: "EMR Interoperability 2014", KLAS Enterprises, September 2014

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Care Everywhere, Epic's standards-based patient record exchange platform, debuted in 2005 – years before the HITECH Act took effect. Today, Care Everywhere uses the Consolidated Clinical Document Architecture (C-CDA) as required for Meaningful Use Stage 2 certification. Epic has installed Care Everywhere in all versions of its EpicCare EHR software in live use. 100% of customers who are live with EpicCare also have the ability to exchange patient records with any other system that supports the national interoperability standards.

Organizations using Care Everywhere make up the largest active EHR exchange group in the United States---over 1000 hospitals and 26,000 clinics are live today and last month they exchanged nearly 8.5 million records patient with each other and with about 7,500 other organizations. This includes healthcare providers using other EHR systems, Health Information Service Providers (HISPs), Health Information Exchanges (HIEs), and groups connected to the eHealth Exchange like the VA, the Social Security Administration and the Department of Defense. According to Healtheway in July 2014, "Organizations using Care Everywhere exchange more records with the VA than any other vendor."

> Any Epic customer can exchange patient data with third party that support national interoperability standards. There is no language in Epic's contracts to restrict our customer's ability to exchange data.

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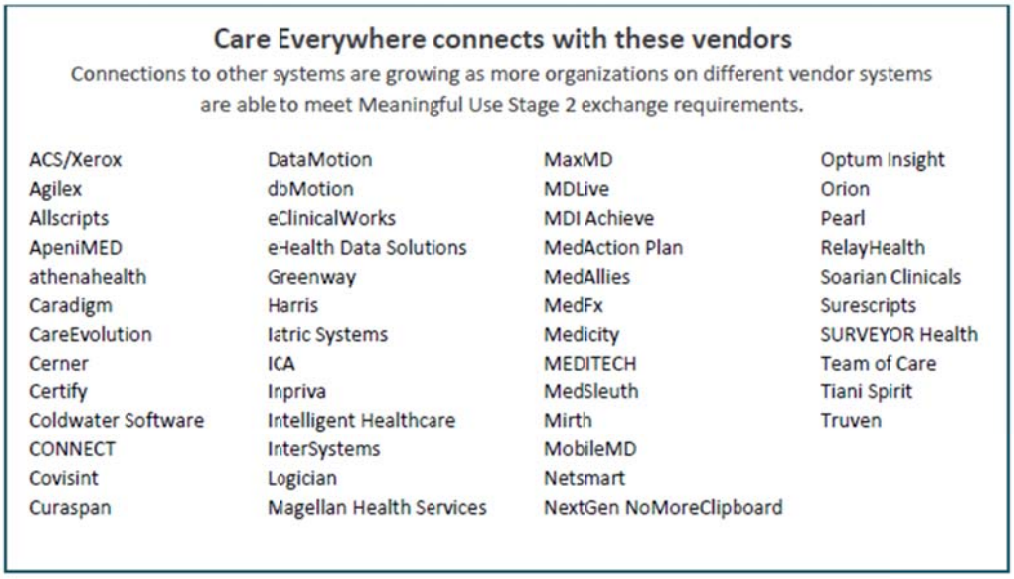

- Interfaces between products

  With over 36 years of experience creating and maintaining connections to other vendor systems, Epic has one of the largest libraries of existing interfaces. Each year, billions of data transactions happen between Epic and 600+ other systems through 12,500+ standards-based interfaces.

  Along with our interfaces we supply Bridges™, an interface development and runtime toolkit that allows customers to write new interfaces and enhance/modify existing ones as well as efficiently maintain and monitor all the Epic interfaces they use.

  These interfaces allow healthcare organizations to connect with other vendors and outside groups such as pharmacies, specialty and immunization registries, and lab systems. Connections to outside agencies include public health agencies, research societies, immunization registries for 46 states, and research Registries.

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- An open system that encourages customer and third party innovation

  For third-party application providers and device manufacturers, the open.epic initiative speeds the connection process to Epic's systems through public documentation, application programming interfaces (APIs), and online testing tools. Epic provides public test harnesses for third party developers to test their integration with our software using FHIR © (Fast Health Interoperability Resources) at http://open.epic.com/Interface/FHIR.

  For healthcare organizations, we have a large set of Web services and APIs for them to create add-ons, extensions, and new functionality. We also offer them the same tools that we use to develop our systems, as well as training for developers and access to source code.

  This year, we debut the Epic app exchange to allow these developers offer their innovations to the Epic customer community.

  We are also continuing our work as a founding member of the Argonaut Project launched by Health Level 7, a non-profit driving the development of international healthcare informatics interoperability standards. Epic is working with healthcare and IT leaders such as Mayo Clinic, athenahealth, Cerner Corporation, Intermountain Healthcare, Meditech, and Beth Israel Deaconess Medical Center accelerate the development and adoption of Health Level 7's Fast Healthcare Interoperability Resources (FHIR). This development will enhance and expand information sharing among EHR systems and other elements of healthcare technology.

Epic's efforts to encourage interoperability

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Along with encouraging adoption, the Meaningful Use program was intended to encourage seamless interoperability across electronic health records. The goal is that a patient should be able to go to any organization using an Electronic Health Record that meets national interoperability standards and have their key medical information be accessible to the provider treating them. While Epic views the Meaningful Use program as a success in terms of encouraging Health IT adoption, three key challenges still remain in achieving true nationwide interoperability.

- A single nationwide directory of exchange ready organizations and providers

  It should be fast and simple for a provider to determine whether another organization has treated their patient in the past. This can be challenging because the organization they are looking for could be a member of one of several interoperability networks – resulting in a time consuming search every time the provider wants to share information. One nationwide network of groups able to exchange patient data would make the process much more efficient.

- Consistent Standards

  Products from light bulbs to cars rely on standards, and healthcare is no exception. Healthcare information technology has a variety of Standards Development Organizations tackling a variety of challenges including: data exchange/messaging standards, terminology standards, document standards, conceptual standards, applications standards, and architecture standards. At times, healthcare has too many options to choose from, with multiple standards serving similar purposes. That's why you can have multiple interoperability networks adopting different standards for exchange of something as fundamental as a patient's medications, or using different data exchange methods. One network may choose to "push" messages to another

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participant using one standard (e.g., Direct messaging), while another may choose to pull messages from its participants using another standard (e.g., IHE profiles).

- Legal Framework

  Before care organizations can exchange data, they must have a legal framework in place governing the use of this connectivity. This ensures, for example, that use remains consistent with the Health Insurance Portability and Accountability Act (HIPAA) requirements. Today, the legal agreements used by one network typically are not compatible with other networks. This means that every time a care organization wants to connect with another group, they may be required to negotiate a new agreement. This is an extremely time consuming process and has created the misconception in the industry that interoperability is being "blocked."

The result is that while many individual Interoperability networks have emerged (graphic), no single network provides universal interoperability. No single network attempts to address all interoperability use cases and scenarios, and no single technical platform operated by a single provider can meet the needs of all the diverse players in healthcare. Just as ATMs and cell phones rely on multiple, interconnected networks, healthcare must connect its interoperability networks to achieve universal connectivity.

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Examples of Interoperability Network Offerings

Health Information Exchange Platform	Care Everywhere	Commonwell	Delaware Health Information Network (DHIN)	Healtheway's eHealthExchange	Kansas Health Information Network (KHIN)
Description	Largest EHR-based C-CDA record exchange network	Network of 7 EHR vendors using one platform.	First operational statewide HIE for Delaware providers.	Group of federal agencies, non-federal provider groups and HIEs. Includes the DoD, SSA and VA	Provider-led organization that provides HIE technology for providers in Kansas and Western Missouri.
Year Launched	2005	2013	2007	2009	2011
Platform or Under-lying technology	Care Everywhere by Epic	Relay Health by McKesson	Network v7 By Medicity	Self-developed	CareAlign By ICA
States Covered	50	4	1	50	2
# live organizations	266	4	~425	85	120
Market Share	• 1,000 live hospitals • 28,000 live clinics • 100000+ live physicians	• 4 live sites • 10 locations • <100 live physicians	• Largest state HIE • 1.5 million unique patients from all 50 states • >7,000 live physicians	• 4 federal agencies • 30% of US hospitals • 10,000 medical groups • 5,200 pharmacies • 100 million patients	• 70 live hospitals • 275 live clinics • >4,500 live physicians
# records exchanged per month	8.3 million	~2000	1 million	N/A	N/A
Sources	*Epic March 2015*	*Commonwell Annual Report published Feb 2014; Commonwell website*	*DHIN 2014 Annual Report; "DHIN & Meaningful Use" slideshow, 6/25/13*	*Healtheway website; Mariann Yeager and Michelle Whitecar of Healtheway*	*KHIN website; Office of Laura McCrary, Executive Director at KHIN*

To put this ATM-like structure in place for healthcare, Epic has helped found Carequality, a public-private collaboration working to create a unifying legal and technical agreement to accelerate connection between networks regardless of platform or underlying technology. Carequality participants include the largest public and private interoperability networks in the U.S. like the Surescripts network (largest e-prescribing network) and the eHealth Exchange.

Carequality's work will build on the success of Epic's Care Everywhere network. By providing a single directory of participating organizations, one consistent legal agreement governing data exchange, and a single set of technical standards, Epic allowed customers to make connections with other network participants much faster and at lower expense that is possible when making connections to groups outside the network. That's what made Care Everywhere the largest open interoperability network in

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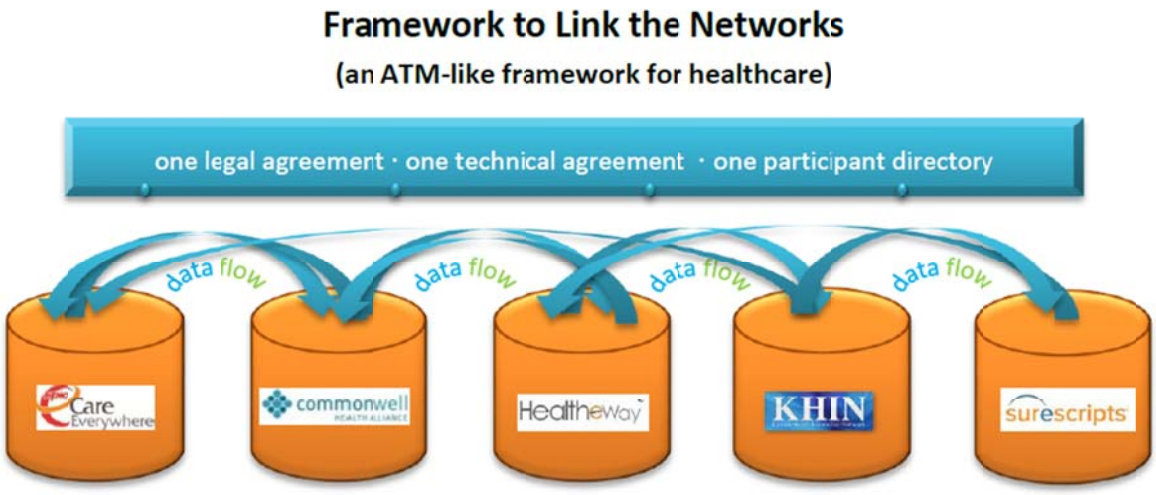
the United States, and what allowed us to achieve 100% adoption across all live customers. The CareQuality Vision is illustrated in the graphic below.



I look forward to answering any questions you may have for me and welcome future dialogue beyond this hearing. Thank you for this opportunity.

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