

**Written Testimony of
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**Before the
Senate Committee on Health, Education, Labor, and Pensions**

Hearing on Investing in Health IT: A Stimulus for a Healthier America

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Chairman Kennedy, Ranking Member Enzi, and distinguished members of the Committee, my name is Peter Neupert, and I am Corporate Vice President of Microsoft's Health Solutions Group. Thank you for the opportunity to share Microsoft's perspective on investments in health IT. We appreciate how much time and attention the Committee has spent on this critical issue, and we commend you for your work in advancing the debate on information technology as part of healthcare reform.

My testimony begins by describing what we believe to be the future of U.S. healthcare—a totally connected, patient-centric system. It explains how technology can help make that future a reality by encouraging better outcomes and innovation, connecting patient data, and empowering consumers to be stewards of their own health. It then outlines ways in which the public and private sectors can work together to create an efficient, data-driven healthcare system, benefiting patients, healthcare providers, and the overall U.S. economy. Finally, it concludes by describing Microsoft's existing investments in health IT and how they are being implemented today.

I. The Future: The U.S. Health System Transformed by Technology

At Microsoft, we envision a dynamic, patient-centric health system that transforms the way physicians provide care and individuals manage their own health—a totally connected network that delivers predictive, preventive, and personalized medicine in an accessible, affordable, and accountable way. Specifically, we see:

- Patients as consumers—experiencing more control, more convenience, better service, and ultimately better value for what they spend on healthcare.
- Physicians as knowledge workers—professionals getting the right data in the right format at the right time to provide the best treatment and preventive care.
- New interactions among the key members of the healthcare ecosystem—physicians, patients, pharmacies, researchers, and insurance providers benefiting from a new flow of data to make better, faster decisions.
- The extension of modern healthcare to the virtual space—patients getting care when they want it, wherever they need it, thanks to virtual medical clinics, virtual doctor visits, virtual lab results, medical homes, and personalized medicine based upon genomic data.

- A learning healthcare system—one that measures everything, identifies errors, and makes improvements in order to deliver value.¹

In summary, it is a world where everyone in the health ecosystem has the right information at the right time with computer assisted decision support, enabling the seamless exchange and reuse of data. Health data is the asset that drives an efficient, high-quality, value-based, evidence-focused future for medicine.

II. The Blueprint: Building a Scalable, Patient-Centric Health IT System

We all know that information technology is a vital component in improving our healthcare system. But simply spending more money on information technology, without considering all the factors driving behavior in our healthcare system, is unlikely to lead to better health outcomes. There have been many investments in technology that did not solve the problems of better quality outcomes, increased access, or reduced costs.

However, across the healthcare industry today, there are many examples of successful technology investments—the Marshfield Clinic, Kaiser Permanente, the Department of Veterans Affairs, and others. These are organizations whose leadership thought about clear outcomes and embraced technology on many different levels to drive improved efficiency, quality, and a reduction of costs across their systems. In essence, they created patient-centric systems. We believe that these are the kinds of successes that need to be scaled nationally.

A. Driving the Right Health Outcomes and Payments to Incent Innovation

An industry focused on lifelong wellness and outcomes would reward caregivers when diseases and conditions do *not* develop.

The problem with our current healthcare system is that it is designed to care for people who are ill, not to keep people healthy. For example, we focus on providing episodic treatment and medication to diabetics instead of asking how we can raise awareness of diabetes risk factors and prevent people from developing diabetes in the first place. The system is this way because we do not reward doctors who provide preventive care or innovative services.

Doctors typically receive a flat fee for each treatment they perform, regardless of the quality of the care, and the amount of the fee is set by a bureaucracy of insurers, health plans, and regulators. In this fixed-price system, there is no incentive for providers to improve customer satisfaction. Most physicians are not reimbursed for telephone or email consultations, let alone more advanced uses of technology. Doctors who attempt to innovate—for example, by investing in systems to collect data from patients remotely—end up delivering better care but making less money.

In health-related areas where prices are set by the market, such as veterinary medicine, dentistry, and cosmetic surgery, providers do a much better job of investing in services that attract customers. For example, pet owners willingly pay for veterinarians who make house calls, maintain electronic medical records, remind owners to bring their pets in for scheduled vaccinations, call to make sure the pets are taking their pills, and are available for email or telephone consultations. Veterinarians compete on price and quality, so they are constantly

looking for innovations that allow them to provide better service and improve customer satisfaction. Because technology is often a source of innovation, veterinarians are quick to embrace new technologies that fuel better service and better patient care. We need to learn from these examples.

B. Connecting and Sharing Data Among and Between Health Entities

We believe the first step is to connect the many medication lists, laboratory test results, and diagnostic images that are already maintained electronically. Eventually, we can build a lifetime record of treatments, prescriptions, and tests that allows individuals and healthcare providers to make better medical decisions, reduce wasteful spending, and increase the quality of care.

Our current system is built around the idea of a specific provider prescribing specific treatment for a specific condition. Patients' health data is locked inside each provider's silo, without being connected or shared. Physicians are forced to either make treatment and prescription decisions without all available clinical data, or else waste time and resources attempting to aggregate data. MedStar Health's Washington Hospital Center estimates that 60% of a clinician's time is spent searching or waiting for information, with only 16% spent on direct patient care.²

The right investments in health IT can tear down these silos, offering patients and doctors a holistic picture of a patient's health history and thereby improving care. Consider chronic diseases, which account for over 75% of healthcare spending.³ Even though most care for chronic diseases occurs at home, data from at-home care is not integrated with data available at the hospital or at the doctor's office. Individuals and providers would all benefit if, for example, patients with diabetes could upload their blood glucose readings to a Web site that offered personalized advice and guidance; receive information alerts regarding changes in recommended treatment or behavior; share their results with a supportive community of fellow patients; and securely transmit readings to their clinician. Patients would have more information on managing their condition, would be in a better position to prevent acute incidents, and would need to make fewer trips to the doctor. Treating physicians would have a greater ability to understand their patients' health over time, allowing them to identify the best treatment for existing patients and to help people who are at risk of developing the disease in the future.

C. Empowering Consumers to Be Stewards of Their Own Health Data

Finally, we need to empower consumers to manage their health data. Just as credit scores represent a lifetime of active and passive financial decisions and transactions, so should health data. We must help consumers to start building their health data into a lifelong asset, to manage it over time, and to share with those who support them in making key decisions both within and outside of the health system.

Today, in order to manage their health, consumers must deal with both paper documents and electronic files. They fill out form after form, calling multiple doctors' offices for appointments. Few people have the resources to keep track of medication lists, vaccination histories, appointment calendars, lab results, diet plans, exercise schedules, and all the other components of health data. Many have little knowledge of how to prevent disease and little, if any, support for managing their healthcare.

Now imagine if consumers could connect all their health and wellness data electronically, share it securely from provider to provider, and keep it in one place over time, no matter the doctor or the insurance company. They would have all the relevant data at their fingertips, accessible at any time and any place. They could sign up for services that would provide personalized alerts and information. They could track fitness goals across numerous devices, such as exercise bikes that monitor vital signs, smart watches that record the number of miles run, and scales that measure body fat as well as weight. They could research relevant medical conditions online and interact with support groups so that they would be better prepared and informed for their next visit to the doctor. They could share data with their support systems and make better health decisions for themselves and their families.

We believe technology can make this vision a reality. The Internet and online social networks have already become an everyday resource for consumers seeking information in order to make health decisions, but what is missing is a way to link this information back to the individual's personal health history. And consumers are ready for it:

- 78% of Americans favor giving doctors the ability to share access to their medical records if done with their permission.⁴
- 66% see value in including their own information anonymously in a large database to help researchers.⁵

Pharmacy benefit managers maintain medication lists electronically, and many hospitals digitally record laboratory test results and diagnostic images. As a first step in empowering consumers, we could require providers to give patients electronic copies of any data that is already available in electronic format. Providing consumers with access to their healthcare data in a secure and private way, and allowing them to keep it in one place over time and share it from provider to provider, will permit them to make the best daily decisions about their health. It also will enable healthcare professionals to deliver better care.

III. The Next Steps: Recommendations for Moving Forward

Microsoft has learned a great deal over the past several years as we have worked to improve healthcare through information technology. We know that just spending more money on health IT will not solve the problems in today's healthcare system. We believe the right investments are those that focus on the right outcomes. We believe that it is essential that data be connected and shared so that consumers and health enterprises can build their health data assets over time.

To achieve our vision will require that the public and private sector take several steps, including:

Encourage innovation in health IT by setting out objective goals and criteria, not by mandating specific technologies or development models. Hundreds of innovative health IT products and services are available on the market today, and many companies are investing large sums to develop new technologies and solutions. Even as they compete, however, companies are collaborating to enable their products to work together and share information regardless of their underlying development, licensing, or business models. To take one example, Microsoft's

HealthVault can interface with the open source VistA EHR system and other open source healthcare applications.

As Congress considers how best to spur the broad adoption of health IT systems, it should take care not to mandate or prescribe any particular technology or development model. Doing so could deprive healthcare providers of the best available solutions, exclude scores of American companies and workers from competing to supply these solutions, and weaken incentives for further private-sector investment and R&D—just when we as a Nation should be trying to strengthen these incentives. To the extent Congress seeks to influence the development or adoption of health IT systems, it should set forth objective, technology-neutral goals and criteria that these systems should meet, such as those relating to security, privacy, interoperability, and total cost of ownership. It should then open the door to all companies to compete for the opportunity to supply health IT solutions that satisfy these criteria.

Reward innovative doctors who make the Internet the foundation of the patient-physician connection. The Internet has created a society that has access to, and demands access to, up-to-date information around the clock. Patients need information about their medical conditions, appropriate drugs or treatments, pre-procedure instructions, and post-visit follow-ups. The Internet is the most efficient way for doctors to provide the “trusted information” that consumers want. But the fixed-price nature of physician reimbursement means that innovative doctors have no incentive to deliver this kind of additional service. Physicians should be encouraged to embrace basic Internet technologies that allow them to communicate more effectively and consistently with their patients.

Provide incentives for sharing data. We believe that it is critical to seamlessly connect data and empower individuals to take control of their health and wellness. We hope that those in the public sector will facilitate the transformation of health data into a vital asset by removing barriers to data sharing and providing incentives for data exchanges that reduce costs, increase value, and improve the quality of care.

Focus on making data interoperable today, not waiting for standards tomorrow, and insist that vendors separate data from applications. Microsoft is committed to the development of interoperability standards and works diligently with the rest of the industry to reach consensus on those standards, but exchanging healthcare data cannot wait—we need a migration path now. Today, data is too often used for a single application or a single purpose, then thrown away once that purpose is complete. We can use metadata—the details that describe the data and how it has been captured—to ensure that data is kept alive and made available for reuse, no matter what its original application or purpose. By insisting that vendors supply IT that allows data transfers to and from other non-vendor applications, we can get data moving better and faster between different systems today, without waiting for standards that may take years to complete. Better use of metadata will pave the way for integrating legacy data with standards-based data once these standards are more widely adopted.

Enable the private sector to develop an information infrastructure that connects data, systems, and people. To move from today’s fragmented delivery system to tomorrow’s connected network, we need technology infrastructure—“plumbing”—that allows data to flow freely throughout the system and be reused. Without it, we will recreate our disconnected paper

system in the virtual space. This infrastructure must be (1) flexible, to enable many different players across the ecosystem to do what they need to do; (2) interoperable, to leverage existing standards and infrastructure investments that work toward more unified ways of organizing and sharing data; (3) scalable, to adapt to the rate of medical and technology advances; and (4) secure and private, to foster consumer trust.

IV. How Microsoft Can Help: Our Investments in Health IT

More than 12 years ago, Microsoft started making investments in the health industry. We saw software and the Internet as essential tools to transform healthcare, as they have so many other industries—opening new ways of working, new ways of communicating, and new economics. We have steadily increased our investments and commitment to health globally. Our vision was simple—to improve health around the world through software innovation. From the beginning, we have thought about improving health in the developed world as well as developing economies. We have focused globally on openness and interoperability to drive truly scalable solutions that can benefit all.

We are concerned with the current focus on electronic medical records (EMRs) as a panacea. While some forms of EMRs are necessary, they represent only a part of the solution. The future vision we describe is far broader than simply making records electronic.

We have a set of solutions in the market facilitating the connection and sharing of data for consumers and large health systems to help them build their health data assets.

A. Empowering Consumers to Access, Consolidate, and Share Their Health Data

For consumers, we launched HealthVault, a privacy and security-enhanced data storage and sharing Internet-based platform. People can use HealthVault to store copies of their health records from providers, plans, pharmacies, schools, government, or employers; upload data from home health devices like blood glucose monitors and digital scales; provide data to health care providers, coaches, and trainers; and access products and services to help improve their health. We worked with leaders across the industry to ensure that the right privacy and security standards would be in place, and we are seeing momentum starting to happen. Since launching, we have enabled 50 devices, have 40 live applications—services on top of HealthVault such as PHRs, alert services, etc.—and signed 91 partners across the country, including leading organizations like Aetna, Kaiser Permanente, Cleveland Clinic, and the Military Health System.

Of particular note is a pilot project with Cleveland Clinic that could have a wide-ranging impact on care—extending care to the home from traditional hospitals and doctors’ offices. It is the first pilot in the country to follow multiple diseases (it addresses chronic disease management in the areas of diabetes, hypertension, and heart failure) in the clinical delivery setting using multiple at-home devices including glucometers, heart rate monitors, weight scales, and blood pressure monitors. Patients enrolled in the pilot upload device data to HealthVault using a home computer, and Cleveland Clinic downloads the data into the patients’ Cleveland Clinic MyChart accounts, creating an online log of the readings available for physicians. We are particularly excited about the results of the pilot. Monitoring constant data, and having it shared in an

efficient way with physicians, can result in better quality of life and increased efficiency. Even possible is the avoidance of acute care incidents, impacting expense.

B. Empowering Health Systems to Provide Patient-Centric Care

For hospitals and health systems, just under a year ago, we launched Amalga, our family of data sharing and intelligence solutions, which connect a hospital's or health system's existing legacy systems and any new systems. This allows patient data to be viewed and queried holistically, enabling a shift from departmentally focused systems to more patient-centric systems. Amalga has been adopted by many leading health organizations—Johns Hopkins, New York Presbyterian, Mayo Clinic, MedStar Health, St. Joseph Health System, Moffitt Cancer Center and Research Institute, District of Columbia Primary Care Association, Wisconsin Health Information Exchange, Novant Health, Children's Healthcare of Atlanta, and the University of Washington.

Of particular note is the Wisconsin Health Information Exchange (WHIE), the first health information exchange to use Amalga. Eight months ago, the WHIE set specific goals to improve physician decision-making and quality care in their emergency rooms. The project aggregates patient data from state Medicaid claims, 13 area hospitals, and more than 110 hospital-associated clinics in Southeast Wisconsin. Amalga presents a single view of aggregated patient data, in real-time, to emergency department doctors at five area hospitals. Gaining a comprehensive view of a patient—including pharmacy prescription data, imaging and lab procedures, current and previous diagnoses as well as hospital admission, discharge, and transfer records—enables emergency room doctors to make fully informed decisions about the patient's care in time-critical situations. The benefits include reduced errors, more efficient care (physicians can see if tests have already been done so that tests are not repeated), and more effective ways to treat patients (physicians can see if patients have been to the ER multiple times, enabling them to follow up more aggressively or put patients on a different care routine to avoid further ER visits).

The early success of the WHIE Project has prompted Humana, one of the nation's largest health benefits companies, to provide an incentive to providers for utilization of the WHIE. As part of its emergency care initiatives, Humana has entered into a pilot program with the WHIE. In this program, Humana recognizes the value of applying health information exchange technology, and its impact on avoiding duplication of services, and has agreed to provide a WHIE-administered incentive to ER physicians for utilization of the tool.

As we move into 2009 and beyond, we will expand our products and develop a new generation of software and services to help support and speed the move towards efficient, data-driven medicine.

When we wanted to go to the moon, we did not focus on spending exorbitant amounts of money to build a rocket. We set the goal of landing on the moon, and we used money, technology, and innovation to make it happen. Once health objectives are set, stakeholders in the health ecosystem can figure out the right technology to reach the goals as efficiently and effectively as possible.

Microsoft looks forward to collaborating with the public sector and others in industry to drive real change in our healthcare system. Thank you for the opportunity to appear before you today.

¹ Institute of Medicine Roundtable on Evidence-Based Medicine, *Learning Healthcare System Concepts v.2008* (2008).

² Microsoft Health Solutions: Helping People Live Longer, Healthier Lives (June 26, 2007).

³ Centers for Disease Control and Prevention, Chronic Disease Overview (Nov. 20, 2008), <http://www.cdc.gov/nccdphp/overview.htm>.

⁴ Council for Excellence in Government et al., *The American Public on Healthcare: The Missing Perspective* (2008), <http://www.excelgov.org/Programs/ProgramDetail.cfm?ItemNumber=9404>.

⁵ *Id.*