Intermountain Healthcare
36 South State Street
Salt Lake City, UT 84111
801-442-2000

Is 'Meaningful Use' Delivering Meaningful Results?
An Examination of Health Information Technology Standards and Interoperability
Subcommittee on Technology and Innovation of the Committee on Science, Space and Technology
U.S. House of Representatives, November 14, 2012

Summary of the Testimony of Marc Probst, Chief Information Officer and Vice President of Information Systems, Intermountain Healthcare

My name is Marc Probst, and I am the Chief Information Officer and Vice President for Information Systems at Intermountain Healthcare, a nonprofit integrated health system in Salt Lake City, Utah. I am also an appointed member of the Health Information Technology Policy Committee (HITPC).

With respect to the first question posed in the Subcommittee's letter, which asks what progress has been made as a result of the HITECH Act towards greater health information technology (HIT) interoperability, my answer is yes, progress has been made, but it is only a beginning. We must set a clear road map and support an exchange infrastructure and the adoption of standards that will make it easier to share health information so clinicians and patients have the information in the form and time they need it to make appropriate healthcare decisions. Presently, we lack a shared infrastructure and long-term plan to make this possible.

The Australian railroad provides a useful example of the importance of standards. In Australia, railroads developed independently, one by one. While trains and tracks did get built, the railroad system was constructed with many different gauges of rail, preventing railroad cars on one set of tracks from running on others. After many years of subpar train service, expensive work-arounds, and increasing costs, Australia defined a standard gauge system. The process of standardizing the gauges was expensive and disruptive, but efficiencies continue to be realized today.

There are parallels between the Australian railroad experience and America's HIT experience. On the HITPC, work began almost immediately, and requirements were created with the goal to increase the Meaningful Use of electronic health records (EHRs) across the country. The vast majority of these Meaningful Use requirements deal with functions that an EHR should be able to perform and requirements for what functions or data should be shared between EHRs. The existing HIT systems, be they vendor developed or self-developed, also were built one-by-one and applied differing standards (the great thing about healthcare standards is there are so many to choose from). Although very effective for each institution, heroics are required to share even basic data between them. We now essentially have our own Australian railroad and fixing it will require leadership and investment.

The goals of ARRA and Meaningful Use of health information technology (HIT) encourage acceleration of the adoption of Electronic Health Record technology in our country. Meaningful Use and certification requirements have started us down that road. The HITPC and ONC have focused on leveraging available technologies to significantly advance the gathering of digital data and incrementally introduce standards to support interoperability. While continuing to support the current momentum created by Meaningful Use, we must leverage all of the expertise in the federal government to develop a long-range plan and architecture for a national healthcare information technology infrastructure and outline the pathway to comprehensive use of meaningful standards that facilitate national interoperability. This will improve healthcare delivery quality, and significantly lower healthcare costs. Successfully achieving that transition will also require significant advanced planning, phasing and educational support of health care providers as they change systems and workflows to adopt the new standards.

I believe with true leadership and a commitment for long-range planning and support for transitions, appropriate standards and exchange infrastructure can be defined and implemented. If this is done, innovation in HIT will skyrocket, costs for technology and access to knowledge will be significantly reduced and quality care across the country will improve.

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Testimony of Marc Probst, Chief Information Officer and Vice President of Information Systems, Intermountain Healthcare

My name is Marc Probst, and I am the Chief Information Officer and Vice President for Information Systems at Intermountain Healthcare in Salt Lake City, Utah. Intermountain is a nonprofit integrated health system that operates 22 hospitals in Utah and Idaho; more than 185 clinics; and an insurance plan, SelectHealth, which covers approximately 500,000 lives in Utah. Intermountain's Medical Group employs approximately 900 physicians, and about 4,000 other physicians are affiliated with Intermountain. Intermountain has about 33,000 employees.

Nationally, Intermountain is known for providing high quality care at sustainable costs. One way we achieve this is by identifying best clinical practices and applying them consistently. Research reviewed by Dr. John Wennberg of Dartmouth showed that "Intermountain is the best model in the country of how you can actually change health care for the better." Dartmouth estimated that if healthcare were delivered nationally in the way it is provided at Intermountain, "the nation could reduce health care spending for acute and chronic illnesses by more than 40%." Essential to Intermountain's ability to deliver high value coordinated patient care is the effective use of health information technology.

In addition to my work as Intermountain's CIO, I am also an appointed member of the Health Information Technology Policy Committee (HITPC), created by the American Recovery and Reinvestment Act to advise the National Coordinator for Health Information Technology, currently Dr. Farzad Mostashari, with respect to the implementation of a nationwide health information technology infrastructure that permits the electronic exchange and use of health information. I am proud to be a member of this hardworking and dedicated advisory committee. Last week, I attended the 42nd in-person meeting of the HITPC here in Washington.

I want to thank Chairman Quayle and other members of the Subcommittee for holding this hearing and inviting me to testify. With respect to the first question posed in your letter, which asks what progress has been made as a result of the HITECH Act towards greater health information technology (HIT) interoperability, my answer is yes, progress has been made, but this progress must be thoughtfully accelerated. We must leverage all of the expertise in the federal government to accelerate the adoption of standards that will make it easier to share health information so clinicians and patients have the information in the form and time they need it to make appropriate healthcare decisions. Presently, we lack a shared infrastructure that will make this interoperability possible.

A report issued recently by the Institute of Medicine (IOM) entitled *Best Care at Lower Cost* highlights this situation and calls for a dramatic transformation in healthcare delivery, saying "America's health

care system has become far too complex and costly to continue business as usual." The IOM's first recommendation ("The Digital Infrastructure") focuses on the importance of health information systems and highlights a crucial aspect of their development that is too often overlooked – the issue of interoperability. Will the individual systems that are created be able to work together efficiently?

It's an enormously important issue for healthcare broadly, and it will determine how effective those systems can be on a national level. At present, healthcare providers across the country are creating or enhancing their health information systems. In some cases, like ours at Intermountain Healthcare, those systems have a long history; we began instituting electronic medical records 40 years ago. Others are early in the journey. But all are being developed essentially for their own internal needs. Interoperability is too low on everyone's priority list and requires nationwide planning and coordination.

Five healthcare providers who have been in the forefront of using electronic medical records have been collaborating on the creation of a Care Connectivity Consortium to pioneer the effective connectivity of electronic patient information across their systems. Those five are Intermountain Healthcare (based in Utah), Geisinger Health System (Pennsylvania), Group Health Cooperative (Washington), Kaiser Permanente (California), and Mayo Clinic (Minnesota). But even this ground-breaking effort will result in a multi-provider network, not a national one.

While we are already learning a great deal from the Care Connectivity Consortium and that learning can be broadly shared, it's a **national network** that we ultimately need. Only a truly national network will allow the efficient transmission of secure patient information to best serve patients in multiple ways. It will serve them when they move (changing doctors or providers, traveling temporarily or relocating permanently); it will enable best practices to be shared across the country; and it will allow the broadest research and learning to advance healthcare delivery. It will truly allow, "all ships to rise."

The IOM report recommends, in part, the following: "The National Coordinator for Health Information Technology, digital technology developers, and standards organizations should ensure that the digital infrastructure captures and delivers the core data elements and interoperability needed to support better care, system improvement, and the generation of new knowledge." Here standard-setting is the key, and a good analogy for the problem can be seen in the evolution of the railroad in Australia.

In Australia, railroads developed independently, one by one: some for moving natural resources like coal; others for carrying freight, and still others for transporting people. While trains and tracks did get built, the railroad system was not constructed with common standards. Many different gauges of railroad evolved, preventing railroad cars on one set of tracks from running on others.

To overcome this obvious challenge, the railroads built new stations and invented new contraptions to move cargo from one set of train cars to another. They were clever indeed; excellent engineering, for sure; and I've included some pictures of the "work-arounds" in my testimony. But to be sure, each contraption and transfer station slowed the transportation system down, added risk of product loss, and increased the cost of shipping by rail. After many years of subpar train service and increasing costs,

Australia defined a standard gauge for its train system. It was likely a huge expense to make this change, but the efficiencies gained continue to be realized today.

The parallel is obvious for America's health information technology. We need national standards to ensure, as the IOM recommends, "that the digital infrastructure captures and delivers the core data elements and interoperability needed." The federal government has made a major investment in electronic medical records, having committed $20 billion from the stimulus bill to it. We must now ensure that, as the capacities of many individual providers grow, they evolve into an efficient and effective national network.

While I am not representing it here, as noted earlier, I serve as a member of the Health Information Technology Policy Committee (HITPC). The HITPC is a hard-working, dedicated, experienced, and intelligent volunteer group. I have been honored to serve on this committee with such fine individuals. The first task of the HITPC was to define "Meaningful Use" and the requirements for certification of electronic health records (EHRs). Work began almost immediately, and the requirements were created with the goal to increase the Meaningful Use of EHR across the country. The majority of these requirements deal with functions that an EHR should be able to perform and requirements for what functions or data should be shared between EHRs. It is time now, however, for the HITPC to focus more on the longer-term plan and activities outside of Meaningful Use that are needed to fulfill our mandate provided in ARRA to "make recommendations to the National Coordinator relating to the implementation of a nationwide health information technology infrastructure."

It should be noted that the effort to achieve Meaningful Use is hard. It is difficult to develop and adopt electronic health records that do all that we want them to do, are easy enough to use that clinicians will use them, and that maintain and improve the patient privacy that is so important.

Indeed, despite Intermountain's long history of success using electronic health records and our sophisticated and largely self-developed information systems, Intermountain has not yet received Meaningful Use payments. Intermountain is on track, however, to receive our first Meaningful Use payments next year, and we have a plan in place to earn the maximum Meaningful Use payments achievable. More importantly, frankly, our plan will allow us to avert the penalties for failing to achieve Meaningful Use.

I share this Intermountain example to highlight two important facts: Achieving the requirements of the Meaningful Use program is not easy, and the Meaningful Use program has very real penalties attached to it. Providers and specifically CIOs across the country are increasingly feeling the pressures which Meaningful Use is creating. Coupled with programs such as Accountable Care Organizations, ICD-10 requirements and the need to ensure privacy and security of newly created petabytes of data, the lack of comprehensive standards is exacerbating the challenges of HIT across the country. What may seem like small steps required by Meaningful Use, are actually big efforts for provider organizations and if not done correctly will not only fail to achieve greater efficiencies for healthcare, but could ultimately create less secure and less safe healthcare delivery. The stages for Meaningful Use started fast and continue to be rolled out at a very quick pace. The work efforts which Meaningful Use defines in many aspects are

cumulative and we do need to be careful that future stages such as Meaningful Use Stage 3 are appropriately timed to allow the majority of our health system to do all that is being asked of it through these transformative times. Because of the difficulty and complexity of the program, I am concerned that the Request for Comment on Stage 3 is expected to be released this month while so many hospitals and physicians are still trying to achieve Stage 1, and the Stage 2 final rule was only officially published in September. I also worry about those providers who have fewer technical resources than Intermountain, and started from a lower level IT adoption – who will be left behind? With respect to the Subcommittee's second question about lessons learned from Stage 1 informing Stage 2 and suggestions for Stage 3, it is structurally impossible to fully benefit from lessons learned in earlier stages when the Meaningful Use timeline is so compressed. Further, everyone could learn from a systematic, independent evaluation of experience to date that looks at the impact on subgroups, such as rural and frontier providers

The goals of ARRA and Meaningful Use of Health Information Technology (HIT) encourage acceleration of the adoption of Electronic Health Record technology in our country. Meaningful Use and certification requirements have been successful in achieving these goals. The HITPC and ONC have focused on leveraging available technologies to significantly advance the gathering of digital data and incrementally introduce standards to support interoperability. While continuing to support the current momentum created by Meaningful Use, we must also focus on development of a long-range plan and architecture for a national healthcare information technology infrastructure and develop the path to comprehensive meaningful standards that can facilitate national interoperability, which will improve healthcare delivery quality, and significantly lower healthcare costs.

At one HITPC meeting not too long ago I stated there were probably 5-10 actions, which could be led by the HITPC and others with expertise in the federal government, that if done correctly could dramatically improve healthcare in the United States, achieving the goals of lower cost, increased access, and higher quality. These actions (see the seven enumerated items below) remain valid but require the federal government to define, set, and enforce a core set of standards (recall the rail gauge in Australia). Many of these standards already exist and could be selected quickly. Others may require a short time to finalize. Clearly, we have seen that volunteer processes can take decades to define and select standards – this is much of the problem and the basis for why I believe federal leadership is required for success.

I believe with true leadership and a commitment for long-range planning and support for transitions, appropriate standards and exchange infrastructure can be defined and implemented. If this is done, innovation in HIT will skyrocket, costs for interoperability and access to knowledge will be significantly reduced, and quality care across the country will improve. So in response to Question 3 about the effectiveness of HHS and ONC in establishing long-term goals and benchmarks for HIT adoption, interoperability, and provision of care, important work has been done, but there is much more to do.

As for Question 4, which asks for recommendations for federal policymakers, the areas I believe should be focused on, where standards should be defined and implemented include (and this list may not be exhaustive):

1. Standard terminologies.
2. Detailed clinical models.
3. Standard clinical data query language based on the models and terminology.
4. Standards for security (standard roles and standards for naming of types of protected data).
5. Standard Application Program Interfaces.
6. Standards for expressing clinical decision support algorithms.
7. Patient identifiers.

With true leadership and funding, based on the excellent work that has been performed already, I believe these standards could be defined, developed, and mechanisms for management put in place. Organizations such as HL7 (Health Level 7) have laid much of the groundwork. Once defined and developed, with mechanisms for support and management in place, realistic but aggressive dates should be set for adoption. Successfully achieving that transition will require significant advanced planning, phasing and educational support of health care providers as they change systems and workflows to adopt the new standards. My suggestion would be 10 years to give vendors, health systems, and other developers the time to change technologies to meet these standards. ”Haste” is not wise in the health information technology arena.

Australia had a vision, one that would cost money and take time (and likely was more disruptive than helpful during the transition), but logic assured that by making the needed changes, railways in the country would be efficient, save money, and improve service. The United States can have a similar vision that will be disruptive and costly but will lay the foundation for healthcare quality improvements and cost savings for generations to come.

I believe that it would be appropriate for the Health Information Technology Policy Committee and the Health Information Technology Standards Committee to be charged with the mission to focus on the development and adoption of comprehensive standards across the industry – standards that would improve patient care and allow interoperability between systems and providers. This would then allow the efforts to achieve Meaningful Use to reach their full potential.

Information and information systems in healthcare have tremendous capabilities to improve patient care. Moving from paper-based to digital systems, as encouraged through the efforts toward Meaningful Use, is a crucial step in facilitating the sharing of knowledge, but long-term planning and ongoing support for widespread use of adequate standards are needed to allow for the ubiquitous sharing of data and, ultimately, enhanced knowledge. The potential is enormous, if we set the standards that will provide common tracks on which this railroad of information will run.

Thank you again for the opportunity to participate in today’s hearing. I look forward to working with the Subcommittee and all who are committed to the successful adoption of national HIT standards and the realization of a shared infrastructure that will enable national interoperability.

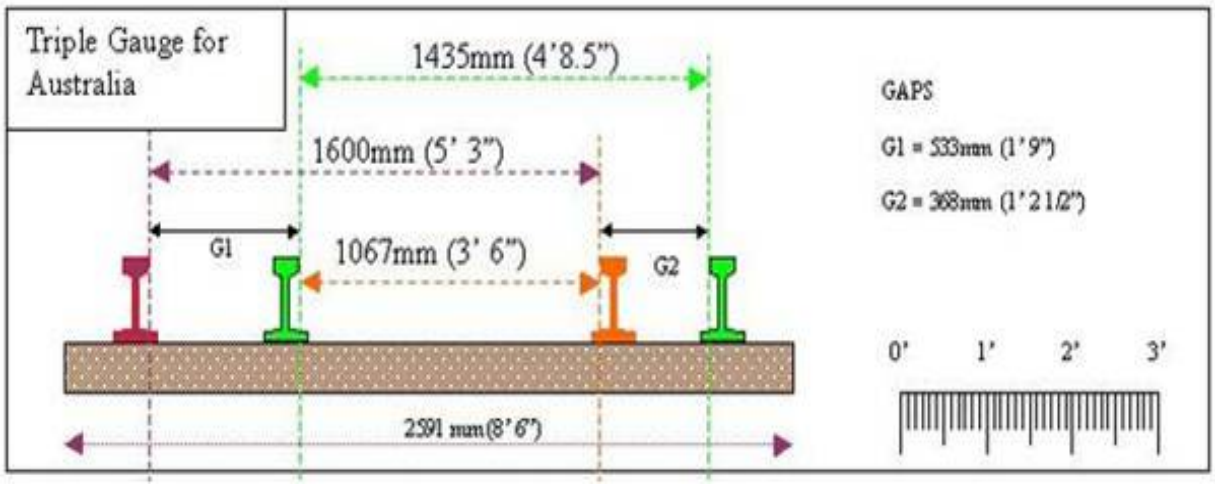
Contacts

Marc Probst
Chief Information Office/Vice President
Intermountain Healthcare
36 South State Street
Salt Lake City, UT 84111
W (801) 442-2000
marc.probst@imail.org
www.intermountainhealthcare.org

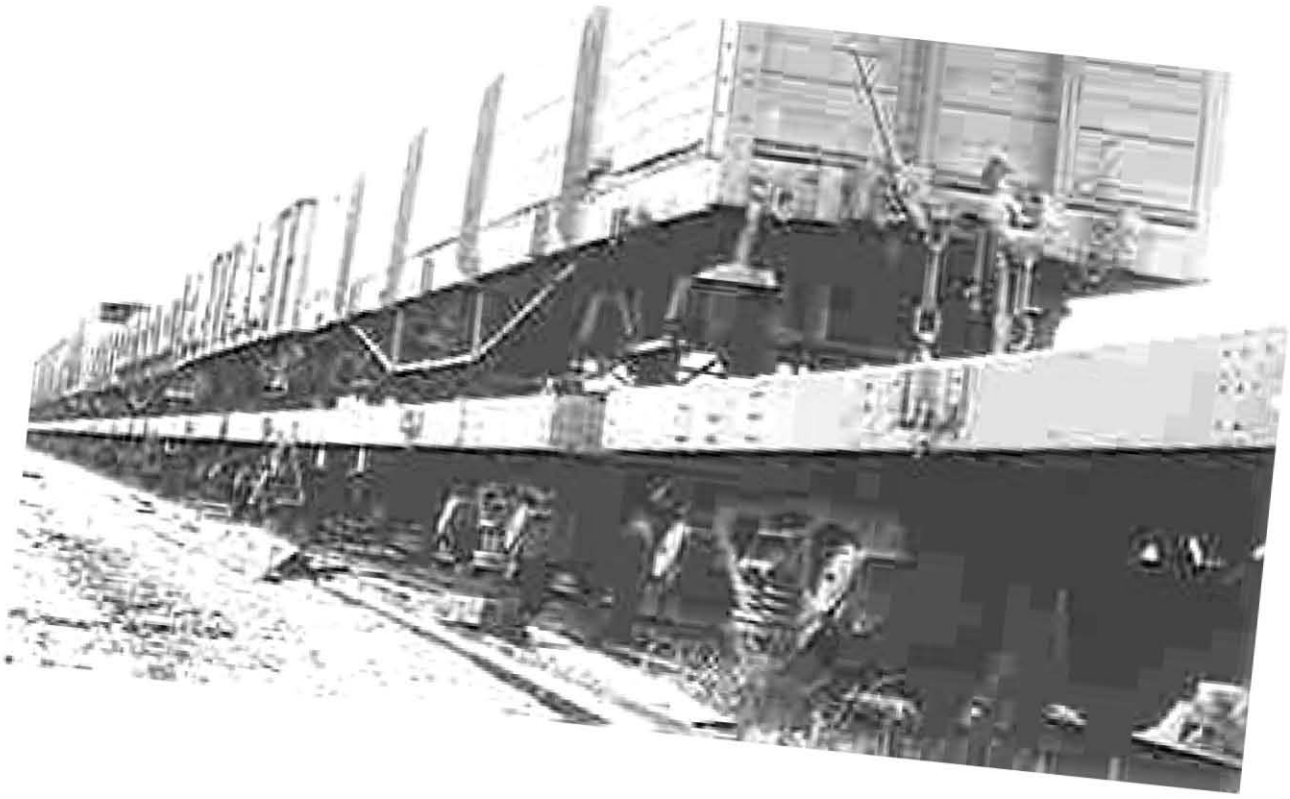
Bill Barnes
Director – Federal Government Relations
Intermountain Healthcare
36 South State Street
Salt Lake City, UT 84111
W (801) 442-3240
bill.barnes@imail.org

Karen S. Sealander
McDermott Will & Emery LLP
500 N. Capitol Street, NW
Washington, DC 20001
W (202) 756-8024
ksealander@mwe.com

Rail Gauge in Australia



Variations in gauge standards have been a problem for over a hundred years.



Marc Probst

Chief Information Officer & Vice President
Information Systems
Intermountain Healthcare, Salt Lake City, UT

Marc Probst is the Chief Information Officer and Vice President at Intermountain Healthcare, an integrated delivery network (IDN) based in Salt Lake City, Utah. Additionally, Marc has been appointed to serve on the Federal Healthcare Information Technology Policy Committee which is assisting in developing HIT Policy for the U.S. Government.

Marc has been involved with Information Technology and Healthcare services for the past 23 years. Prior to Intermountain, Marc was a Partner with two large professional service organizations; Deloitte Consulting and Ernst & Young, serving healthcare provider and payer organizations. Marc has significant interest in the use of information technology to increase patient care quality and lower the costs of care. He is experienced in information technology planning, design, development, deployment and operation.

Marc is a Board Member of the Utah Health Information Network (UHIN) as well as a Board Member of the Utah Food Bank.

Marc is a resident of Utah. Prior to living in Utah, Marc and his family lived in Reston, Virginia and in Tampa, Florida. Marc is married with 5 children who span in age from 27 years old to 7.

Marc is a graduate of the University of Utah where he studied Finance and he has an MBA from George Washington University.