



Amy Caro
Vice President, Health IT Programs
Northrop Grumman Corporation

Q1 What role does the cloud play in health IT today, and how will that develop over the next few years?

Cloud will be a primary means to advance health IT in terms of improved cost, speed, security and flexibility - there's potential for a huge return on investment. There are still security, privacy and data ownership issues that have to be addressed before organizations can successfully migrate to the cloud. But we feel confident this will be the next wave for health IT. We've successfully implemented cloud-based solutions for both health care delivery and public health customers. For example, our MApps2Cloud solution provides a path for building roadmaps to ensure a cost-effective and secure approach for migrating our health IT customers' critical mission applications to the cloud.

Q2 Big Data is a hot topic today in all industries but, outside of any "game-changing" hype, what will be its impact on health care?

It has a huge potential impact. There are massive amounts of health data that, when effectively analyzed, can be beneficial to our health. There is an overarching goal in health care to identify efficiencies, reduce fraud and abuse, and eventually to improve health outcomes for people throughout the U.S. We see Big Data providing the right set of tools and capabilities necessary for achieving the levels of data sophistication this will need.

We are taking a lot of what we've learned in the intelligence space through data mining and analytics and are bringing that to our health customers so they can get better access to health analytics, which in turn will help to better characterize diseases, improve how we develop medications, and drive better health for the entire population.

Q3 Mobile is changing the way people access services and how they interact with both private and public institutions. What are the ways it will impact health care?

Mobile is a key enabling technology. It's going to create a more patient-centered environment. The goal is to provide immediate access to patients and get information to health care services. It can also help public health agencies keep the population healthy.

We see a lot of mobile technology centered on social networking, such as sending the word out to mobile phone users about effective health care and for alerts about various disease outbreaks such as the flu. We're doing that now with federal agencies so that they can successfully connect with the public.

For example, a military veteran can receive medical information on a mobile phone, a food inspector can have results available to them on a mobile device, or a hospital clinician can have a mobile platform to view patient data.

The states are also doing a lot with mobile technology right now. For example, you'll soon be seeing Medicaid eligible recipients able to apply online for benefits from their mobile phone. It can be used generally to keep people up-to-date on the latest health news, and people can tailor it around topics they are specifically interested in.

Q4 Privacy and security are vital to the success of health IT programs. How well is health data protected today, and what else is needed?

This will be an ongoing challenge. As we adopt health IT, patient/provider trust will rest on a consistent experience with the IT platforms and systems that demonstrate they are indeed trustworthy.

Both government and commercial organizations can do more to ensure the trust level is there to gain widespread adoption of health IT. We are focused on protecting personal health information across all phases of the data life cycle- forming data in a secure application, encrypting when data is at rest in a database, transmitting securely, and securing during use through mechanisms such as strong authentication and data loss prevention tools. We are adopting new technologies tied to cloud and mobile applications before they are broadly implemented so we can closely monitor what they mean for security and privacy.

Q5 How will the Supreme Court decision on the Affordable Care Act affect the development of health IT programs?

We really see it as a catalyst. It's given the green light to the programs that exist now so they can really get going, particularly given that the 2014 deadlines are fast approaching and many health IT (HIT) components of the Affordable Care Act will kick in. There's already a tremendous amount of activity around integrating Medicaid eligibility, in helping accountable care organizations manage their data and costs, and around state health insurance exchanges.

While the increasing cost of health care is unsustainable, the real question is what's the best way to solve it. As we seek to make our health care systems more efficient and effective, there is widespread belief that HIT can play a crucial role in harnessing data for use by health systems and the government to improve care and reduce costs.

Q6 How important is telehealth in the overall scheme of health care delivery? What are the major IT issues that affect it, and what are the major changes this area is likely to see in the future?

We think telehealth is going to be a major influence on health IT. It will facilitate better communication among providers and patients, and the technology for that is already there and continuing to evolve. Telehealth will also help spur the development of more patient-centered care. But, it's going to be important to make sure that all of people's data, for example, on blood pressure, glucose levels and vital signs, is securely integrated for use in personal electronic health records (EHRs), so that the information can be used to make better health care decisions.

If done right, you could see improved communication with healthcare providers and reducing the need to go to the doctor's office due to illness. Helping care providers keep closer tabs on their patients' health will mean fewer people will need to go to the emergency room – that also will reduce costs.

Q7 Open source technologies are having a major effect in many private and public environments, but how do they play in health care?

Open source technologies have been used to improve health care delivery and systems. As with many solutions, open source has been used successfully depending on the goals and requirements of the system. It has already been leveraged in scientific communities such as the National Institutes of Health and in places such as the Veteran's Administration to potentially help improve and expand military health care. A few months ago, we jointly announced with the DoD that the military health record, Armed Forces Health Longitudinal Technology Application (AHLTA), would be available to the open source community, which allows it to be used in other countries and by other organizations.

However, you have to pay attention to total cost of ownership with open source. Some people don't realize the potential hidden costs associated with developing enhancements to open source technologies, or just with typical operations and maintenance. A lot of our customers are looking at a hybrid approach, using open source when it's beneficial and combining it with other systems to provide cost effective solutions for their needs.

Q8 Electronic health records have been a contentious technology in health care, but recent reports indicate a growing acceptance. True, and if so what's the reason? What's the outlook for EHRs?

We believe, and the statistics back this up, that there has been a great increase in the rate of adoption of EHRs. We think it's because the government has incentivized providers and hospital health professionals to adopt and use them. Some 270,000 health professionals have now registered for the incentive program. Around \$6.6 billion has already been paid out through the program, so that's one good indicator of their increasing use.

Other contributors to the increasing use of EHRs are the continuing improvements in their usability, the growing standardization among EHR products, and the increasing dependence by current and future providers on electronic communications in their everyday practice. EHR's will become more functional in the office practices and for clinical decision support and analysis, and this will help drive necessary change in the health care delivery support system. All this means that we are on our way to a much greater adoption of EHRs.

Some of the challenges have been due to providers needing to become more familiar with the rapidly evolving technology. Now, the usability of the technology is better and more individuals are comfortable with using mobile devices. It makes it easier for doctors, who generally don't want to be stuck behind a computer, to use EHRs while they are seeing their patients. They see the benefits of collecting information, how it can improve the quality of health care provided and how it can save lives.

Q9 **There's the beginning of a movement from the current service-based to a future patient-centered approach to health care. What are the implications for health IT?**

As patients get more involved in their own care, they'll want to be more connected to the health system. That will drive the changes that can give them better information for improving their health. For health care to become more patient-centered, health IT will need to increasingly support individuals so they can seamlessly access the health care system and harness their own information.

Again, mobile is going to be critical to this change, along with expanded health care decision support that is patient friendly. We expect significant advances in these areas, along the lines of what we are doing with integrated health analytics platforms, to streamline and personalize information for individuals in a more predictive manner.

The bottom line is that there will be a greater need for health IT with the advent of more patient centered care. It will require faster access so the patient can make more informed decisions.

Q10 **Fraud has a major impact on health care costs. What's the role of IT here, and what can be done to effectively fight fraud?**

Fraud and inaccurate payments cost our health care customers billion of dollars each year. Health IT will be an increasingly critical component of fraud detection approaches in the future because it offers the tools to identify, analyze and utilize massive amounts of data. The traditional way to fight fraud is the "pay and chase" method to get back what was paid out, but the key now is predictive analytics. Before payment is made, it is now possible to discover potential trends from an analysis of the data. By applying predictive modeling to identify potential fraudulent claims before payment, our government customers can stop payment before fraud or inaccurate payment occurs. As a national thought leader for fraud prevention systems, we continually monitor and help develop newer technologies and algorithms our government customers can use against increasingly sophisticated perpetrators.

Q11 **Standards are a necessary component of health IT, particularly for such things as interoperability. Are you satisfied with the current state of HIT standards? What else is needed?**

Health IT standards have come a long way in the last five years, but they need to continually evolve as our health IT systems are enhanced and become more interoperable. We need to agree on common standards when possible, and make standards user-friendly. The challenge is evolving the standards we already do have to make them interoperable. We also need to consider where providers and vendors are with the adoption of standards and help them transition to these interoperable approaches.

Northrop Grumman adheres to standards-based approaches, which are very important for systems integrators. For example, we are helping transition to the International Classification of Diseases, 10th Revision (ICD 10), and are also looking at ICD 11 as it is planned.

Q12 **Other than things such as Big Data, mobile and cloud, what emerging technologies do you think could have the biggest impact on health care in the future?**

Emerging technologies range from social and community networking to personal sensors and the overall globalization of advanced health technologies. One that stands out is personalized medicine, when a patient's information is customized with the use of genomic information. This is an emerging technology that can significantly impact future health care, because as you really look at how your DNA is made up, then health care can be more suitably enhanced and applied specifically to you.

This means taking massive amounts of data and storing, transmitting and analyzing it in order for health providers to effectively use the information to improve the health of their patients. This is an area where we anticipate working with our customers and partners to continue to stay focused on the future of health IT.

Q13 Health care policy and legislation have become third-rail issues in U.S. politics, but what else do you think is still needed to help advance the development and use of health IT?

The health IT (HIT) market is strong, growing and very dynamic and it's evolving rapidly towards becoming an integral partner with the health care delivery system. As far as regulation, recent laws such as the HITECH Act and Affordable Care Act introduced a significant amount of change that is still being digested.

We believe that health IT enables the health care system to be more efficient and effective and that this impact will only grow over time. Looking forward, approaches that can truly facilitate greater implementation and use of HIT within health systems (such as clinical decision support, data system modernization, and usability testing) can ultimately provide better care for those they serve. The bottom line, though, is that we've got to reduce unnecessary health costs while improving the health of the population and health IT is definitely an enabler for that objective.

Q14 Budgets in both the public and private sectors are likely to be under pressure for some time yet. What are the implications for health IT?

Budget pressures definitely create challenges. Organizations are going to have to really look at their health IT investments to see where they can save money, but also where to improve health care costs over time. At both the federal and state level, our government customers have been investing in newer health IT technologies such as EHRs and eligibility enrollment systems, and these are going to start to show results in the next couple of years.

But we also see a great potential for savings in the ability of predictive modeling systems to project costs and combat fraud and incorrect payments. Data analytics is going to play a key role here. Plus, with the proliferation of smart phones and tablets in our daily lives, mobile applications will be another area of focus for improving care delivery at the point of care. Budget-constrained organizations are going to have to realize the bigger picture of where they can save costs and that health IT can help with this challenge. Investing in health IT technologies can't be pushed off until later because they will be integral to how organizations work effectively and efficiently from now on.

Q15 What's the goal for a health IT vendor today? And how do you balance the needs of what in many ways is still a very conservative user base with the opportunities afforded by a rapidly innovating technology sector?

That's a very good question. Northrop Grumman has been in this business for more than 25 years and we've seen a lot of change in that time. As we support our customers as business partners, we constantly look at what's around the corner. A lot of our customers have been early adopters of newer technologies and have embraced health IT solutions such as data analytics and mobile into their environment. You'll see many of them leveraging these existing assets and tying them together through service-oriented architectures, and using advanced data analytics to make sense of the all of the data that's produced.

As a health IT vendor, we remain intent on helping customers to focus on systems integration, advanced data analytics, mobile solutions, and tools and capabilities such as our integrated Health Analytics Platform (iHAP) and Clinician Apps. That's because we know that producing, analyzing, and using better information really is the best way to increase system efficiency and to improve the overall health of the population.

THE VALUE OF PERFORMANCE.

NORTHROP GRUMMAN

For more information, please go to: www.northropgrumman.com/healthit