LEVERAGING THE CLOUD TO MEET TODAY’S HEALTHCARE CHALLENGES
Looking across all of the changes and uncertainty in the healthcare industry today, we see three pervasive trends and challenges:

- Patient-centric care, including coordinated care, wellness programs, management of chronic conditions, telehealth, home-based care, and other facets of the Patient-Centered Medical Home (PCMH) model.
- New business models, including accountable care, that are risk-based, performance-focused and analytics-driven. The healthcare cost curve has to bend, changes to payments act as the lever, and providers must play by new rules.
- Digitization of healthcare, including electronic health records (EHR), diagnostic imaging, health information exchanges (HIE), information standards and mandated sharing, and new metrics such as those required for EHR incentive funding.

All three challenges entail the exchange of new information with new people for new purposes, including much more robust information exchange among providers and with patients. That exchange is founded on standards-based management of data, and it presents a sophisticated information management challenge. It requires new relationships built on a fabric of trust. Both patients and institutions have to trust the information they receive, the entities they receive it from and give it to, and the platform that manages it for them. Cloud computing enables healthcare providers to build the platform and weave the fabric of trust.

Given the accelerating pace and pressure of change, we see a very different—and attainable—landscape within five years:

- Portable information including imaging and other advanced diagnostics
- Coordinated care, with capable patient-consumers active in the coordination
- Telehealth and in-home care as the standard for chronic condition management
- Secure, remote, everyday collaboration among providers, physicians, patients, and other providers and venues of care
- Venture capital driven consolidation of providers and adoption of accountable care business models
- Analytical methods to structure and manage pay-for-performance and profitable delivery of care
- Federation of HIEs and the formation of special-purpose information exchanges

How can providers take informed action today and make progress on all of these challenges when the industry is in motion—consolidating, specializing, and partnering? When the patient-consumer is more well-informed and more demanding? When data and technology are so fragmented to begin with? When nobody knows how things will eventually shake out? In essence, how can providers position themselves for the future, and find growth opportunities, without painting themselves into new corners along the way?

The only answer—easy to state but difficult to accomplish—is to become and remain agile. Perhaps an order of magnitude more agile than ever before when it comes to information management. For many healthcare providers, agility equals survival. Be good at changing, then changing again, and experimenting in between. The new motto is “flexibility wins.” Organizations with the information, analytics, and technology-enabled agility to innovate and adapt will thrive.

Business and clinical agility demand a different approach to information and technology. IT resources of all kinds must be managed as a flexible platform, rather than configured only to operate in set ways. A platform enables an organization to operate more efficiently (by better matching service to need), to experiment and innovate more quickly (because resources can be reconfigured), and to connect and collaborate more easily (because connections are standard). In other words, it enables an organization to be more agile.
IT SERVICES PLATFORM FOR GROWTH

Motivated by rapid growth and rising costs, a major U.S. academic medical center is implementing its next-generation data center, starting with server consolidation and virtualization, and continuing with a new architecture—consisting of servers, networks, and storage (both mechanical and electrical)—along with cloud principles. They’re building a dramatically more efficient platform for clinical service and institutional growth. The provider project manager summarizes the fundamental difference in their approach: “Most healthcare IT organizations don’t have the centralized responsibility or budget to rationalize infrastructure. Instead, they respond to requests for specific applications on specific platforms from different departments. By doing what we’re doing, starting with virtualization and defining a next-generation data center, IT can change the conversation with the business units. Instead of a physical IT infrastructure, they can begin to provide IT services. This gives them greater control over their infrastructure, to reduce costs and leverage investments, as well as respond to business needs more quickly and easily.”

CLOUD ADOPTION IN HEALTHCARE

MarketsandMarkets (July 2011) reports that the healthcare industry is facing growing economic and regulatory pressures that make its IT infrastructure ripe for a radical change, and that organizations need to take a closer look at the potential benefits of cloud computing. Globally 32 percent of healthcare facilities are already using cloud applications, and close to 75 percent of the rest are considering adoption in the next three to five years. Drivers for cloud adoption include improved quality, reduced costs, increased access, and stronger data privacy and security.

How does cloud computing fit into the equation? It is the best architecture and means for quickly and cost-effectively increasing the agility of IT and the organization at large. Cloud is inherently a platform approach, and the best strategy for:

- An evolving and patient-participating EHR
- Ubiquitous access for collaboration among patients, physicians, and partners on the device of choice
- Information exchange, including HIEs
- More precise and device-independent security and data protection
- Flexible aggregation of data for measurement, analysis, and clinical and business decision making
- Lowering IT costs and reducing the technology “footprint”

Most fundamentally, cloud computing enables the provisioning of easily understood and easily consumed services for patients, physicians, and other partners. It’s a more coherent, flexible, connectable, secure, efficient, and consumer-oriented way to deliver information and technology services inside and outside the institution.

The cloud approach is being adopted by provider institutions, industry communities (e.g., HIEs), and the business and technology services that support them. The IT infrastructure for healthcare is evolving to become a federation of clouds: public for standard business services; private for restricted data and reliable clinical and business operations; community for health services networks; and hybrid for the secure movement of data between clouds. The healthcare industry is poised and pressured to transform with unaccustomed and uncomfortable speed. For most providers, the gating factors are coordination, motivation, and the condition and receptivity of today’s information and technology infrastructure. Accelerating migration to a cloud-based platform can enable institutions to ride, or even lead, the waves of change instead of being caught in their undertow.

Leaders of most provider institutions have been understandably reluctant to think about IT at the center of things. The common refrain is: “We’re interested in patients, not paperwork,” and investment dollars tend to go to clinical rather than information technology. However, at this point in the now-rapid evolution of the industry, leaders must focus on IT for two reasons. One, quality information is absolutely integral to quality patient care. Two, the agility—directly linked to the viability and success of institutions—is being determined by their approaches to IT.

We recommend that provider organization leadership teams—including CEOs, CFOs, CMOs, and CIOs—ask and discuss these key questions:

- Do we know who our patient populations are, and who they need to be to meet our growth (or survival) strategy? Are we able to influence the mix?
- How prepared are we for accountable care in terms of processes, information, analytics, management capability, and change-ability?
- Do we know how well we leverage the capabilities of our clinical and business partners?
- Can we integrate our clinical, financial, and operational data for the purposes of revenue management, pay-for-performance, strategy formulation, and most importantly, sharing best practices and raising the quality of care?

The next step is to commit to action. If you haven’t done so already, consider these initial steps:

- Articulate the IT implications of your institution’s growth strategy, whether it be via acquisition, specialization, or services excellence.
- Reconfigure IT plans as a roadmap with parallel destinations—a flexible platform for growth and change, and the realization of specific operational, financial, and clinical objectives including PCMH.
- Establish a center of excellence in information standardization, integration, protection, and exchange. This is an absolutely essential business and clinical competency.
PRIVATE CLOUD FOR SERVICE-ORIENTED IT

U.S. and UK providers face many of the same pressures and challenges. Belfast Health has found in cloud computing a solution for delivering service-oriented IT. Belfast Health was forced to facilitate major operating efficiencies and cost reductions while improving the quality of care across six facilities, each with their own information systems. During recessionary times, the technology budget was being cut to protect the funding of clinical care. The only way to do more with less was to do things very differently. For Belfast Health, that meant using a private cloud as the platform for rapid consolidation of clinical and management data, unprecedented 24/7 access to information, and dramatic reduction in IT costs.

“We can no longer ignore the cloud,” says Paul Duffy, co-director of IT. “Big issues such as privacy legislation, compliance, and other data-related security concerns can be overcome. Cost reduction and the simplification of service delivery are absolutely key.”

• Build a private cloud environment for rapid experimentation with new processes, collaborations, metrics, and analyses. Focus at least half your experiments on improving patient, physician, and employee experience.

Providers have begun the process of transforming healthcare information to transform healthcare delivery. Success depends on the ability to do three basic things. First, manage information. Collect, standardize, organize, store, and share information with all appropriate internal and external stakeholders in an efficient and cost-effective manner. Second, utilize information and analytics to create knowledge; to achieve clinical excellence, respond to market trends in a more agile fashion and improve bottom line results. Third, create a fabric of trust through transparency and by exchanging information in ways that preserve and support the integrity and security of the data. A cloud-based platform provides the most direct path to all three, and to the overarching goal of agility.

THE PRESCRIPTION FOR HEALTHCARE IT

<table>
<thead>
<tr>
<th>Beyond</th>
<th>To Achieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data center consolidation and business</td>
<td>IT as a Service and choice computing</td>
</tr>
<tr>
<td>continuity</td>
<td></td>
</tr>
<tr>
<td>Communication and information exchange</td>
<td>Collaborative coordination of care</td>
</tr>
<tr>
<td>Patient portals</td>
<td>Patient engagement platforms</td>
</tr>
<tr>
<td>Integrated hospital and physician systems</td>
<td>Interoperable provider, physician, community, and</td>
</tr>
<tr>
<td></td>
<td>in-home systems</td>
</tr>
<tr>
<td>Realtime information for decision making</td>
<td>Predictive clinical and business analytics</td>
</tr>
<tr>
<td>Data security, privacy, and HIPAA compliance</td>
<td>Information-rich fabric of trust</td>
</tr>
</tbody>
</table>

CONTACT US

To learn about how EMC products, services, and solutions can help solve your business and IT challenges, contact your local representative or authorized reseller—or visit us at www.EMC.com.