Executive Brief:
IBM IT Service Management Solutions for Healthcare

Healthcare Today: People-centric… and Information Intensive

In recent years, the healthcare industry has undergone a dramatic transformation in the way it both creates—and depends on—information. New diagnostic and imaging techniques can create enormous amounts of data, while telemetry and automation have extended the reach of highly trained professionals and freed them from many routine tasks. At the same time, healthcare record-keeping has progressively migrated to a more digital format, replacing literally generations of paper-based records. The sheer volume of information collected and managed by healthcare providers has itself risen in response to substantially increased focus on cost-containment and liability issues.

These trends have tended to foster multiple healthcare information systems, for clinical and professional purposes as well as for business management. The net result in many cases has been a proliferation of healthcare information systems and resources in any given setting. Clinicians, practitioners and healthcare business professionals need them all—but seldom are they harmonized or integrated to any great extent. When they are integrated, they may be required to meet exacting standards such as Health Level Seven (HL7) and its worldwide counterparts and cooperating standards bodies, such as ISO 215 and, in Europe, CEN/TC 251. Though serving a well-defined purpose, standardization may involve substantially increased costs for healthcare providers when they must integrate their own systems to meet requirements.

Healthcare information may be critical to saving lives and preserving health, and must therefore be highly available to professionals whenever and wherever needed. This has produced a need for healthcare information technologies that support fluid mobility, often under highly constrained conditions of network bandwidth and IT resources. When contrasted with the centralized, high-performance information stores that characterize many healthcare organizations—and with which this agile mobility must often be directly integrated— healthcare IT faces a daunting challenge. It is a challenge made all the more demanding when primary medical technologies have a priority claim on available resources in order to maintain currency and competitive differentiation. As a result, there are few industries that must realize a higher return on investment (ROI) from IT investment than healthcare.

It's All About People

Yet none of these information management realities have changed the essential nature of healthcare itself. In spite of advances in medical technology, automation, and "digitization," healthcare is still fundamentally about one thing: *People*. Therefore, when it comes to the management of healthcare information, the most important guiding principle must be this: *Hardly anything can be more personal—or sensitive—than the information regarding an individual's health and history of care*. The improper handling of sensitive health information can have long-lasting consequences that, in their own way, can be just as serious for the individual as improper patient care. Mismanagement of healthcare information can expose people to unaffordable or inaccessible health insurance due to leaked clinical information or records errors. The theft or exploit of identity information can result in tangible damage to credit history and financial resources, and may expose individuals to other, more personal risks. The resulting effect on the healthcare provider—whose primary purpose is to foster and sustain well-being—may range from lost confidence to material liability, all of which could contribute to significant business damage.

In other words, healthcare providers have an obligation to practice the same high standards of *information care* that they pursue in the care of patient health.

Today, Information Care is Enforced

This is a significant aspect of regulatory mandates such as the Health Insurance Portability and Accountability Act (HIPAA) in the United States, and similar privacy regulations from the local to the international level worldwide. Designed to ensure the continuity of affordable care, the responsible management of healthcare information is a substantial focus of these initiatives. Their fundamental intent is to establish standards for managing one of the most difficult dilemmas in healthcare: balancing the individual's right to privacy and accessibility of care with the provider's need for the information it must have in order to assure its sustainability.

These mandates require healthcare information to be reasonably safeguarded from any intentional or unintentional use or disclosure in violation of its provisions. When collected or disclosed, they typically require any personal information to be restrained to the minimum possible. They may also require

the maintenance of disclosure records—regardless whether disclosure was authorized or not—for substantial stretches of time. In the case of HIPAA, for example such records must be maintained for up to six years prior to the date of request.

Though certain mandates have regard for the ability and willingness of a healthcare provider to comply, and may even make allowance for government assistance with compliance, penalties for non-compliance can be severe. For example, HIPAA criminal penalties for the sale or use of individually identifiable health information for commercial gain, personal advantage or malicious harm can be as high as $250,000 and 10 years in prison. The simple disclosure of health information under false pretenses can result in penalties up to $100,000 and 5 years in prison. Even civil penalties for failure to comply can range as high as $25,000 per year, per violation. When multiplied by the number of individual health records managed by any one provider—as well as the civil actions that could result from lost information control—the extent of possible liability may be substantial.

Rising to the Challenge

Clearly, the stakes in establishing a proper information care environment are higher than they have ever been. The demands are many, but the costs are potentially great. The penalties for failure may be substantial—yet the investment in information care must be balanced against the need to invest in primary healthcare technologies while simultaneously meeting cost-containment goals. In order for the healthcare IT investment to meet these lofty expectations and deliver maximum ROI, choices must be made based on demonstrated value, expertise, and solution pedigree. Any risks must be mitigated by turning to proven credibility in delivering maximum satisfaction from the healthcare IT investment.

IBM: Leadership in Information Care

These are qualities for which IBM has become well known across a broad range of industries, including healthcare, for many years. Today, IBM is advancing the frontiers of IT Service Management (ITSM) in healthcare, with solutions that deliver not only information care, but responsive, on-demand IT that meets the most critical requirements of both business and clinical healthcare professionals.

Identity and Access Management: The Front Line of Information Care

Just as healthcare itself is about people, the management of the security and privacy of healthcare information is also concerned with the actions of individuals. Exploits and regulatory violations occur when people gain improper or unauthorized access to information resources. Therefore, the front line of information care must be centered on solutions that manage how people access and use healthcare information.
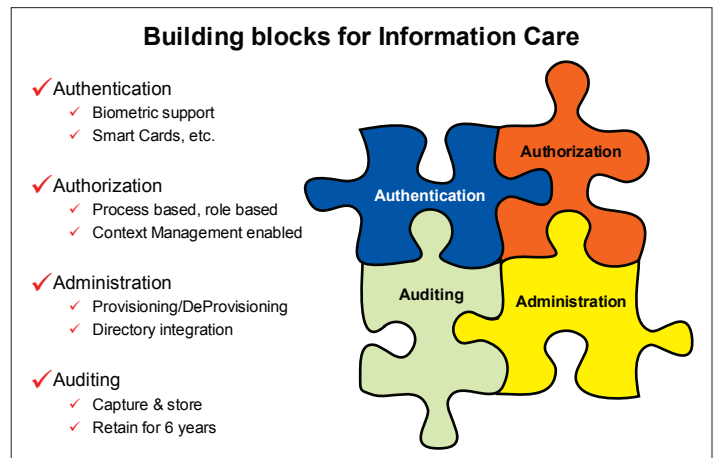
In IT, this requires the proper identification and authentication of IT users. This is no simple task in healthcare, where numbers of disparate systems may require a single individual to maintain multiple login, password and account information. Though intended to protect IT resources, this fragmented scenario can actually pose more risks than it resolves—particularly when professionals resort to using notes or other insecure means of keeping track of their IT access information. Unifying access information and integrating identity management with a wide range of IT resources is not without substantial risks, however. Multiple systems must be integrated successfully, and access mapped to a range of resources which may include operating systems, databases and applications in numerous domains. The process of delegating access rights and privileges must also be managed. This can be one of the highest risks of an identity and access management (IAM) initiative. It requires state-of-the-art identity provisioning tools as well as experience in accepted best practices and industry standards in order to succeed.

As an industry leader in identity management with significant expertise in healthcare, IBM is well positioned to help healthcare resolve its most demanding identity challenges. IBM Tivoli Access Manager can integrate single sign-on access using a number of techniques—from strong passwords and tokens to biometrics, smartcards, and proximity cards or badges—to

mainframe and Unix systems as well as to Microsoft Windows environments, and can extend identity integration to the Web as well as to Citrix, both popular choices for healthcare information mobility. IBM Tivoli Identity Manager extends these values to applications from a broad range of recognized names in healthcare, including Cerner, General Electric, McKesson, Meditech, Lawson, and many others. Together, IBM identity solutions can unify and centralize the administration of a single identity for multiple IT resources, significantly improving the manageability—as well as the usability—of healthcare IT.

The IBM identity solution offers many values critical to healthcare, such as quick switching and auto-logoff to high-use workstations and access points used by multiple clinicians. Patient information context switching conforming to the HL7 Clinical Context Object Workgroup (CCOW) standard can be supported, in cooperation with IBM solution partners such as Carefx. When LDAP or X.500-based directories are the identity information repository of choice, IBM identity solutions can integrate with existing resources, facilitating comprehensive identity integration with minimal impact. Together, these values represent one of the most comprehensive identity integration solutions available to support the requirements of information care.

Recent EMA research indicates that 77% of enterprises give high priority to placing greater controls on sensitive enterprise information. 94% regard identity management as important or critical to the management of security and compliance priorities, as well as to IT availability and information integrity. IBM's leadership in this valuable market places it among the front ranks of preferred enterprise solutions on the "front line" of security and compliance.

IT Resources that Support Today's Cutting-Edge Medical Technologies

At times when access to vital health information is critical, healthcare professionals cannot afford to wait. This means that access to critical IT resources must be responsive and reliable. The availability and integrity of information must be assured. Not only do these demands require leadership in IT integration itself, they also require expertise in meeting healthcare-specific standards and regulatory mandates. This requires the ability to seamlessly integrate a complex array of network, system, data management and infrastructure technologies, as well as the IT Service Management solutions necessary to weave them together.

IBM is able to substantiate its leadership in IT Service Management with a range of assets that meet these strenuous demands of modern healthcare. IBM's WebSphere family offers a market-accepted application platform, designed for integration with critical database resources such as IBM's DB2 and other database systems. IBM's Rational family provides market-leading tools to support the design and development of sophisticated applications that make the most of these well-accepted resources, while the IBM Tivoli Composite Application Management (TTCAM) solution family assures the critical availability, reliability and integrity of complex application environments in operation. Together, these resources both deliver and assure the responsive accessibility of vital healthcare information.

When it comes to the management of the high volumes of data that must be delivered on demand to healthcare applications, IBM's System Storage and TotalStorage resources enable healthcare organizations to make the most of their storage assets, leveraging advanced technologies in storage networking and virtualization to enable healthcare to meet not only critical availability needs, but regulatory requirements such as HIPAA mandates for maintaining separation of electronic protected health information (ePHI) from one organizational unit to another in clearinghouse operations.

Together, these IBM assets help healthcare achieve its most challenging goals, such as fulfilling HIPAA mandates to understand and manage complex information flows throughout the organization.

EMA's Perspective

Information care is not just a regulatory mandate or business requirement. It is also an ethical standard which parallels the primary focus of healthcare itself: making the welfare of the individual the first priority. Because of the close relationship of information and healthcare management today, this sets a high bar indeed for healthcare information systems in terms of availability, reliability, and integrity.

However, though admirable in intent, Enterprise Management Associates (EMA) has seen that, in the "real world," there can be a substantial gulf between what healthcare providers want to do, and what they can do. The IT investment may be subordinated to primary accreditation requirements or new, competitive medical technologies. When investments are made, risks must be carefully managed to preserve high expectations of ROI. Therefore, the investment in healthcare IT must deliver maximum value with minimum risk.

With its market leadership across a range of solutions of primary value in delivering information care, IBM solutions enable healthcare organizations to meet a broad range of their most significant IT challenges. Its expertise in healthcare is backed by one of the most accomplished pedigrees of achievement in the most demanding environments across multiple industries. With the introduction of its Tivoli Express offerings, IBM can extend its IT Service Management values to healthcare organizations across a broad spectrum of size and focus.

These solutions help healthcare achieve many of its most elusive IT goals today—but what about tomorrow? As increasingly intricate application technologies begin to define the IT architectures of the future, healthcare organizations will be even more challenged to keep up. At the same time, the volume of health information will continue to soar, as streaming, real-time content and converged networks redefine what is possible for healthcare IT.

This sort of outlook bodes well for the healthcare organization that partners with IBM in order to position its solutions of today for the challenges of tomorrow. Few companies are as in tune with what IT will become as IBM. With a focus on IT Service Management squarely anchored on the leading technologies driving tomorrow's developments, IBM not only offers healthcare a portfolio of solutions for today's information care requirements. In EMA's view, an IBM engagement brings with it a vision of what healthcare information management will become, paralleling the standards healthcare continues to set for itself in caring for individuals, and the values of high concern to patients and professionals alike.

About IBM

IBM is an innovation company focused on the enterprise. For more than 80 years our technology leadership has been helping businesses innovate. Today, technology has a new position in the agenda: driving new thinking about business design, partnerships and the underlying infrastructure. Drawing on resources from across IBM and from 90,000 Business Partners, we offer a wide range of services, solutions and technologies that enable clients of all sizes to take full advantage of the new era of On Demand Business. IBM is helping clients succeed in delivering business value by becoming more efficient and competitive through the use of business insight and information technology (IT) solutions. For more information on how IBM IT Service Management and Tivoli solutions can help banks accomplish their business objectives, visit http://www.ibm.com/tivoli.