

Integrate your clinical, research and administrative data to help minimize costs and optimize patient care.



Contents

- 2 Executive summary**
- 2 Introducing On Demand Business**
- 3 IBM Middleware Solutions for Healthcare help deliver on demand environments**
- 4 IBM innovations drive solutions for the healthcare industry**
- 7 About IBM**
- 8 Components of IBM Middleware Solutions for Healthcare**
- 8 For more information**

Executive summary

How do you navigate in a sea of constant change? In an environment filled with increased competition and mounting financial pressure, what steps can you take to provide better and safer patient care, while enhancing your business performance?

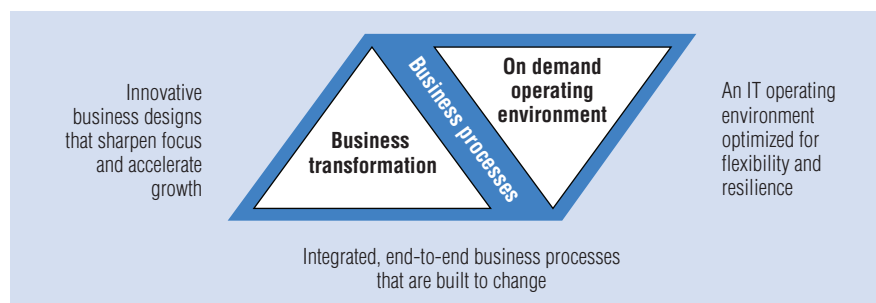
Today's healthcare industry faces numerous unprecedented challenges. Rising costs is the most dominant issue confronting healthcare providers. But it's not the only one. A better-informed patient, with greater access to available health information, "demands" a higher quality of care. Medical errors, costly and harmful, continue to be a source of concern within the medical community. And disparate information technology (IT) infrastructures only widen the chasm between administrative and clinical operations.

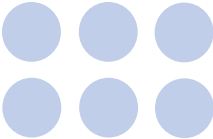
The documentation burden in healthcare makes for inefficiencies and siphons away resources from the primary mission of providing patient care. Add the labor shortages of the past decades and you get healthcare providers and staffs working harder with fewer resources. An overworked staff risks making mistakes. Hospitals need to look for ways to shorten administration time and work smarter to reduce medical errors. At the same time, clinicians and researchers deal with an explosion of information, but often have limited means to access and share this data.

To succeed in today's healthcare marketplace, you need to deploy an open, integrated IT infrastructure aligned with your business objectives. A flexible and resilient system to facilitate integration for process improvement and provide a complete panorama of patient data across systems. A set of solutions to transform your business into one that promotes efficiency and effectiveness. You need to become an on demand healthcare organization.

Introducing On Demand Business

What does it mean to be an On Demand Business? Simply defined, an on demand healthcare organization integrates business processes end to end across the entire enterprise and with other healthcare institutions and government agencies. It can respond with speed to patient, business and community needs; to changing healthcare, economic and regulatory conditions; and to evolving priorities and policies.





And once your organization has begun the journey to become an On Demand Business, what will you have accomplished? In an on demand environment, you work as an inter-connected unit with everyone in your organization—and with your partners, suppliers and patients. Accessing information and collaborating with key constituents becomes easy. You also achieve flexibility by integrating people, processes and information within and beyond your enterprise. But integration is only one aspect of an on demand healthcare organization.

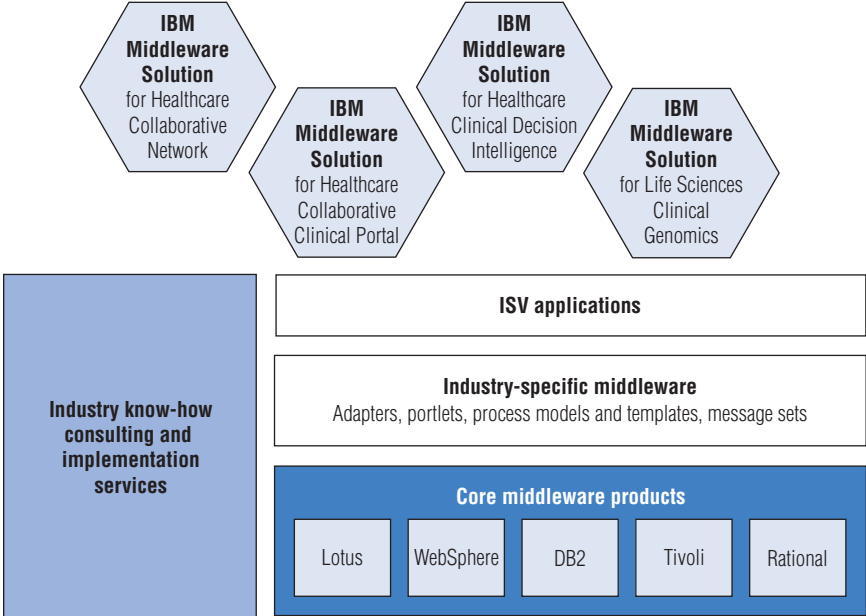
As an on demand healthcare provider, you reach a high level of IT optimization through infrastructure management. Both the automation of your enterprise and the virtualization of your existing and future systems enable you to respond in real time to opportunities, threats and challenges.

Among other capabilities, on demand healthcare organizations can:

- Increase the quality of patient care and minimize medical errors. *Aggregated and shared data—accessed instantly and securely—allows a high level of personalized and precise care.*
- Respond rapidly to changes and threats. *React quickly to emergencies through coordination and delivery of information among key constituents, such as hospitals, physician groups, clinics, local health organizations and emergency response teams.*
- Contain costs. *By increasing efficiencies and productivity, rising medical costs can be better managed and controlled.*

IBM Middleware Solutions for Healthcare help deliver on demand environments

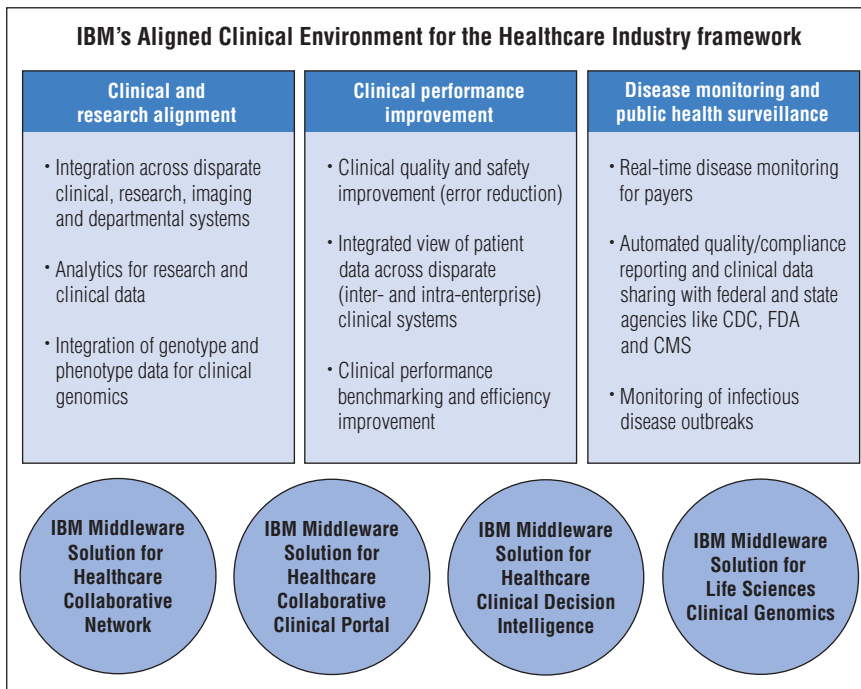
You can use IBM middleware software to develop, integrate and manage your applications and systems. IBM middleware software provides a powerful foundation for healthcare



Overview of a middleware solution

providers' business and technology needs. IBM Middleware Solutions are customized combinations of IBM core middleware and industry-specific middleware that, when combined with application software from IBM's network of independent software vendor partners and industry-specific services, enable customers to build an on demand operating environment. IBM's extensive network of ISV Business Partners provides leading industry-specific business applications that run on IBM middleware platforms, including applications for patient tracking and clinical and hospital information systems.

The individual solution offerings fall under IBM's Aligned Clinical Environment for the Healthcare Industry framework. The Aligned Clinical Environment provides an integration



framework through which public and private healthcare organizations can rapidly access relevant and reliable information, collaborate on key healthcare issues and improve healthcare delivery. The environment promotes important strides in clinical research, information sharing about adverse drug responses and rapid response to public emergencies. Individually, each of the following solutions helps you address particular needs. As your organization's requirements evolve, you can seamlessly deploy additional solutions under IBM's Aligned Clinical Environment for the Healthcare Industry because they have been designed from the outset to work with and build on each other in a modular fashion.

IBM innovations drive solutions for the healthcare industry

Many components of IBM Middleware Solutions for Healthcare contribute to IBM's Aligned Clinical Environment for the Healthcare Industry solution. This solution helps healthcare providers align their clinical and research operations, optimize clinical performance and address disease monitoring and public surveillance requirements. Providers use IBM's Aligned Clinical Environment solution platform for advanced data analysis, as well as for collaboration within an enterprise and with external partners and regulatory agencies.

IBM Middleware Solution for Healthcare Collaborative Network

You want accurate, timely patient information available at your fingertips. Yet, the actionable data you need is stored in multiple disparate applications. If you can't readily integrate,

share or exchange this information within your facility and provider network or with government agencies, your ability to monitor clinical status is greatly hampered. The IBM Middleware Solution for Healthcare Collaborative Network addresses this issue. This solution can integrate key clinical data from disparate applications into one network that provides private and secure transmission of healthcare clinical information.

Using the solution's open-standards-based exchange, you can perform adverse event detection and act on information rapidly. The solution drives maximized efficiencies and minimized reporting burdens by capturing data from disparate systems, allowing the information to be easily shared. And with wide-ranging access to relevant healthcare information, you can make high-quality judgments regarding patient care. The IBM

Middleware Solution for Healthcare Collaborative Network also helps you:

- *Quicken response time to adverse health events.*
- *Optimize quality of patient care.*
- *Minimize administrative costs.*
- *Facilitate biosurveillance.*

“What IBM is focusing on – which is the conversion of paper records to paperless systems; the maximum exploitation, in the best sense of the word, of information systems – is one of the most important things that can happen in healthcare. It means that information will be more rapidly delivered so it can be helpful to patients.”

— Dr. Herbert Pardes, President and CEO, NY Presbyterian Hospital

IBM Middleware Solution for Healthcare Collaborative Clinical Portal

Accessing disparate patient data system wide becomes easy. The IBM Middleware Solution for Healthcare Collaborative Clinical Portal helps unify multiple legacy systems, providing immediate access to patient records from anywhere, at any time. Incorporating your choice of best-of-breed industry application and roles-based views of patient data across financial, administrative, clinical and hospital information systems, healthcare administration and clinicians have a hospital-wide view of the patient-centric information from a single, highly secure portal—even from remote, wireless locations.

Using the IBM Middleware Solution for Healthcare Collaborative Clinical Portal also helps maximize your staff's adoption of IT systems and increase employee satisfaction. And making comprehensive, coordinated and secure patient information readily available to healthcare providers drives the quality and safety of patient care. This solution can help you:

- *Increase staff productivity.*
- *Decrease training time.*
- *Minimize operating costs.*

IBM Middleware Solution for Healthcare Clinical Decision Intelligence

You have a lot of information at your disposal, but you need the right combination of clinical information to help you make a well-informed diagnosis or to suggest treatment. The IBM Middleware Solution for Healthcare Clinical Decision Intelligence enables you to consolidate patient data and analyze data in-depth by aggregating clinical information from multiple disparate sources.

This solution helps you access patient data in real time, allowing you to respond quickly. And by retrieving the right information, you'll be able to make well-informed administrative and clinical decisions, improve processes and lessen the safety risk posed by a lack of information. The IBM Middleware Solution for Healthcare Clinical Decision Intelligence can also help you:

- *Minimize processing costs.*
- *Optimize quality of patient care.*
- *Enhance employee productivity.*

“The primary goal is that the physician has access to clinical information, not only about the patient laboratory and radiological tests, but to give him context he needs to have the most up-to-date information about the condition and the guidelines for treatment. If it’s relevant, he needs to have familial, historical and environmental information about the patient. All of this information must be available at the appropriate time and at the physician’s fingertips, automatically applied to the specific patient.”

— David Liss, VP of Strategic Initiatives, NY Presbyterian Hospital

IBM Middleware Solution for Life Sciences Clinical Genomics

The healthcare and pharmaceutical industries have been buzzing with the promise of personalized medicine since the inception of the human genome project. Advances in science, technology and IT accelerate the delivery of these research discoveries into clinical practice. To realize this vision of information-

based medicine, you need a solution that will allow you to capture, integrate, manage and mine genotype and phenotype data to gain a molecular understanding of disease. The IBM Middleware Solution for Life Sciences Clinical Genomics provides an environment for capturing and integrating clinical patient data with high-throughput research data to identify and validate novel therapeutic targets, conduct focused clinical research and ultimately revolutionize the way to diagnose and treat diseases.

With the IBM Middleware Solution for Life Sciences Clinical Genomics, you can integrate multiple heterogeneous data sources into a single accessible data warehouse. You also can protect new and pending discoveries, sensitive information assets such as intellectual property, and medical patient records against unintended use. It helps you:

- *Accelerate targeted, innovative clinical and basic research.*
- *Optimize the capture and integration of phenotypic and genotypic data.*
- *Enable highly secure, cross-institutional sharing of data for collaborative research.*

About IBM

The goal of IBM Healthcare and Life Sciences is to rapidly translate advanced technologies into value for our customers and IBM Business Partners through professional solutions, services and consulting business worldwide in the fields of pharmaceutical research, biotechnology, genomics, health and other life sciences industries.

Many components of IBM Middleware Solutions for Healthcare contribute to IBM's Aligned Clinical Environment for the Healthcare Industry solution. This solution helps healthcare providers align their clinical and research operations, optimize clinical performance and address disease monitoring and public surveillance requirements. Providers use IBM's Aligned Clinical Environment solution platform for advanced data analysis, as well as for collaboration within an enterprise and with external partners and regulatory agencies.

- *The IBM Research Healthcare and Life Sciences Institute drives invention and technology innovation specifically targeting the healthcare, life sciences and*

pharmaceutical industries in areas such as data management, process improvement and pervasive/wireless technologies and products. IBM's mobile health initiative is one example of how our technology extends the healthcare provider's ability to monitor patients in noninvasive methods, even in the patient's home.

- *IBM Center for Healthcare Management promotes information sharing and dialog on critical issues facing healthcare payers and providers: healthcare quality and patient safety, optimization of clinical and administrative processes, medical personnel shortages, healthcare technology, and innovation and transformation. The center sponsors discussion forums on topics ranging from disease surveillance to healthcare collaboration and data management for informed healthcare decisions. It also supports the development of research reports and case studies on innovative industry approaches to improving quality and efficiency.*
- *IBM's Safe and Lean Provider helps healthcare providers transform and optimize business and clinical processes so that they can deliver improved and cost-effective care. To gain insight into opportunities for improvement, IBM applies innovative simulation and modeling techniques, works with IBM Research to develop solutions and employs cost modeling to understand the cost involved in providing a solution designed to deliver desired results. In implementing the solution, IBM fuses Lean Six Sigma for optimizing performance, quality and cost with enabling technologies. IBM also facilitates organizational change to help people understand and perform their roles and responsibilities.*



IBM remains strongly dedicated to future innovations and discoveries in healthcare and life sciences. IBM can bring you industry-tailored solutions based on our deep knowledge of healthcare and life sciences.



In addition to our extensive healthcare industry expertise, IBM offers:

- *A commitment to open standards.*
- *A choice of platforms.*
- *Scalable solutions.*
- *Relationships with application providers.*

Components of IBM Middleware Solutions for Healthcare

Software

IBM DB2®—Database and data management solutions that help you access, store and analyze data more effectively

IBM Lotus®—Capture and apply essential knowledge, and collaborate in real time

IBM Rational®—Advanced software and system development tools

IBM Tivoli®—Intelligent management software to help you store, protect and provision your resources

IBM WebSphere®—Transaction management and integration solutions

IBM Middleware Solutions for Healthcare offer a world-class foundation for your solutions, and applications provided by our extensive network of industry-focused ISVs complement the full solutions. IBM ISV Business Partners provide leading industry-specific business applications that run on IBM middleware platforms.

IBM Software Development Platform

A comprehensive, proven, open and modular set of tools, the IBM Software Development Platform helps you build, integrate, extend, modernize and deploy software and software systems for the on demand world.

Services

IBM offers an unsurpassed breadth of service capabilities. Resources include:

- *IBM Business Consulting Services*
 - *Strategy*
 - *Integration services*
 - *Business process re-engineering*
- *IBM Software Services*

For more information

To learn more about IBM Middleware Solutions for Healthcare, including case studies and more detailed information about solution components, call your sales representative or visit ibm.com/software/industries/healthcare

© Copyright IBM Corporation 2004

IBM Corporation
Software Group
Route 100
Somers, NY 10589
U.S.A.

08-04
All Rights Reserved

DB2, e-business on demand, the e(logo)business on demand lockup, IBM, the IBM logo, Lotus, Rational, Tivoli and WebSphere are trademarks of International Business Machines Corporation in the United States, other countries or both.

Other company, product and service names may be trademarks or service marks of others.

Each IBM customer is responsible for ensuring its own compliance with legal requirements. It is the customers responsibility to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect business and any actions the customer may need to take to comply with such laws. IBM does not provide legal advice or represent or warrant its products or service ensure compliance with any law or regulation.

Software products and services provided by third parties are sold or licensed under the terms and conditions of the third-party providers. Product availability, warranty services and support for third-party products are the direct responsibility of the third-party providers. IBM is not liable for and makes no representations, warranties or guarantees regarding third-party products or services.