

Customer Solution Case Study



Teaching Hospital Uses Unified Intelligence System, Improves Education and Patient Care

Overview

Country or Region: United States

Industry: Healthcare

Customer Profile

A member of MedStar Health, Washington Hospital Center is renowned for its work in cardiac care, cancer, neurosciences, gastrointestinal disorders, endocrinology, women's services, transplantation, and burn care. It is the largest not-for-profit teaching hospital in Washington D.C.

Business Situation

Washington Hospital Center needed a way to provide comprehensive, easily accessible patient information to its postgraduate residents, undergraduate medical students, fellows, and faculty.

Solution

Washington Hospital Center deployed Microsoft® Amalga™ Unified Intelligence System, which brings together patient data from hundreds of sources—including imaging—and displays it in a single repository.


Benefits

- Instantaneous data access
- Improved patient care
- Dynamic, flexible teaching tool
- Increased operational efficiency
- Intuitive, easy-to-use solution

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Lisa M. Boyle, MD, Associate Chair, Department of Surgery, Associate Program Director, Surgical Residency Training Program, Washington Hospital Center

Washington Hospital Center, the flagship teaching institution of the non-profit MedStar Health organization, is the largest hospital in Washington, D.C. For 50 years, Washington Hospital Center has supported accredited residency and fellowship programs, as well as undergraduate medical education. To provide high-quality healthcare to patients and exceptional training, Washington Hospital Center needed an information system that would provide rapid access to current, accurate patient data. Drs. Mark Smith and Craig Feied created Microsoft® Amalga™ Unified Intelligence System, which pulls patient data from over 300 separate locations into one, easy-to-use repository. Physicians and residents can now instantaneously access comprehensive patient information from any computer in the hospital, vastly improving patient care and creating a dynamic learning environment.



“We can access information pretty much instantaneously. We go to a computer in any part of the hospital, and we have immediate access to all the information we need.”

John Hong, MD, Program Director, Internal Medicine Residency Training Program, Washington Hospital Center

Situation

Washington Hospital Center is the largest teaching and research hospital in Washington, D.C. Founded in 1958, the not-for-profit Hospital Center provides world-class healthcare to over 46,000 inpatients, 370,000 outpatients, and 70,000 emergency department patients each year. The Hospital Center is perennially recognized as “One of America’s Best Hospitals” by U.S. News and World Report.

In addition to clinical care, Washington Hospital Center is also committed to an educational mission. The hospital supports 22 accredited residency and fellowship programs and also maintains academic affiliations with several well-respected medical schools and medical research centers. “Outstanding patient care is a fundamental component of our residency program,” says John Hong, MD, Program Director, Internal Medicine Residency Training Program. “Our residents play a very significant role in maintaining the quality of care in the hospital. We select patients for our residents to work with who have complicated illnesses so that we can provide the most concentrated care to these particularly vulnerable patients.”

To devise effective treatment plans for their patients, residents need easy access to as much patient data as possible, including laboratory test results, X-rays, magnetic resonance imaging (MRI) scans, computed axial tomography (CAT) scans, positron emission tomography (PET) scans, electrocardiograms (EKG), angiograms, and ultrasound images. Unfortunately, the hospital stored imaging films in separate locations throughout the hospital and dedicated equipment was often required to view them. Different departments had developed their own stand-alone information systems, and physicians found it difficult and time-consuming to extract the information


that they needed. “We had a real problem with information retrieval,” Hong explains. “All of the patient data came from different sources—there was the laboratory system and the radiology system. X-rays were stored in the film library. There were many barriers to getting the information that we needed.”

Hong notes that during patient rounds, residents and physicians often deferred making clinical decisions because of the difficulty involved in accessing patient information. “We’d look at part of the patient’s laboratory report or clinical information but suspend a decision until we had more complete data,” says Hong. “Then we’d move on to the next patient. We didn’t complete a particular stream of thought, we weren’t necessarily giving the most efficient care, and we weren’t able to make the most comprehensive clinical decisions.”

Another challenge to making comprehensive decisions was that residents and physicians were unable to search for specific information in a patient database. Physicians look for patterns, either within an individual’s medical history or across a broader demographic, to more effectively monitor for abnormalities or potential outbreaks. “We really didn’t have the capacity to query or search,” Hong says. “We had to rely on other departments in the hospital, separate data systems, and paper charts. It was a very laborious process.”

Solution

In 1996, Washington Hospital Center became the first adopter of Microsoft® Amalga™ Unified Intelligence System. Developed at Washington Hospital Center by Dr. Mark Smith, Chair, Department of Emergency Medicine, and Dr. Craig Feied, Director, Institute for Medical Informatics, Amalga collects data from the majority of information



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systems across the hospital and funnels it into a single, real-time repository. Washington Hospital Center initially deployed Amalga in the Department of Emergency Medicine, a place where immediate access to reliable, current patient information can be a matter of life and death. Based on its success in the Emergency Department, the use of Amalga spread to other departments in the hospital and Washington Hospital Center ultimately deployed Amalga to the entire institution as the core system used by clinicians to access clinical information on their patients. Today, Amalga is available on every computer throughout the hospital.

Washington Hospital Center has been using Amalga to manage patient care for the past 12 years, and it has become an integral part of the hospital’s daily operations. “It’s hard to remember what life was like before Amalga,” says Lisa M. Boyle, MD, Associate Chair, Department of Surgery, and Associate Program Director, Surgical Residency Training Program, Washington Hospital Center. “It’s like trying to remember what life was like before the Internet. It’s really made our lives much easier in terms of taking care of patients and educating residents. It’s difficult to imagine how we existed without it.”

Today, physicians and residents can access patient data, gleaned from over 300 different systems, with the click of a mouse. “We can access information pretty much instantaneously,” Hong says. “We use a computer in any part of the hospital, and we have immediate access to all the information we need.” Users of Amalga can view EKGs, X-rays, CAT scans, MRI images, PET scans, ultrasound images, and dynamic streaming video of angiographic procedures. They have access to laboratory test results, scanned documents, patient admission forms, and even dictated notes.

Using Amalga has fundamentally changed the way Washington Hospital Center operates, explains Boyle. “From a patient care perspective, we have immediate access to up-to-date patient information so we can make better clinical decisions,” she says. “At the end of the day, we’re here to deliver quality healthcare. Using Amalga positively impacts the quality of care we can deliver because we have all of the patient data at our fingertips.”


Benefits

Washington Hospital Center uses Amalga to provide high-quality healthcare to its patients, dynamic education to its students, and improved operational efficiency throughout the hospital. Physicians and residents find the system flexible, customizable, and exceptionally easy to use.

Instant Access to Unified Information Improves Patient Care

Physicians and residents use Amalga to immediately access every piece of patient information they need in a single, easy-to-use repository. “In terms of quality care, it’s incredibly helpful to have efficient access to patient information,” says Boyle. “Some of our patients have complicated medical histories, but with Amalga, all of their information is instantly accessible. I can pull up the operative report and every other piece of information about a patient’s hospitalization. Using Amalga makes it so much easier to take care of patients.”

In addition to retrieving information, physicians and residents use Amalga to easily search for and analyze patient data. “We use Amalga to trend test results, which is especially important for patients with multiple hospital visits,” says Hong. “I can see prior laboratory values for particular tests extended over several visits and view a single test result in the context of the overall



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medical history of the patient. That’s very powerful.”

Flexibility Enhances Education

Washington Hospital Center uses Amalga to provide dynamic, interactive educational opportunities for its medical students and residents. Classrooms are equipped with audio-visual tools so faculty can project data from Amalga onto a screen—radiological images, photographs, laboratory test results—and use these visual illustrations to highlight pertinent clinical information.

“From an educational perspective, it’s been amazing,” says Boyle. “Our computers are linked to projection systems so we can sit in the classroom and review patient information. We bring up X-rays and have a broad discussion about how to read the films and interpret the findings. We use Amalga as a teaching aid with all of our students, even medical students who are relatively early on in their learning curve, because it’s so flexible and dynamic. It is a terrific educational tool.”

In addition to student education, Boyle uses Amalga to help educate her patients about their illnesses and treatment options. “I do cancer surgery,” Boyle explains, “so a lot of my patients have had CAT scans, ultrasounds, and MRIs. Instead of having to run all over the hospital to view these images, I can sit in my office with the patient and look at the films on my desktop. Most patients love the fact that I can pull up their X-rays and say, ‘Here is your cancer—this is what we are going to take out.’ I use Amalga to help my patients feel more included in their own care.”

Centralized Data Improves Operational Efficiency

In her role as Vice President of the Medical Staff, Boyle observes that using Amalga has not only improved patient care and medical education, but it also has helped the hospital

increase operational efficiency. “During the last 15 years,” says Boyle, “the volume of work that we’ve done in the Surgery department has grown significantly—as much as 30 or 40 percent—but we haven’t needed to hire more residents to carry the workload. Using Amalga certainly has enhanced our ability to do more work without having to expand our workforce.”

Washington Hospital Center is also reducing administrative tasks by archiving patient forms and protocols in an online document library. “Because these forms are stored in Amalga,” says Hong, “they interface with our patients’ information, making it much easier to complete admissions paperwork. Using Amalga to submit required forms also greatly reduces the administrative work that hospital staff are expected to do otherwise.”

In terms of compliance, Washington Hospital Center has used Amalga as a framework for meeting the core measures laid out by the Centers for Medicare and Medicaid Services (CMS). “Washington Hospital Center has used Amalga to implement order sets and standard patient care protocols so that we can be compliant with CMS core measures,” Boyle says. These core measures may serve in the future as a “pay for performance” database which will impact the financial health of the institution.

“From a quality and safety perspective,” Boyle continues, “I think it’s been proven beyond a shadow of a doubt that high-quality healthcare is more economical healthcare. Amalga certainly is an important tool and one that we’re using on a daily basis to provide better quality, more economical healthcare to our patients—from the moment they’re admitted until they are discharged.”



Intuitive Features Simplify Use

Users of Amalga universally remark that the system is easy to learn and use. "I think that Amalga is a unique product because it does so much and yet it is so simple to use," says Hong. "I don't have to extensively train and retrain my residents or the medical staff on how to use the information interface. This level of usability is absolutely priceless when you're managing a large, complicated organization."

Boyle adds, "Amalga is designed specifically for physicians so the layout and navigation all make perfect sense. It's very intuitive. I've never heard anybody say Amalga is too hard to use."

Hong concludes, "We've used Amalga to fundamentally change the educational experience for our trainees and residents. We've largely eliminated the barriers to retrieving patient information, so now we can really concentrate on being doctors. Our students and residents can focus on learning clinical decision-making skills rather than administrative data-gathering skills. That's really what we want as doctors and when training doctors for the future."



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For more information about Washington Hospital Center products and services, call (202) 877-7000 or visit the Web site at: www.whcenter.org

For more information about MedStar Health, call (410) 772-6500 or visit the Web site at: www.medstarhealth.org

Amalga Unified Intelligence System

Microsoft Amalga Unified Intelligence System (UIS) gets all your data, in one place, in real time. Amalga delivers a paradigm shift in how organizations can use the data housed in existing systems to drive change, discovery and innovation. Amalga UIS allows agile use of information because it (1) captures all data in one place in real-time, including scans, images, device data and any other type of electronic data (2) advances discoverability because it allows each end-user to ask questions today that were not thought about yesterday - without the intervention of IT, and (3) provides a different approach to interfacing and integrating from disparate data sources that reduces complexity and accelerates time to value. Amalga UIS has been adopted by industry leading organizations. As of October 2008, the list includes: Medstar (July 2006), New York Presbyterian Hospital (March 2007), Johns Hopkins (April 2007), Wisconsin Health Information Exchange (August 2007), Novant (August 2007), Moffitt (September 2007), St. Joseph Health System (November 2007), DC RHIO (June 2008), El Camino (September 2008), University of Washington (September 2008), Seattle's Children Hospital (September 2008).

About Us

Our vision: to improve health around the world through software innovation.

Microsoft is committed to improving health around the world through software innovation. Over the past twelve years Microsoft has steadily increased its investments in health, with a focus on addressing the challenges of health providers, health and social services organizations, payers, consumers and life sciences companies, worldwide. Microsoft closely collaborates with a broad ecosystem of partners and develops its own powerful health solutions, such as Amalga and HealthVault. Together, Microsoft and its industry partners are working to advance a vision of unifying health information and making it more readily available, ensuring the best quality of life and affordable care for everyone.

For more information about Amalga and other Microsoft solutions for the healthcare industry, go to: www.microsoft.com/amalga

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