



Let's build a smarter planet



Smart is...

OPENPediatrics, a cloud-based social learning platform, provides academically rigorous post-graduate medical education to clinicians caring for critically ill children around the world. By fusing medical expertise with Internet technology, the platform promotes knowledge exchange and can revolutionize the medical education.

Boston Children's Hospital and IBM Interactive teamed to envision and develop OPENPediatrics, a cloud-based digital learning platform that delivers training videos, lectures, simulators, best practices and a community of socially-connected experts to all areas of the globe, including those that lack expertise in pediatric critical care.

Boston Children's Hospital and IBM harness social education

OPENPediatrics, a social platform for medical training, can improve pediatric care worldwide

Founded as a 20-bed hospital for children in 1869, Boston Children's Hospital today is a 395-bed comprehensive center for pediatric and adolescent healthcare. It is grounded in the values of excellence in patient care and sensitivity to the complex needs and diversity of children and families. Boston Children's is the primary pediatric teaching affiliate of Harvard Medical School.

A dire need

The teaching hospital apprenticeship model, which once revolutionized medical education, is now failing to adapt to an increasingly interconnected world. As a result, expert knowledge is bottlenecked within the walls of institutions, creating disparities in access to medical education. China, India, Brazil and the United States each have more than 150 medical schools, while 36 countries have none. Of countries with no medical schools, 26 are within sub-Saharan Africa. Thus, areas with some of the greatest disease burdens and highest infant mortality rates lack ways to train medical professionals.

"Expertise in pediatric critical care is rare around the world, yet there's an incredibly dire need," says Margaret Coughlin, senior vice president and chief marketing officer at Boston Children's.

This imbalance led doctors Jeffrey Burns and Traci Wolbrink of Boston Children's, both experts in pediatric critical care, research innovation, and medical learning techniques, to seek a solution using Internet and social networking technology. If international experts could share their knowledge instantly around the world, the global pediatric critical care community would gain equal access to best practices and the latest medical knowledge.





Business benefits

- Augments medical knowledge for healthcare workers everywhere because the application functions in both connected and offline states
 - Brings together a community of pediatric professionals to share medical knowledge globally, outside the walls of teaching institutions
 - Equips caregivers with the knowledge and skills to care for critically ill children
 - Enables doctors to use virtual, interactive ventilator simulations to improve their skills without endangering patients
 - Lets hospital administrators efficiently disseminate knowledge to medical students and staff anywhere and at any time
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To bring this vision to life, Boston Children's began a decade-long project with other educational institutions. The hospital also collaborated with IBM Interactive, a digital agency that is part of IBM® Global Business Services®—Application Innovation Services. In less than two years, IBM Interactive integrated content the hospital created with more than a dozen IBM software products, cloud services and research projects to create a ground-breaking platform for social learning and collaboration.

“Boston Children's Hospital recognized a need to enable smarter medical decisions when children's lives are at stake,” says Mike Rhodin, senior vice president of the software solutions group at IBM. “Through the power of social networking technologies, IBM has been able to significantly advance the dissemination of knowledge around the world to help ensure better patient outcomes.”

A transforming solution

The collaboration resulted in OPENPediatrics, a cloud-based education application for desktop and notebook computers that features advanced social networking. It is the first application for continuing medical education outside of an institution, a paradigm shift that could revolutionize post-graduate medical education.

“OPENPediatrics is an open forum to connect healthcare providers around the world,” says Traci Wolbrink, Associate Director of OPENPediatrics and a doctor at Boston Children's Hospital. “The idea is to leverage technology to promote worldwide sharing and exchange of knowledge to rescue children from crisis.”

Smarter healthcare: OPENPediatrics improves pediatric care



Instrumented

The solution collects pediatric training videos, simulations, lectures and best practices to make them available to healthcare workers and medical students globally.



Interconnected

The platform brings together a community of healthcare workers, students and international experts for near-real-time knowledge sharing and collaboration.



Intelligent

The application personalizes knowledge through community-building mixed with rich interaction models.



Solution components

Software

- IBM® SmartCloud® Enterprise+
- IBM Connections
- IBM WebSphere® Application Server
- IBM Cognos®
- IBM Security Access Manager Reverse Proxy (Web Seal)

Services

- IBM Interactive
 - IBM Global Business Services®—
Application Innovation Services
 - IBM Research
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—Traci Wolbrink, MD, MPH,
Boston Children's Hospital

The application was designed for ease of use and features a social network that enables a global community of pediatric care providers to exchange ideas and answer questions. It offers curricula on demand, guided learning pathways and medical literature on pediatric specialty care. Training videos cover mechanical ventilation, infection control and other advanced procedures. A simulator lets physicians practice their skills on a virtual ventilator without endangering patients. To ensure the platform's credibility, all content is academically rigorous and peer reviewed. It is free to authorized users.

The application can work offline or when connected to the Internet, from which it will download the latest training information and social interactions. Users can store content on a PC or thumb drive, a boon for those with limited Internet access. The application saves all interactions in a local database for synchronization at the next uplink.

Social networking tools such as profiles, tagging and communities create a milieu of active knowledge sharing rather than passive learning. One interactive feature lets users comment on lectures and tag their comments anywhere in the video. Other users can see the comments, add to the discussion, respond over time and search the tagged content.

IBM software products and services provide social functions as well as an analytical dashboard, security, video and simulation capabilities. IBM Connections social business software delivers profile management, content tagging and communities. IBM Security Access Manager for Web Access (WebSEAL) software manages user identification. IBM WebSphere® Application Server software offers business process management. IBM Cognos® analytics software helps administrators analyze site usage and topics covered to improve content. IBM Research contributed award-winning voice-recognition technology that automatically creates a searchable transcript of video soundtracks. IBM's new social learning platform is the foundation for OPENPediatrics and will be introduced more widely into new industries later in 2013. Currently in beta test, OPENPediatrics has more than 1,000 users in 74 countries, including 253 cities and 343 hospitals. Boston Children's Hospital is expanding the solution to subspecialties beyond critical care and for professional accreditation. Other medical institutions are interested as well.



“Together with IBM’s technology and our critical care expertise, we have been able to bring our vision of stronger pediatric care to countries all over the globe.”

—Jeffrey Burns, MD, MPH, Chief of Critical Care Medicine, Boston Children’s Hospital

Reducing child mortality rates

Although it’s still new, OPENPediatrics is already benefitting the world’s healthcare workers. “Together with IBM’s technology and our critical care expertise, we have been able to bring our vision of stronger pediatric care to countries all over the globe,” says Burns.

OPENPediatrics improves education for pediatric healthcare workers. The platform accelerates learning by engaging users through content based on best practices in adult education. Learners completing the guided pathways, for example, must demonstrate mastery by passing a post-test before moving on to the next lesson.

“This program has changed my life,” reports a physician in Israel. “I had a hard time trying to replace postpyloric tubes since no one really showed me the formal way of doing it before. But after watching the video, I get them in every time. I have shared the video with everyone, and it is now how we perform and teach this procedure at our unit.” Another success story comes from Guatemala, where after hospital staff learned ways to avoid nosocomial infections, they developed a hand-washing program in the pediatric critical care unit.

Educators, residents, nurses and medical students also benefit from the practical expertise available in OPENPediatrics. “The information is useful not only for specialists in the field, but also for fellows, residents, nurses and other practitioners,” says Tolga Koroglu, chief of pediatric critical care medicine at Dokuz Eylül University in Turkey. “It is an excellent way to gain know-how without the time and expense of traveling to lectures and training centers.” Koroglu notes that a training video on accessing a central venous line convinced staff that nurses, not residents, should perform this task. As a result, infection rates were lowered.

By connecting providers across the globe and improving access to expert knowledge, OPENPediatrics can help to improve patient care. An early user of the platform at Sarawak General Hospital in Malaysia echoes this sentiment. “More discussion has been going on between the doctors,” says physician Yek Kee Chor, “and care of the patient has improved.”



The inside story: Getting there

After first-hand experience of children dying from treatable and preventable illnesses in remote regions of the world, leading physicians at Boston Children's Hospital recognized the need to improve pediatric critical-care training worldwide. The result of their decade-long effort was OPENPediatrics, a cloud-based digital learning platform that delivers videos, simulations, lectures, knowledge, best practices and social collaboration to caregivers and medical students worldwide. The platform, with an initial focus on pediatric critical care, is currently being tested in 74 countries. The early returns show so much promise that Boston Children's plans to expand the solution to include other subspecialties of pediatric medicine. In the future, the hospital will also use the solution to provide virtual training for medical certifications. In addition, it plans to increase OPENPediatrics' educational resources by inviting other institutions to create and upload content, which must meet rigorous academic standards and guidelines for digital content. The platform is designed for desktop and notebook computers, the latter becoming increasingly present in healthcare. The OPENPediatrics team hopes that the platform will soon be accessible on a smartphone. Future plans include broadening the educational reach of the platform and creating a more robust interactive global community of care.

For more information

To learn more about IBM Interactive, IBM SmartCloud, IBM Connections, IBM Security Access Manager for Web, IBM WebSphere Application Server and IBM Cognos offerings, please contact your IBM sales representative or IBM Business Partner, or visit the following websites:

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