

Adam B. Landman, MD '04: Advancing Patient Care through Health Information Technology

As a child, Adam Landman, MD '04, played for hours with his toy fire trucks, dreaming of growing up to be a firefighter. Fast-forward to May 2016, when Dr. Landman was named chief information officer of Brigham and Women's Hospital (BWH) in Boston. An emergency physician, he also serves as assistant professor of emergency medicine at Harvard Medical School. The story of his career journey, from an imaginative young would-be fire chief to a national leader in clinical and biomedical informatics, is one he loves to describe.

Merging Interests in Technology and Patient Care

After graduation from Cornell University, Dr. Landman worked for Andersen Consulting, now Accenture, specializing in large-system integration. In his off-hours, he was a volunteer emergency medical technician and firefighter, and he seriously considered becoming a full-time first responder. While weighing that decision, he earned two master's degrees at Carnegie Mellon University, one in

health care policy and one in information systems. His discovery of the growing field of clinical informatics ignited both an interest in health care technology and a desire to go to medical school.

Dr. Landman's visit to Robert Wood Johnson Medical School was conclusive. In his admissions interview, he found kindred spirits in David Seiden, PhD, then associate dean for admissions, and Carol Terregino, MD '86, then assistant

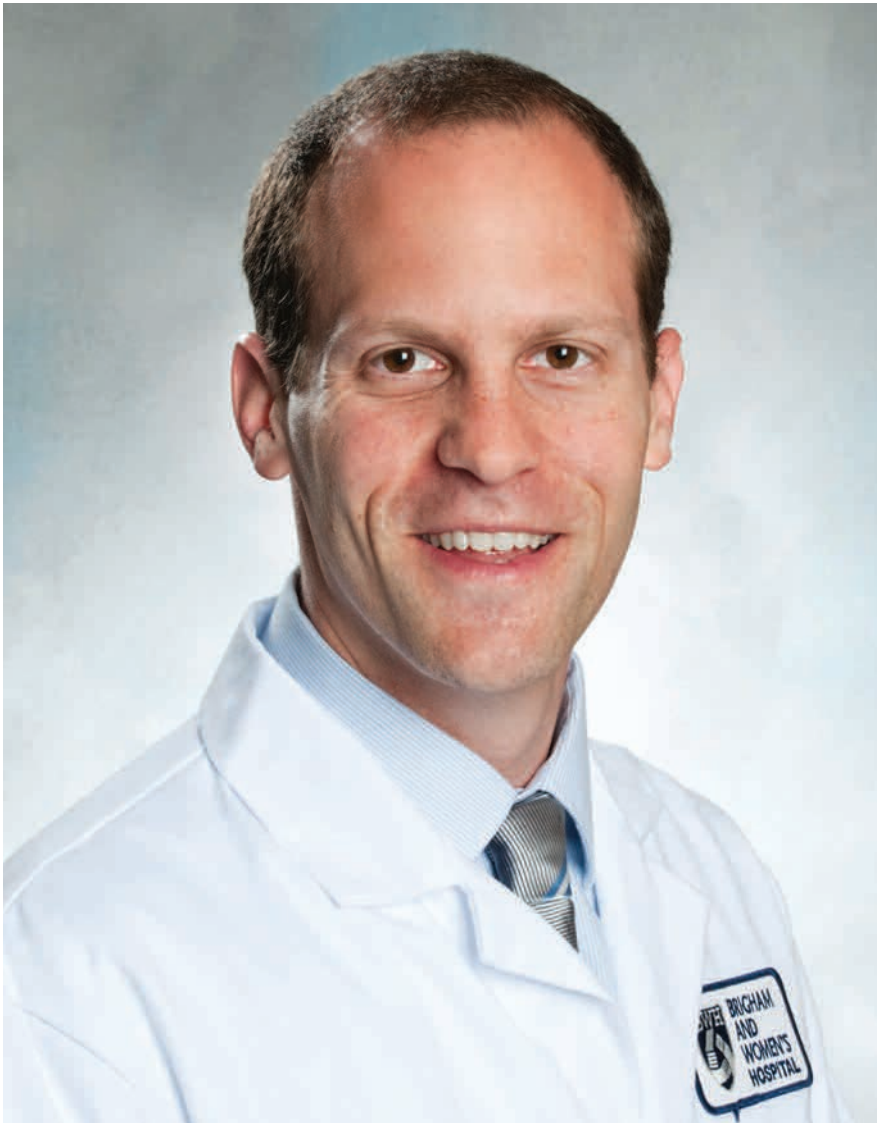
dean for admissions; both shared his vision for advancing health care by bringing together informatics and medicine.

The late Robert Trelstad, MD, then professor and chair, Department of Pathology, was another important mentor. A small-group leader in pathophysiology, Dr. Trelstad stayed in touch throughout Dr. Landman's clinical years and beyond. "He always gave me sage advice," says Dr. Landman, "and, although our clinical interests were very different, he enthusiastically supported my decision to become an emergency physician."

Dr. Landman's residency at UCLA Medical Center confirmed that emergency medicine would be a good fit. The excitement of emergency department work fulfilled his expectation of providing care in a fast-paced, collegial environment, working alongside specialists from different fields, and caring for all kinds of patients, regardless of their ability to pay.

Subsequently, as a Robert Wood Johnson Foundation Clinical Scholar, he completed a two-year fellowship in health services research at Yale University School of Medicine. It was his first full opportunity to merge his dual

BY KATE O'NEILL



COURTESY OF ADAM B. LANDMAN, MD '04

interests in clinical informatics and health care, as he researched the adoption of health information technology (HIT) in the emergency department and prehospital settings.

Expanding Clinical Informatics at Brigham and Women's Hospital

In 2010, Dr. Landman joined the emergency department (ED) at BWH to serve as director of clinical informatics. He led a \$7 million custom software development project for the department, which moved its clinicians from a paper-based system to electronic documentation, including electronic discharge instructions for patients and documentation for providers.

“Information technology can help support everything a hospital tries to do,” says Dr. Landman, “and the pace at ‘The Brigham’ was picking up.” In 2013, after the rollout and implementation of the ED system, Dr. Landman was appointed to serve as the hospital’s chief medical information officer for health information innovation and integration. While continuing to teach and work several shifts a month in the ED, he eagerly stepped into an expanded administrative role, developing larger and more specialized systems for the hospital.

“Our team does the whole life span of a system,” says Dr. Landman, “from the initial concept to helping to evaluate the investment, developing a

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proposal, finding partners, often building the system ourselves, implementing and advertising it, and training support staff.” Over the past three years, his team’s projects have included an integrated system for the hospital’s laboratories and specialized systems for internal departments.

Working with a development partner, Dr. Landman’s team recently built a new app for the Burn Center at BWH, one of two in Massachusetts. The center’s leaders proposed the concept: to use the tools of HIT to make it easier for outside hospitals to refer burn patients promptly. The completed system allows doctors in the area to download an iOS or Android app, page a Burn Center doctor 24–7, and determine both the patient’s immediate need and the best course of treatment.

Dr. Landman also works closely with the hospital’s information security

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team, ensuring privacy for business and research data as well as patient information. He coordinates with enterprise teams running the hospital's computer systems serving more than 20,000 employees. Over the past three years, Dr. Landman also helped implement Partners eCare, an electronic health records system that links all administrative and patient information for Partners HealthCare, the multispecialty, multiple-site, clinical care group cofounded by BWH and Massachusetts General Hospital.

Clinical informatics is now an American Board of Preventive Medicine subspecialty, says Dr. Landman, who created and serves as program director of the two-year Partners Clinical Informatics and Innovation Fellowship. The program is open to physicians from all medical specialties, accepting one fellow each year and attracting many more. "One of the best things about clinical and biomedical informatics is working with colleagues in all fields, with a common goal: HIT innovation," says Dr. Landman, adding, "The program's first fellow is from palliative care, and the second is from internal medicine."

**"The Fun Stuff":
The Innovation Hub and Hackathons**

And that brings us to the fun stuff," says Dr. Landman. "Brigham and Women's has always been a leader in information technology. We want to be the digital hospital of the future." In 2013, he helped

establish the Brigham Innovation Hub (iHub) group, with a mission to "disrupt traditional medicine and reinvent health care."

The hugely successful initiative explores, nurtures, and supports ideas proposed by clinicians, scientists, and staff of the hospital and Partners HealthCare. With the goal of disseminating ideas that match the dual mission of disruption and

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innovation, iHub helps inventors find tangible ways develop their ideas, from software creation, to finding partners and collaborators, to converting their ideas into new products and services that improve patient experiences and health outcomes.

Dr. Landman has "a careful, conservative edge," says Lesley K. Solomon, executive director, Brigham Innovation Hub. Dr. Landman's approach works well for iHub, which constantly proposes ideas that are beyond a hospital's normal comfort zone. "While we have great top-down support from the administration,"

says Solomon, "they know that when Adam suggests something, he has thought it out carefully, and he and the inventor have looked at the idea from every possible vantage point."

Within two months of its establishment, iHub had sponsored the first "Hackathon," a public event focused on brainstorming, innovating, and building solutions. Starting with raw ideas, interdisciplinary teams spent a creative weekend "hacking," devising, and even naming products or services that would address current clinical challenges. Projects that have been supported by iHub include Volaytix, which builds on airport bomb-detection technology to create a breathalyzer device that can detect aspergillosis, a common but potentially fatal fungus.

"One of my favorites," says Dr. Landman, "evolved from a surgeon's need for a hands-free paging system that would permit two-way communication from the OR." The product that evolved is modeled on the Amazon Echo, a voice-controlled device that can be set for cross-room voice recognition, responds to orders, and answers questions.

"Adam is a really good, thoughtful soul, and he's a great connector," says Solomon. "He's the best-qualified person I can imagine for this job—one of the smartest people I've ever worked with—and has an amazing breadth of abilities." The spirit of Adam Landman's full-time firefighter is alive and well at BWH, saving lives, devising solutions, and helping to lead health care into the future. **M**