

Cover Story

Brigham and Women's Hospital: Rise to the Top

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In 1954, while Oliver Brown battled to overturn the doctrine of "separate but equal" in school systems, halfway across the country, the founding fathers of Brigham and Women's Hospital completed the first successful human kidney transplant. Both are important milestones in our nation's history, and both illustrate the point that to understand the future, you can't forget the past.

Decades later, the Harvard teaching hospital continues to build on a centuries-old commitment to excellence that enables it to use the achievements of the past to evolve and meet the challenges ahead.

"This hospital has always been committed to excellence in patient care and has translated the findings of science into easing pain, curing illness, and restructuring healthcare delivery," said Dr. Gary Gottlieb, president of Brigham and Women's. "We also have the great privilege of participating in the education and training of a group of people who ultimately become leaders in the delivery of healthcare and science in the country."

BWH's residents leverage the hospital in a way that defines the hospital's leadership and builds on the institution's commitment to taking risk in the face of substantial challenges. Founded in 1980 by the merger of three Harvard-affiliated hospitals, BWH's history dates back to the 19th century, bringing to the 21st century a rich history of healthcare firsts.

In 1947, a physician at Peter Bent Brigham Hospital perfected a way to collect, store, and transfuse blood. In 1949, Robert Breck Brigham Hospital became the first to administer cortisone to patients with rheumatoid arthritis, and the Boston Hospital for Women (a merger of Boston Lying-In Hospital and the Free Hospital for Women) became the first to utilize non-invasive fetal heart monitoring in 1973. The tradition of leadership continued when, in 2006, BWH rolled out its eMAR and reduced its medication dispensing errors by more than 80%.

"There is no opportunity for leadership without an adherence to mission and a willingness to take risk to succeed," said Gottlieb. "We've seized both throughout our history and continue to do so today."

No greater privilege

The roots of BWH date back to the early 19th century with the development of the first obstetric hospital in the country, Lying-In Hospital, in 1832, and the founding of the first gynecological hospital in the US, Free Hospital for Women, in 1875. At the turn of the 20th century, the bar was pushed even higher, when Harvard University President Charles William Eliot decided to invest in science-based medicine to enhance physician training, moving away from a focus on rudimentary professional activities and toward evidence-based design.

In 1906, Harvard Medical School was developed with the promise that the teaching hospital would allow clinical medicine and science to evolve together. That history, said Gottlieb, along with BWH's affiliation as a Harvard teaching hospital, reinforces the hospital's affinity to the most extraordinary young people in the world.

"You often read about universities' giant recruitments and how packages are put together," he said. "We certainly recruit for areas we have gaps, but we mainly build on the shoulders of those young people. On the one hand, there is intergenerational parochialism. On the other hand, there is



By building off the successes of its past, Brigham and Women's Hospital remains on top.

an extraordinary stream of exceptional people. They are our leverage in this marketplace.”

A typical BWH medical resident, said Gottlieb, is an MD/PhD molecular scientist, works in a homeless shelter, and has traveled the globe to participate in bringing quality healthcare to the underserved. The depth of experience each resident brings to the table is crucial, as BWH is located in a culturally diverse area of Boston.

On one side of the hospital’s campus lies Mission Hill, Roxbury, Jamaica Plain, and Dorchester—some of the poorest neighborhoods in the commonwealth. On the other side is Brookline, one of the wealthiest per capita areas in the nation.

“When you walk room to room, you can’t tell where patients are from, and you certainly can’t tell from their chart,” said Gottlieb. “We have the privilege, in a blind way, of enabling the best and the brightest to care for the sickest and the neediest, whether or not the patients have the ability to pay for their care. There can be no greater privilege.”

Taking responsibility

But with such privilege comes great responsibility. Regardless of the healthcare industry’s reputation for being underinvested in IT as compared to other industries, BWH was one of the first to move forward with EMR implementation in 2004. And for 15 consecutive years, the hospital has ranked in US News & World Report’s Best Hospitals Honor Roll. But Gottlieb believes there is more to be done.

“Our focus on IT investment continues to be around patient safety,” he said. “It’s another translational science we looked at and saw, much like everyone else, that we were making some errors.”

For 15 years, BWH studied the errors and invested in infrastructure. In 2006, it instituted a supermarket-style eMAR (electronic medication administration record) that links order entry, pharmacy, and medication administration together and repackages drugs coming into the hospital with barcodes, which are scanned into the system. The system requires nurses to scan themselves, the drugs, and the patients’ ID bracelets prior to medication administration to ensure a perfect match. Since the system roll-out, the hospital has reduced its dispensing errors by 85% and potential adverse events by roughly 63%—an impressive feat given the hospital administers a dose of medication, on average, every five seconds (6.2 million doses per year).

From a security perspective, the hospital has gone above and beyond HIPAA regulations by installing a number of security “tollbooths” staff members must go through to access patient medical records. Automated and hand-audited processes routinely review who is accessing patient charts. If any rules are broken, employees—both physicians and non-physicians—get one warning. Anything beyond that means termination.

Adherence to evolution

BWH’s adherence to improvement goes beyond IT infrastructure. Its current \$380 million plant improvement plan is focused on the Carl J. and Ruth Shapiro Cardiovascular center with its 136 ICU compatible/convertible private rooms, and 16 operating rooms. Later, the hospital will convert about 85% of the patient rooms to private quarters. But before jumping in, the hospital enlisted Tefen USA, an engineering and systems analysis firm specializing in productivity enhancement, to ensure efficiency right from the start.

To move out of the silo mentality of separate budgets and programs, reduce redundancy, and optimize the hospital’s resources to ensure better clinical outcomes, Tefen performed a diagnostic of BWH’s cardiovascular procedural and imaging services. The results ensure a patient-centric approach that aligns employee staffing levels with demand and implements scheduling structures to increase capacity and limit wasted time and space.

The Carl J. and Ruth Shapiro Cardiovascular Center was designed to align cardiac catheterization, electrophysiology, interventional radiology, and cardiac imaging departments, while enabling staff to be cross-trained where appropriate. “With the simulation models Tefen had,” said Gottlieb, “we realized savings that will provide a set of paradigms to do more efficient work moving forward, optimizing the use of potentially compatible rooms that would otherwise serve separate patient populations. We’re also modifying our scheduling to improve patient transports and our process flow.”

As with many of BWH’s developments, the Carl J. and Ruth Shapiro Cardiovascular Center builds on BWH’s history of innovation. In 1984, the hospital completed New England’s first heart transplant. In 1996, it became one of only 10 hospitals in the US to perform minimally invasive aortic valve surgery, and 2005 marked the anniversary of BWH’s 500th heart transplant.

The center also illustrates the hospital’s adherence to evolution, as the

350,000-square-foot center will combine the latest technological advances in cardiovascular care with an adherence to environmental conservation, and use of a research budget that bests even that of Harvard Medical School at approximately \$435 million.

"Our commitment is to delivering care centered for patients, family members, and their needs," said Gottlieb. "The \$380 million project, and particularly the cardiovascular building we'll be moving into in May, is yet another example of that commitment."