

[Elsevier Connect](#)

When health insurance denied his wife's cancer meds, this physician fought back

Chief Information Officer suggests a better care management process using innovative technology and patient data

- By [John McCormack](#)
- May 2, 2018
- ⌚ 8 mins

[Elsevier Connect](#)



John Halamka, MD, speaks at a HIMSS18 health information and technology luncheon event sponsored by Elsevier.

Last September, Kathy Halamka received a letter from her health insurance company stating that it was discontinuing coverage for her ongoing cancer care because the payer had come across research published 27 years ago suggesting that a different, less expensive treatment was better. The insurer took this action even though Kathy had successfully stayed in remission for five years with her current treatment.

The person responsible for making the decision? A retired psychiatrist from New Hampshire.

The health insurance company had to reckon with a powerful force, however, when the letter made its way to Kathy's husband, Dr. [John Halamka](#), an emergency department physician who serves as Chief Information Officer at [Beth Israel Deaconess Medical Center](#) and a professor at [Harvard Medical School](#). Dr. Halamka immediately called the

leadership of the payer organization and said he was planning on publishing a piece about the letter called “The Failure of Care Management.”

The call led to a meeting with the payer’s medical directors.

“We talked through evidence and best practices,” Dr. Halamka said. “They were very collaborative. The retired psychiatrist is no longer reviewing oncology cases. And, of course, they immediately reversed all their decisions, and my wife gets her meds.”

Dr. Halamka recounted the incident at a recent [HIMSS18 health information and technology conference](#) luncheon event sponsored by Elsevier. HIMSS is the Health Information Management Systems Society.

In his introduction, Dr. [Richard Loomis](#), Chief Informatics Officer for Clinical Solutions at Elsevier, explained how Dr. Halamka’s thinking had shaped his own career and the way in which informatics and healthcare technology was being developed by Elsevier:

I was inspired by John’s career and his leadership in our industry. As I started to explore this rapidly growing field of informatics and healthcare IT, I had the opportunity to meet with him and get his perspective on how I should be advancing my own career.

A better care management process

The situation that befell Kathy Halamka illustrates that what happens today in many healthcare organizations is not what *should* happen. According to her husband, this situation should have played out as follows:

- A cloud-hosted, precision-medicine service provider curates the literature and delivers a library of evidence graded by accuracy, impact and relevance.
- Electronic health records (EHRs) use Fast Healthcare Interoperability Resources (FHIR) clinical decision support “hooks” — interfaces provided in packaged code that allow a programmer to insert [customized programming](#) — to send patient data to the cloud; clinicians receive guidance showing possible treatment choices and objective rankings of safety, quality, efficiency, cost and availability.
- Clinicians and patients have a discussion and collaboratively develop a care plan.
- Open source apps display the care plan, patient-generated healthcare data and outcomes.
- The payer “gold cards” this process.

And true to his promise, Dr. Halamka also [wrote about the incident](#) on his blog: [Life as a Healthcare CIO](#).

Moving forward via innovation

Dr. Loomis explained how that vision is evolving. “Situations similar to the one that the Halamka family experienced are common,” he said. “The good news is that healthcare organizations can implement a variety of emerging innovations and standards that can advance care from its current state to where it should be.

“For example, we now have [oncology clinical pathways](#) integrated with the EHR, which is essential to physician adoption. That can not only measure adherence to the pathways but also learn from the data to continually improve the clinical pathways. Artificial intelligence [can be applied to help clinicians better predict](#) which patients will respond to which treatments as well as have toxicities and adverse events.

Dr. Halamka also shared his own ideas, drawing upon his experiences as a leading technology innovator, physician and care navigator for family members. He indicated that healthcare organizations could advance clinical care in the following ways:

Leveraging advanced data analytics

When Halamka’s wife was diagnosed with “estrogen positive, progesterone positive, HER2 (human epidermal growth factor receptor 2) negative” breast cancer several years ago, he immediately culled the academic literature to determine the best treatment but couldn’t identify any clinical trials that had been conducted with a cohort of Korean women with similar biomarkers.

However, Dr. Halamka did have access to a tool that allowed him to analyze data from several Boston-area health systems. “I was able to mine millions of patient records and discover that for Asian women, [Taxol](#) turns out to be a very powerful medication,” he said. However, most Asian women develop lifelong numbness of hands and feet with this treatment, according to the data analysis. So, Halamka worked with his wife’s physicians, and they, in essence, conducted a “clinical trial of one. We took the dose of Taxol and divided it in half. And what did she get? Remission for five years now, no neuropathy of any kind, and it was all because we mined the data of patients who came before her,” he said.

Exploring machine-learning use cases

Machine learning can be leveraged to analyze more data than humans can and, therefore, solve a variety of challenges. For instance, machine learning could analyze retinal scans and arrive at certain clinical conclusions based on this exercise. “Is a machine-learning tool smarter than an ophthalmologist? No, but it could analyze millions of retinal scans, while an ophthalmologist will have only seen thousands,” Dr. Halamka pointed out. “So, machine-learning technologies can incorporate more data and produce better recommendations and more consistent quality.”

Machine learning also can be leveraged to make healthcare organizations more efficient. For example, at many healthcare organizations it takes several months for patients to secure appointments, yet the “no-show” rate is often high. As a result, providers could have 20 or 30 percent of their appointments open on any given day. Machine-learning solutions can analyze the data and predict who is and is not going to show up — making it possible for healthcare providers to strategically intervene to ensure that patients keep appointments or to fill the slots with other patients.

Tapping into the Internet of Things

Patients can now monitor their health through various mobile devices. As such, they are producing a plethora of data. The challenge for healthcare organizations, however, is to turn all of this data into actionable information. “We need to turn all of this raw data into alerts and reminders that are actionable,” Dr. Halamka said. “No clinician is going to have the time to look at 10,000 blood pressure measurements, but they will want to be told when a patient’s blood pressure goes from 100/70 to 170/100. Those rules will need to be curated by someone.”

He also pointed out that healthcare organizations will need to only take action when working with data from medical grade devices. For example, if a patient is getting a heart rate reading of 20 from a fitness tracker and feels fine, he or she probably doesn’t need to call an ambulance; but “if an implanted, FDA-approved, pace-maker says your heart rate’s 20, it’s time to call an ambulance.”

Adopting patient-matching standards

As healthcare providers utilize apps, and as more data flows through application programming interfaces (APIs) and the cloud, patient matching is becoming more important. However, “our patient data is awful, in general, and trying to do accurate patient matching with awful data doesn’t work so well,” Dr. Halamka said. As a result, the industry needs to solve the patient identification challenge with uniform policies around patient identification and matching.

Embracing innovative decision support

“As we move from fee-for-service to value-based purchasing, we need a new kind of decision support. I trained in medical school in 1984, and I was trained to use [Erythromycin](#) for community-acquired pneumonia ... and to give women post-menopausal hormone therapy. Well, do you or don’t you (still follow these practices)? Some say no and some say yes. So, if we’re going to give the right care to the right patient at the right time, we need to rely on better evidence,” Dr. Halamka said.

To move in this direction, apps could be bidirectionally connected to the EHR. These apps could enable clinicians to leverage FHIR clinical-decision support hooks “that would provide actionable evidence-based information that will change ordering behavior and enable doctor-patient shared decision-making,” according to Dr. Halamka, who,

along with co-author Paul Cerrato, wrote extensively about the potential and challenges associated with various technological advances and genomics discoveries in the recently released book *Realizing the Promise of Precision Medicine*, published by Elsevier.

Many healthcare organizations are exploring these sophisticated technologies:

- Mission Health has [leveraged advanced analytics to experience a 58 percent increase in sepsis detection and a 32 percent reduction in severe sepsis mortality rates.](#)
- The National Institutes of Health [integrated a third-party genomics application into its EHR in an effort to move into precision medicine.](#)
- Allina Health System has realized more than [a \\$45 million performance-improvement savings over the past five years by examining data on care variation and outcomes.](#)

As adoption of such technologies accelerates, providers and patients alike will experience how innovation can transform healthcare into what it *should* be.