INSIGHT

TAPPING INNOVATIVE SOLUTIONS & TECHNOLOGY AT JOHNS HOPKINS MEDICINE

Sharing Patient Reviews Can Improve Satisfaction Scores

In today's digital world, consumer reviews of restaurants, cars, donuts and, yes, doctors are realities of life. Recognizing this, Johns Hopkins Medicine is making a move to deepen and improve its engagement and connection with patients.

The organization is not just listening to feedback; it is actively embracing it, making that feedback public by launching a pilot to add Press Ganey comments and star ratings to a select number of physician profiles.

Some might ask: "Aren't there already enough public 'feedback' options about physicians through sites such as Healthgrades that often contain inaccuracies and negative reviews?" That's just the point, says Dalal Haldeman, senior vice president of marketing and communications.

Haldeman and Aaron Watkins, senior director of Internet strategy, have been spearheading these important conversations with colleagues. Their intention is to pilot the inclusion of patient feedback on 200 physician profiles. The project was the subject of a presentation Haldeman and Watkins gave at the Healthcare Marketing and Physician Strategies Summit in April.

Watkins also recently met with University of Utah leadership, which took the step of putting Press Ganey patient reviews—stars and comments—on their online physician profiles beginning in 2009. University of Utah physicians have since seen dramatic increases in their Press Ganey satisfaction scores—from 4 percent in the top 10th percentile to 46 percent in just four years, according to the *Harvard Business Review*. "The lesson to draw from this," says Haldeman, "is that owning the patient connection through transparency can improve the delivery of care."

Such actions can help drown out the reviews that are just plain wrong. Watkins notes similarities to the current shift of the Hospital Consumer Assessment of Healthcare Providers and Systems' survey to a simple five-star rating method.

To learn more about online reputation management, read Aaron Watkins' series on the Left Nav Blog at left-nav. blogs.hopkinsmedicine.org.
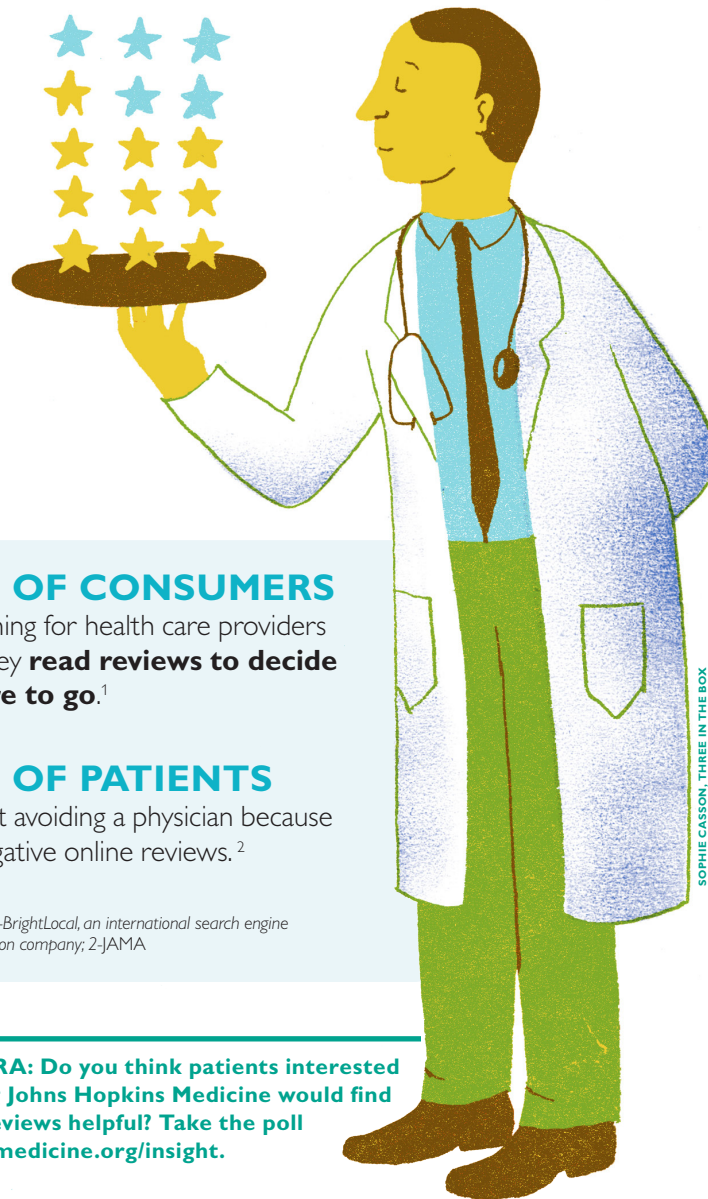
85% OF CONSUMERS searching for health care providers say they **read reviews to decide where to go.**[1]

37% OF PATIENTS report avoiding a physician because of negative online reviews.[2]

Sources: 1-BrightLocal, an international search engine optimization company; 2-JAMA

WEB EXTRA: Do you think patients interested in choosing Johns Hopkins Medicine would find provider reviews helpful? Take the poll at hopkinsmedicine.org/insight.

SOPHIE CASSON, THREE IN THE BOX
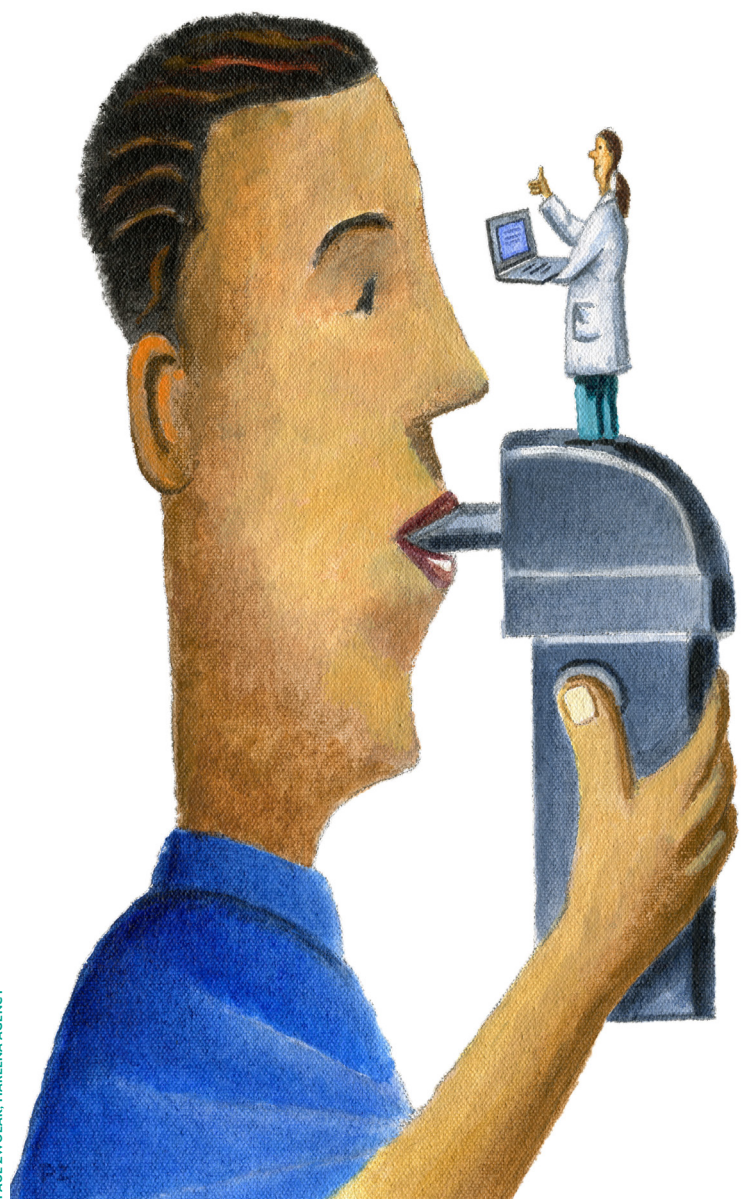
Say Ahh: High-Tech 'MouthLab' Delivers Vital Signs

Deciding whether a symptom is serious enough to go see a doctor could soon become much easier, thanks to a hand-held technology being developed by a Johns Hopkins University startup. "It's like a check-engine light for people," says the inventor.

In 2011, Gene Fridman, an assistant professor of biomedical engineering and otolaryngology–head and neck surgery, started building a device to quickly capture vital signs from one central place—the mouth. "The mouth has a lot of target information that is easily accessible," he says. "There's saliva, breath, blood vessels and mucous membrane."

Called MouthLab, the technology uses connectable, disposable mouthpieces. Pressure sensors measure breath, and electrodes track heart impulses for an electrocardiogram. A separate sensor takes temperature, while red- and infrared-emitting diodes and an optic detector record measurements for pulse oximetry, blood oxygen saturation and blood pressure.

Once gathered, the data are wirelessly transmitted to a computer or smart device, where software extracts vital signs using a set of algorithms. The technology is designed as an off-the-shelf product for people to use in their homes to determine whether or not they should see a doctor, but it is also intended to increase efficiency in doctors' offices and emergency departments, where multiple attachments are used to check vital signs.

With funding from the Maryland Innovation Initiative, Fridman recently compared MouthLab's performance to standard patient monitoring equipment used in doctors' offices and hospitals. Early results were comparable. Now, under company name Multisensor Diagnostics, Fridman hopes to gain additional funding to further test, refine and commercialize the technology.

In the product's next generations, he is aiming for a built-in display to show results, the capability to send information to electronic medical records and the detection of much broader medical information, such as biomarkers in the breath, to identify everything from asthma to renal diseases.

"It could detect problems early that a doctor should examine, but it could also reduce visits to the emergency room," says Fridman. "The possibilities are endless."

For more information, email Fridman at gfridma1@jhmi.edu or visit multisensordiagnostics.com.

PAUL ZWOLAK, MARLENA AGENCY

JOHNS HOPKINS MEDICINE

Apple Teams with Teaching Hospitals on New ResearchKit

Apple is working with more than a dozen academic teaching hospitals on **ResearchKit**, an open-source software framework intended to make it easier for researchers and developers to create apps that could revolutionize medical studies.

For example, **Mount Sinai Hospital, Weill Cornell Medical College** and **LifeMap** developed their Asthma Health app to gain greater insight into triggers for the disease. With an iPhone, iPad or Apple Watch, users can self-manage their asthma by avoiding areas where air quality could worsen symptoms. Since the study tracks symptom patterns in individuals, researchers hope to discover new ways to personalize treatment.

Other hospitals working with Apple include the **Dana-Farber Cancer Institute**, **Penn Medicine** and the **University of Oxford**. 👁

////////////////////////////////

A new smartphone attachment is making it easier to perform blood tests for HIV, syphilis and active syphilis infection. Developed by **Columbia University**, the device supplied results within 15 minutes during a recent pilot test in Rwanda. Developers believe the device could be particularly useful in remote areas without easy access to medical labs.

Attached to a smartphone via the headphone jack, the tool has a circular section for a finger prick. Then, a disposable cassette tests the blood and provides results that can be viewed on the smartphone. 👁

////////////////////////////////

Medical school faculty members at the **University of California, San Francisco**, are using innovative apps to help students prepare for neurological and musculoskeletal physical exams. **Physical Exam Tutors** apps provide clinical cases, physician-authored information and a library of real patient videos.

These free programs help medical students, residents and practicing physicians expand their understanding and execution of these important components of the physical exam. 👁

Capturing Threats to Electronic Medical Records More Quickly

Software developed through DreamIt Health Baltimore identifies unauthorized access to electronic medical records in Epic.

With the adoption of electronic medical records, the incidence of medical identity theft is on the rise. According to a study sponsored by the Medical Identity Fraud Alliance, medical identity theft has nearly doubled over the last five years. A major challenge to stopping these incidents is that it can take months to discover them.

On a mission to protect patients' health information, The Johns Hopkins Hospital and Johns Hopkins Bayview Medical Center are testing new software designed to more quickly detect and analyze unauthorized access of electronic medical records everywhere Epic is deployed.

"We care deeply about protecting patient privacy," says Peter Greene, chief medical information officer for Johns Hopkins Medicine. "We have an innovation imperative, and we're trying to make these information technology systems smarter."

The software is the product of Protenus, a startup company formed through DreamIt Health Baltimore. The four-month program, sponsored in part by Johns Hopkins, helps entrepreneurs accelerate product development for health IT startup companies.

The co-founders of Protenus—Robert Lord, a hedge fund associate, and Nick Culbertson, a Special Forces operator—left their careers to attend medical school at The Johns Hopkins University and later developed the software through the DreamIt program.

In testing, the software has identified patterns of access that deviate from the norm and has provided these tips to designated officers who can investigate. Soon, the software will provide daily and then real-time reports. By summer 2015, the system could be in use at institutions outside of Johns Hopkins.

"We're not seeing any other companies doing what they are able to do in prototype form at the capacity they are doing it," says Greene, an advisor to Protenus. "Their novel analytic techniques are uncovering some impressive findings, such as how access patterns differ between clinicians and researchers."

ISTOCK
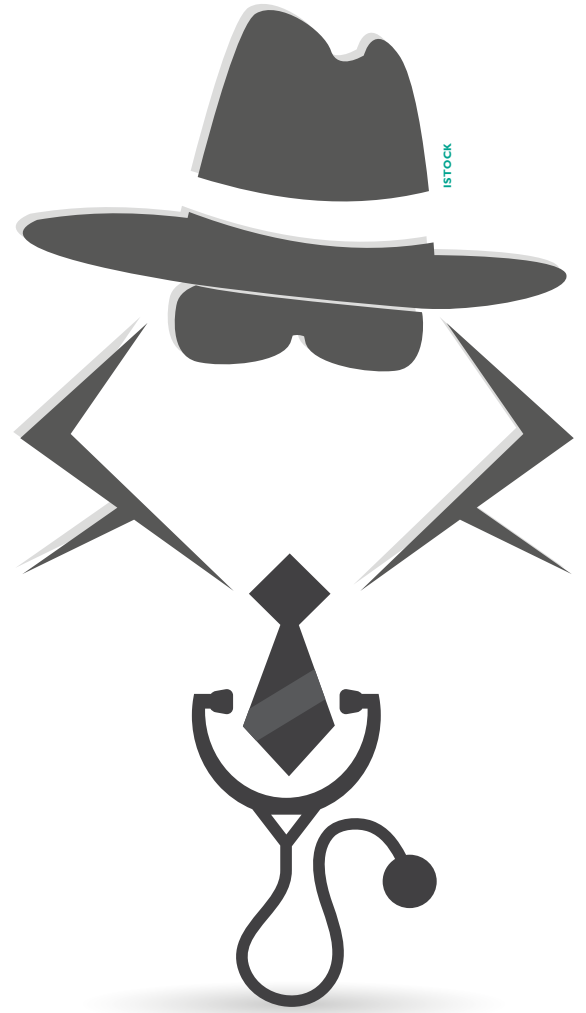
Tweets Alert Researchers to Public Health Issues

A Johns Hopkins computer scientist is part of a multisite team of researchers that has developed a new way to understand public health issues by studying an unlikely resource: Twitter.

The researchers combine analyses of social media messages with traditional survey techniques to examine, for example, why people refuse vaccines and how these reasons vary among communities. Their techniques also show promise as tools to gather important information about some common mental illnesses and a variety of public health concerns.

Mark Dredze, an assistant research professor in the Department of Computer Science at The Johns Hopkins University and a member of the Division of Health Sciences Informatics at the school of medicine, developed novel computer algorithms to support the team's research.

Current survey methods are long, laborious and very expensive, says Dredze, typically resulting in a multiyear process that includes extensive focus groups and large telephone sample sizes. "Our methods allow us to get answers to what people are thinking in real time," he says. "It's definitely cheaper and faster, and you can actually respond to an ongoing health crisis. We can do things we never thought we could do before, so it raises the potential for new research."

For example, the illicit drug market changes rapidly as new illegal drugs become popular. "Traditionally, it takes five years between when an illicit drug is introduced to the market and when we have good data—that's a big blind spot," says Dredze. "Using Web data, we're able to find these drugs and get information much faster. We can say, 'Here's a drug to be concerned about. Here's how people are taking it and what the dosages are.' If you can get that information into the hands of addiction specialists and emergency department personnel, they can use that information immediately."

> "We can do things we never thought we could do before, so it raises the potential for new research."
> — Mark Dredze

Recently, the team analyzed millions of tweets to gather information on the sentiments toward flu vaccinations. The team identified tweets, geolocated the messages and compared their findings to the Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System. Their results show that states with a higher number of residents who received the flu shot had a higher number of vaccine-positive messages on Twitter.

ISTOCK