

Let's Lead the Way on App Development and Use



A recent article in Healthcare IT News caught my interest. Called "Mobile apps helping reduce readmissions," it offered best practices in app development from Andrey Ostrovsky, a physician and CEO of the Boston-based Care at Hand, an app-based care coordination system.

The article finds health systems are increasingly turning to mobile apps to help reduce preventable hospital readmissions, which Medicare estimates costs taxpayers nearly \$17 billion each year. However, these apps have not resulted in solutions tied to the Institute for Healthcare Improvement's guideline to enhance patient experience and population health while simultaneously reducing health care costs. Only 2 percent of current mobile health apps achieve the guideline, finds Ostrovsky, while just 23 percent have peer-reviewed research evidence for their claims.

Earlier this year, Epic announced plans to open its own app store and allow outside

developers to create apps that sync with its electronic medical record platform. Such activity reinforces the opportunity for Johns Hopkins Medicine to lead the way in developing mobile apps in line with our mission to provide patient-centered care and to prevent, diagnose and treat illness.

We must ask ourselves: Are we doing enough in this area? Can we do more?



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Best Practice Tips for App Developers

- Be evidence-based.
- Produce positive outcomes for reimbursement.
- Identify risk factors for patients.
- Validate quality improvement claims within six months of deployment.
- Support National Quality Forum Committee measurements.
- Improve workforce quality and satisfaction.
- Be platform agnostic.
- Adhere to interoperability standards.
- Sustain long-term supports and services.
- Provide technical assistance for baseline capacity.

— Andrey Ostrovsky, as quoted in Healthcare IT News article "Mobile apps helping reduce readmissions"



Hopscore Could Make Triage Decisions Easier



Deciding which patients in the emergency room are the most sick or injured is tricky business. The fear of passing over a critically ill patient is one of the things that keeps emergency room doctors up at night. To make triage decisions more objective and accurate, Scott Levin developed an electronic triage system.

Levin is an associate professor in the schools of medicine and engineering, and he is the director of the Systems Institute, an interdivisional center that employs a multidisciplinary approach to understand and re-engineer systems.

Using data about the patient, Levin's system analyzes a patient's risk of a critical event, like needing surgery or intensive care, and the likelihood of the patient being admitted to the hospital. Based on these results, it assigns a triage level, nicknamed a "Hopscore."

Hospitals currently use the Emergency Severity Index to prioritize patients in the emergency room on a scale of 1 to 5, with 1 being the most sick and 5 being the least. The problem is, approximately half of all patients are assigned a level 3, which mixes a large group of sick and healthy people.

Hopscore uses the same scale from 1 to 5, but a computer algorithm assigns the triage level. "The hope is that we can identify patients who are at risk more quickly," says Levin. "We also want people to move through the Emergency

Department faster when they don't need as much care."

Last year, Levin conducted a retrospective study of the systems at The Johns Hopkins Hospital and Howard County General Hospital. Now it's being tested at these facilities and Levin is gathering feedback from nurses to make the system better.

In just six months' time, Hopscore could be live at Johns Hopkins facilities. After that, it could move to global partner hospitals and then to commercialization.



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A look at innovative developments outside the halls of Johns Hopkins Medicine

Referral Apps

Despite advances in electronic medical records, many physician referrals are still made by fax. Here's a look at several organizations using an app alternative.

Building better relationships with referring physicians is the aim of Cleveland Clinic's Physician Referral app. Features include:

Physician Referral app. Features include:

- A to Z lists of physicians by specialty, departments or location
- Bookmark lists of physician profiles
- Ability to tap on email or phone number to transfer a patient or make inquiries
- Ability to quickly write and save notes



A streamlined way for physicians to connect to services and clinicians,

MGH Access is a new app that allows Massachusetts General Hospital physicians to easily find, contact and bookmark specialty provider practices within MGH to facilitate referrals and inpatient transfers.



Clinical data on patients referred for treatment

is easier for physicians to access through a new Mayo Clinic Care Network Provider app. Features include:

- Patient facts
- Clinical documents
- Images and lab results



A cloud-based Web application, ReferralMD, helps health systems improve access

to care and streamline communication between internal and external referral sources. Features include:

- Insurance preauthorization
- Snapshot of the case
- Results of the appointment
- Lab results

Training Arm to Help Clinicians Meet Global Demand for Contraception



Contraceptive pills and injections can be hard to obtain in the developing world. Many women must take a day off from work and pay significant travel expenses to get to a clinic. Even women in the U.S. can face logistical challenges in filling prescriptions on a regular basis.

Contraceptive implants for the arm, effective for at least three years, are a popular alternative, but insertion and removal can be challenging. A team of Johns Hopkins University biomedical engineering undergraduates and recent grads has developed a new implant insertion and removal training kit to make it easier for health care workers to learn to administer the implant.

Commercial arm models on which to practice inserting the matchstick-size devices don't replicate skin and fat well. But the students' arm model has layers of silicone that mimic how skin, fat and muscle behave when pinched, pressed and punctured. Trainees can peel back the "skin" to see if an implant was inserted correctly, between skin and "fat." If it's stuck in the fat, it's too deep—in real life, it wouldn't work and would be difficult to remove, explains team leader and recent graduate Taylor Lam.

The model is part of the students' CITT (Contraceptive Implant Training Tool) Kit, developed during a design class. Johns Hopkins Hospital nurses and residents who administer the implant in Baltimore have

tested the model and say it's more lifelike than any other they've used.

Next up is a year of design finalization and field testing by students with assistance from Jhpiego, a nonprofit Johns

Hopkins University affiliate that focuses on global health issues. If the silicone holds up in tropical temperatures—as it has in hot oven tests—the kit may be available to train health care workers around the world within three years.



ANDREW COLIN BECK / MARLENA AGENCY

WEB EXTRA: Watch a video demonstration of the training arm at hopkinsmedicine.org/insight.

Connecting Physicians from Any Device, Any Time



How does Johns Hopkins Medicine keep all of its faculty members and affiliated physicians on the same page, whether they are working down the hall, across the region or around the country? By giving them the same page to work from—a new website and companion online newsletter.

"The mission of our work is to connect the people of the world with the people of Johns Hopkins Medicine," says Aaron Watkins, senior director of Internet strategy. "That includes connecting the people within the institution to each other."

The new website and e-newsletter for physicians across Johns Hopkins Medicine can be accessed anywhere and will fit the screen in use. The e-newsletter, BestPractice, will provide summary information about the latest news and innovations, plus links to more in-depth coverage for practitioners to stay well-informed.

Whether a Johns Hopkins-employed physician needs a phone number for transferring a patient to The Johns Hopkins Hospital, wants to understand the Physician Payments Sunshine Act and how it impacts interactions with patients, or seeks standard credentialing policies, the new website has the answers. It also has an interface for looking up specialists from around the health system, updated articles from BestPractice and links to the Johns Hopkins Medicine

Clinical Awards for Physicians and Care Teams.

A separate digital resource, Johns Hopkins Clinical Connection, serves as an online location of clinical information for referring physicians and external health care professionals around the world. The website shares videos, breaking news, case

presentations, articles and information about clinical trials and upcoming continuing medical education opportunities.

Whether faculty members or affiliated physicians at Johns Hopkins Medicine are looking for information about their colleagues or institution, or international health care professionals are seeking the

latest from Johns Hopkins Medicine, digital resources like these will keep them all connected.

Learn more at hopkinsmedicine.org/office-of-johns-hopkins-physicians-and-clinicalconnection. hopkinsmedicine.org.



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