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A MEDICAL MUTUAL CO.



TECHNOLOGICAL INNOVATIONS THAT INTRODUCE MEDICAL LIABILITY

—
Jason Newton

Associate General Counsel & Senior Vice President

Curi—a Medical Mutual Company



“

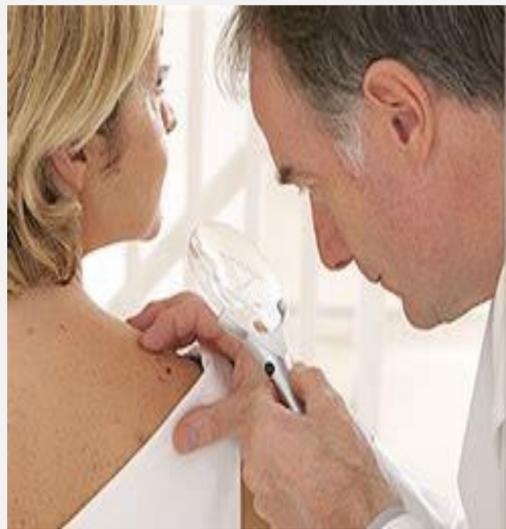
**Life can only be understood
backwards;
but it must be lived forwards.**

—*Soren Kierkegaard*

The Future is
(Already)
Here... and
Brings
Unfathomable
Change,
Benefits and
Risks

Imaging Analysis

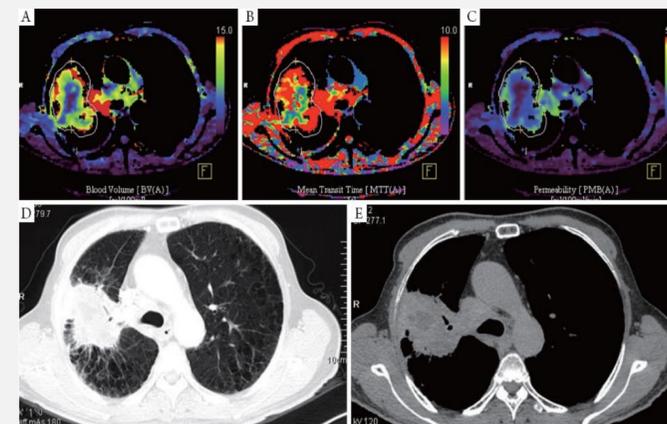
For first time, AI beats experienced dermatologists in detecting skin cancer (5-29-18)



FDA greenlights AI algorithm to detect wrist fractures (5-29-18)



NYU uses Google's AI to identify lung cancer (9-27-18)



Hybrid specialist-AI system outperforms machine learning diagnostic in Stanford study (9-11-18)



A.I. Shows Promise Assisting Physicians



Doctors competed against A.I. computers to recognize illnesses on magnetic resonance images of a human brain during a competition in Beijing last year. The human doctors lost. Mark Schiefelbein/Associated Press

<https://www.nytimes.com/2019/02/11/health/artificial-intelligence-medical-diagnosis.html>

By Cade Metz

Feb. 11, 2019

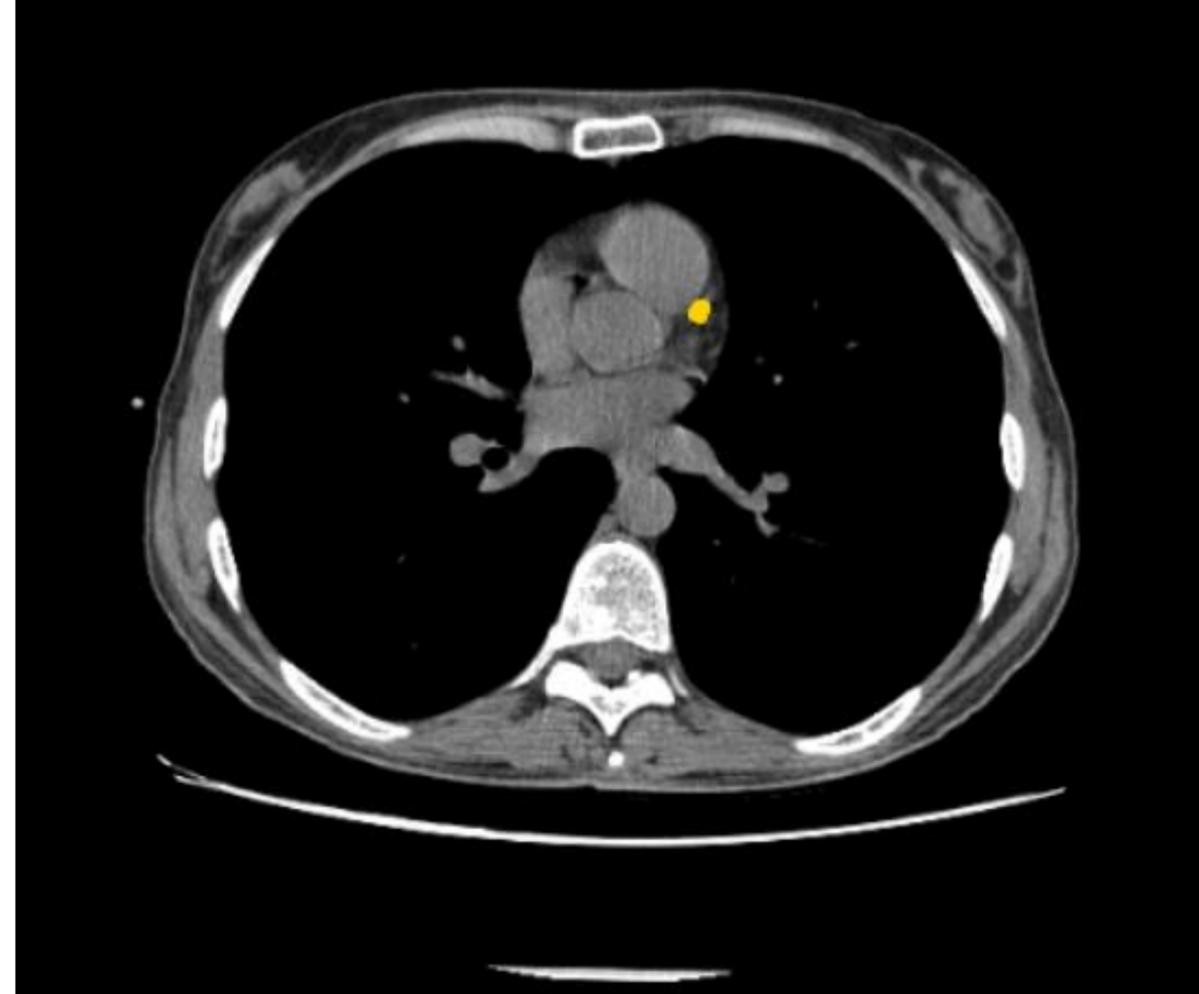




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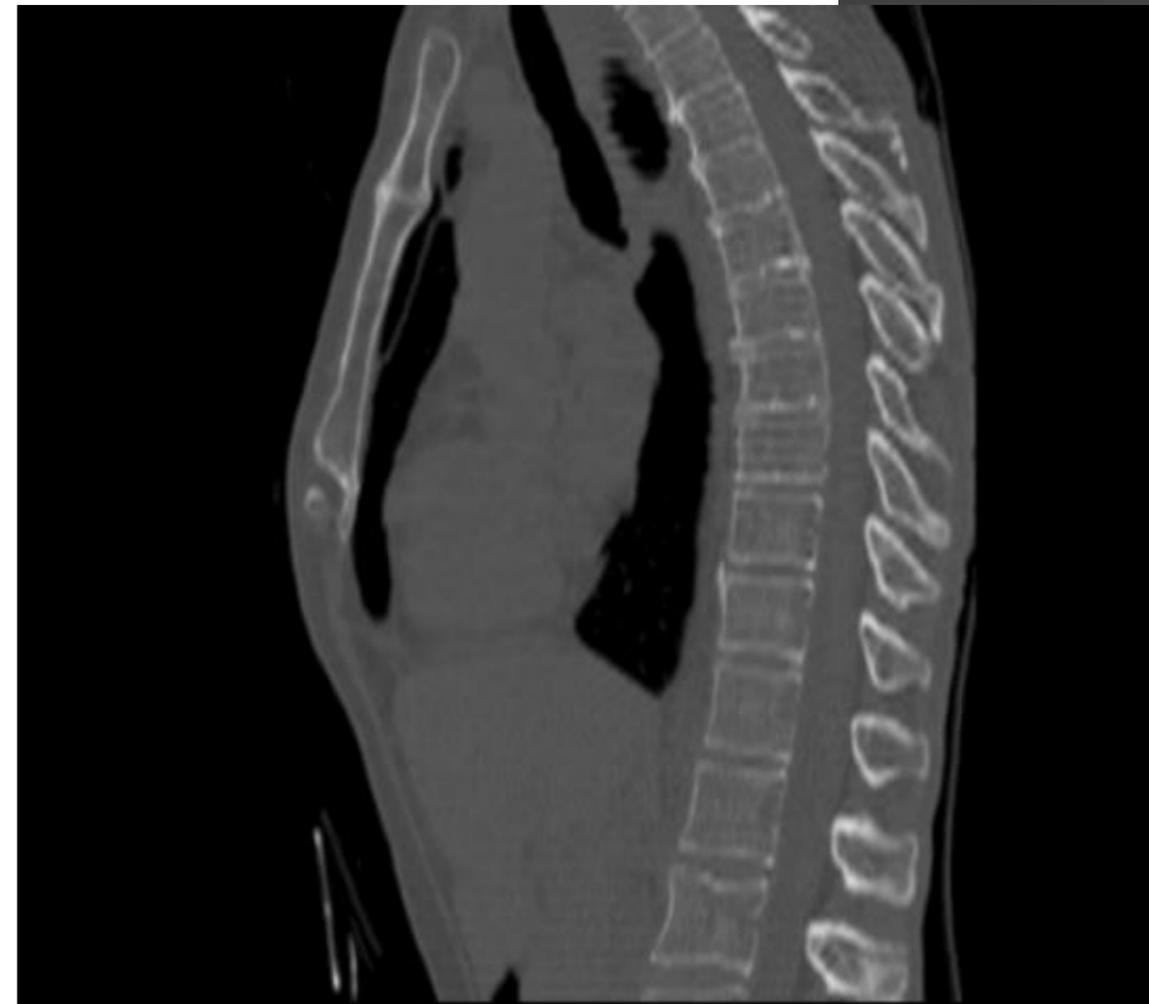
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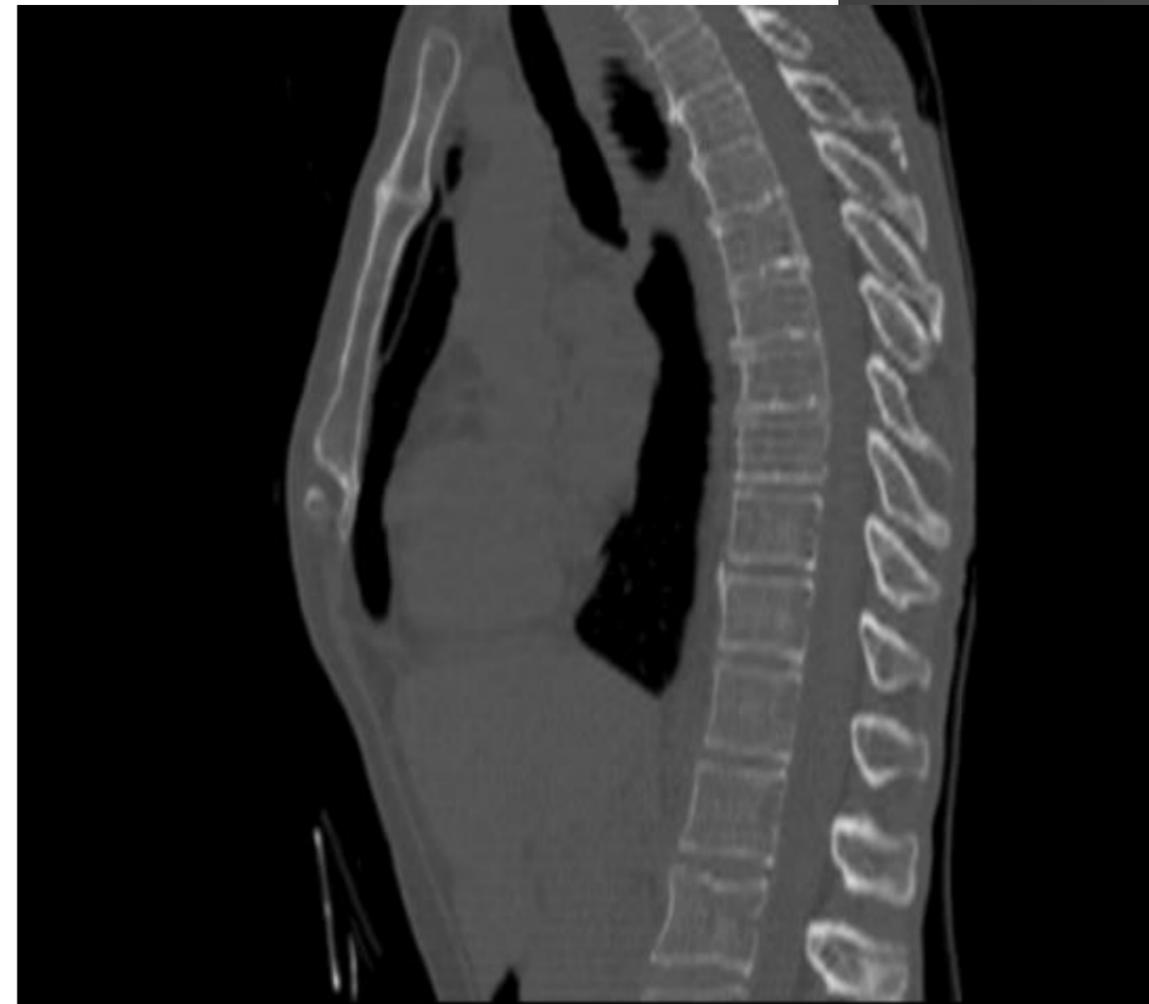
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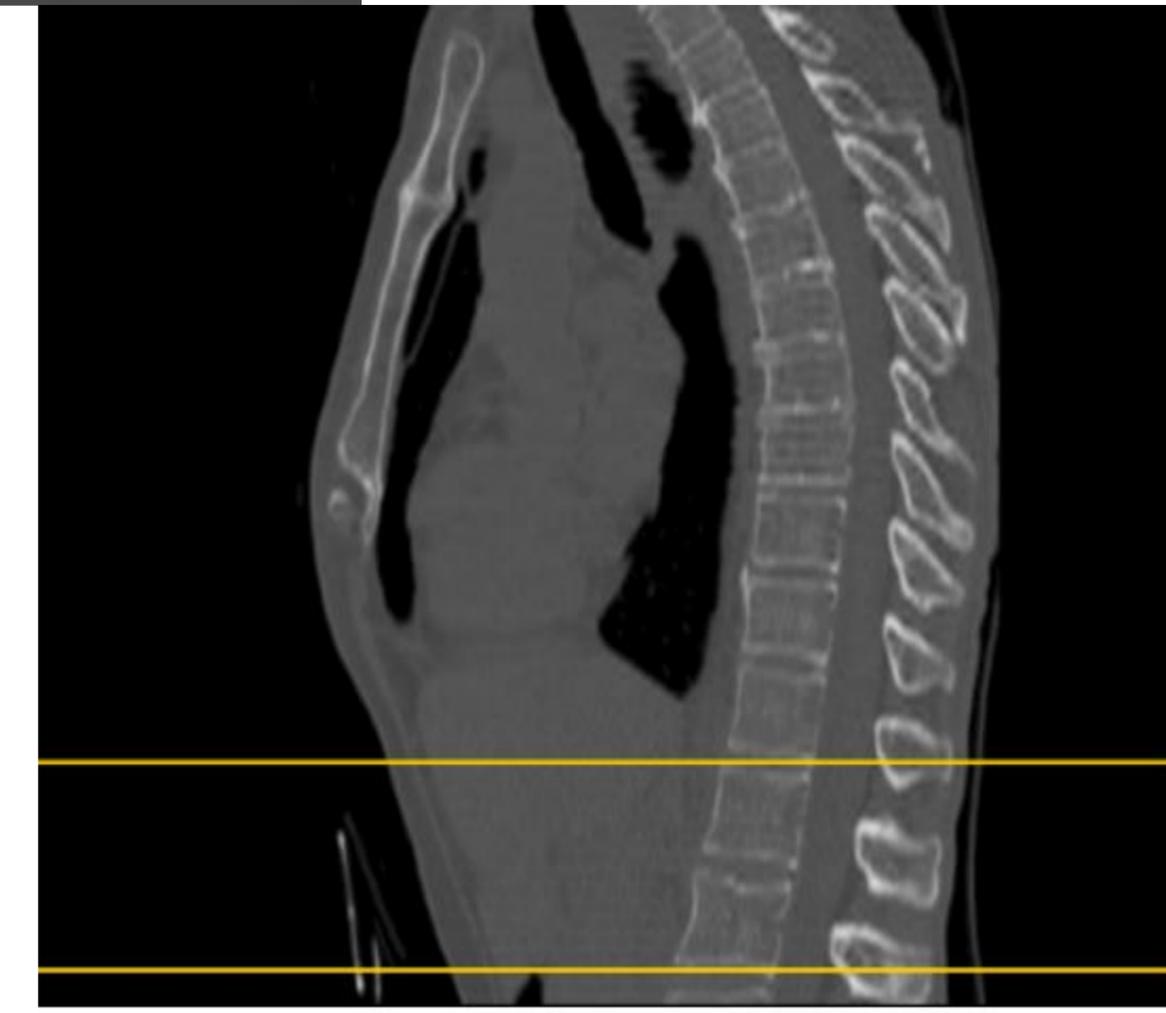
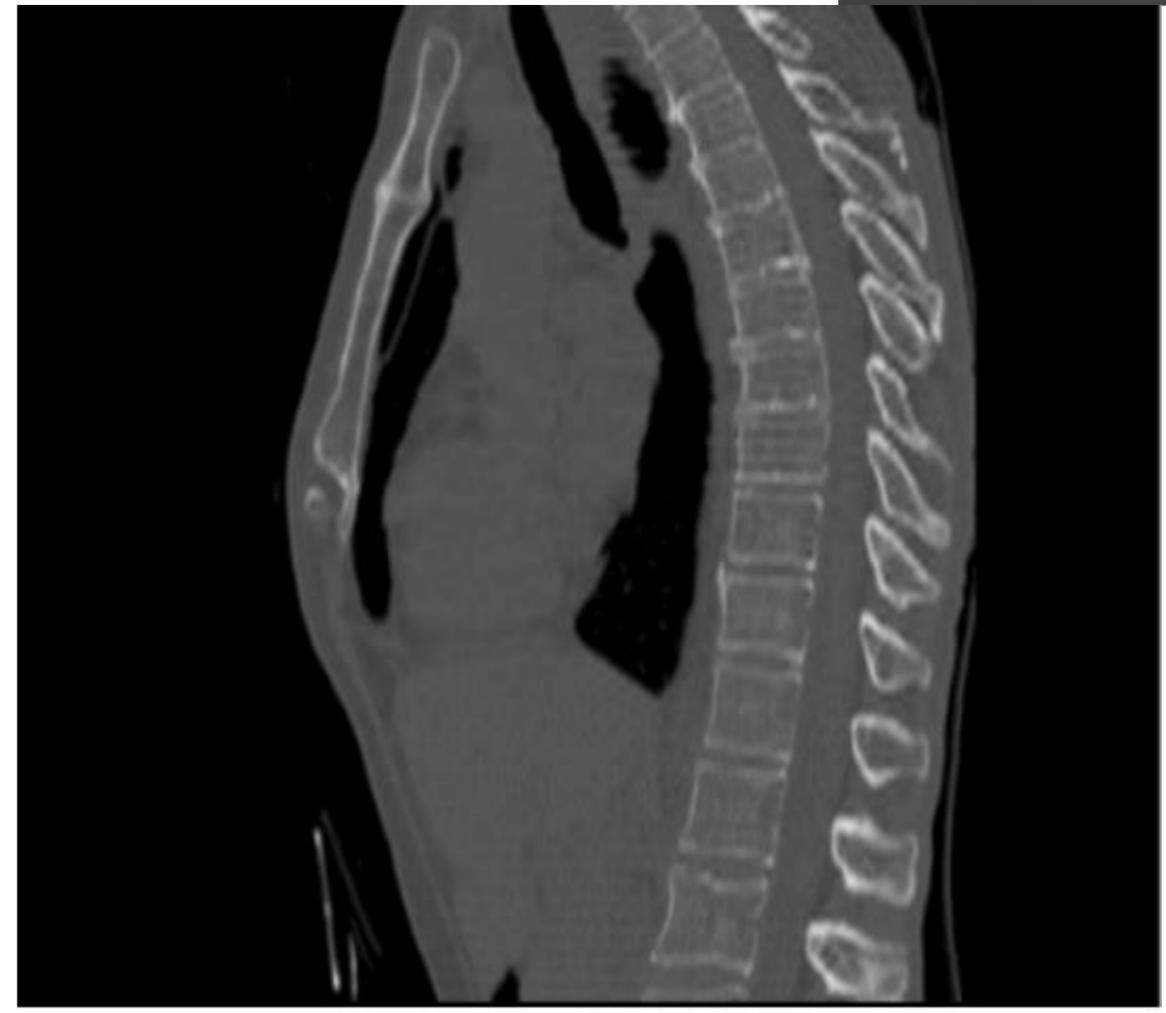


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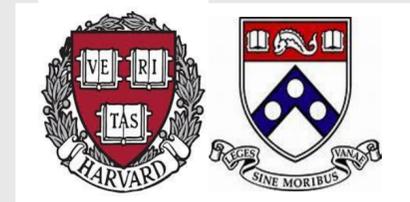
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Predictive Tools

AI software informs clinical decision-making and care by providing predicted outcomes



Harvard, UPenn Researchers Use AI to Predict Mortality for Cancer Patients (6-30-18)



Northwell Health adds AI for Readmissions to its EMR (2-5-19)

Diagnostic Assistance

AI tools help diagnose patient outcomes and potential complications



Odds of Patient Complications Increase by 29% When Physicians Don't Follow EHR Alerts (8-16-18)

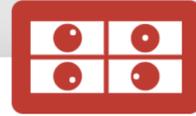


Algorithm Uses Smartphone Camera, Flashlight to Spot Diabetes (3-11-19)



<https://www.digitaltrends.com/cool-tech/johns-hopkins-smart-stethoscope-ai/>

How IDx-DR Works



1) Using a fundus camera, the trained operator captures two images per eye



2) The images are submitted to the IDx-DR Client on a local computer

3) IDx-DR analyzes images for signs of diabetic retinopathy, providing results in less than a minute.



Negative for more than mild diabetic retinopathy: Retest in 12 Months



More than mild diabetic retinopathy detected: Refer to an eye care professional



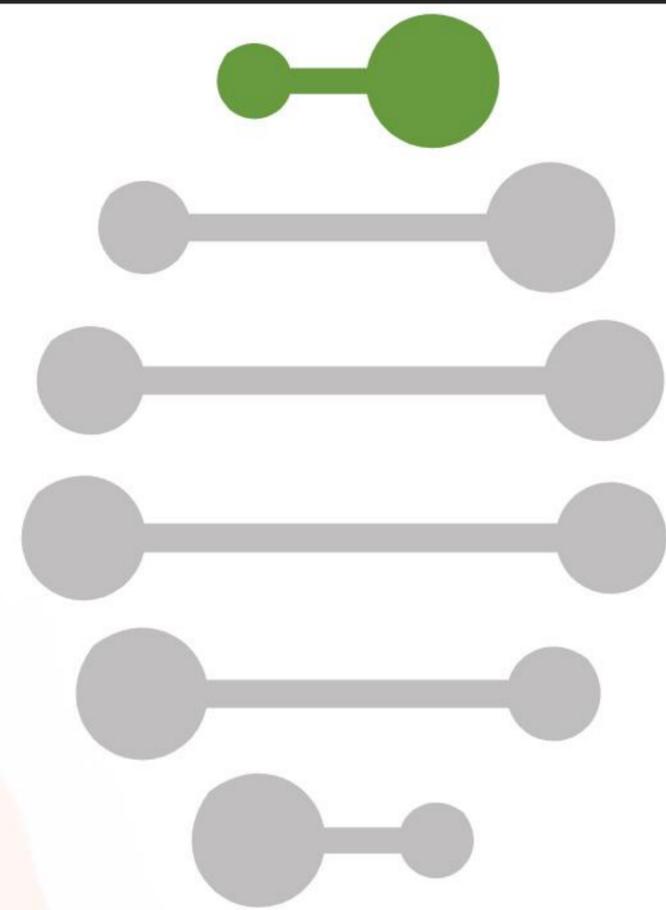
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DATA PRIVACY COMPLIANT



A new study found that clinicians using VR tech could reach targeted vessels faster than today's standard approach.



CLINICAL AI

Monitoring/Follow Up/Engagement

AI tools help encourage,
detect adherence

JAMA Internal Medicine

Google Translate for Spanish, Chinese Discharge Orders Better than Nothing, UCSF Researchers Say (2-26-19)

Journal of Medical Internet Research

44% of MDs would be very likely or somewhat likely to prescribe the use of healthcare chatbots within the next five years (5-4-19)



<https://www.mobihealthnews.com/content/amazon-alexa-celebrates-hipaa-compliant-data-transfer-six-new-healthcare-skills>

"Smart" pills are here and we need to consider the risks



By **Robert Klitzman**

Updated 1:22 PM ET, Sun March 17, 2019



<https://www.medtronic.com/covidien/en-us/products/motility-testing/smartpill-motility-testing-system.html>

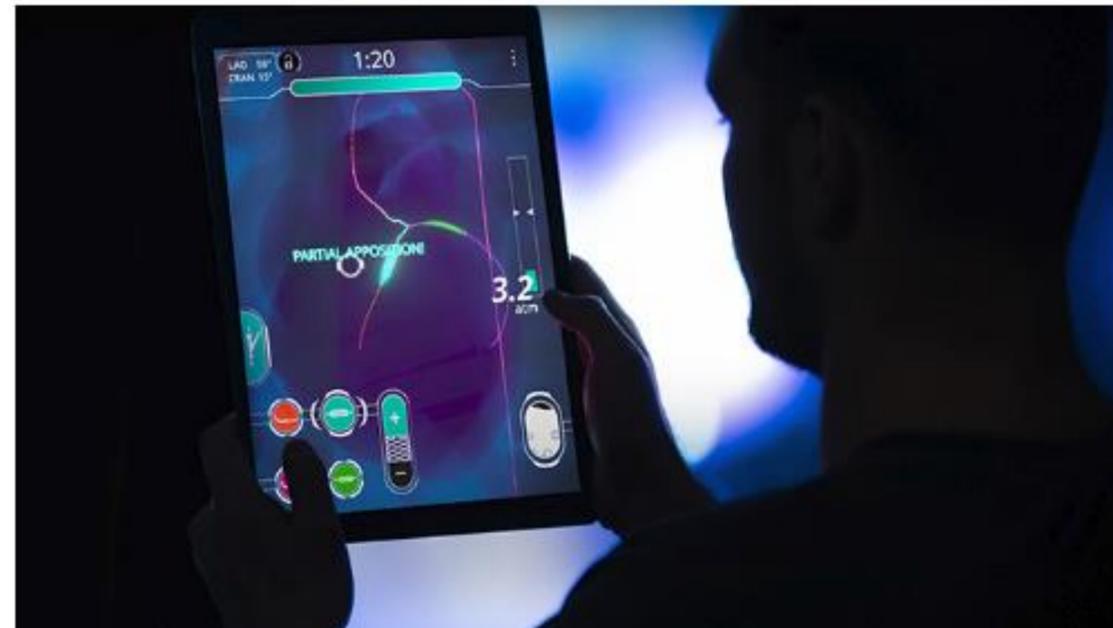


Level Ex's latest mobile game challenges cardiologists' skills for CME credits

The free Cardio Ex game features more than 35 levels that test the player's vascular knowledge, spatial reasoning and decision making.

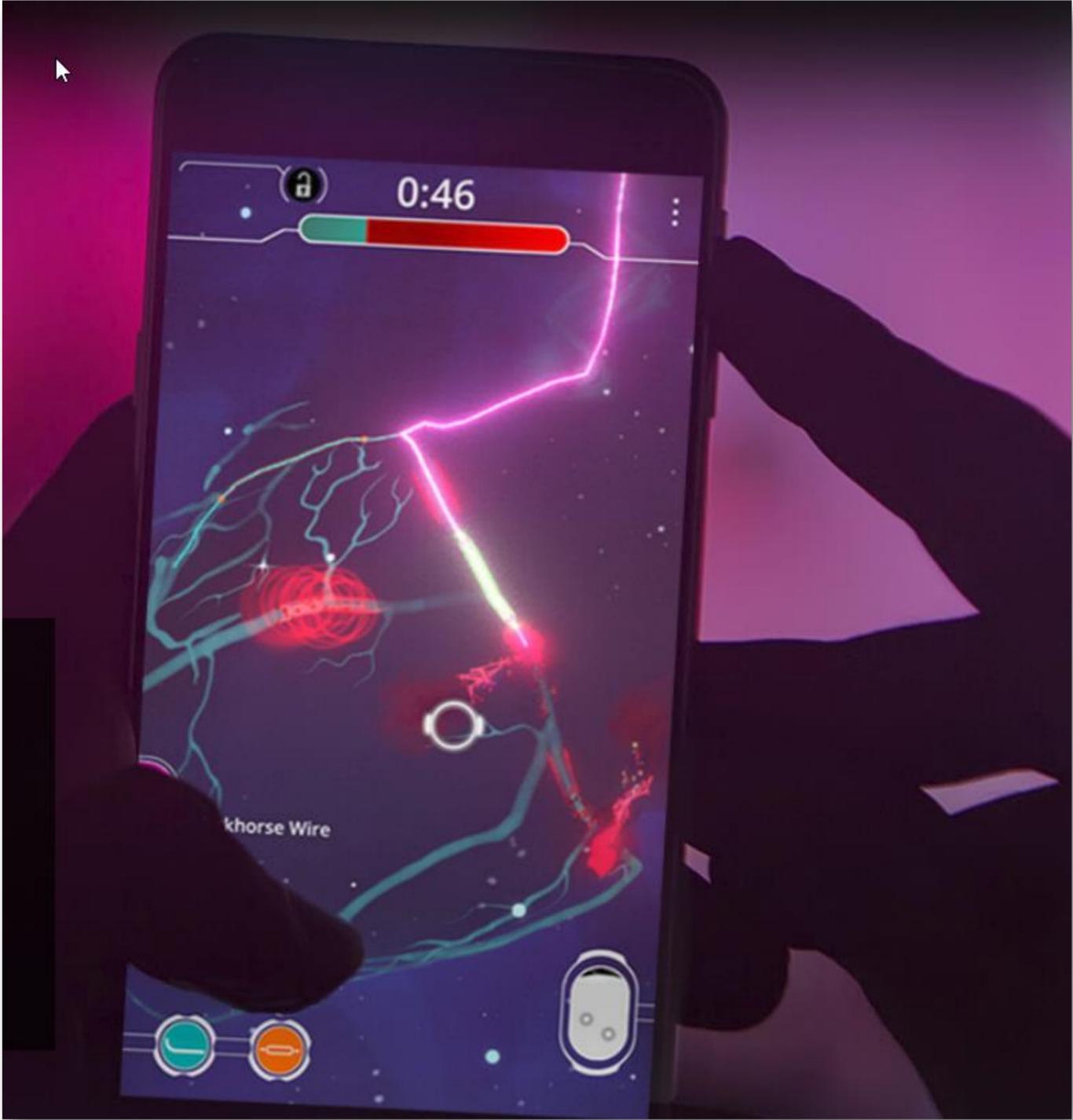
By **Dave Muoio** | March 14, 2019

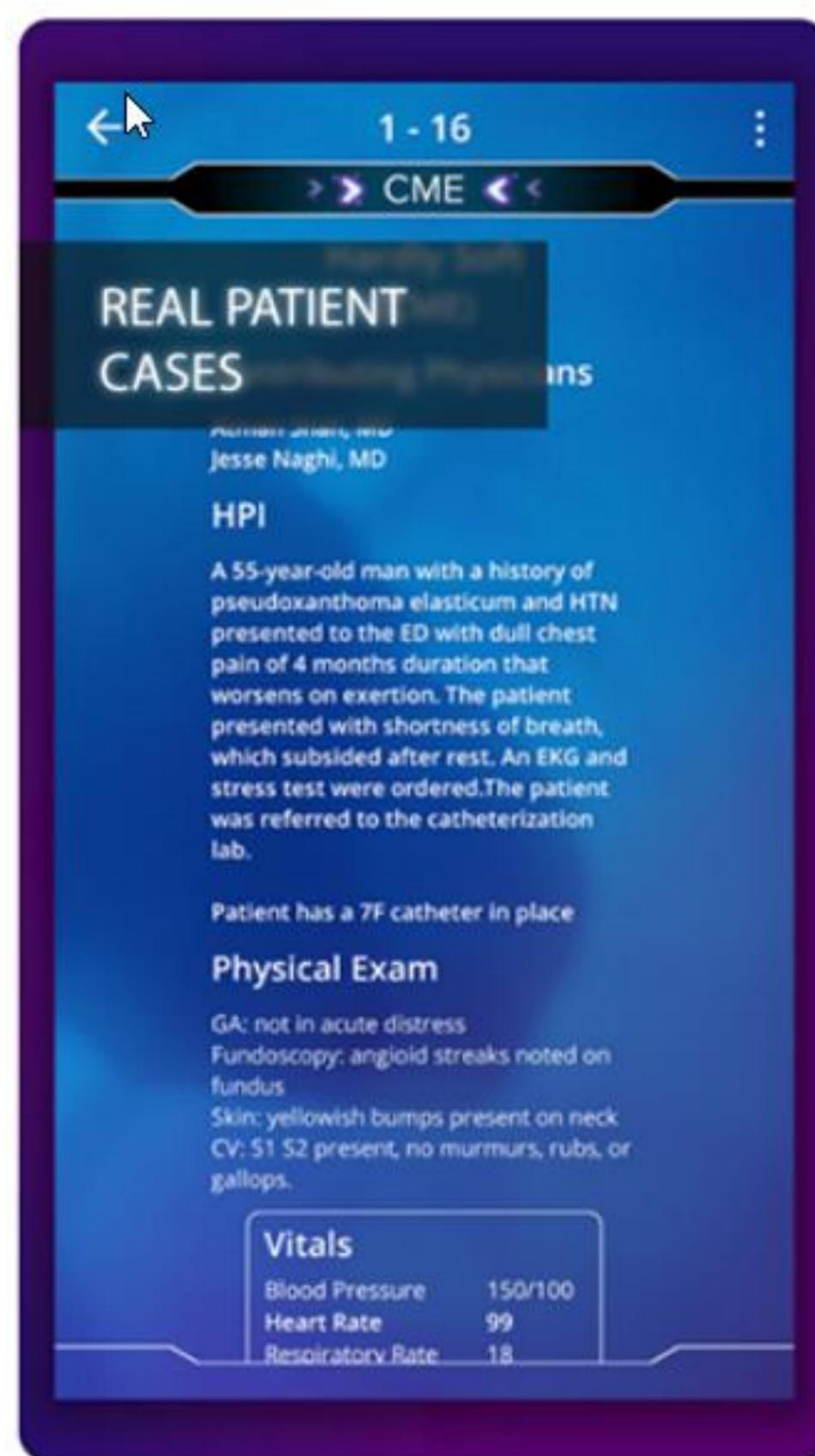
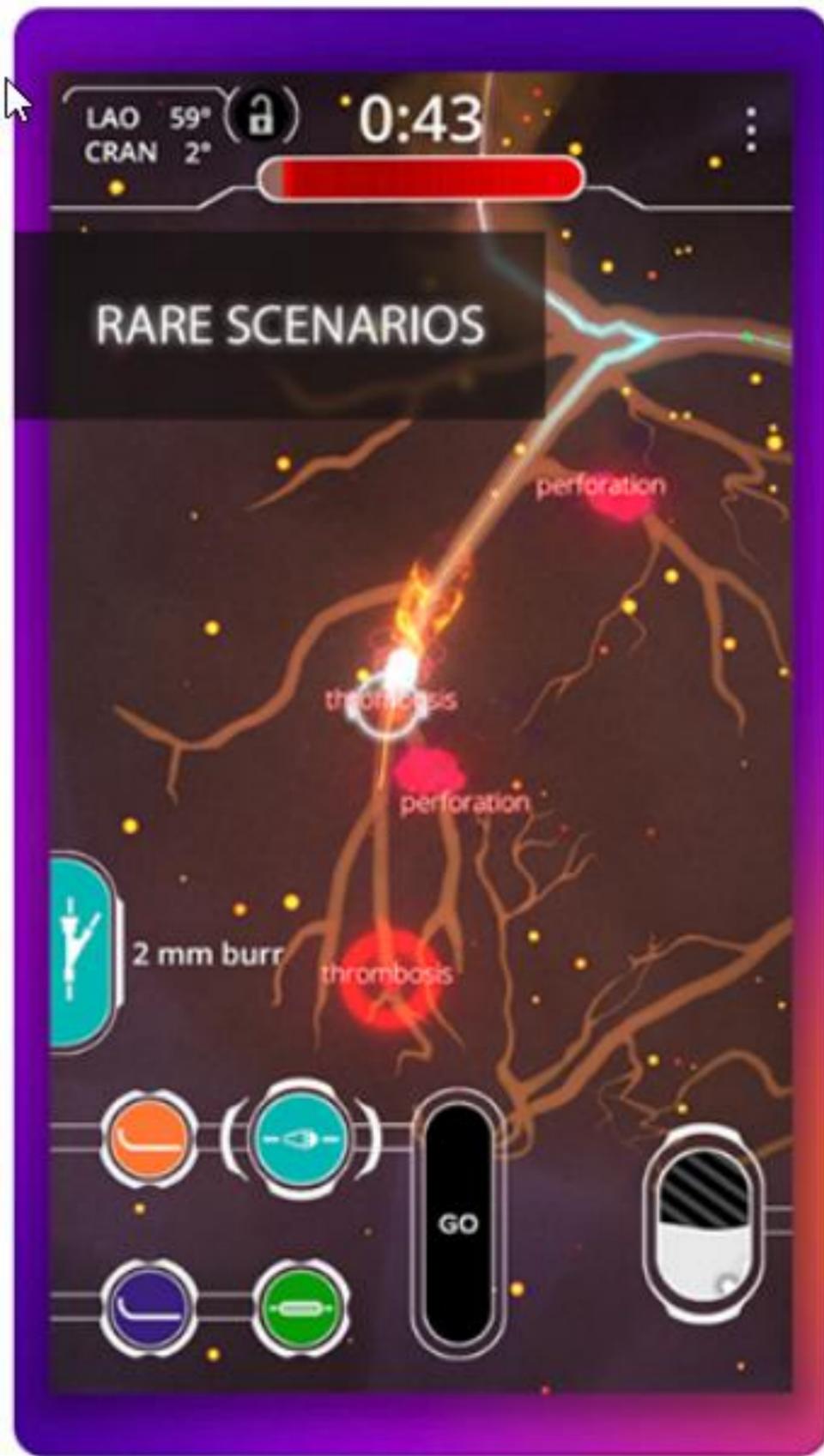
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<https://www.mobihealthnews.com/content/level-exs-latest-mobile-game-challenges-cardiologists-skills-cme-credits>

LEVEL EX





First in drones: WakeMed, partners kick off medical drone delivery program

DRONES

WAKEMED



Photo by: Adam Owens/WRAL News

by Wire, staff reports — March 26, 2019 .

First in drones: WakeMed, partners kick off medical drone delivery program

DRONES

WAKEMED



Photo by: Adam Owens/WRAL News

by Wire, staff reports — March 26, 2019 .

Drones will deliver defibrillators for heart attack victims



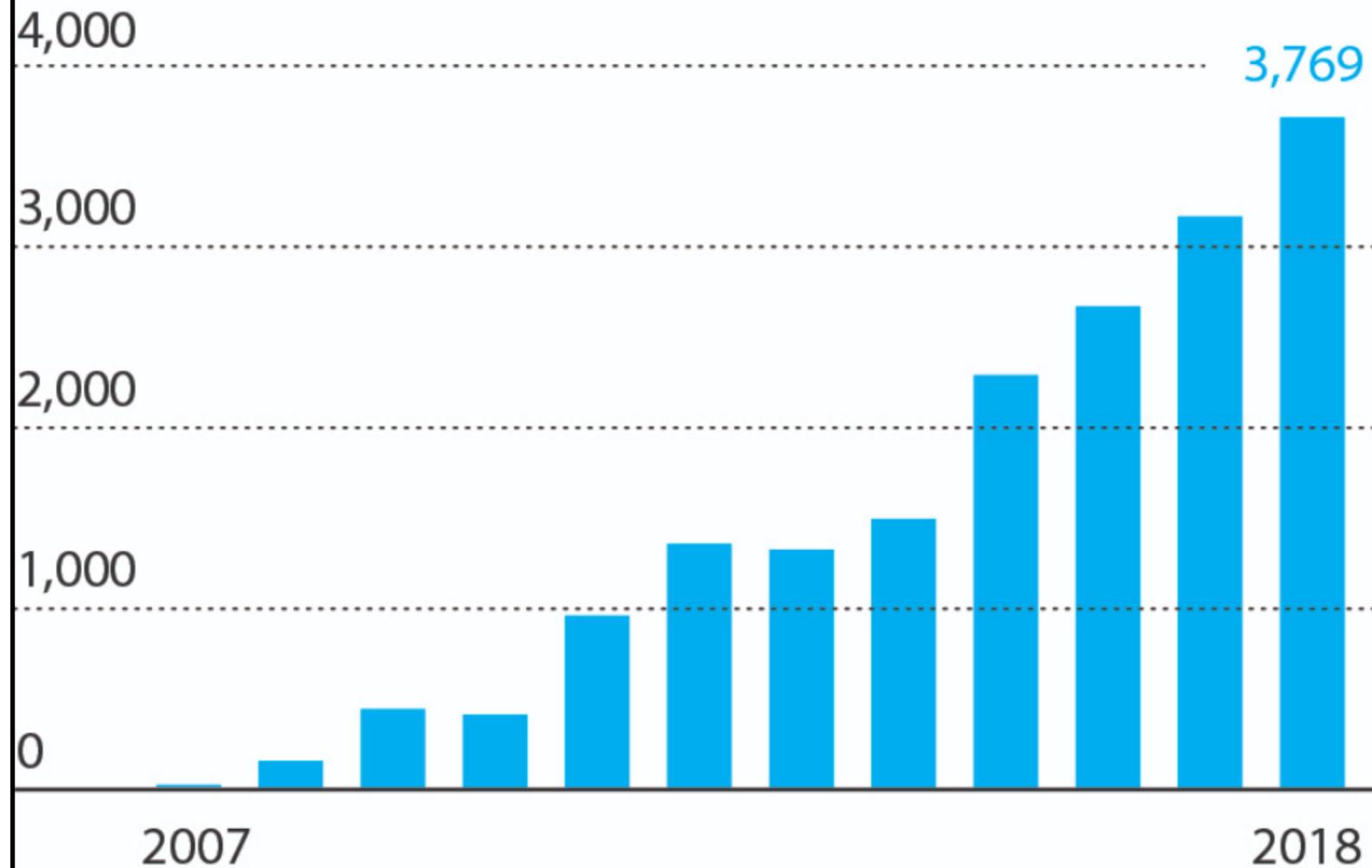
Doctor in California used a video-link robot to tell a patient he was going to die



DANGER SIGNS

Safety events owing to EHR and other health IT issues have been steadily rising. Even so, experts say cases are widely underreported.

SAFETY-RELATED INCIDENTS LINKED TO EHR OR OTHER IT



<https://khn.org/news/death-by-a-thousand-clicks>

Physician Roles

- Impact on physician autonomy & decision-making authority
- Change in daily responsibilities
- Adjustment to appropriate staffing levels
- Choosing what to use, and when
- Informed consent process
- Thoughtful documentation still paramount



Liability Risks: Who's Responsible



“AI may one day be able to explain its deepest, farthest thinking with perfect clarity and fidelity. But until then, **the law will have to grapple with tradeoffs and ambiguity.**”

Explainability: Where AI & Liability Meet

Law 360

Liability Risks: Who's Responsible



- Information overload from patients monitoring every second of their lives
- Due diligence on products/software used
- What is the applicable standard of care?
- What do vendor contracts say about indemnification?

Software as a (Co-Defendant)

- » Skounakis v. Dr. Sotillo and Dr. G's Franchising Companies, LLC (A-2403-15T2 (NJ Super. Ct. App. Div. March 19, 2018))

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 - **Plaintiff's Expert Cardiologist: Dr. G's program deviated from the standard of care by including a combination of phendimetrazine and liothyronine**

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 - Plaintiff's Expert Cardiologist: Dr. G's program deviated from the standard of care by including a combination of phendimetrazine and liothyronine
 - **Appellate Court: Plaintiff's expert 1) does not have to be a computer software expert, and 2) may testify about the propriety of the medications Dr. G's program prescribed**

Reimbursement

- Ability to treat more patients, e.g., analyze more images
- Change in reimbursement per patient or treatment
- Increased capacity to handle value-based care reimbursement



POTENTIAL IMPLICATIONS

Lifestyle Issues: Burnout



More than 2 in 5 physicians (42%) are already experiencing burnout.

STAY CONNECTED

Questions?

Jason D. Newton

Associate General Counsel
& Senior Vice President



Daily Comments



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