

# RSA® Conference 2018

San Francisco | April 16–20 | Moscone Center

SESSION ID: EXP-R04

## HACKING HEALTHCARE LIVE: BITS AND BYTES MEET FLESH AND BLOOD



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Pediatrics | Anesthesiology | Hacker  
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# Hacking Healthcare: Bits & Bytes Meet Flesh & Blood

@joshcorman  
@CDameffMD  
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@iamthecavalry



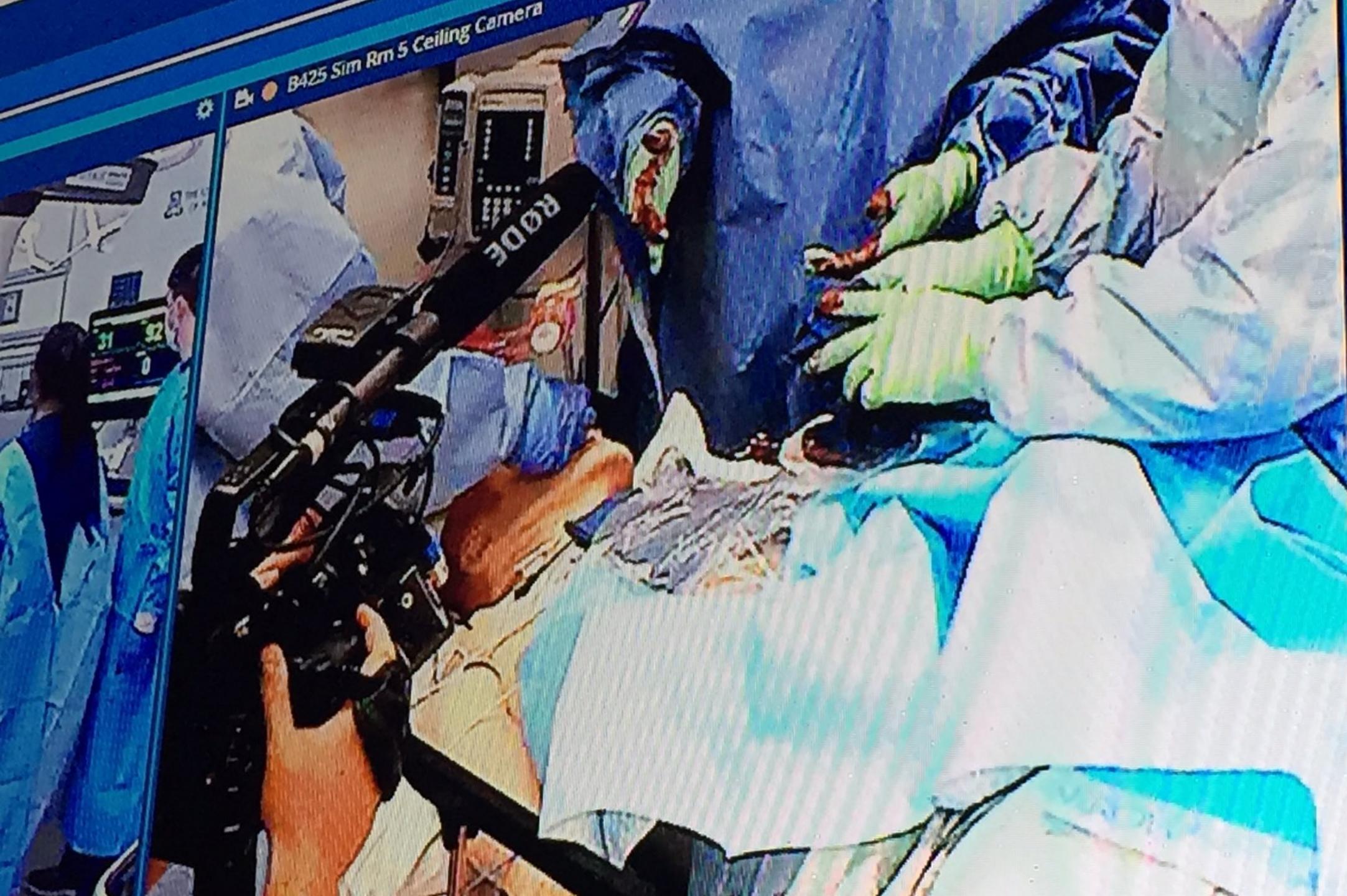
# Safer | Sooner | Together

@joshcorman

@IamTheCavalry



I am The Cavalry



B425 Sim Rm 5 Ceiling Camera

# Hippocratic Oath

## Formal Capacities

1. Cyber Safety by Design
2. Third-Party Collaboration
3. Evidence Capture
4. Resilience and Containment
5. Cyber Safety Updates

## Plain Speak

1. Avoid Failure
2. Engage Allies to Avoid Failure
3. Learn from Failure
4. Isolate Failure
5. Respond to Failure



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# **HEALTH CARE INDUSTRY CYBERSECURITY TASK FORCE**

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June 2017

**REPORT ON IMPROVING CYBERSECURITY IN THE  
HEALTH CARE INDUSTRY**

# HEALTHCARE CYBERSECURITY IS IN CRITICAL CONDITION

## **Severe Lack of Security Talent**

The majority of health delivery orgs lack full-time, qualified security personnel

## **Legacy Equipment**

Equipment is running on old, unsupported, and vulnerable operating systems.

## **Premature/Over-Connectivity**

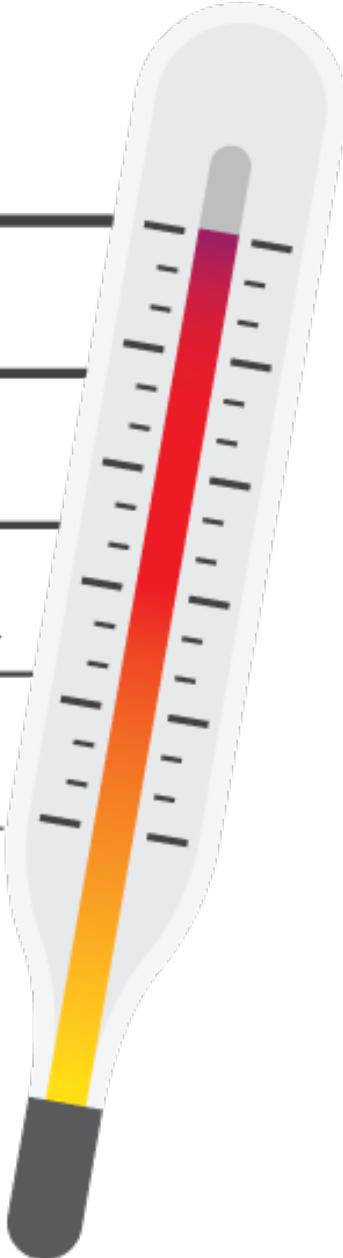
'Meaningful Use' requirements drove hyper-connectivity without secure design & implementation.

## **Vulnerabilities Impact Patient Care**

One security compromise shut down patient care at Hollywood Presbyterian and UK Hospitals

## **Known Vulnerabilities Epidemic**

One legacy, medical technology had over 1,400 vulnerabilities



# Ooops, your files have been encrypted!

English



Payment will be raised on  
5/15/2017 14:57:41

Time Left  
02:23:59:02

Your files will be lost on  
5/19/2017 14:57:41

Time Left  
06:23:59:02

## What Happened to My Computer?

Your important files are encrypted.

Many of your documents, photos, videos, databases and other files are no longer accessible because they have been encrypted. Maybe you are busy looking for a way to recover your files, but do not waste your time. Nobody can recover your files without our decryption service.

## Can I Recover My Files?

Sure. We guarantee that you can recover all your files safely and easily. But you have not so enough time.

You can decrypt some of your files for free. Try now by clicking <Decrypt>.

But if you want to decrypt all your files, you need to pay.

You only have 3 days to submit the payment. After that the price will be doubled.

Also, if you don't pay in 7 days, you won't be able to recover your files forever.

We will have free events for users who are so poor that they couldn't pay in 6 months.

## How Do I Pay?

Payment is accepted in Bitcoin only. For more information, click <About bitcoin>.

Please check the current price of Bitcoin and buy some bitcoins. For more information, click <How to buy bitcoins>.

And send the correct amount to the address specified in this window.

After your payment, click <Check Payment>. Best time to check: 9:00am - 11:00am



**bitcoin**  
ACCEPTED HERE

Send \$300 worth of bitcoin to this address:

115p7UMMn goj1pMv kpHijcRdfJNXj6LrLn

Copy

[About bitcoin](#)

[How to buy bitcoins?](#)

[Contact Us](#)

[Check Payment](#)

[Decryption](#)

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SPECIAL ARTICLE

# Delays in Emergency Care and Mortality during Major U.S. Marathons

Anupam B. Jena, M.D., Ph.D., N. Clay Mann, Ph.D., Leia N. Wedlund,  
and Andrew Olenski, B.S.

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## ABSTRACT

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### BACKGROUND

Large marathons frequently involve widespread road closures and infrastructure disruptions, which may create delays in emergency care for nonparticipants with acute medical conditions who live in proximity to marathon routes.

SPECIAL ARTICLE

**CONCLUSIONS**

Medicare beneficiaries who were admitted to marathon-affected hospitals with acute myocardial infarction or cardiac arrest on marathon dates had longer ambulance transport times before noon (4.4 minutes longer) and higher 30-day mortality than beneficiaries who were hospitalized on nonmarathon dates. (Funded by the National Institutes of Health.)

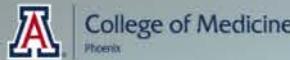
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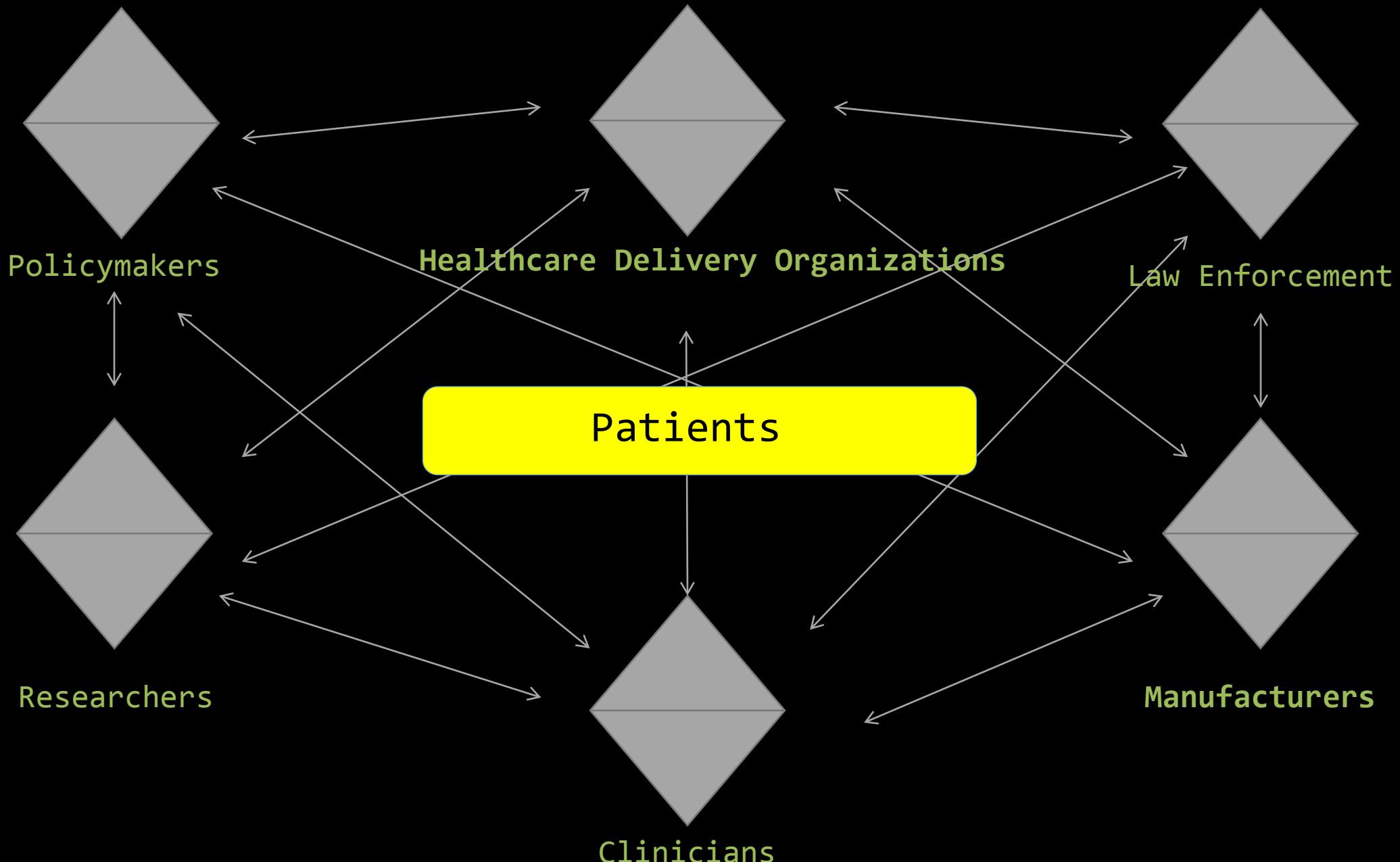
cybermedsummit.com =

# CYBERMED SUMMIT

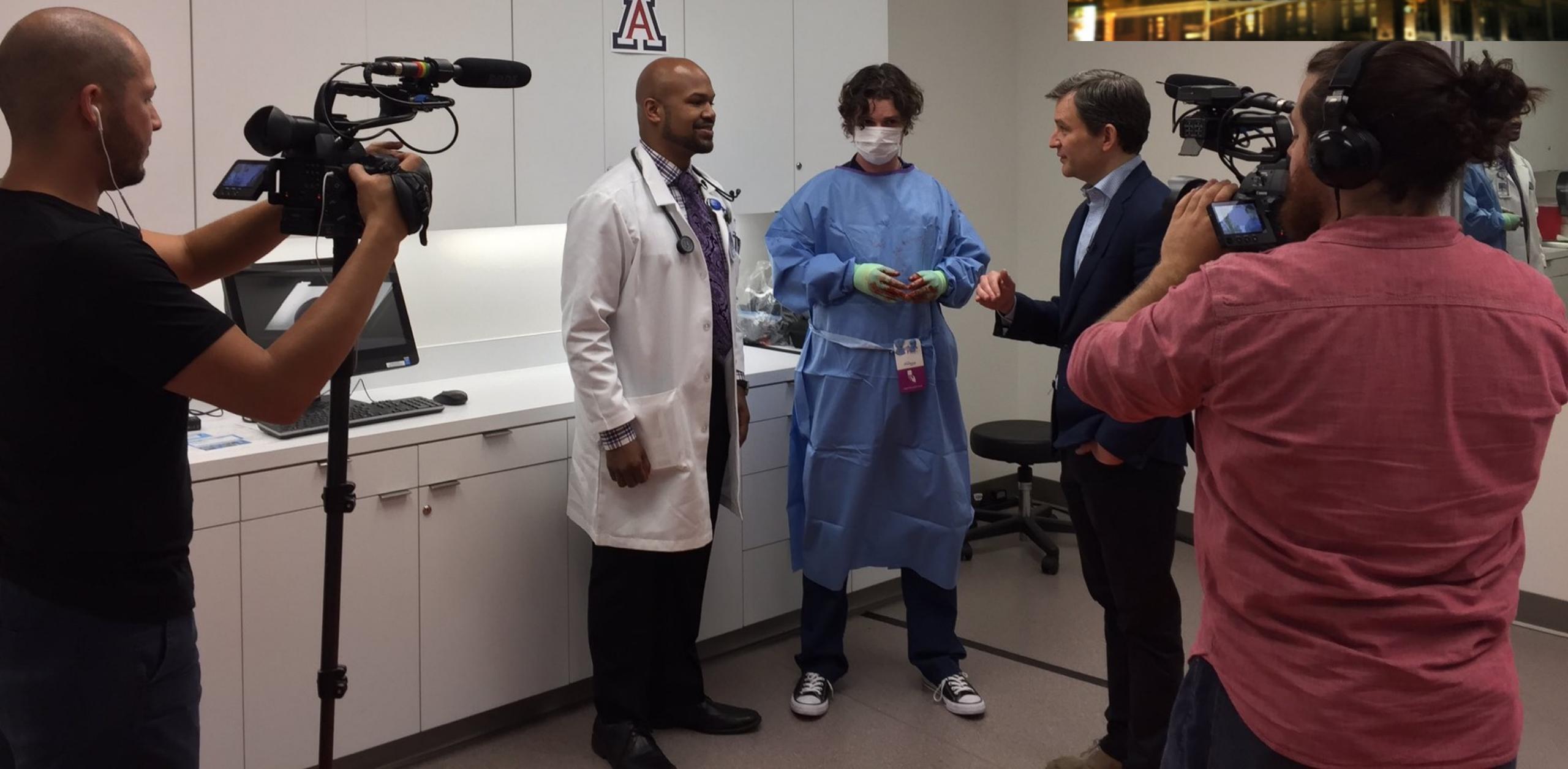
Phoenix, 8-9 June 2017

ATTEND

# Stakeholders









**Atlantic Council**



College of Medicine  
Phoenix

20:45, 3 July - Extortionware

\$300,000 in BTC, at 00:00 4 July

Affected systems

Building (A/C, elevators)

Workstations

EMR

Imaging

Potentially others

**Uncomfortable Truths Require  
Uncomfortable Response**



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The clinical simulation you are about to see is based on laboratory documented security vulnerabilities and features accurate human pathophysiology.



This scenario is not scripted.

The physician in a white coat is a real doctor.  
They have graciously agreed to participate in this exercise  
entirely unaware of the scenario or the underlying  
conceit.



All others on stage are trained simulation personnel.

This exercise will feature an intense medical crisis that some may find upsetting. Viewer discretion is advised.