



REVENUE CYCLE SOLUTIONS  
SUMMIT  
A HIMSS EVENT

FEBRUARY 11, 2019  
ORLANDO, FL



**Keynote: Securing the  
Consumer-Driven Revenue Cycle**

[www.HIMSSConference.org](http://www.HIMSSConference.org) | [#rethinkRCM](https://twitter.com/rethinkRCM)



## Plentiful Data



Personal Identifiable  
Information (PII)



Protected Health  
Information (PHI)



Payment Card  
Information (PCI)



Medical Record  
\$1,000 +



Credit Card  
\$110  
Debit Card  
w/PIN  
\$150  
Bank Details  
\$200 +



Passport  
\$1,000 +  
Drivers License  
\$20  
Social Security  
\$1



Patient Portal  
Credentials  
\$1,500 +



ST. LOUIS  
**BUSINESS JOURNAL**

NEWS DEC 18, 2018, 2:47PM CST

## **St. Louis health system's payment portal hit by malware**

**BJC** HealthCare, which operates 15 hospitals in the region, said Tuesday that it's notifying 5,850 individuals that **credit** card information entered into its online payment portal for two weeks this...





## Recent Data Loss

42,000

Phishing

 AULTMAN

500,000

Malware

 LIFEBRIDGE  
HEALTH

33,420

Public Facing  
Misconfig.

 BJC HealthCare

78.8m

Nation-State

 Anthem  
BlueCross BlueShield  

605

Theft or Loss

  
The University of Utah  
Moran Eye Center 

# Current State: Provider/Payer Centric

PRE-CARE  
EXPERIENCE

Determine healthcare need

Search online for info (self-diagnose)

Find provider options and ratings

Call to make appointment

Wait

Fill out forms on paper  
(possibly redundant)



Receive multiple bills

Follow-up visit with caregiver

Estimate of benefits hard to obtain

Follow-up info on patient portal

Receive survey about service

Receive clinical care call

POST-CARE  
EXPERIENCE

POINT OF CARE  
EXPERIENCE

# Future State: Consumer Centric

## END-TO-END EXPERIENCE

- Access
- Navigate
- Informed
- Involved
- Seamless
- Transparent
- Quality
- Empathy



- Engagement
- Holistic
- Digitally Enabled
- Virtual hospital
- Virtual visits from home



# Bridging Business and Security Requirements

## END-TO-END EXPERIENCE

- Access
- Navigate
- Informed
- Involved
- Seamless
- Transparent



- Quality
- Empathy
- Engagement
- Holistic
- Digitally Enabled





# Unique Risks

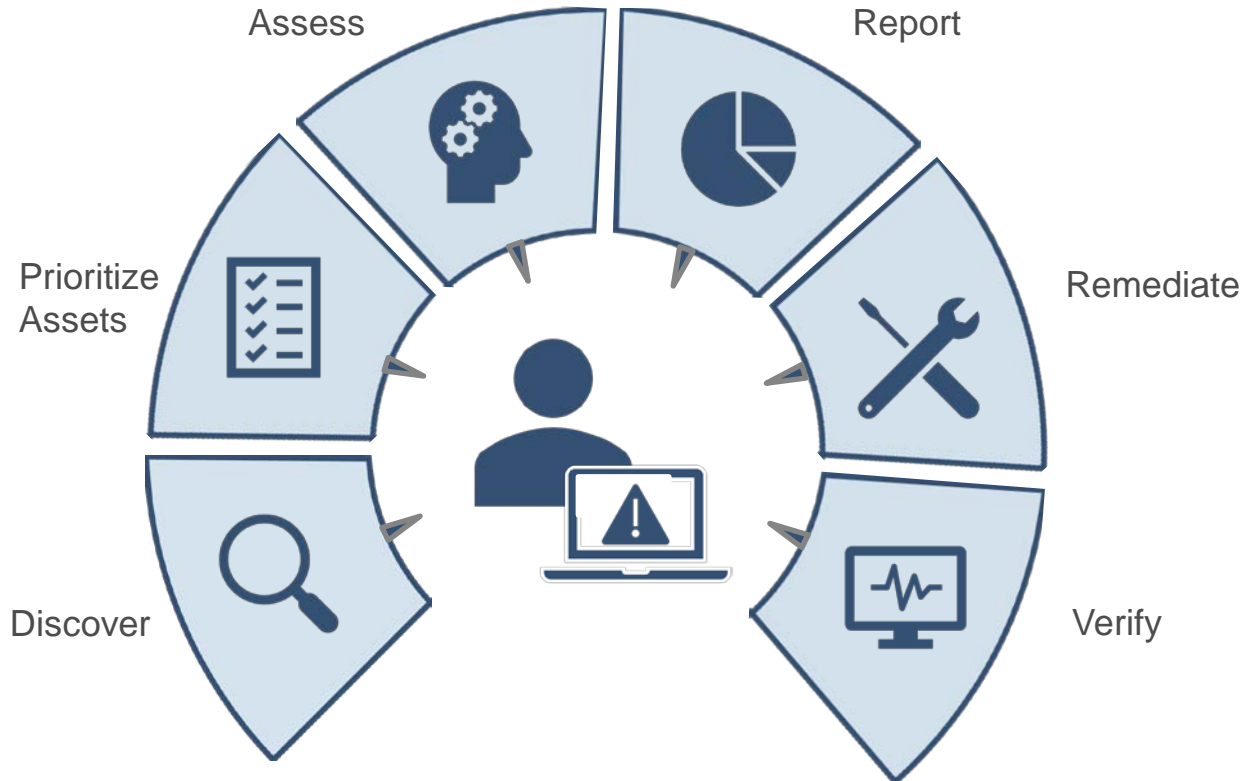
## CONSUMER REVENUE CYCLE

- Fraud
- Breach
- PCI
- PHI
- PII
- Cloud



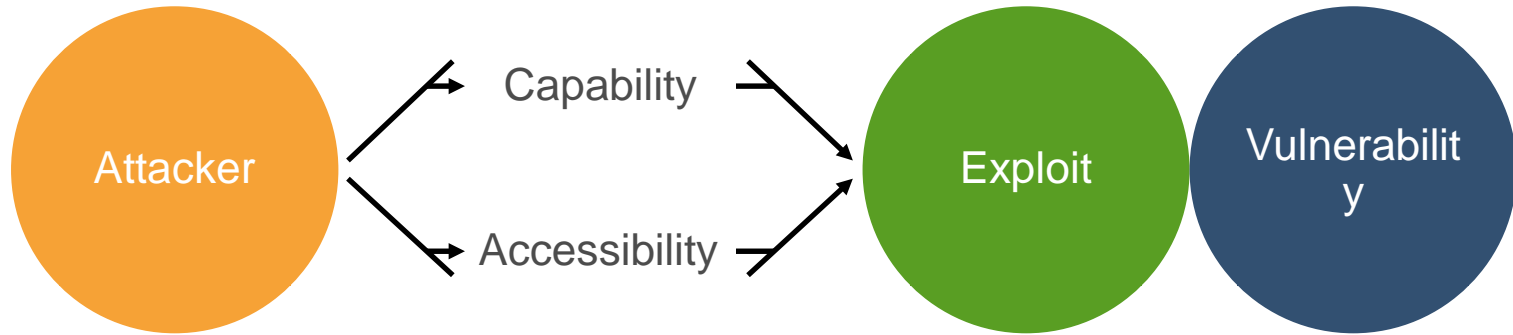


# Vulnerability Management





# Vulnerability Pathway





# Attacks are Growing in Frequency

Healthcare cyberattacks rose

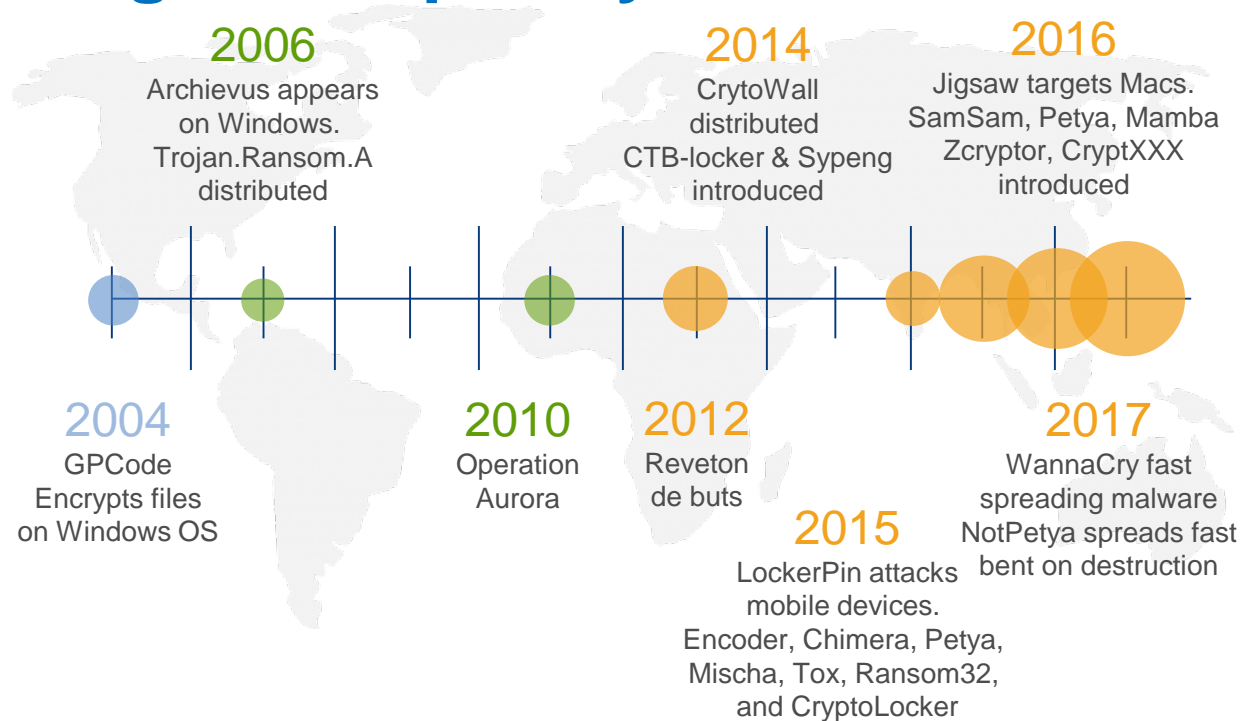
**320%**

between 2015 and 2016

Healthcare most frequently  
industry with

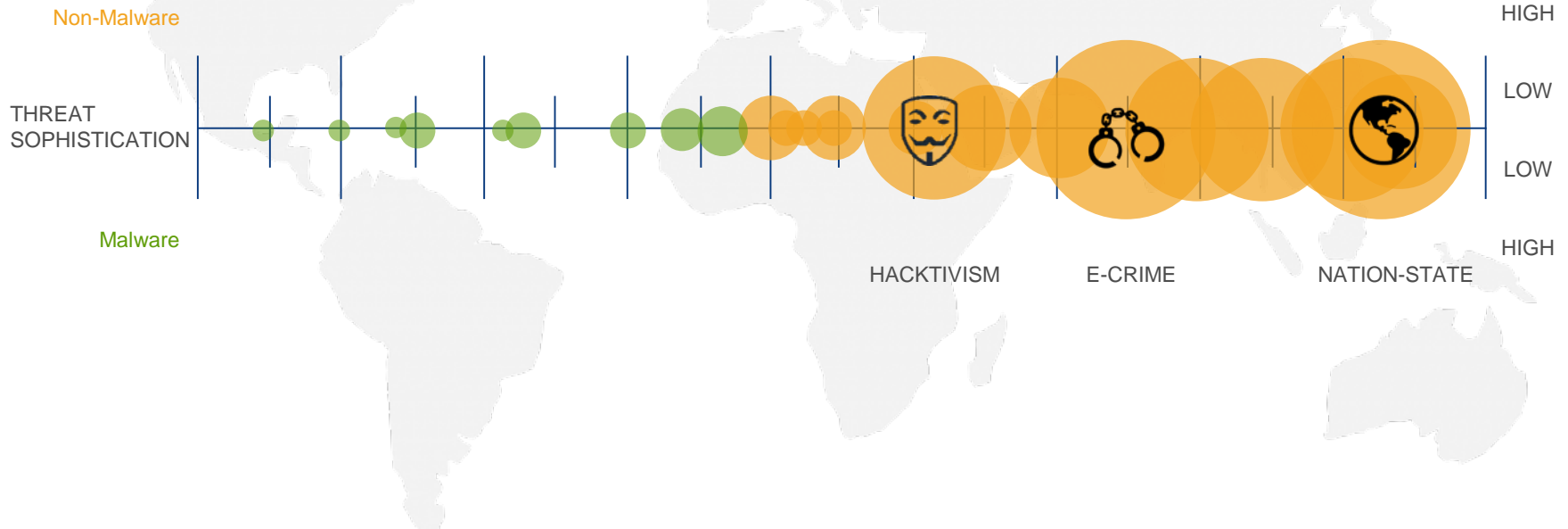
**194**

attacks per 1000 devices





# Attacks are Growing in Sophistication





# The Risks are Changing

Business Critical



Mission Critical



Life Critical

## Confidentiality

- PHI (HIPAA)
- PII & PCI
- Account Information
- Billing & Payment Data
- Intellectual Property
  - Clinical Trials
  - Research
  - Design & Formularies
- Legal & HR Documents
- Identities & Credentials

## Availability

- Clinical Systems
  - EHR & Speciality
  - Ancillary (PACS, Lab, RX)
  - ePrescription/EPCS
- Medical Devices
  - Availability of clinical services and results
- Business Systems
  - Email
  - Billing, Scheduling

## Integrity

- Critical Patient Data
  - Scripts/Meds
  - Dosages
  - Allergies
  - History
  - Diagnosis
  - Alarms
- Critical Technical Data
  - Calibration
  - Safety Limits

Patient Experience: "Patient Trust Zone"

Patient Harm Risk: "Patient Safety Zone"



# Cloud Management

Identify and manage cloud risk

Develop cloud data inventory

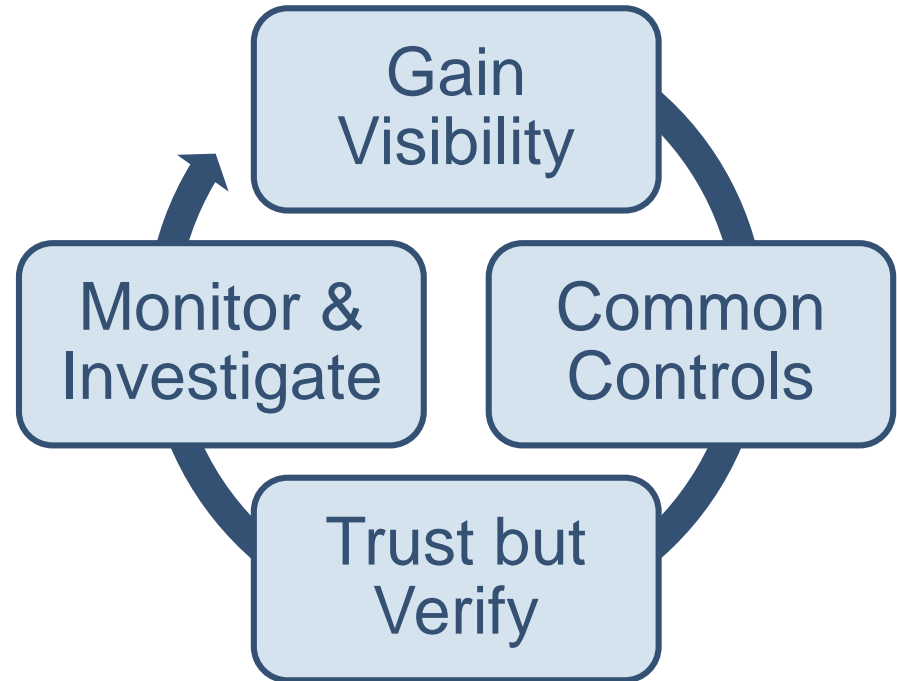
Develop cloud controls

Monitor

Detect and respond to Cloud incidents

Carefully manage BAA

3<sup>rd</sup> Party reviews





# Cloud Migration | 10 Considerations

- Cost Effective Scalability
- Compliance obligations by vendor
- Effect of server crash
- Security across the organization
- Alignment with business goals
- Support on multiple devices
- Ability to provide complete solution
- Type of cloud: Public, Private, or hybrid
- Hardware compatibility
- Content management and governance







# Data Classification

**RESTRICTED**

**PUBLIC**

**PRIVATE**

**CLASSIFIED**

**CONFIDENTIAL**



# Data Protection



Inventory



Encryption



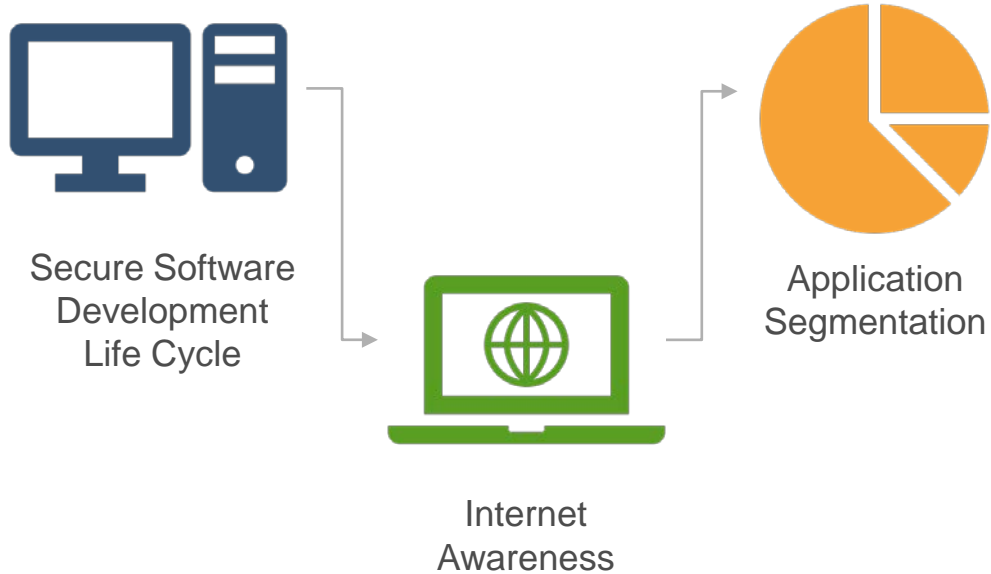
Data Loss  
Prevention  
(DLP)



Detection

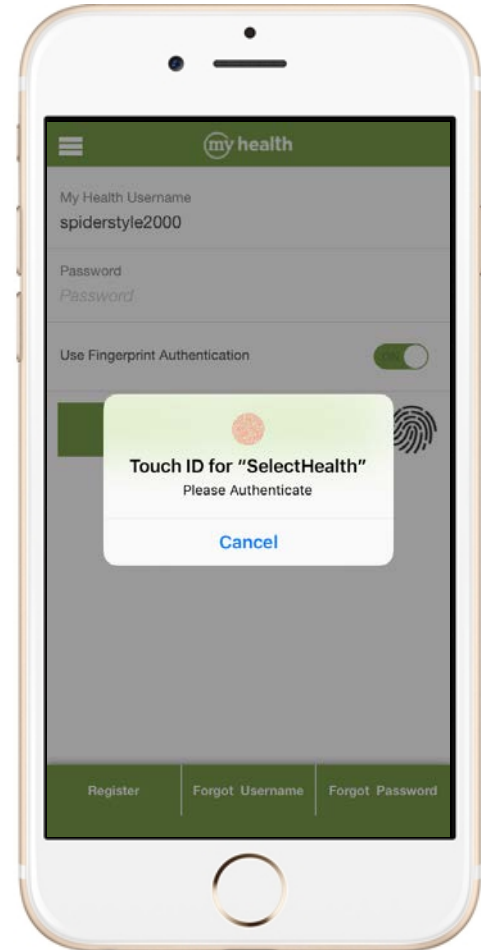
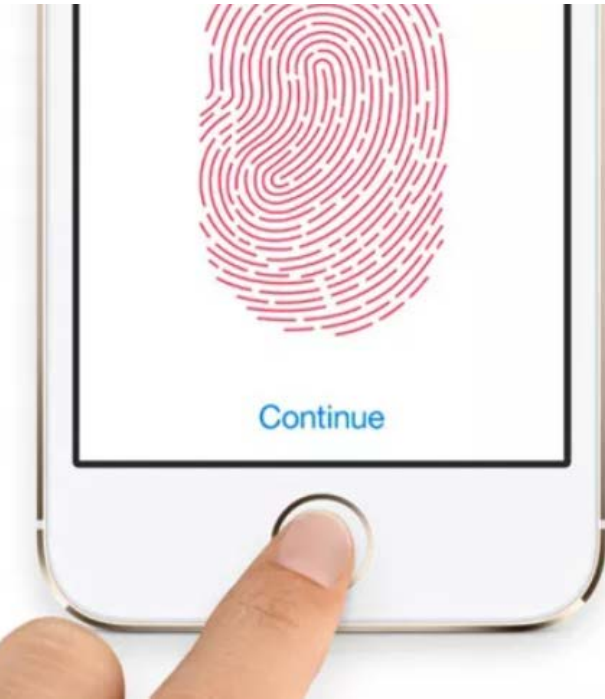


# Application Security





# Consumer Oriented Security





## Key Takeaways

- 1) Be an enabler of healthcare consumerism.
- 2) Aid the business in the healthcare home transition.
- 3) Reduce cyber friction for the business and consumers.
- 4) Prepare and design mature processes into cloud endeavors.
- 5) Always partner with the business to enable its success.

A nighttime photograph of a city skyline reflected in a body of water. The scene is illuminated by city lights, with palm trees in the foreground and several high-rise buildings in the background. The sky is dark, and the water shows clear reflections of the lights and buildings.

**Karl J. West, CISO**

**Intermountain Healthcare**

@intermountain

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