

CYBERSECURITY AND PRIVACY RISKS THAT CREATE ENFORCEMENT AND OTHER EXPOSURE

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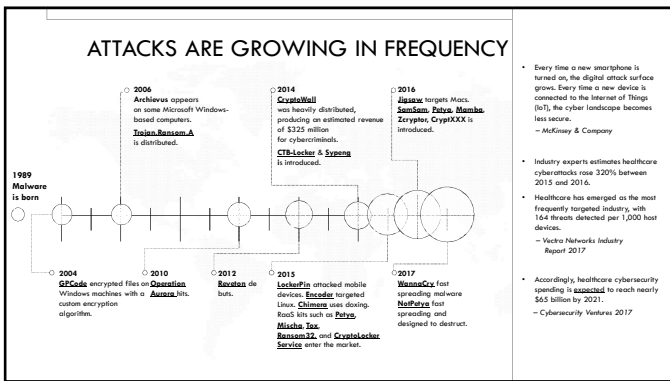
PRESENTATION OVERVIEW

- BACKGROUND ON THE EVOLUTION OF PRIVACY AND SECURITY RISKS IN HEALTHCARE
- PRIVACY AND INFORMATION SECURITY PROGRAM MATURITY IN HEALTHCARE
- RECENT SETTLEMENTS – WHAT WENT WRONG?
- OCR PHASE II AUDITS- AN OVERVIEW OF THE FINDINGS

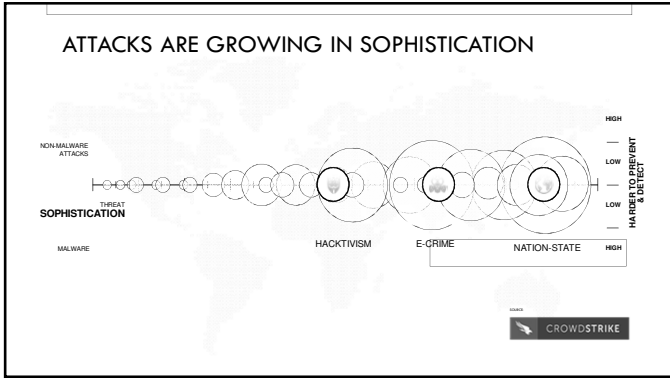
BACKGROUND

TOP SECURITY RISKS IN HEALTHCARE

- Theft & Loss** Nearly half of all breaches involve some form of theft or loss of a device not properly protected or paper.
- Insider Abuse** Breaches in healthcare continue to be carried out by knowledgeable insiders for identity theft, tax fraud, and financial fraud.
- Unintentional Action** Breaches caused by mistakes or unintentional actions such as improper mailings, errant emails, or facsimiles are still prevalent.
- Cyber Attacks** Majority of large breaches reported in 2017 involved some form of hacking and represented nearly 99% of the records compromised.



- Every time a new smartphone is turned on, the digital attack surface grows. Every time a new device is connected to the Internet of Things (IoT), the cyber landscape becomes less secure. — McKinsey & Company
- Industry experts estimate healthcare cyberattacks rose 320% between 2015 and 2016.
- Healthcare has emerged as the most frequently targeted industry, with 144 breaches detected per 1,000 host devices. — Verio Networks Industry Report 2017
- Accordingly, healthcare cybersecurity spending is expected to reach nearly \$6.8 billion by 2021. — Cybersecurity Ventures 2017



CHANGING RISK PRIORITIES

From "Business Critical" to "Mission Critical" to "Life Critical"

Confidentiality	Availability	Integrity
<ul style="list-style-type: none"> • PHI (HIPAA) • But also PII & PCI • Account Information • Billing & Payment Data • Intellectual Property - Clinical Trials - Research - Design & Formularies • Legal & HR Documents • Identities & Credentials 	<ul style="list-style-type: none"> • Clinical Systems - EHR & Specialty - Ancillary (PACS, Lab, Pharma) - ePrescription / EPCS • Medical Devices - Availability of clinical services and results • Business Systems - Email - Billing, Scheduling 	<ul style="list-style-type: none"> • Critical Patient Data - Prescriptions, Medications - Dosages - Allergies - History - Diagnosis - Alarms • Critical Technical Data - Calibration - Safety Limits

Patient Experience: "Patient Trust Zone"

Patient Harm: "Patient Safety Zone"

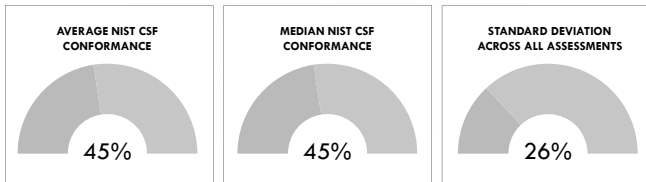
PRIVACY AND INFORMATION SECURITY PROGRAM MATURITY IN HEALTHCARE

ANNUAL REPORT OVERVIEW

- ANALYZED THE AGGREGATED MATURITY RATINGS OF ASSESSMENTS PERFORMED IN 2017 USING THE NIST CSF AS THE BENCHMARK STANDARD
- PROPRIETARY DATA BASED ON THIRD-PARTY ANALYSIS, NOT SELF-REPORTING
- SAMPLE REPRESENTS THE ENTIRE CONTINUUM OF CARE, FROM CRITICAL ACCESS HOSPITALS TO LARGE AMCS TO BUSINESS ASSOCIATES
- DISSECTED FINDINGS BY MULTIPLE CRITERIA: SIZE, REVENUE, TYPE, ETC.

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ANNUAL REPORT FINDINGS

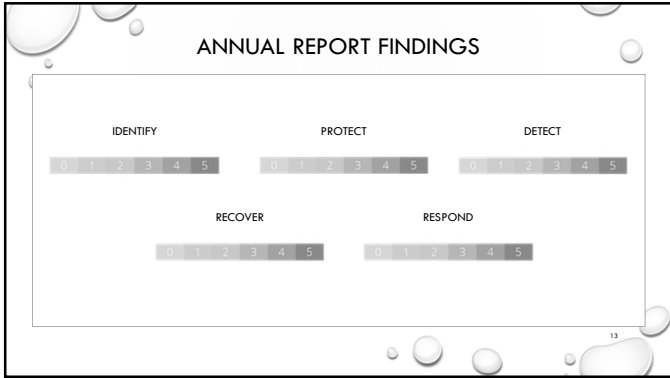


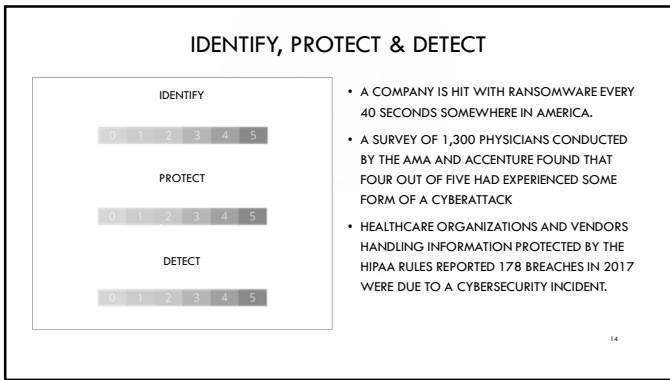
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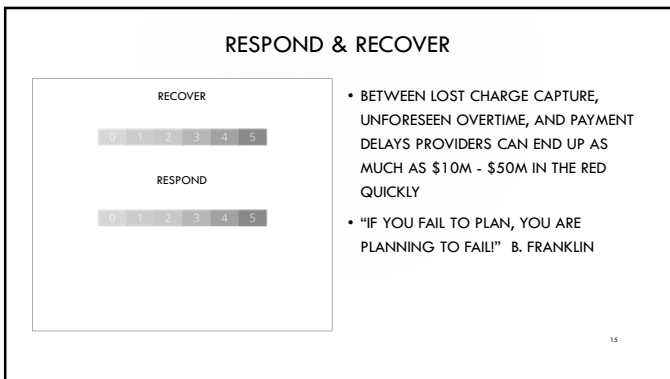
ANNUAL REPORT FINDINGS

- RESULTS SHOW US THAT THERE IS STILL CONSIDERABLE ROOM FOR IMPROVEMENT IN CYBERSECURITY, DESPITE OVER TEN YEARS OF REGULATION
- WE AS AN INDUSTRY ARE NOT EQUIPPED OR PREPARED TO ADDRESS CYBER THREATS OR INCIDENTS WHEN THEY OCCUR, OR EVEN IDENTIFY WHERE RISKS MAY BE
- "A CHAIN IS ONLY AS STRONG AS ITS WEAKEST LINK."

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RECENT SETTLEMENTS – WHAT WENT WRONG?

FOCUS ON RISK ASSESSMENTS

WHAT WENT WRONG?

- FAILURE TO ADDRESS OR FULLY REMEDIATE RISKS IDENTIFIED AND DOCUMENTED PRIOR TO INCIDENTS HAVE RESULTED IN RECENT FINES OF **\$3.2M** AND **\$5.5M**
 - ACCESS CONTROLS TO EPHI – FORMER EMPLOYEE ID
 - ENCRYPTION OF MOBILE DEVICES

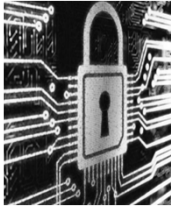


WHAT WENT WRONG?

- **\$5.5MILLION** FOR FAILURE TO:
 - CONDUCT A THOROUGH RISK ASSESSMENT FOR ALL THEIR EPHI (NOT JUST THE EMR);
 - HAVE SUFFICIENT PHYSICAL CONTROLS TO DATA CENTERS;
 - OBTAIN ASSURANCES FROM BUSINESS ASSOCIATES ON SAFEGUARDING EPHI;
 - PROTECT AN UNENCRYPTED LAPTOP.



WHAT WENT WRONG?



- **\$2.7MILLION FOR FAILURE TO:**
 - PERFORM A FULL RISK ASSESSMENT FOR ALL EPHI;
 - STORE EPHI WITH A CLOUD PROVIDER WITHOUT A BAA;
 - MAINTAIN EPHI ONLY ON ENCRYPTED DEVICES.

WHAT WENT WRONG?

- **\$2.5MILLION** FINE - STOLEN LAPTOP WITH EPHI OF 1391 INDIVIDUALS
- NO RISK ASSESSMENT OR RISK MANAGEMENT PROCESSES IN PLACE
- NO POLICIES OR PROCEDURES FOR MOBILE DEVICES
- SECURITY RULE POLICIES ALL IN DRAFT FORM!



WHAT WENT WRONG

ANTHEM, INC. - \$16,000,000

- 78.8M INDIVIDUALS AFFECTED
 - LARGEST HEALTH DATA BREACH IN U.S.
- GAINED ACCESS THROUGH SPEAR FISHING IN FEB. 2014
- DATA EXTRACTED FROM DEC. 2014 TO JAN. 2015
 - INCLUDED NAMES, ADDRESSES, DATES OF BIRTH, EMAIL ADDRESSES, SSNS, MEDICAL ID NUMBERS AND EMPLOYMENT INFORMATION
- ISSUES WITH RISK ANALYSIS, INFORMATION SYSTEM ACTIVITY REVIEW, SECURITY INCIDENT RESPONSE AND REPORTING, AND ACCESS CONTROLS
- 2 OTHER SETTLEMENTS –
 - NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS (DECEMBER 2016)
 - CLASS ACTION (AUGUST 2018)

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FOCUS ON ENCRYPTION & SAFEGUARDS

WHAT WENT WRONG?

\$2,140,500 SETTLEMENT



- EPHI OF 31,800 PEOPLE LEFT OPEN TO THE INTERNET FOR A LITTLE OVER A YEAR
- FAILURE TO RECOGNIZE THE RISK OF A NEW SERVER
- NO ENTERPRISE-WIDE RISK ASSESSMENT

WHAT WENT WRONG?

- A FIREWALL IS OF LITTLE VALUE IF EVERYTHING ISN'T BEHIND IT.
- A HEALTH PLAN PAID **\$1.7MILLION** IN FINES BECAUSE A WEAKNESS IN 1 PROGRAM LEFT THEIR NETWORK AND THE EPHI OF OVER 600,000 INDIVIDUALS OPEN TO THE INTERNET!



WHAT WENT WRONG?



- A PHYSICIAN ATTEMPTED TO DEACTIVATE A PERSONALLY OWNED COMPUTER WHICH OPENED UP A COVERED ENTITY'S NETWORK FIREWALL, ALLOWING INTERNET ACCESS TO PHI
- A UNIVERSITY & ITS AFFILIATED HOSPITAL PAID **\$4.8MILLION** FOR THAT FAILURE


WHAT WENT WRONG?

- WHAT'S THE COST OF A LOST OR STOLEN LAPTOP?
- ENCRYPTED: \$0 IN FINES
- UNENCRYPTED: **\$3.9MILLION** PAID WHEN 1 LAPTOP WITH INFORMATION ON 13,000 RESEARCH PATIENTS WAS STOLEN



WHAT WENT WRONG?

- \$5.5 MILLION FOR FAILURE TO PROVIDE REASONABLE ACCESS CONTROLS RESULTING IN IMPERMISSIBLE ACCESS TO PHI OF OVER 115,000 INDIVIDUALS:
 - DID NOT TURN OFF ACCESS FOR A FORMER EMPLOYEE OF AN AFFILIATED PHYSICIAN PRACTICE
 - DID NOT MONITOR ACCESS TO EPHI



WHAT WENT WRONG

ABC Cases \$999,000

- BOSTON MEDICAL CENTER - \$100,000
- BRIGHAM AND WOMEN'S HOSPITAL - \$384,000
- MASSACHUSETTS GENERAL HOSPITAL - \$515,000
 - BWH AND MGH ARE MEMBERS OF PARTNERS HEALTHCARE - AN INTEGRATED HEALTH CARE DELIVERY SYSTEM THAT INCLUDES COMMUNITY HOSPITALS, PRIMARY CARE AND SPECIALTY PHYSICIANS, SPECIALTY FACILITIES, COMMUNITY HEALTH CENTERS AND OTHER HEALTH-RELATED ENTITIES
- ALL THREE INVOLVED FILMING FOR "SAVE MY LIFE: BOSTON TRAUMA"
- SIMILAR TO ANOTHER ABC TV SHOW - "NY MED"
 - "NY MED" RESULTED IN A 2016 SETTLEMENT WITH NY PRESBYTERIAN FOR \$2.2M
- OCR FILMING GUIDANCE - [HTTPS://WWW.HHS.GOV/HIPAA/FOR-PROFESSIONALS/FAQ/2023/FILM-AND-MEDIA/INDEX.HTML](https://www.hhs.gov/hipaa/for-professionals/faq/2023/film-and-media/index.html)

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AND IT'S NOT JUST HIPAA

- ALL 50 STATES NOW HAVE SOME TYPE OF DATA BREACH NOTIFICATION STATUTE
 - ALABAMA ADDED IN APRIL 2018
 - ALL BUT 8 CONCERN ELECTRONIC DATA ONLY
- IN JUNE, NEW JERSEY AG ANNOUNCED FORMATION OF A NEW DATA PRIVACY & CYBERSECURITY SECTION
- ALSO IN JUNE, THE NEW CALIFORNIA CONSUMER PRIVACY ACT WAS PASSED
- IN SEPTEMBER, THE MASSACHUSETTS AG SIGNED A \$250,000 SETTLEMENT AGREEMENT WITH UMASS MEMORIAL MEDICAL CENTER FOR A PRIVACY VIOLATION
- AND LET'S NOT FORGET ABOUT GDPR!

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OCR PHASE II AUDITS- AN OVERVIEW OF THE FINDINGS

AUDIT PROGRAM PURPOSE & STATUS

- SUPPORT IMPROVED COMPLIANCE
- IDENTIFY BEST PRACTICES; UNCOVER RISKS & VULNERABILITIES; DETECT AREAS FOR TECHNICAL ASSISTANCE; ENCOURAGE CONSISTENT ATTENTION TO COMPLIANCE
- DEVELOP TOOLS AND GUIDANCE FOR INDUSTRY SELF-EVALUATION AND BREACH PREVENTION
- DESK AUDITS OF COVERED ENTITIES COMPLETED – SEPT 2017
- DESK AUDITS OF BUSINESS ASSOCIATES COMPLETED – DEC 2017
- WEBSITE UPDATES WITH SUMMARY FINDINGS – TO BE PUBLISHED

PHASE 2 - AUDIT PROVISIONS

- FOR COVERED ENTITIES (144):
 - SECURITY RULE (63): RISK ANALYSIS AND RISK MANAGEMENT;
 - BREACH NOTIFICATION RULE: CONTENT AND TIMELINESS OF NOTIFICATIONS; **OR**
 - PRIVACY RULE: NPP AND INDIVIDUAL ACCESS RIGHT
- FOR BUSINESS ASSOCIATES (41):
 - SECURITY RULE: RISK ANALYSIS AND RISK MANAGEMENT **AND**
 - BREACH NOTIFICATION RULE: REPORTING TO COVERED ENTITY
- SEE AUDITEE PROTOCOL GUIDANCE FOR MORE DETAILS:
[HTTP://WWW.HHS.GOV/SITES/DEFAULT/FILES/2014/04/hipaa-remediation-audit-guidance.pdf](http://www.hhs.gov/sites/default/files/2014/04/hipaa-remediation-audit-guidance.pdf)

CE DESK AUDIT RATINGS

Element #	Provision	Rating					N/A
		1	2	3	4	5	
P55	Notice	2	34	40	11	16	0
P58	eNotice	59	16	4	6	15	3
P65	Access	1	10	27	54	11	0
BNR 12	Timeliness	67	6	2	9	12	7
BNR13	Content	14	15	24	38	7	5
S2	Risk Analysis	0	9	20	21	13	0
S3	Risk Management	2	2	15	28	16	0

U.S. Department of Health and Human Services, Office for Civil Rights

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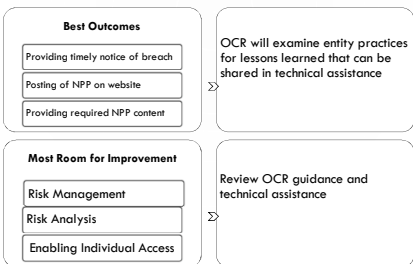
BA DESK AUDIT RATINGS

Element #	Provision	Rating					N/A
		1	2	3	4	5	
BNR17	Notice to CEs	0	2	4	3	0	32
S2	Risk Analysis	3	4	16	12	6	0
S3	Risk Management	0	5	8	21	7	0

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INITIAL TAKE-AWAYS

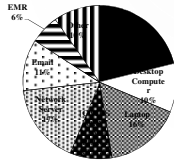


OCR BREACH STATISTICS

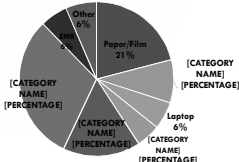
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500+ Breaches by Location

September 23, 2009 through December 31, 2017



January 1, 2018 through September 30, 2018

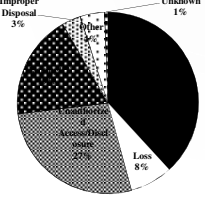


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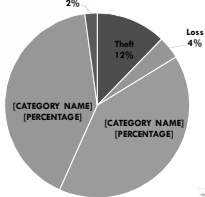
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500+ Breaches by Type

September 23, 2009 - December 31, 2017



January 1, 2018 - September 30, 2018



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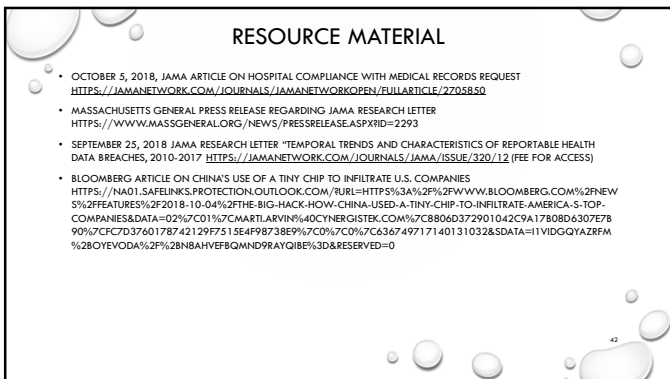


QUESTIONS?



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RESOURCE MATERIAL

- OCTOBER 5, 2018, JAMA ARTICLE ON HOSPITAL COMPLIANCE WITH MEDICAL RECORDS REQUEST [HTTPS://JAMANETWORK.COM/JOURNALS/JAMANETWORKOPEN/FULLARTICLE/27205850](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/27205850)
- MASSACHUSETTS GENERAL PRESS RELEASE REGARDING JAMA RESEARCH LETTER [HTTPS://WWW.MASSGENERAL.ORG/NEWS/PRESSRELEASE.ASPXID=2293](https://www.massgeneral.org/news/pressrelease.aspx?id=2293)
- SEPTEMBER 25, 2018 JAMA RESEARCH LETTER "TEMPORAL TRENDS AND CHARACTERISTICS OF REPORTABLE HEALTH DATA BREACHES, 2010-2017" [HTTPS://JAMANETWORK.COM/JOURNALS/JAMA/ISSUE/320/12](https://jamanetwork.com/journals/jama/issue/320/12) (FEE FOR ACCESS)
- BLOOMBERG ARTICLE ON CHINA'S USE OF A TINY CHIP TO INFILTRATE U.S. COMPANIES [HTTPS://NA01.SAFELINKS.PROTECTION.OUTLOOK.COM/?URL=HTTPS%3A%2F%2FWWW.BLOOMBERG.COM%2FNEWS%2FFEATURES%2F2018-10-04%2Fthe-big-hack-how-china-used-a-tiny-chip-to-infiltrate-america-s-top-companies&data=02%7C01%7CMARTI.ARVIN%40CYNERGISTEK.COM%7C8B06D372901042C9A17B08D6307E7B90%7CFC7D3760178742129F7515E4F98738E9%7C0%7C0%7C63674971714013103285DATA=H1VIDGQYAZRFM%2B0YEVODA%2F%2B8BAHVEFBQMND9RAYQIBE%3D&RESERVED=0](https://na01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.bloomberg.com%2Fnews%2Ffeatures%2F2018-10-04%2Fthe-big-hack-how-china-used-a-tiny-chip-to-infiltrate-america-s-top-companies&data=02%7C01%7CMARTI.ARVIN%40CYNERGISTEK.COM%7C8B06D372901042C9A17B08D6307E7B90%7CFC7D3760178742129F7515E4F98738E9%7C0%7C0%7C63674971714013103285DATA=H1VIDGQYAZRFM%2B0YEVODA%2F%2B8BAHVEFBQMND9RAYQIBE%3D&RESERVED=0)
