



# Responding to Mission Critical (*cyber*) Risks

**Donnie Woodyard**  
*Chief Operations Officer*  
*National Registry of EMTs*

There are two kinds of companies.  
Those that have been hacked, and  
those that have been hacked but  
don't know it yet.

U.S. House Intelligence Committee Chair  
Mike Rogers  
(2012)



# The Price of Tea? ...a Fortune

**GREVILLEA**



# Who is looking at your Fortune?

- Nation-States
- Organized Crime & Hackers
- Hacktivists
- Insider Threats



# Case Study 1

We Welcome Our New Executive Director



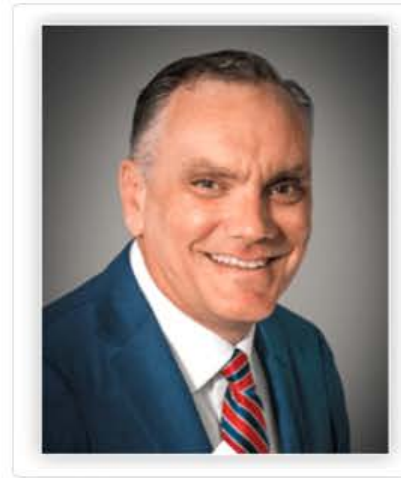
# Case Study 1: New Executive Director

June 2018  
ED Press Release

- Press Release
  - Name
  - Time Line

## THE NATIONAL REGISTRY OF EMTS APPOINTS BILL SEIFARTH AS NEW EXECUTIVE DIRECTOR

*Industry Leader Brings Distinguished Expertise to Position*



**COLUMBUS, OH** – The National Registry of EMTs (National Registry) and its Board of Directors today announced **Bill Seifarth** as the organization's new **executive director**. An industry veteran, Seifarth brings more than 20 years of experience to the position, including Emergency Medical Services (EMS) leadership at both the State and Federal levels, along with a background of managing several comprehensive certification programs.

"Bill truly has a unique combination of experience and talent, making him the ideal individual to serve as the National Registry's fifth executive director," said Dr. Robert Swor, chair of the National Registry Board of Directors. "We are pleased to welcome Bill and look forward to having someone with his passion, genial temperament, and knowledge to help further our goal of providing National Registry Certification for every EMS provider in the country."

Seifarth will assume full executive director responsibilities on **August 24** as Drew Dawson completes his exceptional service leading the National Registry as interim executive director. Over the next few months, Dawson and Seifarth will work closely together to ensure a seamless transition of leadership for the organization.

# Case Study 1: New Executive Director

June 2018  
ED Press Release

August 24  
ED First Day

- Website Updated
- Press Release

The screenshot shows the website for the National Registry of Emergency Medical Technicians (NREMT). The header includes the NREMT logo, the text "National Registry of Emergency Medical Technicians® THE NATION'S EMS CERTIFICATION™", a search icon, and a "LOGIN" button. A navigation bar contains links for HOME, EMR, EMT, AEMT, PARAMEDIC, RECERT, MAPS, VOLUNTEER, STORE, and MOBILE. A sidebar menu on the left lists: HOME, THE NREMT, EMS CERTIFICATION, RECERTIFICATION, STORE, RESOURCES, and CONTACT US. The main content area features the heading "THE NATIONAL REGISTRY LEADERSHIP TEAM" and a profile for Bill Seifarth, MS, NRP, Executive Director. A portrait of Bill Seifarth is shown on the left, and his name and title are on the right. Below his name is a paragraph of text describing his appointment and background.

**THE NATIONAL REGISTRY LEADERSHIP TEAM**

**BILL SEIFARTH, MS, NRP**  
**EXECUTIVE DIRECTOR**

Bill Seifarth was appointed by the National Registry Board of Directors to serve as the fifth Executive Director of the National Registry, starting August 24, 2018. A Nationally Registered paramedic and an industry veteran, Seifarth brings more than 20 years of experience to the position, including Emergency Medical Services (EMS) leadership at both the State and Federal levels, along with a background of managing several comprehensive certification programs.

# Case Study 1: New Executive Director

June 2018  
ED Press Release

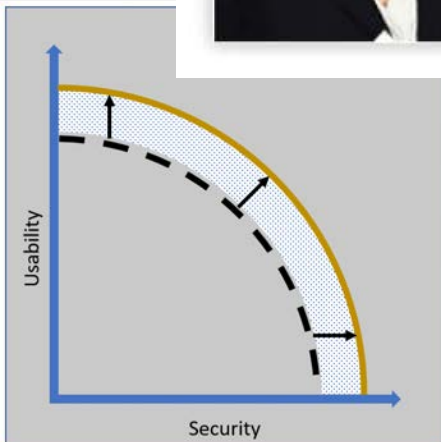
August 24  
ED First Day



**LINDSEY DURHAM, MBA, CPA**  
**CHIEF FINANCIAL OFFICER**

The Finance and Administration Team, led by Chief Finance Officer Lindsey Durham, is responsible for managing the business administration functions of the Registry including contracts, sales fulfillment and administrative support. The core mission of this team is prudent and sustainable business operations. Ms. Durham is a CPA and has a Master's in Business Administration from The Ohio State University.

*"Success is liking yourself, liking what you do and liking how you do it."* – Maya Angelou



**THE NATIONAL REGISTRY LEADERSHIP TEAM**

**BILL SEIFARTH, MD, MPH**  
EXECUTIVE DIRECTOR  
Bill Seifarth was appointed by the National Registry Board of Directors to serve as the fifth Executive Director of the National Registry starting August 20, 2018. A nationally recognized paramedic and an industry veteran, Seifarth brings more than 20 years of experience to the position, including Emergency Medical Services leadership roles at both the State and Federal levels, along with a background of managing several comprehensive certification programs.

**DREW DAWSON, MD**  
SPECIAL ASSISTANT TO THE EXECUTIVE DIRECTOR  
Drew Dawson is the Special Assistant to the Executive Director after having served for nearly a year as the Interim Executive Director. He was appointed by the National Registry Board of Directors to serve as the Interim Executive Director for the National Registry on September 1, 2017. Mr. Dawson has nearly five decades of Emergency Medical Services leadership experience. He was also Chairman of the National Registry Board of Directors, and served as Minnesota State EMS Director for over twenty years. In 2016, he retired as the Director of the National Highway Traffic Safety Administration Office of EMS after thirteen years of service.

**DONNIE WOODYARD JR., MD, MPH**  
CHIEF OPERATIONS OFFICER  
The Operations and Stakeholder Relations Team, led by Chief Operations Officer Donnie Woodyard, is responsible for stakeholder relationships, registration services, information technology, communications and marketing. The core mission of this team is proactive communication to support the EMS community. He has also served as a State EMS Director, and led international EMS system development projects. Mr. Woodyard is a Paramedic and has a Master's in Management and Leadership from Liberty University.  
*"Anyone can steer the ship, but it takes a leader to chart the course. Leaders who are good navigators are capable of taking their people just about anywhere."* – John C. Maxwell

**MARK TERRY, MD, MPH**  
CHIEF CERTIFICATION OFFICER  
The Certification and Policy Team, led by Chief Certification Officer Mark Terry, is responsible for administering certification policies and processes such as eligibility, registration, career review, audits, investigations, policy development and accreditation. The core mission of this team is consistent application of certification policies. Previously, Mr. Terry served on the National Registry Board of Directors from 2008 until 2011. Mr. Terry is a Paramedic and has an MBA from the University of Kansas.  
*"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it is the only thing that ever has."* – Margaret Mead

**LINDSEY DURHAM, MBA, CPA**  
CHIEF FINANCIAL OFFICER  
The Finance and Administration Team, led by Chief Finance Officer Lindsey Durham, is responsible for managing the business administration functions of the Registry including contracts, sales fulfillment and administrative support. The core mission of this team is prudent and sustainable business operations. Ms. Durham is a CPA and has a Master's in Business Administration from The Ohio State University.  
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**GREG APPLAGATE, PhD, MBA**  
CHIEF SCIENCE OFFICER  
The Science and Combinations Team, led by Chief Science Officer Greg Applegate, is responsible for research and examinations and processes that content development for cognitive and psychomotor exams, test administration and psychometrics. The core mission of this team is to advance the understanding of EMS through evidence based research and to provide valid and reliable assessments of competency. Dr. Applegate has a PhD from Purdue University in Education Psychology and an MBA from Indiana University.  
*"The most exciting phrase in science is one that frankly rare discoverers, at first 'fumble' but 'That's funny.'" – Isaac Asimov*

**ANDREA CULP, MBA**  
HUMAN RESOURCES DIRECTOR  
Andrea Culp currently serves as the Human Resources Director overseeing all Human Resource functions for the National Registry. Ms. Culp has a Master's in Business Administration from Middle Tennessee State University.  
*"Good vision without great people is irrelevant."* – Jim Collins

**MEET MORE OF THE NATIONAL REGISTRY TEAM**

**Associate Project Manager**  
Alan Applegate

**Content Developer**  
Jason Arnold  
Jason Arnold is responsible for the successful initiation, planning, design, execution, monitoring, controlling and closure of projects. Mr. Arnold is a Paramedic and has a Bachelor's in Psychology from Michigan State University.

**Developer**  
Jeremy Bentley  
Jeremy Bentley develops responsive, user-friendly web applications using the Microsoft stack and architect scalable hosting infrastructure in Amazon Web Services. Mr. Bentley is a Microsoft Certified Associate in Project

**Business Analyst**  
Jon Bryden  
Jon Bryden is a Certified technology team. Mr. Bryden is a Certified Associate in Project



# Case Study 1: New Executive Director

June 2018  
ED Press Release

August 24  
ED First Day

September 17  
ED Travel

September 17  
Spear Phish



- Bill Seifarth** 9/17/18 >  
RE: Town Hall Meetings  
My vote is yes on the scheduled Oct 16 meeting. [https://nremtdev-cont...]
- Bill Seifarth** 9/17/18 >  
RE: draft of the Pulse  
Looks fine. Maybe my name should be added after the article? [https://nre...]
- Bill Seifarth** 9/17/18 >>  
Office  
I need a couple of physical iTunes gift card. Anyway you can help purchase...
- Bill Seifarth** 9/17/18 >>  
Take two...  
Morning all- I made a couple edits on the attached. Feel free to format this...

- Verizon 5:07 PM 69%
- Bill Seifarth** 9/17/18 >  
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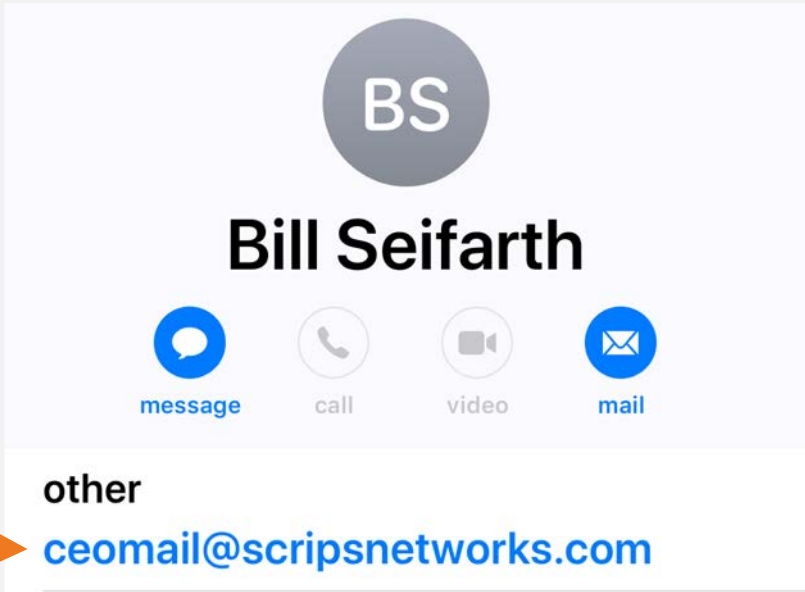
- Bill Seifarth** 9/17/18 BS  
To: Donnie Ray Woodyar... Details
- Are you in your office?
- Thanks.


# Case Study 1: New Executive Director

← **Bill Seifarth** 9/17/18  BS  
To: Donnie Ray Woodyar... [Details](#)





Are you in your office?

Thanks.




 BS

**Bill Seifarth**




 message  call  video  mail

other  
[ceomail@scripsnetworks.com](mailto:ceomail@scripsnetworks.com)

# Case Study 1: New Executive Director

**Lindsey Durham** 9/17/18   
To: Donnie, Tad [Details](#)

Weird email...

 Lindsey Durham, CPA, MBA  
Chief Financial Officer  
National Registry of EMTs  
P: 614-516-2745  
F: 614-396-2442  
W: [www.NREMT.org](http://www.NREMT.org) E: [ldurham@nremt.org](mailto:ldurham@nremt.org)  
 

*[Let's Write The Future Together](#)*

**From:** Bill Seifarth <[ceomail@scripsnetworks.com](mailto:ceomail@scripsnetworks.com)>  
**Sent:** Monday, September 17, 2018 12:46 PM  
**To:** Lindsey Durham <[LDurham@nremt.org](mailto:LDurham@nremt.org)>  
**Subject:** Office

Are you in your office?

Thanks.

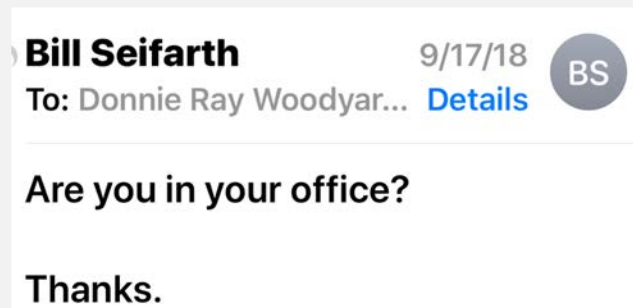
- Multiple People Targeted
- Staff Trained To Recognize
- Steps To Contain

# Whaling / Spear Phishing Attack

- **Customized** for your organization
- Contains '**insider information**' to gain trust
- **Targeted** to a specific audience
- May leverage **stolen-credentials**

## Whaling Attack

- Aimed at wealthy, powerful, prominent (C-Suite)
- **Urgency / Time Sensitive** messages





*The average number of malicious emails each user receives per month. Source: [Symantec 2018 ISTR](#)*

# U.S. Impact of Whaling



**Public Service Announcement**  
FEDERAL BUREAU OF INVESTIGATION

**May 04, 2017**  
Alert Number  
**I-050417-PSA**

Questions regarding this PSA should be directed to your local **FBI Field Office**.  
Local Field Office Locations:  
[www.fbi.gov/contact-us/field](http://www.fbi.gov/contact-us/field)

**BUSINESS E-MAIL COMPROMISE  
E-MAIL ACCOUNT COMPROMISE  
THE 5 BILLION DOLLAR SCAM**

This Public Service Announcement (PSA) is an update to Business E-mail Compromise (BEC) PSAs 1-012215-PSA, 1-082715a-PSA and I-061416-PSA, all of which are posted on [www.ic3.gov](http://www.ic3.gov). This PSA includes new Internet Crime Complaint Center (IC3) complaint information and updated statistical data as of December 31, 2016.

**DEFINITION**  
Business E-mail Compromise (BEC) is defined as a sophisticated targeting businesses working with foreign suppliers and/or regularly perform wire transfer payments. The E-mail Account (EAC) component of BEC targets individuals that perform wire payments.

# \$5 Billion

Edmonton

## MacEwan University defrauded of \$11.8M in online phishing scam



Some funds still missing, most traced to bank accounts in Canada and Hong Kong

CBC News · Posted: Aug 31, 2017 1:47 PM MT | Last Updated: August 31, 2017

# Case Study 2

Protect Your Credentials!

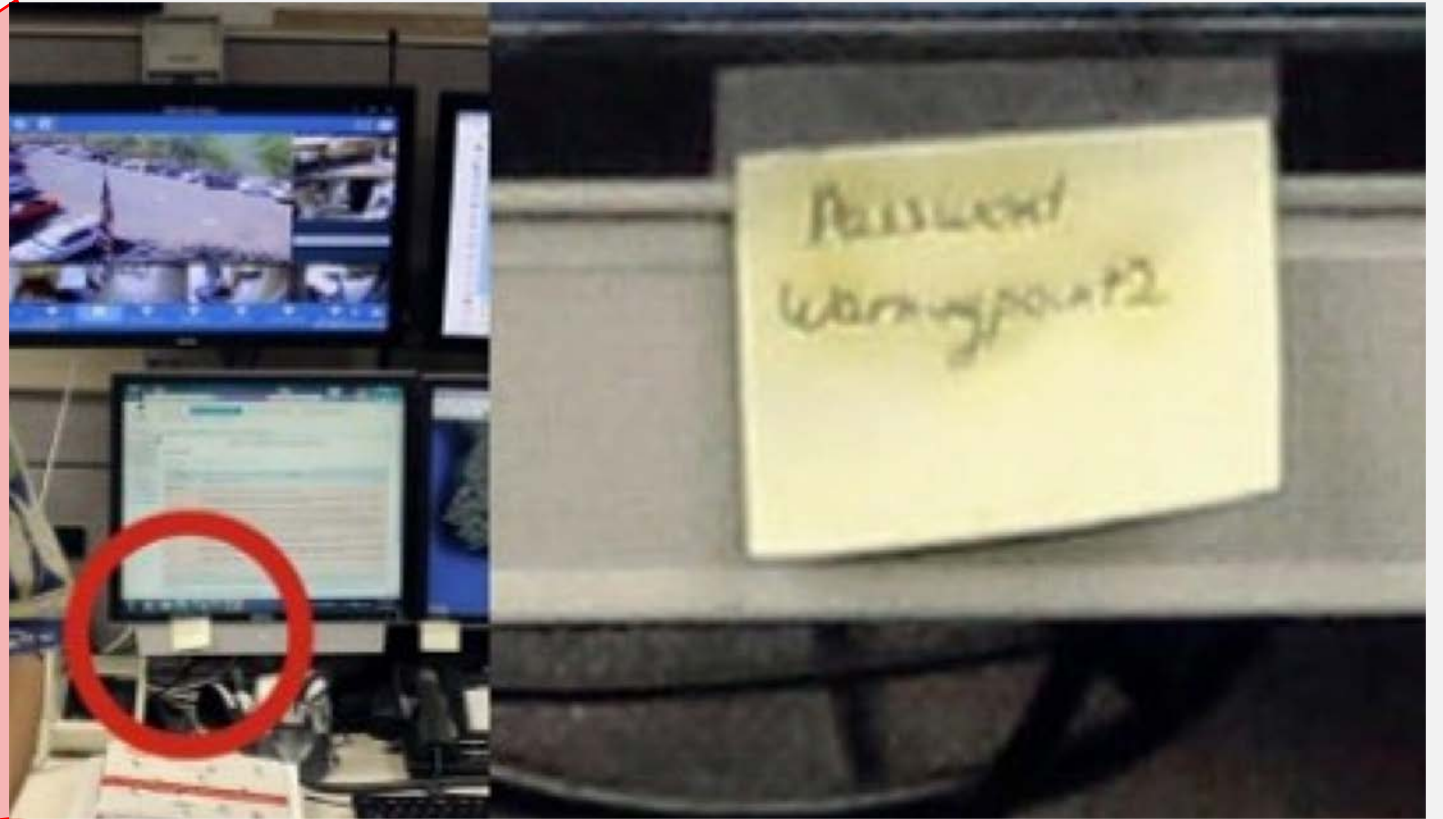


# Case Study: Protect Your Credentials!





# Case Study: Protect Your Credentials!



# Our Experience

- > 1.5 Million User Accounts
- **1 User** Credential Stole, with Elevated Privileges
  - NOT Our Employee
- >800 Records Accessed by an Unauthorized Individual
- Data accessed, not 'sole'



# Breach Level Impact

## Calculate Your Risk Score

Provide your inputs to calculate your own risk score and gauge the breach severity.

### TOTAL NUMBER OF RECORDS BREACHED

900

### THE TYPE OF DATA IN THE RECORDS

Identity Theft / (SSN, ID number, name, mi

### SOURCE OF THE BREACH

Malicious Insider

### HOW INFO WAS USED

Action Was Taken

## What's Your Score?

# 5.0

## Your Breach Level Severity

1-2.9

MINIMAL

3-4.9

MODERATE

5-6.9

CRITICAL

- ✔ A breach with likely short to midterm exposure to business.
- ✔ Legal and/or regulatory impact.
- ✔ Usually tens of thousands of records of moderate sensitive information involved.
- ✔ Some breach notification and financial loss.

7-8.9

SEVERE

9-10

CATASTROPHIC

# Our Response

- **26** State Notifications
- 960 Individual Notifications
- Dedicated Call Center
- 2-Year Paid Credit Monitoring / Restitution Service
- 2, Under 18 = No Statute Of Limitation



# FOIA

- Notification Letter Public
- Event Now Public



## Identity Theft Resource Center

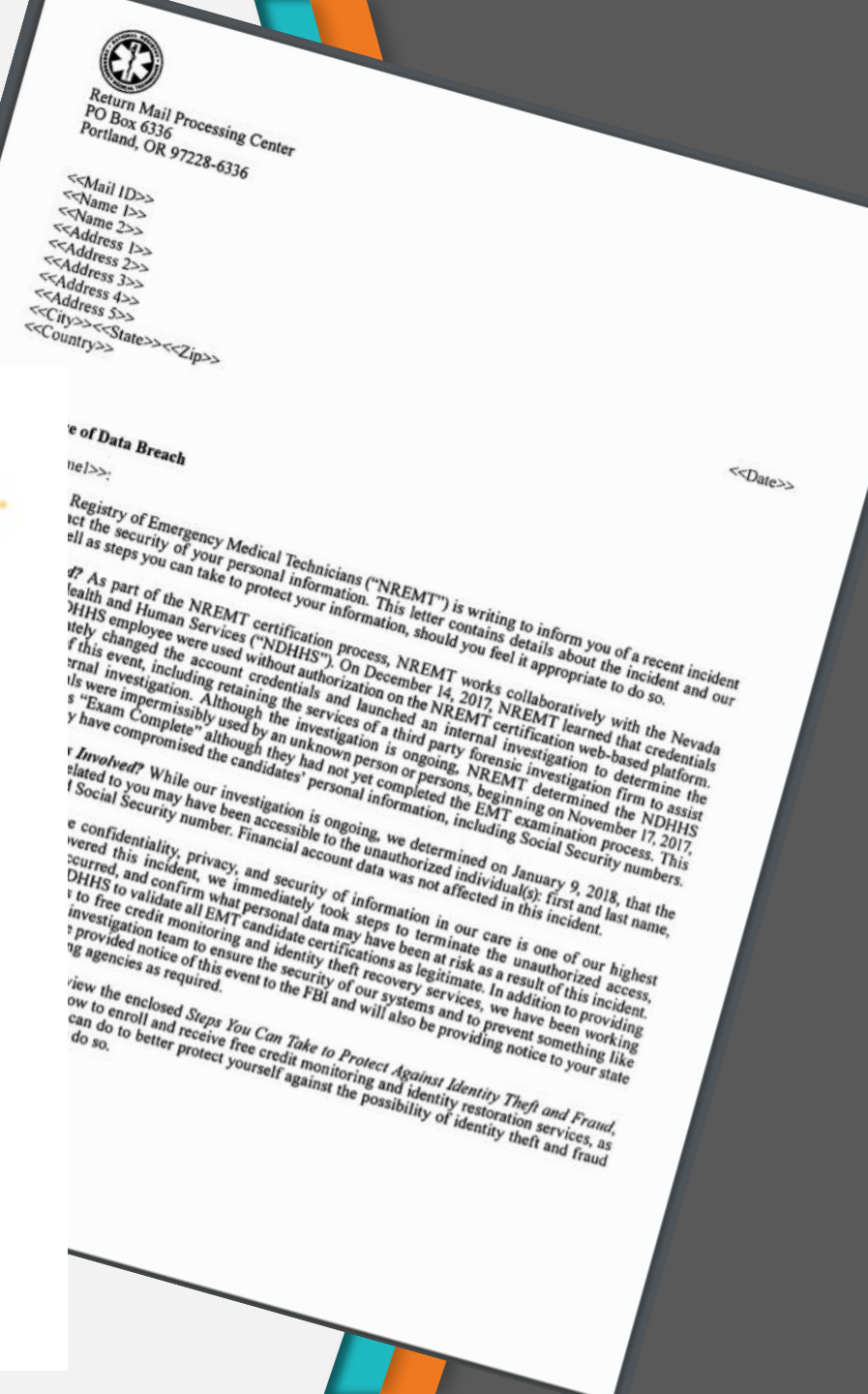


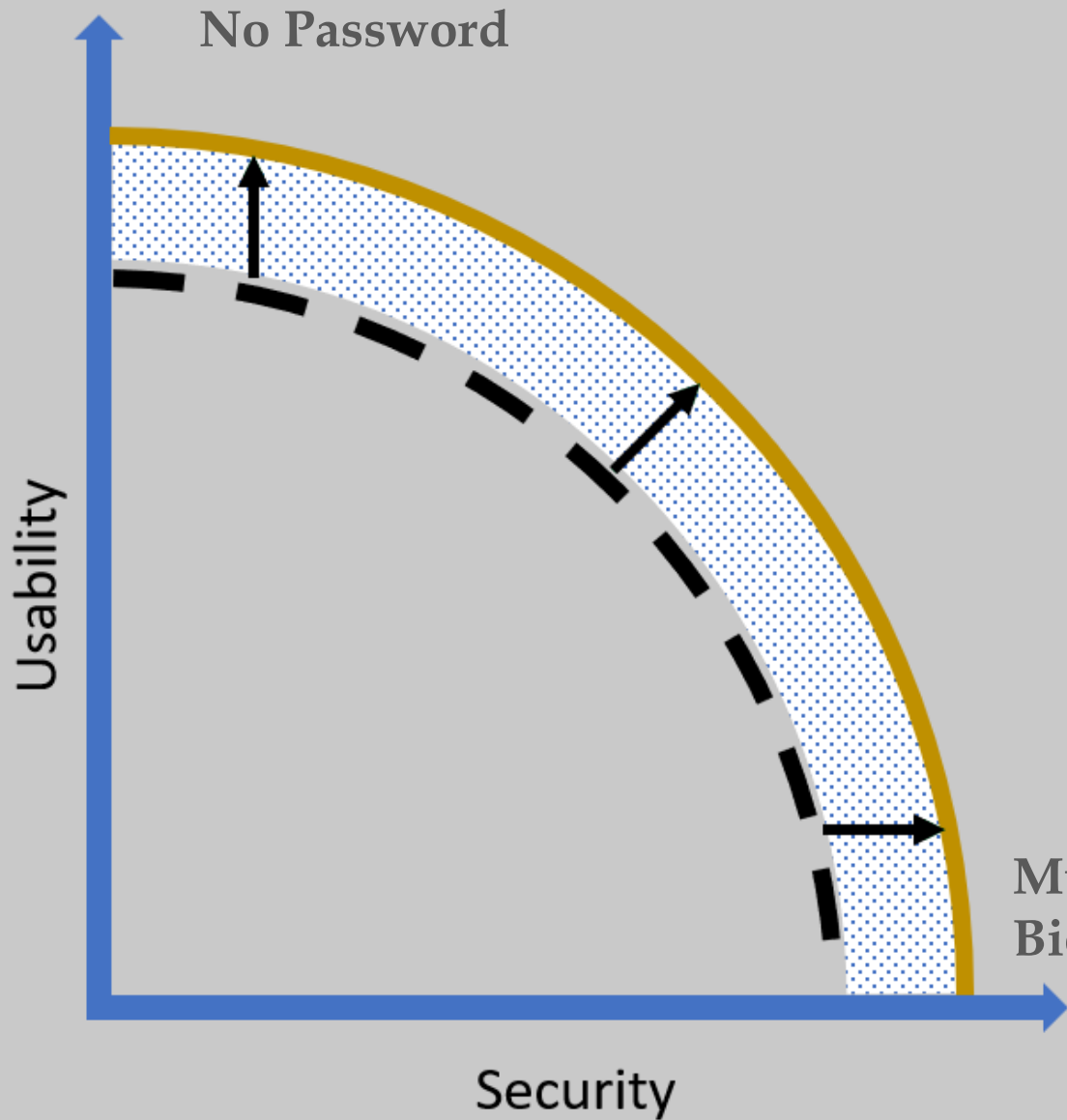
### 2018 Data Breach Stats

How is this report produced? What are the rules? See last page of report for details.

Report Date: 6/8/2018

ITRC20180206-04	Bunge Milling	MO	Business	Yes - Unknown #	Unknown
ITRC20180205-09	Octoly	NY	Business	Yes - Published #	12,000
ITRC20180205-07	Rogin Nassau, LLC	CT	Business	Yes - Published #	268
ITRC20180205-02	Advanced Graphic Products, Inc. dba Advanced-Online	TX	Business	Yes - Published #	22,182
ITRC20180201-02	Kraus Associates, Inc. dba AK Associates	MA	Business	Yes - Published #	132
ITRC20180131-20	VSA Partners, Inc.	IL	Business	Yes - Published #	455
ITRC20180131-19	Pentair Aquatic Eco-Systems	FL	Business	Yes - Published #	239
ITRC20180131-17	National Registry of Emergency Medical Technicians	OH	Business	Yes - Published #	843





No Password


**Balance security  
with usability.**

Multi Factor Authentication  
Biometric Authentication

# Monetary Value of a Credential

- Stolen Healthcare Credential, \$10
- 10-20 X a Credit Card Number

UNCLASSIFIED



**FBI** CYBER DIVISION  
*Private Industry Notification*

8 April 2014  
PIN #: 140408-009

*(U) Health Care Systems and Medical Devices at Risk for Increased Cyber Intrusions for Financial Gain*

(U) Cyber actors will likely increase cyber intrusions against health care systems—to include medical devices—due to mandatory transition from paper to electronic health records (EHR), lax cybersecurity standards, and a higher financial payout for medical records in the black market.

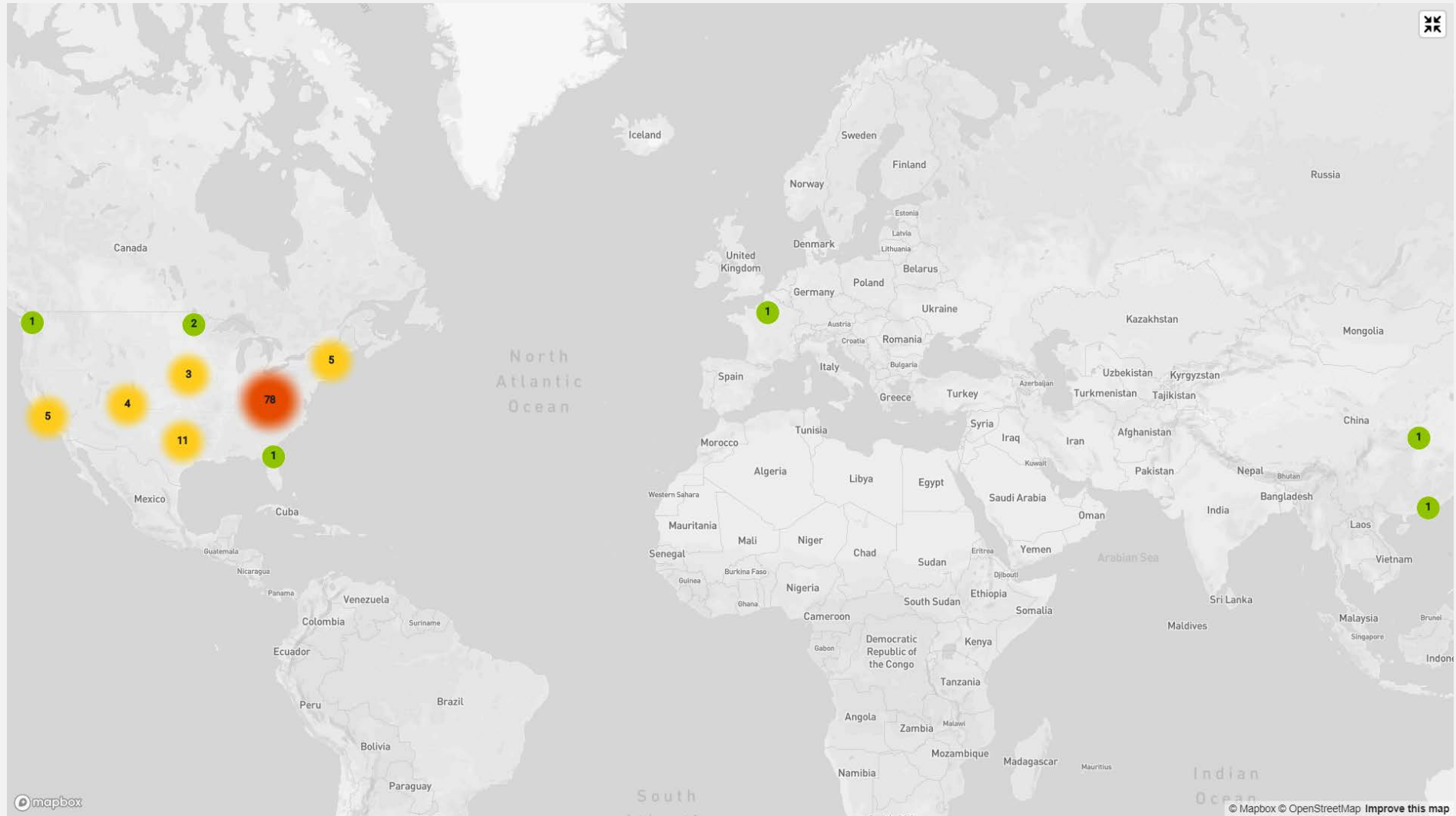
# Case Study 3

Design. Prepare. Attack!





# Case Study 3: Design. Prepare. Attack!

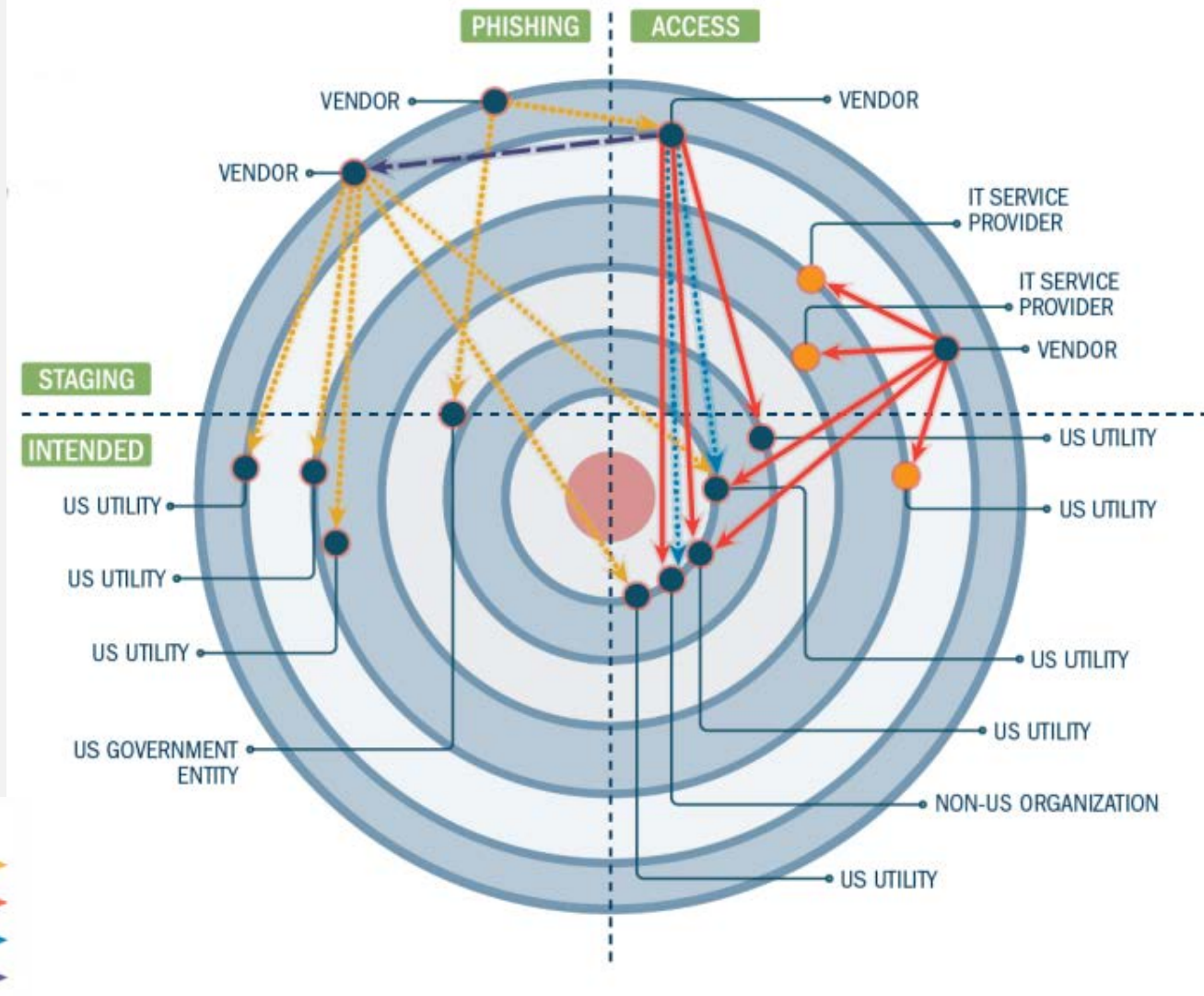


# Case Study 3: Design. Prepare. Attack!



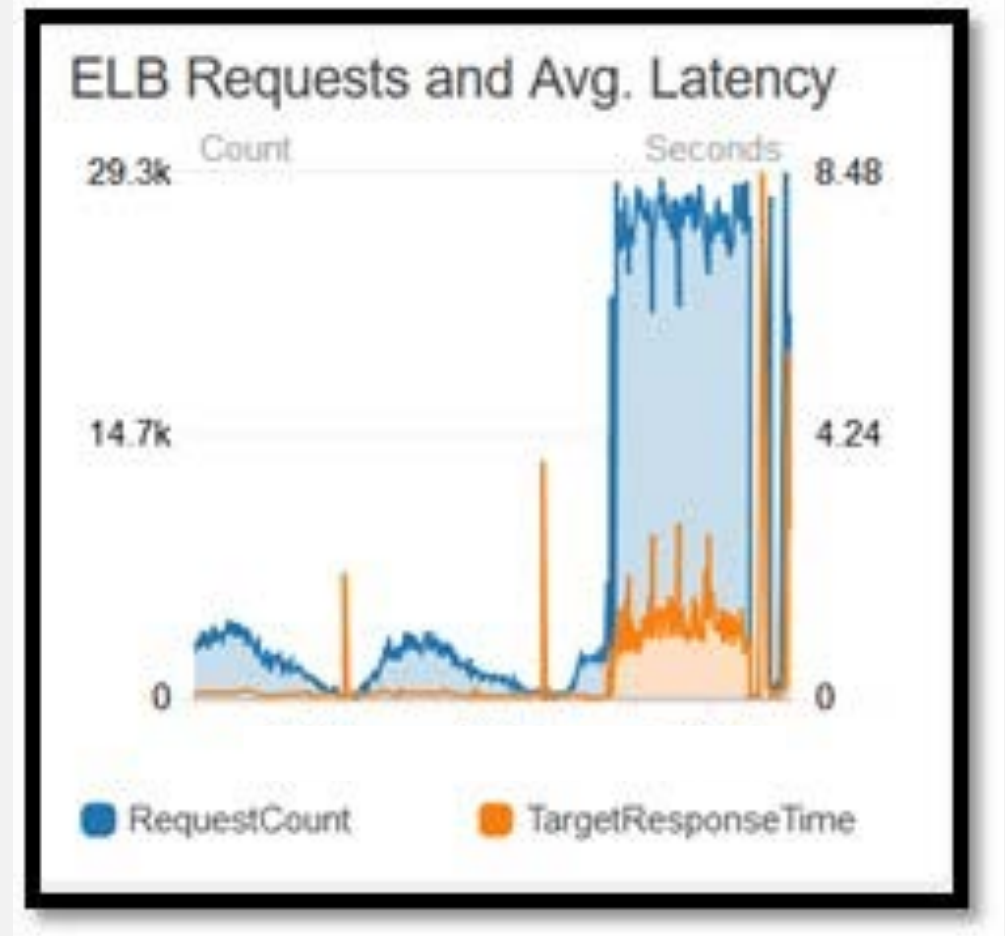
# Case Study 3: Design. Prepare. Attack!

- Who is the target?
- You may be a vector



# Case Study 3: Design. Prepare. Attack!

- Know Your Numbers
- Leverage AI & ML Alerts
- Rapid Response Plan



Cybersecurity is not just  
a technical issue, **it's a  
business imperative.**

-Gen. Gregory Touhill  
Federal Chief Information Security Officer  
of the United States



# Global Issue

## 'Professional' hack on Norwegian health authority compromises data of three million patients

Local security centre blames breach on 'advanced' hackers



Health authority compromises data of three million patients

Healthcare systems of Norway's Health South East RHF, with data potentially compromised as a result.

D.C. Politics

## D.C. government data breach exposed nurses' Social Security numbers



(iStock)

By Fenit Nirappil  
May 24

Security • Insider threat

## Health insurer Bupa fined £175k after staffer tried to sell customer data on dark web souk

Firm failed to monitor CRM system thousands could access

By Rebecca Hill 28 Sep 2018 at 13:37

34 SHARE

International health insurance business Bupa has been fined £175,000 after a staffer tried to sell more than half a million customers' personal information on the dark web.

## SingHealth data breach: Server missed crucial updates



Hackers accessed SingHealth's critical system in Singapore's worst data breach in June. ST PHOTO: SYAZA NISRINA

PUBLISHED SEP 28, 2018, 5:00 AM SGT



For more than a year, the necessary security updates were not made to a computer system which was among many systems exploited by hackers who accessed SingHealth's critical system in Singapore's worst data breach in June.

## Sampling of publicly disclosed security incidents as a result of inadvertent actors, 2015 through 2017

Size of circle estimates relative impact of incident in terms of cost to business, based on publicly disclosed information regarding leaked records and financial losses.

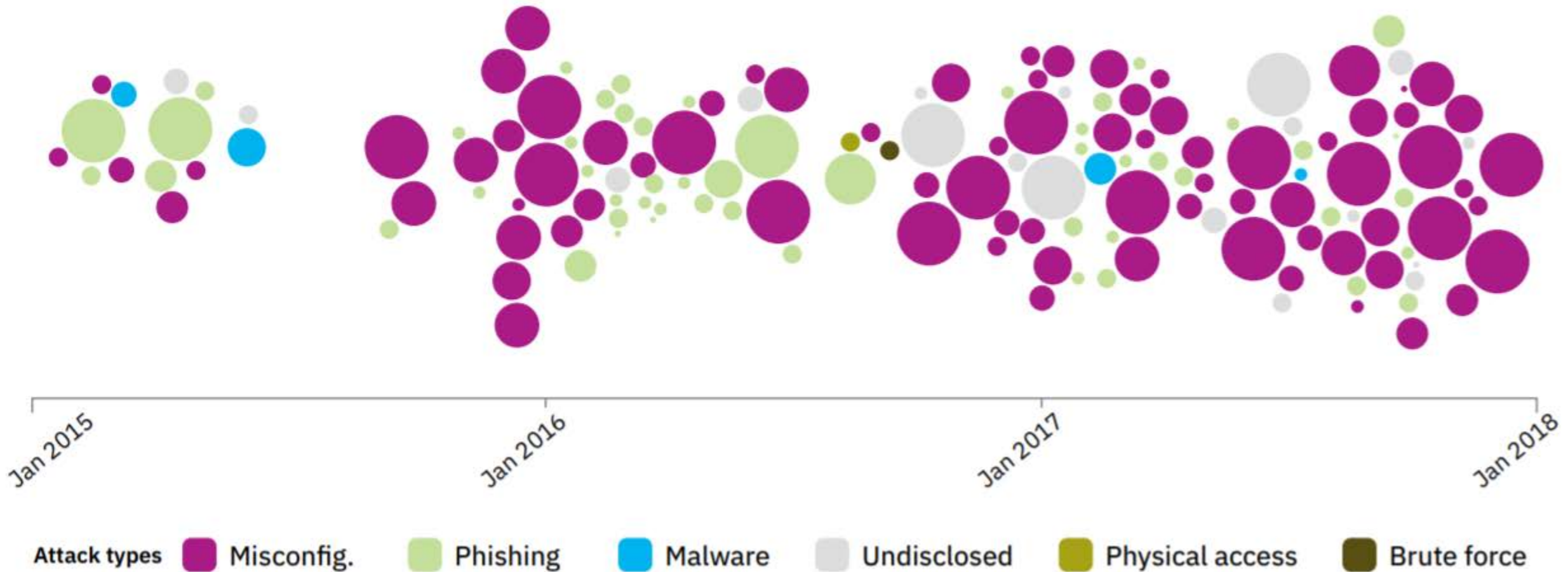
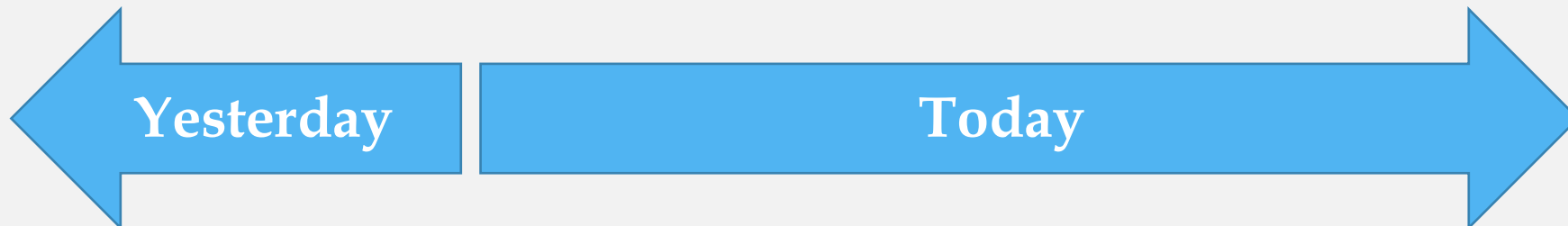


Figure 8: Sampling of publicly disclosed security incidents as a result of inadvertent actors, 2015 through 2017.

# Cyber Risk Management

- Cyber should be incorporated throughout the business in a **holistic** way
- Cyber risk exposure should be shared in a **quantifiable** dollar amount
- Cyber Response **Plan**





# Cyber Breach. Now What?

Minutes Make A Difference



# Identify & Isolate – Stop The Bleed

- Rapid Internal Reporting
- Isolate The Attack
- Protect Your Data
- Capture Forensic Details



# Client Privilege – Protect Your Organization

"The overriding principle of using privilege is straightforward:

**protect your organization's investigation and breach response efforts from usage by third parties or regulatory agencies in litigation arising from a breach."**

# Client Privilege – Protect Your Organization

---



Cyber  
Attack



Cyber  
Breach

Big Difference. Seek Guidance.

# Investigate & Prepare Next Steps

## Cyber

Technological

Forensic

## Regulatory

Mandatory Reporting

Timelines

Contractual Obligations

## Public

Brand Impact

News

# Anticipate Liability

- Response
- Investigation
- Public Trust
- Restitution
- Mitigation



# The Cost

## Average Cost Per Cyber Breach

- Enterprise / Corporation: \$1.3 M
- Small Business: \$117,000

## Annual Cyber Security Budget

- Government: \$959 (per employee)
- Utility Companies: \$1,344 (per employee)

# Cyber Maturity



## Holistic Approach To Cyber Threats



# Questions & Discussion

