



LEADERSHIP FOR IT SECURITY & PRIVACY ACROSS HHS

# HHS CYBERSECURITY PROGRAM

OFFICE OF INFORMATION SECURITY



# Healthcare Disinformation

12/03/2020



Image source: NextGov

- Introduction
- Disinformation – What it is and what it isn't
- Disinformation – Components of a campaign
- Internet Research Agency
- How Russian Disinformation Spreads
- Russian Disinformation Ecosystem
- Examples
- What Can Be Done About It?
- References



## Slides Key:



Non-Technical: Managerial, strategic and high-level (general audience)



Technical: Tactical / IOCs; requiring in-depth knowledge (sysadmins, IRT)



- Disinformation; also called “active measures” when referring to its use by a state for national security and power projection purposes
- The difference between disinformation and misinformation is intent
- Not all false stories are organized campaigns pushed by a nation-state
- Often indistinguishable from conspiracies, and often piggy back on them
- Many countries, both powerful and established as well as smaller, engage in disinformation
- There are estimates of over 10,000 individual disinformation operations during the Cold War
  - It’s believed to be even more prevalent in the Internet Age
- Disinformation is very challenging to deal with because:
  - It can be difficult to identify
  - It can be difficult to trace to its source
  - It can be difficult to counteract
- Famous (recent) case: 2016 U.S. Presidential election
- This presentation will lean heavily towards Russia and its long history of leveraging disinformation, going back to at least the early days of the Soviet Union. Many countries utilize disinformation in the modern era.

Image source: The Star





- Disinformation is also sometimes called fake news, information operations, psychological warfare, active measures, propaganda and political warfare
- Modern era of disinformation began in the 1920s
  - First wave: Interwar period
  - Second wave: Post World War II
  - Third wave: 1970s
  - Fourth Wave: 2010s (social media)
- Characteristics of disinformation:
  - Designed to replace the truth with half-truths and/or emotions
    - “...disinformation runs on emotion...” – Nina Jankowicz
  - Difficult to identify
  - Methodical output of large bureaucracies (vice spontaneous lies)
    - Professionally run, continually improved
    - Often produced by intelligence agencies
  - All disinformation has a purpose, **often deployed to create division, conflict, friction, or undermine trust**
    - Driving wedges between ethnic/racial groups
    - Creating dissent and/or disagreement within a group, party, or movement
    - Creating disagreement between groups within a society
    - Undermining trust in institutions in a society
    - Smearing the reputation of an individual or political decision
  - Designed to work slowly
  - The United States historically was slow to develop disinformation capabilities and countermeasures
- Rid’s definition: “To exacerbate existing tensions and contradictions within the adversary’s body politic, by leveraging acts, fakes, and ideally a disorienting mix of both.” (Rid, Thomas. *Active Measures : The Secret History of Disinformation and Political Warfare*. New York: Farrar, Straus and Giroux, 2020)

“...disinformation corrodes the foundation of liberal democracy, our ability to assess facts on the merits and to self-correct accordingly.”

- Dr. Thomas Rid  
Author, *Active Measures*  
Professor of Strategic Studies, Johns Hopkins University

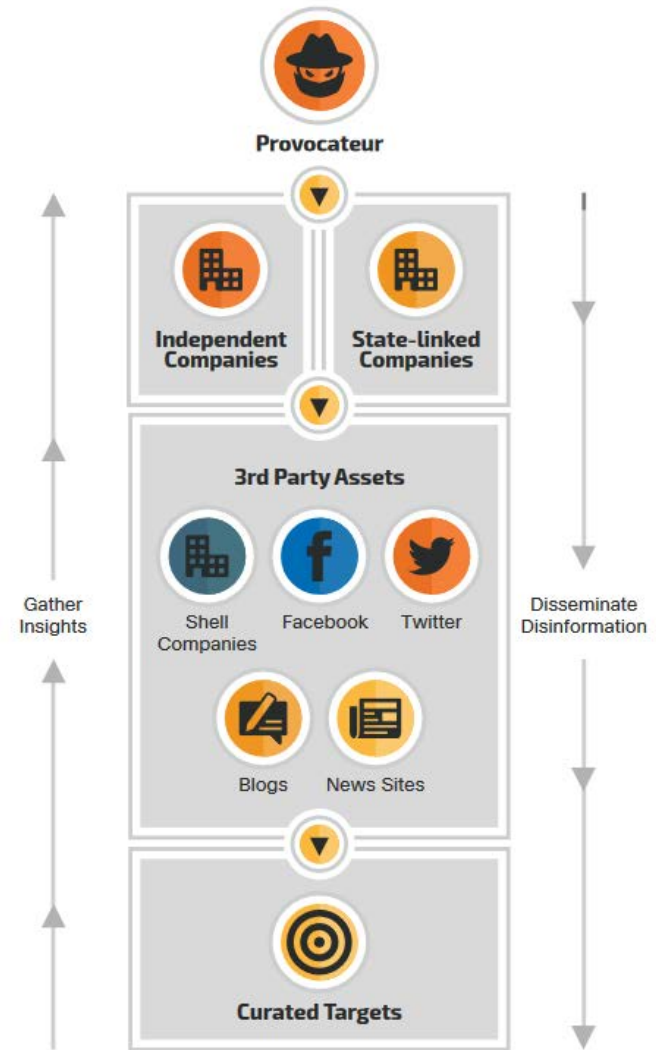






## Cisco Talos: The building blocks of political disinformation campaigns

- Infrastructure – hardware, software, services, and human capital
  - Systems
  - Tools
  - Personnel
  - Technology
- Players
  - Provocateur – Central figure, establishes strategic goals and organizes execution
  - Shell companies – Build reputation or provide cover for financial transactions
- Content
  - Social media post
  - Blog post
  - Article
- Dissemination and amplification
  - Troll accounts
  - Bots
    - Aged
    - Amplifiers
    - Paid/Stolen



[https://talos-intelligence-site.s3.amazonaws.com/production/document\\_files/files/000/094/386/original/Talos\\_Disinformation\\_2020.pdf](https://talos-intelligence-site.s3.amazonaws.com/production/document_files/files/000/094/386/original/Talos_Disinformation_2020.pdf)

Image source: Cisco





- Russian company located in Saint Petersburg, Russia; founded in 2013
- Believed to be involved in large-scale disinformation operations known for targeting the U.S., especially the 2016 elections
- Known for internet trolling; Labeled “Russian Troll Factory” by the NY Times
- Common exploited themes:
  - Black culture, community, Black Lives Matter
  - Blue Lives Matter, pro-police
  - Anti-refugee, pro-immigration reform
  - Texas culture, community, and pride
  - Southern culture (Confederate history)
  - Separatist movements and secession
  - Muslim culture, community, and pride
  - Christian culture, community, and pride
  - LGBT culture, community, and pride
  - Native American culture, community, and pride
  - Meme and “red pill” culture
  - Patriotism and Tea Party culture
  - Liberal and feminist culture
  - Veteran’s Issues
  - Gun rights, pro-2nd Amendment
  - Political Pro-Trump, anti-Clinton content
  - Pro-Bernie Sanders and Jill Stein content
  - Syria and ISIS, pro-Assad, anti-U.S. involvement
  - Trust in media

Image source: Vox



**Yevgeny Prigozhin**  
Founder of the Internet Research Agency

“I arrived there, and I immediately felt like a character in the book *1984* by George Orwell — a place where you have to write that white is black and black is white. Your first feeling, when you ended up there, was that you were in some kind of factory that turned lying, telling untruths, into an industrial assembly line. The volumes were colossal — there were huge numbers of people, 300 to 400, and they were all writing absolute untruths. It was like being in Orwell’s world.”

- Former employee of the Internet Research Agency



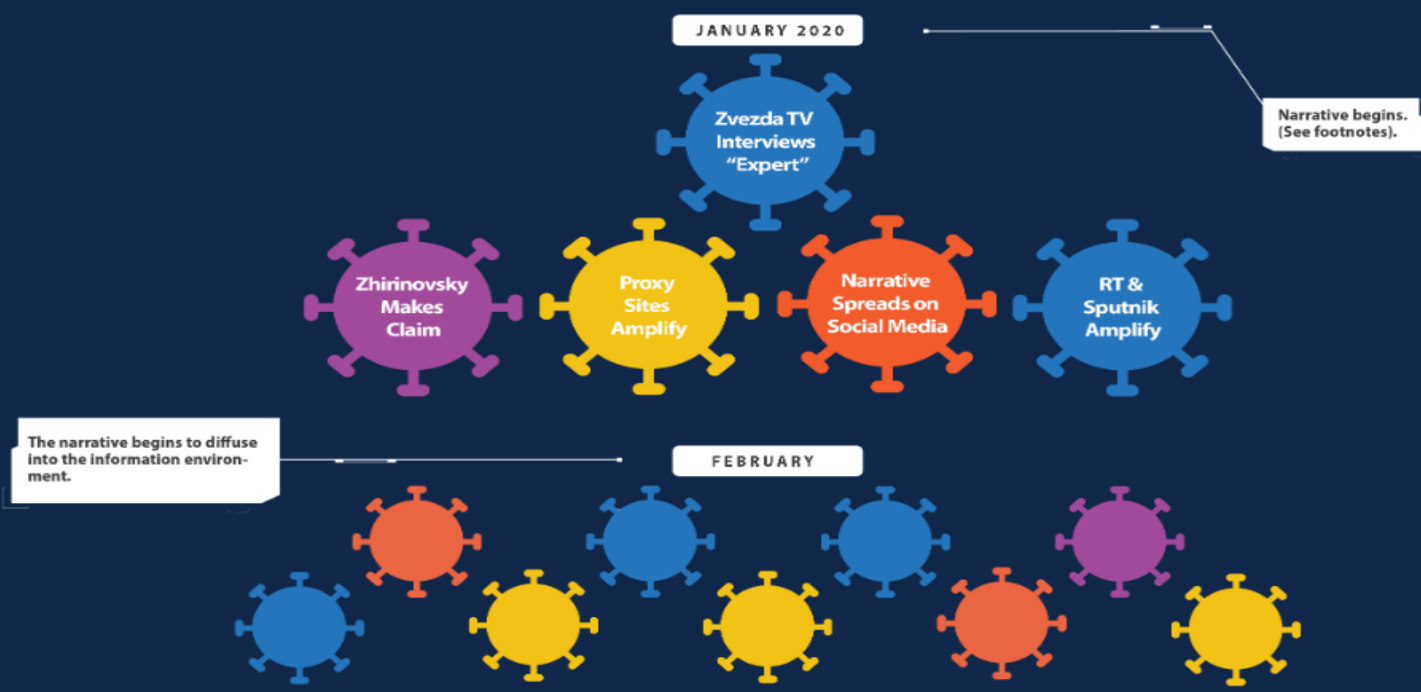


# HOW RUSSIA'S DISINFORMATION & PROPAGANDA



# SPREADS

The Media Multiplier Effect  
False Claim: The U.S. Created COVID-19









## PILLARS OF RUSSIA'S DISINFORMATION AND PROPAGANDA ECOSYSTEM



### Official Government Communications

- Kremlin or Ministry statement<sup>1</sup>
- Official Russian social media post<sup>2</sup>
- Statement or quote by Russian official<sup>3</sup>



### State-Funded Global Messaging

- State-funded, foreign-facing media<sup>4</sup>
- State-funded, domestic-facing media<sup>5</sup>
- Foreign-based, Russian state-funded media<sup>6</sup>
- International Russian socio-cultural institutions<sup>7</sup>



### Cultivation of Proxy Sources

- Russia-aligned outlets with global reach<sup>8</sup>
- Local language-specific outlets<sup>9</sup>
- Witting proliferators of Russian narratives<sup>10</sup>
- Unwitting proliferators of Russian narratives<sup>11</sup>
- Foreign state narrative amplification<sup>12</sup>



### Weaponization of Social Media

- Infiltration of domestic conversations<sup>13</sup>
- Standing campaigns to undermine faith in institutions<sup>14</sup>
- Amplification of protests or civil discord<sup>15</sup>



### Cyber-Enabled Disinformation

- Hack & Release<sup>16</sup>
- Site capture<sup>17</sup>
- Cloned websites<sup>18</sup>
- Forgeries<sup>19</sup>
- Disruption of official sources or objective media<sup>20</sup>

CONNECTION TO RUSSIA

← **VISIBLE**

**OBSCURED**

**DENIED** →





- There are a number of false assertions about cancer
- December 2019 Analysis by NBC news found that cancer disinformation is the most common type of healthcare disinformation
  - <https://www.nbcnews.com/news/us-news/social-media-hosted-lot-fake-health-news-year-here-s-n1107466>
- There are many common cancer myths:
  - Cancer is manmade
  - Superfoods prevent cancer
  - “Big Pharma” is suppressing a known cure for cancer
  - Acidic diets cause cancer
  - Cancer treatments kill more than they cure
- Russian RT America has linked 5G signals to brain cancer



Image source: Medscape



- CLAIM: 5G causes Coronavirus
- Theory: There is a connection between 5G technology and COVID19. Initially, it was suggested that radiation from 5G towers causes COVID19. Some have suggested this is part of a larger effort to depopulate the planet. Some have blamed the company Monsanto.
- Challenge: There is no central authority on COVID19 and some of it has been revised as time has passed.
- One result: Dozens of cell towers have been set on fire in Europe.

# How the 5G coronavirus conspiracy theory tore through the internet

From an interview with an obscure Belgian doctor to apparent arson attacks in the UK, the conspiracy theory that 5G is somehow linked to the coronavirus pandemic has spread unlike any other

**WIRED**

Image source: Vox



Damaged cabling and telecommunications equipment following a fire at a phone mast attached to a northern England, on April 17, 2020.



- Facts:
  - Bill Gates gave a TED talk in 2015 warning about the potential for a worldwide pandemic based on Ebola's impact on Africa
  - Gates has pledged to contribute \$250 million to fighting the pandemic
- Disinformation:
  - Gates plans to microchip people to fight coronavirus
  - His foundation is linked to conspiracies over patents
  - He is linked to (and therefore will profit from) a vaccine
  - He is linked to efforts to control the population
  - He designed the coronavirus (via the Pirbright Institute)

Image source: Twitter



Image source: Reuters

**No, Bill Gates did not engineer the covid-19 pandemic — and other lessons on fake news**

The Washington Post



## Example: The world of monkeys



- The UK Sun reported in October 2020 that Russia was releasing disinformation alleging that the coronavirus vaccine would turn people into monkeys



Source: <https://www.thesun.co.uk/news/12942994/russian-fake-news-covid-vaccine-monkeys/>





- There is much disinformation on fake COVID cures:
  - Colloidal silver
    - <https://apnews.com/article/8479480534>
  - Lemon and water
    - <https://www.politifact.com/factchecks/2020/mar/24/chain-message/facebook-messenger-video-falsely-claims-hot-lemon/>
  - Miracle Mineral Solution (MMS) AKA chlorine dioxide
    - <https://www.fda.gov/consumers/consumer-updates/danger-dont-drink-miracle-mineral-solution-or-similar-products>
  - Garlic
    - <https://www.factcheck.org/2020/02/fake-coronavirus-cures-part-2-garlic-isnt-a-cure/>
  - Vitamin C
    - Unproven and trials were inconclusive
    - <https://clinicaltrials.gov/ct2/show/NCT04264533>



Image source: Hindustan Times



- How do you detect, highlight, and prevent disinformation?
- Combination of human expertise and technology
- Governments, news and media, social media, and tech companies all have a role
- Social media – automated detection
  - Algorithms (must be transparent in their design)
  - Warnings about passing on questionable information
- “Everybody needs to get their news from legitimate places, not from their friend’s friend’s friend’s friend.” – Massachusetts Governor Charlie Baker, In response to false rumors that the Massachusetts government was about to order a “shelter in place”.
- How to fight disinformation
  - Transparency
  - Release facts quickly
  - Utilize evidence
- Social media companies must sort, rank, and prioritize true and reliable information now more than ever.
  - For example, Pinterest has introduced headers and links on their homepages with information about Covid-19.



Image source: Sword and the Script Media





- June 12, 2020: Twitter removed 32,242 accounts connected to three state-linked disinformation campaigns
- Russia 
  - 1,152 accounts attributed to Current Policy (@Current\_policy) for a total of 3,434,792 tweets
  - @Current\_policy first tweeted in 2013 for a total of 58,000 tweets accruing 150,000 followers
  - Amplified pro-Russian government activity and was a cheerleader for Putin and his party
- China 
  - Tweets covered four topics
    - Hong Kong protests
    - COVID-19 (especially promoting China's superior response compared to the US or Taiwan)
    - Guo Wengui (exiled Chinese billionaire)
    - Taiwan
- Turkey 
  - Many accounts created on same day with similar usernames
  - Tweets were political
    - Pro-Justice and Development Party
    - Critical of People's Democratic Party and Republican People's Party
    - Promoted 2017 Turkish constitutional referendum
      - Consolidated power for Turkish President Erdogan
    - Promoted support for Turkish intervention in Syria



Image source: Stanford Internet Observatory



- Twitter now prompts users to read the article rather than just retweeting it. It has also stopped recommending tweets from people whom users do not already follow, to slow viral amplification.
- Twitter is also making changes to the trends it recommends to U.S. users, adding a description to explain why a given term is trending.
- Twitter has also labeled foreign state-run media outlets
- National Library of Medicine: Identifying and Combating Health Misinformation: <https://nnlm.gov/misinfo>

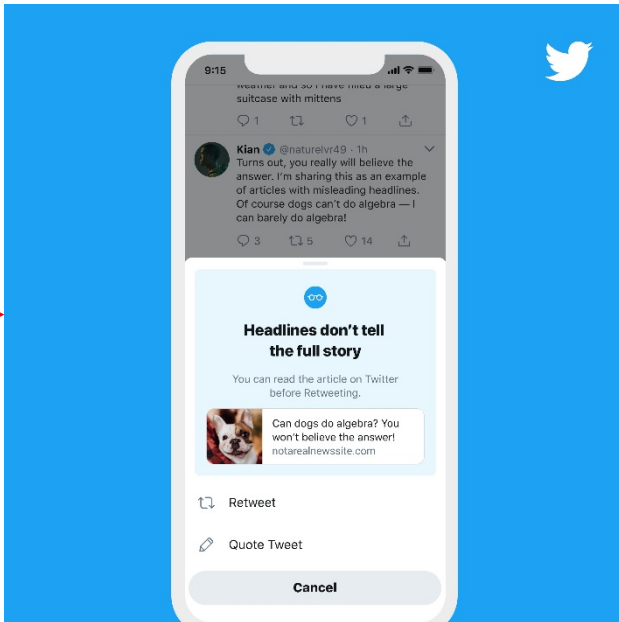


Image source: Twitter

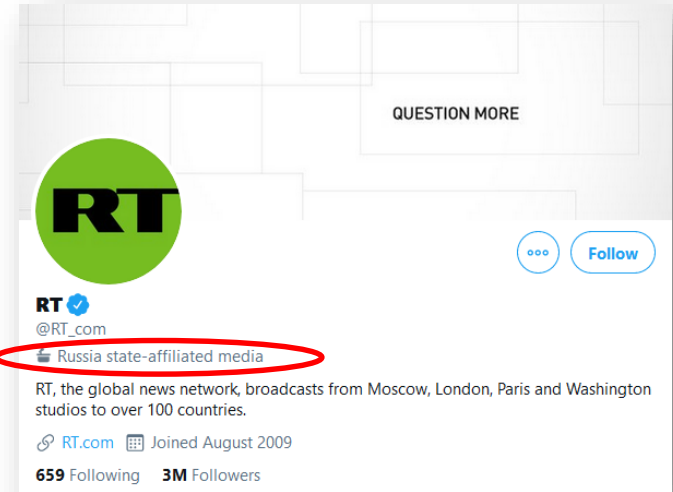


Image source: Twitter



# Reference Materials



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<https://www.infosecurity-magazine.com/news/uk-in-cyber-war-against-anti/>

### Voting Machine Conspiracy Theories Harm U.S. Cybersecurity

<https://www.cato.org/blog/voting-machine-conspiracy-theories-harm-us-cybersecurity>

### The National-Security Case for Fixing Social Media

<https://www.newyorker.com/tech/annals-of-technology/the-national-security-case-for-fixing-social-media>

### THAT'S BANANAS Russian fake news outlets claim Oxford coronavirus vaccine turns people into MONKEYS

<https://www.thesun.co.uk/news/12942994/russian-fake-news-covid-vaccine-monkeys/>

### Britain's GCHQ to wage cyber war on anti-vaccine propaganda: The Times

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### FBI Alert Number I-112320-PSA Spoofed FBI Internet Domains Pose Cyber and Disinformation Risks

<https://www.ic3.gov/Media/Y2020/PSA201123>

### 4iQ COVID-19 Threat Report 2020

<https://4iq.com/covid-19-threat-report/>

### Disinformation and the CISO

<https://www.infosecurity-magazine.com/blogs/disinformation-ciso/>

### A short guide to the history of 'fake news' and disinformation

[https://www.icfj.org/sites/default/files/2018-07/A%20Short%20Guide%20to%20History%20of%20Fake%20News%20and%20Disinformation\\_ICFJ%20Final.pdf](https://www.icfj.org/sites/default/files/2018-07/A%20Short%20Guide%20to%20History%20of%20Fake%20News%20and%20Disinformation_ICFJ%20Final.pdf)



### How Fake News Spread - And How to Counter It

<https://www.chathamhouse.org/2018/12/how-fake-news-spreads-and-how-counter-it>

### Institute of World Politics: Active Measures

<https://www.iwp.edu/category/active-measures/>

### Talos: The building blocks of political disinformation campaigns

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### Twitter Expands Warning Labels To Slow Spread of Election Misinformation

<https://www.npr.org/2020/10/09/922028482/twitter-expands-warning-labels-to-slow-spread-of-election-misinformation>

### Here's how social media can combat the coronavirus 'infodemic'

<https://www.technologyreview.com/2020/03/17/905279/facebook-twitter-social-media-infodemic-misinformation/>

### Dispatches from the June 2020 Twitter Inauthentic Activity Takedown

<https://cyber.fsi.stanford.edu/io/news/june-2020-twitter-inauthentic-activity-takedown-russia>

### Analysis of June 2020 Twitter takedowns linked to China, Russia and Turkey

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### How the 5G coronavirus conspiracy theory went from fringe to mainstream

<https://www.vox.com/recode/2020/4/24/21231085/coronavirus-5g-conspiracy-theory-covid-facebook-youtube>

### Why dangerous conspiracy theories about the virus spread so fast — and how they can be stopped

<https://www.washingtonpost.com/technology/2020/05/01/5g-conspiracy-theory-coronavirus-misinformation/>

### Governments Need Clear Plans to Respond to Disinformation, Experts Say

<https://www.nextgov.com/policy/2020/07/governments-need-clear-plans-respond-disinformation-experts-say/166802/>





### Russia denies coronavirus hacking accusations

<https://www.abc.net.au/radionational/programs/breakfast/russia-denies-coronavirus-hacking-accusations/12471566>

### USENIX Enigma 2020 - Disinformation (Panel)

[https://www.youtube.com/watch?v=4iXFxT\\_4cO0](https://www.youtube.com/watch?v=4iXFxT_4cO0)

### State Department Report on Russian Disinformation (PDF can be downloaded from link below title of page)

<https://www.state.gov/russias-pillars-of-disinformation-and-propaganda-report/>

### How ISIS and Russia Won Friends and Manufactured Crowds

<https://www.wired.com/story/isis-russia-manufacture-crowds/>

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### Trail of Deceit: The Most Popular COVID-19 Myths and How They Emerged

<https://www.newsguardtech.com/COVID-19-myths/#5gtechnology>

- Down the 5G & COVID-19 Conspiracy Rabbit hole

- <https://www.youtube.com/watch?v=zzBLWA-khVg&feature=youtu.be>



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### • 4IQ Covid-19 Threat Report

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## New York Times article on Russian disinformation targeting American health information

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## What Covid-19 can tell us about the future of disinformation

- <https://www.itproportal.com/features/what-covid-19-can-tell-us-about-the-future-of-disinformation/>





## Upcoming Briefs

- Evasion Methods Against Healthcare
- Securing RFID in Healthcare



## Product Evaluations

Recipients of this and other Healthcare Sector Cybersecurity Coordination Center (HC3) Threat Intelligence products are highly encouraged to provide feedback to [HC3@HHS.GOV](mailto:HC3@HHS.GOV).

## Requests for Information

Need information on a specific cybersecurity topic? Send your request for information (RFI) to [HC3@HHS.GOV](mailto:HC3@HHS.GOV) or call us Monday-Friday between 9am-5pm (EST) at **202-691-2110**.





*HC3 works with private and public sector partners to improve cybersecurity throughout the Healthcare and Public Health (HPH) Sector*

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### Sector & Victim Notifications

Directs communications to victims or potential victims of compromises, vulnerable equipment, or PII/PHI theft, and general notifications to the HPH about currently impacting threats via the HHS OIG.



### White Papers

Document that provides in-depth information on a cybersecurity topic to increase comprehensive situational awareness and provide risk recommendations to a wide audience.



### Threat Briefings & Webinar

Briefing document and presentation that provides actionable information on health sector cybersecurity threats and mitigations. Analysts present current cybersecurity topics, engage in discussions with participants on current threats, and highlight best practices and mitigation tactics.

Need information on a specific cybersecurity topic, or want to join our listserv? Send your request for information (RFI) to [HC3@HHS.GOV](mailto:HC3@HHS.GOV), or call us Monday-Friday between 9am-5pm (EST) at 202-691-2110.



# Questions

# Contact



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