



Cyber-attacks, Infectious Diseases and the Next Global Public Health Emergency

Dr Saif F Abed BSc MBBS MPhil MSc

Information Risk Consultant

Biosecurity and Health Security Protection (BSP) Unit, World Health Organization

Sophie Allian loos

Nahoko Shindo

Matthew Lim

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During the Covid-19 pandemic hospitals experienced...



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**During the Covid-19
pandemic hospitals
experienced...**

**DELAYED
DIAGNOSTICS**



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**During the Covid-19
pandemic hospitals
experienced...**

**CANCELLED
SURGERIES**



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**During the Covid-19
pandemic hospitals
experienced...**

**CLOSED
EMERGENCY
ROOMS**



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During the Covid-19 pandemic hospitals experienced...

AMBULANCE DIVERSIONS



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**During the Covid-19
pandemic hospitals
experienced...**

**DELAYED CANCER
TREATMENTS**



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Because of...



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MASSIVE AND CATASTROPHIC CYBER-ATTACKS

Cyber-attacks are increasingly linked to patient harm and even deaths



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Cyber-attacks are increasingly linked to patient harm and even deaths

SCIENCE / HEALTH

Hospitals say cyberattacks increase death rates and delay patient care



/ A new report surveyed healthcare organizations about their experiences

By **NICOLE WETSMAN**

Sep 27, 2021, 8:42 PM GMT+1 | [0 Comments](#) / [0 New](#)



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**WHAT ARE THE
EMERGING CYBER
THREATS?**

What is Cybersecurity?

- Cybersecurity can be explained as the protection of digital data, systems, assets and processes from:
 - Data breaches
 - Loss of Access
 - Tampering

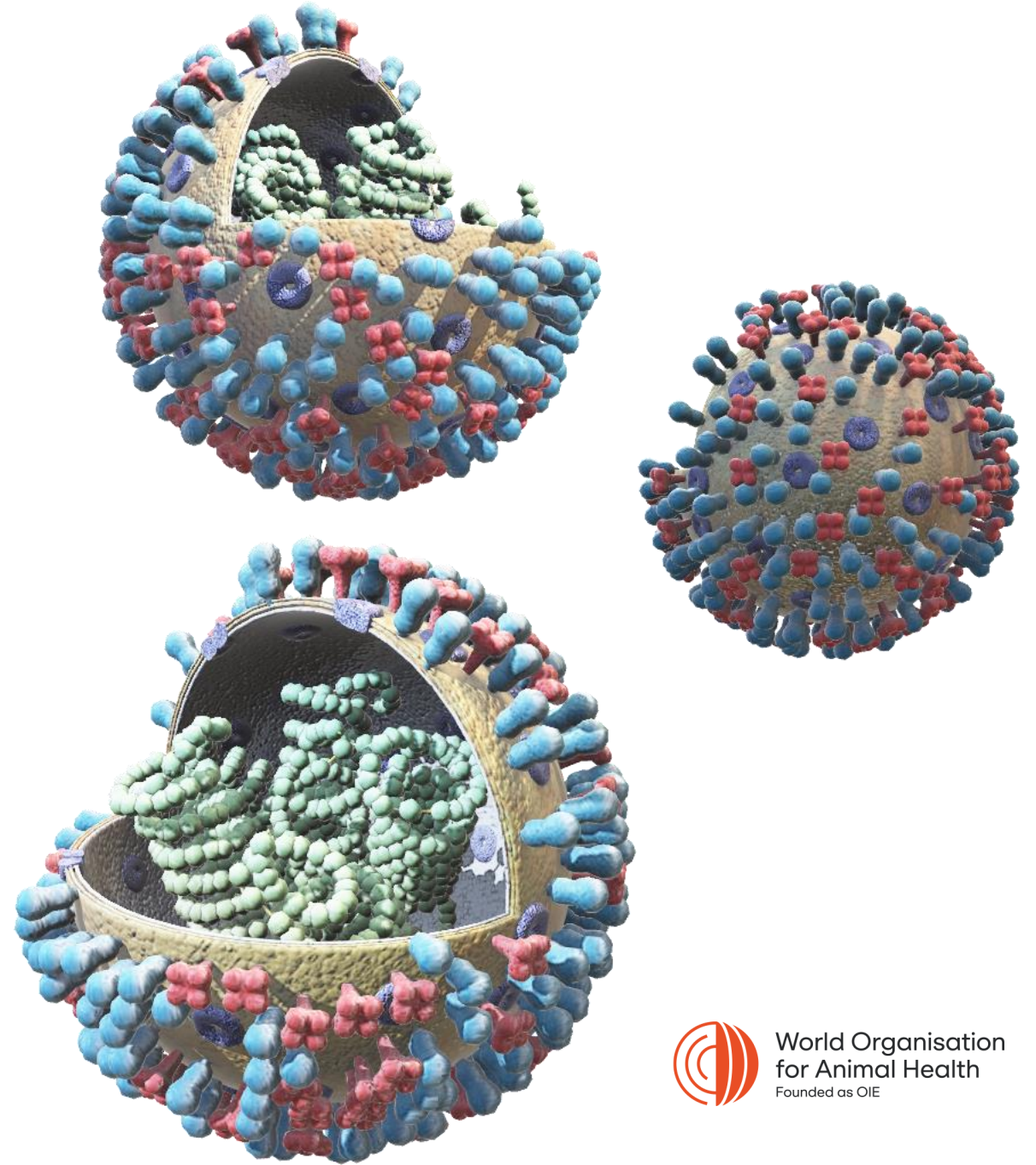


What is Cybersecurity?

- Cybersecurity can be explained as the protection of digital data, systems, assets and processes from:
 - Data breaches
 - Loss of Access
 - Tampering
- Basically, this means any digital product (hardware/software) that connects to an organizational network or the internet will be of concern



Why does it matter?



GLOBAL CONFERENCE
ON **EMERGENCY**
MANAGEMENT



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Why does it matter?

- Attacks against healthcare increased dramatically during the Covid-19 pandemic
- Cyber-attacks have caused ambulance diversions, delayed cancer care, cancelled appointments and operations at national scales

Paralysed French hospital fights cyber attack as hackers lower ransom



Issued on: 02/09/2022 - 11:25 Modified: 02/09/2022 - 15:10



New Zealand hospital faces second week of disruption after major cyber attack

It is not clear who carried out last week's attack on Waikato hospital, which downed computers and phone lines



REUTERS

World Business Markets Breakingviews Video More

TECHNOLOGY NEWS JUNE 9, 2020 / 7:35 AM / UPDATED 3 YEARS AGO

South Africa's Life Healthcare hit by cyber attack

By Reuters Staff

2 MIN READ



(Reuters) - South Africa's Life Healthcare said on Tuesday its southern African operation was hit by a cyber attack affecting its admissions systems, business processing systems and email servers, but is yet to determine the extent to which

Irish health cyber-attack could have been even worse, report says

© 10 December 2021



Brazil health ministry website hit by hackers, vaccination data targeted

Reuters



A man holds a laptop computer as cyber code is projected on him in this illustration picture taken on May 13, 2017. REUTERS/Kacper Pempel/File Photo



Why does it matter?

- The entire biomedical ecosystem- including research laboratories, diagnostic centers, vaccine manufacturers and biotech contractors – is at risk
- Security researchers are uncovering new and novel ways to exploit existing facilities and new technologies



Why does it matter?

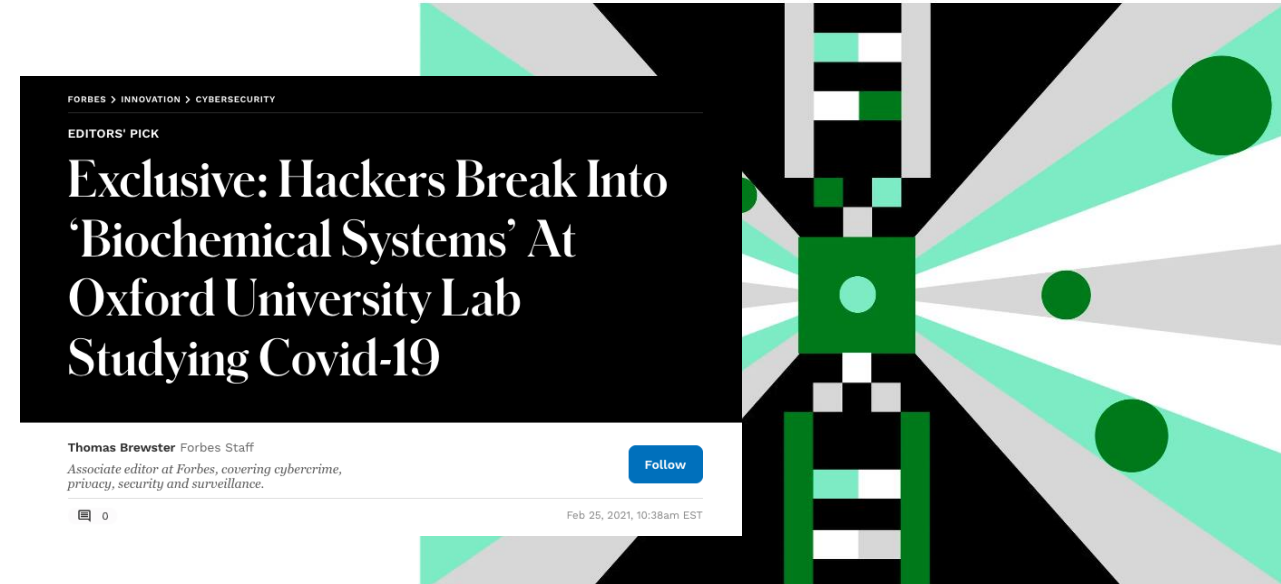
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Biohackers Encoded Malware in a Strand of DNA

Researchers planted a working hacker exploit in a physical strand of DNA.



Researchers hacked a lab's pathogen containment system. Was it a good idea to publish the results?

By George Poste, David Gillum | January 19, 2023



Researchers wearing positive pressure personnel suits at a US National Institute of Allergy and Infectious Diseases biosafety level 4 lab. Credit: National Institute of Allergy and Infectious Diseases.



George Poste

George Poste is Regents' Professor, Del E. Webb Chair in Health Innovation and Director of the Complex Adaptive Systems Initiative at Arizona State... [Read More](#)



David Gillum

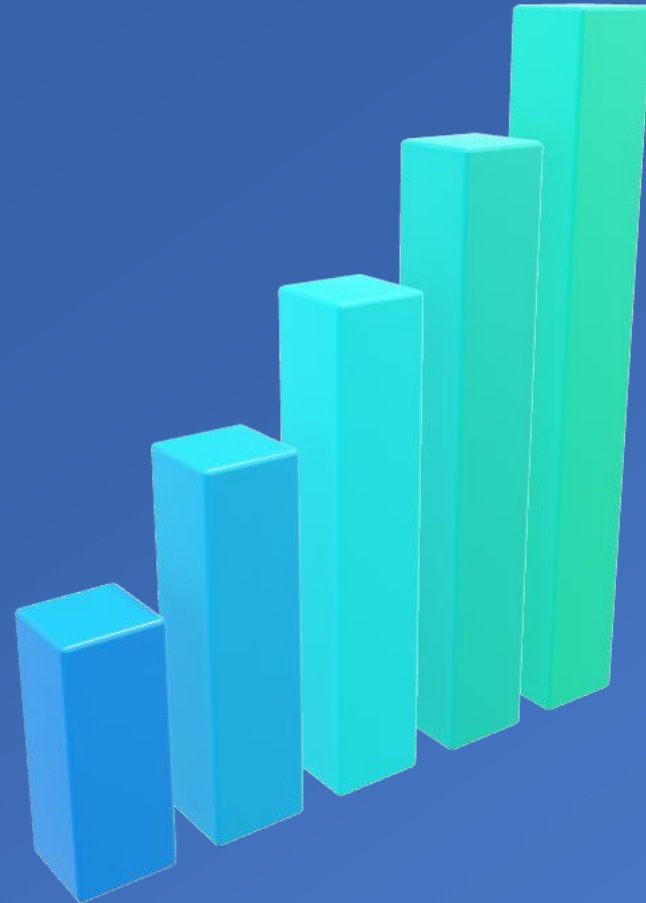
David Gillum is a PhD student in the School for the Future of Innovation in Society at Arizona State University. David is also the assistant vice... [Read More](#)



WHO Activities

WHO Activities

- Since July 2021, the Biosecurity and Health Security Protection (BSP) Unit has been analysing cybersecurity risks to public health
- Internal reports examining the impact of cyber-attacks during the Covid-19 pandemic like ransomware have been produced (publication in pipeline)
- An informal Information Risk Working Group has been formed including stakeholders from UN agencies, law enforcement, academia and NGOs



Key Observations

- This is a global problem and rapidly evolving threat
- It is too often seen as a purely 'tech' problem
- Public health agencies, Ministries of Health and scientific institutions do not have enough awareness of the potentially catastrophic risks to critical infrastructure
- Cyber-preparedness and resiliency are immature and underfunded



Solutions

- Development of capacity building tools, frameworks, checklists, simulation exercises and alerting mechanisms to support Member States aligned with Joint External Evaluation (JEE) tools as part of a One Health approach
- Greater Member State engagement to raise awareness
- Development of a World Health Assembly/UN norm or convention denouncing cyber-attacks against health and biological critical infrastructure





Thank you

Dr SaifAbed

Information Risk Consultant, Biosecurity and Health Security Protection (BSP) Unit

World Health Organization

Dr Saif Abed: abeds@who.int

Dr Sophie loos: iooss@who.int

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