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European Hospital and Healthcare Federation

# Looking beyond one's nose: how hospitals are dealing with cyber attacks and preparing for the worst-case scenario

AIM / EHFCN SEMINAR

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# HOPE at a glance

## Central Office

## Profile

- European non-profit organisation
- Created in 1966 in Rome
- Central office in Brussels

## Membership

- Covers almost 80% of hospital activity in the EU
- 37 organisations in all 27 EU Member States + UK, Switzerland and Serbia
- Public or private; public and private
- Three kinds of members: national hospital associations, federations of local and regional authorities, national health services/ministries of health

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Chief Executive

**Marie Nabbe**
EU Affairs Officer

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# Main Activities

- **Influence and representation:** The EU has influence on hospitals and healthcare, however, impact is often produced at the national level. HOPE presents a common position before the EU
- **Comparative studies** produced internally or as part of EU projects
- **Publications:** Agora Report (detailed report on annual HOPE Agora summit proceedings; on specific topics across national health systems; Position Papers (on EU policy)
- **Other:** HOPE Exchange Programme, Conferences, Study Tours, EU projects

HOPE Board of Governors, June 2022, Brussels

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Participants of HOPE Exchange Programme 2019

# Cybersecurity: Knowledge vs action

- Are hospitals more aware of cybersecurity threats than other institutions?

  Possibly

- Are they well-prepared and able to cope with powerful cyber-attacks?

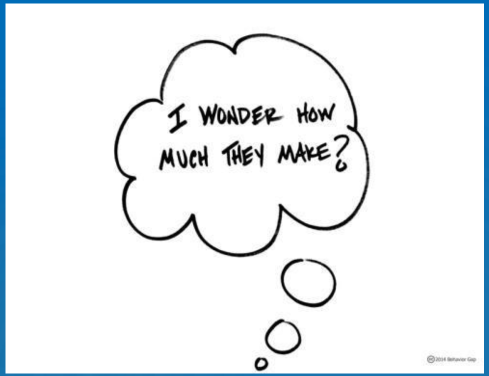
  Rarely

# Why hospitals are on alert

## Cybercrime is an everyday occurrence…

- Highly connected internally & externally – potentially much wider impact
- Very diverse user base, constantly in flux: management, healthcare professionals, administration & other staff, partner institutions, supply chain, patients / carers….
- Lots of entryways: digital hard- and software, mobile & IoT devices, portals, data storage...
- Sectoral transformation – old & new systems side-by-side (e.g., EHDS, AI deployment)
- High possibility of poor security practices, inadvertent errors, misconfigurations
- Hackers can access networks & systems, steal, manipulate, extort, store, release data
- Different threats: ransomware, malware, denial of service, supply chain, intrusion, etc.
- Perpetrators can be criminals, hacktivists, spies, insiders, competitors, skilled individuals…

# Healthcare data
# = particularly lucrative



- Important resale value of electronic health data (individual / bulk), other medical data, payment data, authentication data, strategic healthcare information, etc.
- Often interconnected with other personal data, e.g. civil status, DOB, social security / ID number, insurance coverage, etc.
- Darknet important facilitator of identify theft & fraud
- Victims can be targeted immediately and long-term
- Not only hospitals / healthcare providers affected, but all healthcare actors (health insurance providers, pharma companies, public health, research institutes, etc.)

# High stakes

- Individuals: risk to patient safety (physical & mental harm), personal data theft, privacy loss, extortion, potentially long-term impacts
- Healthcare professionals: impact on ability to perform job / give care, changing routines, confidentiality, liability, dismissal (…)
- Hospitals & healthcare organisations: impact on quality & continuity of care, business operations (incl. suppliers)
- Loss of public trust & confidence, reputation, economic viability, etc.

# Why cyber-resilience is so difficult to achieve in practice

Typically, only 2-5 % of hospital budgets dedicated to digitalisation in European hospitals, incl. cybersecurity measures

- Huge array of critical elements
- Continuous budget cuts affecting hospital services / departments in many countries and regions
- Cybersecurity competing with operational / staff costs
- Persistent staff shortages
- High workload & stress
- Digital literacy gaps
- Lack of cybersecurity & health data expertise / positions
- Outdated technologies, (lack of) interoperability
- Digital fragmentation across EU
- Impact of COVID-19
- (…)

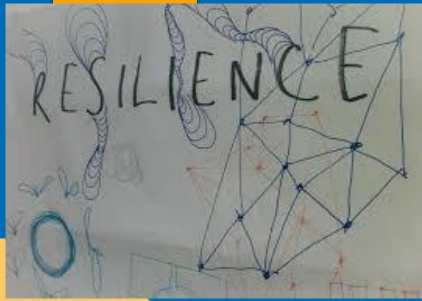
# What hospitals are/should be doing

- Leadership & preparedness – “Not if, but when”, “anywhere, anytime, anyplace”
- Establish cybersecurity teams to instigate change of mindset
- Risk / vulnerability assessments & information systems security policies
- Prepare & practise for worst-case scenarios (e.g., simulations), awareness-raising, reducing stress & building up confidence
- Detailed procedures for incident handling & recovery
  - Reaching / informing all staff, dealing with most urgent emergencies
  - Reverting to paper protocols, low-tech alternatives
  - Safeguarding inter-departmental communication

# What hospitals are/should be doing (cont.)

  - Plans for business continuity, crisis management, reinstatement: immediate vs. longer-term priorities of all services / clinics / administration
  - Co-operation with other HC providers
  - Informing patients / carers / suppliers / etc. (e.g., using landline phones)
- Investigation & incident response plan
- Data breach plan, incl. how to recuperate / retain data, redesign processes
- Adequate insurance coverage
- Information sharing (local, regional, national)
- Post-event assessment: ensure lessons learnt are known to all staff / partners

# Building resilience: What policies / measures should be in place?



## Staff

Passwords – strong identification, regular mandatory changes

Two / multi-factor authentication

Strict access controls, adopt principle of least privilege

Terminate access immediately upon leaving

Prohibit / restrict use of personal e-mail & other accounts

Awareness programmes (threats, common errors, scope of consequences, etc.)

Training - continuous data security / crisis exercises involving ALL staff, toolkits, guidelines

## Vendors / suppliers

Review all vendors' cybersecurity practices

Access - limit, control, monitor activities

Ensure support / assistance

## Systems / networks

Up-to-date software & OS patches

Anti-virus: advanced managed detection & response

Multi-layered firewalls

Robust backups (cloud-based / onsite)

Connected / IoT devices – limit access, intrusion protection, secure storage / key management

Data loss prevention: encryption of patient / operational data, information labeling and protection (e.g., tracking documents)

Secure internal directories

Advanced (AI) solutions to monitor / analyse user and device behaviours, detect abnormalities

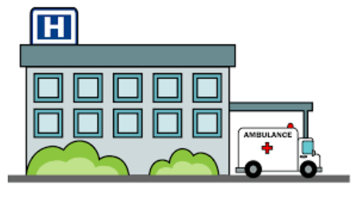
Regular audits (resilience / penetration testing, etc.)

# Cybersecurity

EU legislation – new safeguards & responsibilities

## NIS2 Directive

- Covers all dimensions of information systems security, applies to essential / important entities
- Prevention of health service disruption through mandatory technical, operational, organisational measures, proportional to risks affecting entities
- Risk assessment / management, clear incident reporting, identification / authentication, business continuity, securing communications, audits, training (...)
- Protecting patient data, incl. proper storage and handling practices
- Supply chain control (regular checks of contractual provisions)
- Senior management responsibilities
- Strict sanctions



# How to succeed?

- Ensure practical toolkits & protocols are available – outlining roles, tasks, processes, priorities, communication, etc.
- Make training concrete and personal: all staff / stakeholders need to feel relevance, progress, become emotionally involved (e.g., interactive, exciting, competitive…)
- Instill cyber hygiene through permanent improvement
- Involve staff in co-creation (identification of good practices, user-friendliness)
- Ensure balanced approach:
    - Acknowledge existing limitations & gaps
    - Pool resources with other sites / partner institutions
    - Maintain diversity of approaches
- EU Cybersecurity Action Plan for Hospitals / Healthcare Providers could provide comprehensive 'package' of existing information & guidelines, unleash new investments / funding, help clarify hospitals' responsibilities regarding the interplay of regulations

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# THANK YOU.

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