Panacea

People-centric cybersecurity in healthcare

Cybersecurity from a healthcare professional perspective

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injection.
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nd contact Services
via VirtualCa
to the operations manual or the internet at
http://www.radiology.bayer.com

My worst nightmare today?

Hospitals at the moment can't handle Cyberattacks

- Healthcare operations nowadays are increasingly based and dependent from information systems
- Legacy connected devices represent a major risk (black boxes) designed when cybersecurity attacks were not envisaged
- The increase of connected devices both inside and outside the Hospital is putting the patient and the Hospital at even greater risk due to hackability
- Hospitals are like ”seaports” (fully open to relatives, suppliers, all)
- Constant appearance of new threats (e.i. possibility of adding a tumor directly to a radiography exam)
- Cyberthreats are on the rise (87 billion in 2018 on 3 million assisted patients)
- Hospital structures and administrations are focalizing mainly on protection of patient data (because of possible legal consequences)
- Unpreparedness of Hospitals due to many different causes

Cybersecurity of patient data

- Security of patient data is not guaranteed.
- EHR can be found on the dark web for very low prices
- PHI (patient health information) are more important than PII (personally identifiable information)
- Cyberattacks are not immediately identified: most of them are discovered after they have been active for 18 months
- How as a doctor, nurse, health practioner am I responsible for this? What can I do?

Main types of cyberthreats daily experienced in Hospitals

- Data Breaches
  - PHI and PII: over 15 million health records have been compromised by data breaches in the last year
- Ransomware:
  - phishing with attachments
  - clicking on malicious link
  - viewing advertisement
  - RaaS (Ransomware as a Service!)
- DDoS attacks
  - while most are opportunistic and accidental, many target victims (Hospitals) for social, political, ideological or financial causes related to a situation that angers cyberthreat actors. Medical operations may create conditions of anger/revenge
- Insider threats
  - insiders have legitimate access to the system so they do not have to face traditional cybersecurity defences, the best defence against these threats is by other insiders
- Business email compromise and frauds
  - scammers pretend to be a person of power (e.g. CEO, supervisor). Very effective because they are well targeted (These threats have risen by 1300% since 2015).

What to do?

- Very little help at the moment from Hospital administration and governace
- Scarse knowledge of the ICT technology underlying the systems and devices we utilize
- Present methods to guarantee cybersecurity in our systems are time consuming: nurses, technicians and doctors must daily identify on different terminals and devices much more often than employees working in other industries or roles

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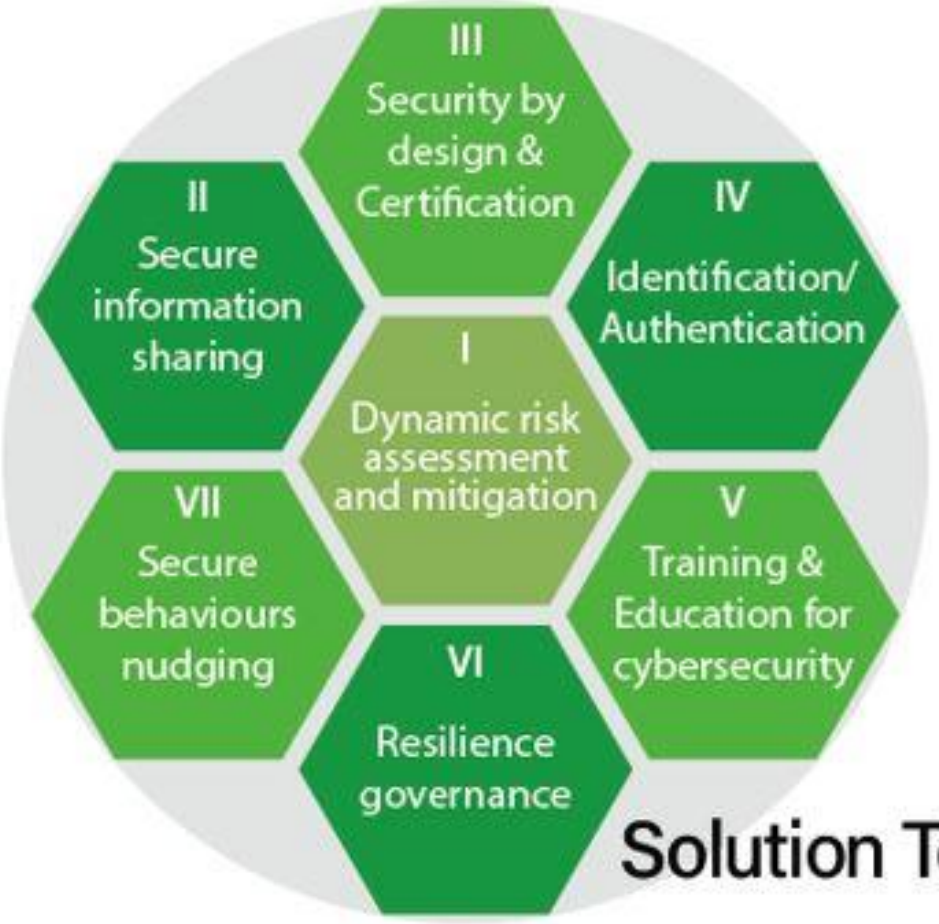
Involvement of Healthcare staff together with ICT staff to identify risks, work methodology and possible solutions.


III
Security by design & Certification
II
Secure information sharing
IV
Identification/ Authentication
I
Dynamic risk assessment and mitigation
VII
Secure behaviours nudging
V
Training & Education for cybersecurity
VI
Resilience governance

Solution Toolkit

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