Empowerment of Health Professionals: How High Level Security Education Can Raise Awareness and Confidence

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A few introductory remarks

- Health Information Systems, Public Health Systems, GP office systems, subsystems (e.g. PACS), registries, departmental systems, and EHR, EPR, CPR, CMR, etc.
- Health cards (e.g. PDC, HIC, PIC, HPC) and tokens especially (but not restricted to) in Europe and Asia
- Extended networks of medical professionals, healthcare establishments, insurance funds, and patients (citizens) even crossing national borders and domain boundaries
- Ethical, legal, social, technical, administrative, organizational, financial requirements for securely communicating
- Medical professionals need to become ICT partners as there’s almost no procedure without ICT support
- Are medical professionals aware of that?
ICT based processing data devices

Emergency Ambulance

Observations Investigations

Monitoring

Diagnosis Decisions

Further Treatment

Reha Home Care

Emergency Car
The MIE 2008 challenge

- George Mihalas, former EFMI President, raised related questions in his “Welcome Address to Göteborg and MIE 2008”
  - “How can we assure the increased medical information accessibility without affecting its security and confidentiality?”
  - “How can eHealth contribute to improve both healthcare service quality and patient safety?”
The CAST approach
CAST workshops

P. Pharow, Regensburg -- MIE 2008
CAST training strategies

Advanced Training

One focus of CAST e.V. is advanced training in the field of IT Security.

Together with the Darmstadt Centre for IT Security (ZKI) and the International Institute for Life Long Learning (I.I.L.L) of the TU Darmstadt (TUD) the CAST Forum offers students at the TUD and working persons the opportunity to obtain a certificate in IT Security. The certificate concludes the successful participation in events revolving around IT Security offered by the Department of Computer Science at the TUD and CAST Workshops.

Additional Information:
- Details on the IT Security certificate for students
- Details on the IT Security certificate for working persons

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P. Pharo, Regensburg -- MIE 2008
Access to Internet example

“Medical professionals are allowed to access the open Internet with their local ICT even if these computers are regularly used to record, store, process, and archive patient-related medical and personal information.”

These new recommendations regarding medical secrecy, privacy, and data protection were issued by the Federal Physicians’ Chamber of Germany.

Recommended are “providers guaranteeing the required security level by using, e.g., a firewall and a certified browser”.

More examples:
Skin cancer investigation
Electronic health card
Electronic health record
Health policies changes
Contractual changes

http://www.baek.de
http://www.kbv.de
MED-CAST concept (1/2)

**Problem:** medical professionals do not spend much time in identifying security threats and risks – “I have got a provider”

**Concept:** MED-CAST invites both medical professionals and ICT specialists involved in healthcare application development

**Stakeholders and addressed community:** healthcare workers in general, eHealth experts, ICT employees in healthcare, developers and suppliers of medical devices, security experts, medical and technical safety experts, legal experts, and many other groups
**MED-CAST concept (2/2)**

**Structure:** organizers predefine one hot topic per year and invite experts from different fields (different views) as speakers and tutors

**Topics:** national eHealth projects, electronic health card, electronic health records, image processing, cross-border aspects, etc.

**Schedule:** 8 to 11 presentations with discussions addressing different aspects of topic followed by a panel discussion with active audience interaction

**Feedback:** very positive in general from all groups of stakeholders
MED-CAST participants

Participants

<table>
<thead>
<tr>
<th>Year</th>
<th>Participants</th>
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<tbody>
<tr>
<td>2002</td>
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<tr>
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<td>2005</td>
<td>~50</td>
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<td>2006</td>
<td>~30</td>
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2004 ratings of presentations

![Bar chart showing ratings of presentations]
2006 ratings of presentations

![Bar graph showing ratings of presentations](image)
Statements

• The Hippocratic Oath defined obligations medical professionals (doctors) in former centuries were able to follow
• ICT has changed that situation dramatically (patches, operating systems, medical devices, automation, archives, etc.)
• Nowadays medical professionals typically have many tasks others than dealing with advanced ICT security measures
• Thus, they need service providers, educational partners, and a specially designed support
• But they need to at least have a basic idea of what security, safety, and privacy (from an ICT point of view) are all about
• Medical professionals – like other users – follow the awareness, confidence, acceptance cycle; unlike others, they have a very special behavior all partners need to take into account
• MED-CAST invites both ICT security experts and medical professionals to inform and educate the community
The authors are in debt to their different partners and organizations (especially the German CAST Forum and its hosting organization Fraunhofer IGD, EFMI and its WGs SSE, PPD, and EHR) for their permanent support and their kind co-operation.