Why teach computer security to medical students?

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Introduction

- Electronic Medical Records
  - integrate heterogeneous patient information
  - support healthcare practice

- Barriers
  - information security

Need for young doctors to better understand and use security

Objective

- To investigate attitudes and awareness of 1st year Medical students towards EPR security

- Do medical informatics' lectures help?
- Do they influence their attitudes?
- How can they be improved?

Methods

- Anonym questionnaire applied before and after the lectures in the academic year of 2003/2004
- The questionnaires introduced security scenarios for the students to comment
- 4 questions were answered

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Results (1)

The first scenario described a breach of patient privacy to an EPR by one of the students' colleagues

Q1.A – Is the described scenario a security breach?

	Before the lectures % (n)	After the lectures % (n)
Answered questionnaires	***(238)***	***(222)***
Valid answers	*98 (232)*	*98 (217)*
Yes	**100 (232)**	**100 (217)**

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Results (2)

Q1.B – What would you do if you found out about this security breach?

	Before the lectures % (n)	After the lectures % (n)
Valid answers	*61 (144)*	*60 (132)*
Reason with the colleague	**54 (77)**	**44 (58)**
Inform responsible authorities	**40 (58)**	**50 (66)**
Others	**6 (9)**	**6 (8)**

Results (3)

Q2 – Would you change your attitude if you found out that the colleague shared his password with a friend and that friend breached patient confidentiality?

	Before the lectures % (n)	After the lectures % (n)
Valid answers	*62 (148)*	*62 (138)*
No	**74 (109)**	**83 (115)**
Yes	**26 (39)**	**17 (23)**

Results (4)

Q3 – Do you think that more sensitive information (HIV, Cancer) requires stronger security measures than other types of information?

	Before the lectures % (n)	After the lectures % (n)
Valid answers	*43 (103)*	*91 (204)*
No	**44 (91)**	**38 (77)**
Yes	**55 (112)**	**52 (127)**

Discussion

- After Security and Ethics' lectures, students:
  - feel more conscientious to report privacy breaches to responsible parties (Q1.B)
  - understand better what computer security is and how to behave in order to protect confidentiality of electronic information
  - consider indirect disclosure of sensitive information, such as with another person's password, a serious fault (Q2)
  - become more aware for the need of different protection levels of security depending on how sensitive information can be (Q3)

Conclusion

- We believe that the introduction of Information Security and Ethics early in the degree of the Medical course **influences the awareness and attitudes of first year medical students towards computer security** and EMR

- This can greatly **influence the success of EMR integration** whilst improving and fastening healthcare treatment

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