Establishment of an Infrastructure to Support the Introduction of Electronic Signatures: a German Example

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Abstract

Secure electronic documentation has become increasingly important in healthcare. However appropriate IT-infrastructures develop slowly in healthcare settings. This leads to uncertainties in healthcare industries and to tremendous costs caused by duplicate archiving of health records. We established a Competence Centre for Electronic Signatures in Healthcare (CCESigG) to support implementation and provide information services for electronic signatures. Our objective is to report about CCESigG and first experiences with its services. Institutions like CCESigG may accelerate the introduction of electronic signatures, particularly in those countries, which rely on these signatures regarding legal management and archiving of electronic health records.

Keywords:

Security, Digital signature, Electronic signature, Electronic health record, Integrity, Communication, archive

Introduction

Electronic health records have to meet requirements such as confidentiality, availability and integrity. Electronic signatures became in many countries mandatory for ensuring secure management and long term archiving of digital documents. Because of missing appropriate IT-infrastructures and the resulting uncertainties in healthcare industries hospitals hesitate to introduce a digital data management and digital archiving system. Instead cost extensive paper or microfilm based archives are still in use.

Methods

An institutional framework was established for the increasingly interdisciplinary, value-driven and patient-centred healthcare setting. Such a platform must consist of representatives from hospitals, institutions, working groups, software developers, trust centres and service providers. To support the implementation of electronic signatures in the public health care, the aim of such a platform should be to distribute the electronic signature amongst healthcare applications while concentrating the interests of working groups, organisations, hospitals, software developers, trust centres and service providers, offer information events and setting up an information service to inform about changes. In addition the development of best practice solutions and necessary standards should be supported.

Results

We founded the CCESigG in March 2009. Institutions like the Peter L. Reichertz Institute (PLRI), the German Scientific Organisation of Medical Informatics, Biometry and Epidemiology (GMDS), the German Professional Organisation of Medical Informatics (BVMI), the German Ministry of Business, Employment and Traffic of the state Lower Saxony and various German hospitals and industry partners where main actors founding the CCESigG. The association is financed by membership fees and government support mainly. Within the next three years the measures mentioned above shall be achieved by the members. At present two working groups are established. One workgroup investigates the legal requirements of documentation in German healthcare settings, followed by an investigation how to integrate required signature types into daily hospital processes without interference. The other group currently reviews existing interface standards.

Conclusions

We expect that institutional frameworks like the CCESigG will support the deployment of digital document management systems and archives. Accelerating the development of the necessary IT-infrastructure is believed to enable advantages of digital documentation with electronic signatures like time and location, independent availability, organisational optimisation and economical efficiency while being compliant to national laws.