

# Open Standards for information management

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# Introduction

- This presentation addresses the benefits of open data interchange standards for eHealth applications and the processes by which they can be developed. Successful development and use of these standards will improve eHealth applications and systems produced by everyone.

# Goals of this presentation

- Define what is meant by interchange standards
- Specify the scope to which they would apply
- Show the benefits that can be gained by their development and use
- Describe the attributes of a successful implementation of interchange standards
- The Internet as an example
- Initiate a discussion

# Terminology

- eHealth application
  - An application or system constructed for the purposes of delivering health care or medical data using information and communication technology, for example
    - Remote diagnosis
    - Handheld epidemiological survey tools
    - Morbidity databases

# Terminology

- Open standard  
Publicly available specifications for enhancing compatibility between various hardware and software components. Open standards allow anyone with the appropriate technical knowledge to implement applications and systems which work together with those of other sources

(adapted from Wikipedia)

# Categories of data interchange standards

- Application or system requirement
- Schemas and datatypes
- Rendering and transport
- Technical implementation

## Application or system requirement standards

- Specify the types of behaviours and functions which should be expected from different types of applications and systems in order to enable to interoperate, such as:
  - requiring XML import/export capability in database based applications
  - Mandating that an eHealth application adhere to privacy protection legislation such as HIPAA

# Schema and datatype standards

- Define a common or compatible structure for representing information at an abstract level. Some examples of this are:
  - Health topics list used by the WHO website, library, and marketing & dissemination
  - ICD-10

# Representation and transport standards

- Describe how information is electronically encoded and how it is transported between different systems. Examples of this are:
  - XML Docbook
  - HTTP
  - SSL
  - DICOM

# Technical development standards

- Specify exactly the concrete technology that must be used in order to build an application or system, such as:
  - XERCES XML Parser
  - Java and JBuilder
  - OpenSSL

# Advantages for eHealth applications

- Reduced design burden
  - Common methods and tools
  - Reusability
  - Faster design time

# Advantages for eHealth applications

- Better compatibility between eHealth applications by:
  - providing common representation and transport formats
  - enabling easier creation of transforms from one data set to another.

# Advantages for eHealth applications

- Consistency across eHealth applications by helping to:
  - reuse technologies and implementations, concepts, and skills
  - enabling more consistent application models

# Advantages for eHealth applications

- Long term benefits:
  - Reduced development costs
  - Improved quality
  - Data sharing rather than replication
  - Applications can provide more authoritative sources of electronic health information

# Successful implementation

- Process built on inclusion, consensus and needs
- Support of the standards
- Clarity of the standard and its justification
- Communication of the standard to its intended audience

# Successful implementation

- Process build on inclusion, consensus and needs
  - Should include anyone who wishes to participate without discrimination
  - Should be driven by users of the eHealth applications and systems as their needs should be primary consideration
  - Should have periodic review
  - Should take into account changing contexts
  - Should include business, government, and health care providers, as well as area of work specialists.

# Successful implementation

- Support of the standards
  - Standard must have a clearly defined and acceptable level of support
  - Easier to do with open interchange standards rather than technical development standards

# Successful implementation

- Clarity of the standard and its justification
  - Standard itself should be clear and unambiguous
  - Justification for the standard should be provided
  - Application of the standard should be described

# Successful implementation

- Communication of the standard to its intended audience
  - All information regarding the standard should be made freely and easily available to anyone who wants or needs it.

# Challenges

- Cooperation between industry, health-care, and governments
- Inclusion of appropriate skills within the standards development process

# The Internet as an example

- The Internet functions according to a set of open standard specification, protocols, and assignments defined by the IETF, IRTF, IAB, and IANA
- Participation is encouraged from industry, academia, government, and private individuals

# The Internet as an example

- Open standards are defined by working groups assigned to a the task, where anyone can contribute
- 3 meetings a year, all over the world
- All actual work is done through email discussion lists and shared document drafts. Many major contributors never need attend a meeting

# The Internet as an example

- Resource issues facing many participants are the same as those faced by people in developing countries
  - Limited funds
  - Limited access to equipment and resources

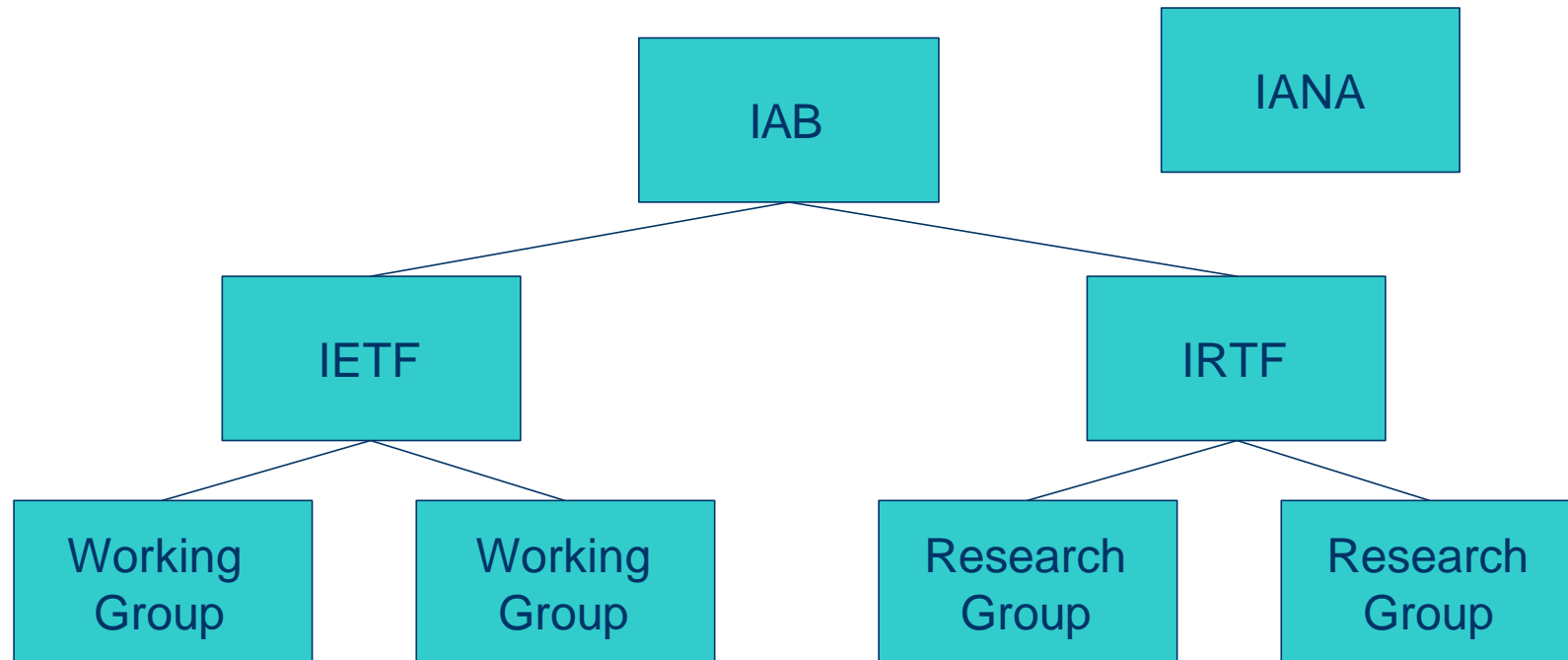
# The internet as an example

- The strengths are the same
  - Huge number of skilled individuals with extensive knowledge and a drive to get things done.

# The internet as an example

- The result is a multicultural, global network, designed and built by all of its users and continuously evolving to meet their needs.

# The Internet as an example



# Conclusion

- Broad overview of what's possible
- Clearly targeted and scoped interchange standards are beneficial to both developers of eHealth applications and their users.
- Open and free process enables participation from the broadest range of people

# Conclusion



Thank you!