



## Reviewing challenges in specifying interoperability requirements in procurement of health information systems

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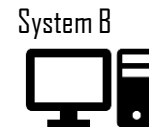


## Why?

- Why interoperability?
  - Interoperability is a prerequisite for an effective working environment and patient safety
  - Over 80% of health data tend to be ignored which can severely impact patient safety
  - Inadequate documentation and use of information at emergency departments, emergency medical services and home care plays a significant role in interorganizational HIE related incidents
- Why procurement of HIS?
  - Interoperability is often challenging, and many interoperability initiatives fail
  - The quality of interoperability requirements affect the outcome of the implementation phase



"Weight": 78 kg

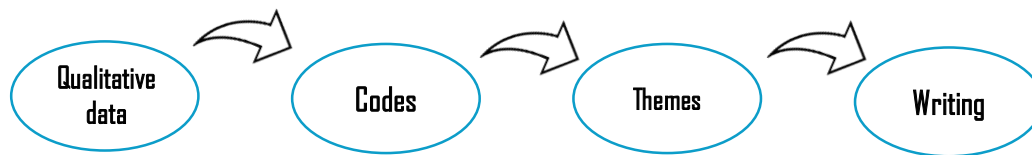


"Body weight": 175 lb



## How?

**Thematic analysis - Identifying, analyzing, and reporting patterns within data**



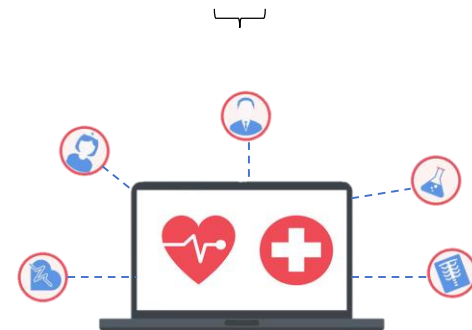
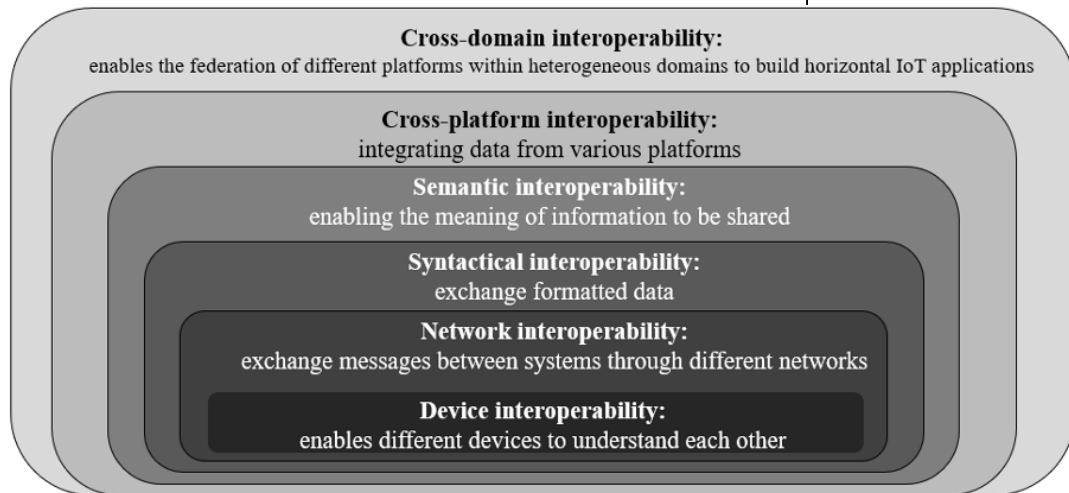
**Table 1.** An excerpt from the coding scheme developed during the thematic analysis.

Data extracted	Coded for	Assigned theme
“[...] functional specifications should be based on local needs [...]. [...] hospital representatives stated that the difficulty [...] was the fact that every organizational [...] needs differed significantly”[17].	Different needs	Different needs, conflicting requirements
“[...] requirements specification [...] reveals challenges with fuzzy requirements in tender announcements”[6].	Ambiguous requirements	Difficult to specify concrete requirements or describe the needs properly



## But what exactly is interoperability?

Reviewing challenges in specifying interoperability requirements in procurement of HIS



A system that: **collects, process, stores or communicates** health related data



## Results

Challenge \ Source	[17]	[5], [10]	[9]	[6]	[18]	[19]	[8]	[20]	[11]	[7]
Different needs, conflicting requirements	x	x	-	-	x	-	-	-	-	x
Lack of technical expertise/knowledge gaps	x	x	-	-	-	-	-	x	x	x
Difficult to specify concrete requirements or describe the needs properly	x	x	-	x	x	x	-	x	x	-
Changing, incomplete or inconsistent requirements	x	-	x	-	-	x	-	x	-	-
Specifying requirements before announcing tender/up front	-	-	-	-	x	x	x	-	x	-
Lack of collaboration or communication between stakeholders	x	-	-	-	-	-	-	x	x	-



## Results

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### 1. Difficult to specify concrete requirements or describe the needs properly

“The provider shall have required experience and competence to deliver and be a provider that has delivered similar services before”

Sundsvall’s Municipality in Sweden asked the supplier to deliver something that creates an “Oh, shit”-feeling (literal translation) among the procuring party.



## Conclusion

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- The requirement specification process is a complex task that requires economical, technical, juridical, and ethical competence and involves multiple conflicting needs
- The ability to specify adequate requirements will become increasingly important and challenging
- Even though recommendations and guidelines on how to specify technical requirements exists, several challenges remain



## Acknowledgments

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## References

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