



# Applying STARE-HI to conference papers

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# Evidence Based Medicine

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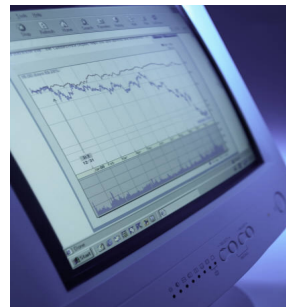


Good Clinical Practice guidelines  
CONSORT statement

# Evidence Based Medicine



GEP-HI  
STARE-HI





# STARE-HI

- STatement on Reporting of Evaluation studies in Health Informatics
- IMIA and EFMI endorsed

Talmon et al. Int J Med Inform 2009; 78: 1-9.

**Table 1 – The STARE-HI principles: items recommended to be included in Health Informatics evaluation reports.**

Item #	Item
1	Title
2	Abstract
3	Keywords
4	Introduction
4.1	Scientific background
4.2	Rationale for the study
4.3	Objectives of study
5	Study context
5.1	Organizational setting
5.2	System details and system in use
6	Methods
6.1	Study design
6.2	Theoretical background
6.3	Participants
6.4	Study flow
6.5	Outcome measures or evaluation criteria
6.6	Methods for data acquisition and measurement
6.7	Methods for data analysis
7	Results
7.1	Demographic and other study coverage data
7.2	Unexpected events during the study
7.3	Study findings and outcome data
7.4	Unexpected observations
8	Discussion
8.1	Answers to study questions
8.2	Strengths and weaknesses of the study
8.3	Results in relation to other studies
8.4	Meaning and generalisability of the study
8.5	Unanswered and new questions
9	Conclusion
10	Authors' contribution
11	Competing interests
12	Acknowledgement
13	References
14	Appendices



## Research questions

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- Which reporting items should be prioritized given the space limitations of a conference paper?
- What is the completeness of recent conference papers?



## Methods- priority framework

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- 5 core team members identified reporting items from STARE-HI

“To secure proper indexing in, for example, Medline it is essential to provide good keywords. Among the keywords should be “evaluation” and keywords describing the type of system evaluated (e.g. EHR, LIS, telemedicine), the setting (e.g. primary care, secondary care), the outcome measures, the study design (e.g. RCT, before-and-after, field study). It is advised to use MESH terms as provided by [..] whenever possible since that will enhance retrievability of the paper in searches”.



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# Methods- priority framework

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- 5 core team members identified reporting items
- Web-based questionnaire:
  - 111 authors, reviewers, editors
  - 10-point scale: “0 not necessary” to “10 - essential”
- Ranking items per area according to the average scores in a descending order





## Methods- completeness

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- 70 conference papers MIE06, MedInfo07, MIE08, AMIA08
- All items assessed independently by 2 assessors
  - Yes - fully reported (=1)
  - Marginal - limited reported (=0.5)
  - No - absent (=0)
  - NA - not relevant for the paper
- Second round for all disagreements



## Methods- completeness

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- Priority adjusted completeness per paper and per reporting area

$$\sum_i A_i * P_i / \sum_i P_i \quad \text{for } \forall i, A_i \neq NA$$

With  $A_i$  the average assessment of the two assessors on item  $i$  and  $P_i$  the priority score for item  $i$ .



# Results – priority framework

- 104 items
- Reponse rate = 67%

Reporting area	Mean priority score
Content of Title	7.1
Abstract	8.0
Keywords	7.1
Introduction	6.9
Study context	7.1
Methods- study design	7.9
Methods- data collection	7.8
Methods- data analyses	7.7
Results	8.1
Discussion	8.3
Conclusion	7.7
References	8.9
Acknowledge	8.0
Conflict of interest	7.6
Author's contribution	5.1

## Results – priority framework

Reporting area	Mean priority score		Mean priority score
Kind of facility	8.2 (1.4)		7.1
Aim of the system	8.0 (1.9)		8.0
Type of system	7.8 (1.9)		7.1
Type of information managed	7.6 (1.7)		6.9
Clinical or other tasks of the system	7.4 (1.9)		7.1
How long the system is used	7.4 (1.9)	design	7.9
How wide spread the system is used	7.4 (2.0)	collection	7.8
Description of how the system works	7.3 (2.2)	analyses	7.7
Which facilities/department(s)	7.1 (2.1)		8.1
Professions and number of users	7.0 (2.3)		8.3
Reference to full technical description	6.7 (2.4)		7.7
Geographical location of health organization	6.4 (2.6)*		8.9
Name of the health organization	4.3 (2.9)	st	8.0
		ution	7.6
			5.1

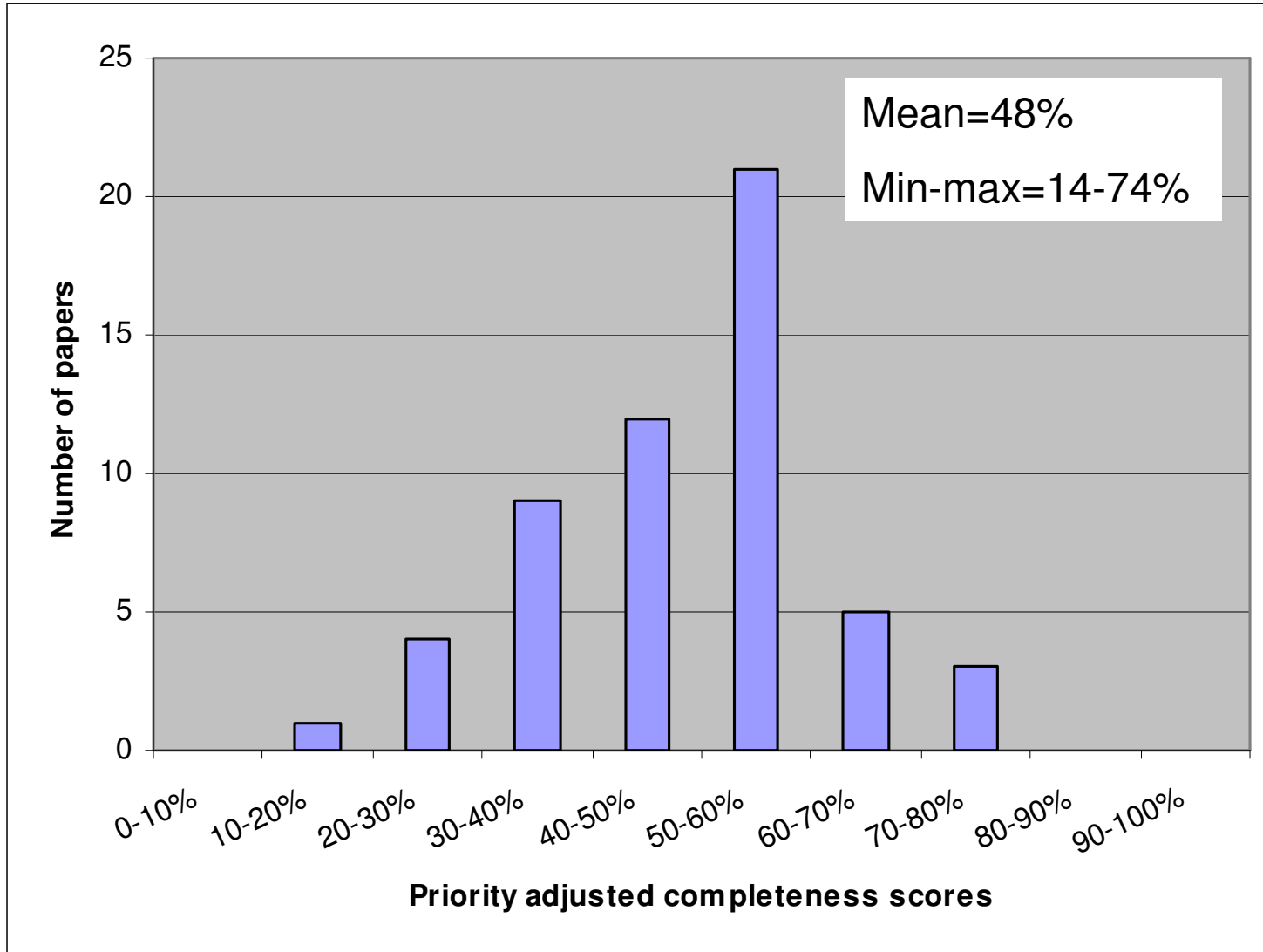


# Results – priority framework

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- High priority (score > 9):
  - Interpret the data and give an answer to the study question (in discussion section)
  - Whether it is a laboratory, simulation or field study (in methods/study design)
  - Description of the outcome measure/evaluation criteria (in methods/study design)
- Low priority (score < 6):
  - Name of the health care organization (methods/study context)
  - Authors' contribution
  - Formal permission and ethical concerns (introduction)
  - Study limitations (abstract)

# Results – Priority adjusted completeness





# Results- completeness

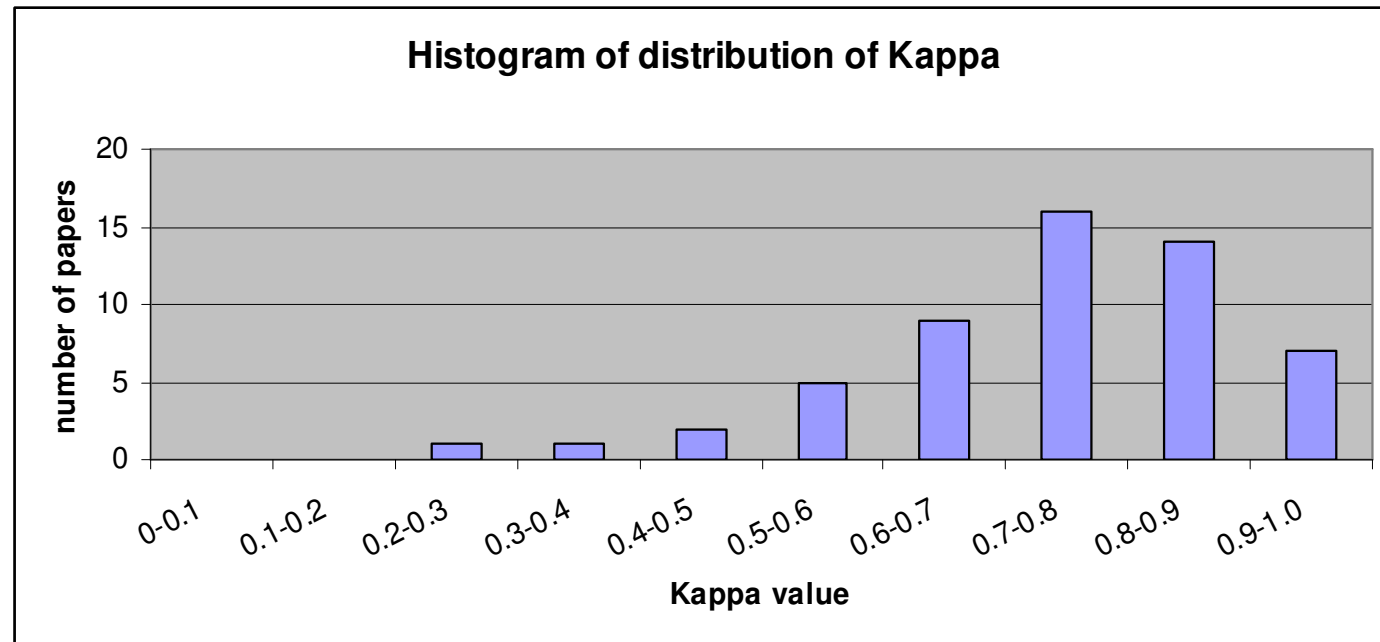
Reporting area	Adjust completeness (%)
Content of Title	51
Abstract	50
Keywords	37
Introduction	58
Study context	68
Methods- study design	61
Methods- data collection	55
Methods- data analyses	21
Results	50
Discussion	35
Conclusion	62
References	93
Acknowledge	58
Conflict of interest	5
Author's contribution	0

# Results completeness

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Kappa 1<sup>st</sup> round: 0.61

Kappa 2<sup>nd</sup> round: 0.85







# Discussion

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- STARE-HI: rank list of reporting items
- Completeness of recent conference papers showed room for improvement
- Large variety in completeness of various reporting areas
  - Methods-data analyses and Discussion
- Weaknesses:
  - Web-based survey send out once. No formal Delphi study
  - Assessing completeness of conference paper is not trivial



## Future work

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- Elaborate on STARE-HI items
- Measure the effect of STARE-HI on quality of publications

# Conclusion

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- Guiding authors in prioritizing what information is important to report
- Improve quality and utility of such publications

