Applied Clinical Informatics

Instructions to Reviewers

As the Official eJournal of the International Medical Informatics Association (IMIA) and the Association of Medical Directors of Information Systems (AMDIS), ACI aims to establish a platform for knowledge sharing between clinical medicine and health IT specialists. It further intends to bridge gaps between visionary design and successful and pragmatic deployment focusing on translational or applied informatics.

In reviewing submissions, please comment on the following major quality aspects:

A Significance for clinical care
B Quality of scientific content
C Originality and innovativeness
D Coverage of related literature
E Organization and clarity of the paper

Please find below more detailed explanations of each quality aspects that may help you to judge each of them. The original list of quality criteria was published by IMIA 12 and was now modified for Applied Clinical Informatics.

For authors whose primary language may not be English, please comment on the appropriate use of the English language, and whether the manuscript will require considerable editorial revisions to be suitable for publication.

Categories and Quality Criteria
A Significance
A1 Topic's importance to applied clinical informatics
Is the topic current and significant to clinical care?
Is the topic interesting for the applied clinical informatics community? Is there need shared knowledge, experience and/or expertise on the topic? Is the topic important to improving care quality, safety, efficiency and or cost?
A2 Impact of the paper on the topic
Does the paper address a relevant applied clinical informatics problem?
Are the presented data and results scientifically credible and feasible?
Is this paper of interest for the medical community? Does it add scientific knowledge, experience or expertise on the given topic? Does it demonstrate an impact (positive or negative) on patient care? Can the results be translated to clinical practice or generalized to similar environments/processes? Is it of educational value (candidate for a tutorial)? Is it newsworthy (candidate for news item)?
B Quality of scientific content
B1 General criteria
Do the keywords represent the topic?

Categories and Quality Criteria
B2 Background and motivation
Is the relevance of the paper stated clearly?
Is the motivation for the work stated clearly (previous research, existing need or problem)?
B3 Purpose of the paper
Are the aims and/or study/research questions presented clearly and unambiguously?
Do the aims and/or questions make sense in the context of the given topic?
B4 Method and approach
Are the analyses, designs, methods, approaches and implementations/deployments presented clearly and unambiguously? Is the given information sufficient to reproduce the method or approach?
Are evaluation methods and approaches placed in context with other possible methods and approaches? Is it explained why this specific evaluation method and approach was chosen over others?
Are the methods and approaches for interventions appropriate to answer the study/research questions?
B5 Presentation of results
Are the results presented clearly and unambiguously?
Is it clear how, and from where, the results have been derived?
Are objective results and subjective interpretations distinguished clearly?
Do the results answer the initial study/research questions?
B6 Discussion
Is the discussion been formulated clearly and unambiguously?
Are facts, conclusions and opinions been separated clearly?
Are the results critically assessed? Are negative data or apparently contradictory results discussed or explained? Are limitations of the method and results been discussed? Are results discussed in the context of other recent research?
Is the significance of the results discussed? Are potential generalizations of the results discussed? Are implications of the results for patient care discussed?
B7 Conclusion
Does the conclusion contain a succinct statement of findings and conclusions? Are these reflected in the Abstract?
Are the conclusions reasonably derived from the presented results?
Are important and novel aspects of the work emphasized? Are these in the conclusion (and Abstract)?
Are the implications for future research, or for patient care, discussed?
B8 Additional criteria for specific types of papers
Additional criteria for application reports
Are the objectives of the system (technical system, application, procedure) clear?
Is the problem the system should solve stated clearly and unambiguously?
Are the architecture and the user functions of the system been presented in sufficient detail?
Are the clinical environment and contexts in which the system is being developed or tested addressed in sufficient detail? Are the clinical processes and outcomes which the system is to modify described in sufficient detail?
Is the described use of the system used in a realistic (clinical) or simulated environment?
Are the effects and impacts of the system presented in a systematic fashion, including presentation of performance and utilization measures and unanticipated consequences (good and bad) in relation to the initial design objectives of the system?
Is the application/system or intervention/approach (still) being used?
Are “lessons learned” of use to others? Are they illustrated by the report?

Categories and Quality Criteria
Addition criteria for systematic reviews
Is the area of review clearly defined?
Has locating, selecting and extracting papers for review been defined clearly and reproducibly?
Are the included papers current?
Is the review based on a careful, international and longitudinal analysis of the available literature?
Does the review possess adequate depth and diversity?
Have interesting conclusions and perspectives been presented and discussed?
Is the discussion of different findings well-balanced?
Additional criteria for seminal and viewpoint papers
Is the paper based on long-term experiences and expertise in a given area?
Do the authors have a clear thesis or opinion?
Are the presented opinions authoritative, reasonable and interesting to others?
Is it clear how the papers relates to prior research?
Are the facts presented correctly?
Does the article promote discussion and present initiatives?
Additional criteria for evaluation papers
Does the study description follow the STARE-HI guidelines[3]?
C Originality and innovativeness
Are the application, study/research question, method/approach and/or results new and specific? Is the presented technology, method or approach novel? Does it present a new technology, method or approach that enhances care? Does it present a proven technology, method or approach in a new domain and/or context?
Does the work add enough to what is already available in the literature to be published?
D Coverage of related literature
D1 References
Are the references sufficiently comprehensive for the given topic? Do the references sufficiently reflect international research? Are they up to date? Are they comprised of only a limited number of papers from the authors' working group?
Do the references contain sufficient information to find them? Are they published (not 'in press' and/or 'personal communication')? Are they in a standard format (Medline, Vancouver).
E Organization and clarity of the paper
E1 Organization the of abstract
Is the abstract been structured?
Does the abstract state the relevance, aims, questions, methods, results and conclusions?
Is the abstract concise and informative?
Are data presented in the abstract consistent with results and conclusions in the body of the paper?
E2 Organization of the paper
Is the title clear, understandable and meaningful?
Is the structure of the article clear and adequate?
Is the presentation coherent, precise and accurate?
Does the article cover the topic and its significance adequately?
Do the sections of the article have sufficient depth to be informative?

Categories and Quality Criteria
Are all figures and tables understandable?
Is the combination of text and figures/tables well-balanced?
Are only useful figure and table data repeated in the text?
Are there discrepancies between text, figures and tables?
Have all abbreviations been explained sufficiently? Is there a legend?
F. Conflict of Interest and Ethical Issues
F1 Conflicts of Interest
Are conflicts of interest described?
Are there concerns that the conflict of interest may significantly impact on the results, discussion, or conclusions of this manuscript?
F2 Human Subject Research Approval
If this is a study involving human subjects, is the process for obtaining Human Subject Research Approval or Exemption described?

[1] Ammenwerth E et al. Quality criteria for medical informatics research papers. IN IMIA Yearbook 2003: Quality of Health Care: The Role of Informatics. Haux R, Kulikowski C (eds), Schattauer Verlagsgesellschaft mbH, Stuttgart. URL: http://www.imiapubs.org/pdf/qualitycriteria.pdf [last accessed 10 November 2009].

[2] Ammenwerth E, Wolff AC, Knaup P, Ulmer H, Skonetzki S, van Bemmel JH, McCray AT, Haux R, Kulikowski C. Developing and evaluating criteria to help reviewers of biomedical informatics manuscripts. J Am Med Inform Assoc. 2003 Sep-Oct;10(5):512-4. URL: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC212789/?tool=pubmed [last accessed 10 November 2009].

[3] Talmon J, Ammenwerth E, Brender J, de Keizer N, Nykänen P, Rigby M. STARE-HI - Statement on reporting of evaluation studies in Health Informatics, Int J Med Inform 2009; 78(1): 1-9. http://www.imia.org/endorsed/endorsed.lasso.