

HIC09 Publication Content Guidelines

Health Informatics Society of Australia

These guidelines apply to submissions for HIC, the annual national Health Informatics Conference. Submissions must be the original work of the submitting author(s), must not have been previously published and must not be under consideration by another publication or conference. Submissions that fail to meet these criteria will be withdrawn from the conference.

Writing a HIC2009 paper

Scientific publications have evolved a standard structure to enhance the clarity of presentation of ideas, and ensure that papers give comprehensive but concise descriptions of what has been done. This also allows others to replicate the work that has been done, or extend upon it, contributing the dissemination and growth of knowledge. Most major biomedical journals demand these standards eg description of research hypothesis, methods employed, and results.

Health informatics papers normally fit into the standard biomedical paper model. However there is a tendency amongst some authors to not follow this reporting structure because it erroneously appears that their work is more about building a system than it is about testing a hypothesis. However, a description of a system or architecture is not evidence of success, only activity. Informatics interventions like software are scientifically no different to traditional biomedical interventions like treatments. A piece of software tests the hypothesis that a certain design will perform better at some task than competing solutions, just like a hypothesis that a new treatment is superior to past treatments. We can apply the same reasoning to software architectures, development methodologies, standards, and computer applications.

Your paper should be written as far as possible in the traditional biomedical model, to make it clear what was done, what you hoped to achieve, and what was ultimately learned. It is not acceptable to simply describe a piece of software, architecture or theory without a formal evaluative framework that tests the importance of the work against competing solutions, and such papers will normally be rejected. An informatics paper should thus address the following issues:

- (1) **Paper objectives or hypothesis:** Define the problem you wish to solve, and state briefly why it is important. Explicitly describe the objective of the paper, as far as possible as a testable statement or hypothesis. For example “This papers aims to test whether home telecare technology can improve clinical outcomes for insulin dependent diabetics”, or “This paper tests whether Bayesian belief networks can to detect infectious disease outbreaks more successfully than existing methods”.
- (2) **Background and concise literature review:** You should demonstrate that you are familiar with the work of others upon which your work is based, or which competes with yours to solve the same problem. It is unlikely that you

are the first to work in the area. Health informaticians often only survey the health informatics journals, but relevant papers usually exist in other literatures. For example, the computer and information science literature will often contain papers with health applications, or papers that solve similar technical tasks in non-health areas. Sociology, decision-making, organisational science and cognitive science journals will often contain papers that are directly relevant to health informatics.

- (1) **Methods** (eg study design, data sources, interventions): Having defined your objective or hypothesis, you now define the measurements against which you will test the success of your work. For interventions, explain how you will measure success, whether in terms of intermediate process variables such as system accuracy, speed, maintainability, or expressiveness and comprehensiveness (for architectures and standards), or ultimate outcomes such as usability or clinical impact or effectiveness. Next you describe the design of your study, to demonstrate how you gathered data to make your measurements, and how you ensured the data are accurate and free of bias. For system designs, you should describe the rational design process you used e.g. use of qualitative methods like user-needs assessment, ethnographic methods, which allows readers to assess how generalisable or robust the designs might be to other areas.
- (2) **Results**: In this section your report either the outcome of your evaluation or describe the product produced by the design process, and its measurable characteristics or performance.
- (3) **Discussion of implications**. In this section you evaluate your performance against the measurement criteria you have proposed. Did you succeed? Compare your efforts against others - how well does your methodology, intervention or design compare to other methods?