Reviewer's report

Title: Has information technology finally been adopted in intensive care units? A survey and review of the literature.

Version: 1 Date: 10 February 2010

Reviewer: Alan Morris

Reviewer's report:

1. Is the question posed by the authors well defined? --NO
2. Are the methods appropriate and well described? --NOT WELL DESCRIBED – THE WRITTEN QUESTIONNAIRE IS NOT VALIDATED. THE TELEPHONE QUESTIONNAIRE IS NOT DESCRIBED RO VALIDATED.
3. Are the data sound? - QUESTIONABLE BECAUSE OF THE LIMITED RESPONSE TO THE FIRST WRITTEN QUESTIONNAIRE.
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? - LIKELY
5. Are the discussion and conclusions well balanced and adequately supported by the data? - NO
6. Are limitations of the work clearly stated? - ONLY PARTIALLY
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? - THEY FAIL TO SUPPORT A NUMBER OF DECLARATIONS WITH APPROPRIATE DATA OR CITATIONS.
8. Do the title and abstract accurately convey what has been found? - YES
9. Is the writing acceptable? - IT NEEDS REVIEW BY A NATIVE ENGLISH SPEAKER.

The authors survey hospitals for use of information technology elements. The make the important distinction between intensive care unit specific information technology systems, and those that are hospital-wide.

The authors extensive use of abbreviations is distracting and lends to confusion among readers. I suggest the authors abandon their use of abbreviations (acronyms).

the authors list a large number of computed percentages regarding presence of electronic elements. They do not bring these observations together in a convincing synthesis. The report's value is therefore limited. The observations that the use of electronic systems in Flemish ICUs seems to have increased over a 3.5 year period is not surprising and does not advance our understanding of important implementation issues.

SPECIFIC COMMENTS:
Abstract-Methods: Line 3: ITC is not defined. This is an incomplete sentence.

Results: Line 1: PACS is undefined.
Line 2: CPOE is undefined
Line 4: EPR is undefined.

Introduction: I suggest the authors consider removing the first two sentences.

P 6 Para 3 Line 7-9: The authors require 3 things for an intensive care information system to qualify in their survey. Interestingly, they do not require bedside decision-support, an important component of electronic systems.

P 7 Para 1 Line4-5: the authors claim that Flanders is representative of other European regions but do not provide a citation to support this claim. A citation should be added.

Materials and Methods: No information concerning validation of the survey instrument is provided by the authors.

Region of Interest: The authors claim, without citation or data, that all Flemish ICUs provided high quality care. This statement should be supported or eliminated.

P 8 Results, Para 1: Only 57% of the insinuations completed the written survey. However, in Paragraph 2 the authors claim the adoption rates over time are highly accurate, with the second (telephone) survey participations of 100% of institutions. This seems inconsistent. How can they be sure of adoptions rates when 43% of the sites failed to complete the first survey? This limitation will apply to all of their results.

P 9 Medication CPOE...Para 2 Line 6-7: Some ICUs use Microsoft Excel and others have homemade systems. This brings into focus the important challenge of interinstitutional compatibility of data and the searchability of data elements. Excel will not likely be satisfactory. This reviewer wonders about the compatibility of the other systems. these concerns do not preclude reporting use, as the authors have done. However, the authors should discuss these important challenges and the limitations, therefore, of the results they report.

Line 9-14: the authors describe some important limitations and tangentially touch upon the way the clinical sites use the electronic information. Some apparently mix electronic and paper reports, and use the electronic information to generate paper reports for their medical charts. Such a mix of uses makes interpretations of the results more difficult. The absence of systematically reported usage details reduces the value of this report.

P 11 Effective Use of Highly Detailed data Extraction...Para 2: The low use of systematic data extraction seems to be inconsistent with the initial claim that all Flemish ICUs are high quality.

The decision-making process... Para 3 The authors list concerns and anticipated
benefits without citations. Are these the opinions of the authors or are they derived from discipline-wide consensus or systematic studies? They cite Table one as a list of concerns when Table one only contains a list of benefits. Table one, importantly and surprisingly, does not include bedside decision-support as a benefit. This seems a serious oversight.

P 22 Figure Legends: Figure 1 does not add anything substantial and can be removed. Figure 5 can be removed and would be better redone as a table.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

'I declare that I have no competing interests'