Reviewer’s report

Title: A national clinical decision support infrastructure to enable the widespread and consistent practice of genomic and personalized medicine

Version: 1 Date: 1 December 2008

Reviewer: Mark Boguski

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Review of “A national clinical decision support infrastructure...” by Kawamoto et al.

The chief purpose of this report appears to be a call-to-action primarily for an audience of government policy makers.

In general, the paper lacks context and perspective in two important respects: 1) there is little or no consideration of lessons learned from numerous similar, albeit smaller-scale, efforts and technologies to organize and communicate healthcare information that have been the grist of the medical informatics community for years and 2) there is no comparative analysis of experiences in those other countries that have long had universal health care systems and IT infrastructures to support them.

Critical component 1: Knowledge management. Without some example(s) of how this has been accomplished in other areas, the speculation that this might be done by academic medical centers, professional associations and government agencies seems implausible. Contributions by the commercial sector are ignored. For example, what would be the role of medical publishers, such as Elsevier which has recently published the authors’ new book on genomic medicine? What would be the role of commercial online providers of medical information such as WebMD?

Critical component 2: Information standardization. Are there successful models of this that can be imitated, e.g. what about EBI’s MIAME or NCBI’s GEO? How would any system be made compatible with diagnostic standards and ontologies in wide use by anatomic and clinical pathologists to diagnose diseases and communicate this to treating physicians and insurance companies?

Critical component 3: Health information systems. Again, there is no review or examples from decades of work by the medical informatics community. What existing “clinical terminologies” need to be extended? Does it really make sense to shoe-horn genomics into mid-20th century concepts and classifications of disease and medical specialties?

Critical component 4: It’s difficult to tell what the authors are referring to. Extensions of existing web services standards and protocols? A medical “semantic web”? Something else?
Critical component 5: Locating and retrieving patient data from disparate systems. In what ways do HIPAA standards have to be revised and extended to accommodate these goals?

The authors go on to make seven recommendations:

1. This recommendation relates to implementing the critical components described above. However, because these components are rather vaguely defined, there is really nothing to implement at the present time.

2. Genomic CDS to be integrated with all aspects of healthcare. This may be premature and, regardless, ignores the critical roles of medical education and training.

3. Leveraging existing resources. Do the authors mean content resources such as databases, books and journals or communication channels for information delivery, or both?

4. Resources and standards included in Table 2 are a mélange of entities requiring more explanatory context.


6. Reference 22 concerning EHRs is outdated (or insufficient). What about the recent push by IT companies (Google Health, Microsoft Health Vault, etc.) to create a new market of patient-controlled electronic health records?

7. What’s the incentive to do this? Who pays?

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**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.'