Reviewer’s report

Title: Toward Successful Implementation of Electronic Health Records (EHR) in Ambulatory Practice Settings

Version: 1 Date: 17 September 2008

Reviewer: William Yasnoff

Reviewer’s report:

Summary:

This is a thoughtful and useful overview of the barriers and obstacles related to EHR adoption in small ambulatory practices, combined with a comprehensive set of guidelines for practices that are planning to install an EHR system. It is an excellent distillation of the authors' considerable research and direct experience in this domain and will likely be very useful to physicians and others wishing to develop and execute a well-organized, successful transition to an EHR system. While it does not present substantial new findings, it effectively summarizes a large body of existing knowledge. It is especially helpful in that it describes the required phases and key issues that need to be addressed in each. After a small number of needed corrections and omissions are addressed, it should serve as an important and practical contribution to the literature on EHR adoption.

Major Compulsory Revisions:

1. Throughout this manuscript, the concept of EHR implementation seems to be intertwined with the separate (but closely related) concept of providing physicians with more complete records. The implementation of an EHR in a physician practice serves solely to improve access to information in that practice unless there are interfaces to outside information systems that result in more comprehensive patient records. Many of the benefits of EHRs are a result of more comprehensive information that is not available within the practice. Explaining this concept and differentiating the "internal" EHR benefits from the advantages of adding external information helps both to clarify the sources of benefit and keep physician expectations realistic. This point could be made in the first paragraph of page 2, but is also relevant elsewhere, e.g., in the box on page 7 where the benefits are described as coming from the interface to the hospital information system. Suggest that the authors consider whether this concept should be explicitly mentioned in the guidance provided for various stages of the implementation process.

2. There needs of be a clearer linkage between the two parts of the manuscript. For example, the authors could add: "Before embarking on an EHR implementation project, it is essential to be familiar with the benefits and barriers. Therefore, before providing detailed guidelines for such an effort, a synopsis of what is known about benefits are barriers is given, with special attention to those
issues relevant to small ambulatory practices."

3. The review of benefits and barriers is not comprehensive. This should be stated, and the specific selection of the material included explained (e.g. "This paper is not intended to be a comprehensive review of EHR benefits and barriers. The material included was selected to be illustrative of some of the key issues that small practices encounter.")

4. Policy implications of barriers are not discussed. The manuscript should include a statement that these are beyond the scope of the article.

5. There is not much discussion about the differences between large and small physician practices. This should either be included or it should be a bit clearer that the focus of the manuscript is exclusively on small practices. While this latter point is stated once on page 1 ("... especially practices of five physicians or less."), it needs a bit more emphasis to be sure the reader understands that this relates to small practices only.

6. The experience of the "Greenhouse Internists" is discussed and referenced multiple times, but there is no description of the practice. This should be included with the first reference to this group on page 3.

7. Part of the "Introduction to Change as a Key Factor in EHR Implementation" (page 5) should include the caveat that change management cannot address the external financial barriers to adoption as described in the previous section (e.g. "... Enhanced reimbursement models will be needed for wider adoption" on page 4). Rather, once a decision has been made to embark on EHR implementation, managing change is invaluable in the process.

8. At the beginning of the "Toward Successful Ambulatory EHR Implementation and Greater Adoption" section (page 6), it would be helpful to provide an overview of what is to come, e.g. vision, phases, key role of a physician champion, workflow redesign, etc. Also, "... and Greater Adoption" probably should be dropped from the title of this section because that is not really the focus (since many financial and policy issues are not addressed).

9. Issues related to patient privacy are not addressed. Assuming that the authors do not wish to cover this topic, a statement indicating that it is important but beyond the scope of the manuscript should be added (perhaps with a reference for readers who wish to explore further).

10. Throughout the EHR change management guidance, there is a theme of reinforcement as an element of behavioral change. Would be worth mentioning this theme.

Minor Essential Revisions:

1. page 6, last paragraph, "... allows to create ..." should be "... that allows creation of ..."

2. page 7, last line, "field guide" is missing a closed quote
3. page 8, second to last paragraph, "... failure involves failure to plan ..." is awkward and should be rewritten.

4. page 9, second paragraph, "... to not allow unfounded allegations about the new system to go unanswered." is essentially a double negative and is confusing. Suggest rewording.

5. page 10, "Selection Phase", 4th bullet, "... possible talk ..." should be "... possible, talk ...

6. page 12, last bullet: Shouldn't evaluation be institutionalized into an ongoing monitoring and improvement program for the system? This is an important point, as it makes the evaluation more than a "post mortem" or academic exercise.

7. page 12, "Timely Training", 3rd from last line: "... physicians' needs." Isn't this too restrictive? What about the rest of the staff?

8. page 13, box, first paragraph, line 2, "Physicians are working ..." should be "Physicians need to be working ..."

9. page 13, box, second paragraph, line 3, "... system had to be ..." should be "... system has to be ..."

10. page 13, "Implementation Phase, first paragraph, second to last line, "... EHR productivity will initially decline, no ..." should be "... EHR, productivity will initially decline no ..."

11. page 14, "Encourage the Practice", line 2, "... who have contributed directly ..." should be "... who contribute directly ...

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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

Declaration of competing interests:

I am Founder and President of the Health Record Banking Alliance (HRBA), a non-profit organization that promotes patient-controlled repositories of health information (no compensation).