

PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

This paper was submitted to a another journal from BMJ but declined for publication following peer review. The authors addressed the reviewers' comments and submitted the revised paper to BMJ Open. The paper was subsequently accepted for publication at BMJ Open.

(This paper received three reviews from its previous journal but only two reviewers agreed to published their review.)

ARTICLE DETAILS

TITLE (PROVISIONAL)	Protocol for a scoping review to understand how inter-organisational electronic health records affect hospital physician and pharmacist decisions
AUTHORS	Scott, Philip; Nakkas, Haythem; Roderick, Paul

VERSION 1 – REVIEW

REVIEWER	Lisette C. Roman Healthcare Consultant, Day Health Strategies, USA
REVIEW RETURNED	08-May-2018

GENERAL COMMENTS	This is a well-designed scoping review that addresses an important issue in health informatics. However, I urge the authors to nuance their study title and research question to more accurately reflect the population at hand ("physicians and clinical pharmacists"). At time of publication, I also urge the authors to include a rich discussion of the study limitation by using this population (rationale: "many care decisions are about adding, stopping or changing doses of medications"), as it may well be that an inter-organizational record is not as frequently important for medication dose decisions as it is for other treatment decisions that impact other provider types. For example, mental health/safety evaluations at the point of care without a longitudinal inter-organizational record may result in overlooked history critical to decision-making.
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REVIEWER	Cristiano André da Costa Universidade do Vale do Rio dos Sinos, Unisinos
REVIEW RETURNED	01-Jun-2018

GENERAL COMMENTS	The article presents a interesting protocol for conducting a review in EHR interoperability. The methodology is defined and the article well written. Bellow I suggest some clarifications regarding the protocol: - For selection, (stage 2) is there a range in terms of years? I think it should be clearer stated why limit to Pubmed; - For stage 3, is there inclusion / exclusion criteria? If yes, please add those to the article
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REVIEWER	Justin Keen Leeds Institute of Health Sciences, University of Leeds, Leeds, England
REVIEW RETURNED	09-Jul-2018

GENERAL COMMENTS	<p>This paper describes a protocol for a scoping review on an important topic, inter-organisational electronic health records. My main comments are concerned with improving the clarify of the objective and method.</p> <p>The objective is not clear. It would be helpful to clarify whether it is concerned with, (i) the effects of improved access to remote patient records (via an electronic network), or, (ii) the effects of integrating patient records. Put another way, is the focus on functional or semantic inter-operability?</p> <p>It seems reasonable to think that these networks will generate risks as well as benefits. These are well described by Wachter (reference 2). It isn't clear whether or not the authors will be searching for risks as well as (positive) effects.</p> <p>The chosen method - scoping review - is supported by a single reference, Arksey and O'Malley: this protocol provides an opportunity to build on the available sources for the method. To that end, the authors should take the opportunity to provide a clear 'route map' for using it.</p> <p>The PICO should be stated explicitly, and the text revised to demonstrate that it is consistent with PRISMA-P, which appears to be the most appropriate checklist.</p> <p>The research question is broad. Is 'affect clinical decision-making' a sufficiently well defined Outcome?</p> <p>It wasn't clear why the search will be restricted to PubMed - not Medline or HMIC, and not any resources (Web of Science, engineering databases) that might yield key references on human-computer interaction. This should be explained.</p> <p>The distinction between this protocol and the protocol in reference 14, Akhlaq et al, should be stated.</p> <p>Figure 1 is difficult to understand. Where are the arrows that are leaving the circles pointing to?</p> <p>The protocol would benefit from a brief - 1-2 paragraph - discussion.</p>
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VERSION 1 – AUTHOR RESPONSE

Review comment	Author response
<p>Reviewer: 1 Reviewer Name: Lisette C. Roman</p> <p>Institution and Country: Healthcare Consultant, Day Health Strategies, USA</p> <p>This is a well-designed scoping review that addresses an important issue in health</p>	<p>Thank you for the positive comments.</p>

<p>informatics. However, I urge the authors to nuance their study title and research question to more accurately reflect the population at hand ("physicians and clinical pharmacists"). At time of publication, I also urge the authors to include a rich discussion of the study limitation by using this population (rationale: "many care decisions are about adding, stopping or changing doses of medications"), as it may well be that an inter-organizational record is not as frequently important for medication dose decisions as it is for other treatment decisions that impact other provider types. For example, mental health/safety evaluations at the point of care without a longitudinal inter-organizational record may result in overlooked history critical to decision-making.</p>	<p>We have nuanced the title as suggested, changing it from "Protocol for a scoping review to understand the role of inter-organisational electronic health records in changing clinical practice" to "Protocol for a scoping review to understand how inter-organisational electronic health records affect hospital physician and pharmacist decisions".</p> <p>We understand the recommendation about a "rich discussion" of the limitations of our scope "at the time of publication" to mean when the full review is submitted, rather than this protocol. However, we have added a brief statement of limitations towards the end of this paper that acknowledges the constraints imposed by our scope definition.</p>
<p>Reviewer: 2 Reviewer Name: Cristiano André da Costa</p> <p>Institution and Country: Universidade do Vale do Rio dos Sinos, Unisinos</p> <p>The article presents a interesting protocol for conducting a review in EHR interoperability. The methodology is defined and the article well written. Bellow I suggest some clarifications regarding the protocol:</p> <ul style="list-style-type: none"> - For selection, (stage 2) is there a range in terms of years? I think it should be clearer stated why limit to Pubmed; - For stage 3, is there inclusion / exclusion criteria? If yes, please add those to the article 	<p>Thank you for the helpful comments.</p> <p>We have specified the date range in the main text as well as the supplementary file and expanded beyond PubMed as described in response to reviewer 3.</p> <p>We have expanded the section title for stage 2 to make it clearer that it includes inclusion and exclusion criteria.</p>
<p>Reviewer: 3 Reviewer Name: Justin Keen</p> <p>Institution and Country: Leeds Institute of Health Sciences, University of Leeds, Leeds, England</p> <p>This paper describes a protocol for a scoping review on an important topic, inter-organisational electronic health records. My main comments are concerned with improving the clarify of the objective and method.</p> <p>The objective is not clear. It would be helpful to clarify whether it is concerned with, (i) the effects of improved access to remote patient records (via an electronic network), or, (ii) the effects of integrating patient records. Put another way, is the focus on functional or semantic inter-operability?</p>	<p>Thank you for the useful comments.</p> <p>We have expanded the statement of study objectives, describing the variety of types of inter-organisational health record and that our focus is on the use of information in decision-making rather than the technical architecture.</p>

<p>It seems reasonable to think that these networks will generate risks as well as benefits. These are well described by Wachter (reference 2). It isn't clear whether or not the authors will be searching for risks as well as (positive) effects.</p> <p>The chosen method - scoping review - is supported by a single reference, Arksey and O'Malley: this protocol provides an opportunity to build on the available sources for the method. To that end, the authors should take the opportunity to provide a clear 'route map' for using it.</p> <p>The PICO should be stated explicitly, and the text revised to demonstrate that it is consistent with PRISMA-P, which appears to be the most appropriate checklist.</p> <p>The research question is broad. Is 'affect clinical decision-making' a sufficiently well defined Outcome?</p> <p>It wasn't clear why the search will be restricted to PubMed - not Medline or HMIC, and not any resources (Web of Science, engineering databases) that might yield key references on human-computer interaction. This should be explained.</p> <p>The distinction between this protocol and the protocol in reference 14, Akhlaq et al, should be stated.</p> <p>Figure 1 is difficult to understand. Where are the arrows that are leaving the circles pointing to?</p> <p>The protocol would benefit from a brief - 1-2 paragraph - discussion.</p>	<p>We agree that negative effects also need to be considered. We have added a sentence to stage 1 saying "We are not presuming that all effects will be positive or making that an inclusion criterion".</p> <p>In fact, we have three references about the scoping review methodology (now renumbered to [30, 31, 33]). However, we take the point about building upon the method, so added a sentence to stage 5 saying "We will also report our experience with the scoping review methodology and any suggestions for improvement that we might develop".</p> <p>We have changed the citation from PRISMA to PRISMA-P, but with the qualification that we will use it as far as relevant for a scoping review. We have added a table showing the PICO and a supplementary file with the PRISMA-P checklist.</p> <p>We have refined the main research question to "How do inter-organisational electronic health and care records affect decision-making by hospital physicians and pharmacists?" We acknowledge that this remains a broad question, but that is the nature of our review.</p> <p>As our review is specific to hospital physicians and pharmacists, we originally thought that PubMed was an adequate source if supplemented by snowball searching to identify papers not indexed in PubMed. However, we have reflected upon this in light of your comment and now propose to use the NICE healthcare databases advanced search (HDAS) which incorporates MEDLINE, EMBASE, CINAHL, PsycINFO, AMED, British Nursing Index, HMIC and Health Business Elite. The initial search strategy has been amended accordingly.</p> <p>The scope of reference 14 is about how health information exchange is conceptualised rather than its effects on decision-making. We do not think this needs explicit reference.</p> <p>To clarify the DICOT-CL diagram (not our invention), we have added a sentence that says "This might be interpreted as a "ripple effect" spreading from the micro to the macro without any fixed boundary.".</p> <p>We have added a brief discussion at the end of the paper.</p>
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VERSION 2 – REVIEW

REVIEWER	Justin Keen University of Leeds, Leeds, England
REVIEW RETURNED	01-Nov-2018
GENERAL COMMENTS	I have gone through my earlier comments, and am happy that the authors have made substantive, helpful, changes to the text.