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Research and theory

Use of a knowledge synthesis by decision makers and planners to facilitate system level integration in a large Canadian provincial health authority

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Abstract

Purpose: The study is an examination of how a knowledge synthesis, conducted to fill an information gap identified by decision makers and planners responsible for integrating health systems in a western Canadian health authority, is being used within that organization.

Methods: Purposive sampling and snowball technique were used to identify 13 participants who were interviewed about how they are using the knowledge synthesis for health services planning and decision-making.

Results: The knowledge synthesis is used by those involved in the strategic direction of the provincial healthcare organization and those tasked with the operationalization of integration at the provincial or local level. Both groups most frequently use the 10 key principles for integration, followed by the sections on integration processes, strategies and models. The key principles facilitate discussion on priority areas to be considered and provide a reference point for a desired future state. Perceived information gaps relate to a lack of detail on 'how to' strategies, tools and processes that would lead to successful integration.

Discussion and conclusion: The current project demonstrates that decision makers and planners will effectively use a knowledge synthesis if it is timely, relevant and accessible. The information can be applied at strategic and operations levels. Attention needs to be paid to include more information on implementation strategies and processes. Including knowledge users in identifying research questions will increase information uptake.

Keywords

knowledge synthesis uptake, decision makers and planners, health systems integration, community health centres, integrated seniors health, knowledge translation

Introduction and background

Integration has been recognized as a means for maintaining the accessibility and integrity of healthcare systems and a necessary component to enhance patient care and outcomes. However, despite an overwhelming amount of literature on integration, decision makers report difficulty accessing or interpreting the information [1]. In addition, information often lacks local applicability which is important when planning for

healthcare systems [2–5]. Having easily accessible, reliable evidence is essential to support successful health systems redesign [6–9].

Knowledge synthesis such as systematic literature reviews, are one source that may assist decision makers access the information necessary to make evidence informed decisions for integrating health systems [3, 7–8, 10–13]. Knowledge syntheses have several advantages over single studies. Processes of undertaking systematic literature reviews ensure the information is relevant and captures best quality research from a range of sources (peer-reviewed and grey literature) and methodologies (qualitative or quantitative) [14–18]. They summarize divergent studies, making comparison easier [12, 19–21]. However, knowledge syntheses have limitations. While clinical questions of effectiveness may be easily synthesized, health system issues are typically more complex and concern the context and overall organization of service delivery [3]. There is also a difference between syntheses that provide 'knowledge support' and those that provide 'decision-support' [4, p. 45]. Policy makers and managers require information that synthesizes existing evidence and incorporates 'weightings that represent values or judgements' [4, p. 45], also identified as colloquial knowledge [22].

There are several ways in which to increase the usefulness of knowledge synthesis and their use by decision makers. Close collaboration between researchers and knowledge users is key. The involvement of decision makers and planners and ongoing two-way communication throughout the research process will increase relevance, timeliness and use of the findings [1, 12]. The format in which findings are presented is also important. Decision makers, planners, and managers prefer summaries they can easily access and understand [4, 6, 12, 17]. The appropriate audience must be identified and findings produced in their preferred format [23].

Despite numerous papers on knowledge users needs and preferences and how to facilitate research uptake by knowledge users [1, 12], there are comparably few studies following up on the use of specific knowledge syntheses by planners and decision-makers [24, 25]. This paper explores the uptake of a knowledge synthesis to facilitate successful integration at the system and service delivery levels aiming to improve quality of care in a large regional health authority in Western Canada.

The story of a successful knowledge synthesis

In 2005, stakeholders in a Western Canadian health region were charged with the planning, implementation and evaluation of a new integrated health services delivery model. The principal author was involved in a formative evaluation of the service delivery model with focus on the planning and implementation processes [26–28]. Throughout the evaluation interviews with planners, decision makers, community members, physicians, and clinical and administrative staff, it became obvious that 'integration' meant different things to different people which impacted expectations of outcomes to be achieved. Depending on the stakeholder group, the expectations centred on clinical integration and continuity of care, patient/family centredness, integration of business processes or cost efficiencies. Different definitions of integration emerged. One chief complaint from the planning group was that it was difficult to find the information necessary to create a shared vision around integration with some clear definitions and strategies of how to accomplish it.

In response to that need, the researchers partnered with approximately 20 decision makers in the Regional Health Authority tasked with integrating service delivery or health systems. A survey and focus groups with these decision makers highlighted that the information decision makers required most urgently was definitions of integration, conceptual frameworks/models, characteristics of successfully integrated models, and outcomes of integration. Also of interest were descriptions of demonstration projects, identification of research gaps and future research, and the growth and evolution of integrated systems. The results of the survey and focus group discussions provided direction for the research questions. These were further refined by senior management, planners, medical leaders, directors, and managers of programmes from across the continuum of care within the health authority, and by senior policy advisors with the provincial department of health. The refined research questions formed the basis for the systematic literature review.

The methods of the systematic literature review were based on recommendations for evidence-based clinical practice systematic review [29, 30], with adaptations for the review's broader health systems and policy-related questions [for example, 2, 31, 32]. The review included peer-reviewed health sciences and business databases. Business databases were searched to identify innovations in the planning and implementation of integrated systems outside healthcare that may have applicability to the healthcare context. The health sciences literature (Medline, EMBASE, CINAHL, PsychINFO) for years 1998–2006 and business literature (ABI/Inform Global, CBCA, Business Source Premier) for years 2001–2006 were searched for relevant articles. Search terms included *delivery of healthcare*, *integrated*, *organizational integration*, *integrated health services*, *integrated healthcare*, *care coordination* and *health services integration*. Grey literature was also

searched to capture non-peer-reviewed documents relevant to the review. A more complete description of the systematic literature review methodology can be found in an earlier published article [33].

Throughout the review process, decision makers were kept appraised of progress and they had an opportunity to read and comment on a first draft of the knowledge synthesis.

The review identified 10 universal principles of successfully integrated healthcare systems which may be used by decision-makers to assist with integration efforts. These principles define key areas for restructuring and allow organizational flexibility and adaptation to local context. It also revealed a number of gaps in the evidence including the lack of a universal definition or concept of integration, no definitive model or framework, and few processes or strategies to successfully integrate health systems. The focus on system level integration limited the number of programme level studies included in the findings. These programme level studies may have provided insights to integration efforts such as detailed strategies of implementation or guidance to stakeholder engagement.

A number of dissemination strategies were implemented with decision makers and planners as target audience. The final report [34] was widely circulated within relevant departments, with the request to distribute to other stakeholders. A number of presentations were given to local stakeholders, to delegates on an international study tour and at a national integration conference. The key messages were summarized in two peer-reviewed manuscripts [33, 35] in journals with broad readership. Overall, the knowledge synthesis created great interest within the organization as well as externally, and the information was rated as relevant and useful.

Purpose of the current research

The current study examines how the knowledge synthesis on health systems integration is being used by provincial health authority planners and decision makers and how the use of the knowledge synthesis has impacted their approach to integrating services and health systems. Furthermore, we aimed to identify what information in the knowledge synthesis was most useful and if there were any perceived information gaps.

Methods

A purposive sampling strategy combined with a snowball technique was used for recruiting participants. The initial intent was to approach the decision-makers and planners who were originally involved in the knowledge synthesis. However, most of them no longer work in the organization or have changed their roles. The recruitment strategy was thus expanded to decision makers and service planners known by the primary author to be using or at least being aware of the knowledge synthesis. Potential participants were approached with a request for an interview and were also asked to recommend other people that may have used the knowledge synthesis, including external stakeholders. A total of 19 potential participants were approached, 13 of them were interviewed (eight individual interviews and two group interviews). The interviews ranged from 30 minutes to one hour in length and were either face-to-face or over the phone. The purpose of the interview was explained to participants and verbal informed consent obtained to audiotape the conversation and use the information for the manuscript. Interview questions focused on which information was used from the knowledge synthesis and for what project, how the information was used for planning or decision-making, how useful the information was overall, applicability to the local context, if evaluation is being considered, where there were gaps in the information, how information from the knowledge synthesis weighs in comparison to other sources of evidence, suggestions for dissemination of materials, and the overall accessibility of the knowledge synthesis. Each interview was audio-recorded and complemented by field notes. A qualitative approach was used to simultaneously collect and interpret the data [36]. Ongoing analysis and evaluation of the data by both researchers informed the direction of the study [37]. The audio-recordings were transcribed using a denaturalized method which emphasizes accuracy of the content over speech patterns [38]. The transcriptions were thematically analysed and summarized to identify and describe themes common among the participants.

Results

Participants

Most of the interviewees are employed by the same provincial health entity as the authors. Only one of the interview participants was involved in the original development of the knowledge synthesis; all other participants learnt about the knowledge synthesis from colleagues, the primary author or at conferences. There were also two participants from outside the organization.

Participants from the local health authority were engaged with integration in a variety of programmes or departments including Community Health Centres

(n=5), Integrated Seniors Health (n=2), Knowledge Management (n=2), System Design Support (n=1), and Strategic and Integrated Service Planning (n=1). Five participants were responsible for strategic planning of integration and six were tasked with the operationalization of integration. The two external participants were engaged in operationalizing integration within both their employment roles and projects conducted under the auspice of the Canadian Health Services Research Foundation's Executive Training for Research Application programme. All interview participants confirmed that integration was a core principle underlying their work, 'being embedded in everything we do.'

Using the integration knowledge synthesis

The two peer-reviewed manuscripts [33, 35] were the conceptual foundation for many of the participants responsible for the strategic planning of integrated health services. When discussing integration with stakeholders, they stated they used the 10 key principles of integration summarized in one of the articles [35] to organize discussions around integration and to reach consensus on what was meant by integration, what was being integrated and to what end; "It makes discussions about integration more palatable and helps ensure common understanding and goals." Other comments were that the principles "put words around what we do," and "help validate our own thinking." The principles provided a helpful framework for integration including how all the pieces fit together.

The 10 key principles were further used to develop a toolkit to support decision makers and planners within the organization in the development and implementation of a new integrated health services structure, that is, clinical networks. These clinical networks are developed in a number of areas (for example, bone and joint health, cardiac, mental health) and aim to create integrated care pathways across the province. The toolkit should assist planners in adopting an integrated care approach, assessing current and future states, identify gaps and help prioritize action. Similarly, others stated that the principles were helpful for discussing what progress has been made towards the integration of services under their portfolios and, "It reminds us of the different pillars to consider throughout our project."

Participants who were responsible for the operationalization of integration also used the report and/or manuscripts in their work. One participant spoke about the application of the 10 key principles on a micro level when discussing how they were applied to the integration plan for a community health centre. They used individual principles to examine questions, such as 'How does an integrated information system support continuity of care,' 'What is the geographic coverage for certain services,' and 'Who is your physician sponsor to ensure appropriate engagement.' Others used the principles during preliminary discussions with community committees and working groups who were involved in the development of a community health centre. Some participants referenced the use of other sections of the report for the development of foundational planning documents, including the section on integration processes, strategies and models. However, while all participants acknowledged the importance of evaluation, few of the programmes in which they were involved included evaluation as a foundational process, and hence, that section of the report was not generally being used.

Two case studies further exemplify how the knowledge synthesis has shaped planning and decision-making around health services integration within a large provincial health authority.

Case study 1: Community Health Centres

Community health centres use a primary health care model that promotes health and wellness. Guiding principles include a culture of integrated services across the care continuum, cooperation and team work for the provision of services, interaction of all people involved to provide quality care, and access to programs and services that address individual and community needs, values, lifestyles and cultural diversity.

The strategic direction for community health centres is developed within a provincial department specifically mandated to plan system changes that would apply to all provincial health centres. This group used the knowledge synthesis to provide a conceptual foundation of integration and contribute to a guiding framework. "The value that the synthesis has had is that it has made us think and consider carefully what it is that we are trying to see in this work that we are doing." It also helped "understand that there isn't a single way of looking at integration or defining it, there are multiple ways of doing that."

The individuals tasked with making health centres a reality in their communities use the knowledge synthesis to promote discussion and consensus with stakeholders to create a shared vision of what is meant by integration and how it might be accomplished. At an inner city community health centre, the relevant key principles were applied at the micro level to build relationships among various programmes to support integrated patient focused care. A tour of the centre by the provincial health board impressed them with

the aspect of programme integration rather than just co-location. During the planning stage of a community centre that will serve a town and its surrounding rural population, we were told that, "I was using them [articles, principles] more deliberately when I was introducing concepts like integration and coordinated services, community involvement in decision making." The knowledge synthesis and 10 key principles provided the planner with "evidence if people had questions about why do we have to work at relationships, what difference would that make, and what kinds of outcomes could we achieve."

Case study 2: integrated seniors health portfolio

Integrated Seniors Health is a newly formed portfolio which integrates clinical services for seniors across the care continuum including acute care (for example, Geriatric Assessment & Rehabilitation Program, a convalescent unit), home care, supportive and facility living, transition services, specialized geriatric services and end-of-life care. All these departments report to one Executive Director and operate under an integrated budget. The portfolio also manages sub-acute care contracts (for example, Regional Community Transition Programme beds) and contracts for other community services (for example, Comprehensive Community Care for the Frail Elderly, day hospitals). In addition, the portfolio is mandated to work with community groups and associations that interact and provide services and support to seniors.

The vision for the portfolio is to create a tighter, cohesive group of clinical services for the seniors flowing between the portfolio services, to have the clinical frontline people identify as a single, collaborative, interprofessional team rather than as healthcare providers in a particular department, and to provide the team with the support to think from the client perspective despite organizational structures that may act as barriers. "We wanted to think of what integrated seniors health can be. It isn't just a title of a portfolio; what we wanted to do was have people really think about how we look at our work and what can we do because we are all within one portfolio to live that notion [of integrated services for seniors]."

To advance that vision, one of the strategies was a retreat of the leadership team. At the retreat, the leader "used these principles [10 key principles reported in 35] and asked my leadership team how people felt we were doing in terms of how we would measure up." During our interview, the interviewee used the principles to frame the portfolio's progress and challenges. The knowledge synthesis was further used to gain "a common understanding of integration ... [it] makes us think about how we might move towards improving what we do for the clients we serve."

Gaps in the integration knowledge synthesis

The key information gap identified by interview participants related to a lack of detail on 'how to' use strategies, tools and processes that would lead to successful integration. This included guidance on how to break down system barriers or how to achieve integration in the context of big complex systems. They would have found it helpful to have a list of questions to be considered when developing and implementing an integrated health system. More specific information gaps also emerged such as how to engage stakeholders, build relationships and communicate appropriately across target audiences. On a more strategic level, participants were lacking information on how to know if they have achieved integration or if integration can exist if it is only partially implemented. Some desired more information on integration for rural and remote communities. Overall, it was felt stories that make integration come alive would be helpful, 'Some of the stakeholders can't see how it lives operationally so maybe that's what is needed, more stories of what it looks like.'

Overall utility of the knowledge synthesis

Participants stated that the knowledge synthesis has impacted their planning and implementation process 'in a good way' and 'is an important piece.' They do not solely rely on information from the knowledge synthesis but also access other peer-reviewed literature, historical documents, and draw on personal knowledge and the experience of colleagues.

Overall, the participants tended not to use the full report [34] instead referring to the less dense, more accessible articles [33, 35]. When asked what would make knowledge syntheses more user friendly, they reported a preference for articles such as those noted above, one page summaries in plain language (with reference to more detailed findings so the reader is able to investigate further if needed) and case studies.

Discussion

A number of authors have stated that in order to promote the use of evidence in health systems planning decisions, it must be developed as a collaborative effort by decision makers, planners, researchers and other stakeholders [1, 39]. The findings must be accessible,

not only available for viewing but also comprehensible and in a format that allows fast and easy reference [10].

This study verified how a recent knowledge synthesis on health systems integration is being used in a large provincial health authority. The present study confirms that planners and decision makers access the knowledge synthesis and apply it to the planning and implementation of integrated service delivery models with an aim to improve patient care and outcomes. The information from our knowledge synthesis is being used by those involved in the strategic direction of the provincial healthcare organization and by those tasked with the operationalization of integration at the provincial level or a local level, although in slightly different ways. Planners in the present study used the information for a range of purposes. For example, during the early planning stages of service integration, the knowledge synthesis helped clarify integration concepts and areas that needed to be considered for successful integration. This facilitated common understanding and goal setting amongst all the stakeholders including community and patient groups which were expressed in an integration framework. When questions arose in the later, more operational planning stages, the framework allowed the stakeholders to keep discussion and decisions grounded within the collaboratively identified goals. At the operational level, the 10 key principles helped to drill down into strategies for specific integration areas, identify gaps and prioritize action. It also fostered discussion about specific outcomes to be achieved. This constitutes a marked difference from earlier planning approaches used within the health authority. Evaluation findings from two previous projects reported limited integration success which was attributed to a lack of planning focus on creating common meaning or understanding of integration [26, 28], lack of consistent communication about the intent of integration and anticipated outcomes [27, 28] and a lack of attention to key aspects of integration such as clinical and community integration [26, 27]. Overall, using the knowledge synthesis has created a new, more consistent planning approach across portfolios and generated alignment within the provincial health authority in understanding and adopting the key principles of integration enhanced quality of care and patient outcomes.

It was of interest to note that only one of the interview participants was involved in the development of the knowledge synthesis. All other participants learnt about the knowledge synthesis through colleagues in their department or through presentations or events where the findings of the knowledge synthesis were highlighted. Also, while the knowledge synthesis originated from work conducted around community health centres, it is now being used by a number of portfolios in the provincial health authority with responsibility for service integration such as Clinical Networks, Community Health Centres, System Design Support, Strategic and Integrated Service Planning and Seniors' Health.

Dobbins and colleagues [25] have argued that knowledge syntheses can significantly impact health policy decisions as long as the topic is relevant and policy setting occurs in an environment that values research evidence. The wide uptake of the information across the organization attests to the relevance of this knowledge synthesis. This can likely be attributed to the close collaboration between researchers, decision makers and planners in the development of the knowledge synthesis as well as in the interpretation and validation of the findings and the broad knowledge base covered by the synthesis. The review synthesised health and business knowledge and identified 10 key principles which can guide the development of appropriate strategies for planning and implementing successfully integrated health care systems. The evidence comprising the knowledge synthesis originate from several jurisdictions including the US, Canada, UK, Australia/New Zealand, and Europe. This combined with the use of the knowledge synthesis to inform or evaluate integration efforts by healthcare organizations outside the provincial health authority [for example, 40, 41] would indicate a wider applicability and lessons for the future of integrated care. From the inception of the knowledge synthesis, our partners were able to guide the areas of focus and provide feedback along the way. This stakeholder participation approach enabled us to go beyond a typical academic review and integrate the practice experiences of knowledge users in the review. This has resulted in a high quality product that is practice-relevant with information being applicable across stakeholder groups and settings. Furthermore, the knowledge synthesis has created capacity within a large provincial health authority for integrated service planning by helping create a common language and shared understanding of integration, its core concepts and how to approach planning and implementation for integrated health services. It is recognized that decision makers use a deliberative process to combine colloquial knowledge and academic evidence [22] and the authors conclude that the current knowledge synthesis users applied that process to their integration efforts with the aim of enhanced quality of care and improved patient outcomes. This is significant given the challenges associated with planning and implementing integrated health services.

Conclusions

The researchers are pleased with the uptake of the integration knowledge synthesis by decision makers,

planners and managers. Key information from the knowledge synthesis has found its way into a number of strategic and operational planning documents for integrated health systems. We attribute this positive uptake to our early involvement of stakeholders in the knowledge synthesis process and the fact that our knowledge synthesis evolved from an imminent need identified by decision makers in the organization. Also, the dissemination strategy focused on user-friendly articles and ongoing communication with the appropriate knowledge users. Given the provincial work of most of the interview participants, the uptake of research evidence into health policy and system design has great potential to influence health services delivery for over three million people. The dispersion of the knowledge synthesis and articles and adoption of the 10 key principles for successful health systems integration outside the provincial network indicates a universal applicability and lessons for the future of integrated care.

This study adds to the growing literature about the positive impact knowledge syntheses can have on evidence informed decision making by planners and policy makers [1, 17, 42]. The production of knowledge synthesis must be supported by decision makers, planners and funders by identifying what information is needed and by ensuring resources are available to undertake the research. Ongoing collaboration among decision makers, planners, funders and researchers is necessary to make certain the knowledge is timely and the findings shared with the appropriate knowledge users. The current project demonstrated that such information is effectively used if it is relevant and accessible to those who need it and can greatly enhance the capacity for integrated service planning within organizations with a goal to improve quality of care and patient outcomes.

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