Rapid Synthesis

Examining the Role of Coaching in Health-system Transformations

8 January 2020

RISE

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Rapid Synthesis:
Examining the Role of Coaching in Health-system Transformations
90-day response

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Rapid-Improvement Support and Exchange

RISE's mission is to contribute to the Ontario Ministry of Health's 'one window' of implementation supports for Ontario Health Teams by providing timely and responsive access to Ontario-based 'rapid-learning and improvement' assets.

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Timeline

Rapid syntheses can be requested in a three-, 10-, 30-, 60- or 90-business-day timeframe. This synthesis was prepared over a 90-business-day timeframe. An overview of what can be provided and what cannot be provided in each of the different timelines is provided on McMaster Health Forum's Rapid Response program webpage (www.mcmasterforum.org/find-evidence/rapid-response).

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Conflict of interest

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Merit review

The rapid synthesis was reviewed by a small number of policymakers, stakeholders and researchers in order to ensure its scientific rigour and system relevance.

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KEY MESSAGES

Questions

- What is the role of coaching in implementing health-system reforms at different levels (i.e., interorganizational, organizional and practice)?
- What does coaching look like in the literature and in practice?
- What is needed and what exists in Ontario (and abroad) to support Ontario Health Teams (OHTs)?

Why the issue is important

- OHTs are being introduced to provide a new way of organizing and delivering care that is more integrated from the perspective of the patients in their local communities, and that achieves measurable improvements in key quadruple-aim metrics of improving care experiences and health outcomes at manageable per capita costs and with positive provider experiences.
- Approved OHTs will be expected to proceed quickly with implementing the transformation plans
- To inform the design of an implementation coaching infrastructure for these OHTs, we have undertaken a rapid synthesis about the role of coaching in implementing health-system reforms.

What we found

- What is the role of coaching in implementing health-system reforms at different levels?
  - Coaches' roles across all three levels (i.e., interorganizational, organizational and practice) consist of assessing the current state, defining goals, identifying problems, and implementing solutions.
  - At a practice level, coaching includes drawing on tools such as audit and feedback and chart reviews to improve patient care, whereas at an interorganizational level, coaching includes facilitating communication and relationships between organizations involved in the transformation process.
- What does coaching look. like in the literature and in practice?
  - Coaches are organized differently depending on the level at which they work, with more defined organizational forms and more frequent check-ins at the practice level, and less defined organizational forms and 'embedding' a few days a week for interorganizational coaches.
  - Both the literature and key informants agree that coaches should possess a similar set of skills regardless of the level at which they work, including relationship building and managing, flexibility, project management, change management, and co-design. However, project management tended to be emphasized more at the practice level while relationship building and management as well as co-design tended to be emphasized at the interorganizational level.
  - While primary studies and even systematic reviews have examined the effects of practice facilitation and academic detailing, very few coaching initiatives at the organizational or interorganizational level are formally evaluated. To evaluate coaching at the interorganizational and organizational levels, key informants suggested the use of surveys to track perceived changes in attitudes, skills and behaviours.
- What is needed and what exists in Ontario (and abroad) to support OHTs?
  - Key informants emphasized that coaching needs will evolve over time and that there was a need to first identify those teams that would benefit most from coaching, such as those with the most complex governance structures and those OHTs experiencing difficulty in understanding and articulating a coherent vision of integrated care.
  - Key informants drawn from OHTs had varied views on the potential benefits of coaching, with some expressing that investments in coaching at the interorganizational level could be better used elsewhere, such as making human resources available for approved OHTs, while others indicated that they could benefit from coaching, particularly at interorganizational levels, to assist in clarifying and moving forward with collaborative governance arrangements.

QUESTIONS

- What is the role of coaching in implementing health-system reforms at different levels (i.e., interorganizational, organizational and practice)?
- What does coaching look like in the literature and in practice?
- What is needed and what exists in Ontario (and abroad) to support Ontario Health Teams (OHTs)?

WHY THE ISSUE IS IMPORTANT

OHTs are being introduced to provide a new way of organizing and delivering care that is more integrated from the perspective of the patients in their local communities, and that achieves measurable improvements in key quadruple-aim metrics of improving care experiences and health outcomes at manageable per capita costs and with positive provider experiences**.** This change requires significant adjustments to the way in which care is organized and provided, as well as the ways in which organizations and providers across the system interact with one another.

To become an OHT, teams were invited to assess their readiness and begin working to meet key readiness criteria by completing a self-assessment form. Teams who submitted self-assessment forms were classified into three groups: 1) proceeding to full application; 2) in development; and 3) in discovery. Thirty-one teams were accepted to proceed to full application and have recently submitted these for evaluation by the Ministry of Health. The ministry has announced in December 2019 that the applications of 24 teams have been approved. Approved OHTs will be expected to proceed quickly with implementing the transformation plans.

Box 1: Background to the rapid synthesis

This rapid synthesis mobilizes both global and local research evidence about a question submitted to the McMaster Health Forum's Rapid Response program. Whenever possible, the rapid synthesis summarizes research evidence drawn from systematic reviews of the research literature and occasionally from single research studies. A systematic review is a summary of studies addressing a clearly formulated question that uses systematic and explicit methods to identify, select and appraise research studies, and to synthesize data from the included studies. The rapid synthesis does not contain recommendations, which would have required the authors to make judgments based on their personal values and preferences.

Rapid syntheses can be requested in a three-, 10-, 30-, 60- or 90-business-day timeframe. An overview of what can be provided and what cannot be provided in each of these timelines is provided on the McMaster Health Forum's Rapid Response program webpage (www.mcmasterforum.org/find-evidence/rapid-response)

This rapid synthesis was prepared over a 90-business-day timeframe and involved five steps:

1) submission of a question from a policymaker or stakeholder (in this case, the Ontario Ministry of Health);
2) identifying, selecting, appraising and synthesizing relevant research evidence about the question;
3) conducting key informant interviews;
4) drafting the rapid synthesis in such a way as to present concisely and in accessible language the research evidence; and
5) finalizing the rapid synthesis based on the input of at least two merit reviewers.

While this reorganization is new in Ontario, similar efforts have been undertaken in other jurisdictions, many of which have employed "coaches" to help manage different aspects of the transition. In addition, many past initiatives within Ontario have used coaches to help facilitate health-system reforms, including their use in Health Quality Ontario's (HQO) Adopting Research To Improve Care (ARTIC) program, Improving and Driving Excellence Across Sectors program (IDEAS), and the Emergency Department Process Improvement Program (ED PIP).

Coaches can be deployed at an interorganizational, organizational or practice level to support identifying problems, clarifying options to address those problems and implementing solutions. However, our understanding of how, why and under what conditions coaching is effective in supporting health-system reform remains limited.This is further complicated by the lack of a consistent definition used for coaching, and the diversity of approaches that are used to support change management. To inform the design of an

implementation coaching infrastructure for these OHTs, we have undertaken a rapid synthesis about the role of coaching in implementing health-system reforms.

WHAT WE FOUND

We found three systematic reviews and 14 primary studies relating to the three questions. To gain insights from those who have researched coaching, provided coaching services, and been the recipients of coaching across all levels of the health system, we also conducted 23 key informant interviews. These interviews included individuals working as policymakers in Ontario, managers of organizations, researchers and those working in six Ontario Health Teams. Finally, we conducted a jurisdictional scan of websites for local, national and international organizations that have experience providing coaching at any of the three levels.

In reviewing the literature and in speaking with key informants, no clear definition of coaching emerged. A number of different dimensions to coaching were identified including coaches as practice and outreach facilitators, knowledge brokers, problem-solvers and consultants. Similarly, no one model of coaching emerged that should be reproduced in Ontario. Instead, many of the findings included in this synthesis address what the role of the coach is (or could be) at different levels (e.g., interorganization, organization or practice), and the range of factors identified in the literature and by key informants that have led to success. To answer each of the questions below, we have divided the findings based on the three levels at which coaching can take place (e.g., interorganization, organization or practice level).

Box 2: Identification, selection and synthesis of research evidence

We identified research evidence (systematic reviews and primary studies) by searching Health Systems Evidence (www.healthsystemsevidence.org) and PubMed in October 2019. In Health Systems Evidence, we used the following search strategy: (coach* OR facilitate*) AND implementation. In PubMed, we ran two searches. The first was: (practice facilitation OR outreach facilitation). The second search was: (coach* OR facilitate*) AND implementation. In addition, we hand searched the journal Implementation Science as well as asked key informants for suggestions about relevant literature.

The results from the searches were assessed by one reviewer for inclusion. A document was included if it addressed one or more of the questions posed in the rapid synthesis.

For each systematic review we included in the synthesis, we documented the focus of the review, key findings, last year the literature was searched (as an indicator of how recently it was conducted), methodological quality using the AMSTAR quality appraisal tool (see the Appendix for more detail), and the proportion of the included studies that were conducted in Canada. For primary research (if included), we documented the focus of the study, methods used, a description of the sample, the jurisdiction(s) studied, key features of the intervention, and key findings. We then used this extracted information to develop a synthesis of the key findings from the included reviews and primary studies.

Question 1: What is the role of coaching in implementing health-system reforms at different levels (i.e., interorganizational, organizional and practice)?

Key messages

- Across all three levels (i.e., interorganizational, organizational and practice) coaches' roles consist of assessing the current state and assisting the stakeholders in identifying problems, defining goals and implementing solutions.
- The required expertise of the coach also varied across the three levels, and while knowledge of change management was viewed as central to all three levels, key informants emphasized the importance of specific knowledge about the change being implemented as being critical for practice facilitation, while a generalist perspective was viewed as central to effective interorganizational change.
- At a practice level, coaching includes drawing on tools such as audit and feedback and chart reviews to adjust providers' practices, whereas at an interorganizational level, coaching includes facilitating communication and relationships between organizations involved in the transformation process.

Interorganizational level

At the interorganizational level, coaches support similar functions to those at the organizational level, while also addressing challenges posed by shared governance, multiple organizational policy environments and collaboration. This can include facilitating discussions between organizations, particularly around defining shared goals and common ways forward. Key informants also stressed that: coaches can build teams' capacities for change management, systems-level thinking, and managing future implementation goals; facilitate discussion to ensure smaller and less well-resourced partners in interorganizational teams have a voice in decision-making processes; and work towards a "level setting" to address starting-point disparities in the exposure of member organizations to change-management processes. One key informant with prior experience in implementing Ontario health reforms noted that coaching or other supports can only be successful if financing, legislation and policy are aligned. This informant also noted that generalist supports may be more effective than specific coaching interventions, as the latter requires interorganizational leaders to interface with multiple individuals in different support roles, and therefore they must easily be able to adapt their approaches. Generalist supports need to be backed by access to expert and topic-specific resources as needed.

One primary study evaluated the implementation of large primary-care networks.(1) Coaching activities across networks included biweekly interactive lectures and the establishment of learning collaboratives.(1) Across the five networks success factors included: the importance of interdisciplinary collaboration and opportunity to share experiences with other teams; the need for dynamic design and iterative evaluation; and consistent engagement with stakeholders.(1) Another primary study highlighted the use of the Interactive Systems Framework for Dissemination and Implementation, which consists of a support system working with the delivery system to enhance implementation capacity.(2) The framework includes four components that should be put in place: 1) tools (e.g., informational resources designed to organize, summarize and communicate knowledge to those driving change); 2) training (e.g., instructional activity that promotes the acquisition of knowledge such as how to do a needs assessment); 3) technical assistance (e.g., providing external support that can help to select the right innovation, suggesting adaptations to enhance fit, and building implementation and evaluation skills); and 4) quality assurance (e.g., use of tools to assess implementation and to inform future direction).(2)

Organizational level

At the level of an organization, key informants provided both local and international examples of enabling change. One international key informant described using a consultant model of coaching for organizational change. They described working closely with executives in an organization over a six-week to six-month period, dependent on how complex the change was, to support the executive to adopt the necessary skills to implement a change. Locally, key informants in Ontario described how some of the projects initiated by the ARTIC program were focused at the level of enabling change at an organizational level, such as the ASP ARTIC CHILL program which established antimicrobial stewardship programs in community hospitals. Other initiatives under ARTIC focused on implementing new organizations, including Rapid Access Clinics for Musculoskeletal Care and Primary Care Collaborative Memory Clinics. In both instances key informants identified both credible leadership and structured implementation plans as being critical to enabling change – both of which can be supported by coaches. Another local key informant described the Provincial System Support Program (PSSP), affiliated with the Centre for Addiction and Mental Health. The PSSP uses a team-based approach to organizational and interorganizational coaching and other implementation supports, where implementation specialists are joined by evaluation specialists and knowledge brokers.

Crucial tasks of coaches at the organizational level reported by key informants included supporting plan-do-study-act cycles and problem-solving by researching a problem and bringing new solutions to the discussion table. Key informants also stressed that coaches can "ask the right questions" to help organizational leaders think through problems and options; and can engage organizations in co-design and co-development processes. These findings were also supported by one older primary study which found the role of coaches

was to engage in the identification of problems, and communicate with internal champions and outside stakeholders to develop solutions. The study highlighted four success factors: 1) motivation from the organization to change; 2) prioritization of the coaching role; 3) contact with sites; and 4) a match between the area of change and the coach.(19) Another primary study examined the role of implementation coaching in driving organizational change and found that process began with identifying a set of common principles and then unifying the organization around them. The process then continued with coaches facilitating discussions about what each individual's role and contribution to change would be. Coaches then undertook efforts to build change-management capacity and trouble-shooted as the organization began to work towards its goals.(3) This study highlighted staff turnover as being a limiting factor for change, noting that because this was a multi-year project, when people left their position, it took time and effort to bring new individuals up to speed and to establish trust with the group.(3)

Practice level

We spoke with three key informants who were actively involved in practice facilitation and three in academic detailing (which is a form of continuing medical education typically undertaken with a clinician one-on-one in their place of work). With regards to practice facilitation, all three key informants reported it as a cost-effective means of changing a provider's practice. This finding was re-affirmed in a cost-consequence analysis which found an annual savings of $3,687 per physician and of $63,911 per facilitator, for practice facilitation to reduce inappropriate and increase appropriate screening tests in primary care in Ontario.(4) The three key informants emphasized that the majority of research in this area had been conducted in primary care (and most frequently, with physicians in primary care), but noted there were also some successful examples working with acute-care providers and interdisciplinary teams. Key informants identified success factors at the practice level as: working with a manageable number of professionals, creating personal relationships between the facilitators and the professionals, and making long-term investments to allow change to take shape. These success factors were affirmed in an older medium-quality review as well as in one recent primary study, which also added the importance of stable staffing.(5; 6) The review found that practice facilitation almost always included an element of audit and feedback, as well as consensus building and goal setting.(6) Other common elements include implementing reminder systems, regular meetings focusing on quality improvements, and chart review (or chart audit).(2) One key informant with experience in academic detailing also called attention to the need for contextual sensitivity, noting that rural and remote practices need detailing that is relevant to the resources they do and do not have available. This same informant noted that time demands are a major barrier for engagement, even for clinicians who are otherwise interested.

Other studies and reviews reinforce these findings and shed light on additional detail of effective coaching at the practice level. One recent medium-quality review found that external change agents used a range of approaches to create change at the practice level, including academic detailing, integrated audit and feedback and practice facilitation.(1) The review found that practice facilitation with consistent, tailored follow-up is a critical component of effective practice-level change.(1) One older primary study found that at the practice level, coaches' first step was an audit and feedback approach to collect meaningful data that could be shared with providers.(9) Three primary studies reported that practice facilitation led to improvements in guideline adherence, consistency in prescribing practice and alignment with the chronic care model.(7-9) A second systematic review examined the use of practice facilitation in primary-care settings to improve care for a range of chronic diseases. The review found process measures improved by an average of 8.8%.(5) These findings were distinct from academic detailing alone, which was found in the same review to be ineffective without intensive follow-up. However, this was contradicted in an older high-quality review which found that academic detailing (or educational outreach) improved the care provided to patients.(10) The first review also noted that change agents employed a range of methods including information technology tools such as automated reminders and alerts for practice-level change, as well as regular phone calls and mailing educational material.(11) However, the review found that both of the latter strategies were ineffective when implemented alone.(11)

Question 2: What does coaching look like in the literature and in practice?

Key messages

- Coaches are organized differently depending on the level at which they work, with more defined organizational forms and more frequent check-ins at the practice level, and less defined organizational forms and 'embedding' a few days a week for interorganizational coaches.
- Both the literature and key informants agree that coaches should possess a similar set of skills regardless of the level at which they work, including relationship building and managing, flexibility, project management, change management, and co-design. However, project management tended to be emphasized more at the practice level while relationship building and management as well as co-design tended to be emphasized at the interorganizational level.
- Coaches must be seen as being credible to physicians and other providers at the practice level (which often necessitates having a relevant clinical background), however at the organizational and interorganizational level they must also be seen as credible by executives, health administrators and other types of health system experts.
- While primary studies and even systematic reviews have examined the effects of practice facilitation and academic detailing, very few coaching initiatives at the interorganizational or organizational level are formally evaluated. To evaluate coaching at the interorganizational and organizational levels, key informants suggested the use of surveys to track perceived changes in attitudes, skills and behaviours.

To answer this broad question, we organized our findings according to three sub-questions: 1) how are coaches organized to support change?; 2) who are the coaches and what are their competencies?; and 3) how are coaches evaluating their own interventions?

How are coaches organized to support change?

Coaching at an interorganizational level was the least well-defined and key informants spoke about coaching through the lens of knowledge brokering or facilitation. They described working either individually or with a small (three person) team to deliver support. Coaches at this level typically begin with in-person engagement, and may use tools including gap analysis, surveys and mapping of current processes, along with less structured discussions about current practices and objectives. Modes of delivery included in-person sessions, telephone and web conferences, and email communication. One key informant described regional implementation teams serving organizations and interorganizational networks, where each team included specialists in implementation as well as evaluation. Another described site-specific "project coordinators" deployed during previous provincial health-reform efforts.

At the level of the organization, most key informants spoke about leadership and change-management coaching either through a train-the-trainer model (e.g., a group of the organization's employees receive training both on content and how to teach this training content to others) or by using an external agent. In both models, key informants highlighted the use of intensive sessions with follow-up teleconferences. One recent primary study compared the use of a train-the-trainer model and external change-agent model. The study found greater consistency across organizations that had employed an external change agent, whereas those that relied on a train-the-trainer model varied in whether or not they were successful. The study found that many of the chosen internal trainers did not possess the prerequisite skills and personal characteristics needed to lead change. Further, they varied significantly in their confidence and willingness to bring process-improvement strategies to their organization.

Key informants described having the clearest picture of what coaching supports could look like at the practice level. One facilitator typically works with a practice or numerous practices to manage change. This includes a range of both in-person and virtual consultations whereby facilitators assess existing workflow and performance data to identify where changes towards the desired goals can be made. They then work with the teams through a series of meetings and feedback mechanisms to determine how the implementation of a new practice is progressing, and troubleshoot along the way. Practice facilitators may work with numerous

practices at once to facilitate the same or different changes. For example, one primary study conducted in Ontario used 16 practice facilitators to support the Quality Improvement and Innovation Partnership learning collaborative over a 15-month period.(12) Two other primary studies reported that practice facilitators worked with 12-15 practices at a given time.(9) A fourth primary study found that the average practice facilitator supported six primary-care teams, however noted that restrictions on time spent with each team was a significant barrier to change.(5) Practice facilitation was reported to begin with more intensive sessions such as three two-day meetings whereby facilitators are able to get a sense of the practice and meet with all the professionals.(12) After the intensive sessions, facilitators tend to have monthly "check-ins"to determine how the work is progressing.(12) One of the studies reported that these 'check-ins' occurred both in-person and over the telephone, lasting an average of 46 minutes.(13) Another recent primary study found that two external facilitators worked half-time to support four health teams (10-46 clinicians) over a year-long transition to an interprofessional primary-care team. Another recent primary study examined practice facilitation to implement evidence-based guidelines and found facilitators visited practices a total of 13 times throughout the year they were employed.(14) Facilitators tailored their strategies based on five criteria: policy environments; patient needs; site characteristics; leadership; and competing priorities.(14)

Who are the coaches and what are their competencies?

Key informants agreed that coaches have a core set of interpersonal skills across all three levels (e.g., interorganizational, organizational and practice). Coaches need to: skillfully build genuine, trusting relationships with healthcare providers and leaders; manage conflict; and foster collaboration. Flexibility and persistence are also important attributes. Effective coaches adapt established frameworks and approaches to the specific context of a given team or practice. Beyond interpersonal skills and attributes, coaches must also be confident project managers with expertise in implementation and co-design. Finally, coaches either need expertise in the area in which they are providing coaching (particularly for practice facilitation and academic detailing), or need to know where they can access and partner with experts in the case of inter-organization level. Sometimes, this may require collaboration: for instance, implementing digital tools in a clinical context may require support from coaches with expertise both in clinical practice and information technology.

Coaches need to have legitimacy with individuals and organizations that they are coaching. At the practice level, key informants suggested that clinicians may be perceived as more legitimate coaches than non-clinicians; correspondingly, at the leadership level, coaches may have greater legitimacy if they have experience in high-level health administration. There are also sector-specific concerns. Some key informants noted that clinicians and leaders in primary and community care may assume coaches associated with hospitals do not understand their context. Coaches may also need local knowledge in order to refer individuals and organizations to appropriate trusted resources. Finally, organizational leaders may have more trust in coaches who are not perceived to report directly to the government.

One recent medium-quality review found that coaches at the level of the individual practice were quality-improvement experts trained in change implementation.(2) The review reported that other facilitators included dietitians, practice assistants, research staff, and practice-enhancement assistants.(2) One primary study found competencies for practice facilitation include: flexibility; building relationships; leveraging experts; and building capacity and efficiency among providers.(14) Another recent primary study from Quebec found that practice facilitators tended to take on two different roles, either implementation-oriented facilitation (which focuses on change and project management) or support-oriented facilitation (which focuses on improving group effectiveness during implementation).(15) Finally, studies guided by the Interactive Systems Framework for Dissemination and Implementation identify that the 'support system' (including coaches) require two types of implementation capacities: 1) general (expertise in implementation processes drawing from implementation science) and 2) innovation-specific (expertise in the type of 'innovation' or change being implemented).(2)

How are coaches evaluating their own interventions

While key informant interviews underscored the importance of evaluating coaching interventions, relatively few were formally evaluating their coaching practices. A key informant from an international academic detailing organization described a hierarchy of evaluation processes, from measurements of clinical outcomes (if the timeframe allows for reasonable expectations of change), to objective measurements of provider behaviour change, to self-reported attitudes, knowledge and behaviours. Key informants describing their work in practice facilitation were the only ones who discussed evaluation at the level of clinical outcomes. Key informants involved in coaching largely reported methods based on self-reporting including perceived change in attitudes, skills and behaviour. Most key informants who had provided coaching services reported soliciting qualitative feedback from clients, and noted that this feedback should be obtained throughout the coaching process rather than only once the intervention is complete. One key informant suggested hosting quarterly sessions to debrief on the perceived impact of the interventions thus far. The key informant described that these offered the opportunity to both informally evaluate their own work as well as to include a degree of flexibility in planning for the remainder of implementation coaching. Some key informants also described using surveys to systematically gauge the perceived impact. Important qualitative changes were suggested to include satisfaction and self-efficacy of those receiving coaching.

Question 3: What is needed and what exists in Ontario (and abroad) to support OHTs?

Key messages

- Key informants emphasized that coaching needs will evolve over time and that there was a need to first identify those teams that would benefit most from coaching, such as those with the most complex governance structures, those ready to embrace coaching, or those OHTs experiencing difficulty in understanding and articulating a coherent vision of integrated care.
- Key informants drawn from OHTs had varied views on the potential benefits of coaching, with some expressing that investments in interorganizational coaching could be better used elsewhere, such as making human resources available for approved OHTs, and others indicating that they could benefit from coaching, particularly at interorganizational levels, to assist in clarifying and moving forward with collaborative governance arrangements.
- At a practice level there is a focus on skill-building with many organizations having developed resources to help facilitate change in an individual practice, however in moving up the levels the distinction between coaching and consulting becomes increasingly blurred.

What is needed in Ontario?

Key informants suggested that implementation coaching for Ontario Health Teams should focus on helping them to achieve the quadruple aim of improving patient outcomes and experience at a lower per capita cost while improving provider experience. It was suggested that coaching needs would vary over time, with initial need highest at the interorganizational level. Critical initial needs at the interorganizational level will include developing good working relationships among organizations within an OHT, overcoming traditional power dynamics (e.g., large hospital versus a community-based organization), building an understanding of the OHT model and its vision, and breaking down the process of OHT implementation into achievable steps. Additional early needs identified by key informants include: developing shared governance and decision-making models; engaging physicians and primary-care providers; integrating home and community care; and addressing privacy, data and information technology concerns. At the organizational level, it was suggested that teams could benefit from building capacity for inter-sectoral collaboration. Key informants noted that smaller organizations especially may lack capacity and resources to devote to OHT implementation, and will need support to create space for these changes. It was also noted that coaching can help ensure smaller organizations have an equal voice in the OHT implementation process. Key informants suggested that the initial implementation phase may have a long duration given the complexity of the model and the number of players involved.

To get started, key informants pointed to the need to develop a strategy for identifying teams most in need of coaching, such as those with the most complex governance structures, those most receptive to receiving coaching, and those OHTs experiencing difficulty in understanding and articulating a coherent vision of integrated care.

It was noted that previous implementation efforts have had mixed results, particularly at the interorganizational level, and that evaluations will be needed to demonstrate the value of coaching. Stakeholders noted that OHTs will have intensive reporting requirements and it is important that evaluation of coaching is not burdensome. It was also suggested that evaluation will need to consider the relative impact of multiple supports on obtaining a given outcome. Key informants also suggested that highly specific targets for coaching will need to be defined.

To get the perspective of those working within the OHTs, we spoke with individuals from six geographically dispersed teams that had submitted full applications. The individuals ranged in their roles with teams, however all had been central to planning efforts and to the development and submission of the full application. Teams varied significantly in their opinions about the extent to which they thought bringing in a coach would help. While many agreed that it would be helpful to have someone to facilitate discussions at the interorganizational level, with one team specifying that it would be particularly helpful to sort out questions about governance and financial arrangements, others saw it potentially adding to the confusion and questioned whether ministry resources could be better spent. Teams that did support the idea of coaching supports for teams articulated three roles for coaches that they saw as being beneficial: managing information; problem solving and navigating supports; and facilitating discussions between organizations. Even those teams that supported the use of coaches spoke about the need for coaches to be an additional resource to whom they could offload questions, and stated explicitly that "they can't add more work to our plates." One key informant noted that this is consistent with coaching at the practice level, warning of the need for changes to be easily integrated with existing workloads.

With regards to who the coach should be, key informants from the OHTs expressed that they should be generalists, but needed to have an excellent grasp of the Ontario health system and the vision that the ministry and team are working towards, with one key informant stating, "if the 24 teams are coached to 24 different ends that this will be a big failure." Key informants also agreed on the need for coaches to have credibility among both health-system leaders and physicians, and supported finding someone who had experience working within valued-based funding mechanisms.

What types of supports already exist in Ontario and abroad?

In conducting a jurisdictional scan, we found that Ontario had significant expertise in facilitating practice-level change, particularly as it pertains to primary care. In addition, HQO and their experience through the ARTIC program of interorganizational coaching and change management is a significant asset to the province. In exploring the development of a coaching program for OHTs, it is critical to harness this existing knowledge base. Coaching initiatives identified at the national level found greater diversity of approaches across the three levels, however, particularly at the organizational level, there was significant blurring between implementation coaching and consulting, as well as a focus on executive leadership and lean coaching. Internationally, there was a shift towards organizational and interorganizational coaching, however this is likely a result of sampling, whereby practice-level coaching may have less of an international internet presence. The three U.S.-based interorganization coaching examples may also be a good resource for lessons learned given their experience with U.S. accountable-care organizations (ACOs), which have many similarities to the new OHT model.

In conducting the jurisdictional scan, some common themes emerged across the exemplars uncovered at each of the three levels. At the interorganizational level, many coaching resources act as hubs for collecting and disseminating information and best practices to various organizations that have similar goals. Some resources position themselves as being third parties that can connect otherwise independent organizations to enable the

emergence of 'learning systems'. This idea of creating linkages was most apparent with the U.S.-based organizations that are supporting ACOs. Furthermore, some of the language seen at the organizational level (specifically the focus on improving patient outcomes while containing costs as well as the transition to team-based care) can also be seen at the interorganizational level.

Many services position themselves as partners in helping healthcare organizations achieve better patient outcomes and improve financial outcomes for the organization. A common theme that emerged from these services is 'change management'. Change management goes by many names, such as 'organizational development' or 'transformational change', and generally focuses on supporting organizations as their ways of operating and providing care change to realize new goals or a new vision. Another common theme that emerged was 'integrated care delivery' and 'collaborative models/decision-making'. Finally, many services advertised their ability to help organizations adopt and institutionalize team-based care by introducing both technical tools and changes in organizational culture.

At the practice level, many exemplars focus on skill-building for individual providers. Examples include training providers and administrators to make better use of electronic medical records, academic detailing to improve prescribing practices, and building capacity for quality improvement in healthcare providers. A common theme that emerged in practice-level coaching initiatives was flexibility. Many coaching services noted that they can work around providers' busy schedules and provide coaching in short periods of time (e.g., as little as 45 minutes) at providers' places of work.

Table 1: Jurisdictional scan of existing coaching assets in Ontario and abroad

Jurisdiction	Practice	Organizational	Interorganizational
Ontario	Centre for Effective Practice • Academic detailing Health Commons Solutions Lab • Population health in primary care OntarioMD • Peer leaders program Health Quality Ontario, Institute for Health Policy, Management and Evaluation, and Institute for Clinical and Evaluative Sciences • Improving & Driving Excellence Across Sectors (IDEAS)		Health Quality Ontario (now Ontario Health, Quality Business Unit) • Bundled care • Adopting Research to Improve Care (ARTIC) o Implementation supports School Mental Health Ontario • Implementation supports *(education focused)* Ontario Health Team supports for leardership, governance and accountability • Implementation supports • Quality improvement • Leadership coaching

National	Canada Health Infoway • Implementation support Dalhousie University Faculty of Medicine • Academic detailing service British Colombia Ministry of Health • Provincial academic detailing Alberta Medical Association • Physician learning program	Huron | Studer Group Canada • Leadership coaching Deloitte Canada • Rapid-learning and improvement supports ARCUS Consulting Group • Change-management coaching The Duffy Group • Quality improvement The Conference Board of Canada (Niagara Institute) • Leadership coaching	BC Patient Safety and Quality Council • Tools to advance team-based primary and community care
International		The King's Fund • Organizational development Bain and Company • Integrated care design McKinsey and Company • Organizational development Center for Creative Leadership • Leadership coaching	Center for Medicare and Medicaid Innovation • Implementation coaching *(financial arrangements)* Mathematica • Implementation coaching • Learning collaborative Center for Health Care Strategies • Learning collaborative

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APPENDICES

The following tables provide detailed information about the systematic reviews and primary studies identified in the rapid synthesis. The ensuing information was extracted from the following sources:

- systematic reviews - the focus of the review, key findings, last year the literature was searched, and the proportion of studies conducted in Canada; and
- primary studies - the focus of the study, methods used, study sample, jurisdiction studied, key features of the intervention and the study findings (based on the outcomes reported in the study).

For the appendix table providing details about the systematic reviews, the fourth column presents a rating of the overall quality of each review. The quality of each review has been assessed using AMSTAR (A MeaSurement Tool to Assess Reviews), which rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to delivery, financial or governance arrangements within health systems. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered "high scores." A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1):S8).

All of the information provided in the appendix tables was taken into account by the authors in describing the findings in the rapid synthesis.

Appendix 1: Summary of findings from systemtic reviews about coaching

Focus of systematic review	Key findings	Year of last search/ publication date	AMSTAR (quality) rating	Proportion of studies that were conducted in Canada
To review how external change agents have participated in organizational changes in healthcare practices – particularly primary-care clinics (11)	External change agents can play a key role in healthcare organizational change efforts. This agent is often the individual responsible for delivering the implementation strategy and ensuring its success in realizing organizational goals. This review included 21 studies that aim to provide information to health services and implementation researchers in designing implementation strategies that engage external change agents working in primary-care and community-based settings. Of the 21 studies included in this review, 16 used academic detailing as part of a multi-component intervention strategy. Thirteen studies integrated audit and feedback mechanisms into their intervention, while 11 used a type of practice facilitation or coaching. Studies that included practice facilitation reported significant effects in one or more study outcomes (e.g., proportion of mammograms recommended). Five studies reported employing a form of information technology or system support (IT), including automated reminders that alerted clinicians when there was an error in the system, and online forms or informational websites for participants. Two studies used regular phone calls with sites, with both revealing this strategy as ineffective. Two studies mailed educational materials to patients, with neither demonstrating a significant effect. In terms of the backgrounds of the academic detailers and external change agents, most studies employed pharmacists and pharmacologists to deliver the academic detailing. Physicians and nurses were also engaged as academic detailers. In other studies, quality-improvement experts trained in organizational change implementation served as academic detailers. These studies usually included practice facilitation as part of their intervention rather than administering only academic detailing. All studies that included practice facilitation through external change agents yielded positive effects. These findings highlight that practice facilitation with consistent, tailored follow-up is a crucial component of an effective organizational-change strategy. This effectiveness stands in contrast to academic detailing alone or detailing combined with audit and feedback, which are ineffective without intensive follow-up. Finally, while educational materials and use of audit and feedback can be important aspects of multifaceted implementation strategies, they are relatively ineffective as standalone interventions. Technology may be helpful as a system-level support but must be tailored to clinic needs.	2016	7/10 (AMSTAR rating from McMaster Health Forum)	1/21
To conduct a quantitative synthesis of the effect of practice facilitation for the adoption of evidence-based	The review included a total of 23 randomized controlled trials and controlled clinical trials that evaluated the effectiveness of external facilitators in promoting evidence-based practices. In total, 1,398 practices were included in these trials. The average number of practices taking part in each trial was 59.5.	2011	7/11 (AMSTAR rating by McMaster	3/23

guidelines in primary-care practices (6)	The majority of the trials used some form of performance measurement in preventive services as their primary outcome. Not all trials reported the qualifications of the external facilitators, but 44% were reported as being either registered nurses or masters' educated people with specific training. Other facilitators included dietitians, practice assistants, research staff, and practice-enhancement assistants. With respect to the interventions, all trials included an element of audit and feedback. Ninety-one percent included an element of consensus building and goal setting. Other common elements of the interventions included reminder systems and meetings (for quality improvement or learning collaboratives). Practice facilitators tailored the intervention to the needs of the practice in 74% of studies. On aggregate, the intervention condition is significantly favoured. The pooled estimate favours the intervention condition with an effect size point estimate of 0.56. Practice facilitation was found to increase the likelihood of evidence-based guideline adoption by 2.76 times. Some elements of practice facilitation were found to moderate the effect size. Interventions tailored to the context and/or needs of the participating practice had a significantly stronger effect size than untailored interventions. The effect size of practice facilitation was found to decrease as the number of practices per facilitator rises. Furthermore, the intensity of the intervention (defined as the average number of contacts multiplied by the average length of contact time) was found to be positively associated with the effect size of an intervention. Finally, the duration of an intervention was not found to have an effect on the effect size. The authors note that this review supports the fact that practice facilitation can improve guideline adoption related to prevention; however, practice facilitation may be more challenging to promote guideline adoption in other areas (particularly those that require more physician involvement). Furthermore, the authors found evidence of publication bias in this line of research.		Health Forum)	
To review the effects of practice facilitation in primary-care settings on processes and outcomes in chronic-disease care (16)	The review included 25 studies (12 randomized controlled trials and 13 prospective cohort studies) on practice facilitation. The outcomes of interest included process measures (including screening, diagnosis, and clinical processes) and patient outcome measures (including laboratory measures, blood pressure, hospitalizations, patient-reported chronic illness care). Eight types of chronic diseases were of interest in this review: asthma, cardiovascular disease, cancer screening, chronic kidney disease, diabetes, and chronic illness. There was no discussion of what interventions or tools were used for practice facilitation. Overall, process measures improved by an average of 8.8% and patient-outcome measures by 5.4% with practice facilitation. Across almost all areas of chronic-disease care, practice facilitation was found to impart improvements. One exception was the effect practice facilitation had on chronic kidney disease. The authors note that short study durations and the other internal and external factors at play in each included study may have influenced their findings.	2017	7/10 (AMSTAR rating from McMaster Health Forum)	Not reported
Effects of educational outreach visiting on physicians' practice behaviour and patients' outcomes (10)	This review included 69 randomized controlled trials to address the effectiveness of educational outreach visits (either alone or as part of a multifaceted interevention) compared to other interventions or no intervention. This review took educational outreach visits to include interventions often referred to as university-based educational detailing, public-interest detailing, and academic detailing. These interventions generally involve someone from outside the practice receiving the intervention coming in to provide information (which can be based on identified barriers or feedback) aimed at changing behaviours.	2007	8/11 (AMSTAR rating from McMaster Health Forum)	4/69

	Of the included studies, the majority came from North America or the United Kingdom. In 53 of the trials, the intervention was targeted at primary-care or community-based physicians. Other trials also targeted health teams comprised of: physicians, nurses and other professionals; residents and interns; nursing-home based professionals; pharmasicts or pharmacy workers; and community-based dentists. Twenty-nine trials focused on prescribing practices. Another 29 targeted common problems encountered in primary care, and 11 trials focused on changing practice behaviour towards preventive services. The authors' first comparison (educational outreach visits including educational materials versus no intervention (also including educational materials)) was informed by 62 trials. Of the trials with dichotomous outcomes, the median adjusted risk difference in compliance with desired behaviour was 5.6 % (with a range from -3% to 64%). A meta-regression of 31 trials provided no significant explanatory factor for the variation in risk differences, though it was found that educational outreach visits had a smaller effect on prescribing behaviour while trials that examined multi-component interventions that included educational outreach visits had a slightly larger effect. For 17 trials using continuous data, the median percentage change in provider behaviour was 21%. Fourteen trials that used patient outcomes generally found that educational outreach visits resulted in small or no improvements in patient outcomes. The second comparison (solely educational outreach visits versus no intervention) was informed by 34 trials. Sixteen trials with dichotomous outcomes had a median adjusted risk difference of 5% (with a range from 1% to 20%) on desired health-professional behaviour. Fourteen trials with continuous outcomes found that the interventions had a median adjusted relative percentage change of 23% (with a range from 0% to 617%). The third comparison (any intervention involving educational outreach visits versus interventions involving audit and feedback and reminders) was informed by eight trials. When comparing educational outreach visits alongside other interventions (such as audit and feedback and/or reminders and/or educational meetings) to audit and feedback alone, there is some evidence to suggest that the more extensive interventions are slightly more effective. Finally, the fourth comparison (between different types of educational outreach visits) was informed by six trials. Three trials provide inconclusive evidence as to whether educational outreach visits given to groups or individually may be more effective. One trial provides very limited evidence that presenting statistical information may be more effective than case studies. One trial found that educational outreach visits combined with telephone support may be more effective that an intervention with telephone support only. Finally, one trial found that physicians were more likely to improve their practice behaviour when educational outreach visits were conducted by physician peers, but trained practice assistants may be more effective at improving practices related to physician records.			

Appendix 2: Summary of findings from primary studies about coaching

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
To compare how practice facilitation is	*Publication date:* 2019	Facilitators involved with the HealthyHearts	HealthyHearts New York City aimed to	The interviewed facilitators described the same set of factors that influence how they tailor their facilitation strategies in both small

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
tailored to meet the needs of small and large healthcare practices (14)	*Jurisdiction studied:* New York, U.S, *Methods used:* Semi-structured interviews with facilitators, analyzed using inductive and deductive approaches	New York City project were interviewed. The project aimed to study practice facilitation in small independent practices and Federally Qualified Health Centers. These two types of practices differ significantly, notably, small independent practices have less capacity for quality improvement. Fifteen facilitators were interviewed. Thirteen facilitators worked to support small independent practices while two worked with Federally Qualified Health Centers. Most facilitators had two or fewer years of experience in their role, but all facilitators received a two-week training course and ongoing support as part of the program. The small independent practices were typically run by a single clinician with an average of four support staff. The Federally Qualified Health Centers typically had five or more clinicians, more than 20 support staff, and were part of larger organizations that are	understand how practices can implement evidence-based guidelines for cardiovascular disease management. The intervention was informed by the Chronic Care Model and patient-centred medical home, and practice facilitation was used to support implementation. Practice facilitators visited sites 13 times over the course of a year. Their tasks focused on three main goals: build capacity to use electronic health records and data to monitor and drive change; provide information related to cardiovascular disease risk; and increase evidence-based guideline use through organizational/workflow changes. Facilitators had the freedom to make minor changes to interventions to increase their local applicability and likelihood of implementation.	independent practices and Federally Qualified Health Centers. These factors include the following: policy environments; patient needs, site characteristics, leadership; and competing priorities. Similarly, there was a significant amount of overlap in how facilitators tailored their interventions. Four methods for tailoring interventions were described. The first tailoring method centred around flexibility to match priorities. In small independent practices, facilitators were required to remain flexible as they were called upon to aid with a wide range of issues, many of which were out of the scope of their intervention. This was described as being important for building relationships and trust. Meanwhile, in Federally Qualified Health Centers, the scope of work was more focused, but flexibility was required to adapt to changing timelines and competing priorities. The second tailoring strategy was to build relationships. In smaller practices this was important to get buy-in. In the Federally Qualified Health Centers, relationships were important for understanding teams' capacity for quality improvement and for getting top-level leadership members to champion change. The third tailoring strategy was to leverage their information technology expertise. In smaller practices, facilitators offered technical support that was not available on-site and built capacity for using electronic health records. In the larger organizations, facilitators described their role as being at a more macro level as they aided organizations to use data and electronic health records to support quality improvement. The final tailoring strategy focused on building capacity and efficiency. A common challenge was a lack of time to engage in quality improvement, so facilitators sought avenues where efficiencies could be created through harmonizing overlapping tasks. Workflow redesigns also helped to create time and develop ownership for specific aspects of quality-improvement projects. The small sample size and specific jurisdictional context (New York City) limit the generalizability of this study.

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
		able to support quality-improvement efforts.		
To explore the interaction within a complex quality-improvement implantation project at the primary-care level (1)	*Publication date:* 2017 *Jurisdiction studied:* Canada *Methods used:* Qualitative evaluation of the implementation of a primary-care-level intervention	This study evaluated the implementation of 5 As Team randomized controlled trials. This study was developed jointly with a large, urban Primary Care Network (that links family practices and enables interdisciplinary team-based care) to improve prevention and management of obesity. The study randomized 24 clinic-based teams. A clinical champion was engaged in the study. Twenty-nine staff members from the 12 clinics receiving the intervention were engaged in this evaluation. Data for the evaluation came from interviews with 28 participants, field notes, the logbook of the clinical champion, and project-related documentation.	The 5 As trial aimed to change health professionals' behaviour and care organization regarding obesity care at the primary-care level. The intervention lasted six months and consisted of biweekly interactive lectures and learning collaboratives where team members shared lessons learned, considering challenges, and developed practice-improvement goals. A graphic designer was made available to adapt and create tools as required.	Three primary themes emerged linking the 5 As trial implementation with the interactive systems framework: collective sense-making; dynamic evaluation and implementation adaptation; and consistent engagement with stakeholders. With respect to collective sense-making, interdisciplinary collaboration and discussions to share experiences and develop approaches to challenges were seen to be very important. This collaboration happened in many formal and informal ways. An important example of sense-making was the learning collaboratives as they deliberately created a space for interdisciplinary collaboration and improved team relations. With respect to dynamic evaluation and implementation process evaluation, the authors highlight the importance of enabling flexible implementation while maintaining the principles of the intervention. The implementation process was described as having a "dynamic design and iterative evaluation [process]" that enabled real-time adjustments to deal with barriers and ensure participants were getting what they needed out of the intervention. With respect to consistent engagement with stakeholders, the need for continual engagement with managers, researchers and the clinical champion was raised. Giving various actors (including the participants) a role in adapting the intervention was described as being important for institutionalizing change that can persist. However, challenges with time management from this level of engagement were noted.
To review practice leaders' and practice facilitators' views of and experiences with a quality-improvement strategy for cardiovascular-disease care (5)	*Publication date:* 2018 *Jurisdiction studied:* Indiana, Illinois, and Wisconsin, U.S.	This study examined the Healthy Hearts in the Heartland program. This program was aimed at improving small- and medium-sized primary-care practices' ability to provide preventive cardiovascular-disease	The Healthy Hearts in the Heartland program was a 12-month program that paired primary-care practices with a practice facilitator to implement quality improvement methods for preventive	Both practice leaders and facilitators valued the experience. Practice leaders valued having practice facilitators support their teams with skills and knowledge that are otherwise unavailable to them, particularly regarding electronic health records. Leaders found value in the intervention being linked to national incentive programs, and facilitators thought this made the program more attractive to leaders. However, leaders and facilitators both lamented that the program did not address the pressing challenge of patient adherence to treatment.

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
	Methods used: Semi-structured interviews and rapid qualitative analysis	care through practice facilitation. In total, 226 practices participated in the program, but only 33 were involved at the time of this study. All participating practices had 20 or fewer physicians. Seventeen practice leaders from the 33 eligible practices participated in the interviews, and all 10 practice facilitators whosupported these 17 practices participated as well. Practice leaders were usually physicians, though some were nurses or office managers. Most led small practices. The experience levels of the practice facilitators varied, and their backgrounds were generally split between clinical work and health information technology.	cardiovascular-disease care. The frequency of contact between practice leaders and facilitators was determined by the practice leaders and their needs. Practice facilitators were trained in quality improvement related to Aspirin use in high-risk individuals, blood pressure control, cholesterol management, and smoking cessation. Practice facilitators were trained for this intervention through both web-based sessions and interactive in-person sessions. The array of quality-improvement methods available to practice facilitators came from national incentive programs including Meaningful Use and accountable-care organization shared savings programs. The strategies that facilitators used included audit and feedback, clinical decision support within electronic health record standing orders, work-flow improvements, and patient education and outreach. On-site, practice facilitators led trainings, led discussion	The liberty that practice leaders had to determine the pace of the intervention was appreciated by the leaders as it enabled the intervention to suit their needs and capacity. Facilitators, however, were frustrated with not having a set project plan and reported that leaders made little time for the program. Leaders and facilitators both found that electronic health record documentation support was a "quick win" as it was a small, easy intervention with significant benefits. However, leaders generally embarked on few quality-improvement strategies, and facilitators reported that certain interventions were not well-received. With respect to internal factors that impacted implementation, limited time was an important barrier for nearly all interviewees. Facilitators to implementation include: an existing electronic health record platform; a good team dynamic; and stable staffing. Good relationships between practice leaders and facilitators were also highlighted as being important for success. Overall, practice leaders were positive about the intervention. However, practice facilitators had more reservations, citing the limited engagement from some participating practices.

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
			based on data, trained staff in electronic health record documentation, and gathered performance data.	
To examine the experiences of participants taking part in a regional learning collaborative to improve evidence-based chronic kidney-disease care (17)	*Publication date:* 2016 *Jurisdiction studied:* Oklahoma, California, Wisconsin, and Minnesota, U.S. *Methods used:* Sequential mixed methods analysis with performance data and interviews	This study examined the experiences of local learning collaboratives focused on improving care for patients with or at risk of chronic kidney disease. These collaboratives brought together regional practices that use data to drive performance improvements. These collaboratives were based on the breakthrough learning collaboratives of the Institute for Healthcare Improvement. The collaboratives ideally meet monthly to collaborate on practice improvement strategies and share best practices. In total, 89 practices (which ranged in their nature) participated.	The collaboratives were composed of a mix of clinicians who either had prior experience working with a practice facilitator to help implement chronic kidney-disease guidelines in their practice and those who did not have this experience. The clinicians with this experience were expected to bring their lessons learned to six one-hour monthly meetings. Each learning collaborative was also supported by a practice facilitator who provided logistical and performance data support.	The clinicians who participated in the local learning collaboratives felt that similarities in the practices of those involved and good relations between members of the collaborative facilitate learning. Participants found that the time commitment to participate in the learning collaborative was challenging to manage. Furthermore, they found that practice facilitators played a critical role in organizing the learning collaboratives and providing support to participants between meetings. Finally, the sharing of performance data was found to be valuable for learning and created accountability.
To examine the role and perceptions of practice facilitators in a primary-care practice quality-improvement project (12)	*Publication date:* 2015 *Jurisdiction studied:* Ontario, Canada *Methods used:* Descriptive and qualitative study with semi-structured interviews	This study draws on the Quality Improvement and Innovation Partnership aimed at advancing quality improvement among primary-healthcare teams in Ontario. Learning Collaboratives were a component of	The Quality Improvement and Innovation Partnership Learning Collaborative was a 15-month program that involved three distinct two-day meetings, a final congress, and periods of engagement between	The practice facilitators were trained in clinical knowledge, quality-improvement methodologies, facilitation skills, communication strategies, and information management. The training included a two-day intensive workshop, individualized trainings, self-study, and the sharing of lessons among facilitators. The tasks of facilitators included working with primary-healthcare teams (both virtually and in-person) to facilitate meetings and provide coaching and mentoring. Facilitators also spent a quarter of their time on administrative work. Furthermore, another

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
		the partnership aimed at facilitating quality improvement, and external practice facilitators played an important role in these groups. Sixteen practice facilitators were involved in this initiative. All were employed part-time to work with specific teams assigned to them.	meetings. External practice facilitators were employed to facilitate team development and adoption of quality-improvement strategies.	quarter of their time was spent on continual training and education. Finally, facilitators communicated with the Quality Improvement and Innovation Partnership – as well as other facilitators – to share lessons and challenges. With respect to their role in driving quality improvement, facilitators were seen to be coaches who can help teams improve their processes, set goals and make decisions. Furthermore, they were seen as reliable, trustworthy and knowledgeable resources who can help teams find information and tools. Practice facilitators were also noted to play an important role as outside observers able to provide new perspectives and motivate teams to institutionalize quality improvement. Given that the average practice facilitator supported six primary-healthcare teams, time constraints were noted. Furthermore, some practice facilitators wanted more training prior to starting their role. Another important barrier was that practice facilitators required some time to get to know the teams they were working with and how they function before they could provide value. Finally, the primary-healthcare teams desired more on-site and hands-on involvement with quality-improvement strategies from the practice facilitators.
To compare two methods of internal facilitation to support evidence-based practice in a nursing-home environment (18)	*Publication date:* 2018 *Jurisdiction studied:* England, Ireland, the Netherlands, and Sweden *Methods used:* Qualitative analysis of meeting notes and interviews	This paper examined the Facilitating Implementation of Research Evidence study that compared two facilitation approaches aimed at enhancing the use of research evidence related to continence management in long-term care nursing homes. The authors describe that the two facilitation interventions they piloted did not have an impact on guideline use, so they sought to understand what	Facilitation was used to support the uptake of research evidence in the nursing homes. The Facilitating Implementation of Research Evidence study compared two types of facilitation: Type A and Type B. Type A facilitation was a 12-month intervention aimed at training internal facilitators (from the nursing homes) in quality-improvement strategies such as audit and feedback. External facilitators were involved to provide ongoing	The authors acknowledge that the implementation interventions employed did not follow their planned logic pathway. With respect to the recruitment of internal facilitators, it is noted that many of the chosen internal facilitators did not possess the prerequisite skills and personal characteristics needed to effectively lead change in their organizations. The residential internal facilitator training also proved to be a challenge due to language barriers, lack of buy-in, and its short duration. However, some Type A internal facilitators did report learning something of value. When the internal facilitators returned to their nursing homes, some felt more confident about continence care. This was enabled because external facilitators were able to listen to the internal facilitators for subject matter expertise and connect them with the right people. There was also variance in terms of how eager and willing internal facilitators were to bring process improvement strategies to their organization and who they would engage in this process. Some preferred to act alone, others

Focus of study	Study characteristics	Sample description	Key features of the intervention(s)	Key findings
		happened in the process of intervention implementation.	support and respond to issues. A three-day residential training program started this intervention and was followed by 12 monthly teleconferences. Type B facilitation was a 24-month intervention focused on a collaborative and emancipatory approach towards implementing research evidence in practice. This approach focuses on individual and group transformation on a more holistic level. This intervention started with a five-day residential training program and continued with 16 teleconferences over the course of 24 months.	involved colleagues, and some stepped away altogether. Those whpdid try to bring colleagues on board noted that this required a lot of time and the change was incremental. Finally, external facilitators noted that internal facilitators with low skill levels in using computers and audit systems may have hindered and/or slowed the uptake of improvement strategies. The teleconference calls were meant to allow external facilitators to provide ongoing support, but inconsistent attendance, technology issues, and language barriers prevented this from being fully realized. Furthermore, there was some frustration as some internal facilitators had issues that may have required hands-on assistance that was not a possibility in this study. Finally, internal facilitators who tried to build implementation project teams within their organizations had varying experiences. Those who built reliable teams noted the need to purposefully select the right people to be involved and to create buy-in.
To describe interactions between and the role of internal and external facilitators in a primary-care practice implementation process (15)	*Publication date:* 2016 *Jurisdiction studied:* Laval, Quebec, Canada *Methods used:* Qualitative analysis of interviews and case audit documents	Four family medicine groups taking part in the Transforming Interprofessional Cardiovascular Prevention in Primary Care project were involved in this implementation study. This project aimed to improve cardiovascular-disease prevention at the primary-care level. In Quebec, family medicine groups exist to enable physicians to work cooperatively with	The implementation of the Transforming Interprofessional Cardiovascular Prevention in Primary Care project involved two facilitation strategies: external facilitation and interprofessional facilitation teams (with members coming from individual primary-care practices). The interprofessional facilitation teams consisted of (at least)	The authors identified a total of 72 different facilitation roles taken on by the interprofessional health teams and/or external facilitators. Two broad categories of roles were defined: implementation-oriented facilitation roles and support-oriented facilitation roles. There exists a relationship wherein support-orientation roles help sustain implementation roles. The authors position implementation-oriented roles as focusing on change and project management, while support-oriented roles focus on improving group effectiveness during implementation. Though most of the 72 roles were taken on by both external facilitators and interprofessional facilitation teams, a few were only performed by one group. With respect to the dynamics of facilitation, the authors note that the facilitation process involved the research group, the external facilitators, the interprofessional facilitation teams, the family medicine group, and external change agents. Between these groups there was bidirectional facilitation among the research

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		various other health professionals. In this study, the family medicine groups ranged in size from 10 to 46 clinicians.	one physician, one case managing nurse, one pharmacist, and at least one more allied health professional. The interprofessional facilitation teams were responsible for facilitating implementation in their organizations and creating buy-in within their discipline. External facilitators were described as facilitating meetings and supporting interprofessional health teams. Two external facilitators were hired on a half-time (2.5 days per week) basis to support the four interprofessional health teams. The external facilitators included a nurse with experience in health administration and a pharmacist with experience in academic detailing. Both were training specifically for this project's implementation.	group, external facilitators, and interprofessional facilitation teams. There was a unidirectional flow towards the family medicine group and external change agents.
To describe facilitators' roles and impacts within the Quality Enhancement Research Initiative (19)	*Publication date:* 2006 *Jurisdiction studied:* United States of America *Methods used:* Qualitative analysis of interviews and correspondences	This study examines facilitation processes that were part of the Quality Enhancement Research Initiative within the United States' Veterans Health Administration. Seven researchers who facilitated or managed	Facilitators were involved in various ways across the Quality Enhancement Research Initiative project within the Veterans Health Administration.	The interviewees saw the objectives of facilitation as helping internal change agents institutionalize change(s) and supporting and motivating internal change agents in informal ways. Interviewees noted that facilitation is a more general role than other implementation interventions and that facilitation may draw in (and enable) other tools for implementation, such as audit and feedback or operational system changes. Furthermore, facilitation was seen to start when the working relationship is made with a group that is trying to implement change.

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		the facilitation of various Quality Enhancement Research Initiative-related implementation projects were interviewed.		With respect to the roles of facilitators, there was a common sense that facilitators engage in the identification of problems, the use of formative data (regarding a particular problem), and communication with internal change agents (and at times with other stakeholders/sites). Furthermore, facilitators were seen as important supports for internal change agents that can enhance internal change agents' ability to solve problems. The success of facilitators was seen as being related to four factors: motivation/leadership from the receiver of change, prioritization of the facilitation role, contact with sites, and the match of assignment to the individual facilitator. Successful facilitators were described as being trustworthy, good communicators, knowledgeable, and having the backing of a supportive Quality Enhancement Research Initiative team. Conversely, less successful examples of facilitation were seen to emerge in situations where the facilitator's role was not flexible, the facilitator could/would not work with internal change agents to support problem solving, facilitators lost any ownership in implementation success, and when project teams did not embrace facilitation.
Describing outreach facilitation as an effective method of assisting and supporting primary-care practices to improve processes and delivery of care (9)	*Publication date:* 2012 *Jurisdiction studied:* Eastern Ontario, Canada *Methods used:* Case study	A primary-care group practice comprising five family physicians and multiple allied health personnel was located over three sites in Eastern Ontario, Canada, in the Improved Delivery of Cardiovascular Care through the Outreach Facilitation program.	Each outreach facilitator visited an average of 12 to 15 practices monthly during the first year and less frequently during the second year. The first step in the intervention was to use audit and feedback. Audit and feedback describes processes and outcomes at a specific instant in time. This intervention necessitates the compilation of data points from patient charts from a provider or a group of providers. The information is then presented during a feedback session to allow the practice staff	An outreach facilitator has been deemed as one method that can expedite quality-improvement efforts in primary-care practices. The current case study demonstrates specific examples of practice improvements that were directly attributed to outreach facilitation, and provides guidance about the varying roles within a practice the outreach facilitator can play. Outreach facilitation improved inconsistent Aspirin-prescribing patterns and documentation among practice providers. It also improved adherence to guidelines of care for hypertension and diabetes care. The outreach facilitator expedited such improvements by prompting staff to discuss and agree on specific terminology, embed an alert for Aspirin within the electronic medical record, and write prescriptions for Aspirin to guide appropriate use. The audit and feedback highlighted that some patients' hypertension was not being sufficiently monitored and controlled. While the majority of physicians felt that they should be able to reach targets given the resources that are available, there was also a feeling among the healthcare team that patients needed to take

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			members to evaluate their own performances.	more responsibility for their own health and follow-up appointments. In response to the different perspectives among the care team, the outreach facilitator introduced the Plan, Do, Study, Act Quality Improvement tool. As a result of this tool, the primary-care group implemented process changes to identify patients, monitor blood pressure during every visit, and record every blood pressure in the electronic medical record. After several months, they were able to differentiate those patients who were being managed from those who were not. The latter patient group were called to visit the office more frequently to control their hypertension. Towards the end of the first year of participation, the practice in the case study was revisited by the outreach facilitator, who wanted to check-in on the practice's hypertension management quality-improvement efforts. It was found that although the group had put a lot of effort into improving their processes for diabetes care and developing a recall system, improving outcomes still needed an additional approach. Consequently, the practice decided to implement a diabetes group comprising the diabetes team, clinical and administrative staff, with the clinical coordinator as the leader. This stepwise strategy would involve rationalizing referrals to community diabetes education programs to prevent service duplication, implementing a self-management program within the practice, and convening a training day to finalize their strategy. Such actions would aim to help patients reach better HbA1c targets. This case study brought forth several lessons learned that may be valuable to supporting quality improvement in other primary-care settings. Practice culture is an important consideration when implementing a quality-improvement initiative, as changes have to be tailored to the practice's culture. Another salient lesson learned was that outreach facilitators can help focus the team toward effective evaluation of outcomes. Furthermore, outreach facilitators can work with practices to identify areas of waste and help reduce inefficiencies through such interventions as reminders in an electronic medical record. Finally, an outreach facilitator can update and disseminate community-based resources for maximum use by practitioners and patients, which is conducive to improved health outcomes.

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				Taken together, the study suggests that although practice facilitation can exist as a challenge, there are several tools and resources that can support practices in improving the health outcomes of the populations they serve.
Evaluating whether a comprehensive preventive intervention program using outreach facilitators improves preventive-care delivery (13)	*Publication date:* 2008 *Jurisdiction studied:* Eastern Ontario *Methods used:* Match-paired, cluster-randomized controlled trial	A volunteer sample of 54 fee-for-service primary-care practices in Eastern Ontario, Canada, at a time of physician shortage.	The facilitation intervention lasted 11.5 months. Two nurses with a master's degree in administration were employed as prevention facilitators. Each facilitator was assigned 13 or 14 practices, visited each practice approximately once a month, with each visit lasting an average of 46 minutes. Facilitators administered an average of three interventions, while practices in the control group did not receive any services from the facilitators during the intervention period.	Outreach facilitation engages external professionals with a nursing background and experience in management to promote the uptake of evidence-based guidelines and streamline quality-improvement efforts in practice settings. This study aimed to assess whether a comprehensive preventive intervention program using outreach facilitators improves preventive -care delivery. The main outcomes assessed include the mean difference between intervention and control arms in practices' delivery of preventive manoeuvres, such as smoking-cessation counselling, folic acid supplementation, and counselling regarding exercise/physical activity. The primary outcome measure was the composite index of preventive performance, characterized by the number of appropriate preventive manoeuvres done as compared to the number of inappropriate manoeuvres. Although an identical operationalization was used for the secondary outcome assessment, patient surveys were used in lieu of chart reviews. The study findings reveal no detectable difference between the trial's arms for the primary outcome's overall prevention index. However, a small significant difference was found between the trial and intervention arms for the secondary outcome. The study findings suggest that outreach facilitation did not produce significant improvements in preventive-care delivery. However, the methodological limitations present in this study, including potential inaccuracies in patient charts, emphasize that the results should be interpreted with caution.
Assessing practice facilitation as an intervention to improve the delivery of chronic-illness care in primary care (8)	*Publication date:* 2013 *Jurisdiction studied:* San Antonio Metropolitan Statistical Area and surrounding counties *Methods used:* Group-randomized trial	Forty small primary-care practices in the South Texas region of the United States	Practice facilitators held a minimum of six 60-minute team meetings within each practice over a 12-month period of time. Chart audit and feedback, interactive consensus building, and goal setting were integrated into the intervention. Furthermore, 60 adults	Practice facilitation is an especially promising approach to supporting primary-care reform. This group-randomized trial of a practice-facilitation intervention aims to examine: 1) changes in the extent to which care is organized around the chronic-care model at the end of the one-year intervention; 2) its sustainability one year after the removal of the intervention; and 3) subsequent improvement in the delayed intervention (control) practices. The Assessment of Chronic Illness Care survey measured the extent to which care delivered in each practice realized crucial elements of the Chronic Care Model. The study found substantial improvement in the degree to which care aligned with elements

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			seeking care in each practice completed a satisfaction survey. The practice-facilitation intervention began with a review of the chart audit results and results from the patient survey.	of the chronic-care model in small primary practices randomized to the initial practice-facilitation intervention group. This improvement was still evident one year post-intervention, standing in contrast to the lack of improvement in the delayed intervention (control) practice. However, the delayed intervention (control) practice experienced similar improvement during their one year as a recipient of the practice-facilitation intervention. The study findings suggest that practice facilitation resulted in a significant and sustained improvement in care delivery aligned with the chronic-care model. However, methodological limitations, such as the potential for selection bias, highlight the importance of interpreting results with caution.
Providing an empirical description of how one organization coordinated 10 national improvement programs between 2004 and 2010 (3)	*Publication date:* 2013 *Jurisdiction studied:* The Netherlands *Methods used:* Case study approach	Interviews were conducted with Netherlands Organisation for Health Research and Development program coordinators (*n=10*), and the program managers in the different organizations contracted by Netherlands Organisation for Health Research and Development program to implement the programs (n = 10), and with the researchers who evaluated each program (n = 10).	The 10 improvement programs began at different times, were diverse in their subjects, aims, methods, organization, and in the services participating, and had varying time scales and budgets. One covered hospital care only, while many covered hospital, primary and social care. Several covered only social or mental health care. One covered only public health and one covered only consumer education. Quality-improvement collaborative breakthrough designs informed five of the improvement programs. The program evaluation initiatives were also diverse, ranging in the types of researcher teams and types of collaborations with implementers.	Both public and private health and social-care services are grappling with increased demands to improve quality and cost-effectiveness. The purpose of this paper is to offer a description of how one organization led 10 national improvement programs from 2004 to 2010. It also provides details which may be helpful to others planning and implementing these programs, and gives rise to the understanding of knowledge translation and network governance. In terms of the origins of the programs, interviewees highlighted that the 10 programs that were pioneered by the Netherlands government in the wake of rising public concerns in 2002-2004 related to health and social-care quality. Several interviewees explained that implementing national quality-improvement programs was viewed as a way to support providers to respond to regulated market reforms, and as a means to help branch organizations introduce the proposed reforms amongst their membership. Regarding the process of establishing the improvement programs, most did not start with an assignment to the Netherlands Organisation for Health Research and Development program. On the contrary, the ministry aimed to initiate quality-improvement programs crosscutting healthcare, social care and public health. However, the ministry became increasingly cognizant of its limitations for running these quality-improvement programs and sought to identify an organization that could adopt an intermediary role. In terms of the governance structure for the programs, interviewees emphasized the structure for program progression as

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				a network in lieu of a hierarchical or market-containing structure. Most programs were governed by a steering group of representatives from different interest groups. An advisory body provided technical advice to this steering group, and the implementing organization supported and collected reports from provider organization project teams which carried out service-level improvements. From 2004 to 2007, the ministry approached the Netherlands Organisation for Health Research and Development program to perform a mediating and coordinating role, which would involve sub-contracting them to lead both program implementation and evaluation. After this change in program leadership, the structure began functioning more optimally. The uncertainties and confusions present in the first few years of the program about objectives and the responsibility and roles of different organizations and individuals in the network governance structure were cited by many interviewees. The study revealed that there was a process that began with abstract ideals and principles, unifying the members of the network. These specifications generated disagreement and practical discussions; however, the political eagerness of both the government and the branch organizations to use broad ambiguous terms in their descriptions precluded the establishment of clear objectives and roles. Many interviewees reported that it took time and skills in all the programs to guide parties to agreements, steer towards more specification where needed, and to collaborate with program managers and others. These factors, along with difficulties obtaining data about improvements from program-implementing organizations, led to delays in programs and resentments amongst stakeholders. The Netherlands Organisation for Health Research and Development program, as described by many interviewees, played a crucial role for the groups in the network structure. In fact, many program managers and some evaluators mentioned how coordinators had worked to help different parties become aware of each other's contributions and progress, which, in turn, streamlined the progress of the overall program.

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				In terms of the coordinating role performed by the Netherlands Organisation for Health Research and Development program, interviewees described how they honed the skills of negotiation, mediating and persuasion, while working towards establishing relations with ministry contacts. One factor repeatedly mentioned by coordinators, program managers and evaluators was the impact of changes in personnel in different organizations. Personnel dealing with the program at the ministry, program-delivery organizations and at the Netherlands Organisation for Health Research and Development program changed on an annual basis, which makes coordinating roles more important. In some cases, however, the Netherlands Organisation for Health Research and Development performed their coordinating role less effectively due to loss of a coordinator and delays in filling the position. Two issues referenced by interviewees were arrangements for sustaining and spreading improvements, and for planning what would happen when the program finance and the Netherlands Organisation for Health Research and Development program role ended. A part of sustainability warranted the program-implementing organizations to continue their role, or plan for others to fill this position. Furthermore, methods of financing the program must be adequately established. Finally, one initiative taken by the Netherlands Organisation for Health Research and Development program was to manage the evaluations of each program. They accomplished this by promoting learning between researchers about methods and findings from the evaluations of each program, and to build research capacity to perform additional evaluations of this type. The study highlighted in this paper suggests that organizing the implementation of large-scale improvement programs is a complex endeavour. In describing empirical details of one variation of the network government-funded approach, where the Netherlands Organisation for Health Research and Development program provided coordination, it offers several lessons for other countries on how research can be used in improvement programs.
Evaluating whether two different approaches to facilitating	*Publication date:* 2018	Staff participants included an internal facilitator (a member of staff from the long-term	In arm one, the standard dissemination control group had the urinary continence	Healthcare practice needs to be guided by the best available research evidence, to ensure the provision of high-quality care. This study employs the Promoting Action on Research Implementation in Health Services framework as its theoretical

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implementation could have an impact on the use of research evidence in practice (7)	*Jurisdiction studied:* England, Sweden, the Netherlands, Republic of Ireland *Methods used*: Pragmatic cluster randomized controlled trial	care setting) nominated in each intervention site to collaborate with external facilitators to implement the urinary incontinence recommendations. Resident participants were aged 60 years or more with documented urinary incontinence.	recommendations and a PowerPoint presentation on implementation sent to the head of each site. Both the intervention groups also received the same presentation as the standard dissemination sites. In addition, external facilitators prepared two different facilitator-development programs. Arm two received a type of facilitation termed 'type A', which is a goal-focused approach to facilitation. Arm three received a type of facilitation termed 'type B', which is supported by principles of stakeholder empowerment. A model of co-facilitation was used in both facilitation arms where a second staff member in the organization collaborated with the internal facilitator.	support to assess whether two different approaches to facilitating implementation could influence the use of research evidence in practice. The primary outcome measure was the percentage compliance with the four continence recommendations produced by the fourth International Consultation on Incontinence: 1) the resident should be actively screened for incontinence; 2) a detailed assessment should be carried out; 3) an individualized treatment plan should be in place; and 4) a specialist referral should be made if necessary. After obtaining quantitative data from reviews of 2,313 records, no significant differences were found in any of the four examined continence recommendations. This study suggests that while both models of facilitation examined were generally viable options, they were not significantly better than a control in improving the primary outcome. However, the study findings should be interpreted with caution due to its methodological limitations, including its small sample size.
Conceptualizing theory, research, and action for an evidence-based system for innovation support (2)	*Publication date:* 2012 *Jurisdiction studied:* U.S. *Methods used:* n/a	n/a	In the Interactive Systems Framework for Dissemination and Implementation, the evidence-based logic model can be applied to support many types of innovations. The evidence-based logic model begins with the identification of an entity's desired outcomes, followed by	When an individual or organization aims to implement an innovation, support is usually required. The Interactive Systems Framework for Dissemination and Implementation involves a *Support System* collaborating with *Delivery Systems* (e.g. national, state and/or local organizations) to enhance their capacity for the implementation of innovations. This paper aims to conceptualize theory, research and action for an evidence-based system for innovation support. The evidence-based system for innovation support is guided by a logic model that includes four key support components: 1) tools; 2) training; 3) technical assistance; and 4) quality assurance/quality improvement.

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			an evaluation of the entity's capacity for achieving this outcome. Entities vary in their ability to effectively implement an innovation. Therefore, collecting data about capacity enables the Support System to accommodate the entity's needs and resource limitations. The logic model involves four components of support: 1) tools; 2) training; 3) technical assistance; and 4) quality assurance/quality improvement. Each of the components should be employed continuously until organizational aims are achieved.	The *tools* component in the evidence-based system for innovation support encapsulates informational resources designed to organize, summarize, and/or communicate knowledge. Tools include books, journals, manuals, guides, pamphlets, worksheets, templates, spreadsheets and checklists. Tools are more likely to contribute to clinical excellence when they are current, organized, understandable and accurate. The *training* component of the evidence-based system for innovation support involves planned, instructional activity that promotes the acquisition of knowledge, skills and attitudes in order to improve learner performance. Training is often completed in group-based formats. Evidence suggests that there is a need for a comprehensive model that includes central features of the training process, such as conducting needs assessments to assess organizational impact and sustainability. The *technical assistance* (TA)component is a hands-on approach to building organizational capacity for quality implementation of innovations. TA can improve an entity's capacity by assisting the entity in the selection of the optimal innovation, informing adaptations of the innovation to enhance fit, and building skills for implementation and evaluation of the innovation. Knowledge of best/promising TA practices is at an early stage, but there is a growing evidence base for four dimensions of TA in particular: dosage, mode of delivery, collaborative design, and proactive design. Finally, *quality assurance* involves the use of tools and logic to assess quality performance. *Quality improvement* is the employment of methods to enhance quality performance. Quality assurance/quality improvement is an integrated process for identifying current quality levels and for improving quality performance. The paper proposes two ways in which quality assurance/quality improvement plays an important role in the Interactive Systems Framework for Dissemination and Implementation: 1) QA/QI is used to track and improve the implementation of an innovation in the Delivery System; and 2) QA/QI is applied in the interaction between the Support System and the Delivery System to monitor and improve support quality. Taken together, this article suggests that an evidence-based system for innovation support is as essential as having evidence-

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				based healthcare, therapy, or educational programs. However, there are several limitations in the current status of the evidence-based system for innovation support, including the dearth of evidence within each of the four components of this system.

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