

Effective Knowledge Translation Tactics for Increasing the Use of Health Status and Surveillance Data

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Key Messages

1. To change attitude, ensure interaction between producers and end users during content development and utilize training or workshops.
2. To change knowledge, utilize training or workshops with or without online access to information, and actively disseminate information.
3. To change practice, utilize training or workshops with or without online access to information, actively disseminate information, utilize key opinion leaders and combine online access to information with targeted messages.
4. Knowledge translation tactics that combine mentoring (people) and data access (technology) will increase the likelihood that staff will use health status or surveillance data in their program decisions.

Executive Summary

Research Question

What knowledge translation (KT) tactics increase the use of health status and surveillance data?

Context

Peel Public Health (PPH) strives to create a culture of numeracy among staff. Staff should feel confident using health status and surveillance data when they make program decisions. Poor KT products have been identified by PPH staff as a barrier to using health data. Current KT tactics that aim to increase the use of health data include health status reports, rapid review poster sessions, and access to data through the Health Status Data and PicWiki websites. These tactics are effective at reaching staff to varying degrees. Peel lacks a consistent and robust KT strategy.

Methods and Results

Peer-reviewed and grey literature was searched to obtain relevant literature for inclusion in this review. Key informants were also consulted to identify relevant literature. Out of 517 articles, five systematic reviews met the relevance criteria. One systematic review received a weak rating and was excluded. The four remaining systematic reviews were included in the rapid review.

Synthesis of Findings

The following KT tactics are effective at:

- Changing attitude: producer-user interaction during content development and training/workshop

- Changing knowledge: training/workshop, active dissemination of information, and online access to information plus training/workshop
- Changing practice: training/workshop, active dissemination of information, key opinion leaders, online access to information plus training/workshop, and online access to information plus targeted messages
- Improving acceptability or the utilization of resources: active dissemination of information

Recommendations

- Utilize KT tactics that combine mentoring (people) and data access (technology) to increase the likelihood that staff will use health status or surveillance data in their program decisions.
- Consider using the following KT tactics in a more consistent and robust manner at PPH:
 - Active dissemination of information
 - Key opinion leaders
 - Online access to information with training/workshop or targeted messages
 - Producer-user interaction during content development
 - Training/workshops
- Review and reconsider the use of KT tactics not currently supported by research evidence:
 - Communities of practice
 - Distribution of information plus audit and feedback and training/workshop
 - Online access to information alone or in combination with targeted messages and access to a knowledge broker
- Investigate appropriate evaluation measures for current and future KT tactics

1 Issue

Creating a culture of numeracy is important to Peel Public Health (PPH). When staff feel confident using health status and surveillance data in making program decisions, PPH can focus on priorities and respond more effectively to challenges and emergencies.

Preparing health status and surveillance products, mentoring staff on the use of data and responding to data-related requests are resource- and time-intensive activities. Without a consistent and robust knowledge translation (KT) strategy, staff could be less likely to use data in determining program strategy or priorities.

Staff at all levels have revealed frustration with using health data and products: *“Disease information, it’s so hard to work with. How can I use that and get it into a format where [I know] what I actually can do.”*¹ Many PPH staff also feel that the responsibility of translating data into meaningful program information is daunting. Staff have indicated that they felt *“dread”* and *“nervousness about anything in stats or epi.”*¹ Even staff that had recent training in epidemiology reported being uncomfortable when interpreting data or making recommendations if they didn’t get a chance to practice or apply the skills within their work.

This review seeks to determine which KT tactics increase the use of health status and surveillance data.

2 Context

An organizational needs assessment conducted in 2012 with selected PPH staff in specialist and management roles identified four common barriers to routinely using health data, one of which was poor knowledge translation.

The Canadian Institutes of Health Research defines knowledge translation as:

“A dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge...this process takes place within a complex system of interactions between researchers and knowledge users.”²

Knowledge translation is an important piece of the work of PPH’s Population Health Assessment and Surveillance teams (PHAST). These teams provide methodological support and services to the entire department around acquiring and using health-related data. This includes responding to data requests, producing health status and other survey reports, and advising staff on research methodology. Because of the amount of time devoted to the creation of data products and data support to teams, the application of effective KT tactics needs to be a key piece of this support.

Current KT tactics used by the PHAST and the Office of the Medical Officer of Health (OMOH) to share data, reports or research include:

- Presentations about data reports, research, or rapid reviews (e.g., NIPS & RIPS, CD Interchange)
- Access to the Health Status Data and PicWiki websites
- Hard-copy dissemination of data or full-length reports to staff

- Electronic communication with staff including newsletters and emails (e.g., Public Health ‘DaRT,’ Peel Library updates).

While various tactics are used, Peel lacks a consistent and robust KT strategy. **Table 1** summarizes KT tactics utilized by the PHAST and OMOH, and usage statistics that evaluate their reach.

Table 1: Peel Public Health PHAST / OMOH Knowledge Translation Tactics

Knowledge Translation Tactic	Evaluation Measure	Results
Health Status Data Website Feb 2012 – Feb 2014	Average number of visits per month	*2,240
Health Status reports Jan 2012 – Apr 2014	Average number of views per report, per month	36
PicWiki Website Aug 2012 – Feb 2014	Average number of visits per month	±136
Public Health ‘DaRT’ newsletter Jan 2013 – Feb 2014	Average number of recipients per month	320
Rapid Review poster sessions	Number of attendees	2012: 190 2013: 220
Rapid Review reports Jan 2012 – Apr 2014	Average number of views per report, per month	^53
Rapid Review summary videos Jul 2011 – Mar 2014	Average number of views per video, per month	8

Note: see **Appendix A** for a more detailed analysis of Health Status Reports web traffic

Note: PHAST – Population Health and Surveillance Team; OMOH – Office of the Medical Officer of Health

* The Health Status Data Website results include all pages accessible from the landing page.

± The average number of visits per month to the PicWiki Website represents only visits to the main landing page, not all other pages accessible from the landing page.

^ Calculation did not include views from “Effectiveness of the Use of Social Media” because the number of views for that review fell far outside the range in views for all other rapid reviews.

3 Conceptual Framework

Following a scoping review, Figure 4 from *Facilitating a Knowledge Translation Process:*

*Knowledge Review and Facilitation Tool*³ was used to form the basis of the conceptual

framework. We modified the original framework and the PHAST provided feedback during two consultation meetings. The conceptual framework depicts how we envision the KT process will work at PPH in the future (**Appendix A**).

4 Literature Review Question

What knowledge translation tactics increase the use of health status and surveillance data?

- P: Public health professionals
- I: Knowledge translation tactics
- C: None
- O: Use of health status and surveillance data

5 Literature Search

Table 2: Electronic Databases and Grey Literature Sources Searched

Electronic Databases*	Grey Literature Source^
<ul style="list-style-type: none"> • Ovid • EBSCO (CINAHL, Health Business Elite, Academic Search Primer) • ABI/INFORM Global • Google Scholar • DuckDuckGo • University of Toronto Book Catalogue 	<ul style="list-style-type: none"> • World Health Organization • National Collaborating Centre for Methods and Tools • National Guideline Clearinghouse • Registers Nurses Association of Ontario • National Institute for Health and Clinic Excellence • CDC: The Community Guide • Centres for Reviews and Dissemination • The Evidence for Policy and Practice Information and Co-ordinating Centre • The Campbell Collaboration • The TRIP Database • The Public Health Agency of Canada • Health Evidence • Health Systems Evidence

* Searched January, 2014

^ Searched November, 2014

Following relevance assessment, we hand-searched the reference lists of included papers. Five KT experts were contacted by email to supplement the search for literature. We assessed the articles suggested by the KT experts using the relevance criteria. The search was limited to studies in English. No restrictions on publishing date were applied. See **Appendix B** for details of the search strategies.

6 Relevance Assessment

Two reviewers independently assessed relevance based on title and abstract. The full-text versions of relevant papers were assessed using the criteria in **Table 3** to determine if they would be critically appraised. At each stage in the relevance assessment, discrepancies were discussed until consensus was reached.

Table 3: Inclusion and Exclusion Criteria

Inclusion	Exclusion
<ul style="list-style-type: none">• Papers focusing on the effectiveness of KT tactics• Papers with outcomes focused on the use of research or data	<ul style="list-style-type: none">• Papers describing KT theories or models• Papers describing evaluation methods for KT tactic effectiveness• Papers with KT tactics implemented in a hospital or clinical setting• Papers evaluating the effectiveness of treatment guideline dissemination• Papers with outcomes focused on the health of the patient targeted by the KT tactic• Case studies with no measure of effectiveness• Tool kits with no measure of effectiveness• Protocols for future research• Single studies

7 Search Results

The search yielded 557 articles (**Appendix C**). After removing 40 duplicates, an additional 501 articles were excluded based on title and abstract review. We assessed the remaining 16 articles using the criteria in **Table 3**; 11 articles were excluded. The five remaining articles were all systematic reviews and were assessed for quality.

8 Critical Appraisal

Two reviewers critically appraised the five included systematic reviews independently using the Health Evidence Quality Assessment Tool – Review Articles. Discrepancies in the quality assessment score were discussed between the two reviewers until a consensus was reached. One

systematic review was excluded based on a weak quality assessment rating (total score: 3). Of the four included systematic reviews, two were rated as strong (total score: 8 and 9) and two were rated as moderate (total score: 6 and 5). The remaining sections of this review are based on findings from the four included reviews.

9 Description of Included Studies

The interventions and outcomes measures varied significantly among the 30 primary studies included across the four reviews. While the methodological quality of systematic reviews included in this review was good (two strong, two moderate), the quality of the primary studies was often poor. Many primary studies did not use a control group, did not compare the intervention to usual practice, and only evaluated post-intervention.

LaRocca et al. (2012): *The effectiveness of knowledge translation strategies used in public health*⁴ (Quality Assessment Rating: 8)

The objective of this review was to “address which knowledge translation strategies are most effective among practitioners, managers and policy makers to promote the use of research evidence in public health settings.”⁴ Five primary studies were included: four randomized controlled trials (RCTs) and one interrupted time series (ITS) analysis.

The primary study interventions in this review included: a workshop, information service, discussion list and free access to databases; communities of practice; one-on-one contact with a knowledge broker plus tailored and targeted messages and access to health-evidence.ca; and dissemination channels (e.g., pamphlet, CD-ROM, Internet). Intervention settings varied based on the type of intervention and included public health departments, community agencies, and

policy making bodies. The intervention target groups included public health professionals involved in public or community prevention-oriented coalitions from a range of practice areas including mental health, preventative adolescent substance abuse services, healthy body weight promotion, and immunization and cancer screening promotion. The primary outcomes of this review were change in knowledge and change in practice.

Murthy et al. (2012): *Interventions to improve the use of systematic reviews in decision-making by health system managers, policy makers and clinicians*⁵ (Quality Assessment Rating: 9)

The objective of this review was to “identify and assess the effects of information products based on systematic review evidence and organizational supports and processes designed to support the uptake of systematic review evidence by health system managers, policy makers and clinicians.”⁵ Eight primary studies were included: five RCTs (four cluster RCTs) and three ITS analyses.

The primary study interventions in this review included: access to the WHO Reproductive Health Library with assistance plus interactive workshops; access to Cochrane reviews on pregnancy and childbirth, a video on Evidence-Based-Medicine and a single educational visit; one-on-one contact with a knowledge broker plus tailored and targeted messages and access to health-evidence.ca; an analgesic league table based on systematic review evidence, audit and feedback and interactive workshops; provision of a summary of findings table for a Cochrane Review; and dissemination of Effective Health Care bulletins. Intervention settings varied based on the type of intervention and included obstetric units, an orthopedic unit, hospitals, public health departments, general practitioner practices, and a workshop. The intervention target

groups included public health department staff, workshop participants, and healthcare professionals (e.g., physicians, nurses). The primary outcome of this review was the utilization of research (change in practice). Secondary outcomes included the utilization of healthcare resources, changes in knowledge, perceived understanding and ease of use, preferences and attitudes, and patient-related outcomes.

Barwick et al. (2012): *Knowledge translation efforts in child and youth mental health*⁶

(Quality Assessment Rating: 6)

The objective of this review was to “assess the current state of scientific knowledge regarding the effectiveness of KT strategies or interventions for child and youth mental health (CYMH).”⁶

Twelve primary studies were included: three cluster RCTs, two RCTs, one ITS analysis, one controlled before and after and five quasi-experimental studies.

The primary study interventions in this review included: practitioner/teacher training in the form of workshops, meetings, or conferences; intensive quality assurance following workshop training; communities of practice; trained facilitators; and key opinion leaders. Intervention settings varied based on the type of intervention but were grouped into community-based or school-based by the review authors. The intervention target groups in the community-based CYMH interventions included a variety of CYMH practitioners (e.g., therapists, physicians, nurse practitioners, adolescent drug treatment program staff, and registered nurses). In the school-based CYMH interventions, target groups included teachers, mental health providers, principals, school psychologists and teacher assistants. The primary outcome of this review was a change in practice.

Moore et al. (2011): *What works to increase the use of research in population health policy and programmes*⁷ (Quality Assessment Rating: 5)

The objective of this review was to “analyse what is known about the extent to which strategies to increase the use of research in population health policies and programmes is effective.”⁷ Five primary studies were included: two RCTs, one multi-case study, one cross-sectional follow-up study and one self-assessment.

The primary study interventions in this review included: one-on-one contact with a knowledge broker plus tailored and targeted messages and access to health-evidence.ca; disseminating systematic reviews in areas of policy priority; interaction between users and producers of research; and training in research appraisal and use. Intervention settings varied based on the type of intervention and included public health departments, and training/skills building environments outside of the normal work environment. The intervention target groups included policy makers, program managers, clinicians, practitioners, healthcare managers/administrators and executives. The primary outcomes of this review were the use of research in a policy or program; change in knowledge, attitudes, skills and behaviour; opportunities to use research in collaboration with others; and organization and environment characteristics.

10 Synthesis of Findings

Table 4: Knowledge Translation Tactic Effectiveness Summary

KT Tactic	Outcome					
	Change in Attitude	Change in Knowledge	Change in Practice	Patient-Related	Acceptability	Utilization of Resources
Active dissemination of information		↑ (1)	↑ (4) and ↔ (1)		↑ (1)	↑ (2)
Communities of practice		↔ (1)	↔ (1)			
Distribution of information + audit and feedback + training/workshop				↔ (1)		
Key opinion leaders			↑ (1)			
Online access to information			↔ (1)			
Online access to information + training/workshop		↑ (1) and ↔ (1)	↔ (2) and ↑ (1)			
Online access to information + targeted messages			↑/↔ (1)			
Online access to information + targeted messages + access to a knowledge broker			↔ (1)			
Producer-user interaction during content development	↑ (1)		↔ (1)			
Training/workshop	↑ (1) and ↔ (1)	↑ (2)	↑ (8) and ↔ (4)			

↑: Positive effect

↔: No effect

Note: number in bracket refers to the number of primary studies informing the outcome direction

The outcomes included in **Table 4** are defined as follows:

- Change in attitude: organizational research receptivity; perceptions of the value of research
- Change in knowledge: self-rated knowledge on various topics (e.g., critical appraisal)
- Change in practice: concrete application of new skills and/or knowledge
- Patient-related: pain rating following surgery
- Acceptability: formatting of an information summary
- Utilization of resources: cost savings associated with changes in clinical practices

KT tactics that are effective at changing attitude are:

1. Training/workshop (one of two primary studies)

Denis et al. (2008) investigated the effects of a two-year training program on clinician managers, program managers and executives (n=26). This study did not have a control group. After the training, organizational research receptivity showed a modest improvement.

2. Producer-user interaction during content development

Kothari et al. (2005) investigated the effects of ensuring interaction between users and producers of research for a period of one year on policy makers, program managers and practitioners. The control group in this study did not interact with the research organization commissioned to produce the research report. Interaction between researchers and program managers in the development of policy and programs increased perceptions of the value of research six to eight months after the intervention.

KT tactics that are effective at changing knowledge are:

1. Training/workshop

Denis et al. (2008) investigated the effects of a two-year training program on clinician managers, program managers and executives (n=26). This study did not have a control group. After the training, the proportion of participants who rated themselves as excellent or very good increased on research literacy, knowledge of research-based evidence, skills for doing research, assessing the quality of research, knowledge of change management and the ability to promote the use of research evidence in their organizations. Taylor et al. (2004) investigated the effects of a workshop on clinicians and healthcare managers/administrators (n=145). The control group in this study did not attend the workshop. Six months after the workshop, participants showed statistically significant but small improvements in knowledge about research principles and the ability to critically appraise research results, compared to the control group.

2. Online access to information plus training/workshop (one of two primary studies)

Forsetlund et al. (2003) investigated the effects of a workshop plus information services, a discussion list and free access to databases, on public health physicians (n=148). The control group in this study only had access to free library services. After the intervention, participants in the intervention group showed greater improvement in self-perceived knowledge on a scale of 0 to 3 (mean difference: 0.4, 95% CI 0.2 to 0.6, $p < 0.01$) and knowledge about terms of importance to critical appraisal on a scale of 0 to 2 (mean difference: 0.2, 95% CI 0.0 to 0.3, $p = 0.01$).

3. Active dissemination of information

Di Noia et al. (2003) investigated the effects of disseminating program materials through pamphlet, CD-ROM, or internet channels to school personnel, community providers and policy makers (n=188). Six months after the intervention, participants who received the materials by

CD-ROM or Internet showed greater knowledge of where to locate the materials compared to those who received the pamphlet ($p<0.05$). Bonferroni post-hoc comparisons favoured participants in the Internet group ($p<0.05$).

KT tactics that are effective at changing practice are:

1. Training/workshop (eight of twelve primary studies)

Henggeler et al. (2008) investigated the effects of a workshop followed by intensive quality assurance on therapists ($n=30$). The control group in this study only attended the workshop. Four months after the workshop, participants in the intervention group increased their implementation of cognitive-behavioural techniques. The control group showed no change. Homer et al. (2004) investigated the effects of an educational conference and toolkit on physicians and nurse practitioners ($n=33$). The control group in this study did not attend the conference. Care improved in both groups following the intervention, however evaluation for coexisting conditions ($p=0.02$) and offering treatment options ($p<0.001$) improved more for conference attendees. Lerman et al. (2004) investigated the effects of presenting a workshop and distributing educational materials to special education teachers ($n=5$). This study did not have a control group. After the intervention, all workshop participants met or exceeded the skills accuracy criterion through role play. The skills were implemented with $>80\%$ accuracy ($<65\%$ pre-intervention). Liddle et al. (2006) investigated the effects of a technology transfer approach including training and supervision on adolescent drug treatment program staff ($n=10$). This study did not have a control group. After the intervention, therapists increased their number of weekly individual sessions ($p=0.20$), extra-familial contacts ($p<0.001$), and covered more evidence-based practice themes ($p=0.014$). Moore et al. (2002) investigated the effects of training in

elementary teachers (n=3). This study did not have a control group. After the training, the percentage of correct teacher responses relating to functional analysis methods during direct observation exceeded 95%. Tucker et al. (2008) investigated the effects of presenting a workshop and distributing educational materials to registered nurses (n=27). The control group in this study did not attend the workshop. After the intervention, workshop participants increased their self-reported frequency of use of praise and incentives (p=0.036), frequency in working with parents (p=0.01) and positive verbal statements (p=0.016). Negative verbal statements (p=0.028) and use of commands during play (p=0.013) both declined. Wallace et al. (2004) investigated the effects of a workshop on teachers and a school psychologist (n=3). This study did not have a control group. After the workshop, an in-classroom simulated assessment was conducted with 100% accuracy in all participants. Webster-Stratton et al. (2001) investigated the effects of training on teachers and teacher assistants (n=37). The control group in this study did not receive training. After the training, participants displayed better classroom management than teachers who did not receive the training (p<0.01).

2. Active dissemination of information (four of five primary studies)

Black et al. (2002), Mason et al. (1998/1999), and Mason et al. (2001) investigated the effects of distributing an Effective Health Care bulletin to physicians. None of the three studies had a control group. In Black (2002), the mean annual decline in the rate of surgery for glue ear (six-year period) was significantly greater after the intervention (-10.1%; 95% CI -7.9% to -12.3%) than before the intervention (-1.6%; 95% CI -3.9% to 0.85%). In Mason (1998/1999), the rate of prescribing selective serotonin reuptake inhibitors was estimated to be 8.2% lower than that predicted by prescribing rates before the intervention. In Mason (2001), the quarterly rate of grommet insertion declined by 0.044 per 1,000 children (95% CI 0.080 to 0.011, p<0.0001) four

years after the intervention. Dobbins et al. (2001) investigated the effects of disseminating relevant systematic reviews to public health decision-makers (n=141). This study did not have a control group. Sixty-three percent of participants reported using at least one of the systematic reviews in the past two years to make a decision. Of those individuals, 40-50% perceived the review to have had a great influence on program justification or planning decisions, but 37-44% stated that the review had not influenced decisions relating to policy development, program evaluation or staff development.

3. Online access to information plus training/workshop (one of three primary studies)

Gulmezoglu et al. (2006) investigated the effects of providing access to the WHO Reproductive Health Library with assistance plus an interactive workshop to healthcare professionals (n=40 hospitals). This study did not have a control group. After a follow-up period of 10-12 months, there was a statistically significant change in selective episiotomy practice rates at one of the two centres following the intervention.

4. Online access to information plus targeted messages

Dobbins et al. (2009) investigated the effects of providing access to an online registry of systematic reviews of public health interventions plus weekly targeted messages about relevant registry articles to public health staff (n=108 public health departments). The control group in this study only had access to the online registry. After the intervention, the number of public health policies and programs implemented which documented the inclusion of research evidence increased (mean difference: 1.67, 95% CI 0.37 to 2.97, p<0.01). Surprisingly, participants' self-reported use of evidence (scale from 1 to 7) did not increase (mean difference: -0.42, 95% CI -1.10 to 0.26).

5. Key opinion leaders

Atkins et al. (2008) investigated the effects of key opinion leaders and professional consultation on teachers and mental health providers (n=115). The control group in this study only received professional consultation. Over a two year period, teachers who were exposed to a key opinion leader reported greater use of the strategies taught in a web-based course than teachers who received only consultation with a mental health provider ($p<0.001$).

KT tactics that have a positive influence on acceptability are:

1. Active dissemination of information

Rosenbaum et al. (2010) investigated the effects of providing a summary of findings table for a Cochrane Review to healthcare professionals and researchers (n=79). The control group in this study only received the Cochrane Review. Individuals who received the summary of findings table were more likely to respond ‘agree’ or ‘strongly agree’ to the following questions: 1) “easy to find results for important outcomes” ($p=0.021$), and 2) “overall perceived accessibility” ($p=0.037$). Eighty-one percent of participants agreed or strongly agreed that Cochrane reviews should include a summary of findings table.

KT tactics that have a positive influence on the utilization of resources are:

1. Active dissemination of information

Mason et al. (1998/1999) and Mason et al. (2001) investigated the effects of distributing an Effective Health Care bulletin to physicians. Neither of these studies had a control group. In Mason et al. (1998/1999), the cost saving associated with a reduction in SSRI prescription rates may have amounted to nearly £40 million (138,000 years of treatment). In Mason et al. (2001),

the theoretical savings associated with a reduction in glue ear surgery amounted to £27 million. The cost of alternative treatments or prevention strategies was not assessed in either study.

KT tactics that are currently not supported by research evidence include:

- Communities of practice
- Distribution of information plus audit and feedback and training/workshop
- Online access to information only
- Online access to information plus targeted messages and access to a knowledge broker

For further details on the primary studies that investigated these KT tactics, refer to **Appendix D**.

11 Applicability and Transferability

On July 31, 2014, PPH staff met for a facilitated discussion on the applicability and transferability of the rapid review findings and recommendations. Staff in various roles from The Office of the Medical Officer of Health, Communicable Diseases, Communications, Chronic Disease and Injury Prevention, Environmental Health, and Family Health Divisions were represented at the meeting. A summary of the points of discussion can be found in **Appendix E**.

The meeting attendees agreed that the recommended KT tactics would be supported in the current political climate. Many of the tactics are already being used by the organization and for both the producers of knowledge products, and the users, there is motivation to improve KT processes at PPH. In addition, Regional Council supports receiving reports that contain health status and surveillance data. Further increasing the use of data helps PPH use tax dollars in the most cost-effective manner and will enhance the stature of the organization. The *Evidence-*

Informed Decision-Making and Surveillance: Data for Action strategic priorities have helped to prime PPH staff to use data on a regular basis. However, in order to gain social acceptability, partnering with staff who are already actively involved in KT activities will be important so that we can leverage their existing knowledge and experience. Some staff are currently using KT tactics that were not supported by the literature in this rapid review. Providing evidence-informed alternatives will be necessary. Implementing the recommended KT tactics as a set of options where staff can choose which ones will best connect with their target audience is preferred over standardizing a KT approach to every new knowledge product.

Some resources are already in place to implement the recommended KT tactics, as staff at various levels (e.g., specialist, middle management, AMOH) employ various KT tactics throughout the organization. However, resources will be required to build a more robust and consistent KT process. Expanding the use of some KT tactics (e.g., training/workshop) may require additional training and new resources (e.g., facilitation skills). Many meeting attendees expressed interest in having guiding documents (e.g., logic model, Peel-specific KT tools) that complement a renewed approach to KT at PPH. These documents would need to be created with cross-divisional input.

KT tactics are naturally a part of all strategic priorities at PPH and enhanced work in KT will support the *End-to-End Public Health Practice* strategic priority. Additionally, improving KT processes to increase the use of health status and surveillance data satisfy the goals set out in the Ontario Public Health Standards. Knowledge translation activities open many opportunities for cross-departmental/divisional collaboration. Divisions with extensive KT experience can be

called on for insight into what tactics have worked for them in the past. Also, the current cohort of internal Knowledge Brokers could assist with more intensive KT efforts.

The anticipated reach of the recommended KT tactics is wide. Putting in place tools, guidance documents, and processes to guide the KT process will improve reach and effectiveness, and help to standardize KT efforts across the organization. Many meeting attendees stressed the importance of consistency in how KT tactics are implemented not only across divisions, but also from one project to another. This will also aid evaluation efforts.

Not all of the primary studies included in the review focused on public health staff. There was some concern from the meeting attendees that this might limit the generalizability of the results. However, the KT tactics that were evaluated are still applicable to the public health setting. In many cases, the KT tactics that are currently used by PPH were found to be effective when targeted at many heterogeneous populations, providing additional evidence of their value.

Health status and surveillance data are currently being used to different degrees across the organization. Changing the attitude of staff that health status and surveillance data is difficult to work with is a necessary first step, and much work is already underway (e.g., ‘Strength in Numbers’ numeracy strategy). The results of this rapid review need to be situated within the context of PPH’s numeracy work, other rapid reviews focusing on effective communication strategies, and the applicable strategic priorities in order to achieve the goal of ensuring staff use data, correctly, in their program decisions.

12 Recommendations

It is recommended that Peel Public Health:

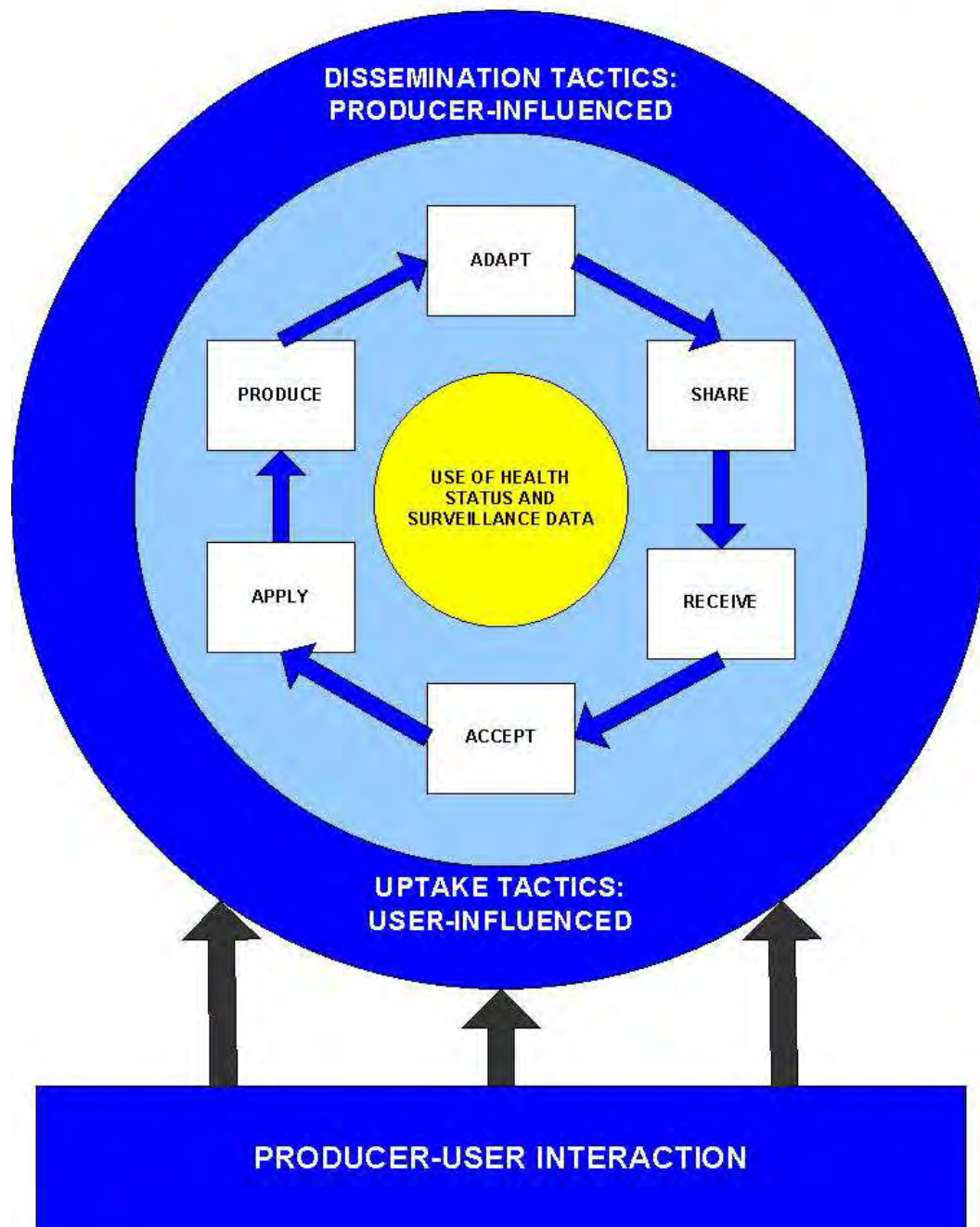
- Utilize KT tactics that combine mentoring (people) and data access (technology) to increase the likelihood that staff will use health status or surveillance data in their program decisions.
- Consider using the following KT tactics in a more consistent and robust manner at PPH:
 - Active dissemination of information
 - Key opinion leaders
 - Online access to information with training/workshop or targeted messages
 - Producer-user interaction during content development
 - Training/workshops
- Review and reconsider the use of KT tactics that are currently not supported by research evidence:
 - Communities of practice
 - Distribution of information plus audit and feedback and training/workshop
 - Online access to information only
 - Online access to information plus targeted messages and access to a knowledge broker
- Investigate appropriate evaluation measures for current and future KT tactics

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5. Murthy L, Shepperd S, Clarke MJ, et al. Interventions to improve the use of systematic reviews in decision-making by health system managers, policy makers and clinicians (Review). *The Cochrane Library*. 2012;9.
6. Barwick MA, Schachter HM, Bennett LM, et al. Knowledge translation efforts in child and youth mental health: a systematic review. *Journal of Evidence-Based Social Work*. 2012;9:369-395.
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Appendix A: Concept Model

KNOWLEDGE TRANSLATION FOR PUBLIC HEALTH HEALTH STATUS and SURVEILLANCE DATA FOR ACTION



Appendix B: Search Strategy

Ovid: Searched January, 2014

Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to November 2013>, EBM Reviews - ACP Journal Club <1991 to December 2013>, EBM Reviews - Database of Abstracts of Reviews of Effects <4th Quarter 2013>, EBM Reviews - Cochrane Central Register of Controlled Trials <December 2013>, EBM Reviews - Cochrane Methodology Register <3rd Quarter 2012>, EBM Reviews - Health Technology Assessment <4th Quarter 2013>, EBM Reviews - NHS Economic Evaluation Database <4th Quarter 2013>, Ovid Healthstar <1966 to November 2013>, Ovid MEDLINE(R) <1946 to November Week 3 2013>, Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations <January 09, 2014>
Search Strategy:

-
- 1 exp Knowledge Management/ (168)
 - 2 exp Translational Medical Research/ (4416)
 - 3 exp Information Dissemination/ (21502)
 - 4 Public Health/ (123758)
 - 5 public health.ti,ab. (253625)
 - 6 exp Community Health Workers/ or exp Community Health Nursing/ or exp Community Health Services/ (993778)
 - 7 community health\$.ti,ab. (28087)
 - 8 exp Public Health Practice/ (948363)
 - 9 exp Public Health Administration/ (29028)
 - 10 (decision\$ or decision-mak\$).ti,ab. (400231)
 - 11 meta-analysis.mp,pt. (183926)
 - 12 systematic review.tw. (118994)
 - 13 cochrane database of systematic reviews.jn. (42751)
 - 14 11 or 12 or 13 (269059)
 - 15 exp guideline/ (41997)
 - 16 (practice guideline or guideline).pt. (53546)
 - 17 15 or 16 (53546)
 - 18 14 or 17 (321533)
 - 19 (comment or letter or editorial or note or erratum or short survey or news or newspaper article or patient education handout or case report or historical article).pt. (2978680)
 - 20 18 not 19 (309280)
 - 21 ("evidence diffusion" or "evidence uptake" or "evidence translation" or "evidence transfer" or "evidence exchange" or "evidence utilization" or "evidence utilisation").ti,ab. (133)
 - 22 ("knowledge diffusion" or "knowledge uptake" or "knowledge translation" or "knowledge transfer" or "knowledge exchange" or "knowledge utilization" or "knowledge utilisation").ti,ab. (3780)
 - 23 ("evidence implementation" or "evidence synthesis" or "evidence dissemination").ti,ab. (2227)
 - 24 ("knowledge implementation" or "knowledge synthesis" or "knowledge dissemination").ti,ab. (424)

- 25 ("research diffusion" or "research uptake" or "research translation" or "research transfer" or "research exchange" or "research utilization" or "research utilisation").ti,ab. (1474)
- 26 ("research implementation" or "research synthesis" or "research dissemination").ti,ab. (1082)
- 27 21 or 22 or 23 or 24 or 25 or 26 (8806)
- 28 health.ti,ab. (2084393)
- 29 10 and 28 (94904)
- 30 4 or 5 or 6 or 7 or 8 or 9 or 29 (2019168)
- 31 1 or 2 or 3 or 27 (33889)
- 32 20 and 30 and 31 (392)
- 33 remove duplicates from 32 (218)

EBSCO (CINAHL, Health Business Elite, Academic Search Primer): Searched January, 2014

#	Query	Limiters/Expanders	Last Run Via	Results
S26	S10 AND S24	Limiters - Scholarly (Peer Reviewed) Journals Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	227
S25	S10 AND S24	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	234
S24	S20 AND S23	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	1,186
S23	S11 OR S21 OR S22	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	6,498
S22	S13 OR S14	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases	4,404

			Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	
S21	S15 OR S16	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	2,131
S20	S7 OR S19	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	1,217,929
S19	S17 AND S18	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	64,447
S18	TI health OR AB health	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	1,565,392

S17	TI (decision* or decision-mak*) OR AB (decision* or decision-mak*)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	580,105
S16	TI ("research implementation" or "research synthesis" or "research dissemination") OR AB ("research implementation" or "research synthesis" or "research dissemination")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	956
S15	TI ("research diffusion" or "research uptake" or "research translation" or "research transfer" or "research exchange" or "research utilization" or "research utilisation") OR AB ("research diffusion" or "research uptake" or "research translation" or "research transfer" or "research exchange" or "research utilization" or "research utilisation")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	1,213
S14	TI ("knowledge implementation" or "knowledge synthesis" or "knowledge dissemination") OR AB ("knowledge implementation" or "knowledge synthesis" or "knowledge dissemination")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	408
S13	TI ("knowledge diffusion" or "knowledge uptake" or "knowledge translation" or "knowledge transfer" or "knowledge exchange" or "knowledge utilization" or "knowledge utilisation") OR AB ("knowledge diffusion" or "knowledge uptake" or "knowledge translation" or "knowledge transfer" or "knowledge exchange" or "knowledge utilization" or "knowledge utilisation")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health	4,030

			Business Elite;CINAHL Plus with Full Text	
S12	TI ("evidence implementation" or "evidence synthesis" or "evidence dissemination) OR AB ("evidence implementation" or "evidence synthesis" or "evidence dissemination)	Search modes - SmartText Searching	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	0
S11	TI ("evidence diffusion" or "evidence uptake" or "evidence translation" or "evidence transfer" or "evidence exchange" or "evidence utilization" or "evidence utilisation") OR AB ("evidence diffusion" or "evidence uptake" or "evidence translation" or "evidence transfer" or "evidence exchange" or "evidence utilization" or "evidence utilisation")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	94
S10	TI (review or systematic review or meta-analysis) OR AB (review or systematic review or meta-analysis)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	3,625,005
S9	S5 AND S7	Limiters - Scholarly (Peer Reviewed) Journals Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	610
S8	S5 AND S7	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search	651

			Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	
S7	S1 OR S2 OR S6	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	1,173,056
S6	TI "public health" OR AB "public health"	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	138,820
S5	S3 OR S4	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	4,306
S4	AB ("knowledge implementation" or "knowledge dissemination" or "knowledge syntheses*" or "knowledge broker*") OR AB ("knowledge implementation" or "knowledge dissemination" or "knowledge syntheses*" or "knowledge broker*")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	518
S3	TI ("knowledge translation" or "knowledge transfer" or "knowledge exchange" or "knowledge	Search modes - Boolean/Phrase	Interface - EBSCOhost	3,870

	utilization") OR AB ("knowledge translation" or "knowledge transfer" or "knowledge exchange" or "knowledge utilization")		Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	
S2	DE "PUBLIC health" OR DE "BURIAL" OR DE "COMMUNITY health services" OR DE "DAIRY inspection" OR DE "DENTAL public health" OR DE "DISEASE eradication" OR DE "ECOSOCIAL theory (Social medicine)" OR DE "ENVIRONMENTAL health" OR DE "EPIDEMIOLOGY" OR DE "FOOD adulteration & inspection" OR DE "HEALTH boards" OR DE "HEALTH facilities" OR DE "HEALTH planning" OR DE "HEALTH risk assessment" OR DE "HOUSING & health" OR DE "LABOR unions & public health" OR DE "MASS media & public health" OR DE "MEDICAL care" OR DE "MENTAL health" OR DE "POPULATION health" OR DE "PUBLIC health -- Citizen participation" OR DE "PUBLIC health communication" OR DE "QUARANTINE" OR DE "REGIONAL medical programs" OR DE "RURAL health" OR DE "SANITARY districts" OR DE "SANITARY engineering" OR DE "SCHOOL hygiene" OR DE "SOCIAL epidemiology" OR DE "SOCIAL medicine" OR DE "UNIVERSAL precautions (Health)" OR DE "URBAN health" OR DE "VETERINARY public health" OR DE "VOLUNTEER workers in public health" OR DE "WORLD health"	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	507,506
S1	(MH "Public Health+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - Academic Search Premier;Health Business Elite;CINAHL Plus with Full Text	744,555

ABI/INFORM Global: Searched January, 2014

Search Strategy

Set#	Searched for	Databases	Results
S17	<p>((("research diffusion" OR "research uptake" OR "research translation" OR "research transfer" OR "research exchange" OR "research utilization" OR "research utilisation") OR ab("research diffusion" OR "research uptake" OR "research translation" OR "research transfer" OR "research exchange" OR "research utilization" OR "research utilisation")) OR (ti("research implementation" OR "research synthesis" OR "research dissemination") OR ab("research implementation" OR "research synthesis" OR "research dissemination")) OR ((("evidence implementation" OR "evidence synthesis" OR "evidence dissemination") OR ab("evidence implementation" OR "evidence synthesis" OR "evidence dissemination")) OR (ti("evidence diffusion" OR "evidence uptake" OR "evidence translation" OR "evidence transfer" OR "evidence exchange" OR "evidence utilization" OR "evidence utilisation") OR ab("evidence diffusion" OR "evidence uptake" OR "evidence translation" OR "evidence transfer" OR "evidence exchange" OR "evidence utilization" OR "evidence utilisation")) OR ((("knowledge translation") OR ti(("knowledge transfer" OR "knowledge exchange")) OR ti(("knowledge utilization" OR "knowledge implementation")) OR ti(("knowledge</p>	ABI/INFORM Global	110*

	<p>dissemination" OR "knowledge syntheses")) OR (ab("knowledge translation" OR ab(("knowledge transfer" OR "knowledge exchange") OR ab(("knowledge utilization" OR "knowledge implementation")) OR ab(("knowledge dissemination" OR "knowledge syntheses")))) AND (((ti(health) OR ab(health)) AND (ti(decision" OR decision-mak") OR ab(decision" OR decision-mak")) OR (ti(public health) OR ab(public health) OR ti(community health) OR ab(community health)) OR (SU.EXACT("Public health") OR SU.EXACT("Health care management"))</p>		
S16	<p>((ti("research diffusion" OR "research uptake" OR "research translation" OR "research transfer" OR "research exchange" OR "research utilization" OR "research utilisation") OR ab("research diffusion" OR "research uptake" OR "research translation" OR "research transfer" OR "research exchange" OR "research utilization" OR "research utilisation")) OR (ti("research implementation" OR "research synthesis" OR "research dissemination") OR ab("research implementation" OR "research synthesis" OR "research dissemination")) OR (((ti("evidence implementation" OR "evidence synthesis" OR "evidence dissemination") OR ab("evidence implementation" OR "evidence synthesis" OR "evidence dissemination")) OR (ti("evidence diffusion" OR "evidence uptake" OR</p>	ABI/INFORM Global	3064°

<p>S15</p> <p>(ti("research diffusion" OR "research uptake" OR "research translation" OR "research transfer" OR "research exchange" OR "research utilization" OR "research utilisation") OR ab("research diffusion" OR "research uptake" OR "research translation" OR "research transfer" OR "research exchange" OR "research utilization" OR "research utilisation")) OR (ti("research implementation" OR "research synthesis" OR "research dissemination") OR ab("research implementation" OR "research synthesis" OR "research dissemination"))</p>	<p>ABI/INFORM Global</p>	<p>239*</p>

	"research dissemination"))		
S14	ti("research implementation" or "research synthesis" or "research dissemination") OR ab("research implementation" or "research synthesis" or "research dissemination")	ABI/INFORM Global	147°
S13	ti("research diffusion" or "research uptake" or "research translation" or "research transfer" or "research exchange" or "research utilization" or "research utilisation") OR ab("research diffusion" or "research uptake" or "research translation" or "research transfer" or "research exchange" or "research utilization" or "research utilisation")	ABI/INFORM Global	92°
S12	(ti("evidence implementation" OR "evidence synthesis" OR "evidence dissemination") OR ab("evidence implementation" OR "evidence synthesis" OR "evidence dissemination")) OR (ti("evidence diffusion" OR "evidence uptake" OR "evidence translation" OR "evidence transfer" OR "evidence exchange" OR "evidence utilization" OR "evidence utilisation") OR ab("evidence diffusion" OR "evidence uptake" OR "evidence translation" OR "evidence transfer" OR "evidence exchange" OR "evidence utilization" OR "evidence utilisation"))	ABI/INFORM Global	40°
S11	ti("evidence implementation" or "evidence synthesis" or "evidence dissemination") OR ab("evidence implementation" or "evidence synthesis" or "evidence dissemination")	ABI/INFORM Global	34°
S10	ti("evidence diffusion" or "evidence uptake" or "evidence	ABI/INFORM Global	6°

	"evidence uptake" or "evidence translation" or "evidence transfer" or "evidence exchange" or "evidence utilization" or "evidence utilisation") OR ab("evidence diffusion" or "evidence uptake" or "evidence translation" or "evidence transfer" or "evidence exchange" or "evidence utilization" or "evidence utilisation")		
S9	((ti("knowledge translation") OR ti(("knowledge transfer" OR "knowledge exchange")) OR ti(("knowledge utilization" OR "knowledge implementation")) OR ti(("knowledge dissemination" OR "knowledge synthes*")) OR (ab("knowledge translation") OR ab(("knowledge transfer" OR "knowledge exchange")) OR ab(("knowledge utilization" OR "knowledge implementation")) OR ab(("knowledge dissemination" OR "knowledge synthes*"))))	ABI/INFORM Global	2799°
S8	(SU.EXACT("Public health") OR ti("public health") OR ab("public health")) AND ((ti("knowledge translation") OR ti(("knowledge transfer" OR "knowledge exchange")) OR ti(("knowledge utilization" OR "knowledge implementation")) OR ti(("knowledge dissemination" OR "knowledge synthes*")) OR ti(("knowledge broker" OR "knowledge brokering")) OR (ab("knowledge translation") OR ab(("knowledge transfer" OR "knowledge exchange")) OR ab(("knowledge utilization" OR "knowledge implementation")) OR ab(("knowledge dissemination"	ABI/INFORM Global	18°

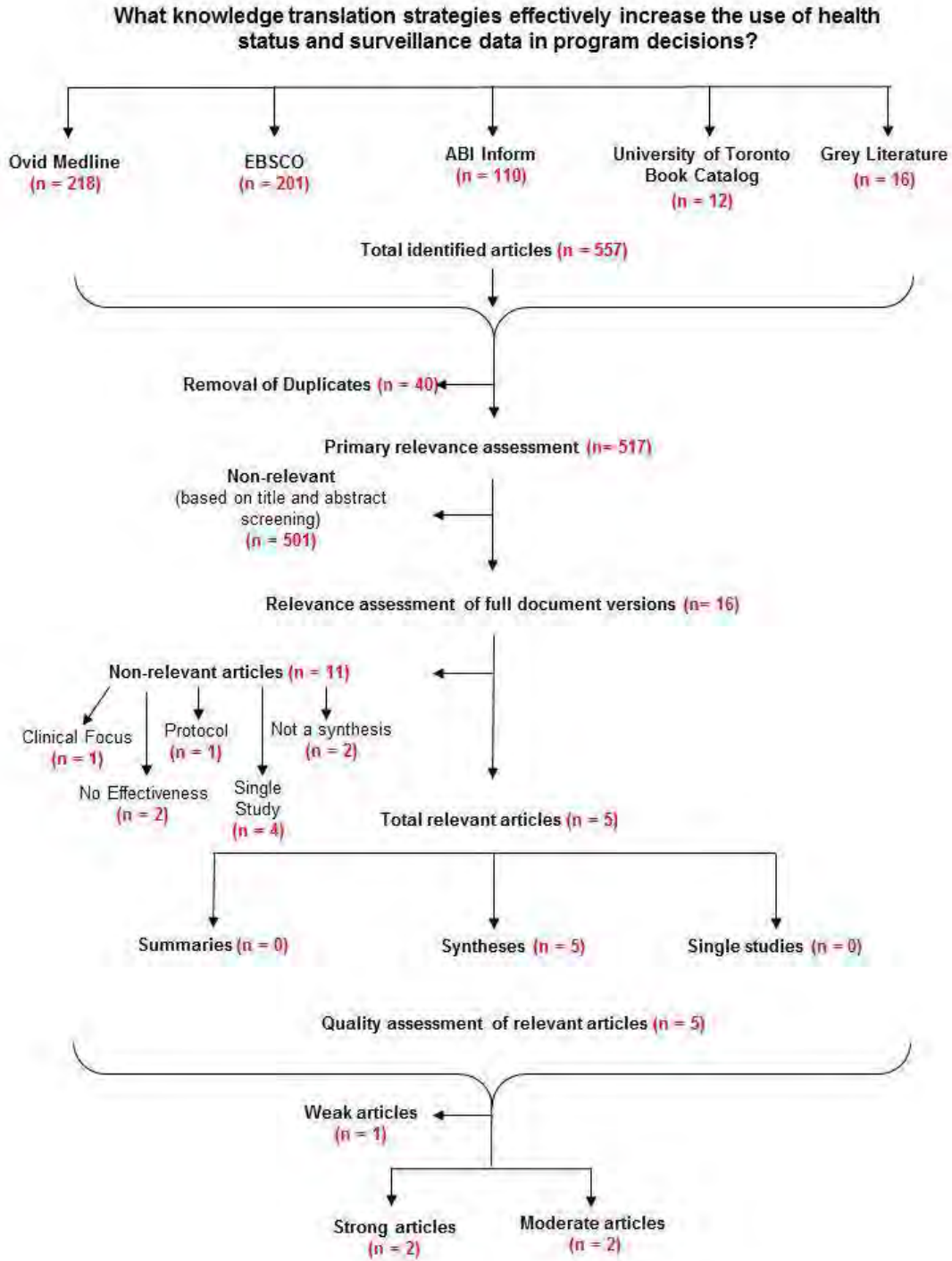
	OR "knowledge syntheses") OR ab(("knowledge broker" OR "knowledge brokering"))		
S7	((ti(health) OR ab(health)) AND (ti(decision* OR decision-mak*) OR ab(decision* OR decision- mak*))) OR (ti(public health) OR ab(public health) OR ti(community health) OR ab(community health)) OR (SU.EXACT("Public health") OR SU.EXACT("Health care management"))	ABI/INFORM Global	87760*
S6	(ti(health) OR ab(health)) AND (ti(decision* OR decision-mak*) OR ab(decision* OR decision- mak*))	ABI/INFORM Global	18860*
S5	ti(health) OR ab(health)	ABI/INFORM Global	357984*
S4	ti(decision* or decision-mak*) OR ab(decision* or decision- mak*)	ABI/INFORM Global	418696*
S3	ti(public health) OR ab(public health) OR ti(community health) OR ab(community health)	ABI/INFORM Global	59668*
S2	SU.EXACT("Public health") OR SU.EXACT("Health care management")	ABI/INFORM Global	21636*
S1	SU.EXACT("Public health") OR SU.EXACT("Health care management") OR SU.EXACT("Health care industry")	ABI/INFORM Global	175431*

Additional Electronic Databases and Grey Literature Sources: Searched November, 2013 (Grey Literature) and January, 2014 (Electronic)

Search terms used:

1. Knowledge translation
2. Public health

Appendix C: Literature Search Flowchart



Adapted from: healthevidence.org Keeping Track of Search Results: A Flowchart. [Retrieved January 13, 2010]

Appendix D: Data Extraction Tables

Data	Data Extraction Details
General Information and Quality Rating for Systematic Review #1	
1. Author(s) and Date	LaRocca R., Yost J., Dobbins M., et al. 2012
2. Country (of authorship)	Canada
3. Quality rating	Health Evidence Quality Assessment Tool – Review Articles <ul style="list-style-type: none"> • Strong (8/10) • Lost points on criteria 3 and 9
4. Objectives of review	Address which knowledge translation (KT) strategies are most effective among practitioners, managers and policy makers to promote the use of research evidence in public health settings.
Details of Review	
5. Number of primary studies included	Five from an original search of 64,391 records
6. Types of studies included	Four randomized controlled trials (RCT) and one interrupted time series (ITS) analysis.
7. Search period	2000-2010
8. Databases searched	Health databases: <ul style="list-style-type: none"> • CINAHL, Medline and EMBASE Other databases: <ul style="list-style-type: none"> • Effective Practice Organization of Care Group (EPOC), Cochrane Database of Systematic Reviews, Knowledge Translation + and Public Health + Unpublished: <ul style="list-style-type: none"> • Canadian Public Health Association, Research Transfer Network of Alberta, Knowledge Exchange in Public Health, National Institutes of Health and 2010 Public Health Policy Conference Reference lists of five included primary studies Key informants
9. Inclusion and exclusion criteria	Inclusion: <ul style="list-style-type: none"> • Studies directed towards health professionals involved in the delivery of preventative services

	<ul style="list-style-type: none"> Practitioner RCTs, cluster RCTs, non-randomized cluster controlled trials, controlled before and after studies and ITS designs <p>Exclusion:</p> <ul style="list-style-type: none"> Studies with practitioners involved in activities focused on clinical care Studies where participants were students learning in a school setting Change in attitude outcome Qualitative and mixed method study designs
Details of Interventions Included in Review	
10. Description of interventions	<p>Educational sessions (two primary studies)</p> <ul style="list-style-type: none"> 11 course skill building workshop on evidence-based public health involving small group problem-based activities and discussion, goal setting, access to web-based information services (inclusive of a question and answer service, discussion list, and ongoing support services) and three newsletters (Forsetlund) Didactic presentation, peer discussion, and group work on real life vignettes (Hanbury) <p>Technical/peer support (two primary studies):</p> <ul style="list-style-type: none"> Communities of practice: deliberate communities of people who share knowledge, learn together and create common practices supporting knowledge exchange among practitioners (Barwick) One-on-one contact with a knowledge broker and access to an online registry (Dobbins) <p>Dissemination channels (one primary study):</p> <ul style="list-style-type: none"> Program materials disseminated through pamphlet, CD-ROM and Internet channels (Di Noia) <p>Web-based services (one primary study):</p> <ul style="list-style-type: none"> Tailored and targeted messages and access to an online registry (Dobbins)
11. Intervention settings	<p>Settings varied based on type of intervention:</p> <ul style="list-style-type: none"> United States (one primary study), Canada (two primary studies), Norway (one primary study) and England (one primary study) Public health departments, community agencies and policy making bodies
12. Target groups	<p>Public health professionals involved in public or community prevention oriented coalitions from a range of public health disciplines including:</p> <ul style="list-style-type: none"> Mental health (Barwick, Hanbury) Preventative adolescent substance abuse services (Di Noia) Healthy body weight promotion (Dobbins) Immunization and cancer screening prevention (Forsetlund)

	Job titles included school personnel, social workers, registered nurses, physicians, program managers and coordinators or directors
13. Primary outcomes	<p>Change in knowledge:</p> <ul style="list-style-type: none"> • Concrete change in knowledge or understanding <p>Change in practice:</p> <ul style="list-style-type: none"> • Concrete application of knowledge
14. Outcome measures	<p>Change in knowledge (multiple assessment tools):</p> <ul style="list-style-type: none"> • Self-reported content knowledge <p>Change in practice (multiple assessment tools):</p> <ul style="list-style-type: none"> • Self-reported content use • Health report content analysis
Results of Review	
15. Meta-analysis?	<p>No:</p> <ul style="list-style-type: none"> • Variability in the type of KT strategies and implementation of these strategies between the included studies • Difference in data collection between the included studies
16. Main results of review	<p><u>Change in knowledge</u></p> <p>Educational sessions:</p> <ul style="list-style-type: none"> • Workshop, information services, discussion list and free access to databases vs. access to free library services only (Forsetlund): <ul style="list-style-type: none"> ○ Between group differences for self-perceived knowledge (scale: 0 to 3) (mean difference: 0.4, 95% CI 0.2-0.6; $p < 0.001$) and knowledge about terms of importance to critical appraisal (scale: 0 to 2) (mean difference: 0.2, 95% CI 0.0-0.3; $p = 0.01$) in favour of the intervention group ○ Measurement period: baseline and end of intervention (1.5 years) <p>Technical/peer support:</p> <ul style="list-style-type: none"> • Communities of Practice vs. usual practice (Barwick): <ul style="list-style-type: none"> ○ No between group differences in participants' knowledge related to the use of an evidence based tool recently introduced into practice ($p = 0.14$) ○ Measurement period: baseline and end of intervention (11 months) <p>Dissemination channels:</p> <ul style="list-style-type: none"> • 1) Pamphlet vs. 2) CD-ROM vs. 3) Internet (Di Noia): <ul style="list-style-type: none"> ○ Respondents who received materials disseminated via CD-ROM or Internet showed significantly greater

	<p>knowledge of where to locate materials (Likert-scales response options) compared to respondents who received printed pamphlets ($p < 0.05$)</p> <ul style="list-style-type: none"> ○ Post-hoc comparisons favoured the Internet ($p < 0.05$) ○ Measurement period: baseline and follow up (six months) <p><u>Change in practice</u></p> <p>Educational sessions:</p> <ul style="list-style-type: none"> • Workshop, information services, discussion list and free access to databases vs. access to free library services only (Forsetlund): <ul style="list-style-type: none"> ○ No between group differences in the use of research in written reports (statistical test not reported) ○ Measurement period: baseline and end of intervention (1.5 years) • Educational session vs. usual practice (Hanbury): <ul style="list-style-type: none"> ○ No between group differences in adherence to a national guideline (statistical test not reported) ○ Measurement period: baseline <p>Technical/peer support:</p> <ul style="list-style-type: none"> • Communities of Practice vs. usual practice (Barwick): <ul style="list-style-type: none"> ○ No between group differences in self-reported use of implementation supports ($p = 0.87$) or self-reported practice change ($p = 0.65$) ○ Measurement period: baseline and end of intervention (12 months) • 1) Access to an online registry of systematic reviews of public health interventions vs. 2) access to online registry plus tailored, weekly targeted messages advising of articles in the registry relevant to their program area vs. 3) access to online registry plus tailored messages plus one-on-one exposure to a knowledge broker (Dobbins): <ul style="list-style-type: none"> ○ Knowledge brokers along with access to an online registry (intervention #3) showed a trend towards a positive effect when organizational research culture was perceived at baseline as low (statistical test not reported) ○ Measurement period: baseline and end of intervention (two years) <p>Dissemination channels:</p> <ul style="list-style-type: none"> • 1) Pamphlet vs. 2) CD-ROM vs. 3) Internet (Di Noia): <ul style="list-style-type: none"> ○ No between group differences in frequency of searching for information (statistical test not reported) ○ Measurement period: baseline and follow up (six months) <p>Web-based services:</p> <ul style="list-style-type: none"> • 1) Access to an online registry of systematic reviews of public health interventions vs. 2) access to online registry plus tailored, weekly targeted messages advising of articles in the registry relevant to their program area vs. 3) access to online registry plus tailored messages plus one-on-one exposure to a knowledge broker (Dobbins): <ul style="list-style-type: none"> ○ Between group differences in the number of public health policies and programs being implemented in favour of intervention group #2 ($p < 0.01$) ○ No between group differences in the extent to which research evidence was considered in a recent program
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	<p>planning decision (p=0.45)</p> <ul style="list-style-type: none"> ○ Intervention #2 was more effective when organizational research culture was high (statistical test not reported) ○ Intervention #1 alone had no impact on evidence-informed decision making (statistical test not reported) ○ Measurement period: baseline and end of intervention (two years)
17. Comments/limitations	<p>“Recommendations related to interventions can only be given or considered within the boundaries of the context they were delivered in (e.g., characteristics of the knowledge being transferred, the providers, participants and organizations).”⁴</p> <p>Strengths:</p> <ul style="list-style-type: none"> ● Comprehensive search strategy ● Rigorous methodology <p>Limitations:</p> <ul style="list-style-type: none"> ● Small body of literature directed towards changing the knowledge, skills, or practice of public health practitioners ● Included primary studies were moderate quality (small sample sizes) ● High variation in settings, interventions and outcome measures across the included studies ● Difficult to determine if the KT strategy itself was effective or if it was the context in which it was delivered ● Reliance on self-reported outcome measures

Data	Data Extraction Details
General Information and Quality Rating for Systematic Review #2	
1. Author(s) and Date	Murthy L., Shepperd S., Clarke MJ., et al. 2012
2. Country (of authorship)	United Kingdom
3. Quality rating	Health Evidence Quality Assessment Tool – Review Articles <ul style="list-style-type: none"> • Strong (9/10) • Lost points on criteria 9
4. Objectives of review	To identify and assess the effects of information products based on systematic review evidence and organizational supports and processes designed to support the uptake of systematic review evidence by health system managers, policy makers and clinicians.
Details of Review	
5. Number of primary studies included	Eight from an original search of 19,996 records
6. Types of studies included	Five RCTs, of which four were cluster RCTs, and three ITS analyses.
7. Search period	1992-2012
8. Databases searched	Health databases: <ul style="list-style-type: none"> • CINAHL, Medline, EMBASE and Web of Science Psychological databases: <ul style="list-style-type: none"> • PsycINFO Other databases: <ul style="list-style-type: none"> • The Cochrane Library and Health Economic Evaluations Database Unpublished: <ul style="list-style-type: none"> • Cochrane Colloquia, Health Knowledge Network Bulletins, Cochrane Centres, Canadian Health Services Research Foundation, Canadian Institutes of Health Research, The International Network of Agencies for Health Technology Assessment and archives of relevant electronic discussion or distribution lists Hand searched <i>Implementation Science</i> (2006-2011) and <i>Evidence and Policy</i> (2005-2011) Reference lists of eights included primary studies Key informants

9. Inclusion and exclusion criteria	<p>Inclusion:</p> <ul style="list-style-type: none"> • RCTs, ITS analyses (clearly defined point in time when the intervention occurred and at least three data points before and three after the intervention), controlled before-after studies (two intervention and two control sites) <p>Exclusion:</p> <ul style="list-style-type: none"> • Studies with interventions based on the use of guidelines, and clinical pathways or algorithms derived from guidelines • Studies with interventions targeted at patients or the public • Studies with interventions such as learning or teaching aids developed to support the use of evidence • Studies where the decision makers were students, lay participants, patients or other members of the public • Government 'benchmarks' and performance targets, briefs, guidance or position statements from professional bodies and evidence from audits of clinical practice
Details of Interventions Included in Review	
10. Description of interventions	<p>Push activities (arising from the research community) (six primary studies):</p> <ul style="list-style-type: none"> • Access to the WHO Reproductive Health Library with assistance plus interactive workshops (Gulmezoglu) • Dissemination of Effective Health Care bulletins (Black, Mason 1998/1999, Mason 2001) • Provision of a summary of findings table for a Cochrane Review (Rosenbaum) • Analgesic league table based on systematic review evidence, audit and feedback and interactive workshops (Seers) <p>Linkage and exchange activities (two-way activity) (two primary studies):</p> <ul style="list-style-type: none"> • Access to 1) health-evidence.ca vs. 2) tailored, targeted messages and access to health-evidence.ca vs. 3) tailored, targeted messages, access to health-evidence.ca and a knowledge broker who worked one-on-one with decisions makers (Dobbins) • Access to Cochrane reviews on pregnancy and childbirth, a video on evidence-based medicine and a single educational visit (Wyatt)
11. Intervention settings	<p>Settings varied based on type of intervention:</p> <ul style="list-style-type: none"> • General and teaching hospitals • Public health departments • General practitioner offices • Workshop
12. Target groups	<ul style="list-style-type: none"> • Nurses • Physicians • Public health professionals • Workshop participants • NHS clinicians and decision makers
13. Primary outcomes	Utilization of research:

	<ul style="list-style-type: none"> • Use of research in health care decision-making (e.g., clinical practice, changes in clinician behaviour, healthcare management decisions) <p>Secondary outcomes:</p> <ul style="list-style-type: none"> • Acceptability of the way information has been presented • Knowledge • Utilization of healthcare resources • Patient-related outcomes
14. Outcome measures	<p>Utilization of research:</p> <ul style="list-style-type: none"> • Rate of surgery • Global evidence-informed decision-making and public health and policies and programs • Clinical practices: 1) social support during labour, 2) magnesium sulphate for eclampsia, 3) corticosteroids to women with preterm birth, 4) selective episiotomy, 5) uterotonic use after birth, 6) breastfeeding on demand, 7) external cephalic version, 8) iron/folate supplementation, 9) antibiotic use at caesarean section, 10) vacuum extraction for assisted birth, 11) use of polyglycolic acid sutures, 12) use of ventrouse for instrumental delivery • Prescribing behaviour and volume of use • Rate of grommet insertion <p>Utilization of health care resources</p> <ul style="list-style-type: none"> • Costs of intervention <p>Knowledge:</p> <ul style="list-style-type: none"> • Extent to which labour ward guidelines were evidence-based <p>Acceptability:</p> <ul style="list-style-type: none"> • Satisfaction in locating main findings • Preferences and attitudes about the inclusion of Summary of Findings tables in Cochrane Reviews <p>Patient related outcomes:</p> <ul style="list-style-type: none"> • Pain rating • Use of analgesia
Results of Review	
15. Meta-analysis?	<p>No:</p> <ul style="list-style-type: none"> • Not possible to combine studies due to divergent clinical areas, baseline variation in practices between studies, direction of the conclusion of the systematic review being summarized, and the health system being targeted
16. Main results of	<u>Utilization of research</u>

review	<p>Push activities (four primary studies):</p> <ul style="list-style-type: none"> • Access to the WHO Reproductive Health Library with assistance plus interactive workshops vs. no intervention (Gulmezoglu): <ul style="list-style-type: none"> ○ Overall median effect size (difference in adjusted end of study proportion of use) for six target obstetric practices: Thailand (4.2%: range -11.2% to 18.2%), Mexico (3.5%: range 0.1% to 19.0%) ○ Statistically significant change in one clinical indicator (selective episiotomies) adjusted for baseline difference (5.3%, 95% CI -0.1% to 10.7%, p=0.05) at one centre (Thailand) ○ Measurement period: baseline and follow up (10-12 months) • Dissemination of Effective Health Care bulletins (no control group): <ul style="list-style-type: none"> ○ The mean annual decline in the rate of surgery for glue ear was significantly greater post-intervention (-10.1%, 95% CI -7.9% to -12.3%) than the 1.6% annual decline (95% CI -3.9% to 0.8%) before the intervention (Black) ○ Prescribing of SSRI antidepressants was estimated to be 8.2% lower (p=0.005) than that predicted by the rates of prescribing observed before the intervention (Mason 1998/1999) ○ The quarterly rate of grommet insertion decreased by -0.044 per 1,000 (95% CI -0.080 to -0.011; p <0.0001) four years after the intervention (Mason 2001) ○ Measurement period: pre-intervention (1975 – 1997/98) and post-intervention (1992/93 – 97/97) (Black); baseline and post-intervention (1.5 years) (Mason 1998/1999); pre-intervention (1989-1999) and post-intervention (four years) (Mason 2001) <p>Linkage and exchange activities (two primary studies):</p> <ul style="list-style-type: none"> • 1) Access to an online registry of systematic reviews of public health interventions vs. 2) access to online registry plus tailored, weekly targeted messages advising of articles in the registry relevant to their program area vs. 3) access to online registry plus tailored messages plus one-on-one exposure to a knowledge broker: <ul style="list-style-type: none"> ○ Statistically significant effect of intervention #2 on the number of public health policies and programs implemented from baseline to follow-up immediately after the intervention (mean difference: 1.67; 95% CI 0.37 to 2.97; p <0.01) ○ High organizational research culture significantly increased the impact of tailored messages (statistical test not reported) ○ No statistically significant effect of intervention #2 on evidence-informed decision making (scale: 0 to 7) (mean difference: -0.42; 95% CI -1.10 to 0.26; p<0.45) ○ No statistically significant effect of having access to a knowledge broker (intervention #3) compared to intervention #1 on evidence informed decision-making (scale: 0 to 7) (mean difference: -0.09; 95% CI -0.78 to 0.60) ○ Measurement period: baseline and end of intervention (two years) • Access to Cochrane reviews on pregnancy and childbirth, a video on Evidence Based-Medicine and a single educational visit vs. no intervention (Wyatt): <ul style="list-style-type: none"> ○ The median rate for the four clinical marker practices was lower in the intervention group: RR=0.92 (range: 0.57 to 1.01) ○ Measurement period: baseline and follow up (nine months)
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Knowledge

Linkage and exchange activities:

- Access to Cochrane reviews on pregnancy and childbirth, a video on Evidence Based-Medicine and a single educational visit vs. no intervention (Wyatt):
 - The extent to which labour ward guidelines were evidence-based (scale: 0 to 16) increased from a baseline median score of 1.5 (range: 0 to 7.8) to 2.75 (range: 0 to 9.5) at follow-up for the units in the intervention group and from 2 (range: 0 to 7.5) to 4 (range: 0 - 9.5) for the units in the control group at follow-up. These were not statistically significant changes
 - Measurement period: baseline and follow up (nine months)

Utilization of healthcare resources

Push activities:

- Dissemination of Effective Health Care bulletins (no control group):
 - SSRI cost savings estimated to be nearly £40m (potentially avoiding approximately 138,000 years of treatment). No evidence that changes in reimbursement price over time affected prescribing (Mason 1998/1999)
 - 89,800 procedures avoided nationally resulting in a theoretical savings of £27m (Mason 2001)
 - Measurement period: baseline and post-intervention (1.5 years) (Mason 1998/1999); pre-intervention (1989-1999) and post-intervention (four years) (Mason 2001)

Acceptability

Push activities:

- Provision of a summary of findings table for a Cochrane Review vs. a Cochrane Review with no summary of findings table (Rosenbaum):
 - Statistically significant effect of receiving a summary of findings table for the following criteria: 1) “easy to find results for important outcomes” (p=0.021), 2) “overall perceived accessibility” (p=0.037)
 - No between-group differences for the following criteria: 1) “review authors have indicated what they believe are the most important outcomes” (p=0.93); 2) “easy to find this information” (p=0.29); 3) “easy to find quality of evidence for important outcomes” (p=0.12); 4) “easy to understand the main findings” (p=0.31); 5) “main findings are presented in such a way that it is helpful in making a decision” (p=0.54)
 - 81% of all participants agreed or strongly agreed that Cochrane reviews should include summary of findings tables. 75% found the explanation sheet on elements of the summary of findings table helpful.

Patient-related outcomes

Push activities:

- Analgesic league table based on systematic review evidence, audit and feedback and interactive workshops vs. no intervention (Seers):
 - No between-group differences at follow-up for current pain at rest (all scales: 0 to 10) (mean difference: 0.00; 95% CI -0.69 to 0.69), current pain on movement (mean difference: -0.14; 95% CI -1.06 to 0.52), pain at rest since surgery (mean difference: -0.27; 95% CI -1.06 to 0.52), pain on movement since surgery (mean

	<p>difference: -0.04; 95% CI -0.98 to 0.90), worst pain since surgery at rest (mean difference: -0.85; 95% CI -2.04 to 0.34), and worst pain since surgery on movement (mean difference: 0.49; 95% CI -0.66 to 1.64)</p> <ul style="list-style-type: none"> ○ No between-group differences at follow-up in the use of diclofenac (RR: 1.40; 95% CI 0.68 to 2.9) or paracetamol (RR: 1.00; 95% CI 0.70 to 1.40) ○ Measurement period: baseline and follow up (three months)
17. Comments/limitations	<p>“The range of measures used to assess the utilization of research, in addition to the different interventions, meant that the authors were unable to combine studies to report a pooled measure of effect. The evidence included in this review suggests that contextual factors (e.g., awareness of the problem and the extent that this awareness corresponds to the evidence) should be examined before deciding on which type of information product should be implemented.”⁵</p> <p>Strengths:</p> <ul style="list-style-type: none"> • Comprehensive systematic search of the indexed literature, grey literature and checked reference lists of relevant publications <p>Limitations:</p> <ul style="list-style-type: none"> • Included studies of very low to moderate quality evidence

Data	Data Extraction Details
General Information and Quality Rating for Systematic Review #3	
1. Author(s) and Date	Barwick MA., Schachter HM., Bennett LM., et al., 2012
2. Country (of authorship)	Canada
3. Quality rating	Health Evidence Quality Assessment Tool – Review Articles <ul style="list-style-type: none"> • Moderate (6/10) • Lost points on criteria 3, 6, 7 and 9
4. Objectives of review	Assess the current state of scientific knowledge regarding the effectiveness of KT strategies or interventions for child and youth mental health (CYMH).
Details of Review	
5. Number of primary studies included	12 from an original search of 7,626 records
6. Types of studies included	Three cluster RCTs, two RCTs, one ITS analysis, one controlled before and after (CBA) and five quasi-experimental.
7. Search period	No publication limit was placed on the search
8. Databases searched	Health databases: <ul style="list-style-type: none"> • CINAHL, Medline/PreMedline, EMBASE, LILACS and ADOLEC Psychological databases: <ul style="list-style-type: none"> • PsycINFO Social Science databases: <ul style="list-style-type: none"> • Sociological Abstracts Other: <ul style="list-style-type: none"> • Cochrane Central Register of Controlled Trials and Cochrane Database of Systematic Reviews
9. Inclusion and exclusion criteria	Inclusion: <ul style="list-style-type: none"> • Evaluated effectiveness of at least one KT intervention/strategy • KT strategy directly targets any stakeholder other than the actual care users • Studies involving children and youth from 0 to 24 years • Studies that employed simulated assessments to measure outcomes Exclusion:

	<ul style="list-style-type: none"> • Studies targeting the care user • Studies with outcomes other than behavioural or organizational • Publication in a language other than English
Details of Interventions Included in Review	
10. Description of interventions	<p>Practitioner/teacher training (eight primary studies):</p> <ul style="list-style-type: none"> • Conference, toolkit (Homer) • Technology transfer approach including training and supervision (Liddle) • Workshop, distribution of education materials (Tucker and Lerman) • Training (Moore) • Teacher training and principal intervention (Rohrback) • Workshop (Wallace) • Teacher training (Webster-Stratton) <p>Intensive quality assurance (one primary study):</p> <ul style="list-style-type: none"> • Workshop and intensive quality assurance (Henggeler) <p>Communities of practice (one primary study: Barwick)</p> <p>Trained facilitators (one primary study: Scott)</p> <p>Key opinion leaders (one primary study: Atkins)</p>
11. Intervention settings	<p>Settings varied based on type of intervention:</p> <ul style="list-style-type: none"> • Community-based CYMH: five studies • School-based CYMH: seven studies
12. Target groups	<p>Community-based CYMH:</p> <ul style="list-style-type: none"> • CYMH practitioners • Therapists • Physicians • Adolescent drug treatment program staff • Social workers • Mental health technicians • Registered nurses • Program and medical directors <p>School-based CYMH:</p>

	<ul style="list-style-type: none"> • Teachers • Principals • Mental health providers • School psychologists • Teacher assistants
13. Primary outcomes	Change in practice
14. Outcome measures	<p>Change in practice:</p> <ul style="list-style-type: none"> • Use of outcome measurement tool • Use of implementation supports • Use of contingency management cognitive-behavioural and monitoring techniques • Consistency with practice recommendations • Number of weekly therapy sessions • Extra-familial contact • In-session MDFT content • Characteristics of program environment • Use of child behaviour management strategies and skills • Use of ADHD assessment and intervention strategies • Proportion of preference assessment, direct teaching, and incidental teaching skills performed correctly • Percentage of correct teacher responses during simulated functional analysis • Quantity, integrity and maintenance of substance abuse program implementation • Frequency of selected strategies during simulated functional behaviour assessment • Percentage of correct responses during simulated functional analysis • Classroom management skills
Results of Review	
15. Meta-analysis?	<p>No:</p> <ul style="list-style-type: none"> • Rational for not performing a meta-analysis was not provided by the review authors
16. Main results of review	<p><u>Community-based CYMH</u></p> <p>Practitioner/teacher training:</p> <ul style="list-style-type: none"> • Conference and toolkit vs. no intervention (Homer): <ul style="list-style-type: none"> ○ Post-intervention between-group differences in consistency with diagnosis and treatment guidelines were significant for two practices favouring the intervention group: evaluation for coexisting conditions (p=0.02) and offering treatment opinions (p<0.001) ○ Measurement period: baseline and post-intervention • Technology transfer approach including training and supervision (no control group) (Liddle):

	<ul style="list-style-type: none"> ○ Therapists conducted more weekly sessions and extra-familial contacts ($p < 0.001$ for both), increased their number of weekly individual sessions ($p = 0.20$) and covered more evidence-based practice specific themes ($p = 0.014$) following the intervention ○ Measurement period: baseline and follow up (six months) ● Workshop and distribution of educational materials vs. no workshop (Tucker): <ul style="list-style-type: none"> ○ From baseline to post-training, statistically significant increase in self-reported frequency of use of praise and incentives ($p = 0.036$) and frequency in working with parents ($p = 0.01$) in the intervention group ○ Positive verbal statements increased ($p = 0.016$), negative verbal statements declined ($p = 0.028$) and use of commands during play sessions declined ($p = 0.013$), post-training in the intervention group ○ Measurement period: baseline and post-intervention <p>Communities of practice:</p> <ul style="list-style-type: none"> ● Communities of Practice vs. practice as usual (Barwick): <ul style="list-style-type: none"> ○ No significant between-group differences in self-reported practice change or use of implementation supports ○ Intervention group did engage in greater use of the outcome measurement tool in practice (statistical test not reported) ○ Measurement period: baseline and follow up (11 months) <p>Intensive quality assurance:</p> <ul style="list-style-type: none"> ● Workshop and intensive quality assurance vs. workshop only (Henggeler): <ul style="list-style-type: none"> ○ Participants in the intervention increased their implementation of cognitive-behavioural techniques from baseline through 4-months post-workshop ($p = 0.01$) ○ Practitioners in both groups did not sustain their increase in the use of cognitive behavioural techniques ○ No observed differences in practitioner use of monitoring techniques ○ Measurement period: baseline and follow up (four months) <p><u>School-based CYMH</u></p> <p>Practitioners/teacher training:</p> <ul style="list-style-type: none"> ● Workshop and distribution of educational materials (no control group) (Lerman): <ul style="list-style-type: none"> ○ Workshop participants mastered the skill components of the workshop through role play and implemented them with $> 80\%$ following the intervention ○ Measurement period: baseline and post-intervention ● Training (no control group) (Moore): <ul style="list-style-type: none"> ○ Following teacher training, the mean percentage of correct teacher responses on questions related to functional analysis skills exceeded 95% (increase from at or below 60% pre-training) ○ Measurement period: baseline and post-intervention ● 1) Intensive teacher training and principal intervention vs. 2) brief teacher training and principal intervention vs. 3) no principal intervention (Rohrback):
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	<ul style="list-style-type: none"> ○ One year post-intervention, 78% of teachers had implemented one or more of the program lessons (21% implemented all lessons) ○ No effect of teacher training on the quantity of initial implementation ○ A principal intervention was found to increase the quantity of initial implementation ($p < 0.05$) ○ Intensive teacher training (intervention #1) was not found to affect implementation integrity ○ Benefits from teacher training were not sustained (25% into second year) ○ Measurement period: baseline and follow up (one school year) ● Workshop (no control group) (Wallace): <ul style="list-style-type: none"> ○ The percentage of correct teacher responses during simulated assessment increased post-workshop (<50% pre-intervention; 96%-100% post-intervention) ○ Measurement period: baseline and post-intervention ● Teacher training vs. regular Head Start program (Webster-Stratton): <ul style="list-style-type: none"> ○ Teachers in the intervention group showed better classroom management than control teachers ($p < 0.01$) ○ Measurement period: baseline and post-intervention <p>Key opinion leaders:</p> <ul style="list-style-type: none"> ● Key opinion leaders and mental health provider consultation vs. mental health provider consultation only (Atkins): <ul style="list-style-type: none"> ○ Statistically significant between-group difference in the reported use of ADHD assessment and intervention strategies ($p < 0.001$) ○ Influence of mental health providers was not significant ○ Measurement period: baseline and follow up (two years) <p>Trained facilitators:</p> <ul style="list-style-type: none"> ● Facilitator training vs. experts (Scott): <ul style="list-style-type: none"> ○ Teams that included trained facilitators selected fewer instructional strategies ($p < 0.001$), more negative consequences ($p < 0.001$), and far more exclusionary strategies ($p < 0.001$) than did teams with FBA experts ○ Measurement period: baseline and post-intervention
17. Comments/limitations	<p>“The review authors’ ability to draw substantive conclusions from the results was hindered by the small number of included studies, their variability, and poor reporting, all of which hampered the validity of findings.”⁶</p> <p>Limitations:</p> <ul style="list-style-type: none"> ● Search strategy included only English language publications ● Did not include substance abuse as a search term ● Study quality ranged from poor to fair for the included RCT, ITS and CBA studies ● The quasi-experimental studies were of higher quality, but had extremely small sample sizes (most fewer than five participants)

Data	Data Extraction Details
General Information and Quality Rating for Systematic Review #4	
1. Author(s) and Date	Moore G., Redman S., Haines M., et al., 2011
2. Country (of authorship)	Australia
3. Quality rating	Health Evidence Quality Assessment Tool – Review Articles <ul style="list-style-type: none"> • Moderate (5/10) • Lost points on criteria 2, 3, 7, 9 and 10
4. Objectives of review	Analyze what is known about the extent to which strategies to increase the use of research in population health policies and programs is effective.
Details of Review	
5. Number of primary studies included	Five intervention studies from an original search of 7,227 records
6. Types of studies included	Two RCTs, one multi-case study, one cross-sectional follow-up study and one self-assessment
7. Search period	1999-2009
8. Databases searched	Health databases: <ul style="list-style-type: none"> • CINAHL, Medline and PubMed Psychological databases: <ul style="list-style-type: none"> • PsycINFO Other databases: <ul style="list-style-type: none"> • ProQuest 5000 and Informit Online
9. Inclusion and exclusion criteria	Inclusion: <ul style="list-style-type: none"> • Studies containing an element of ‘translation’ or repackaging of the review content • Any study design Exclusion: <ul style="list-style-type: none"> • Publication in a language other than English • Resources making systematic review evidence accessible only to patients/consumers, those for health professionals making decisions about individual patients (unless relevant to higher-level decision making), and clinical guidelines based on systematic reviews

Details of Interventions Included in Review	
10. Description of interventions	<p>Increasing access to relevant research (two primary studies):</p> <ul style="list-style-type: none"> • Access to online registers of systematic reviews and summaries; tailored targeted messages; one-on-one support by a knowledge broker (Dobbins, 2009) • Disseminating systematic reviews in areas of policy priority (Dobbins, 2001) <p>Promoting frequent interaction (one primary study):</p> <ul style="list-style-type: none"> • Interaction between users and producers of research (Kothari) <p>Increasing organizational research capacity (three primary studies):</p> <ul style="list-style-type: none"> • Training in research appraisal and use (Taylor, Denis) • Access to online registers of systematic reviews and summaries; tailored targeted messages; one-on-one support by a knowledge broker (Dobbins, 2009)
11. Intervention settings	<p>Setting varied based on type of intervention:</p> <ul style="list-style-type: none"> • Public health departments • Training environment
12. Target groups	<p>Increasing access to relevant research:</p> <ul style="list-style-type: none"> • Policy makers, program managers, clinicians <p>Promoting frequent interactions:</p> <ul style="list-style-type: none"> • Policy makers, program managers and practitioners <p>Increasing organizational research capacity:</p> <ul style="list-style-type: none"> • Practicing clinicians, healthcare managers/administrators, clinician managers, and program managers and executives
13. Primary outcomes	<ul style="list-style-type: none"> • Use of research in a policy or program • Change in knowledge, attitudes, skills and behaviour • Opportunities to use research in collaboration with others • Organization and environment characteristics
14. Outcome measures	<p>Use of research in a policy or program:</p> <ul style="list-style-type: none"> • Using at least one systematic review in the past two years when making a policy, program or staff development decision • Reading, processing and applying research findings into the team's activities • Extent to which research evidence was used in a program decision in the previous 12 months

Results of Review	
15. Meta-analysis?	<p>No:</p> <ul style="list-style-type: none"> • Rational for not performing a meta-analysis was not provided by the review authors
16. Main results of review	<p>Increasing access to relevant research:</p> <ul style="list-style-type: none"> • 1) Access to an online registry of systematic reviews of public health interventions vs. 2) access to online registry plus tailored, weekly targeted messages advising of articles in the registry relevant to their program area vs. 3) access to online registry plus tailored messages plus one-on-one exposure to a knowledge broker (Dobbins, 2009): <ul style="list-style-type: none"> ○ No significant difference between the three groups in the extent to which research evidence was considered when making a recent program-planning decision (statistical test not reported) ○ Health departments in group #2 reported the use of evidence-based programs to a greater extent than departments in the other two groups (statistical test not reported) ○ The intervention in group #2 may be more effective in organizations with high research culture (statistical test not reported) ○ Measurement period: baseline and follow up (12 months) • Dissemination of five systematic reviews on the effectiveness of public health interventions (Dobbins, 2001): <ul style="list-style-type: none"> ○ 63% of decision-makers used at least one of the disseminated systematic reviews in the past two years to make a decision ○ 40-50% of decision-makers perceived the review to have had a great influence on program justification or planning decisions ○ 37-44% of decision-makers indicated the review had not influenced decisions relating to policy development, program evaluation or staff development ○ Measurement period: baseline and follow up (two years) <p>Promoting frequent interaction:</p> <ul style="list-style-type: none"> • 1) Public health teams that interacted with the research organization commissioned to produce a research report vs. 2) teams that did not interact with the research organization (Kothari): <ul style="list-style-type: none"> ○ Interaction in the development of policy and programs increased perceptions of the value of research (statistical test not reported) ○ At follow-up, no evidence that the interaction had impacted the use of research (statistical test not reported) ○ Interaction may build trusting relationships that could later support research generation and use (statistical test not reported) ○ Measurement period: baseline and follow up (six to eight months) <p>Increasing organizational research receptivity:</p> <ul style="list-style-type: none"> • 1) Critical Appraisal Skills Program vs. 2) no training (Taylor): <ul style="list-style-type: none"> ○ Participants in the intervention group showed a statistically significant but small improvement in overall knowledge about research principles and in the ability to critically appraise research results compared to the control group (statistical test not reported)

	<ul style="list-style-type: none"> ○ No between-group differences in perceived confidence, attitude towards research or evidence-seeking behaviour (statistical test not reported) ○ Measurement period: baseline and follow up (six months) ● Participation in the Executive Training for Research Application Program (Denis): <ul style="list-style-type: none"> ○ The proportion of senior health service executives that participated who rated themselves as excellent or very good increased (pre- to post-intervention) on the following measures: research literacy, knowledge of research-based evidence, skills for doing research, knowledge of change management and ability to promote the use of research evidence in their organization (statistical test not reported) ○ Participants identified more opportunities to use research in collaboration with other professionals (statistical test not reported) ○ Changes in organizational research receptivity were modest (statistical test not reported) ● 1) Access to an online registry of systematic reviews of public health interventions vs. 2) access to online registry plus tailored, weekly targeted messages advising of articles in the registry relevant to their program area vs. 3) access to online registry plus tailored messages plus one-on-one exposure to a knowledge broker (Dobbins, 2009): <ul style="list-style-type: none"> ○ Knowledge brokers (group #3) were not effective in increasing the use of research by policy makers (statistical test not reported) ○ Measurement period: baseline and follow up (12 months)
17. Comments/limitations	<p>Limitations:</p> <ul style="list-style-type: none"> ● Few of the included studies met the criteria for high-quality intervention studies ● No included studies reported measures with the strongest forms of validity assessment ● Sample sizes of the included studies tended to be small ● Little consideration of the size of change that would be required for statistically significant differences flowing from the interventions to be detected

Appendix E: Applicability and Transferability Worksheet

Factors	Questions	Notes
Applicability (feasibility)		
Political acceptability or leverage	Will the intervention be allowed or supported in current political climate?	<ul style="list-style-type: none"> • Yes, but resource issue re: time for engagement and mentoring • There is a strong will among staff to improve knowledge translation (KT) processes • Internal and external parties will support • Cost-restraint: intensive, extensive trainings/workshops (and the use of FTE) will need to demonstrate a clear value for productive cost-effective outcomes • Anything that is going to cost money, a cost-benefit analysis needs to be considered • Council has an appreciation for the dissemination of information and is used to seeing health status/surveillance data • Given the upcoming election, the accountability expectation remains
	What will the public relations impact be for local government?	<ul style="list-style-type: none"> • Better use of research • With elections, opportunity to educate new councilors • It's more budget-responsible to get people to use data
	Will this program enhance the stature of the organization? <ul style="list-style-type: none"> • E.g., are there reasons to do the program that relate to increasing the profile and/or creating a positive image of public health? 	<ul style="list-style-type: none"> • KT initiatives are already underway with Strategic Priorities • The use of data can provide confidence, better programs and decisions • Always asked for evidence – of course is positive for public health profile; ensures we are seen as thoughtful, robust, thorough, striving for excellence

	Will the public and target groups accept and support the intervention in its current format?	<ul style="list-style-type: none"> • Depends on which of the KT tactics are implemented
Social acceptability	Will the target population find the intervention socially acceptable? Is it ethical?	<ul style="list-style-type: none"> • Yes • Target population = staff, community physicians, schools, other Public Health Units, the Ministry of Health and Long-Term Care; needs to be further defined • Focus on “team” approach in the recommendations to the utilization of health status and surveillance data will be very acceptable • Program staff working with an Epidemiologist - increased engagement, acceptability, utilization, knowledge • Epidemiologists want to produce products that are used by health professionals
	<ul style="list-style-type: none"> • Consider how the program would be perceived by the population 	<ul style="list-style-type: none"> • Additional KT efforts (e.g., training and workshop) require time and effort on the part of the end user • Will staff feel this is one more thing they need to add to their workload? • Staff will learn how to use the information and incorporate it into programs • There is precedence re: producer-user interaction during content development (e.g., student health survey and child health status report) • Training/workshops (interactive group sessions) used in Family Health and have proven effective. Nurses do require ‘key message documents’ following sessions as reminders • Results/recommendations align with the previous Rapid Reviews focusing on effective communication • Options, not fixed tactics will be preferred by

		<ul style="list-style-type: none"> • both producers and users • Implications of communities of practice and Knowledge Broker recommendations
	<ul style="list-style-type: none"> • Consider the language and tone of the key messages 	
	<ul style="list-style-type: none"> • Consider any assumptions you might have made about the population. Are they supported by the literature? 	<ul style="list-style-type: none"> • Decision makers are program management • Context of literature is community and school based – does this mirror your audience/targets? • Staff will need to change their attitude about using data first (work already underway)
	<ul style="list-style-type: none"> • Consider the impact of your program and key messages on non-target groups 	
Available essential resources (personal and financial)	Who/what is available/essential for the local implementation?	<ul style="list-style-type: none"> • KT work is already underway with ARPs, supervisors and managers • Epidemiologists and Program Planning and Evaluation (PPE) leads could be used • Proposed recommendations can easily be implemented • Depends on type and frequency of training (train the trainer?) • Need to consider available FTE – must be able to implement with current staffing • Be careful with training/workshops to ensure only those who will have an immediate benefit attend • Other (non-effectiveness) KT literature (e.g., John Lavis, etc.) provide a good context for building a KT “process” • What is the minimum required to get people to use data? • Do we have a mechanism for targeted messaging? What would the scope of this be? • KT tactics (especially training/workshop) will need to be relevant to staff and implemented at the right time • Our current technology is not consistently

		<p>interactive/real-time; much room to improve here</p> <ul style="list-style-type: none"> • Guidance documents will be necessary (form an advisory group to inform documents?)
	Are they adequately trained? If not, is training available and affordable?	<ul style="list-style-type: none"> • Epidemiologists may need facilitation training - new set of skills already identified • New KT processes could be incorporated into PPE process • Products tailored for different audiences – decision-makers are usually busy (training is essential) • Additional training/resources may be required for some staff (producers or users of data) • Data is currently being used to different degrees across the divisions • The organization is now primed to use data • KT is two-way in this context – data experts must understand program issues while program staff need to gain knowledge/skill in utilizing data effectively
	What is needed to tailor the intervention locally?	<ul style="list-style-type: none"> • May need to develop additional procedures to build producer-user interaction • Different users will need data presenting in different ways • Peel-specific interventions are needed
	What are the full costs?	
	<ul style="list-style-type: none"> • Consider: in-kind staffing, supplies, systems, space requirements for staff, training, and technology/administrative supports 	
	Are the incremental health benefits worth the costs of the intervention?	<ul style="list-style-type: none"> • Depends on outcome you're seeking , what you're evaluating, and when the evaluation occurs

		<ul style="list-style-type: none"> • Too many tactics implemented at once might not be helpful – need to find the sweet spot in the middle where value is added • Adjustments to training - how many people need to be involved to see sustained change
	<ul style="list-style-type: none"> • Consider any available cost-benefit analyses that could help gauge the health benefits of the intervention 	
	<ul style="list-style-type: none"> • Consider the cost of the program relative to the number of people that benefit/receive the intervention 	
Organizational expertise and capacity	Is the intervention to be offered in line with Peel Public Health’s 10-Year Strategic Plan?	<ul style="list-style-type: none"> • Yes, End-to-End Public Health Practice, Evidence-Informed Decision Making (EIDM), Surveillance: Data for Action • EXTRA Project: Strength in Numbers
	Does the intervention conform to existing legislation or regulations (either local or provincial)?	<ul style="list-style-type: none"> • Yes, Ontario Public Health Standards (OPHS)
	Does the intervention overlap with existing programs or is it symbiotic (e.g., both internally and externally)?	<ul style="list-style-type: none"> • Many KT tactics are currently being used across the organization
	Does the intervention lend itself to cross-departmental/divisional collaboration?	<ul style="list-style-type: none"> • Yes, the goal of KT tactics will be similar regardless of the division • Current PPE process could be used for collaboration • How will the Knowledge Brokers-in-training be involved? • How does it overlap with Workforce Development work by Bev’s team? • Some divisions have more experience with knowledge dissemination that can be leveraged (e.g., Family Health)

	Any organizational barriers/structural issues or approval processes to be addressed?	<ul style="list-style-type: none"> • Yes, depending on topic of KT • In a multi-generational organization there are different perspectives re: online access; some people will always prefer face-to-face meetings
	Is the organization motivated (learning organization)?	<ul style="list-style-type: none"> • Yes, EIDM has set the tone
	<ul style="list-style-type: none"> • Consider organizational capacity/readiness and internal supports for staff learning 	
Transferability (generalizability)		
Magnitude of health issue in local setting	What is the baseline prevalence of the health issue locally?	<ul style="list-style-type: none"> • Health issue in this context = ‘use of data’ • Heterogeneous: different use by different teams • The use of data by front-line staff is rare
	What is the difference in prevalence of the health issue (risk status) between study and local settings?	
	<ul style="list-style-type: none"> • Consider the Comprehensive Health Status Report, and related epidemiological reports 	
Magnitude of the “reach” and cost effectiveness of the intervention above	Will the intervention appropriately reach the priority population(s)?	<ul style="list-style-type: none"> • Yes, if targeted at different levels • Additional supports/guidance documents and a formalized process need to be established to ensure reach • Depends on the level of experience of audience and outcomes pursued • As there are a number of strategies that can be implemented, reach can be wide as some will be involved in one/two strategies and others impacted by others • A consistent approach will be necessary • Having a clear KT approach will help to scale the recommendations (e.g., hyper-target vs.

		generalize)
	<ul style="list-style-type: none"> • What will be the coverage of the priority population(s) 	<ul style="list-style-type: none"> • Define priority population – not all public health professionals are necessarily ‘priority population’ targets for this
Target population characteristics	Are they comparable to the study population?	<ul style="list-style-type: none"> • Not in every primary study
	Will any difference in characteristics (e.g., ethnicity, socio-demographic variables, number of persons affected) impact intervention effectiveness locally?	<ul style="list-style-type: none"> • Yes, public health professional backgrounds • Population-level data needed to generalize • Is Peel similar to the study population of this Rapid Review? - although some studies were from a clinical or education setting, the interventions generally recognize adult learning principles and the need to increase learning via didactic/engaging methods • Clinical teachers - a few of the included systematic reviews targeted quite different populations
	<ul style="list-style-type: none"> • Consider if there are any important differences between the studies and the population in Peel (e.g., consider demographic, behavioural and other contextual factors) 	
Proposed direction (after considering the above factors)	<ul style="list-style-type: none"> • Use research with our numeracy findings and what we know of our program area staff, our physicians, etc. • Audience-specific combination of approaches; KT options to consider does not necessarily eliminate other options based on the discussion • Implementation on a controlled scale and very targeted • Pilot some ‘real-life’ projects where people (program staff and Epidemiologist) are combined to use health data to make decisions. • Clearly define what each recommended KT strategy means operationally (e.g., active dissemination of information, producer-user interaction during content development) • Results of the Rapid Review should be viewed within the context of other work already done (e.g., EXTRA: Strength in Numbers, strategic priorities, other communication-focused Rapid Reviews) 	

Appendix F: Health Status Reports Web Traffic Summary

Name of Report	Published Online	Total Number of Views	Average Number of Views per Month
A Picture of Health 2008: A Comprehensive Report on Health in Peel	Dec, 2009	719	14
Born in Peel: Examining Maternal and Infant Health 2010 Key Findings Document	Dec, 2011 Dec, 2011	462 279	16 10
Burden of Tobacco: The Use and Consequences of Tobacco in Peel Key Findings Document	Dec, 2012 Jan, 2013	500 190	31 13
Destination Peel: Immigrant and Ethnocultural Health, 2012 Key Findings Document	Apr, 2013 Jan, 2013	1,010 726	84 48
Growing Up in Peel: The Health of Our Children Key Findings Document	Jun, 2013 Jul, 2013	358 319	36 36
Health in Peel: Determinants and Disparities	Dec, 2011	1,640	58
Student Health 2011: Measuring the Health of Peel's Youth	Mar, 2013	778	60
2006-2010 Communicable Disease in Peel: Summary of Key Findings	Dec, 2012	461	29

Note: Data is current as of March 27, 2014.

Note: The average number of views per month may be lower for reports published online for longer periods of time because most views occur in the months soon after the report is published.