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Can I Use This Evidence in my Program Decision?

Assessing Applicability and Transferability of Evidence

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SUMMARY

Purpose

The purpose of this background paper is to summarize the current literature and identify criteria and a process for the evaluation of applicability (feasibility) and transferability (generalizability) of evidence to public health practice and policy. The paper was then used to develop a tool (Appendix 1) to assist public health managers and planners in decision-making about program priorities for their community. The evaluation of applicability and transferability follows from the critical appraisal of any research; once the study results are judged to be valid, how do you determine whether the intervention could work with similar expected outcomes in other jurisdictions?

Methods

The literature reviewed for this document included all literature (grey and published) used for the environmental scan for the NCCMT, references found in bibliographies to identify other relevant work that would contribute specific concepts for evaluation of applicability and transferability, and citations from an updated (June 2006 to February 2007) review using refined search methods to focus on the concepts of applicability and transferability.

Conclusions

No primary empirical evidence supports the selection of criteria for applicability and transferability of evidence for the development and implementation of public health policy and programs. Reviews, reflections, experiences, stories, and theoretical concepts form the criteria and processes suggested in this document:

1. Evaluation of applicability (feasibility) refers to whether it is possible to provide an intervention in a local setting. Attributes of feasibility include political climate/leverage, political barriers, social acceptability, locally tailored intervention, available essential resources, and identified organization(s) to provide intervention, organizational expertise, and capacity.
2. Transferability (generalizability) criteria refer to whether the intervention can achieve the same outcomes in the local setting. Attributes of transferability include magnitude of health issues in the local setting, magnitude of the reach or coverage and cost-effectiveness of the intervention, target population characteristics, and overall community capacity to implement the intervention.
3. The questions for evaluation of applicability and transferability, which were identified in this background paper, have been synthesized, and the list is attached (Appendix 1). Some overlap was found between the two attributes.
4. The process includes the following steps:
    a) Public health policy-makers and decision-makers need to collaborate closely with stakeholders and researchers to assure that the best evidence is available, useful, and relevant in order to transfer research to practice. This step involves finding and appraising the relevant research.
    b) Inter-sectoral, multidisciplinary, and consumer groups should be involved in choosing which of the applicability and transferability assessment questions are most important for the particular intervention of interest and the local context, and if these should be weighted. The local context must be fully considered when interventions are evaluated for translation into practice or policy. Evaluation of criteria that reflect local geopolitical,

socio-demographic, and organizational (“functional”) context of the intervention needs to be completed.

c) Documentation of decisions related to criteria chosen, and process for decision-making needs to be maintained to provide explicit records of the process.

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Introduction

There is a growing body of knowledge that informs the formation and utilization of public health interventions and strategies. The bridge from evidence to practice is built to support positive health outcomes for individuals and communities. However, research is limited about methods to positively influence the uptake of these "best" practices into public health practice and policy.

In 2006, a group of authors were contracted to provide an environmental scan on behalf of the Ontario Public Health Research and Education Development (PHRED) program of the Ministry of Health and Long-Term Care. The scan was completed in order to identify priorities to focus and guide the formation of the National Collaborating Centre for Methods and Tools (NCCMT) initial work plan. The final report of the scan was submitted to PHRED in September 2006.

Thirteen broad recommendations were identified in the report, which informed the development of the focused work plan. NCCMT would synthesize the literature and produce three background documents on specific topic areas relating to knowledge synthesis, translation, and exchange; one of these was assessment of feasibility/transferability.

The process of knowledge transfer or translation of evidence for public health practice and policy is not linear or one-dimensional. Rather, it is a complex, multi-factorial synthesis of science and art of decision-making. This paper focuses on the stage after question identification, literature search and retrieval, and critical appraisal. If the methods reported in the study are judged sufficiently valid and the outcome of sufficient importance, the next stage in knowledge transfer is to decide if the intervention should utilized. This background paper will explore feasibility and transferability of evidence into the domains of public health practice and policy-making. Relevant criteria will be identified for the purpose of informing decision-making regarding development and implementation of public health programs and services.

Methods

The methods used to collect relevant literature for this background paper included

- Review of literature retrieved during the Environmental Scan for the work plan for the NCCMT (Ciliska, Clark, Thomas, Valaitis, & VanBerkel, 2006).
- Review of references from the literature review to solicit other work relevant to assessment of applicability and transferability for knowledge transfer/translation
- Review of new and related literature (June 2006–February 2007).

The comprehensive literature search methods for published literature from 1996–2006 are described fully in the NCCMT Environmental Scan Final Report (Ciliska, Clark, Thomas, Valaitis, & VanBerkel, 2006). Full data extraction was completed on 234 articles for the environmental scan. These articles were reviewed for data relating to the

focused topic of applicability and transferability assessment—that is, identification of criteria for deciding if and how evidence can be transferred to a local setting. Twenty-eight articles, which had some relevant data or recommendations on this topic, were initially identified from this review. From this first phase of the literature review, 12 additional articles were identified from the references provided.

A skilled librarian conducted an update of the initial search in February 2007. This new search used the following key search words: adaptability, transferability, evidence-based research, public health, and practice. The related search terms are summarized in Appendix 2. Ninety-eight "new" articles were found and reviewed for relevance. Seven articles were requested for review, and only one was considered relevant for inclusion. Only non-intervention studies (reviews, commentaries, and reports) were used in the formation of this report, because no intervention studies were found during the two searches.

The relevant work was summarized and synthesized into questions for assessment of applicability and transferability of evidence to enable decision-makers to better channel scarce public health resources into the best available programs and services for local delivery.

General Findings

There was little consensus on criteria to evaluate applicability and transferability of evidence for public health decision-making. The multiple perspectives found in the literature came from "different worlds," which included researchers, policy makers, administrators, economists, social advocates, public health practitioners, epidemiologists, dentists, academic/diffusion theorists, and organizational/behavioural change experts. Different language and opposing frameworks emerged. Authors used "applicability" and "transferability" interchangeably, and some lumped the terms together into "external validity," which made extracting relevant concepts difficult. Other authors focused discussion on only one factor or attribute related to one construct, such as political acceptability, as it affected the applicability of the evidence.

Ten articles addressed multiple issues and discussed both concepts of applicability and transferability (Bamford & Daniel, 2005; Chambers, Bourns & Underwood, 1992, Green & Glasgow, 2006; Grimshaw, Eccles, & Tetroe, 2004; Lavis, Posada, Haines & Osei, 2004; Lomas, Culyer, McCutcheon, McAuley & Law, 2005, Proctor, 2004; Rychetnik, Hawe, Waters, Barratt & Frommer, 2004; Wang, Moss & Hiller, 2006; Weightman, 2005). This same literature also suggested an array of processes or methods for evaluating applicability and transferability of evidence for the purpose of public health policy or program delivery.

Other literature identified clear factors or attributes to be used to evaluate each of the discrete constructs of applicability and transferability. Some of these authors "mixed up" the two constructs and the factors; some blended methods and tools with critical appraisal of efficacy. Other authors focused largely on the participative processes or methods needed to evaluate the evidence and then transfer the knowledge into policy or practice (Aaserud, Lewin, Innvaer, Pahlsen, Dahlgren, Trommald et al., 2005; August, Winters, Realmuto, Tarter, et al., 2004; Biglan, 2004; Bryant, 2002; Briss, 2005; Canadian Population Health Initiative, 2002; Collins, 2002; Dobbins, DeCorby & Twiddy,

2004; Haines, Kuruvilla & Bochert, 2004; Helfand, 2005; Rychetnik, Frommer, Hawe & Sheill, 2002; Weatherly, Drummond, & Smith, 2002; Zahner, 2005.

The remaining discussion of the literature will focus on the suggested criteria and methods for evaluating two key elements, applicability and transferability. This discussion will also be summarized in a question list and suggested process for evaluation of applicability and transferability. The synthesized framework is summarized in table form in Appendix 1.

Key Documents

In 1992, the Department of Public Health Services for the Regional Municipality of Hamilton Wentworth created a priority-setting tool and decision-making process for allocating public health resources (Chambers et al., 1992). This tool was made available to local health units in Ontario in a learning package entitled "Setting Public Health Priorities: A Guide to Resource Allocation." This unpublished work pioneered selection of criteria and structured methods for choosing among alternative public health programs competing for scarce resources. While this work was not formally evaluated, it introduced many concepts that have "stood the test of time." The proposed tool provided definitions, methods, and examples to assess and score "objective" criteria for need, efficacy, and cost benefit followed by a similar process of assessing and scoring "subjective" criteria for applicability, resource availability, political leverage, and division (organizational) priority (Chambers, Bourns, & Underwood, 1992). The priority-setting tool synthesized evidence, local public health experience, and expertise for the purpose of matching limited resources to program delivery.

More recently, Wang and colleagues (2006) proposed that a series of attributes should be systematically used by public health professionals in the appraisal of applicability (feasibility) and transferability (generalizability) of interventions with demonstrated effectiveness in a study setting. These authors proposed several methods for evaluating public health studies for applicability and transferability, which built on earlier work reported by Rychetnik and colleagues (2002). Wang and colleagues recommend that once critical appraisal of evidence with confirmation of effectiveness in primary studies is done, a series of criteria should then be used to determine applicability and transferability of this evidence to public health practice (Wang et al., 2006). Wang and colleagues' applicability and transferability criteria will be used for the tool.

Barriers — The Roadblocks to Knowledge Transfer

The literature identified many barriers faced by public health professionals along the road of knowledge transfer to practice (Aaserud et al., 2005; Chambers et al., 1992; Wang et al., 2006). Haines and colleagues (2004) provided a detailed discussion about the potential barriers to uptake of evidence in clinical practice, which were categorized as the health care system; practice (organizational); educational, social and political environments; as well as factors that focus on the practitioner and the variables associated with the public/client/community (Haines et al., 2004). Aaserud and colleagues (2005), in a case study that examined the translation of findings from randomized controlled trials on the effective use of magnesium sulphate for pre-eclampsia in developing countries, identified several barriers to implementation(Aaserud et al., 2005). Political will or support and availability of the "drug" or intervention were

concluded to be essential considerations in the successful translation of the research into practice (Aaserud et al., 2005). The concepts of political climate and political barriers are key to evaluating accessibility(Want et al., 2006). In addition, a full assessment of costs, availability, and appropriateness of resources in the context of organizational circumstances and community settings is necessary (August et al., 2004; Lin, 2004). Another noted barrier is the absence of the required "learning" capacity from local public health departments, which impairs the ability of the organization to effectively use and tailor evidence for local programming (Lin, 2004).

Aaserud and colleagues (2005) concluded that research-policy-practice relationships are not "rational," rather the process is one of "enlightenment" where the complexity of barriers needs to be carefully considered in order to successfully make the knowledge transfer. In general, the barriers to knowledge transfer found in the literature helped to identify relevant factors, attributes, and methods for proposed questions for evaluation of applicability and transferability. This background document will continue with some discussion of the findings specific to the constructs of applicability, transferability, and related methods for evaluation of the evidence.

Applicability — Can it Work?

Applicability focuses on whether it is feasible to provide an intervention in a local setting; it examines the process of the intervention (Want et al., 2006). Synonyms for applicability that were found in the literature were feasibility, plausibility, and acceptability. Variations were found in the question for applicability:

- Can it work?
- Could it work?
- Is it feasible?
- Would it be credible?

Dobbins (2004) review of the literature and feedback from public health decision-makers, found that applicability of evidence to local and current decision-making was a very important concept. The key factors to be considered are cost-effectiveness, political and social acceptability, and organizational culture and capacity (Dobbins et al., 2004). The Cochrane Collaboration Health Promotion and Public Health Field also articulated that public health decision-making must include a rigorous evaluation of plausibility, political feasibility, and cost-effectiveness (Waters & Doyle, 2002).

Weatherly, Drummond, and Smith (2002) concluded in their work on development of local health policies that local constraints are a significant barrier to knowledge transfer. Scientific evidence, including that which supports cost-effectiveness, needs to be carefully considered for applicability in local settings (Birch & Gafni, 2003; Briss, 2005; Helfand, 2005; Weatherly et al., 2002). Additionally, political acceptability must be merged with professional opinion when deciding upon applicability of inventions for local context (Bamford & Daniel, 2005; Bryant, 2002; Waters et al., 2002; Weatherly et al., 2002).

Political dimensions need to be considered in evaluation of community or organizational readiness for implementation of new interventions, as politics can create a hidden or explicit agenda affecting the adoption of new public health practices (Bamford et al., 2005). Political sensitivity and assessment of relevance of the intervention to

organizational priorities were also seen as important criteria in a summary review of how Canadian organizations utilize research (Canadian Population Health Initiative, 2006).

Community health professionals need to explore the importance of organizational culture in transforming behaviours, programs, and services (Bamford et al., 2005; Gandelman, Desantis & Rietmeijer, 2006; Proctor, 2004). Organizational attributes such as commitment to evidence-based practice, quality of leadership and skills, and level of staffing were considered critical to the assessment of applicability and transferability (Gandelman et al., 2006; Simpson, 2002). Wang (2006) points out that if an intervention is first found not to be applicable, then assessment for generalizability is moot.

Transferability — Will it Work?

Transferability assesses whether the intervention can achieve the same outcomes in the local setting; it is an appraisal of generalizability of the achievement of effectiveness of the strategy/intervention (Wang, Moss, & Hiller, 2006). Synonyms for transferability are generalizability, external validity, and community effectiveness. The key questions for the evaluation of transferability are

- Will it work? (After we determine that it can work — i.e., proven efficacy)
- Does it work in the local setting?

Wang and colleagues offered the most current and comprehensive approach to the assessment of transferability. They focused on understanding the impact of the context in which the intervention is to be introduced, and included such contextual factors as the skill set of the proposed providers, accessibility of the intervention, and the socio-demographic profile of the target population (Wang et al., 2006).

Green and Glasgow discussed the concept of "reach" as an important criterion for evaluating the "external validity" or transferability of a public health intervention (Green and Glasgow, 2006; Glasgow, Lichtenstein & Marcus, 2003). This notion of ensuring that all relevant members of a targeted population are able to receive an intervention is an important criterion for decision-making about its applicability at a local level. Reach is described as a function or outcome of the participation rate and the representativeness of key characteristics of the targeted participants.

In the earlier work of Chambers and colleagues, transferability was described in terms of community effectiveness — that is, does it work (Chambers et al., 1992)? These authors suggested looking at four factors when evaluating whether an intervention with demonstrated efficacy has the potential to reduce or prevent a health problem in a local setting. Community effectiveness is more likely to result if the health problem is defined with some accuracy, there is high compliance by the health care provider in providing the intervention, the target population is highly compliant with "doing" the intervention, and there is excellent coverage (Chambers et al., 1992). Coverage refers to the ability of the intervention to reach all who really need it (the target population).

Chambers and colleagues (1992) also proposed a priority-setting process for a local public health agency that uses a committee consisting of the agency's chief executive officer, senior management staff, and selected board of health members. This process was structured to analyze, in a standardized fashion, all the important factors, alternatives, and problems in a given decision or budget cycle for an agency. They recommended that the process take place annually, prior to the development and

approval of the agency's budget. The process consisted of several steps that began with a front-line manager preparing documents that contained a summary of the proposed program, detailed costs, summary of program efficacy as found in the literature, and a divisional priority score. This information was used in a second process, where the decision-making committee considered the merits and weaknesses of each proposed program. Each member rated the program according to weighted criteria, averages were calculated, and then a priority rating was provided across all proposed programs within the agency. Lastly, the committee held an informed discussion to reach consensus on the programs to be put forward for approval in order of priority and in the context of the agency's approved budget.

Processes to Assess Applicability and Transferability

Evaluation of primary research findings for the purpose of determining applicability and transferability to local context requires a blend of judgement, skill, and expertise in consensus building. The processes need to be explicit, open, and public in order to enhance confidence and certainty in decision-making for public health practice. From the literature described below, the table of questions was developed (see the Appendix 1).

Multiple authors suggested that expert opinion (practitioners, scientists, and policy-makers) be sought to develop fully list of criteria to be used in the evaluation of both applicability and generalizability, and then choose those that need to be tailored to the public health intervention of interest and the local context (Cuijpers, DeGraaf & Bohlmeijer, 2005; Wang et al., 2006). During the appraisal of primary evidence for effectiveness, reviewers must retrieve details about the context and process used in the intervention in order to provide relevant information that needs to be considered in the evaluation of applicability and generalizability (Cuijpers et al., 2005; Want et al., 2006). Since this process is unique and specific to the intervention, a consensus approach must be systematically used to create the list of related attributes for appraisal (Wang et al., 2006).

Wang and colleagues (2006) described a two-step Delphi technique for this purpose, which first uses a group of clinical experts in public health practice and members of the target population of interest to develop a list of attributes for each criterion—applicability and transferability. The second step involves a critical review of the attributes by a group of local "experts" and target population representatives, who also have the additional requirement of being familiar with the local setting.

Wang and colleagues (2006) also suggested an alternative method to the two-step process above. This method uses literature searching and synthesis strategies. Experienced public health personnel (clinicians, managers, and policy-makers) and systematic reviewers would start by using existing literature to develop a list of attributes for the assessment of applicability/feasibility and transferability/generalizability from published, peer-reviewed literature. They would also review other sources of data, reports, and literature describing the local setting (socio-demographic profiles, political/social/cultural environments that influence the targeted health issue). The group would subsequently rate the level of applicability and transferability for each identified attribute in the "list," based on their experience and knowledge of the local setting (Wang et al., 2006).

Successful Knowledge Transfer: Who to Involve

Dobbins, DeCorby, and Twiddy (2004) studied knowledge transfer in public health, and found that public health professionals prefer a single, reliable, and accessible information source for systematic reviews of effective public health practice, and "active" knowledge transfer approaches are growing. Many authors support the need for "interactive" processes among practitioners, decision-makers, and the public in order to effectively evaluate and translate knowledge (Aaserud et al., 2005; Bryant, 2002; Haines et al., 2004; Want et al., 2006; Weatherly et al., 2002).

Lomas and colleagues (2005) summarized factors that bring "more science into decision-making". Two such factors are "relevance" or "context-sensitivity" in interpreting scientific evidence, which allow public health professionals to explore the implications of the evidence within the context of the local setting. They argue that the process to assess "context" is very complex and recommend that multiple methods from social sciences are needed to obtain scientific evidence on context factors. They divide scientific evidence on context into factors on implementation, organizational capacity, attitudes, forecasting, economics, and ethics. They also state that a "deliberative process" is recommended with appropriate participation from stakeholders who have interest in the application and generalization of the evidence to practice or policy. This process provides "colloquial evidence," which considers the experts' views and realities of all stakeholders. The participative process "has clear objectives; is inclusive and transparent; challenges science; promotes dialogue; and directly impacts the decision itself." Important factors to be considered in the process include the number of participants, fair representation of various and relevant interest groups (including scientists), the ability and skills of the chair, type of meetings held, and transparency or "publicness" of the process. Lomas and colleagues conclude that these findings form "best practices" only, and there are "no magic technical processes available to combine these different forms of evidence to create health system guidance" (Lomas et al., 2005).

The process of public participation or engagement in methods to evaluate health systems is helpful for increasing responsiveness to user requirements. Despite this advice, there was no evidence to support the effectiveness of the strategy in successfully implementing research findings. The work of Haines and colleagues (2004) was targeted for policy-makers and public health professionals working in low-income countries; however, their concepts parallel the recommended criterion for evaluation of public health interventions in developed countries as well.

A 2002 working paper from the Canadian Population Health Initiative identified early engagement of policy-makers from multiple sectors in the assessment of applicability of research findings and labelled this activity as a "best practice" (Canadian Population Health Initiative, 2002). Definition of context is the first step of a systematic framework for health policy analysis discussed by Collins in his work at the School of Public Health and Health Services in Washington (Collins, 2002). He believes that a full definition of the background (including local determinants of health, politics, geography, and social structures) is necessary for any decisions in public health. Collins stated that the development of public health policy and programs is very time consuming and is a

political as well as a social activity, but he offers no suggested inclusion of multidisciplinary parties in the process of evaluation.

Similar to Wang and colleagues, Green and Glasgow (2006) recommended using theory, experience, and professional and community judgement in the process of translating evidence into practice in a local context. They describe various ecological approaches (Match, Intervention Mapping, Pooling, and Patch) for program-planning models to align evidence with local public health policy and practice. Their conclusions converge with those from previous authors who conclude that public health practitioners must work with stakeholders, because together they hold the best intuitive understanding and familiarity with the local context to judge the external validity (applicability and transferability) of research use in local settings. No method was suggested for this collaboration, but they argued that better programs and practice would emerge as relevant best practices are adopted (Green & Glasgow, 2006).

Wang and colleagues (2006) also suggested quantitative rating. Once there is agreement on the attributes to be included in the assessment for applicability and transferability, a rating method, such as a five-point Likert scale, allows different interventions to be rated on their applicability and transferability, in order to score and record the results. This provides an explicit record of the process and provides rational evidence for decision-making.

In a specific example, Gandelman and colleagues (2006) offered a comprehensive tool for organizations to assess skills for delivering evidence-based HIV prevention interventions at the individual, group, and community levels. Cuijpers offered a decision tree and checklist for whether or not to disseminate an effective intervention from one country to another; this is a helpful tool for the purpose of evaluating applicability and transferability (Cuijpers, DeGraaf, & Bohlmeijer, 2005). Steps three and four of their four-step systematic process ask the following questions and include sub-points to consider for each question:

- "Can the results of the trials be generalized (transferability)?"
- "Can the intervention be implemented (applicability)?" (Cuijpers et al., 2005).

Also, Green and Glasgow (2006) developed a series of questions to be used by public health professionals for deciding if evidence has "external validity" — that is, assessing whether the research is applicable to their organization, practice, or community — and then suggested methods for adapting the evidence to local context. Glasgow and colleagues developed a framework called RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance), which provides criteria for planning for and conducting programs which include translating, and disseminating evidence (Glasgow, Klesges, Dzewaltowski, Bull, & Estabrooks, 2004). Specifically, the following questions were selected from the RE-AIM framework for the purpose of evaluating applicability and transferability (and paraphrased appropriately):

- Are participants in the research representative of your practice setting (target population characteristics)?
- What would the program cost in your setting (available essential resources)?
- Did the program help the organization/agency to address its primary mission (strategic or operational plan)?
- Is the program consistent with your values and priorities (socially and politically acceptable, alignment with strategic plan)?

- What is the staffing (organizational structure/capacity and staffing skill/training) required to deliver the program/intervention?

Weightman and colleagues (2005) developed a grading framework for evidence considered relevant for public health interventions for the National Institute for Clinical Excellence (NICE) in the United Kingdom, and they considered criteria for evidence of "corroboration" or "extrapolation" for which they included the questions "will it work?" and "does it matter?" (Weightman et al., 2005). Following a systematic review of the literature examining issues of feasibility, plausibility, acceptability, and transferability, the authors concluded, "while there is need for a transparent and reproducible approach (to examine this issues), there is currently a lack of consensus as to how to grade this type of evidence … but inclusion of corroborative evidence is important" (Weightman et al., 2005). Lomas and colleagues (2005) concur with this conclusion, in that there is little evidence on the effectiveness of deliberative processes, but best practice using a balanced consensus building approach is a worthy approach to producing context-sensitive evidence-based practice (albeit not guaranteed!).

Lastly, Lavis and colleagues (2004) developed an untested but structured approach to critically evaluating the local applicability of evidence. They proposed using three questions, which are summarized below, as a framework for assessment:

- Could it work? This considers institutional/organizational attributes.
- Will it work, or what would it take to make it work? Reflection on power dynamics and impact on front-line realities, such as political barriers, stakeholder and interest group influences/social acceptability, availability of financial resources, availability and costs of human health resources, and match to priorities of the setting
- Is it worth it? Is the balance of benefits/harm worth the incremental costs?

Recommendations

Public health decision-makers base clinical and policy recommendations on high-quality evidence, when it exists. Even then, there are considerations about local applicability and transferability of an intervention that worked within a research project in another community. Principles of scientific reasoning, program planning models, political ideology, and behavioural science theories are needed to evaluate applicability and transferability for the development of effective programs and policy (Briss, 2002; Bryant, 2005). In addition, complex issues such as community values, evidence of need, organizational and political priorities, resource capacities, and skills all need to be considered.

A key principle to guide assessment of applicability and transferability is "functional contextualism," which requires the collaboration of practitioners, policy-makers, academics, organizational leaders, and the public so that local context is fully considered when interventions are proposed for implementation (Biglan, 2004; Kemm, 2006).

Based on the literature reviewed in this paper, the following are recommended:

1. Public participation is important for the assessment of applicability and transferability, and it assists with the integration of community preferences into evidenced-based practice.

2. Participation of representative public health front-line professionals, academics, politicians, economic consultants, program/service managers, or decision makers enhances the breadth of the evaluation process and increases local relevance.
3. Evaluation criteria for applicability and transferability need to be chosen specific to the intervention of interest (cost, availability, reach, or coverage) and to the local context, which includes political and organizational environments, community characteristics, and socio-demographic features of the target population.
4. A two-step process for evaluation of the criteria (choice and agreement of the evaluation criteria, then rating/scoring/documenting these specific criteria to the intervention of interest) should be considered.
5. Documentation or completed decision-support aids for the evaluation of the attributes need to be maintained in order to provide explicit records of the process.
6. Greater attention needs to be given to the analysis and reporting of issues that related to the external validity and appraisal of evidence, which will enhance its relevance to best practice.
7. The criteria, methods, and tools to support evaluation of applicability and transferability need further development and study.

Conclusions

This background paper summarized the current literature that identified relevant criteria and methods for assessing applicability and transferability of evidence for the development and implementation of public health policy and programs. These findings were not derived from empirical evidence or data. The questions and processes came from the reflections, reviews, experiences, stories, and theoretical frameworks proposed by many. This background paper attempted to create a thorough, inclusive list of possible questions for consideration, as well as some recommendations for process.

Funding needs to be allocated to support rigorous methodology for public health and health promotion study. While many systematic reviews are surfacing, these need to have full information about the geopolitical, socio-demographic, and organizational context of the intervention in order for public health professionals to be able to identify the components that could be applied to the local setting (Rychetnik & Wise, 2004; Waters et al., 2002). Researchers must pay greater attention to external validity in conducting primary studies and reviews in order to enhance “practice-based” research and, ultimately, credible evidence-based “best practice” (Green et al., 2006; Rychetnik et al. 2002).

The art of public health practice requires policy-makers and program planners to exercise judgement when faced with incomplete evidence (Grimshaw et al., 2004; Rychetnik et al., 2004). The use of criteria and a systematic, interactive methodology to assess acceptability and transferability of interventions improve the certainty that the policy or program is relevant and feasible. Interventions are more likely to be successfully integrated into local public health practice and policy if full recognition and analysis has been given to careful evaluation of applicability and transferability with the evidence. Policy-makers and administrative decision-makers for public health need to collaborate closely with stakeholders and researchers to assure that the best evidence is available, useful, and relevant for informing their conclusions and judgement about best practices.

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APPENDIX 1

Tool for Assessing Applicability and Transferability of Evidence

Purpose and Target Audience

To assist public health managers and planners in decision-making about program priorities for their community.

Where does this fit?

The relevant research evidence should be retrieved and appraised in preparation for making decisions about which programs to introduce, continue, or end,. While assessing the evidence is a necessary step, it is not sufficient to make the decision about implementation of an intervention in the local community.

This tool highlights a process and criteria for assessing applicability (feasibility) and transferability (generalizability) of evidence to public health practice and policy.

How to Use this Tool

Prior to using this tool, search for, retrieve and appraise the relevant research. Then:

a) Choose stakeholders to be involved in decision. Consider inter-sectoral, multidisciplinary, and consumer groups. The following steps are done in collaboration with the entire group.

b) Give orientation to the process; establish time lines.

c) From attached list of criteria, choose which of the applicability and transferability assessment questions are most important for the particular intervention of interest and the local context, if these should be weighted, and what weights to assign. Not all criteria are relevant all the time. The group may decide to weight some criteria as being more important than others, for this particular time period, in their particular community.

d) Determine if/how final scoring will be done: addition of individual ratings; or discussion and consensus on each criteria. For example, you can individually rate each criterion on a 1-5 point scale, where 1 is low impact/relevance or match and 5 indicates high level impact/relevance or match. Priority then goes to the highest scoring program.

e) Document whatever process was used in d)

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Assessment of Applicability & Transferability

Construct	Factors	Questions to Ask
Applicability (feasibility)	Political acceptability or leverage	▪ Will the intervention be allowed or supported in current political climate? ▪ Will there be public relations benefit for local government? ▪ Will this program enhance the stature of the organization? ▪ Will the public and target groups accept and support the intervention in its current format?
	Social acceptability	▪ Will the target population be interested in the intervention? Is it ethical?
	Available essential resources (personnel and financial)	▪ Who/what is available/essential for the local implementation? ▪ Are they adequately trained? If not, is training available and affordable? ▪ What is needed to tailor the intervention locally? ▪ What are the full costs (supplies, systems, space requirements for staff, training, technology/administrative supports) per unit of expected outcome? ▪ Are the incremental health benefits worth the costs of the intervention?
	Organizational expertise and capacity	▪ Is the current strategic plan/operational plan in alignment with the intervention to be offered? ▪ Does this intervention fit with its mission and local priorities? ▪ Does it conform to existing legislation or regulations (either local or provincial?) Does it overlap with existing programs or is it symbiotic?) ▪ Any organizational barriers/structural issues or approval processes to be addressed? ▪ Is the organization motivated (learning organization)?
Transferability (generalizability)	Magnitude of health issue in local setting	▪ Does the need exist? ▪ What is the baseline prevalence of the health issue locally? ▪ What is the difference in prevalence of the health issue (risk status) between study and local settings?
	Magnitude of the “reach” and cost effectiveness of the intervention above	▪ Will the intervention broadly “cover” the target population?
	Target population characteristics	▪ Are they comparable to the study population? ▪ Will any difference in characteristics (ethnicity, socio-demographic variables, number of persons affected) impact intervention effectiveness locally?

Example of Documentation

Rating is scaled 1-5, where 1 is low impact/relevance or match and 5 indicates high level impact/relevance or match.

Program A

Criteria	Rating	Weight	Score
Political leverage	3	2	6
Social acceptability	2	2	4
Available resources	5	2	10
Magnitude of the health problem	5	1	5
Potential reach of the intervention to this population	5	1	5
Comparability of study population to this one	3	1	3
TOTAL SCORE			33

Program B

Criteria	Rating	Weight	Score
Political leverage	5	2	10
Social acceptability	5	2	10
Available resources	1	2	3
Magnitude of the health problem	2	1	2
Potential reach of the intervention to this population	2	1	2
Comparability of study population to this one	2	1	2
TOTAL SCORE			29

Decision: Program A.

APPENDIX 2

Search strategy
Adaptability or transferability of evidence-based research into public health practice

2006-2007

Adaptability	Evidence based research	Public Health	Practice
assess* apply* applicab* adapt* adopt* feasibility external validity generalizability implement* synthesi* transfer* translat* utilis* utiliz*	evidence-based research research evidence	public health community health population* preventi* health promotion	decision mak* health planning policy mak* public polic* guideline* intervention* program* priorit* implement* practice inform