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Original Research

Shifting sands – from descriptions to solutions

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ABSTRACT

Background: Public health practitioners and policymakers value research evidence as one of many resources to use in evidence-informed decision making (EIDM) for public health. However, both researchers and decision-makers have described persistent barriers and facilitators involved in using research evidence for public health practice and policy. This is likely to affect the extent to which research evidence is influential or useful in decisions. Numerous taxonomies, typologies and frameworks are available to guide action in EIDM, but their application in practice is relatively unknown.

Methods: The *Public Health Evidence* group based in Australia, which incorporates The Cochrane Collaboration's Public Health Review Group, have adapted a number of conceptualizations of research use and types of evidence into a practical typology that defines and illustrates three main types of evidence used in evidence-informed public health: data (Type 1), intervention effectiveness (Type 2) and implementation evidence (Type 3). The authors have actively used this typology within our primary research, evidence synthesis, workforce development and stakeholder engagement strategies, which has enabled practical application of these concepts. To test the relevance of the typology in practice, relevant findings from our applied research and evaluation (including two exploratory studies of evidence use in decision-making and evaluations of the use and impact of systematic reviews among end-users) were triangulated.

Results: The typology has been useful in stakeholder interactions when defining evidence, and identifying processes for EIDM. There was a preference for defining evidence as descriptive evidence (data) rather than impact evidence and implementation evidence. Practitioners were confident and competent at generating and using data and community views descriptively for priority setting (describing the problem). However, finding and using impact and implementation evidence appropriate for strategy development (effective solutions) was often described as a more daunting task. As a result, there was low awareness of, and competence with, Types 2 and 3 evidence. Organizational processes for using these types of evidence were almost non-existent.

Discussion: Applying this typology with stakeholders has allowed us to observe that it; (1) has been useful in conceptualizing useful evidence for public health, which has guided our work (2) has been useful in stakeholder interactions to introduce evidence, its definition and what it means to be 'evidence-informed' and (3) has identified 'faults' in the EIDM approach. The typology includes examples of common questions in public health, and

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suggestions of the types of evidence that may be useful to answer those questions. Findings that test the use of the typology have been synthesized. These have demonstrated inconsistencies in defining and applying evidence, and low awareness about what types of evidence are crucial to ensure that interventions are effective and minimize harm. Based upon these findings, the authors would argue that current investment in type 1 evidence (e.g. data repositories) shifts to make way for KT strategies, which facilitate the uptake of type 2 and 3 evidence (interventions and implementation guidance).

Conclusions: Building a shared understanding of the types of evidence and their importance in public health decision-making is crucial if we wish to build a system that supports EIDM and results in effective interventions being delivered. There are a number of 'faults' in the system which the authors have illuminated through understanding the individual and organizational realities of evidence use. These faults could be addressed through KT strategies with the public health workforce, and development of organizational cultures and the broader system.

Introduction

Building upon recognized models of evidence-based practice[1,2] the decision-making context of non-clinical health fields such as public health and health promotion have been acknowledged and explored. Features unique to the context, organization, politics, and information required to inform decisions have emerged. A substantial body of work conceptualizing and describing the processes, barriers and enablers involved in evidence-based public health (EBPH)[3–6] has now been well documented, demonstrating the inherent differences in decisions made in public health contexts to the therapeutic settings addressed in EBP.[7] In public health contexts decisions often relate to diverse and changing populations rather than individuals; health policies, preventive and community health promotion programs rather than treatments. In response, evidence-informed public health (EIPH) has been embraced as a more accurate and realistic description of how decisions are made in public health settings.[8–10] It suggests that research evidence is one form of a spectrum of evidence that should be considered in decision-making in the context of all other political and organizational factors,[11] such as politics, habits and traditions, pragmatics, resources, values and ethics.[12–14] Given the complexity of decision-making, there is no one set process that will work best for evidence informed decision making (EIDM).[15,16] Decision-making is rarely linear and is more likely to involve a range of inputs and cyclical, iterative processes[17] and decisions are informed by a spectrum of evidence, rather than research evidence alone (Fig. 1).[12,18–21]

Despite shifts in perspectives related to EIDM and EIPH, the application of evidence to decision-making remains a challenge. There is a substantial literature which describes the barriers and facilitators to EIDM and identifies how evidence is used in various contexts.[22,23] As a result a number of high-quality frameworks have become available to guide action to support EIDM particularly in light of documented barriers and facilitators.[4,7,24,25] Many of these typologies and frameworks outline a process by which research evidence can be incorporated into decision-making and so are useful for conceptualizing the process of EIDM from a researcher's perspective, and for anticipating how decisions *might* be made. However little is known about how useful these typologies and frameworks are in supporting practical applications of the EIDM process. These processes are often referred to as knowledge translation strategies. These have been defined as the 'adoption of strategies to optimize the uptake and use of research findings to inform evidence-based policy and practice' (Rychetnik et al. 2012) and 'the synthesis and ethically sound application of knowledge…to accelerate the capture of the benefits of research…through improved health, more effective services and products, and a strengthened healthcare system'.[26,27] After searching the literature whether evaluations of these typologies and frameworks 'in action' have been undertaken among the decision-making population that they purport to serve (practitioners, policymakers) have not been able to identify. Our work with decision-makers, albeit not all empirical,

Fig. 1 – Types of information and evidence used to inform decision-making.