Cochrane update: building capacity in evidence-informed decision-making to improve public health

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INTRODUCTION

A range of public health interventions operate internationally, informed by research evidence, professional experience and stakeholder preferences. Practitioners and decision-makers have a significant role in facilitating the use of data and research evidence to inform practice and services, but they are faced by individual- and organizational-level challenges such as time and skills for accessing evidence, and low value placed on research in the workplace culture.¹–³ Realizing the effectiveness of investments to promote health and prevent disease may be limited if implementation is not evidence informed, and if rigorous evaluation is not conducted to verify impacts. Varying degrees of support is available to build capacity for evidence-informed decision-making among the public health workforce.

Knowledge translation and exchange (KTE) strategies have been proposed to support evidence-informed decision-making (EIDM), and capacity building is an example of one such strategy. As part of a suite of KTE strategies, the Cochrane Public Health Group (CPHG) delivers training courses to support the use of systematic reviews in public health decision-making. The CPHG has designed and delivered tailored EIPH short courses since 2005. This has often been done in collaboration with others locally (such as local authorities and councils, health promotion agencies and non-government organizations), and internationally (such as the International Union of Health Promotion and Education, the World Health Organization), to reflect the specific needs of various targeted audiences. Whilst training programmes that aim to increase knowledge and skills for evidence-informed decision-making show promise,⁴–⁷ few have been rigorously evaluated in complex decision-making settings like public health, and thus it has been difficult to determine their overall usefulness.

This paper describes the methods of implementation and evaluation of EIPH training courses by the CPHG, reporting participant experiences, as well as the impact the courses have had on individuals’ capacity for accessing and using evidence to inform programmes and policies aiming to improve public health. In doing so, this paper aims to stimulate discussion about how international efforts to improve the exchange in knowledge, quality of research, uptake of evidence into practice and co-generation of contemporary knowledge, could be addressed through ongoing improvements in training and capacity building.

IMPLEMENTATION OF TRAINING

The practice of EIPH in this decision-making context involves the application of findings of sound evaluation research to determine whether an intervention is likely to be effective.¹,⁸,⁹ The Public Health Evidence and Knowledge Translation team, University of Melbourne, within which the editorial base of the CPHG is located, have delivered a series of EIPH short courses since 2005. These short courses have increasingly responded to an identified need and ongoing demand among stakeholders. Short-course options are tailored for community-based and public policy contexts to best support stakeholders. The target audience and participants include professionals from a range of agencies, including Departments of Health, community health services, primary care partnerships, NGOs and more recently Local Governments and authorities.

The overall aim of the EIPH training is to build awareness and understanding of the types and breadth of evidence, and to increase confidence and skills in defining, accessing, appraising and applying evidence to decision-making. Core components of the EIPH training are based on the EIPH process comprising five key domains: (1) ask an answerable
question, (2) find the evidence to answer the question, (3) assess the trustworthiness of the evidence, (4) integrate the evidence with your expertise and values of the population and evaluation and (5) evaluate to generate evidence to contribute back to the process. The EIPH process is modelled on evidence-based practice (EBP) teaching frameworks and the systematic review process, and has been purposefully adapted over time in response to stakeholder needs and policy and decision-making contexts.

In recent years the focus for capacity building in this area has shifted from ‘evidence-based’ towards ‘evidence-informed’ decision-making (EIDM), necessitated by the complex context in which professionals make their decisions for public health practice and policy-making. Any training course that aims to build confidence and competence in this area must acknowledge the wide range of competing information inputs required for decision-making, including political priorities, values, ethics, resources and other pragmatic issues. This focus also acknowledges the range of cross-sectoral evidence and interventions required for interventions that seek to improve public health.

The more innovative aspect of this training is a focus on applying, adapting and combining evidence for use in decision-making and practice. This component has evolved and adapted over recent years, in response to a demand for more practical support in applying evidence to decision-making contexts. Although asking answerable questions, searching and assessing trustworthiness (critical appraisal) are critical skills that can be enhanced by such training, proportionally more time is spent addressing issues in applying evidence. Such issues include assessing applicability and transferability of research evidence, working in the gaps where evidence is insufficient, processes and frameworks for decision-making, strategies to support individuals to work in an ‘evidence-informed way’ in their organizations and partnerships and core components for rigorous evaluation to enhance the quality and reporting of practice-based evidence.

**EVALUATION OF TRAINING**

Limited empirical literature is available to support our understanding of the effectiveness of EIDM training in complex public health and policy contexts, where decision-making is arguably more multifaceted than for individual (patient-level) decision-making. Traditionally, the EIPH training course was evaluated by collecting feedback on participant experiences of taking part in training courses. Limited data were collected that measured the objectives (i.e. to build knowledge, confidence and competence in evidence-informed decision-making). A lack of contemporary evaluations locally and internationally also highlights the need to evaluate more comprehensively to understand which training components are most effective and transformative and in which contexts.

Since 2012 a more rigorous evaluation was designed and implemented by CPHG to understand the potential capacity building impacts of training in the short and longer term. A pre- and post-training questionnaire was developed to suit the EIPH training process, informed by systematic reviews and primary research and evaluations from a range of health and social care settings. The domains to be assessed were informed by the Sicily statement on classification and development of EBP learning assessment tools. Specific questions were informed by and adapted from published validated tools for EBP.

The survey asks participants to self-report on practice, knowledge, confidence and attitudes towards EIPH processes, which are assessed at three time points: pre-course, post-course and follow-up. Relevant items are assessed and reassessed before and after training to assess impact on confidence and attitudes towards practice, and relevant items are reassessed 6 months after the training course to determine if impacts upon EIPH practice are sustained. As such, the questions were designed to be generic rather than course specific, to enable consistency of questions pre- and post-test, over short and long term, as well as to be applicable to a comparison group.

The evolved model of evaluation employs mixed methods, collecting quantitative data to assess impacts as well as qualitative information for thematic analysis. In future, to strengthen the evaluation, a quasi-experimental design will be adopted by adding a comparison group to determine impacts more objectively.

**HOW DOES TRAINING MAKE A DIFFERENCE TO EIPH DECISION-MAKING?**

According to the qualitative feedback provided over the years, expectations of the EIPH courses the team have delivered are continually being met and exceeded. Consistently, high ratings of course relevance are observed, as well as high rating of overall course quality and of facilitators’ performance. To understand whether or not the course is having an impact on the intended objectives and to inform future course development, we implemented the evaluation tool (described above) as a pilot test for assessing experiences and impacts concurrently. Evaluation data from all courses run between 2011 and 2013 were combined, which comprised a small sample of responses for pre-course (n = 45), post-course (n = 59) and follow-up (n = 38).
Using basic change-score analysis of pre-course compared with post-course responses, the findings suggest improvements across several domains of EIPH practice. Marked increases in ratings of confidence were observed across all five domains of EIPH (formulating answerable questions to inform an evidence search, searching, assessing trustworthiness, determining applicability and transferability, evaluation, and implementing EIPH in the workplace). Attitudes towards some EIPH components were generally positive before the course, particularly regarding the importance of asking answerable questions before searching for evidence, the importance of critical appraisal (assessing trustworthiness) of evidence before using it to make a decision and the importance of evaluation. Small improvements were also seen in these three areas. Substantial improvements were observed in participants’ perceived ease in accessing relevant research evidence and in understanding how research findings apply to participants’ own contexts.

At 6-month follow-up, compared with the pre-course survey, more participants reported practising EIPH including formulating answerable questions, searching and critical appraisal.

In addition, improvements have been observed in course evaluations between courses over time. Over the period 2011–13, interactions and partnerships with international and local stakeholders have increased understanding of practice and policy decision-making contexts, resulting in substantial revisions and tailoring of the course content. Following delivery of courses with increased tailoring, the rating for relevance, quality and facilitators’ performance also increased.

**DISCUSSION AND NEXT STEPS**

In addition to consistently high ratings of course relevance, facilitation and ease of understanding content, improvements across five core domains of EIPH have been observed from EIPH course evaluation data. Further analysis is underway and longitudinal assessment is ongoing. In the meantime, these results suggest that training courses may be effective for enhancing the use of evidence in complex decision-making settings, warranting more rigorous evaluation in the future in order to build knowledge about this capacity building strategy.

Future developments for the EIPH course include a plan to strengthen the evaluation design, such as including a comparison group and qualitative methods to triangulate findings. Improvements in corresponding data collection may also take place during future training courses, for example by integrating interactive technology and applications (for example, real-time electronic feedback from participants) to capture participant reactions and learnings as they are experienced.

Further exploration and interpretation of findings within a broader KTE framework is also required to understand the role and importance of organizational culture and systems for EIDM. To progress this area, it will be valuable to work with partners internationally through the ‘satellite’ activities of the CPHG into South Asia (http://ph.cochrane.org/south-asian-satellite), Central Europe and the UK, in response to the need to continue to support, engage and develop organizations and individuals whose aim is to impact favourably upon population and global health.

**NEW CPHG REVIEWS PUBLISHED**

Interventions to improve water quality and supply, sanitation and hygiene practices, and their effects on the nutritional status of children.

In-work tax credits for families and their impact on health status in adults.

**NEW CPHG PROTOCOLS PUBLISHED**

Fortification of staple foods with zinc for improving zinc status and other health outcomes in the general population.

Iodine fortification of foods and condiments, other than salt, for preventing iodine deficiency disorders.

**References**


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