Knowledge Brokering as an Evidence-Based Strategy

KTER Center’s State of the Science Conference on Employment Research
September 5, 2019
Knowledge Brokering as an Evidence-Based Strategy

Maureen Dobbins, RN, PhD
Summit Conference 2019
Portland, Maine
Objectives

- Define knowledge brokering
- What does the science say
- Evidence-informed decision-making (EIDM) model
- Stages of change theory to guide evaluation
- Examples from public health in Canada
- Recommendations for vocational rehabilitation (VR) settings
sharing what works in public health
The NCCMT

The mission of the National Collaborating Centre for Methods and Tools (NCCMT)

• Enhance evidence-informed public health in practice, programs, and policy in Canada

• Provide leadership and expertise in supporting the uptake of what works in public health
NCCMT Products and Services

Registry of Methods and Tools

Networking and Outreach

Multimedia

Capacity Development

Knowledge Repositories
“A knowledge broker [KB] is an intermediary (an organization or a person), that aims to develop relationships and networks with, among, and between producers and users of knowledge by providing linkages, knowledge sources, and in some cases knowledge itself (e.g., technical know-how, market insights, research evidence) to organizations in its network.”

Source: https://en.wikipedia.org/wiki/Knowledge_broker
Knowledge Broker

In the field of public health, knowledge brokers facilitate the appropriate use of the best available research evidence in decision-making processes, enhancing individual and organizational capacity to participate effectively in evidence-informed decision making. In this setting, knowledge brokers promote research use.

Activities

- Knowledge management
- Linkage and exchange
- Capacity development

Sources:

Knowledge Management

• Identify and obtain relevant information
• Facilitate development of analytic and interpretive skills
• Create tailored knowledge products
• Project coordination
• Support communication and knowledge sharing
• Monitor the process of implementation

Linkage and Exchange

• Identify, engage, and connect with stakeholders
• Facilitate collaboration
• Connect stakeholders to relevant information sources
• Support peer-to-peer learning
• Support communication and information sharing
• Network development, maintenance, and facilitation

Capacity Development

- Define problem/research question
- Appraise quality of evidence
- Design and deliver tailored training sessions
- Facilitate knowledge dissemination
- Assess readiness/capacity for change
- Generate buy-in among stakeholders
- Facilitate organizational change
- Sustain organizational engagement

Characteristics of a KB

- Entrepreneurial (networking, problem solving, innovating)
- Trusted and credible
- Clear communicator
- Understands the cultures of both the research and decision-making environments
- Able to find and assess relevant research in a variety of formats
- Facilitates, mediates, and negotiates
- Understands the principles of adult learning


symbiosis = living together

- mutualism (both organisms benefit)
- commensalism (one benefits, one unaffected)
- parasitism (one benefits, one is harmed)
- competition (neither species benefits)
- neutralism (both species are unaffected)

Source: https://en.wikipedia.org/wiki/Symbiosis
Knowledge Brokering Impact

From published systematic reviews:

- Few published studies
- More rigor needed


Knowledge Brokering Impact

May be a link between KBs and
- Knowledge
- Skills
- Practice behaviours

A Model for Evidence-Informed Decision Making in Public Health

Source: https://www.nccmt.ca/about/eiph
Stages of Evidence-Informed Public Health

Source: https://www.nccmt.ca/about/eiph
VR Setting and Knowledge Brokering

- Changing health professional behaviour
- Changing client/patient behaviour
- Context
- Culture
EIDM: Where Do Practitioners Fit In?

- Questioning practice
- Critical consumer
- Knowledge
- Skills
- Program decisions
- Organizational structures
- Influence/motivate peers
NCCMT Pathway to Change

NCCMT offers training and consultations and develops resources and tools for EIDM

- Learning Centre (13 self-paced online learning modules)
- Webinars
- Online Journal Club
- Newsletter (Round Up)
- EIDM self-assessment
- Workshops
- Conference Presentations
- Repository of Methods and Tools
- Videos
- Publications
- KB Mentoring Program
- KB Services
- Healthevidence.ca
- PublicHealth+

Public health professionals view NCCMT as a go-to credible source and use the services and resources which increases their EIDM capacity

- Increased confidence
- Increased knowledge and skills
- Expanded networks
- Enhanced organizational supports

Public health professionals engage in EIDM

- Use multiple types of evidence
- Conduct rapid reviews
- Critically appraise evidence
- Use frameworks
- Evaluate
- Engage in KT
- Generate practice-based evidence
- Make evidence-based decisions
- Continue to engage in professional development

Public health practice improves

- Increased consistency
- Increased efficiency
- More systematic
- More engaged staff
- More skilled workforce
Partnership for Health System Improvement

- Integrated Knowledge Translation (KT) program
- Collaborative approach to applied health systems/services research
- Partnerships between researchers and knowledge users

Source: Canadian Institutes for Health Research (CIHR): http://www.cihr-irsc.gc.ca/e/38778.html
We asked . . .

What is the impact of a tailored KB intervention on knowledge, capacity, & behaviour for EIDM?

What contextual factors facilitate and/or impede impact?

Methods

Case study
- Three cases: Ontario health departments
- Tailored intervention, delivered by a KB

Data collection
- Quantitative and qualitative; triangulation
- Three time points: baseline, interim, follow-up

## Total Activities

<table>
<thead>
<tr>
<th>Case A</th>
<th>Case B</th>
<th>Case C</th>
</tr>
</thead>
<tbody>
<tr>
<td>• 18 rapid reviews</td>
<td>• 5 questions/reviews</td>
<td>• 5 questions/reviews</td>
</tr>
<tr>
<td>• Large-scale <strong>training sessions</strong> provided</td>
<td>• Additional divisional training delivered (e.g., half-day workshops)</td>
<td>• EIDM policy and procedure developed and approved</td>
</tr>
<tr>
<td>• KB facilitated/contributed to <strong>Critical Appraisal Club</strong></td>
<td>• <strong>Presentations</strong> to senior management</td>
<td>• RKEC presentations</td>
</tr>
<tr>
<td>• <strong>Presentations</strong> of research to staff colleagues and senior management</td>
<td>• Abstracts submitted to present research</td>
<td>• All-staff training delivered</td>
</tr>
</tbody>
</table>

Results

EIDM behaviour

• Attending large-group sessions alone was not effective in changing EIDM behaviours
• Significant improvement in EIDM behaviour among those who worked intensively with KB

EIDM knowledge and skills

• Increase in EIDM knowledge and skills among staff who worked with KB in Cases A and C across time

Contextual Factors

Identified supports

• KB knowledge/skills and support; external
• EIDM process/template as embedded organizational structure
• Peer support; culture of inquiry
• Visible senior management support; EIDM valued in the organization

Contextual Factors

Potential challenges

• Time, competing priorities; varied staff engagement and progress
• Anxiety, uncertainty (process, expectations)
• Inefficient library services; disconnect
• Differing definitions of “EIDM”; communication

Conclusions

Tailored KT interventions, developed through partner engagement, had an impact on EIDM in public health by

• Enhancing individual staff capacity
• Addressing organizational factors to facilitate a culture conducive to EIDM in practice

Knowledge Broker Mentoring Program

- Objective: advance uptake and use of EIDM in public health practice at public health units

- Evidence supports a multifaceted knowledge translation and exchange strategy
  - Decision maker involvement
  - Prioritization by organization
  - Staff training
  - Infrastructure support

Strategy

Recruit public health units to KB program

1. Assess organizational needs

2. Build individual capacity of “internal” knowledge brokers

Participating Organizations

Cohort 1 (red):
• Timiskaming
• Simcoe-Muskoka District
• Hamilton
• Brant County
• Middlesex-London

Cohort 2 (yellow):
• Ottawa
• Niagara Region
• Waterloo Region
• Lambton County
• Southwestern Public Health
Phase 1: Organizational Needs

- Senior management
  - Individual review
  - 2.5-hour team focus group
- Consensus on future directions
Phase 2: Individual Capacity Building

- Staff trained as knowledge brokers to help champion EIDM at health unit
- Up to six individuals selected by senior management
- Activities:
  - Workshops at 0, 6, and 12 months
  - Monthly webinars
  - Biweekly e-mail/telephone mentor support
  - Final rapid review project
- Led by senior KT experts as mentors
In-Person Training Workshops

- 10 training days
  - Start (5 days)
  - 6 months (3 days)
  - 12 months (2 days)
- Course readings
- Lectures
- Individual and group critical appraisal practice
Monthly Webinars

- 90-minutes; led by program mentors
- Open discussion: Ongoing activities, progress, concerns
- Practice critical appraisal skills
Final Rapid Review Project

• Culmination of knowledge and skills gained through curriculum
  – Develop research question
  – Search for evidence
  – Appraise evidence
  – Extract and synthesize data
  – Apply results to local context

• Topics selected with senior management team
Results: Change in EIDM Knowledge and Skills

• Skills assessment administered pre-post program completion
• Statistically significant improvement in performance for both cohorts

<table>
<thead>
<tr>
<th></th>
<th>Cohort 1</th>
<th>Cohort 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest mean score</td>
<td>60.7</td>
<td>63.1</td>
</tr>
<tr>
<td>Posttest mean score</td>
<td>77.6</td>
<td>77.5</td>
</tr>
<tr>
<td>Mean difference</td>
<td>16.9, <em>p</em> &lt; 0.001</td>
<td>14.4, <em>p</em> &lt; 0.001</td>
</tr>
</tbody>
</table>

• Limitations: small sample size; ceiling effect
Program Impact

- Participants increased confidence, knowledge, and skills
  - Leading rapid reviews
  - Acting as consultants for health unit
- Organizations implementing EIDM
  - Conducting additional rapid reviews
  - Requiring evidence to support new initiatives
  - Critically appraising evidence
- KB program seen as impetus for organizational change to support EIDM
“I think what it’s done is it’s increased consistency and, I would say, elevated the importance and understanding for people about the use of evidence and really, what is good evidence, what are we looking at? And also being more critical about it, not just, oh, I found something on Google.” —KB Participant

“I think the training was very well done. It was nice to actually go to [on-site training location] to have days concentrated on the training.” —KB Participant

“Well, we have a journal club now, which is led by a member of the original cohort. And it’s a monthly kind of get-together and staff are welcome to come and discuss articles. That’s been one major change.” —KB Participant

“It gave me confidence in supporting other people to follow that cycle and mentor people or support them in going through the steps to incorporate evidence in their work.” —KB Participant

“The combination of hands-on practice, audio visual materials, and one-on-one support—it really helped. You can tell that they’ve taken evidence-informed teaching styles and really implemented that into the program.” —KB Participant
After the program, participants are able to . . .

<table>
<thead>
<tr>
<th>Activity</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find evidence</td>
<td>“Since the program, I do a lot of my searches myself. So in the past I would figure out my question and the hub librarians did everything; now it’s much more collaborative. I’m doing my own search terms; I’m really more involved in the process. It saves me time because I get stuff that’s more relevant to what I’m doing.”</td>
</tr>
<tr>
<td>Critically appraise evidence</td>
<td>“The program has elevated the importance of and understanding about the use of evidence and, really, what is good evidence . . . and being more critical about it, not just, oh, I found something on Google.”</td>
</tr>
<tr>
<td>Use a variety of types of evidence</td>
<td>“The need to consider research as well as community desire and political environment and all those different set of bubbles [NCCMT’s model for EIDM]. The activity needs to be assessed on an ongoing basis; you can’t just think of what you want to do and do it, you have to take a look at the larger picture of what’s going on in the communities before you approach it.”</td>
</tr>
<tr>
<td>Produce evidence</td>
<td>“At the end of every year, I evaluate the practice by looking at the hard numbers. I’m actually doing that right now. I can tell you what works and what didn’t work, and then we can think of what needs to change and what do we keep on doing. And I can go to management and say I have proof that what we’re doing is working, as opposed to just randomly guessing or doing it because we’ve always done it.”</td>
</tr>
</tbody>
</table>
Conclusions

• Knowledge brokering holds promise in a variety of settings
• Still much to learn about the KB role and personality characteristics
• Still much to explore on training and capacity development of KBs
Thank You

www.nccmt.ca
nccmt@mcmaster.ca
The contents of this presentation were developed under grant number 90DP0077 from the National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR). NIDILRR is a Center within the Administration for Community Living (ACL), Department of Health and Human Services (HHS). The contents of this presentation do not necessarily represent the policy of NIDILRR, ACL, HHS, and you should not assume endorsement by the Federal Government.