Second generation questions for policy decisions

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How do we go from the first generation questions:

- 'What works?'
- Are we doing it right?' (fidelity)

To second-generation questions:

- 'What works for whom, in what situations?'
- 'How does it work?'
- 'What is it that works?'
- 'What other factors are needed for success?'
- 'How could it be implemented here?' (adaptation)

Overview of session

Brief presentations from each – including posing a question

- Tim, Penny, Patricia

Facilitated discussion around the questions

Summing up comments

We would like to record the presentations and discussion – please advise if you'd like to opt out. We will acknowledge contributions.

BACKGROUND

- The nature of the problems we are addressing have changed – now more likely to be complex / wicked problems

- Traditional forms of service are not effective for dealing with these kinds of problems – we are not making headway with issues such as child abuse and obesity, despite increased awareness and funding

- The default response of governments has been to focus on ensuring that services are evidence-based – governments are increasingly seeking to identify the most effective programs and require the services they fund to use them

"Across medicine, business and government, there's no simpler or more powerful tool for finding out what works than a randomised experiment.

There is simply no better way to determine the counterfactual than to randomly allocate participants into two groups: one that gets the treatment and another that does not."

Andrew Leigh (2018). **Randomistas: How radical researchers changed our world.** Carlton, Victoria: La Trobe University Press.

BACKGROUND (cont)

There are a number of problems with this approach:

- First, this an 'engineering' approach, an attempt to fix the presenting problem without addressing the conditions that have caused the problem – programs may not be the most important thing we need to change

- Second, it begs the question of whose problem it is – it's a top-down or outside-in approach to defining that problem that does not take account of how the person experiences or sees the problem

- Third, it is answering a first-generation research question – *what works?* – rather then second-generation research questions such as *what works for whom and in what circumstances?*

In an opinion piece in the *British Journal of General Practice*, Trisha Greenhalgh (2012) asks 'Why are Cochrane reviews so boring?'

The reason why Cochrane reviews are boring — and sometimes unimplementable in practice — is that the technical process of stripping away all but the bare bones of a focused experimental question removes what practitioners and policymakers most need to engage with: the messy context in which people get ill, seek health care (or not), receive and take treatment (or not), and change their behaviour (or not).

BACKGROUND (cont)

- Fourth, evidence-based practice cannot be reduced to lists of evidence-based programs – properly understood, it is much broader than this and involves integrating three sources of evidence:

  - *evidence-based programs,*

  - *evidence-based processes*, and

  - *client and professional values and beliefs*
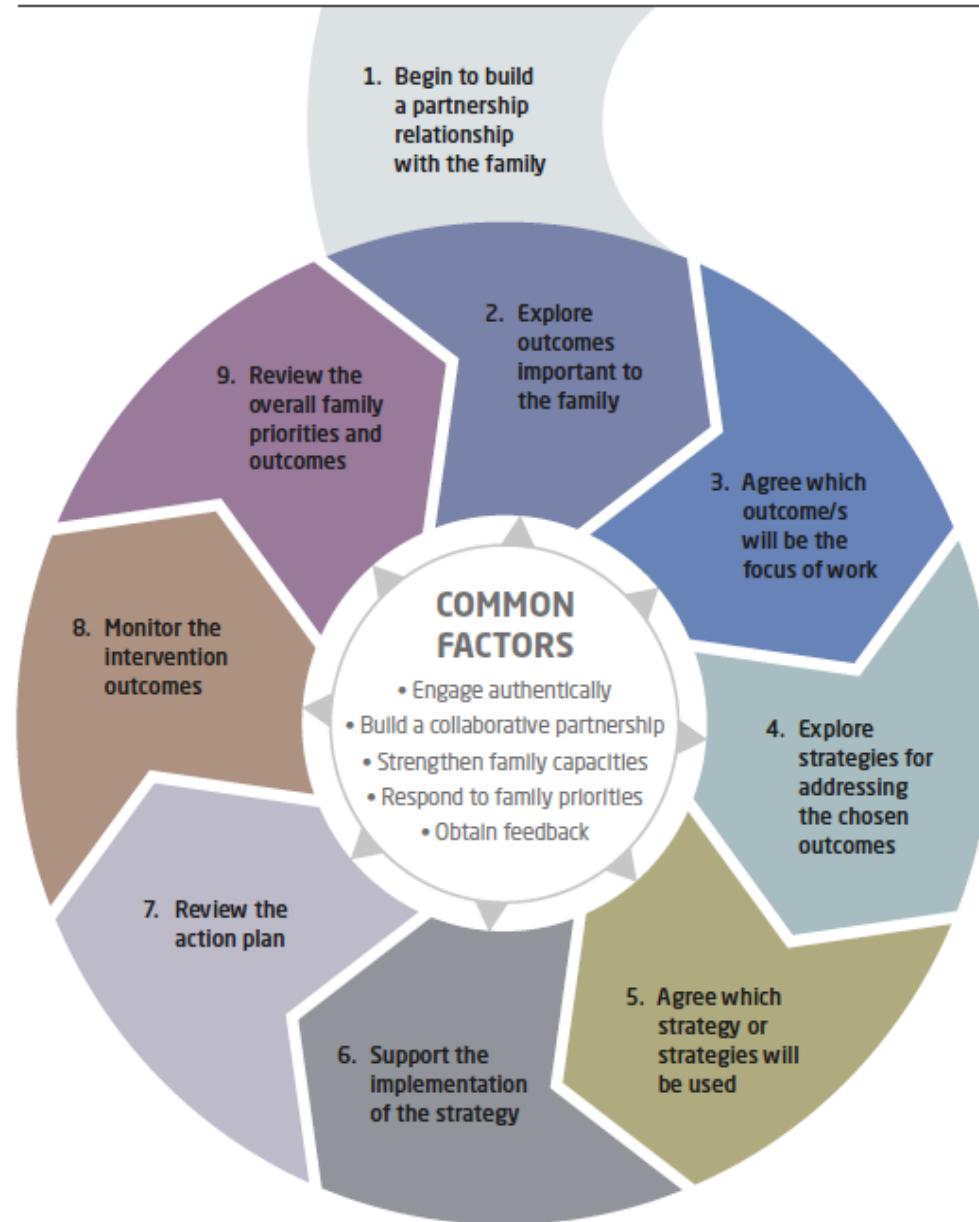
WORKING WITH FAMILIES

- Working with families who are facing many challenges involves working with wicked problems

- The key features of wicked problems is that each one is unique, there is no definitive solution, and we cannot know beforehand what will work

- Therefore, we cannot simply determine what programs families need and roll them out

- Instead we need to work with families to trial evidence-based strategies and programs that address their particular needs

WORKING WITH FAMILIES (cont)

- Convergent evidence indicates that *how* we work with families is as important as *what* we do with them

- Human services are inherently relational, and their effectiveness depends upon the quality of the relationship established between clients and practitioners.

- Establishing positive engagement is particularly critical for families who are involuntary or feel distrustful of services.

- There is consistent evidence that services are less effective if they do not address issues that clients see as important and if they do not use strategies that the clients are happy and able to use

- What is needed is an evidence-informed decision-making framework that integrates relationship-based practice and evidence-informed practice

EVIDENCE-INFORMED DECISION-MAKING FRAMEWORK

EVIDENCE-INFORMED DECISION MAKING

1. Begin to build a partnership relationship with the family

2. Explore outcomes important to the family

3. Agree which outcome/s will be the focus of work

4. Explore strategies for addressing the chosen outcomes

5. Agree which strategy or strategies will be used

6. Support the implementation of the strategy

7. Review the action plan

8. Monitor the intervention outcomes

9. Review the overall family priorities and outcomes

COMMON FACTORS
- Engage authentically
- Build a collaborative partnership
- Strengthen family capacities
- Respond to family priorities
- Obtain feedback

WHAT WE NEED TO KNOW TO SUPPORT CHILDREN AND FAMILIES EFFECTIVELY

- **What are the issues that the families are facing?** If families feel that the professionals do not really understand their views or their circumstances, then they are less likely to trust and listen to what the professionals have to offer.

- **What goals do the family want to work on?** If professionals determine what the goals of intervention should be, then the issues that are most important for families and have most impact on their lives are likely to be overlooked.

- **What strengths and resources does the family have?** If families are to learn how to manage their challenges more effectively, they need to build on and develop their capabilities and make use of the available resources

SUPPORT CHILDREN AND FAMILIES EFFECTIVELY (cont)

- *What strategies are acceptable to and useable by the family?* If decisions about goals and actions are made by professionals, then they are less likely to be realisable in the circumstances in which the family lives.

- It is at this point in the decision-making cycle that professionals can introduce evidence-based strategies and programs, always in response to family priorities

- The choice of what strategies to use is determined by the families themselves

CONCLUDING COMMENTS

ENSURING ' TAKE-UP'

- The ultimate aim of effective implementation is helping clients / parents find solutions to the challenges that face them.

- The real issue we should be concerned with is the extent of 'take-up' by those we seek to support – that is, the extent to which clients / parents are able to make use of the support provided, and the extent to which that leads to actual changes in behaviour.

- By themselves, evidence-based programs, not matter how faithfully they are implemented, are not guaranteed to produce desirable changes in clients.

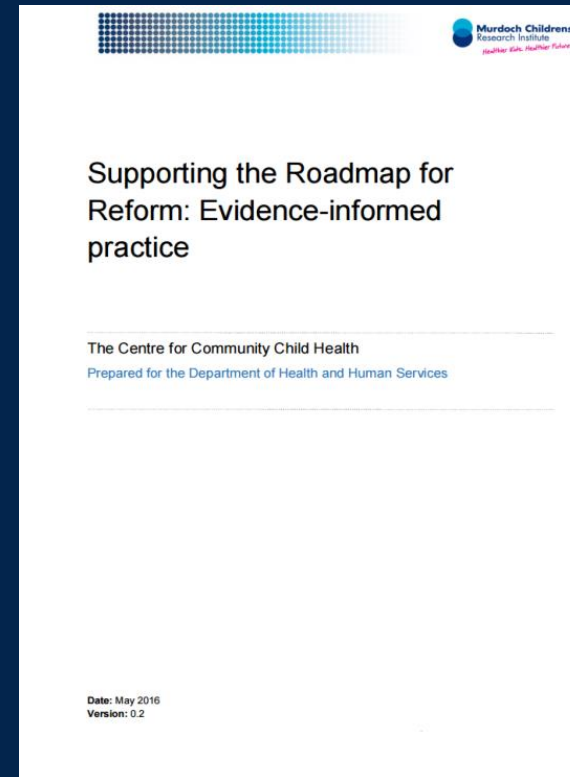- Using an evidence-decision-making framework will increase the chances of 'take-up'

CONCLUSIONS

- In going beyond the first-generation question of '*what works?*', we need evidence to answer second-generation questions such as '*how does it work?*'; '*what works for who, in what situation?*'; and '*how could it be implemented here?*'

- However, since we are not able to generate enough research to answer all our first generation questions, it is unlikely we will be able to answer all our second-generation questions using the same research methodologies

- The approach proposed here involves the adoption of a practice framework that can individualised for every family, while following certain core evidence-informed practices
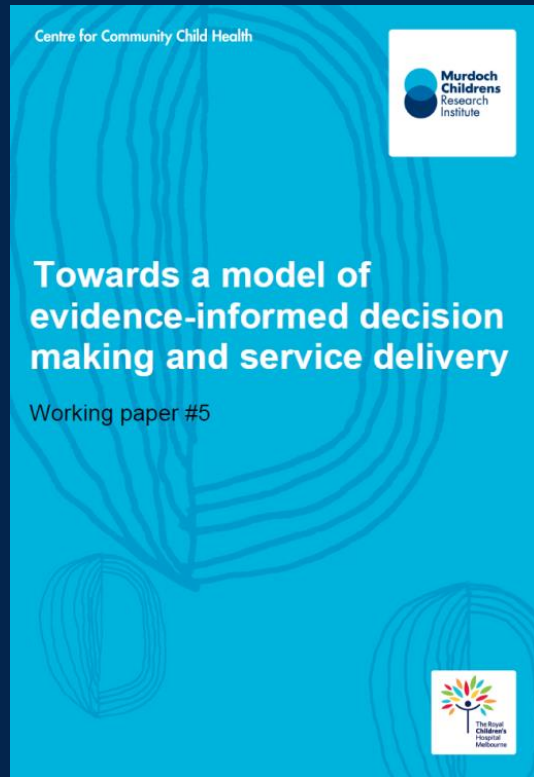
Moore, T.G. (2016). **Towards a model of evidence-informed decision-making and service delivery.** *CCCH Working paper No. 5.* Parkville, Victoria: Centre for Community Child Health, Murdoch Children's Research Institute.

http://www.rch.org.au/uploadedFiles/Main/Content/ccchdev/CCCH-Towards-a-model-of-evidence-informed-decisio-making-and-service-delivery-Tim-Moore-May2016.pdf

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http://strongfamiliessafechildren.vic.gov.au/news-feed/news_feed/using-evidence-to-improve-outcomes
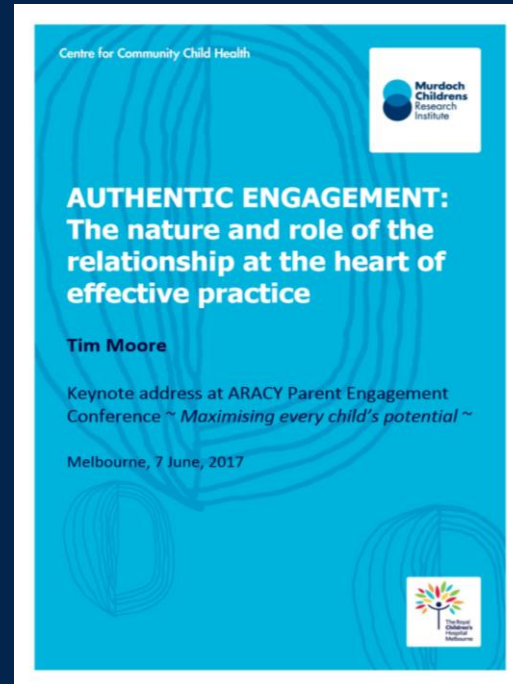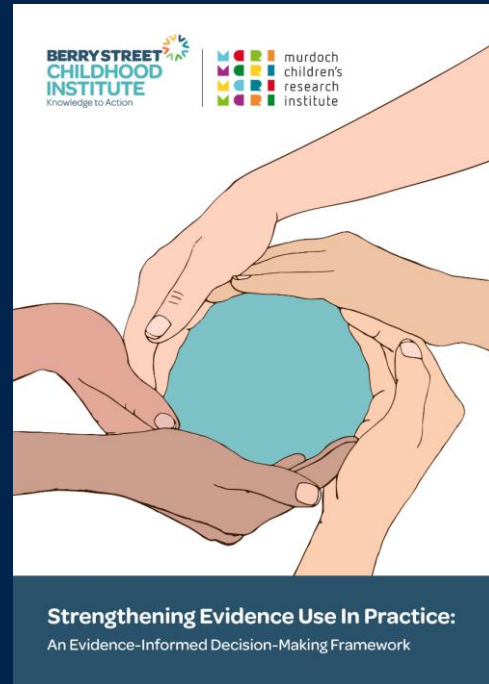
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Moore, T.G. (2017). **Authentic engagement: The nature and role of the relationship at the heart of effective practice.** Keynote address at ARACY Parent Engagement Conference – *Maximising every child's potential* – Melbourne, 7th June.

https://www.rch.org.au/uploadedFiles/Main/Content/ccchdev/CCCH-ARACY-Parent-Engagement-Conference17-Paper-Oct2017.pdf

Discussion question

- Is a practice framework as described a viable way of addressing the needs for second-generation research?

What types of evidence are useful to understand interventions in complex systems?

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The Australian Prevention Partnership Centre

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Complexity thinking means re-thinking a pipeline (or rocket ship) model of translation of knowledge to practice.

1. Problem definition	2. Solution generation	3. Innovation testing	4. Intervention demonstration	5. Intervention dissemination	6. Program monitoring
Program planning and development		**Program implementation and evaluation**			**Program maintenance**

Epidemiology and demography

Formative evaluation

Social, behavioural and organisational research

Literature searching; theory development; pretesting methods and materials

Impact and outcome assessment

Performance management and monitoring

Process evaluation

Community needs analysis

What is the problem?

How might it be solved?

Was the solution effective?

Can the program be replicated?

Can the program be disseminated?

Can the program be sustained?

Key research questions

Source: Nutbeam D and Bauman A. Evaluation in a Nutshell – A practical guide to the evaluation of health promotion programs. Sydney: McGraw-Hill; 2006.

Complexity thinking means re-thinking a pipeline (or a rocket ship) model of translation of knowledge to practice.

Because we look for knowledge generated *from* practice.

Implementation is a process of mutual adaptation between the program and the context - rather than simple "transfer."

Hubbard LA, Ottoson JM. When a bottom-up innovation meets itself as a top-down policy. *Science Communication,* 1997; 19:41-55

The spread challenge

How to support the successful uptake of innovations and improvements in health care

Tim Horton, John Illingworth and Will Warburton

The Health Foundation

So what type of evidence is useful?

Qualitative evidence **about how practitioners are solving problems** (including implementing programs)

- from ethnography

- from qualitative interviews and diaries

…….to help us figure out the larger patterns. In particular, two things:

- **simple rules** being enacted

- the **function of actions** in the context/system

Simple rules

Based on the idea that very simple "rules of thumb" about the agents interacting determine the patterns that emerge at the higher levels

BMC Medicine

RESEARCH ARTICLE   **Open Access**

CrossMark

Simple rules for evidence translation in complex systems: A qualitative study

Julie E. Reed[*], Cathy Howe, Cathal Doyle and Derek Bell

Abstract

Background: Ensuring patients benefit from the latest medical and technical advances remains a major challenge, with rational-linear and reductionist approaches to translating evidence into practice proving inefficient and ineffective. Complexity thinking, which emphasises interconnectedness and unpredictability, offers insights to inform evidence translation theories and strategies. Drawing on detailed insights into complex micro-systems, this research aimed to advance empirical and theoretical understanding of the reality of making and sustaining improvements in complex healthcare systems.

Methods: Using analytical auto-ethnography, including documentary analysis and literature review, we assimilated learning from 5 years of observation of 22 evidence translation projects (UK). We used a grounded theory approach to develop substantive theory and a conceptual framework. Results were interpreted using complexity theory and 'simple rules' were identified reflecting the practical strategies that enhanced project progress.

Results: The framework for Successful Healthcare Improvement From Translating Evidence in complex systems (SHIFT-Evidence) positions the challenge of evidence translation within the dynamic context of the health system. SHIFT-Evidence is summarised by three strategic principles, namely (1) 'act scientifically and pragmatically' – knowledge of existing evidence needs to be combined with knowledge of the unique initial conditions of a system, and interventions need to adapt as the complex system responds and learning emerges about unpredictable effects; (2) 'embrace complexity' – evidence-based interventions only work if related practices and processes of care within the complex system are functional, and evidence-translation efforts need to identify and address any problems with usual care, recognising that this typically includes a range of interdependent parts of the system; and (3) 'engage and empower' – evidence translation and system navigation requires commitment and insights from staff and patients with experience of the local system, and changes need to align with their motivations and concerns. Twelve associated 'simple rules' are presented to provide actionable guidance to support evidence translation and improvement in complex systems.

Conclusion: By recognising how agency, interconnectedness and unpredictability influences evidence translation in complex systems, SHIFT-Evidence provides a tool to guide practice and research. The 'simple rules' have potential to provide a common platform for academics, practitioners, patients and policymakers to collaborate when intervening to achieve improvements in healthcare.

Understanding the functions of actions taken when implementing a program in a system.

CrossMark

Dynamics behind the scale up of evidence-based obesity prevention: protocol for a multi-site case study of an electronic implementation monitoring system in health promotion practice

Kathleen P. Conte[1], Sisse Groen[1], Victoria Loblay[1], Amanda Green[2], Andrew Milat[3], Lina Persson[3], Christine Innes-Hughes[2], Jo Mitchell[4], Sarah Thackway[3], Mandy Williams[5] and Penelope Hawe[1*]

Abstract

Background: The effectiveness of many interventions to promote health and prevent disease has been well established. The imperative has therefore shifted from amassing evidence about efficacy to scale-up to maximise population-level health gains. Electronic implementation monitoring, or 'e-monitoring', systems have been designed to assist and track the delivery of preventive policies and programs. However, there is little evidence on whether e-monitoring systems improve the dissemination, adoption, and ongoing delivery of evidence-based preventive programs. Also, given considerable difficulties with e-monitoring systems in the clinical sector, scholars have called for a more sophisticated re-examination of e-monitoring's role in enhancing implementation.

Methods: In the state of New South Wales (NSW), Australia, the Population Health Information Management System (PHIMS) was created to support the dissemination of obesity prevention programs to 6000 childcare centres and elementary schools across all 15 local health districts. We have established a three-way university-policymaker-practice research partnership to investigate the impact of PHIMS on practice, how PHIMS is used, and how achievement of key performance indicators of program adoption may be associated with local contextual factors. Our methods encompass ethnographic observation, key informant interviews and participatory workshops for data interpretation at a state and local level. We use an on-line social network analysis of the collaborative relationships across local health district health promotion teams to explore the relationship between PHIMS use and the organisational structure of practice.

(Continued on next page)

Population Health Information Management System (PHIMS)

- Supports practitioners to implement and report on progress in achieving implementation targets

- Ministry of Health uses aggregate data to monitor KPIs (about extent of program implementation) and to further support local areas
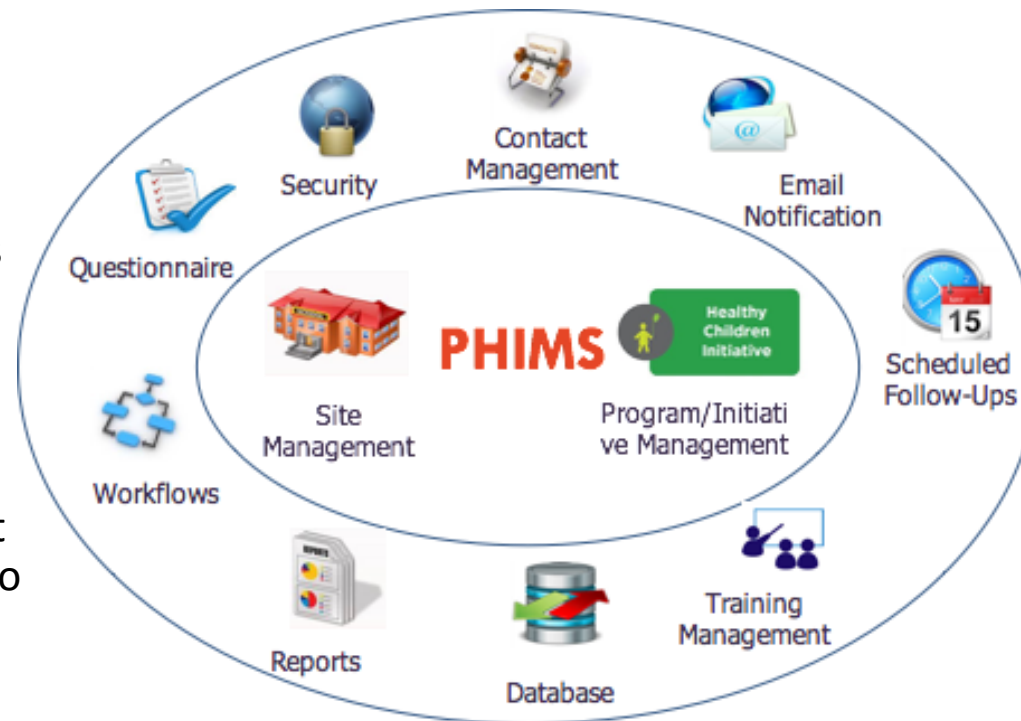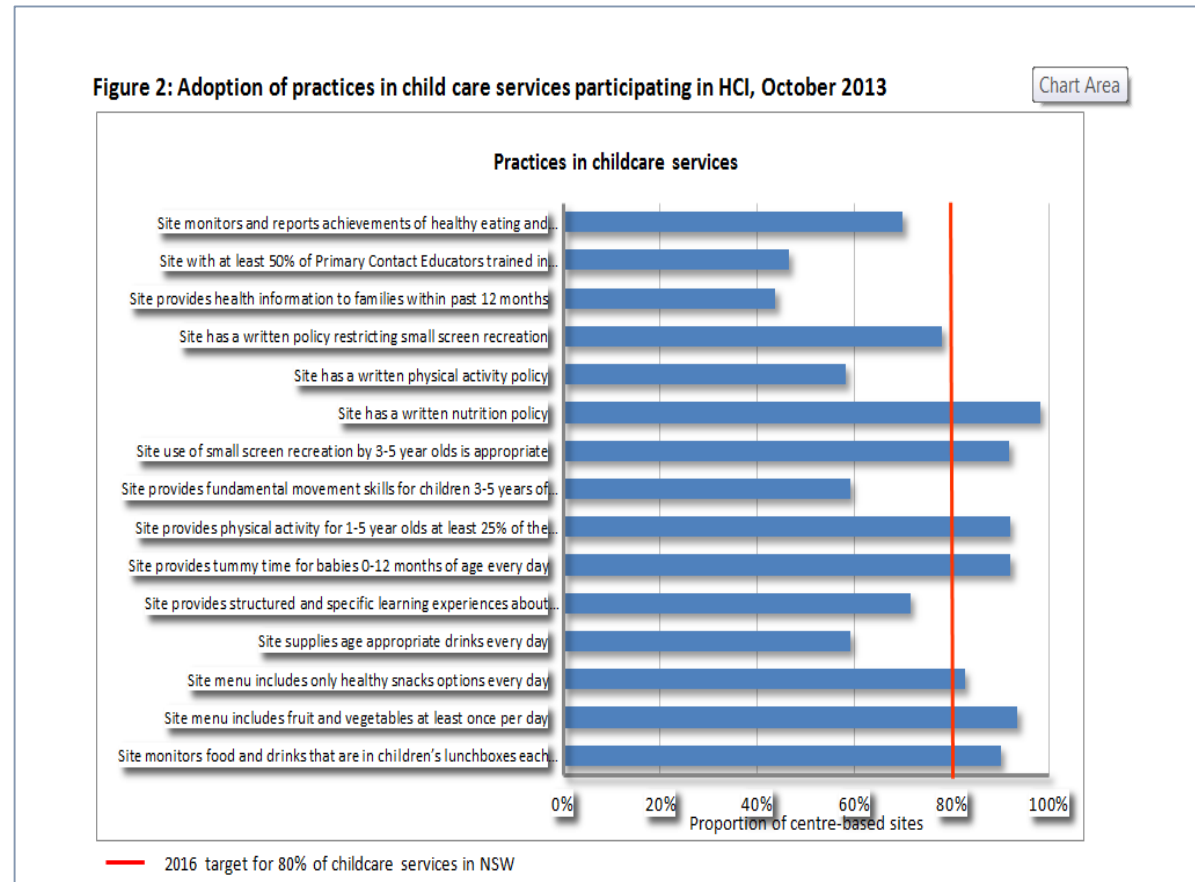
EXAMPLE: How the data are used at state level

- Communicating progress against state Government targets (NSW2021)

- Informs ongoing program implementation
  - Ensuring reach and fidelity
  - Additional focus on practices where adoption is lower

Figure 2: Adoption of practices in child care services participating in HCI, October 2013

Chart Area

Practices in childcare services

Practice	
Site monitors and reports achievements of healthy eating and...	
Site with at least 50% of Primary Contact Educators trained in...	
Site provides health information to families within past 12 months	
Site has a written policy restricting small screen recreation	
Site has a written physical activity policy	
Site has a written nutrition policy	
Site use of small screen recreation by 3-5 year olds is appropriate	
Site provides fundamental movement skills for children 3-5 years of...	
Site provides physical activity for 1-5 year olds at least 25% of the...	
Site provides tummy time for babies 0-12 months of age every day	
Site provides structured and specific learning experiences about...	
Site supplies age appropriate drinks every day	
Site menu includes only healthy snacks options every day	
Site menu includes fruit and vegetables at least once per day	
Site monitors food and drinks that are in children's lunchboxes each...	

Proportion of centre-based sites (0% 20% 40% 60% 80% 100%)

2016 target for 80% of childcare services in NSW

Multiple "informal" knowledge management systems exist alongside the formal software for program roll out. They seem to perform 6 functions.
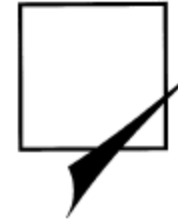

(Conte *et al*, submitted for publication)

So where are we headed now?

→ re-do/update the logic model of the program and its effects

Using Programme Theory to Evaluate Complicated and Complex Aspects of Interventions

PATRICIA J. ROGERS
RMIT University, Melbourne, Australia

This article proposes ways to use programme theory for evaluating aspects of programmes that are complicated or complex. It argues that there are useful distinctions to be drawn between aspects that are complicated and those that are complex, and provides examples of programme theory evaluations that have usefully represented and address both of these. While complexity has been defined in varied ways in previous discussions of evaluation theory and practice, this article draws on Glouberman and Zimmerman's conceptualization of the differences between what is complicated (multiple components) and what is complex (emergent). Complicated programme theory may be used to represent interventions with multiple components, multiple agencies, multiple simultaneous causal strands and/or multiple alternative causal strands. Complex programme theory may be used to represent recursive causality (with reinforcing loops), disproportionate relationships (where at critical levels, a small change can make a big difference – a 'tipping point') and emergent outcomes.

KEYWORDS: collaboration; complexity; performance measurement; programme theory; theory of change

Also exploring other ideas. e.g.,

What does "accountability" looks like in the presence of complexity (with its consequent lack of predictability)?

"We want to go beyond our KPIs and put our health promotion skills into play."

(From Groen *et al*, KPIs in health promotion and different program implementation practice styles. Forthcoming)

How can evaluation answer these second-generation questions?

Professor Patricia Rogers

Evidence and Evaluation Hub,

Australia and New Zealand School of Government

BetterEvaluation

First generation questions – 'What Works?' 'Are we doing it right?

What interventions look like	Discrete, standardized intervention
How interventions work	Pretty much the same everywhere
Theory of change	Fixed, universal
Questions asked in evaluation	What works? Are we doing it right? (fidelity)
Evaluation methods to generate evidence	Counterfactual designs (Experimental/Quasi-experimental)
	Standardised measures and baselines
Nature of advice given by evaluation	Single way to do it
	Best practices
Processes needed for evaluation influence	Knowledge transfer – dissemination, policy briefs, 'What Works' clearing houses, monitoring implementation fidelity.
Metaphor for evaluation influence	Fixed directions (one way to do it – little skill needed to follow instructions)
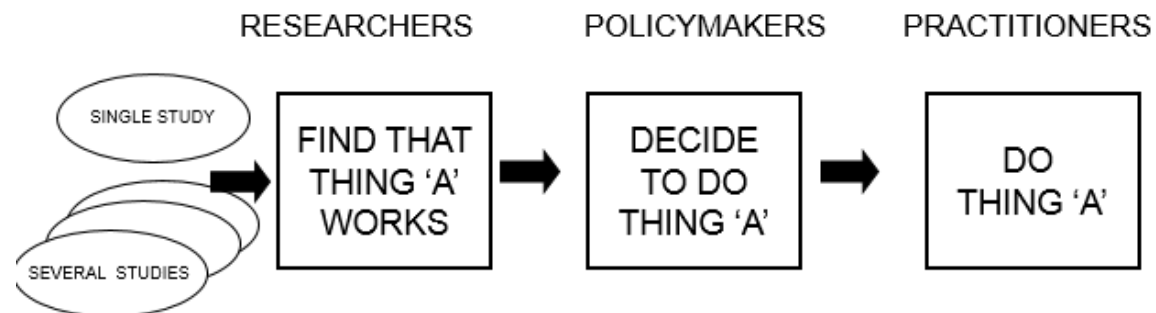
When 'what works' doesn't – even with implementation fidelity

- When **it works for some people but not others** (could even be harmful)

- When **it only works in conjunction with other factors** – eg favourable implementation context

- When **the scaling up changes the dynamics** (eg job programs)

Second generation questions involve complicated or complex interventions (or aspects of interventions)

	Glouberman and Zimmerman 2002	Kurtz and Snowden 2003
Simple	Tested 'recipes' assure replicability Expertise is not needed	The domain of the 'known', Cause and effect are well understood, Best practices can be confidently recommended,
Complicated	Success requires high level of expertise in many specialized fields + coordination	The domain of the 'knowable' Expert knowledge is required,
Complex	Every situation is unique – previous success does not guarantee success Expertise can help but is not sufficient; relationships are key	The domain of the 'unknowable', Patterns are only evident in retrospect.

Glouberman, S., and Zimmerman, B. *Complicated and Complex Systems: What Would Successful Reform of Medicare Look Like?* Ottawa: Commission on the Future of Health Care in Canada, 2002. http://www.healthandeverything.org/fi les/Glouberman_E.pdf.

Kurtz, C. F. and D. J. Snowden (2003) 'The New Dynamics of Strategy: Sense-making in a Complex and Complicated World', IBM Systems Journal 42(3): 462–83. (who also discuss chaotic and disordered)

Second generation questions (complicated) - 'What works for whom in what situations and how'?

What interventions look like	Different in different situations (appropriate adaptation)
How interventions work	Differently in different situations (different people or different implementation environments)
Theory of change	Differentiated by implementation context (including the influence of other projects) and participant characteristics
Evaluation methods to generate evidence	Multiple arms of experimental/quasi-experimental designs
	Realist evaluation – understanding causal mechanisms that work in particular contexts
	Learning from outliers and exceptions
	Non-counterfactual impact evaluation designs and approaches
Nature of advice given by evaluation	Contingent
	Good practices in particular situations
Processes needed for evaluation influence	Knowledge translation to new situations – differential decision support based on contextual matching, including values
Metaphor for evaluation influence	Transport map and timetable (need some skill to choose the most appropriate option for that time and place)

Second generation questions (complex) 'What is working'?

What interventions look like	Non standardized and changing, adaptive, and emergent
How interventions work	Results sensitive to initial conditions as well as to context, generalisations rapidly decay
Theory of change	Iterative, changing conceptual model used for synthesis
Evaluation methods to generate evidence	Real-time data, A/B tests (which are not RCTs)
	Realist synthesis of diverse evidence about outcomes and contexts
	Rubrics which combine diverse evidence and values
	Learning from outliers and exceptions
	Non-counterfactual impact evaluation designs and approaches
Nature of advice given by evaluation	Dynamic and emergent
	Principles
Processes needed for evaluation influence	Ongoing, collaborative knowledge generation, synthesis, and sensemaking; adaptive planning
Metaphor for evaluation influence	Topographical map and compass (need to work it out as you go along)

Non-counterfactual impact evaluation designs and approaches

Some non-counterfactual causal inference designs and approaches

- Contribution Analysis: assessing whether the program is based on a plausible theory of change, whether it was implemented as intended, whether the anticipated chain of results occurred and the extent to which other factors influenced the program's achievements.

- Process tracing: focusing on the use of clues within a case (causal-process observations, CPOs) to adjudicate between alternative possible explanations – do they support or rule out that explanation?

- Searching for disconfirming evidence/Following up exceptions: Treating data that don't fit the expected pattern not as outliers but as potential clues to other causal factors and then seeking to explain them

- Collaborative Outcomes Reporting (COR): mapping existing data against the theory of change, and then using a combination of expert review and community consultation to check for the credibility of the evidence.

- Qualitative Impact Assessment Protocol (QuIP): uses contribution analysis and process tracing with quantitative outcome measures and qualitative narratives of key informant attribution through blinded interviews to reduce bias

- Causal Link Monitoring (CLM) – a systematic approach to contribution analysis which adds information about two important sources of uncertainty - contextual factors that may influence the project and diverse perspectives on the problem and its solution

More info on methods, processes, approaches for second generation questions

https://www.betterevaluation.org

SEARCH for methods, processes, approaches by name, 'complexity', 'adaptive management'

DOWNLOADS

https://www.betterevaluation.org/en/rainbow_framework/downloads

Discussion question

How might we overcome the barriers
to using new methods, designs, processes and approaches
that are needed for second generation questions?

1. Is a practice framework as described a viable way of addressing the needs for second-generation research?

2. What does "accountability" looks like in the presence of complexity (with its consequent lack of predictability)?

3. How might we overcome the barriers to using new methods, designs, processes and approaches that are needed for second generation questions?

Our three questions

Concluding comments

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