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Social-Centric Discovery Evaluation: A Theory-Based Approach to Evaluating Complex Public Health Programs

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Background: There is strong evidence that social conditions drive health outcomes and disparities. Consequently, there is scientific and policy interest in understanding the effectiveness of interventions designed to ameliorate such social conditions, with particular attention on place-based interventions and reducing inequalities. However, neither the science nor the policy interest is well served by conventional evaluation frameworks and, furthermore, few evaluations show that impacts have consistently been achieved. In short, current approaches are ill-suited to either proving what has worked or improving what might work. Transferable lessons are often limited. In this context, recent public health literature is helpful in relation to approaches to evaluation framework-building and theory-building.

Purpose: We describe an alternative approach, in contrast to contribution, attribution or developmental approaches, as a "social-centric discovery" approach. This explores the dynamic relationship between social context and an evolving intervention viewed as a sequence of events within a complex social system.

Setting: Not applicable.

Intervention: Not applicable.

Research Design: Not applicable.

Data Collection and Analysis: Not applicable.

Findings: Not applicable.

Keywords: *evaluation framework-building; evaluation theory-building; theorizing complex public health interventions; place-based*

It is commonplace that designing and evaluating complex public health interventions is difficult. Identified challenges include long causal chains, extensive interdependencies, and the involvement of multiple relatively autonomous actors whose behavior is only partly influenced by the intervention (Datta & Petticrew, 2013). Furthermore, complex public health interventions operate in an environment where many factors lie outside the control of the intervention and are shaped by both social structures and human agency (Hughes et al., 2022). Programs have effects because they change people's calculations or reasonings, and because they change the resources available to them (Dalkin et al., 2015). These effects are mediated by the social circumstances where programs are implemented.

Indeed, public health interventions in complex environments display a close—possibly inseparable—relationship between the intervention and the context. The intervention should be viewed as an event within a complex system (Craig et al., 2008; Hawe et al., 2009). This complexity has contributed to a world of public health interventions in which Ornstein and colleagues can report that only some 60% of public health interventions are evidence based (Gibbert et al., 2013; Ornstein et al., 2020; Prasad & Ioannidis, 2014).

In this article we argue for a new approach when evaluating complex public health interventions. Where interventions depend upon multiple decision points, requiring the alignment of actions across organizations and social groups, we need to root the evaluation in the program's social context. However, in keeping with seeing the program as part of a complex system, we need to understand how the program influences the availability of resources, creates opportunities to build relationships, and interacts with the disposition of power. Building on this argument, we will suggest that often the design of public health evaluations is at odds with what is emerging from many evaluations and research studies.

Flipping the Focus

When evaluating complex public health interventions, the focus is typically on providing evaluative evidence to improve program decision-making. For many evaluators, the preferred approach is to develop a theory of change that describes hypothesized or anticipated causal pathways connecting inputs, activities, outputs, and outcomes. These may be more or less linear and can be graphically represented in various ways. This stage is typically followed by collecting evidence that assesses each of the "mini-hypotheses" along the causal pathway. Evidence is then analyzed and organized to support judgments about the program, its impact, and how it might be improved. This might be called the "blueprint" approach to a theory of change; it both describes to implementers and users what (according to those who designed the intervention) should happen, and provides a basis for evaluating progress.

We, the authors of this article, when faced with evaluating a complex public health program, came to believe a more interesting and important approach would be to abandon an intervention-centered evaluation and consider instead a more social-centered evaluation to examine how (if at all) the program interacts with established social systems and inequalities to impact on health-related behavior. Critically, this includes understanding the lives of the individuals who interact with the program, especially how they shape and are shaped by their (relevant) social context.

This approach requires an adaptation of more conventional theory-based approaches, towards a social-centric [1] or place-centric evaluation focused on exploring the dynamic interactions among social determinants, individuals' sense-making and behaviors, the activities supported by the intervention, and adjacent developments in policy and practice. Given the uncertain interactions of these forces, impacts are unlikely to be consistent over time.

Social-Centric Discovery Evaluation in Context

Theory-based evaluation (TBE) continues to be a creative and dynamic part of current discussions of the intersections of evaluation, implementation, and complexity (Mayne, 2017; Mickwitz et al., 2021 Stame, 2022). TBE has been used to inform four evaluation approaches/frameworks currently used by evaluators: process, contribution, attribution, and developmental evaluation. We propose a fifth: social-centric discovery evaluation. The first four approaches are familiar to evaluators and so are described here only briefly.

[1] An alternative term to *social* would be *field*, understood to be a system of social relationships, such as housing or the law, typically characterized by power inequalities.

The first approach (process evaluation) uses the theory of change to structure and answer the questions, "Did the activities and processes work as intended, and how might these be improved?" It may or may not be combined with other approaches. The second and third approaches (contribution and attribution) both use the theory of change to build a body of evidence with which to construct a credible account of the intervention and derive conclusions about the difference the program made. This might lead either to a contribution analysis (a credible, evidence-based narrative of the contribution a program can be shown to have made to any impact) or to an attribution analysis (an assessment based on a measurable difference between the impacts achieved with and without the program). Both are concerned to show the extent to which intended outcomes were achieved, and the strength of the evidence supporting these claims.

Following Patton (2010), evaluators often recognize a fourth approach; developmental evaluation is especially appropriate for projects or programs working in conditions of complexity and/or uncertainty. Their purpose is to support innovation and adaptation in the program to improve performance in "real time" (innovating, as compared with improving an existing approach). Both implementing teams and wider interest-holders may have a broad understanding of how they think the program should work (enough to support a provisional theory of change), but they iterate between learning and doing to understand how to work better.

We suggest a fifth approach: social-centric discovery evaluation. This is where the uncertainties and complexities found in developmental evaluation are present but where the focus of the evaluation is not on innovating and improving the intervention (although this may be achieved in the end) but on exploring the social systems in which the program sits and the mechanisms driving change where the program lands to inform more creative, effective, and efficient ways of achieving intended outcomes.

At a more practical level, this means understanding the social and other circumstances of people whose lives are touched by the program, understanding how they became aware and made sense of the program in relation to their lives, what it meant to them in terms of how they used the program to engage differently with the world where they live (achieved by using resources, ideas, and relationships made available through the program). It means understanding how the social structures and intermediaries shape and inform their responses.

For example, for a program aiming to slow the development of long-term health conditions, it is important to understand how (if at all) the program changes the circumstances within which people act. Such an analysis would likely take into account the strong association between poverty and long-term health conditions. This approach might be summarized as social-centric rather than intervention-centric. In principle, this leads to transferable lessons not about intervention replication, but about how interventions such as programs interact with complex systems resulting in public health outcomes.

To provide an imagined example, James is an 82-year-old man with Caribbean heritage, living several blocks from the nearest food store, 4 miles from the nearest health clinic, and 20 miles from his only child. He is unable to walk in his nearby park because of a perceived threat of violence and racism, and his house is damp and he cannot afford to keep it warm. An effective public health program would help James manage his chronic obstructive pulmonary disease (COPD) and depression through access to a better food system, walking in well-managed parks, available and cheap public transport systems, zero tolerance of racism, and more equitable allocation of housing resources. The program works by changing how such systems are adapted so that James is better able to use them to manage his conditions.

In this sense, social-centric discovery evaluation is interested in the interactions of events within a complex social system. How the intervention "lands" in these contexts is as variable as the various behaviors in these settings. Interventions may empower people to behave differently within these systems, but also the systems shape people's health related behaviors. And this interaction of social structures and human agency is inherently unpredictable. Because of this uncertainty in interventions of this sort, not only evaluators but all interest-holders are engaging in a process of discovery. We cautiously propose that this might be viewed as social-centric discovery evaluation, and we put this forward as a basis for discussion.

Elements of a Social-Centric Discovery Evaluation: For Discussion

A social-centric discovery evaluation, as conceptualized here, would be guided by three key questions (Table 1).

Table 1. Guiding Questions for Social-Centric Discovery Evaluation

Question	Description
How do people, the program and their contexts interact?	Start with understanding the lives of service users and citizens in their social settings, and in their own words. Ask how they use the intervention to modify or challenge these settings and how these settings shape how they engage with the intervention.
How do people understand and respond to the program?	Ask how actors within the program (both recipients and implementation teams) work with others to incorporate and act upon their understanding of what the program has to offer.
What is the pattern of change for the intervention?	Understand how change occurs within the intervention. Are there radical tipping points, (e.g., long periods of time when nothing measurable appears to change followed by a radical and sustained transformation), or a gravitational pull back to former ways of working (e.g., initial success followed by a reversion to the original state)?

How Do People, Interventions, and Contexts Interact?

People use public health interventions in multiple ways—by, for example, accessing resources, building confidence, forming relationships, or rethinking their actions after discussing with others the inequities they face. These are uses that cannot be bounded; a program cannot require that individuals use their newfound confidence, for example, only in pursuit of its public health outcomes. Discovery evaluation would involve, first, collecting quantitative and qualitative data focused on how service users and groups use the program to build confidence, capabilities, information, and relationships that potentially reshape how class, gender, racism and the structures of inequality impact their lives. It therefore reverses the conventional approach, which starts with the intervention and then locates this within its social and institutional context.

How Do People Understand and Respond to the Program?

There is a dynamic and unpredictable relationship between the program and its social context. We can hypothesize that implementing teams are likely to be sensitive to how service users react to the intervention and modify their behaviors accordingly (regardless of the "official version" of the theory of change). How the intervention is responded to, and engaged with, will change the intervention as experienced (as opposed to the intervention as imagined by its designers). This may have benign or malign consequences.

How Does the Intervention Change over Time?

Public health interventions may have radical tipping points, or they may demonstrate a gravitational pull back to former ways of working. This is especially the case where the intervention is a relatively small event in a large ecosystem. In principle, and if well used as part of a discovery approach, theories of change can support detailed, analytically rich descriptions and provide a structure for reflection, learning, and adaptation by helping to identify where the important unknowns are, including the possibility of tipping points and gravitational pulls. This approach to incorporating theories of change into the evaluation of complex public health interventions can strengthen existing recommendations from Skivington and colleagues (2021), as well as other guidance (Craig et al., 2008; Campbell et al., 2000).

Complementary Approaches, Tools, and Methods

Some existing evaluation approaches, such as developmental evaluation (Patton 2010), systems theory (Cabrera et al., 2008; Hummelbrunner & Reynolds, 2013; Gates, 2016), and complexity aware evaluation (CORE Group, 2021), have complementary elements with our proposed approach and provide useful tools and methods upon which to draw. However, the focus of social-centric discovery evaluation on the *people* within complex systems and their response to interventions distinguishes it from these other approaches. Table 2 summarizes these areas of agreement and divergence, and Table 3 highlights useful tools and methods for implementing the approach. As with other TBE approaches, social-centric discovery evaluation is agnostic on methods; however, key to this approach is understanding how individuals and groups use their creativity, reasonings, values, biases, and enthusiasms to engage with the program and act differently than they would have done if the program did not exist. Therefore, methods are required that can understand this.

Table 2. Complementary Approaches

Approach	Complementary elements with social-centric discovery evaluation	Divergent elements with social-centric discovery evaluation
Developmental evaluation (Patton, 2010)	*Exploratory approach*: Encourages an adaptable approach to evaluation to support real-time learning and program improvement under conditions of complexity.	Focus is on understanding the *intervention* and people's response to it to support program improvement. *In contrast*, social-centric discovery evaluation focuses on people's response to the system as well as the intervention, to enable broader, transferable lessons about the mechanisms underlying behavioral change.
Systems theory (Cabrera et al., 2008; Hummelbrunner & Reynolds, 2013; Gates, 2016)	*Holistic perspective*: Considers the whole system in which people live. *Feedback loops*: Understands systems as dynamic, whereby changes in one part feed back and cause changes in other parts. *Interconnectedness and interdependence*: Understands components of systems as being interdependent and interconnected.	Focus is on understanding the *system* and using this understanding to inform program improvement. *In contrast,* social-centric discovery evaluation focuses on understanding how people respond to, make sense of, and change the system, including the intervention.
Complexity aware evaluation (CORE Group, 2021)	Both include an interest in *contextual*, *temporal*, and *interpretive* complexity. Evaluations should be aware of *unexpected results*. Individuals and groups may *interpret their systems differently*.	Knowledge is not extracted using checklists but is *co-created*— including the experiential knowledge of individuals and groups. How individuals engage in and understand their systems is a *socially negotiated* process.

Table 3. Tools and Methods for Implementing a Social-Centric Discovery Evaluation

Tool/method	Rationale for use
Ethnographic methods: Ethnographic observations, ecological momentary assessments (Shiffman et al., 2008)	• To understand how actors respond to interventions within complex systems. • To capture the relevant contexts in which actors and the intervention are embedded, especially those of which program designers may not be aware.
Interview and discussion: Deliberative spaces (University of Cambridge, 2024), focus groups, and interviews	• To understand how stakeholders perceive the intervention, including stakeholders' motivations, values, and beliefs. • To understand how stakeholders perceive the systems in which they and the intervention are embedded.
Systems mapping: Social network analysis, systems maps	• To understand the relationships between actors or elements of the system. • Can be used to form the base on which the causal chains and relationships of a theory of change are structured. • Foreground the system context and relationships within the theory of change instead of relegating it to a footnote, as often occurs.
Phenomenology: With the goal to describe the meaning of this experience—both in terms of what was experienced and how it was experienced (Neubauer et al., 2019)	• Empathy and exploring the lifeworld of others • Recognizing multiple perspectives • The evaluator is not bias-free

Conclusion: Implement to Discover

Social-centric discovery evaluation aims to understand and improve the dynamic relationship between social context and an evolving intervention, understood as a sequence of events within a complex and unequal social system. Such an approach is appropriate where limited evidence to support implementation, combined with turbulent causal pathways in the field in question, justifies an "implement to discover" approach. Generalizability is a challenge in a social-centered approach. Our proposed approach includes iterative data collection and learning and would, we anticipate, still show patterning of effects in diverse settings and support learning and transferable (but not generalizable) insights.

It might be considered that public health interventions should be subject to an evaluability assessment (DFID, 2013) and that a discovery evaluation is only necessary because the intervention fails to meet the evaluability criteria. However, this would miss the potential contribution of evaluations to the development of novel ways of working in the face of uncertainty (although it would certainly highlight the inappropriateness of contribution or attribution approaches). Similarly, it could be suggested that what we describe here is really a form of developmental evaluation. We would also welcome views on this, but we feel that the distinctiveness of a social-centric approach which sees the program as an event in a complex social system (Hawe et al., 2009) is significantly different from the focus on program improvement and innovation associated with developmental evaluation.

Theories of change run the risk of "locking in" the evaluation with the result that an evaluator only sees what they are looking for. In such circumstances, the evaluation will not only ask the wrong questions, but it might be looking in the wrong places for answers and asking the wrong people. Iterations are required to open up this space with early testing and adaptation while maintaining a skeptical stance. A social-centric discovery approach requires that the evaluation is open to the unexpected and works with so-called "target

populations" not as "targets"[2] but as active co-producers of outcomes. The transferable lessons are not that Program A produces outcomes Y and Z but that people in social context A are likely to react to programs such as B in ways that can be described as Y and Z. This can then become a better basis for designing future social interventions and provide a structure for further scientific inquiry.

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[2] We dislike the way this ballistic metaphor removes all sense of agency from the so-called "target" population.

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