
Preface

Geris Story

As she sipped her coffee, Geri listened to fragments of conversations in small groups around the room. She had just finished presenting a wealth of infant mortality data from her community and, unfortunately, the data did not paint an optimistic picture. When compared nationally, Geri's community ranked toward the bottom in infant mortality. Too many babies were being born prematurely, sleep-related deaths were also too high, and racial inequities in infant survival had not improved significantly in the past decade. Despite the work that needed to be done, Geri felt a sense of relief—the data were finally “out there” and could be used to motivate change.

As a representative of the health department, Geri hoped the data would inform the community members in attendance. She envisioned the group reaching consensus and agreeing to take strategic action. Her presentation seemed to have gone well. The room was attentive, and she noticed various active responses. Eyes lit up as new understandings and implications dawned. Heads nodded, gratified that the data confirmed their thinking. Many were taking notes. These were all good signs. However, she noticed that some people looked skeptical at points.

As conversation began, Geri could hear concerns creeping in. An immigrant rights worker did not trust Geri's numbers on race and ethnicity. A neonatologist felt that Geri's study should have included surrounding counties where many of his preemies and sick babies came from. A young mother doubted that having less than a high school education could cause health problems. There was also anxiety about the changes that might be required. A manager worried about keeping her program funded. An obstetrician knew she couldn't fit another set of screening questions into her office routine. Several more people sat quietly but looked perplexed. Geri began to wonder what she could do to harness the brains in the room and help them reach consensus to move the community forward. How could she provide better data or frame them differently to lead to consensus?

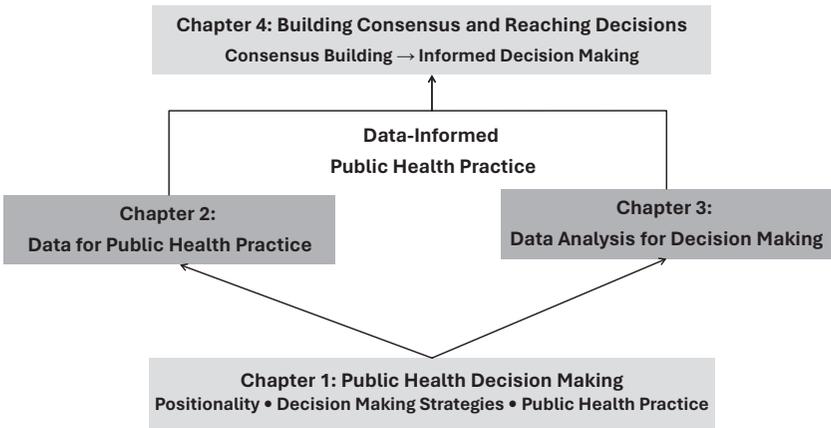
Data can illuminate otherwise murky issues, providing clarity instead of guesswork. Data can be used to evaluate performance, improve efforts, make profits, justify hard decisions, and even settle seemingly impossible disputes. In a diverse group, data can provide a factual foundation on which everyone can agree.

However, data do not always provide clear and definitive answers. For example, think back to an improbable score you witnessed in a sporting event. It may have been amazing, but was it legal? Did it really count? In an earlier era, we had only the opinion of the referee, but as we watch our favorite players and teams today, data pour across the screen constantly, providing evidence we can use to check the accuracy of the referees. We are shown multiple angles in high definition with slow-motion video. However, the analysis often becomes so nuanced that it makes our heads spin and the definitive answer to whether the score was legitimate or not remains elusive. Once again, we find ourselves back in the realm of opinion, forced to accept the interpretation of the referee. Even in this high-tech, well-funded, data-rich situation, “truth” is often not as clear as we wish it to be.

Consider Geri’s story. It is a story that the authors have seen play out in communities across the country time and again. In fact, we have frequently helped “Geri” put together her data presentation, assisting her to present the best data possible. If the data aren’t explained carefully and thoroughly, her audience may misunderstand and not reach consensus. After all, change can be difficult and in public health, there is always something to dispute.

How can we help Geri and her community do a better job of using data to make decisions? Can Geri be more transparent about the limitations of her data, yet make strong recommendations based only on the available evidence? Can she bring more “truth” to her analysis by involving people with different traditions and perspectives in her selection of data sources, study questions, and analytic methods? Can she more systematically account for biases caused by excluding parts of the population or by missing or messy data elements? Perhaps the most important question is this: What should we do when action needs to be taken, but we don’t have all the information, or don’t agree on what is true?

Public health decision makers must admit that incontrovertible evidence is seldom available, yet decisions must be made. For too long, we, as public health professionals, have asked too much of data. This book gives public health professionals the necessary skills to find and extract as much information as possible from existing data sources, carefully evaluate the limits of our factual knowledge, and improve our analyses by including communities in both analysis and programmatic decision making. We explore techniques for communicating our data processes and outcomes with the goals of inviting participation, stimulating discussion, questioning assumptions, and reaching a consensus that is informed by what the data do and do not tell us. Each chapter discusses a step in the process and includes considerations for a range of data types. We also discuss opportunities for community input, real-world stories of success and failure, and resources for diving deeper into various topics (see the following figure in the Preface).



Framework for Data-Informed Decision Making

Chapter 1 addresses the intricacies of public health decision making amid myriad, often competing priorities. How can the public health workforce successfully navigate so many viewpoints? In this context, we introduce the critical concept of positionality, which urges introspection into how our personal backgrounds shape our unique perspectives. Not only do public health professionals need to understand and respect the positionality of community members, but their success depends upon being thoughtful and transparent about their own positionality.

Chapter 2 highlights the importance of using both scientific literature and local data sources for informing public health practice. We discuss various secondary data sources, including population-based surveys, disease surveillance systems, health care data, and place-based data, while acknowledging their advantages, limitations, and potential biases. The chapter also emphasizes the value of collecting primary data through methods like surveys, interviews, focus groups, and observations, as they can provide contextualized information tailored to the community's needs. Additionally, we underscore the significance of addressing potential biases, such as differential response rates, data collection modes, and privacy and data sovereignty concerns, to ensure accurate and representative data for effective public health decision making.

In Chapter 3, we emphasize the importance of a systematic and community-engaged approach to data analysis for effective public health decision making. The chapter outlines five guiding principles: clearly understanding the purpose of the analysis, examining relevant causal relationships, consulting complementary data sources, identifying potential biases, and involving the community. Next, we discuss various considerations for good scientific practice, including understanding the limitations of our data sources, using appropriate denominators, diagramming problems, linking and synthesizing datasets, building new evidence through evaluation, and always partnering with community members. The overarching theme is the need for a rigorous, inclusive, and contextually grounded analytical process that leverages diverse perspectives and data to inform sound public health decisions.

In Chapter 4, we draw on all previous content to address the topic of using data to inform public health decision making. The chapter provides real-world examples of instances where data-informed public health action and the community came into conflict. To address and resolve these frequent conflicts, we propose a set of principles informed by the emotional intelligence literature. Our key point is that effective public health data use is more than just analytic capacity. Instead, it depends on self-awareness and social empathy.

The book finishes with a short conclusion, which stresses that data-informed decision making is crucial for effective public health practice but points out that access to essential data sources remains a significant challenge. In our view, restrictions on data access and use have been rapidly increasing, often hindering health departments from fulfilling their core functions effectively. While data owners have legitimate concerns

regarding data security, handling practices, and political sensitivities, excessive restrictions hamper the ability of health departments and their partners to make informed decisions based on the best available evidence. Moving forward, we believe a broader conversation within the public health field is imperative to address data use and access issues, including efficient data use agreement processes that help ensure appropriate data analysis and dissemination and facilitate collaboration with partner organizations to leverage their expertise.

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