

## From research evidence to context: The challenge of individualizing care

When strong research evidence supports a low-risk intervention that is easy to implement, the practice of medicine may seem straightforward. The decision, for instance, to prescribe a  $\beta$ -blocker for a patient who has had a myocardial infarction is generally clear cut. However, challenges abound as the possibility of harm increases, the evidence for efficacy diminishes, or the steps to implementation become more complex. Deciding whether to recommend adjusted-dose warfarin in a 75-year-old man with newly diagnosed atrial fibrillation and a history of stroke can become nearly overwhelming as we delve into the particulars of his life: that he recently relocated to a second floor flat after his wife died and has slipped on the stairs twice; that his daughter will be moving in to help, but not for 6 months; that he can only arrange for transportation to the clinic to get his international normalized ratio checked every other month; and that he is also taking amiodarone, which will make dosing more difficult. We may opt to talk with his daughter to see if she can come sooner, to his cardiologist to determine if he can substitute another antiarrhythmic, and to the visiting nurses association to see if they can monitor him in his home. Our plan of care will evolve as we factor in these options.

Unless we ask the right questions, we are likely to miss the contextual issues that are so often essential to care. Even in apparently straightforward cases, such as the initiation of  $\beta$ -blocker therapy described above, recognizing that a patient cannot afford medications, has difficulty remembering to take them, or lacks confidence in the judgment of his or her providers, may each be critical to planning an effective intervention. The challenge is to ascertain what may be clinically relevant from the particulars of a patient's life. Issues to consider include their cognitive abilities, emotional state, cultural and spiritual beliefs, access to services, social support, caretaker responsibilities, attitude toward illness and the health care system, and economic situation (1). Although it is a fundamental part of clinical decision making, contextualizing care—especially under the usual time constraints of the patient encounter—may seem to be an elusive goal. Is there any systematic way to proceed?

Clinical decision making involves both quantitative and qualitative approaches to data acquisition. Most medical education places heavy emphasis on the former with little formal instruction in the latter. The clinical approach involves *categorization*, a process of labeling (e.g., diagnosing) a patient's signs and symptoms and then pairing that label with the "best evidence" (e.g., recommended management). Too often, clinical reasoning stops there. Considering context requires moving beyond categorization to a process of *discovery*, in which unique elements of a patient's life are uncovered and explored for clinical relevance. As such, it requires a departure from the hypothesis-driven, deductive approach to determining whether a patient fits a preconceived set of criteria, to a hypothesis-generating mindset that can spot individual but clinically important patterns amidst infinite variation.

Contextualization may be regarded as the qualitative component of clinical decision making. *It is the process of identifying factors specific*

*to a patient's life situation and relevant to their care.* Contextualization falls within the scope of "clinical expertise," a broad concept in evidence-based decision making that includes the provider skills required for integrating the patient's clinical state and circumstances, research evidence, and the patient's preferences (2). Contextualization is also integral to the process of shared decision making: it enables physicians to identify the implications of various interventions as they relate to the patient's unique circumstances—implications that a patient might otherwise overlook. As such, it serves to reduce the problem of patients choosing or accepting management strategies that are not in their best interests as *they would define them* (3).

Although contextual reasoning is essential to generating and organizing new knowledge, it cannot be described using the language of quantitative methods. Medical educators and clinicians need to look elsewhere for tools to think analytically about individualizing care. The challenge of characterizing and legitimizing qualitative inquiry has been addressed by colleagues in a related field—scientists in the social sciences who undertake qualitative research (4). We can adopt their methods once we recognize that, like an anthropologist's engagement with a community, the physician–patient encounter may be regarded as a participant observer case study with an *n* of 1 (1).

While a full discussion of the scope of qualitative methods theory is not possible here, 3 basic concepts that embody systematic qualitative analysis warrant brief review. These are *theory building*, *triangulation*, and *reflexivity*. Each addresses a cardinal dimension of contextualizing care.

Among empiricists, a "theory" is only worth its salt if it has predictive value (5). In contrast, among those engaged in understanding social behavior, the role of theory is primarily explanatory (6). The process by which explanatory theory emerges from systematic observation was first articulated almost 40 years ago and has provided a methodological framework for much qualitative research (7). Appreciating their complementary roles, social scientists now often combine qualitative and quantitative approaches in what is aptly called "mixed-methods" research (8).

Such complementarity is integral to clinical assessment as well. For example, diagnosing diabetes in a particular patient was a straightforward matter of testing the hypothesis that a presentation of new polyuria and polydipsia is related to hyperglycemia. However, recognition that the onset of poor control some years later was precipitated not by progression of her disease but by disrupted self-care after she assumed caretaker responsibility for an elderly demented parent, began with the observation that she was uncharacteristically late for recent appointments. The concept of theory building was articulated best, perhaps, by Sir Arthur Conan Doyle in the words of Sherlock Holmes, acknowledged to be modeled on Doyle's teacher, Joseph Bell, Professor of Medicine at the University of Edinburgh: "You know my method. It is founded in the observance of trifles" (9).

Making the connection between a patient's glucose control and a change in habits is an example of "triangulation": the process of combining various data sources to build an explanatory model

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(10). Pursuing a contextual explanation led to the discovery that the patient was now dependent on neighbors and friends to cover for her whenever she left her home. It also revealed a chaotic home environment where activities of daily living, including shopping for groceries, eating regular meals, and taking medications on time, had become a constant struggle. Management of her diabetes shifted from a focus on titrating her insulin to addressing contextual issues.

Contextualizing medical decisions requires self-knowledge and a sensitivity to one's effect on others. In contrast to quantitative data, which can be processed by computers or laboratory devices, qualitative data must be processed by humans, which invariably introduces subjective elements. "Reflexivity" has been defined as an "attitude of attending systematically to the context of knowledge construction" and implies an awareness of how personal biases and the investigator's (or clinician's) relationship with their subject (or patient) shape the impressions that are formed (11). The clinician caring for the woman with diabetes, for instance, would need to be particularly self-aware if they tend to react judgmentally to patients who show up late for visits. When we pass judgment we are making assumptions, whereas discovery depends on an open-minded, curious attitude.

Assessing our performance at contextualizing care poses unique challenges. Based on a chart review, physicians will appear competent as long as their notes are internally consistent and the plan of care is appropriate on the basis of the information documented. However, the data gathered from patients may be of poor quality—missing subtext, overlooking discrepancies, and gaps inadvertently filled in by the clinician's assumptions and preconceptions. In such cases, care will be

suboptimal, and perhaps unsafe, if critical elements about the patients and their life situation have not been addressed.

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