Performance Measurements and Social Relationships in Health Care

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Abstract

Digital healthcare information infrastructures and emerging data storage and analytic tools are expected to revolutionize accountability and quality improvement of healthcare delivery. Based on early findings of ethnographic fieldwork on performance measurement in obstetrical care, I describe some key problems surrounding use of performance measurements to evaluate the practices of individual clinicians, with a specific focus on relational aspects of performance measurement data.

Author Keywords

Data; Performance Measurement; Information infrastructure; accountability; data practice

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous

Introduction/Case

Mass digitization of healthcare information infrastructures is expected to result in a number of fundamental shifts in healthcare practice and management. These include increased data accessibility for healthcare workers and patients, mobilizing data for novel clinical, and even finding ways to utilize non-clinical data sources for healthcare and public health research (Raghupathi & Raghupathi, 2014). Amidst this evolving healthcare data ecosystem, I have been doing

research on how healthcare organizations are using data for accountability—primarily through examining the shifting practice of healthcare performance measurement surrounding wide implementation of EHR systems, new models of healthcare evaluation, regulation, and payment, and emerging database and data analytic tools.

One consequential shift has been the expansion of performance measurement such that healthcare organizations are measuring not just structure and outcomes of healthcare, but processes of delivering care. Performance measurement is not new. But, recent iterations of data-driven accountability expand the number of dimensions along which organizations are evaluated and utilize a growing array of non-financial measures to audit performance, such as adherence to best practices (Ratnayake, 2009). Abstract values such as "quality" and "effectiveness" are operationalized through design and implementation of certain performance measurements—it is not just what outcomes a healthcare organization produces that demonstrate the quality of their service provision, but the particular practices that they engage in as part of delivering services.

Recent years have seen the growth of data-driven accountability in multiple forms. Performance measurements are key to both internal quality improvement processes, and to external reporting to regulatory bodies that license and oversee hospitals. The stakes of performance measurement for external accountability have been heightened by a controversial new form of data driven accountability in healthcare: the move from "volume based" (fee for service) to "value based" or "pay for performance" (fee for quality of services delivered) payment models. As value-based payment schemes are implemented in the coming years, organizations and individual providers are faced with an urgent need to shift to data-intensive performance measurement as the cornerstone of internal organizational reflection and external regulatory reporting.

Performance Measurement and Social Relationships

On the ground in health care organizations, making sense of data inherently involves social relationships. Setting aside the new relationships that must form as part of the human infrastructure required to produce the performance measurements (see Pine, Wolf, & Mazmanian, 2016 for more on that), I will focus on the relational aspects of communicating and understanding performance measurements and making data actionable.

One key relationship that is emerging in the new "data-driven world" of health care is that between those in an education role—the bearers of data—and those who are the subject of the performance measurements. Clinicians are subject to performance measurement, and surveillance of their practice, in a way that has heretofore been unheard of. For example, my local hospital field sites began calculating individual rates of cesarean section (c-sections are a major target of quality improvement in obstetrics because the steadily climbing rate of c-section indicates vast over utilization and is contributing to high health care costs and adverse outcomes for mothers and babies) in an attempt to lower the total rate of cesarean section for each hospital. Within a few years, it is predicted that this measurement will become a key component of the design of value-based payment for obstetrical care, which adds extra pressure to both clinicians and

administrators to decrease individual provider's rate of c-section and the total rate for the hospital. Yet, despite designing a measurement algorithm that attempts to remove variation due to patient population, calculating c/s rates for individual clinicians is still a fraught endeavor. Clinicians viewing their c-section rate often reacted with shock, as did the physician quoted:

"That's definitely not my rate. There must be a mistake."

--physician viewing individual NTSV c-section rate

Educators are placed in a powerful role as communicators of performance measurement, but a complex one; clinicians do not see 'their practice' reflected in the disembodied numbers before them, and, like a dieter confronting the scale for the first time, struggle to accept the numbers. They question the validity of the measurement, and educators often must spend time explaining how the data are collected and calculated, encountering a clinician's emotional reaction to the dawning recognition that this number does indeed represent something about their practice. One interview subject described this as a process of grief counseling:

"So the whole point of the idea is to improve the data and the other side is like half of my job, I'm a grief counselor. So, you know, the five stages of grief, the first one is denial, and you know I take the physicians, my members, through those stages of grief to acceptance and the first stage of denial, 'That is not my data,' or 'That data doesn't represent me,' or 'That is not what my patients look like.'"

--QI officer for national program

Individual c-section rates are potentially highly volatile pieces of data, especially if they should become public; it is this social pressure that also makes them so effective as tools for changing practice. Communicating about these rates places educators and clinicians in new and different relationships, as educators must work to both show clinicians how performance measurements relate to practice and deal with the emotional reactions of those being evaluated.

Performance measurement data are also playing into the relationships between clinicians, who anticipate having a new window through which they can surveil one anothers' practice. In my field sites, nurse in particular looked forward to publication of individual performance measurements as a way to hold physicians accountable for their actions locally. The nurses perceived that they had little agency to influence physician practice, even when a physician was not following an evidence-based practice. An educator relayed the following story to me, emblematic of how some nurses felt in the face of certain physicians:

"It was one of our nurses who worked on our latent labor management and send them home and don't wait for labor to begin and all this. She said, "With Dr. XXX, though, you can suggest that all you want and he will say, 'No induce her. We don't want to send her home and have her come back tomorrow with a dead baby.'"

I said, 'Really? Statistically that doesn't hold up.' She said 'That's what he tells us every time. 'Then the blood will be on your hands, XXXXX (RN's name).' You can't argue with a dead baby."

--Educator, describing a conversation with a nurse about a repeat offender

Nurses feel that they will have new professional leverage to hold doctors accountable once individual performance measurements for certain practices are made available, since they will have a recourse to physicians' power to make practice decisions that are not based in evidence.

Thoughts on the Work of Making Performance Measurements Meaningful in Practice

In the absence of work to create connection between clinicians and performance measurements that refer to their work, data will "fail." As described by Nafus & Sherman (2014), sensor data "…often provoke a sense of vagueness that is worked on until it becomes either clarity or action, failure or indifference…" Performance measurement data, similarly, does not produce certainty but must be made to matter through situated work. In my case, this work is most often relational between people; managers, educators, and clinicians, among other specialties, interact around data to create clarity and make the numbers actionable.

A number of elements are involved in making performance measurement data matter in health care settings, and in this last section of the workshop paper I describe three facets of work that I think are crucial in making these data socially meaningful.

Creating resonance: those attempting to direct practice using performance data must create a clear sense, for those they are attempting to influence, of what the number points to. "Resonance" is the feeling that the number actually relates to, indexes, one's actual experience of a phenomenon. Different groups have to build resonance with the same number. For example, the low risk c-section rate must become something that multiple groups have resonance with (i.e. doctors, nurses, managers, administrators) even though these different groups have different experiences, goals, motivations, and meanings.

People must *take ownership* of a number. This someone must decide to do something WITH the number. That is, they have to decide to investigate the practices associated with the number and figure out what can actually be done to change the number—for example, what practices will actually result in a lower rate of low-risk c-sections

Finally, there is the work of making the number *actionable*-- this is literally identifying practices and making changes that allow us to move the number. This involves making changes to practice (i.e. changing admission criteria for women in labor so that only women in more advanced labor are admitted, to stave off c-sections performed due to slow labor).

Conclusion

This workshop is a rather disjointed effort to bring out some of my thinking about the relational aspects of data practice in my research on data-driven accountability in health care. At present health care workers and organizations, like other organizations, are experiencing an ongoing reconfiguration of professional accountability around algorithmic, IT-embedded measurements (Scott & Orlikowski, 2012). There is a need to understand the situated data practices and real impacts of this reconfiguration on workers and organizations, including unpacking shifting social dynamics and relational aspects of data work in health care.

Acknowledgements

National Science Foundation Grant 1319897 and the Intel Science and Technology Center for Social Computing supported this work. I thank Mary Pauline Lowry for her valuable contributions to this research and Miriam Bender for important conversations.

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