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Web Roundup: Trapped in the Tar Pit

2018-11-15 20:39:59

By Kathleen Lynch

Earlier this month, Atul Gawande, physician-author and new CEO of the yet-to-be defined health venture formed by JP Morgan, Berkshire Hathaway, and Amazon, published the long-form *New Yorker* article, "Why Doctors Hate their Computers." The article describes rising rates of physician burnout attributed to poor work-life balance, long hours, and exorbitant amounts of time spent on chart review and data entry, compared to direct patient care. Contrary to techno-utopian visions, the implementation of a robust electronic medical record (EMR) exacerbates rather than solves these issues. Drawing on the writing of software engineer Frederick Brooks, he describes complex hospital EMRs as "Tar Pits" writing:

"The tar pit has trapped a great many of us: clinicians, scientists, police, salespeople—all of us hunched over our screens, spending more time dealing with constraints on how we do our jobs and less time simply doing them. And the only choice we seem to have is to adapt this reality or become crushed by it."

Multiple publications this month echo Gawande's critique of our current EMR systems. A large issue is that EMRs often leave physicians little room to "tinker" with the technology, which medical anthropologists (Kingod 2018; Guell 2012) have explored as a key component of technology usability, acceptability, and adoption. As Gawande writes, large-scale software systems are inherently not adaptive. A talk at the American Public Health Association annual meeting this month described how "providers reported that EHRs [electronic health records] were burdensome and time consuming to navigate and they felt restricted by boilerplate care plan formats that prevented individualized treatment goals." In an example of poor "one-size fits all" planning, multiple articles reference "signal fatigue" as a large source of frustration: mandatory alerts that may be necessary in certain clinical encounters, but that need to be acknowledged in every time a record is opened. This "abundance of useless alerts" increases workload and can lead to missed notifications that are actually critical.

Despite system restrictions, physician-led groups have been attempting to innovate around this inflexibility. A New England Journal of Medicine

article published this month describes Honolulu-based physician Melinda Ashton's initiative "Getting Rid of Stupid Stuff." Launched in October 2017, the program has aimed to reduce burnout among clinicians at their hospital by asking them to " to review their daily documentation practices and nominate aspects of the EHR they thought were 'poorly designed, unnecessary or just plain stupid.'" In his article, Gawande wrote about an emerging movement to establish an "app store" for EMR's, which would allow medical practices to customize the platform based on the needs of their specialty and patient population. Also this month, teams of researchers and clinicians are working to develop a natural-language processing tool that would allow clinicians to extract "useful" data from the EMR and produce "annotated" data sets to guide decision-making.

However, these fixes are only needed because current EMRs amplify the "garbage in/garbage out" maxim so often heard in research (in other words, if the data is bad, the conclusions will be bad). Gawande interviews physicians who complain that "the problem lists [on a patient case] have become a hoarder's stash." Rather than using efficient shorthand to describe a clinical issue—traditionally done in paper-based notes—EMR text boxes allow for detailed data entry. Theoretically, this is potentially a good thing: physicians have the space to easily give adequate description and context about an issue. However, what results are bloated problem descriptions that get added to, not tightened, with each subsequent record opening. To save time, physicians may copy/paste from a previous or referring note. The issue is, bad or inaccurate data may be copy/pasted, skimmed over, and copy/pasted again, never getting expunged from the note. This phenomenon has been described by physicians participating in Digital Health Breakthrough Network pilot studies of clinical decision-making tools and care management platforms. In the American Public Health Association talk, NYU's Dr. Stanhope described how the participants of her study often selected "Other" when they were unsatisfied with options in the EMR, which can lead to confusing or even redundant reporting throughout the system.

These issues, as well as the human impulse to adapt and create when faced with constraints, point to what medical anthropologists who focus on human-technology interactions often observe: tools designed without input and engagement from those who use them daily leads to disconnection, or patchwork solutions that may increase burden, particularly on individuals with the least power in the (social) organization. Ironically, clunky EMRs have created a reversion to low-tech solutions: Gawande writes that he has become increasingly paper-based, printing notes so that he doesn't have to click through multiple tabs during an appointment. The use of medical scribes, referenced in multiple articles this month, has been floated as a solution to reduce physician burnout and data entry burden—adding human input, rather than automation. The labor

implications of EMR navigation are ripe for anthropological critique: EMRs have constrained the role of medical assistants through restricting feature access to physicians, increasing burden. Yet the addition of trained medical scribes, the proposed patchwork solution, only shifts the technology burden to minimum wage hospital employees or physicians in the "Global South."

STS scholar Danya Glabau aptly pointed out the irony that Gawande, the author of the Checklist Manifesto, would critique the rigid, constraining workflow of modern EMRs. There is a tension between, as Gawande notes at the beginning of the article, the excitement and promise of technology to support clinical decision-making and patient care, and the workflow burden and restrictions that come with institution-wide software implementation. Quoting the chief clinical officer of Partners HealthCare in Boston, he writes, "If computerization causes doctors some annoyance but improves patient convenience and saves lives… isn't it time we all get onboard?" There may indeed be a mismatch between the benefits offered by EMRs to patients and providers, but a survey of 2,000 American adults published this month revealed that clinical encounters may only be getting more painful for both, the backlog of data entry decreasing the amount of interaction in visits: only 11 percent of visits discussed the patients environment, 45 percent of patients said they wished they and their physician talked more about why they want to be healthy.

If we want to design and build EMRs that work for both patients, providers, and hospital staff, anthropologists need to be involved. The granularity of anthropology's approach: observing the minutiae and subtleties of "mundane" everyday behavior (i.e. clicking through screens on a computer), can help us understand how physicians are engaging with patients, their devices, and each other, and how an EMR can be built to support, not hinder this process. Anthropologists can also recognize the systems-level effect of technological implementation: how may an EMR impact not only physicians, but other staff, particularly those with more precarious employment status? The various articles this month have highlighted current ethnographic work in this area, as well as future directions for anthropological engagement in clinical and technology-driven spaces.

AMA citation
Lynch K. Web Roundup: Trapped in the Tar Pit. *Somatosphere*. 2018. Available at: http://somatosphere.net/?p=15116. Accessed November 16,

2018.

APA citation
Lynch, Kathleen. (2018). *Web Roundup: Trapped in the Tar Pit*. Retrieved November 16, 2018, from Somatosphere Web site: http://somatosphere.net/?p=15116

Chicago citation
Lynch, Kathleen. 2018. Web Roundup: Trapped in the Tar Pit. Somatosphere. http://somatosphere.net/?p=15116 (accessed November 16, 2018).

Harvard citation
Lynch, K 2018, *Web Roundup: Trapped in the Tar Pit*, Somatosphere. Retrieved November 16, 2018, from <http://somatosphere.net/?p=15116>

MLA citation
Lynch, Kathleen. "Web Roundup: Trapped in the Tar Pit." 15 Nov. 2018. Somatosphere. Accessed 16 Nov. 2018.<http://somatosphere.net/?p=15116>