Chapter 103
On the Road to Ephesus:
Data-Based Wisdom and Healthcare

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ABSTRACT

Following a brief review of literature on big data as well as wisdom, this chapter provides a definition of data-based wisdom in the context of healthcare organizations and their visions. The author addresses barriers and ways to overcome barriers to data-based wisdom. Insights from interviews with leading healthcare professionals add practical meaning to the discussion. Finally, future research directions and questions are suggested, including the role of synchronicity and serendipity in data-based wisdom. In this chapter, developing data-based wisdom systems that flourish Wisdom, Virtue, Intellect, and Knowledge are encouraged.

We are like dwarfs on the shoulders of giants, so that we can see more than they, and things at a greater distance, not by virtue of any sharpness of sight on our part, or any physical distinction, but because we are carried high and raised up by their giant size.-- Bernard of Chartres c1120 AD

The truth is, that we need more, not less, data interpretation to deal with the onslaught of information that constitutes big data. The bottleneck in making sense of the world's most intractable problems is not a lack of data, it is our inability to analyze and interpret it all. -- Christian Madsbjerg

INTRODUCTION

The Library of Celsus built from 114 to 117 AD in Ephesus, with its four front statues depicting Wisdom, Virtue, Intellect, and Knowledge, was once known as the repository of the world's knowledge. I have stood in its magnificent ruins and felt a sense of awe for what I imagined to be the cumulative wisdom of all humankind. Here is the place where knowledge flourished and was

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accessible to its inhabitants. Fast forward to the 21st century and there is no one repository where all data-based knowledge flourishes. But this is the era of big data[1] with the potential to reconnect to those ancient and currently less understood values of Wisdom, Virtue, Intellect, and Knowledge.

Data-based wisdom has different meanings depending on who is seeking it – for example to the medical clinician who wants to make the wisest decision to treat his or her patient or to senior healthcare leadership who want to innovate how to best cost-effectively serve patients or the researcher who is wise enough to see patterns that no one else has noticed. Data-based wisdom is context sensitive.

Healthcare and its organizations generate strikingly large amounts of data. Clearly there is no lack of it for increasingly more physicians use EHRs (electronic health records) for clinical notes; more patients wear medical tracking devices; and more communication goes online (Digital Healthcare Coalition, 2013). Researchers (Boyd & Crawford, 2011) ask, "Will large-scale analysis of DNA help cure diseases? Or will it usher in a new wave of medical inequality?," (p.1) noting that "the era of Big Data has only just begun, but it is already important that we start questioning the assumptions, values, and biases of this new wave of research" (p.13). Harvard Magazine managing editor Shaw (2014) states, "new ways of *linking* datasets have played a large role in generating new insights. And creative approaches to *visualizing* data – humans are far better than computers at seeing patterns – frequently prove integral to the process of creating knowledge" (p. 3). While we may need more data interpretation (Madsbjerg, 2013), we certainly need more data-based wisdom. Specifically, that means strategic data-based wisdom to solve the problems that healthcare faces in providing quality medical and behavioral health treatment cost-effectively to all populations.

This chapter was inspired by a dream of connecting all the dots, mining all the data, to find a cure for a disease that touches so many lives: cancer. But this chapter is not about cancer or treatment.[2] It relates to how healthcare organizations generate data, achieve knowledge and nurture strategic data-based wisdom to be transferred and preserved for those who can most innovate with it.

Blog postings, academic articles, and professional conferences increasing focus on big data and healthcare as public and private organizations seek solutions to collect, analyze, and apply the findings of big data. The rather recent emergence of the "data scientist" demonstrates the centrality of big data in the operation of healthcare organizations. Clearly, big data and healthcare are more than a new trend as medical science continues to embrace evidence-based practice and global governments seeks better outcomes for their populations.

But crunching numbers is not enough even if it shows improved blood glucose or cholesterol levels. What is needed is documented evidence that the analytics actually reduced cardiac death or limb amputation. "Those are the real end points we need to reach" (Cerrano, 2012). It would seem that in healthcare, data can only be considered wisdom when it leads to real world results for patients – which are the ultimate end of any healthcare vision. That may be the qualitative difference between data on one end of the continuum and wisdom on the other.

Following a brief review of literature on big data as well as wisdom, this paper turns to data-based wisdom in the context of healthcare organizations. Barriers and ways to overcome barriers to data-based wisdom are addressed. Preliminary insight from a few healthcare professionals adds practical meaning to this discussion. Future research directions are suggested.