Maps, “Big Data,” and Case Reports

Cartografía, “Grandes datos” e Informes de casos

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INTRODUCTION

Healthcare needs updated maps. Analysis of data from the point of care, collected from practitioners and patients (“big data”) and published in the medical literature as case reports, is one tool that will be useful in updating our healthcare maps. Maps are a universal tool for communication, understood by people across cultures and languages. When I travel to a new city, one of the first things I do is look at a map. Maps commonly focus on a particular concept or strategy for presenting data that has been selected from a larger pool of possibilities, and they change over time. Historical
Direction in healthcare.

Maps not only provide insight into what was known in the past but also offer clues about the cultural basis for the map itself. New strategies and new ways of thinking often require new maps.

Maps are symbolic representations of an area or field that provide insight into the relationships between elements in the map. Navigational maps, ranging from road maps to topographical maps to astronomical maps, are an example of a type of map commonly used today. How one uses a map for orientation and direction is a highly cultural phenomenon and has changed over time. For example, a medieval T-O (orbis terrarum) map from Europe, the Hereford Mappa Mundi, placed Jerusalem at the center and the direction east at the top (Figure 1), and a celestial map from the Dutch cartographer Frederick de Wit in the 17th century used the zodiac as the celestial coordinate system (Figure 2). Today we use digital maps generated by Geographic Information Systems (GIS) and astronomical “apps” such as Star Walk, which displays in real time constellations, stars, planets, and galaxies currently overhead from anywhere on Earth—just point your phone to navigate through the universe! Healthcare challenges are beginning to be studied using “big data” analytic techniques to identify patterns in very large datasets and create maps that match patients with treatments that work.1

The mission of Global Advances in Health and Medicine involves developing a map that focuses on the global convergences in health and medicine with a particular emphasis on whole systems approaches in healthcare and case reports—scaffolding from anecdotes to evidence. Our vision is to share vital information with the worldwide community of healthcare professionals—especially those positioned to apply breakthroughs and best practices to improve the health of individuals. We intend to be a leader in the ongoing global healthcare debate by providing innovative scientific information to healthcare professionals through Global Advances in Health and Medicine, conference and collaboration services, and a searchable information repository. In order to achieve these goals, we need strategic plans, and in order to implement strategic plans, we need updated maps. The Bravewell Collaborative mapping study of 29 medical centers in the United States is one of the maps that can be used to guide and support those charting new directions in healthcare.

The data from the Bravewell Collaborative report “Integrative Medicine in America” published in this issue is a mapping survey that documents the consistent pattern of convergence among different systems of medicine in the delivery of healthcare in the United States. The healthcare delivered across the 29 centers surveyed was consistently individualized, and a partnership between patient and practitioner was important. Patient satisfaction was measured on an ongoing basis. These centers reflected the convergence of conventional Western care with other whole systems models, from Ayurveda to traditional Chinese medicine to functional medicine; these centers are updating healthcare delivery maps. For example, the Functional Medicine Matrix is a map that integrates the patient’s story, lifestyle factors, and clinical imbalances and can be used for the prevention and treatment of chronic disease.2 The emergence of these maps reflects the convergence in research, education, and collaboration of conventional Western medicine and integrative medicine within the United States. The World Health Organization has documented the convergence of healthcare systems around the world. Global mapping surveys will inform the worldwide healthcare professional community about disruptive innovations and converging patterns that hold out the possibility of accelerating advances in health and medicine.

Patients everywhere receive treatments, and these treatments produce outcomes. The practice of evidence-based medicine integrates a practitioner’s clinical expertise with information from external research and training. Without clinical expertise, the delivery of healthcare is held hostage to evidence, and even excellent research may not be relevant for an individual patient.3 For example, more than 18 000 randomized controlled trials (RCTs) are published every year, yet the routine conclusion of systematic reviews is that the published evidence is insufficient to guide clinical practice or inform healthcare policy. Strategies that allow healthcare professionals to proactively deliver individualized medical care and create a partnership with patients that respect their preferences are important if we are to prevent and reverse the epidemic of chronic disease. Global Advances in Health and Medicine is helping to create standards for publishing and aggregating information from different medical systems and cultures through case reports to ensure that treatments and outcomes from the real world of medicine inform the evidence base, provid-
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This cross-cultural convergence is gaining momentum on several fronts. In order to promote communication between Western and traditional Asian medical therapies from China, Japan, and Korea, the World Health Organization plans to incorporate the International Classification of Traditional Medicine into the next revision of the International Classification of Diseases (ICD-11). The development of this shared coding platform will benefit all of medicine and begin to provide insight into some of the cultural nuances within traditional Chinese medicine as well as overlap with conventional Western medicine.

The recognition that the practice of medicine is closely connected to culture is one of the challenges and opportunities of globalization in health and medicine. Whole systems approaches are encouraging a rethinking of the one-drug-for-one-disease model that has dominated healthcare for the past 70 years. And information technology is facilitating the information flow that supports a global convergence, changes that are leading healthcare professionals from nurses to insurers to consider care in a broader context, including lifestyle, environment, and genetics. For example, stakeholders interested in breakthroughs and best practices in metabolic syndrome will have the ability to query across organizational source, country, culture, medical system, discipline (eg, nurse practitioner or acupuncturist), condition, or diagnosis.

Information technology allows healthcare professionals around the world to compare and contrast findings, exploring the implications of discoveries in one area or system vis-à-vis another.

The “Integrative Medicine in America” mapping survey featured in this issue forms part of the mosaic of evidence that documents the evolving global convergences that are occurring in healthcare delivery. In addition to providing a snapshot of where we are right now, it serves as a template for similar surveys in different cultures and medical systems. Maps like these allow for greater understanding and opportunities as data are transformed into information, knowledge, and wisdom. As a new generation of healthcare professionals from the global web of private and public organizations begins to use new maps, clinical practice guidelines and healthcare delivery will change, and patients will benefit.

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