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POLICY FORUM

Increasing Cost Efficiency in Health Care without Sacrificing the Human Touch

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On the beach, the traditional summer challenge is to build the most elaborate sand castle. Those with towers and moats are easily identifiable “high-value” constructions that achieve beachwide admiration. When the challenge is, however, to build the highest-value health care system, the characteristics equivalent to towers and moats are less obvious. Michael Porter simplified the definition of value in health care with the equation $value = outcomes/cost$ —equating value with achieving the best outcomes at the lowest costs [1, 2]. But how best to optimize value in a well-designed delivery system for a population is still not well understood. The sand castle we will try to construct in this article is for the population of pregnant women.

The High-Volume Approach

One way value can be optimized is reducing the denominator of the health care value equation: cost. It is an oft-quoted statistic that 30 percent or more of health care spending may be wasteful [3]. As a result, the effort to increase value in health care has been dedicated to improving efficiency and thereby reducing cost. One type of delivery system that has emerged from these efforts is the “focused factory model,” surgical centers that specialize in care for a very specific condition or population. Shouldice Hospital [4] for hernia care and Martini Klinik [5] for prostate cancer care are well-regarded examples. These focused factories sustain high volumes that help build clinical expertise and standardization of care, thus achieving high value by reliably increasing both positive outcomes and cost savings. They optimize operations through the adoption of process improvement methodologies like LEAN and Six Sigma to improve the efficiency and flow of the system.

On the other side of the Pacific Ocean, we can get a glimpse of a “factory-style” health care system. With 1.3 billion people to serve, China’s national health care system is by necessity high-volume [6]. Spending a month at Ruijin Hospital in Shanghai provided me with an insider’s view of the operations in place at one of the busiest teaching hospitals in all of China. Clinicians routinely see upwards of 50 and sometimes as many as 100 patients a day in the outpatient setting just to scratch the surface of the country’s high demand.

Routine prenatal care appointments in China are best compared to an assembly line. Patients queue outside the office door to see whichever obstetrician is available (clinicians do not have their own panels of patients) and file in one by one at the call of

“next!” The patient’s chart is quickly handed to the obstetrician for review. The medical assistant immediately begins to conduct a physical exam and calls out rapid-fire findings to be recorded by the obstetrician, who then makes recommendations. Each appointment lasts no more than five minutes, which allows patients to ask just one or two questions; there is no time for chitchat. If further testing is needed, the medical assistant quickly ushers the patient into an adjacent exam room, where all swabs and collection tubes are prepared for the obstetrician’s examination so that he or she can return to the consultation room within five minutes. Patients are given their collected samples and specific instructions on where to drop them at the hospital labs.

Is this high-volume system high-value? It is difficult to comment on the clinical outcomes quantitatively and holistically, given significant access challenges in China’s more rural areas and practice variations rooted in cultural differences [7]. If a healthy baby and healthy mother at delivery are the desired outcomes, China’s factory-like health care system, with its efficient and standardized care, does produce just that. Maternal mortality and infant mortality rates have dropped dramatically since 1990 [8-10].

However, China’s extreme form of factory-like medicine, with its clinician-centric focus on efficiency for episodic care, does seem to neglect the long-term patient outcomes. China’s cesarean section rate in some places is greater than 50 percent [11, 12], and anecdotal evidence suggests it is approaching 70 percent at Ruijin Hospital. (One of the several hypotheses about China’s high cesarean section rate is that it is a reaction to the extremely large population’s high demand for obstetrical services [11].) Given evidence that cesarean sections are inferior to vaginal deliveries for both the health of mother and baby, a 50 percent cesarean section rate indicates that there is room for improvement on clinical outcomes, at least from the patient experience and longitudinal care perspectives [13].

“High-Touch” Approaches

At the other end of the spectrum from high-volume delivery models are those that are “high-touch.” Such models optimize health care value by focusing on the numerator of the equation: patient outcomes. This optimization is often achieved by reducing complications, aiming at restoration of health, or preventing disease and costly care interventions through a patient-centered, community-based, and even consumer-driven approach. Ultimately, with greater adherence to care plans and sustainable behavioral change, cost savings are also achieved.

Iora Health, a Cambridge startup that seeks to transform primary care, is a high-touch care delivery system [14, 15]. Each patient is assigned a health coach who maintains and encourages all lines of communication—phone calls, text messages, emails, office visits, and house calls—to help patients achieve their individual health goals. Health coaches and physicians at Iora Health practices develop relationships with patients beyond a

focus on disease states, laboratory tests, and biometric markers. These relationships become woven into the fabric of the community to shape behavioral and lifestyle changes that influence health outcomes. Community-tailored group exercise and wellness classes offered at each clinical site are examples. Payment is per patient rather than per encounter, which encourages clinicians to focus on overall health and prevention to reduce the use of more expensive forms of care. Iora Health has been able to achieve impressive outcomes, like reduction of emergency room visits for a generally sick population of patients who have several chronic diseases [15].

The CenteringPregnancy model of group prenatal care visits is a high-touch approach to prenatal care. Women of similar gestational age within a community are grouped together, and over the course of about ten prenatal visits they gain each other's support as they learn about and experience the clinical changes of pregnancy and prepare for labor and delivery [16]. Each 90-minute visit begins with a woman's self-assessment of vital signs while she mingles with others in the group and their invited family members. There is then teaching and discussion that follows a standard curriculum. Sessions are facilitated by a nurse-midwife or physician [16]. A growing body of research suggests that group prenatal care produces comparable if not better outcomes than traditional visits [16-18]. It also seems to be a clinically effective model for at-risk populations such as adolescents and low-income women [17].

While there is not yet much evidence about the connection between high-touch models of health care and overall clinical outcomes, the growing body of literature on "etiquette-based medicine" demonstrates a correlation between effective physician-patient communication and improved patient outcomes [19-21]. Behavioral change research also suggests that, because a healthy lifestyle may require significant behavior modification, the creation of physician-patient relationships with the development of a web of accountability that promotes behavioral change [22] also points to the value of a "high-touch system."

The Best of Both Worlds: Segmenting a Population and Then Scaling Care

Strong arguments can be made in favor of both high-touch and high-volume approaches. Both have led to model systems that achieve improvements in outcomes and reductions in cost. The advantage high-touch has is its population-based approach. Patients and their health conditions are heterogeneous. Health care needs range from psychiatric therapy sessions to prenatal care to transplant surgery. Similarly, patient communities include young millennials who communicate almost exclusively over mobile devices and the sickest of the "dual-eligibles" (those eligible for both Medicare and Medicaid), who are oftentimes homebound. Upon closer examination, all of the successful models mentioned earlier—Shouldice Hospital, Martini Klinik, and Iora Health—actually employ both high-touch and high-volume approaches. All three are sensitive to the needs of specific segments of their patient population and designed ways to address those needs in an efficient and scalable manner. As these successful models indicate, creating a high-

value health care system must begin with a high-touch understanding of the patient population.

Re-envisioning prenatal care through the lens of value would transform our current one-size-fits-all approach. A high-touch approach would help us segment the pregnant population by degrees of risk. A high-volume approach would help us develop scalable solutions best suited for each segment of that population. The future of prenatal care would reflect the heterogeneity in the population and include characteristics that allow us to optimize outcomes within each segment. Low-risk expectant mothers may only need a few in-person appointments and can receive the rest of their care via mobile phone, while high-risk pregnancies may necessitate more frequent visits, group prenatal care, and/or remote monitoring. Prioritizing certain needs and outcomes for each segment of the population means that solutions and interventions can then be tailored to the patients' needs and, when scaled up, remain efficient.

Ultimately, health care value needs an approach that is both high-touch and high-volume, and, above all, population-specific. Before we embark on building new sand castles for health care, we must identify whom we are building them for.

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