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Population Health in Three Paragraphs

By Dale Sanders

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> The motive behind a care management system—services and software—is to reduce the investment (TPI) necessary by the healthcare system to achieve a unit of improvement in clinical outcomes (COA) by engaging patients in both the numerator and denominator of their own health.
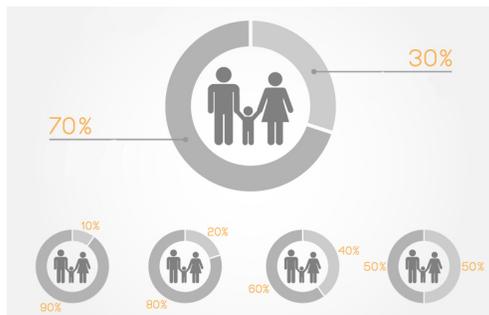
Population health isn't as complex or novel an idea as some people make it out to be. We're wringing our hands and making it more complicated than necessary. It boils down to borrowing the concepts from public health in the management of infectious disease in the community; and applying those concepts to population health and the management of chronic disease in the community, and then combining that with a per-capita reimbursement model that rewards the reduction of chronic disease rates in that patient population. With rare few exceptions, healthcare delivery systems have never had to deal with the socioeconomic and social determinants of health to the degree that public health systems have faced these issues. With public health as a role model, it's not that healthcare delivery systems have no framework to achieve population health; it's that they've never had to do it before and so they lack the skills and data. Public health was left to city, state, and federal government. In regards to the skills, our current healthcare delivery systems must add public health professionals and epidemiologists to their management and executive staff. They need to build the skills to interact with and develop health intervention strategies in concert with law enforcement; social support services in the community, including charitable and religious organizations; job growth and economic development in communities that ensures patients can afford care when they need it; adequate affordable housing in the community; healthy options for eating in the community; adequate dental care; primary and secondary education programs that encourage healthy lifestyles; violent crime reduction; and environmental strategies to ensure that communities have clean air and water. These are the sorts of issues that public health professionals have been managing for years in the progressive reduction of infectious disease in our communities. Now we need to borrow from those skills and apply them to the new setting of chronic condition management in the community.

In regards to the data of population health, my white paper on the 12 categories of the data required for population health is still accurate and applicable, but if we wanted to trim that list down to the absolute minimal data sets required by population health—and

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data which are largely missing in today's healthcare data ecosystem—the trimmed list would be: (1) Patient-reported outcomes data; (2) Social determinants of health data; and (3) Activity-based costing data which will allow healthcare organizations to accurately manage their financial margins in the per capita reimbursement contracts.

If the fundamental, traditional Healthcare Value equation is defined by the Quality of Care divided by the Cost of Care, or $HV = QoC/CoC$, then the fundamental equation of population health will be the calculation of Return on Engagement, that is, the Clinical Outcome Achieved divided by the Total Patient Investment by the Healthcare System in a Patient's Health. Described otherwise, "How much does it cost our population health management system to increase a patient's clinical outcome by one unit of measure?" This is why the understanding of costs and patient outcomes is so fundamentally critical to the success of population health. Understanding the patient's socioeconomic environment is also critical to this equation because in population health, 80 percent of clinical outcomes are attributable to the social determinants of health (2011, Robert Wood Johnson Foundation). $ROE = COA/TPI$. The motive behind a care management system—services and software—is to reduce the investment (TPI) necessary by the healthcare system to achieve a unit of improvement in clinical outcomes (COA) by engaging patients in both the numerator and denominator of their own health. My dear friend, Marie Dunn, a graduate of Harvard's Public Health Program, points out a very important factor in the economic environment that must be embraced by healthcare executives in their population health strategy: "A public health professional has the luxury of thinking about health over the course of an individual's life. A population health management professional thinks about it in the context of a year-long contract and an insurer might think about it for a couple years longer. Anything that shows a return outside the period in which you're accountable for the patient is not incentivized. The longer timeframe over which we see healthcare systems accountable for a patient's life, the closer we'll see public and population health strategies come together."

About the Author

Dale Sanders has been one of the most influential leaders in healthcare analytics and data warehousing since his earliest days in the industry, starting at Intermountain Healthcare from 1997-2005, where he was the chief architect for the enterprise data warehouse (EDW) and regional director of medical informatics at LDS Hospital. In 2001, he founded the Healthcare Data Warehousing Association. From 2005-2009, he was the CIO for Northwestern University's physicians' group and the chief architect of the Northwestern Medical EDW. From 2009-2012, he served as the CIO for the national health system of the Cayman Islands where he helped lead the implementation of new care delivery processes that are now associated with accountable care in the US. Prior to his healthcare experience, Dale had a diverse 14-year career that included duties as a CIO on Looking Glass airborne command posts in the US Air Force; IT support for the Reagan/Gorbachev summits; nuclear threat assessment for the National Security Agency and START Treaty; chief architect for the Intel Corp's Integrated Logistics Data Warehouse; and co-founder of Information Technology International. As a systems engineer at TRW, Dale and his team developed the largest Oracle data warehouse in the world at that time (1995), using an innovative design principle now known as a late-binding™ architecture. He holds a BS degree in chemistry and minor in biology from Ft. Lewis College, Durango Colorado, and is a graduate of the US Air Force Information Systems Engineering program.