

Chapter 4

Population Health Management and the Science of Individuality

Anastasios Moumtzoglou

Hellenic Society for Quality and Safety in Healthcare, Greece, & P. & A. Kyriakou Children's Hospital, Greece

Abraham Pouliakis

National and Kapodistrian University of Athens, Greece

ABSTRACT

This article espouses that population health management (PHM) has been a discipline which studies and facilitates care delivery across a group of individuals or the general population. In the context of population health management, the life science industry has had no motivation to design drugs or devices that are only effective for a distinct segment of the population. The major outgrowth of the science of individuality, as well as the rising 'wiki medicine', fully recognizes the uniqueness of the individual. Cloud computing, Big Data and M-Health technologies offer the resources to deal with the shortcomings of the population health management approach, as they facilitate the propagation of the science of individuality.

INTRODUCTION

Public health' connotes a relatively narrow field with activities carried out by agencies granted with official functions. 'Population health' a term with broader content, is related to a field relevant to the study of several important factors for health. As a result, it involves many terms, such as outcomes, disparities, determinants, and risk factors (Kindig, 2007).

Notwithstanding the term 'population health' combines the concepts of both health and population, every term has an essential meaning of its own. The population is related to a group of persons being organized into numerous different units of analysis. Similarly, the term health was defined negatively, i.e., the absence of disease. Nowadays, the modern understanding stresses the positive aspects as well, and health is considered to be related to all life issues. Summarizing, today it is debated whether population health and public health are different or identical. Nevertheless, population health is defined as health outcomes and their distribution in a population (Kindig, 2007).

DOI: 10.4018/978-1-7998-1204-3.ch004

Population Health Management and the Science of Individuality

Population health management (PHM) has been defined as ‘the technical field of endeavor which utilizes a variety of individual, organizational and cultural interventions to help improve the morbidity patterns (i.e., the illness and injury burden) and the health care use behavior of defined populations (Hillman, 2002). It is differentiated from disease management because it includes (Howe & Spence, 2004):

- More chronic conditions and diseases.
- Uses a single point of contact and coordination and predictive modeling across multiple clinical conditions.

Moreover, PHM is considered a broader term than disease management, as it includes (Coughlin, Pope, & Leedle(Jr), 2006):

- Intensive care management for individuals at the highest level of risk.
- Personal health management for those at lower levels of predicted health risk.

At the provider level, there are three highlighted components (Care Continuum Alliance, 2012):

- The leadership and the central care delivery role of the primary care physician.
- The critical importance of patient activation.
- The capacity expansion of care coordination.

In this context, to successfully achieve all of these requirements, an organization should provide proactive, preventive and chronic care services to all managed patients. Additionally, this should take place both during encounters of patients with the healthcare system and in between. Therefore, providers should maintain regular contact with their patients and support them in the management of their health. Additionally, providers must manage patients at high risk, to prevent the deterioration of their health and avoid the development of complications. Finally, evidence-based protocols for the diagnosis and treatment of patients, consistently and cost-effectively, are also required if for a provider-based PHM approach is followed.

The Federal Agency for Healthcare Research and Quality (AHRQ) developed the concept of ‘practice-based population health’ (PBPH) and defined it as “an approach to care that uses information on a group of patients within a primary care practice or group of practices to improve the care and clinical outcomes of patients within that practice.’ (Cusack, Knudson, Kronstadt, Singer, & Brown, 2010).

Obviously, the implementation of health IT is among the essential components and requirements for planning and implementing PHM. The adoption of Electronic Health Records is just the first step toward the creation of the requisite infrastructure. However, a wide range of other IT applications to automate PHM, track results and engage the patients in their health care is required. Additionally, IT systems should repeatedly be evaluated because of rapid technological changes, new government regulations and new approaches to patient management (Moumtzoglou & Pouliakis, 2015).

AHRQ recommends health IT tools for the stratification and monitoring of populations, as follows:

- Target patients being in greatest need of health services by stratifying the patients and narrowing subpopulations.

26 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/population-health-management-and-the-science-of-individuality/243104

Related Content

Unstructured Healthcare Data Archiving and Retrieval Using Hadoop and Drill

Hang Yue (2018). *International Journal of Big Data and Analytics in Healthcare* (pp. 28-44).

www.irma-international.org/article/unstructured-healthcare-data-archiving-and-retrieval-using-hadoop-and-drill/223165

Developing a Framework to Study the Impact of Contingent Factors on Business Performance Using Strategic Cost Management: A Meta-Analysis Study

Tanvi Verma and Rashmi Aggarwal (2021). *Big Data Analytics for Improved Accuracy, Efficiency, and Decision Making in Digital Marketing* (pp. 227-253).

www.irma-international.org/chapter/developing-a-framework-to-study-the-impact-of-contingent-factors-on-business-performance-using-strategic-cost-management/280654

Rethinking Learning Engagement Through Emotional Learning Analytics in K-12 Classrooms Through Social-Emotional Learning and Mindfulness

Nurdan Kavaklı Uluta (2024). *Emergent Practices of Learning Analytics in K-12 Classrooms* (pp. 198-212).

www.irma-international.org/chapter/rethinking-learning-engagement-through-emotional-learning-analytics-in-k-12-classrooms-through-social-emotional-learning-and-mindfulness/336017

A Machine Learning-Based Intelligent System for Predicting Diabetes

Nabila Shahnaz Khan, Mehedi Hasan Muaz, Anusha Kabir and Muhammad Nazrul Islam (2019).

International Journal of Big Data and Analytics in Healthcare (pp. 1-20).

www.irma-international.org/article/a-machine-learning-based-intelligent-system-for-predicting-diabetes/247455

SBASH Stack Based Allocation of Sheer Window Architecture for Real Time Stream Data Processing

Devesh Kumar Laland Ugrasen Suman (2020). *International Journal of Data Analytics* (pp. 1-21).

www.irma-international.org/article/sbash-stack-based-allocation-of-sheer-window-architecture-for-real-time-stream-data-processing/244166