

Population Health NEWS

Machine Learning and Blockchain in Population Health

by Lynn Carroll, Chief of Strategy & Operations, HSBlox, Inc.

So Much Data, So Little Time

The volume of healthcare data continues to increase exponentially—burdening healthcare organizations with the management of disparate data, interoperability challenges between source systems and the complexities of unstructured data. With so much data, searching out the relevant and actionable data can seem like an insurmountable task. Population health initiatives have extensively relied on the use of structured data from health insurance claims and charge-capture coding from medical billing systems.

While valuable, this data represents approximately 20 percent of all healthcare data—the rest is unstructured. Additionally, edge data from medical and Internet of Things (IoT) devices is proliferating and adding to the challenge of wading through this wealth of information to deploy timely intervention and chronic disease management. The healthcare ecosystem is ripe for the application of new technologies that will tap into unstructured data sources to improve outcomes, contain costs and improve the experience of patients and providers.

Population Health Management

Risk stratification of patient populations helps providers to continue the move from volume to value by identifying at-risk patients and avoidable cost events. Management of chronic disease, avoidance of hospital admissions and medication adherence are examples where the application of new technologies can improve population health. Medication adherence on its own is a \$300 Billion problem,¹ and one that can be impacted by technology. Understanding why a patient is noncompliant is not easily determined from claims and charge-capture data alone. The incorporation of social determinants of health (SDOH) may provide the answer—but this information may lie within vast amounts of unstructured data. Likewise, gaps in the continuum of care may keep this information from becoming actionable.

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Innovative Collaboration between a Local IPA and County Fire Districts Shows Significant Outcomes

In October 2014, Northwest Physicians Network (NPN) a local independent physician association that is part of [DaVita Medical Group](#), and six Pierce County Fire Districts, including East Pierce Fire and Rescue, West Pierce Fire and Rescue, Central Pierce Fire and Rescue, Graham Fire and Rescue, Orting Fire and Rescue, and Gig Harbor Fire and Rescue, joined together to form Pierce County Community Paramedicine Collaboration. The aim of the collaboration is to help identify high utilizers of emergency medical services and when appropriate, refer them to their primary provider systems for care management.

At the time of the collaboration's inception, it appeared that many individuals in the community were not receiving the necessary services and were relying on emergency services for a variety of complex medical and social issues to get their short-term needs met, while their chronic conditions were worsening. The collaboration seeks to provide additional support in order to help individuals receive the appropriate level of care and access to social services. This has resulted in a reduction of non-acute Emergency Medical Services (EMS) calls, which can allow EMS' staff and vehicles to respond more efficiently to emergency calls in which response time is critically important.

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