



Johns Hopkins takes predictive analytics system global

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After more than 25 years, the Johns Hopkins Adjusted Clinical Group (ACG) System has become an industry standard as risk adjustment and predictive analytics software, enabling healthcare providers to model and predict patient health over time by leveraging claims, clinical and demographics data.

Users of the system met on Monday in San Antonio, Texas, for the Johns Hopkins ACG System 2018 International Conference to hear about the latest enhancements and use cases.

Currently, the analytics system is licensed and used in more than 20 countries by providers, payers and academic institutions, according to Mark Cochran, managing director of Johns Hopkins HealthCare Solutions, a commercialization unit within Johns Hopkins Medicine that manages and licenses the ACG System globally.

“We’ve taken an academic product and shaped it into something that’s digestible by business,” Cochran told the conference, noting that the healthcare of more than 170 million patients is actively managed and monitored using ACG, which enables providers to describe or predict a population’s past or future healthcare utilization and costs.

First released in 1992, ACG—developed and maintained by the Johns Hopkins Bloomberg School of Public Health—is based on the premise that the clustering of morbidity is a better predictor of health services resource use than the presence of specific diseases or disease hierarchies.



Bloomberg School of Public Health

The ACG system leverages automated claims, encounter and discharge abstracts data to characterize the level of overall morbidity in patients and populations. An algorithm assigns each individual to a single mutually exclusive ACG category, defined by patterns of morbidity over time, age and sex.

Companies have taken ACG—or components of it—and combined the system with some of their own intellectual property, bringing the technology to market as part of their own product offerings.

DST Health, a business process outsourcing and enterprise business application solutions vendor for the healthcare industry, is an exclusive distributor of ACG to providers and health plans in the United States.

“An interesting market that’s new to us is the pharmaceutical marketplace,” added Cochran, who added that in the U.S., an undisclosed pharma company is conducting a one-year evaluation pilot with ACG to analyze morbidity patterns as drivers for value-based care.

While ACG measures health status by grouping diagnoses into clinically cogent groups, assigning each individual a single value that is a relative measure of the individual’s anticipated or actual consumption of health services, Cochran contends that the analytics system is more than just “grouper” technology.

Jonathan Weiner, co-developer of ACG and professor of health policy and management in the Bloomberg School, said that there have been about 20 versions of the system. He announced that ACG System Version 12.0 will be released in the fourth quarter of this year—it will include new opioid markers for people who are at risk for abuse, new social determinants of health and unstructured EHR data, as well as a new tool for avoidable emergency admissions.

“We have a new set of algorithms to help you determine at a population level—you wouldn’t want to give it to a triage nurse in the emergency department—whether or not your population is appropriately or inappropriately using the emergency department,” added Weiner.

Weiner’s team is applying the latest risk adjustment and predictive modeling tools to improve population health by leveraging analytics and big data.

“As the field develops with big data, the opportunities are great” for supporting the social and medical health of populations, commented Weiner, who is also director of the Johns Hopkins Center for Population Health Information Technology (CPHIT), which focuses on research and development related to the application of EHRs, e-health and other HIT to the health of populations, integrated delivery systems and public health agencies. “There has never been a more exciting time for big data and health information.”

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According to Weiner, EHRs and other HIT offer profound opportunities to understand the risk and need for communities and populations beyond current administrative data-based models. He said CPHIT is working with the Department of Veterans Affairs to develop a national population health measurement framework.

“We now have access to 25 million veteran EHR records as if we were employees of the VA,” Weiner says. “The VA is the first and oldest user of electronic medical records.”

He also noted that CPHIT is working with Epic, the EHR vendor, to develop population health IT tools. In addition, the center is developing a new geriatric frailty “e-risk” score utilizing structured and unstructured EHR data, as well as an advanced set of EHR-based population focused predictive modeling “e-ACG” tools.