New Ways to Know Your Consumers
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A decade ago, as Hurricane Frances headed toward Florida, Walmart executives sought to understand consumers’ shopping habits in advance of the storm. At that time, Walmart had about 460 terabytes of data about its customers, more than twice as much as the Internet as a whole. The data included consumers’ social security numbers, license plate numbers, and products purchased in each Walmart store derived from checkout scanning, credit cards, and checks. Walmart routinely analyzed this information to make decisions about staffing, inventory, pricing, and store locations. So when Walmart identified the products whose demand increased significantly ahead of a previous hurricane—including strawberry Pop Tarts and beer—the company was able to be sure those products were present at Walmart stores in the path of Frances.¹

Today, this kind of information is being supplemented by data from loyalty programs, web browsing, social media, smartphones, and in-store cameras. Companies are able to use this information for even more precise decisions about staffing, inventory, pricing, and real estate. Perhaps most impressive, data often are analyzed and put to use in real time. Beacon technology, for example, allows a store to deliver a personalized offer to a customer via smartphone based on the customer’s location within the store.²

What It Takes

As healthcare faces its own heavy weather, healthcare management is challenged to become more sophisticated in many areas. One of the most important is the use of information about consumers to make business decisions.

Traditionally, hospitals’ and health systems’ information about consumers has focused on inpatient care. Business decisions such as staffing or whether to offer or expand a service line have been based on information about inpatient utilization, which is relatively easily derived from medical records, organized by DRG, and benchmarked using information from state hospital associations. Hospital planners also traditionally have used selected demographic and socioeconomic information, such as a population’s age and location.

As the outpatient market has grown, providers’ information about consumer behavior has not kept pace, leaving many health systems without fundamental business information about services that often constitute half or more of an organization’s revenue. In many ways, this information gap is understandable. Outpatient and physician-encounter data are harder to access than inpatient data. And compared with the relatively limited 500 DRGs for inpatient care, outpatient and physician-encounter data have many more codes and qualifiers, making them far harder to organize and benchmark.

However, even if providers’ information about outpatient use were equal to that for inpatient use, it would still be insufficient for today’s business challenges. Consider the kinds of questions that providers...
need to answer in order to shape a network in a value-based, retail-oriented environment: Which consumers prefer retail clinics, urgent care clinics, or physician office visits for which kinds of conditions? Which consumers are willing to communicate with their physicians through video chat? How do consumers choose a physician? How important are convenience factors such as location and parking? What types of insurance plans do consumers have? How many consumers want to compare prices? How many use price transparency tools?

And consider the kinds of questions that need to be answered to manage the health of a population under a risk-bearing payment arrangement: Which members of a population are most likely to require which kinds of healthcare? Which members are most likely to require focused outreach to avoid unnecessary emergency department visits or hospitalizations? What demographic factors, environmental conditions, behaviors, and beliefs are associated with patients requiring more intensive levels of care? What techniques would be most effective to engage high-risk patients in their own care?

Answering these questions requires a sophisticated mix of demographic, socioeconomic, behavioral, attitudinal, and psychographic information. That information then needs to be used to create consumer segments related to particular business functions or goals.

Retailers create segments associated with shopping patterns. For example, one analysis segmented grocery shoppers into basic shoppers, meat lovers, produce lovers, gourmet lovers, and variety shoppers. A more elaborate system grouped shoppers based on the percentage of luxury goods purchased into segments with labels like the hedonist, the conservative, and the wannabe. Understanding the presence or absence of consumers who have the factors associated with these segments helps retailers with business decisions from competitive strategy to store inventory.

For a healthcare organization attempting to shape its delivery system, consumers might be grouped into segments pertaining to their price sensitivity, physician loyalty, acceptance of digital care, and use of non-traditional care settings. For an organization attempting to manage population health, segments might be defined by health status, type of condition, health risk, and degree of engagement in care. Ideally, understanding the factors that constitute these segments allows healthcare organizations to construct predictive models that inform decisions about issues such as network structure, pricing, and staffing. By tracking these factors over time, organizations can make the necessary modifications as the composition of the segments changes.

What’s Been Done

Some healthcare organizations are beginning to use nontraditional data sources to mine this kind of information. UPMC—a Pittsburgh-based system that operates more than 20 hospitals, more than 500 doctors’ offices and outpatient sites, and an insurance division—has begun to collect data about patients’ income, education, marital status, race or ethnicity, number of children, and even number of cars. UPMC, which already mines data from claims, prescriptions, and census records, plans to incorporate the new data into its efforts to segment health plan members based on risk, and identify patients who would benefit from focused care coordination.
Carolina HealthCare System, whose more than 900 care locations include academic medical centers, hospitals, surgery centers, and physician practices, has begun to use consumer data from public records, store loyalty programs, and credit card purchases to identify high-risk patients before they require high-cost intervention. For example, the information could determine whether an asthma patient has been buying cigarettes. Although such transaction-specific information isn’t currently shared with an individual’s doctor, it can be aggregated into a risk assessment that is provided to doctors.⁶

Geisinger Health System, which includes nine hospital campuses, a 1,200-member multi-specialty group practice, and a health plan, has a long history of mining data to improve care quality, cost, and efficiency. Currently Geisinger is working to supplement information from its electronic medical record with non-traditional “ambient” data sources to predict volume in its outpatient clinics. “Trying to predict what clinical volumes will be at any given time…and what systems can be implemented to give patients better experiences and healthcare is largely dependent on how our patients behave under certain circumstances and how they perceive and interact with the world around them,” according to Nicholas Marko, M.D., Geisinger’s Chief Data Officer. “There is a lot more to that than what is recorded in the medical chart.”⁷

Preparing for Heavy Weather

When asked about the state of business intelligence in healthcare, Glenn D. Steele Jr., M.D., Ph.D., Geisinger’s outgoing President and CEO, said that “we’re probably about to enter the 19th century.” Steele acknowledged the many systemic challenges to better business intelligence, including regulatory hurdles and the structural divide between payers and providers. However, Steele cited “attitudes and intrinsic behavior” as the more critical limiters. Steele encourages organizations to identify the functionalities they need and take small, achievable steps in that direction, even if it’s not perfect.⁸

Ten years ago, Walmart had the data and analytics to help its stores and consumers prepare for a hurricane. Today, healthcare is facing its own threatening conditions, but is far less prepared with information to guide the necessary business decisions. Whether healthcare is facing a single hurricane or a long spell of extreme weather, executives need to secure the information necessary to plan for success in a landscape that is soon to change permanently.

Your comments are welcome. I can be reached at kkaufman@kaufmanhall.com.

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