Understanding Data-Driven Demand Will Help Optimize Vaccine Distribution
For example, in the thick of early shortages of personal protective equipment (PPE) for medical and other frontline workers, the American Hospital Association responded by partnering with Kaiser Permanente, Kearney and others, using artificial intelligence, predictive analytics and supply chain know-how to create HealthEquip, a platform that determined where PPE was most in demand and what logistics would get it there most expediently.

Another similar response for sourcing and delivering PPE came from the retail and apparel manufacturing industry in an initiative named Retailers United, a diverse retail industry coalition that developed new data-driven ways to quickly source, manufacture and distribute PPE to frontline workers. In both cases, multiple data sets were used to understand how much product was available, and how to pivot their supply chain and logistics resources to get the right amount of it to those locations where it was needed.

We are now in a complex new phase of the pandemic. With the economy opening up, we are seeing a resurgence of new cases in some geographies. Coronavirus is just not going away as quickly as we’d hoped.

Although the vaccine may still be several months away, we expect that pharmacies will soon need to think about how to best determine demand on a geographic basis, for example to locations where there is a surge in cases, or where the data determines a large patient population that might be particularly vulnerable — for example, a senior population or a large percentage of patients with immune issues or other existing conditions.
Pharmacies are already preparing for a spike in demand this fall for flu vaccines, with 60% of American adults saying they plan to get one, up from less than half one year ago. As long as the coronavirus continues to spread, people will take the initiative to stay healthy in whatever ways they can, including maintaining social distancing and getting themselves a flu vaccine.

But taking that sharpened new focus one step further, pharmacy operations would benefit from the ability to plan their allocations to geographic areas where there will be most demand for the vaccine, versus simply relying on even distribution or distributing according to volume of prescriptions handled at specific stores.

In that regard, the situation — mitigating the risk of distributing a surplus to some stores while others experience a shortage — is not so different from recent incidences where grocery stores or other essential retailers have needed to best determine where there would be spikes in demand, and quickly pivot their supply chain to meet it by using multiple data sets to assess supply and demand on a highly localized, granular basis, and quickly meet that demand.

Therefore, as we get closer to having a vaccine readily available for COVID-19, how do pharmacy operations figure out their geographic distributions? Predictive analysis and insights that can be gained based on a view across multiple data sets can help anticipate where there is the most need.

Let’s talk about the range of questions this data will need to answer. Pharmacies generally have a good understanding of their own patients and customers, which helps them discern their particular needs and requirements at a given store. They will need to combine this information with third-party sources to help identify cases and mobility — in other words, which pharmacy operations serve those populations who are most likely to opt to be vaccinated sooner rather than later.

Crunching their own customer data — factors ranging from which prescriptions they’re filling and how often, to the size of the population that makes several visits to the pharmacy counter per month or quarter, to the percentage of days covered (PDC) score (how adherent they are in taking their maintenance medications), to records of their past immunizations — will better help predict demand for the COVID vaccine.

Using the data within each store’s trading area — that is, the patients who fill their prescriptions at a particular location — and third-party data on COVID cases by county, it’s possible to triangulate patient populations to given store locations, identifying overall need with greater accuracy.
These groups can then be further segmented into subsectors that are highly likely to come in and get the vaccine, very likely to come in, and so on, creating a data-driven, best-in-class system of vaccine distribution by finetuned geographic allocation that will allow the pharmacy operations the best chance of accurately anticipating and meeting needs.

Widening the lens, by using third-party geo-location data — such as The New York Times’ COVID heat maps and other mobility information — pharmacies will be able to identify current or recent hot spots that are experiencing continued growth in new cases. This will provide yet another data point to layer into their distribution of available vaccine stock.

By using a pharmacy’s own data combined with the right third-party data sets, it’s possible to quickly identify geographies where patient groups are at greater risk.
With these factors changing constantly, it’s important to track and adjust to them on as near a real-time basis as possible. Readers may remember, very early in the pandemic, a spike of cases in New Rochelle, N.Y.; as of this writing parts of Florida, Texas and the southern states are in the red zone. Combining their own customers’ historical data with third party data will allow pharmacy operations to make a more targeted assessment of vaccine distribution based on where exactly it is needed.

Another factor is acceptance of the new inoculation. Unlike the flu vaccine, which has been around a long time, the level of acceptance of a new COVID vaccine is yet unknown. However, the potential patient base at each store location may be better understood by using existing vaccination programs and their acceptance as a model.

Data-driven strategy also allows chains to fine-tune front-of-pharmacy strategies. The retail pharmacy industry has long been known for its strong supply chains, but with the anticipated influx of new customers coming to the store because of the COVID vaccine, there is also a renewed opportunity to reach new customers and meet their demands, particularly as they return to store shopping after the lockdown.

To that end, data to determine best distribution of the vaccine to given locations may also inform the front-of-store plan, given what’s understood about patients already shopping there.

It will allow for a targeted promotional strategy that will help increase basket sales while these patients are in the store, encouraging them to shop for nonprescription items as well. When the COVID vaccine becomes available, pharmacy operations can offer incentives, such as signing up for a loyalty program via email, or an instore offer to new patients coming in. This way, they can convert pharmacy patients into front-of-store customers, and vice versa.

Ultimately, data management and enterprise analytics capabilities provide a way forward. Retailers can get more useful insights by adding multiple data layers to their own customer data; analyzing these thick data sets will help direct them to more relevant actions. By making smart use of a wide range of available data, pharmacy operations can improve their game and gain sustainable market advantage as we exit the pandemic.

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