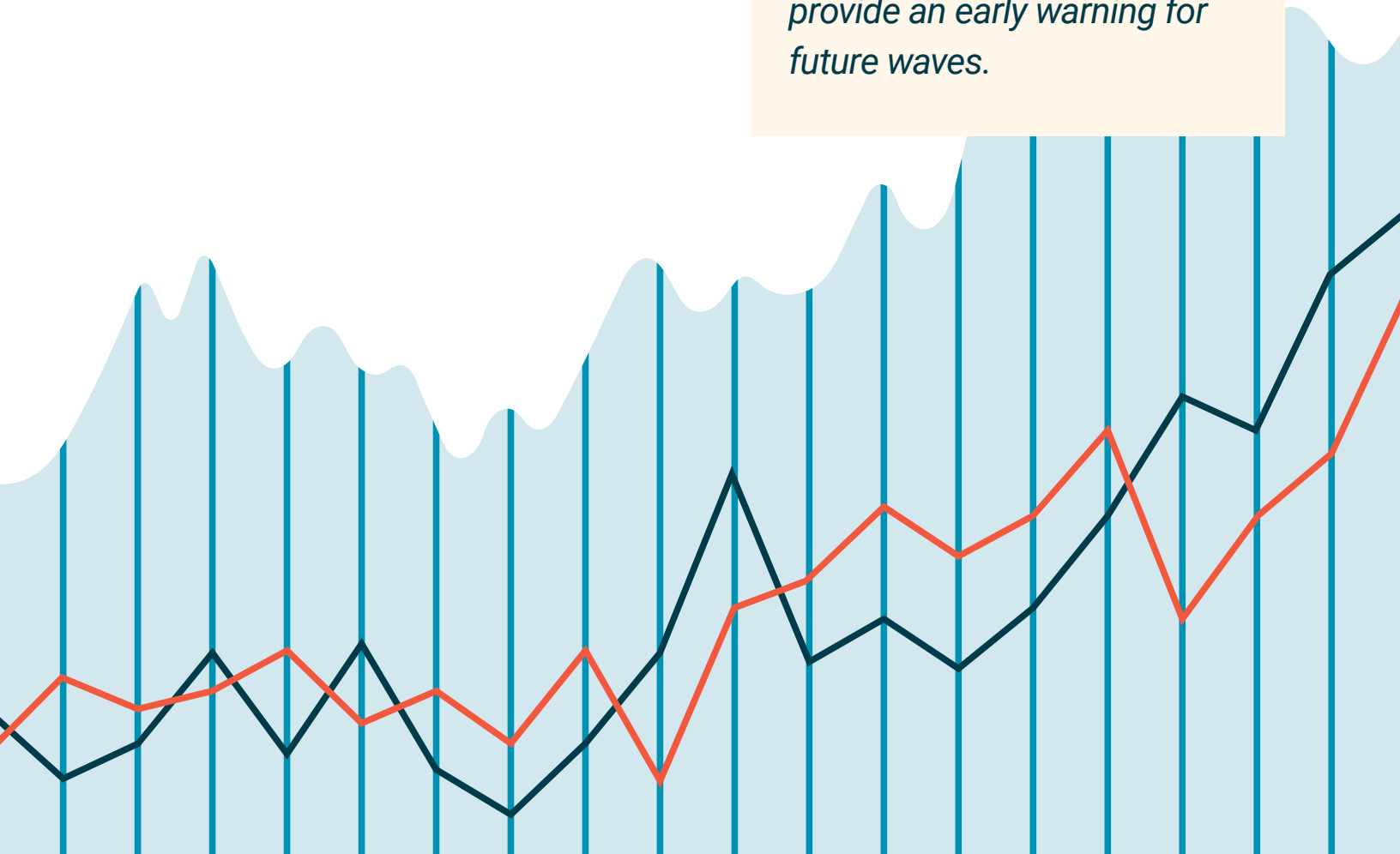


Clinical Surveillance Guidance on Reopening Our Communities

A real-time, ready-to-deploy COVID-19 national surveillance solution that can be scaled quickly to guide efforts on reopening communities and provide an early warning for future waves.



Executive Summary

America needs a real-time, health information surveillance system that can identify a future pandemic hot zone, predict its growth and impact on patients and resources, and assess and activate clinicians to use therapies that can prevent its growth.

Premier has been building this capability for healthcare providers for 20+ years. Today, more than 1,000 geographically dispersed hospitals representing approximately 25 percent of the nation's and one-third of the Veterans Affairs (VA) hospital's discharges use this real-time technology platform. Moreover, more than 1,200 hospitals use Premier's data to benchmark their quality, cost and performance. Finally, 200,000 clinicians rely on Premier technology for real-time clinical decision support. **Premier proposes to use this technology platform to create a real-time, national disease surveillance system that is ready to activate today to assess the spread, resource use, value of therapies and deployment of best practices in the face of a disease outbreak, pandemic or biological attack.**

As a leading healthcare improvement company that unites an alliance of 4,000 health systems and 175,000 other providers, **Premier is uniquely positioned to provide real-time insights that forecast and avert the spread of pandemics.** This white paper describes the technology and capabilities to provide this national surveillance system.

The United States is home to advanced medical care, delivered by highly trained healthcare professionals. But as COVID-19 surges through American communities, it exposes one of our nation's most fundamental weaknesses: the fragmented and disconnected reality of our healthcare system.

Today, healthcare is provided piecemeal, as visits occur in silos and few providers can outline the care a patient receives outside of their exam room. Although almost every provider has an electronic medical records system in place, these platforms are not standardized and can rarely communicate with one another. Moreover, public health is a local endeavor, where monitoring, measurements and requirements deviate across regional boundaries and state lines.

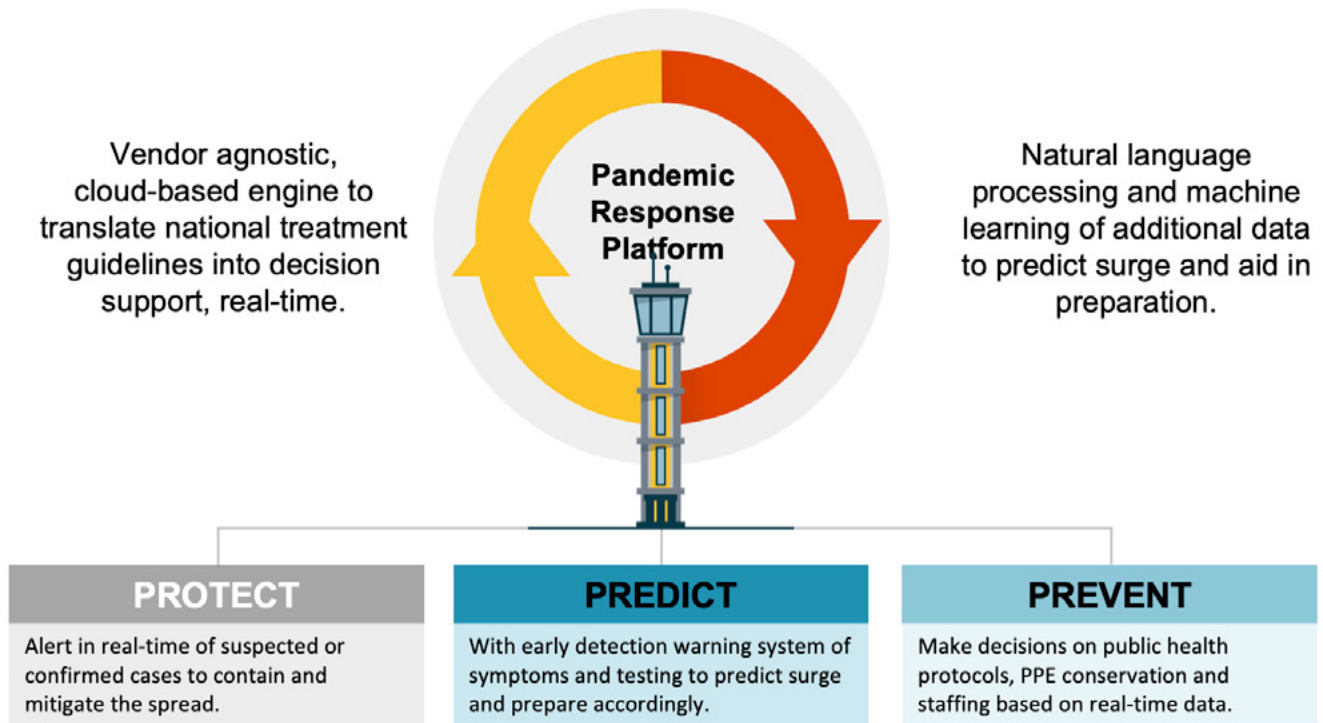
Without a single, national system for disease surveillance and monitoring, the U.S. response to COVID-19 and future pandemics will continue to face handicaps and critical knowledge gaps. For instance, today we continue to lack clear, real-time, nationwide data detailing:

- Where and in which settings patients are presenting with COVID-19-like symptoms
- The number of positive cases being detected, and the local hospitals that are likely to admit these patients for care
- Which departments within a hospital are caring for patients (i.e., the intensive care unit versus a med/surg floor)
- The specific supplies a provider will require to care for its precise patient population that is risk and severity adjusted
- Which patients are likely to grow sicker over time
- How physicians are caring for positive patients, including therapies and prescription medications used in treatment
- Which care protocols appear to be yielding the most successful outcomes
- In real time, where the disease is surging; what's its duration, and where it may be waning

Rather than continuing to fight the pandemic using a patchwork of solutions, **Premier already has in place a singular, real-time surveillance platform that can be used to plan a coordinated response to suspected or confirmed cases, pinpoint symptom hot spots to predict and prepare for surges, determine the supplies necessary to care for the infected population, and ultimately prevent the spread of the disease.** This platform is vendor agnostic and can interoperate with any of the disparate electronic medical records systems offered, and process both structured and unstructured data.

With a single, bird's eye view into the pandemic, Premier's surveillance platform provides public health and other government officials with detailed, actionable, real-time data about potential trouble spots, enabling faster and more effective responses.

Premier has more than 20 years of experience offering clinical, financial and supply chain technologies to health systems and physician practices, retail pharmacies and life-sciences companies conducting real-world clinical trials across the country. Housing the nation's largest and most comprehensive comparable dataset on clinical, financial and operational outcomes data, **Premier functions as an air traffic control for the healthcare industry**, providing a one-stop shop for information on staffing, resource allocation and medical utilization at the local, state and national levels.

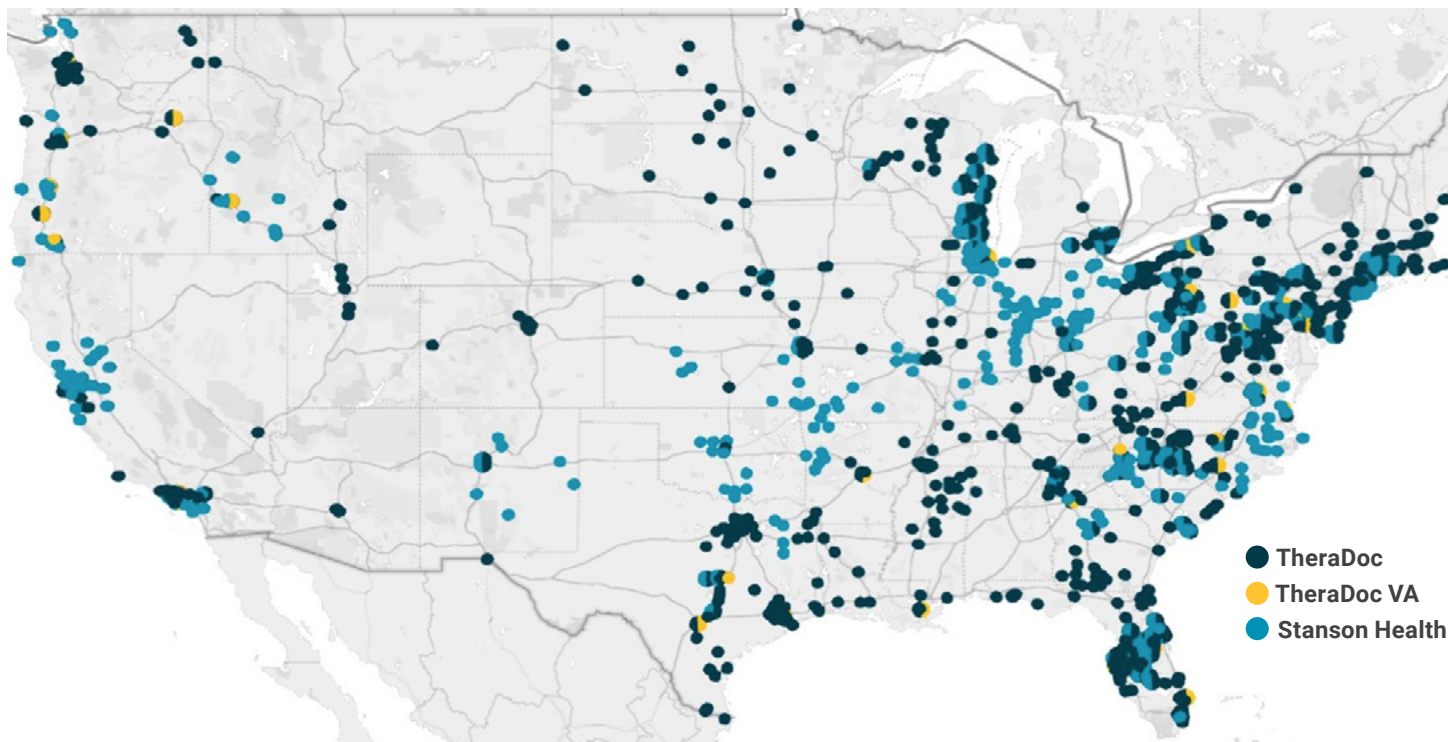


This technology platform collects real-time data from 1,000 hospitals representing approximately 25 percent of the nation's discharges, retail pharmacies and one-third of the Veteran's Administration's discharges. This platform also includes a similarly sized, detailed, retrospective data set that includes administrative, demographic and risk-adjusted outcomes data from more than 1,200 hospitals across the country. This data allows providers to:

- Examine types of medications used to treat diseases and assess the efficacy of selected medications or procedures through the lens of clinical outcomes, cost and resource utilization
- Measure the cost, length of stay, ICU utilization, mortality rate and more for discharges relating to an outbreak
- Identify risk factors for disease-specific mortality through laboratory markers including demographics and comorbidities

Moreover, Premier's technology capabilities include an EMR-agnostic technology already supporting more than 500 hospitals and 200,000 providers in the U.S. Given the reach, existing scale and extensive capabilities, **Premier is best equipped to assist the government and public health workers in our collective fight against pandemics and future public health matters in the U.S.**

Predictive Surveillance for a National Response



Six Strategies Premier Can Implement Immediately to Track, Manage and Treat Pandemic Patients Across a Community and the Nation

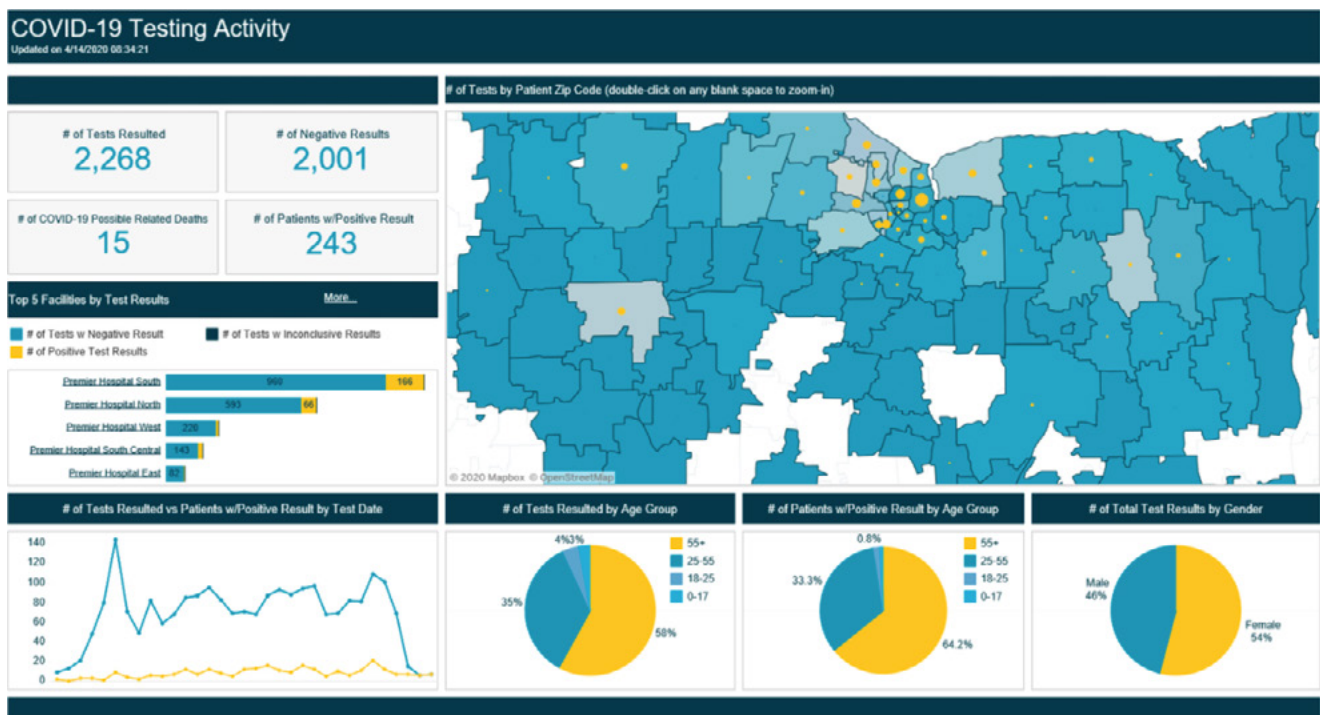
Strategy 1:

Create an early warning system before patients are hospitalized.

One of the earliest warning signs that can signal a future pandemic hot zone is a sharp increase in specific symptoms within a defined community. Using Premier's solution – which is integrated within all the major electronic health record systems and used by more than 200,000 clinicians – public health officials can set specific triggers alerting public health agencies of upticks in certain symptoms, thus predicting future cases. This includes natural language processing to read the discrete data and free text within the medical record, including clinical signs and symptoms that are recorded within physicians' notes. From there, machine learning can extrapolate the symptoms from these notes and develop a unified concept, aggregating multiple symptoms indicative of a certain disease to predict its surge, all in real time. This is an essential capability, as current electronic medical records systems are unable to read and search for free text within their systems.

Considering that patients aren't typically confirmed cases for at least a week after showing symptoms, this early warning buys time to support containment and mitigation strategies, and lead surge preparations and coordination across all relevant stakeholders – all before patients arrive at the hospital for treatment. Moreover, Premier's technology can also identify patients who should be tested for COVID-19 and those who should not – a vital prioritization mechanism considering the international shortage of certain testing supplies.

Using Machine Learning & Natural Language Processing to Predict Suspected Cases

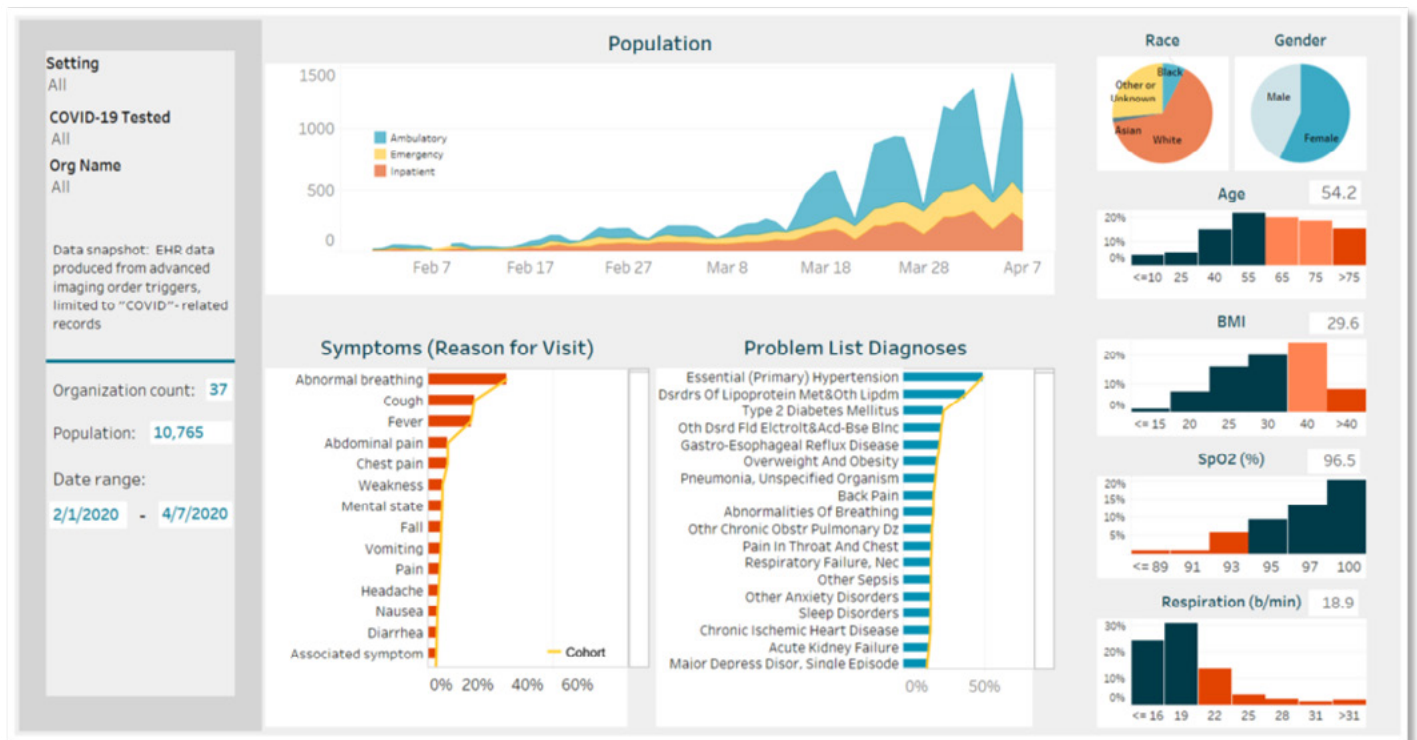


Strategy 2:

Leverage predictive modeling to make actionable forecasts on surge.

Without access to real-time data, providers may be unsure whether their COVID-19 caseload is rising, holding steady or waning. Lacking these insights, it remains difficult for providers to demand plan, allocate scarce supplies or understand whether ancillary capacity may be needed to support care needs. **Premier's integrated solution leverages clinical and public health information to create predictive models about demand, indicating the projected caseload for five to seven days for a health system, city, region or the nation.**

Using Machine Learning & Natural Language Processing to Predict Suspected Cases



Strategy 3:

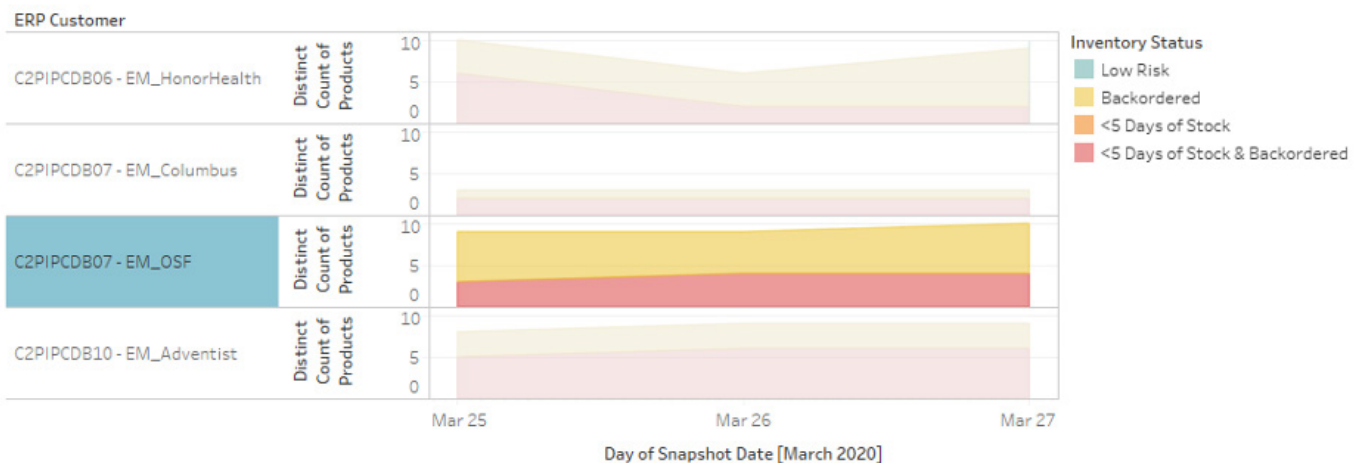
Predict and identify the priority supply needs based on the acuity of the patient population.

As suspected cases are triaged in the acute care setting, a provider’s needs for supplies varies. Premier’s technology aggregates clinical surveillance data to visualize which patients are cared for in different settings and when they may need to be moved into different units such as the ICU. Armed with this data, officials can be better informed about how rapidly a disease is maturing, and which supplies a provider needs at any given point of the disease’s progression.

Premier uses its comprehensive, vendor-agnostic supply data to develop a supply allocation model that predicts the number of disease cases over a seven-day period by county and models the supply levels a healthcare provider will need based on estimated case volume and typical surge demand. The model predicts a provider’s supply utilization based on the acuity of cases, allowing decision-makers to dynamically allocate supplies to specific care sites. This avoids bottlenecks or hoarding so that supplies go to the care sites with the greatest need.

Forecasting PPE Usage

N95 Inventory Status Trending



Detail

ERP Customer	Org	Asset Loc	Mfr ID	Item No	Item Desc	Days Of Stock	Days of Stock (Adjusted for COVID-19 Projection)	Inventory Status	On Hand Qty	On Order Authorized Qty	
C2PIPCDB07 - EM_OSF	10100	10100-Main	201	3183001	MASK SRG ..	43	30.1	Backordered	39	33	
				3183235	MASK N95 R	5	3.5	<5 Days of Stock & Backor..	40	240	
				3183236	MASK N95 R	330	231	ESPIRATOR..	Backordered	440	480
				3183236	MASK N95 R	0	0	ESPIRATOR..	<5 Days of Stock & Backor..	0	880
	10200	10200-Main	201	4972145	MASK RESP..	50	35	Backordered	800	1,760	
				3183235	MASK N95 ..	0	0	<5 Days of Stock & Backor..	0	72	
				3183235	MASK N95 ..	3	2.1	<5 Days of Stock & Backor..	10	40	
				3183236	MASK N95 R	1	0.7	<5 Days of Stock & Backor..	92	60	
				3183236	MASK N95 R	15	10.5	ESPIRATOR..	Backordered	2,804	400
				6072	10110094	MASK RESP..	0	0	<5 Days of Stock & Backor..	0	0
10250	10250-MAIN	13	10110077	MASK N95 R	108	75.6	Backordered	216	0		
			ESPIRATOR..	617	431.9	Backordered	103	0			
10300	10300-Main	201	3183236	MASK N95	1798	1258.6	Backordered	8,812	20		

Strategy 4: Stay informed and ensure adherence to the latest evidence-based clinical guidance for best possible care.

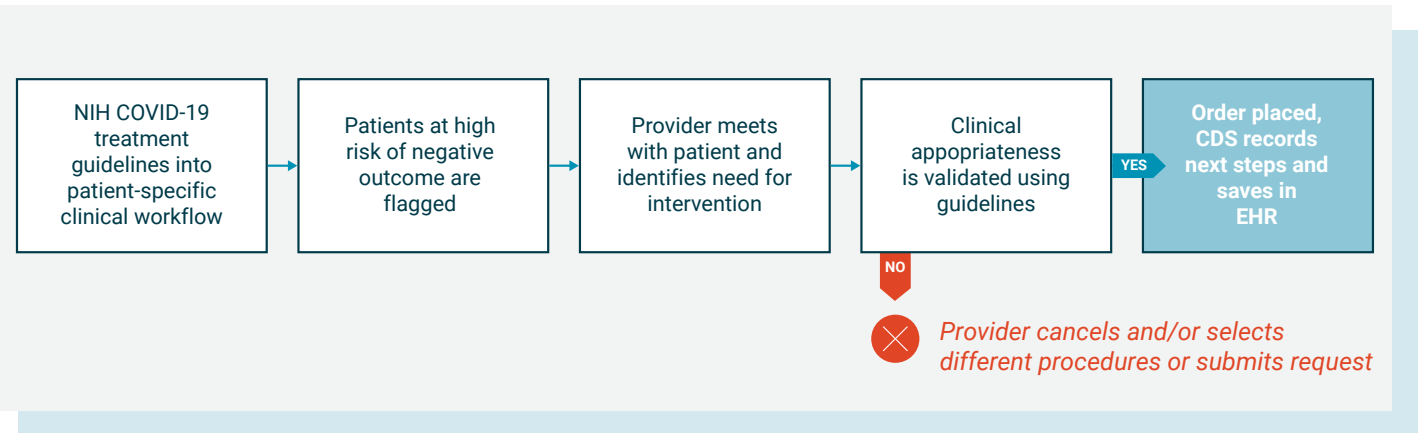
Public health officials are continually learning and adjusting response recommendations, meaning providers must have streamlined systems to study, comprehend and implement the latest guidance. For example, as treatments are tested, some will work, some will not, and some will only be effective for a subset of the population. Rather than dedicate resources to monitoring guidance for care pathways and trying to teach best practice person by person, **Premier’s clinical decision support technology embeds the latest and most relevant clinical guidance into the workflow, allowing nurses and physicians to incorporate the most recent findings into their treatment protocols at the time that decisions are being made.** If their proposed treatment protocols and therapies are not concurrent with evidence-backed practices, the solution serves up an alert – allowing them to adjust their prescribed therapy and/or clinical practice, effectively raising the standard of care for patients across the country. These guidelines can be updated immediately, from the cloud, to support rapid deployment of the most up-to-date care protocols.

Predicting Risk in Acute & Ambulatory Environments

Help physicians predict the outcomes of each patient with **more precision at the bedside.**



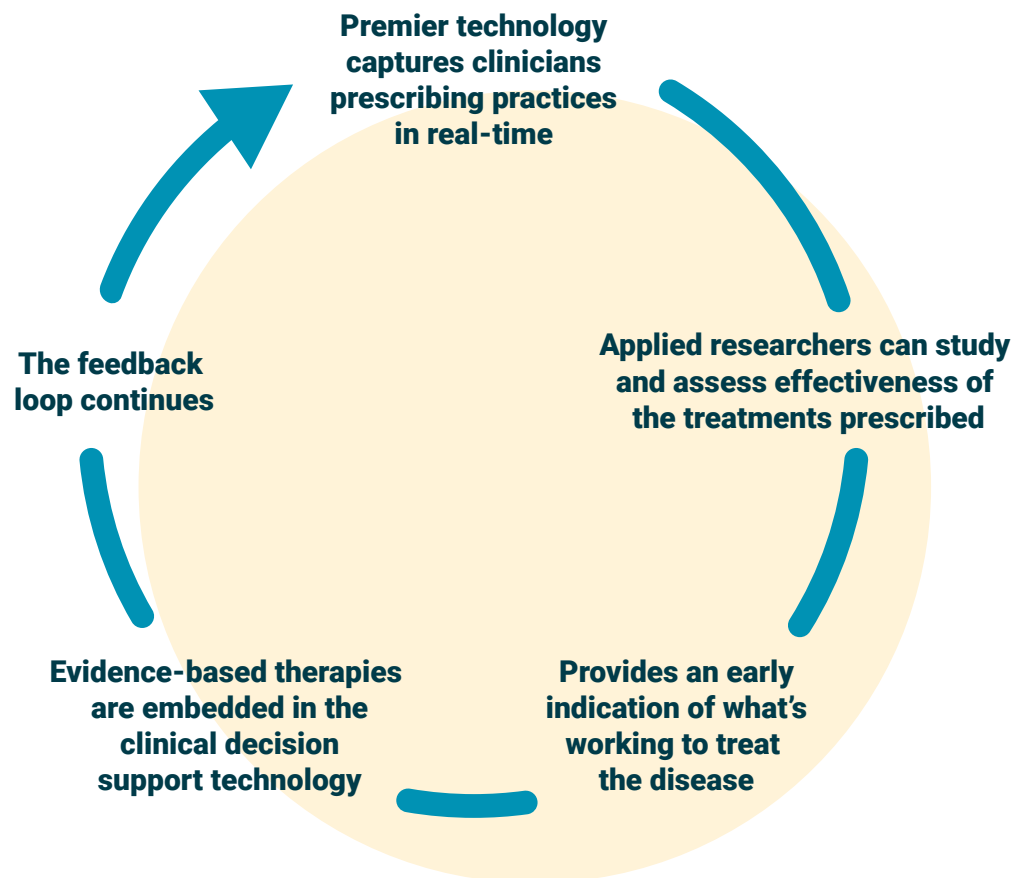
Here’s how.



Strategy 5: Observe and adjust therapies based on real-time research.

To understand the therapies that are yielding the best outcomes – and quickly equip clinicians with the most effective clinical guidelines – the industry needs visibility into which therapies providers are prescribing and their rates of success. **Premier technology captures clinicians' prescribing practices in real time, thereby allowing applied researchers to study and assess the effectiveness of the treatments clinicians prescribe. This window into prescribing habits provides an early indication of what's working to treat the disease.**

As Premier experts learn the therapies that yield the highest-quality outcomes, they embed this critical information in the clinical decision support (CDS) technology, enabling an automated feedback loop that researches, corroborates and automatically adds the latest, research-backed guidelines into the CDS. Now, clinicians have evidence-backed clinical guidelines of hundreds of their peers at their fingertips – without having to step away from patient care to keep up with evolving guidance.



Strategy 6: Rapidly deploy best practices across healthcare providers.

Clinical and operational best practices are slow to scale in our fragmented healthcare system. Premier has developed a proven solution to rapidly enable knowledge diffusion at scale. Premier has brought together more than 1,500 hospitals in collaboratives over the last decade, enabling them to identify, test and scale the most effective practices using a data-driven approach. This includes running the largest and one of the most successful demonstration projects for Medicare from 2003 to 2009 that laid the groundwork for value-based purchasing.

In proliferating learnings and opening up avenues for providers to network with their peers, Premier has enabled hospitals across the nation to save millions of lives and billions of dollars. **Therefore, in addition to providing a real-time, national surveillance system, Premier provides a means to rapidly scale learnings and best practices across the nation.**



01

Organizing
an Industry
Expert
Panel

02

Curating
Content of
Greatest
Need

03

Launch
Mobile-enabled
Virtual Session

04

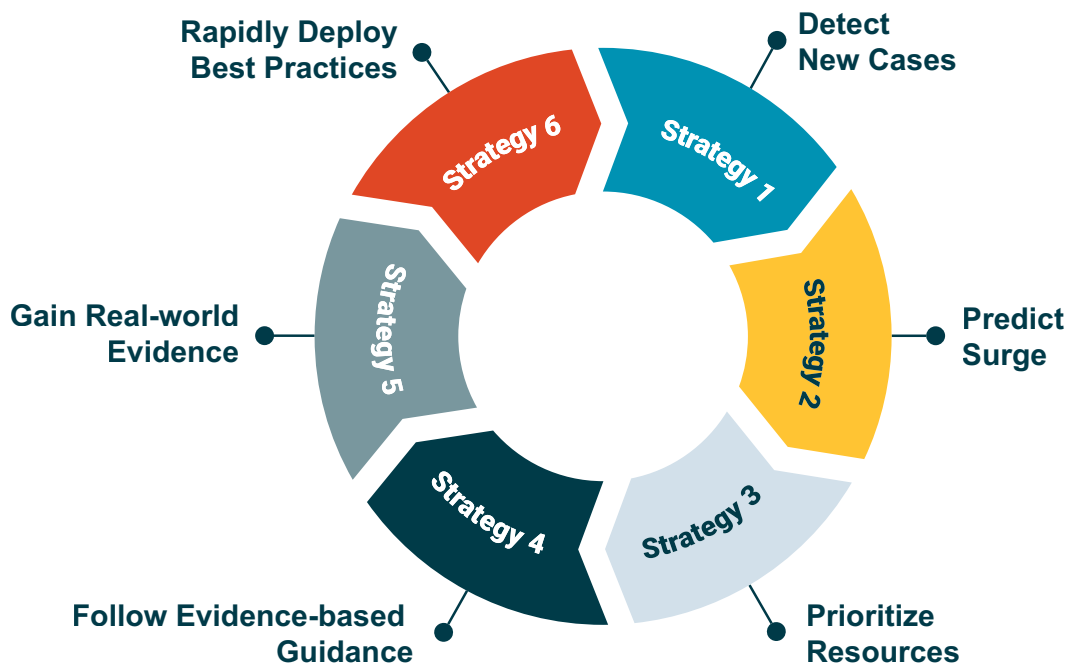
Enhance with
Partner
Capabilities
for Mobile
Chat

*In high demand today & can be repurposed
for the next crisis*

Conclusion

Embedded in approximately 25 percent of the nation’s hospitals and one-third of the Veterans Affairs hospitals, Premier’s technology is geographically dispersed and captures real-time admission, discharge and transfer information. Using natural language processing and machine learning, Premier technology provides comprehensive real-time insights into physician decision-making. Married with our supply chain and resource utilization insights, this national surveillance system is already at scale and ready to be activated today to manage COVID-19 and help plan and predict our nation’s response to any future virus, pandemic or biological attack.

Integrated Pandemic Surveillance Solution



Premier Inc. (NASDAQ: PINC) is a leading healthcare improvement company, uniting an alliance of more than 4,000 U.S. hospitals and health systems and approximately 175,000 other providers and organizations to transform healthcare. With integrated data and analytics, collaboratives, supply chain solutions, and consulting and other services, Premier enables better care and outcomes at a lower cost. Premier plays a critical role in the rapidly evolving healthcare industry, collaborating with members to co-develop long-term innovations that reinvent and improve the way care is delivered to patients nationwide. Headquartered in Charlotte, NC, Premier is passionate about transforming American healthcare. Please visit Premier’s news and investor sites on www.premierinc.com, as well as Twitter, Facebook, LinkedIn, YouTube, Instagram and Premier’s blog for more information about the company.