

*The Value of Health Systems During the COVID-19 Pandemic*  
**Advocate Aurora Health – Milwaukee, Wisc.**

**Responding to the Pandemic: Adapting for Patient Need, Supply Chain and Staff Support**

Advocate Aurora Health's scale has been a critical asset that has allowed us to successfully respond to the financial, operational and clinical challenges created by COVID-19. Below are examples:

**Expert emergency management, supply chain and laboratory teams worked around-the-clock to ensure adequate supplies and equipment, rerouting gear where most needed.** The team was given the funds needed to procure personal protective equipment and scoured the globe — not just the country — resulting in swift replenishment of critical equipment. We eventually invested in a domestic mask manufacturer, Prestige Ameritech, to ensure our PPE supply remains stable in the future. Scale has enabled us to have our own centralized laboratory company, which greatly facilitated our testing and distribution ability.

**In response to unprecedented staffing challenges, our system leaders developed a flexible staffing strategy to address COVID-19 patient surges in hospital emergency departments, critical care, medical and surgical units.** The strategy included standards and best practices that will become operating norms for Advocate Aurora Health, even after the pandemic ends. This includes informing the organization's strategy for operational efficiency and cost-effective labor management, including the development of a system labor pool. Our system created and implemented education and training plans to support more than 5,000 clinical team role reassignments in direct response to staffing needs. This was accomplished via just-in-time learning modules that prepared nurses and others for supportive and assistive roles, including mobilization of team members to new clinical and screening areas. Virtual tools were developed to assist with efficiency, including an assessment for appropriate placement based on experience, skill evaluation and training. We matched nurses' previous experience when reassigning; took advantage of more flexible licensing requirements at the state level to deploy nurses across Illinois and Wisconsin; and conducted twice-daily system calls to address immediate and anticipatory staffing needs.

**Flexibility and innovation marked our response to the challenges presented by the pandemic.** To serve our patients as lockdowns began, we rapidly expanded consumer-first offerings, including telemedicine, self-management tools and an AI-powered COVID-19 symptom checker that has been used more than 400,000 times since the pandemic began. We conducted nearly 1 million virtual visits in 2020, providing important care to patients in the comfort and safety of their own homes.

As the vaccine arrived, we created a completely automated process to sign up where vaccine-eligible individuals schedule their first vaccine on Live Well. They complete their registration and use geo-location to automatically notify the clinic of arrival via the app.

Second-dose scheduling is also completely automated. As the vaccinations expanded to patients, we created algorithms to prioritize access to the most vulnerable patients, partnering with community organizations to stand up tech-enabled mass sites. Non-tech outreach includes partnering with Federally Qualified Health Centers and expanding the call center function so we can reach those without internet capability.

**Our in-house data experts created predictive models of test positivity and bed and ventilator utilization to guide resource allocation and purchasing in the face of COVID-19 surges.** These forward-looking estimates of volumes guided planning and purchasing, resulting in more efficient and targeted spending — especially important given last year’s supply chain disruption and price increases. Because we knew our precise demand in each of our hospitals, we were able to move ventilators from site to site as need dictated, rather than buying new ones at extremely high prices.

**We instituted robust system and site programs to support our team members.** As smaller and less financially secure hospitals were forced to lay off or furlough workers without pay, we continued to pay our team members’ salaries, wages and benefits, including retirement plan contributions. We paid a special bonus to all team members, as well as additional crisis pay for front-line staff. We also provided lodging accommodations and childcare stipends, flexible paid time off, and mental health and wellness resources.

### **Prioritizing Community Health**

We understand that we will never fully accomplish our purpose of helping people live well until health equity is achieved. That’s why we’ve created crystal-clear objectives and made our leaders’ compensation dependent on accomplishing them. **As a member of the Healthcare Anchor Network, we have committed a \$50 million investment to help address social determinants of health. We maintain specific action plans to ensure diversity in our workforce,** including a leadership pipeline and mentorship program for nurses of color, veteran recruitment strategy, LGBTQ recruitment and inclusivity plan, and a program that explores how unconscious bias impacts medical residency selection. When it comes to our capital improvement and building projects, we’re increasing the amount of work we require our general contractors to award to minority- and women-owned subcontractors to 25% by next year.

**We’ve expanded programs to address health disparities,** including Circle of Care Program at Aurora Sinai Medical Center, South Asian Cardiovascular Center at Advocate Lutheran General Hospital, LGBTQ Health Program, Wisconsin’s first Spanish-language cancer clinic at Aurora St. Luke’s Medical Center, and instituted a diversity, equity and inclusion committee of the board.

### **Increasing Operational Efficiencies**

**When Advocate Health Care and Aurora Health Care merged in April 2018, we operated more than 30 different systems for clinical, departmental and revenue cycle workflows. Since then, we have consolidated to a single patient record — a tremendous effort that will markedly improve efficiency and patient care going**

**forward.** Today, if a patient presents for care anywhere in our organization, caregivers have their complete medical record. The patient safety and patient experience of this single platform are foundational to our merged organization.

As we streamlined and reorganized our merged organization, we: reviewed and standardized thousands of individual workflows, taking the best learnings from across the system; trained more 40,000 team members and more 10,000 providers; standardized operational metrics so sites can compare apples to apples; added bar code medication of specimens and blood administration to our medication administration processes to improve safety; added integration between the electronic medical record and the patient pump at the bedside for an additional safety check; and automated the patient flow process with a connection all the way from the central transfer center to the transporter carrying a smart phone, creating full transparency.

Completion of these projects during COVID-19 created new challenges around remote training and support. Even with the unprecedented challenges, the project was completed on time and slightly under budget.

### **Maintaining and Expanding Access**

**Advocate Aurora Health contributed \$2.2 billion to community charitable care and services in 2019, which expands access to care and improves health outcomes by addressing social determinants of health.** Free and discounted care is just one component in a broad array of community benefits we are proud to provide. In addition to providing free and subsidized care, we also sponsor programs and services that focus on expanding access and removing barriers to care, as well as preventing illness and addressing the social and behavioral factors that influence health. These programs include behavioral health and school-based care, wellness screenings, workforce development initiatives, community-building efforts and more.

By shifting care from acute interventions to preventive and wellness-focused efforts, we are working to make a difference in our communities and improve people's health while keeping them out of expensive emergency rooms.

**During the worst of COVID-19, we remained committed to serving patients in their own communities. As patient surges affected our hospitals, we responded by shifting use of clinical space to expand capacity so as not to have to turn away sick patients.** Because the Illinois Department of Public Health filed emergency rules, we were able to easily increase bed capacity and reallocate beds between clinical departments. Examples of these efforts include converting units into additional ICU beds and temporarily converting private patient rooms to double-occupancy rooms. Additionally, we managed our capacity expansion at a system level, coordinating our hospitals' individual surge plans to bring equipment, supplies and staff to new locations as demand required. Because of regulatory flexibility and our own ability to coordinate capacity across our Illinois hospitals, we were able to serve our patients in their own communities during a period of extreme crisis without overwhelming our facilities.

## Fueling Innovation

**Since our merger, we created a single patient portal (“LiveWell”) that unites patient communication with other wellness resources.** Patients use LiveWell to message their providers, schedule care and execute a virtual visit while also accessing healthy recipes, guided meditation and more. LiveWell grew to 662,000 downloads in 18 months.

**Scale enabled the development of Advocate Aurora Enterprises.** We invested in health-related efforts and initiatives, including senior care, personal health and parenthood areas of focus.

## Improving Quality of Care

**Increased scale allows us to continue to provide high-quality, safe care that more patients can feel good about choosing:** Where there’s a national benchmark, we are exceeding it. We achieved top quartile health outcomes in 2018, coming close to top decile.

**We’re making headway on eliminating a leading cause of patient death by sharing best practices.** Sepsis bundle compliance has improved by 32% — a critical improvement, given that 1 in 3 inpatient deaths are caused by sepsis. Hospital mortality has decreased by 11%.

**We’ve increased transparency and safety across the system by best practice sharing and a unified Culture of Safety.** Safety event reporting has increased by 25%.

**As a system, we can quickly mobilize resources, test innovations and roll out significant improvements to patient care that touch more patients as a result of our scale and scope.** Our Multidisciplinary Surgical Team Approach to Advanced Recovery is changing pre- and post-surgical protocol to speed patients’ recovery, and we’re now rolling it out across all Advocate Aurora inpatient sites. Post-op pneumonia and elective colorectal surgery length of stay has decreased by nearly 30% through this program.

**We scaled new clinical best practices to treat COVID-19 in our hospitals, including advancing new treatments such as the use of extracorporeal membrane oxygenation, or ECMO, machines on critically ill patients.** Our system-wide collaboration played a significant role in meeting patient needs throughout this effort. In just one example, when as many as 30 patients at Advocate Christ Medical Center required ECMO at a single time, qualified staff from throughout the system were deployed to assist. **Our Safe Care promise created new best practices that are now standard operating procedure at every site.** These revamped protocols address masking, screening, social distancing, virtual check-in and enhanced cleaning to ensure patient safety, reduce the risk of contracting a communicable illness at a site of care, and increase trust and confidence among patients and team members alike.