

A PATH FORWARD

HEALTHCARE DESIGN STRATEGIES FOR A POST-COVID WORLD

SMITHGROUP



THE LONG-TERM IMPACT OF COVID-19

As architects, engineers, and designers, we need to be mindful of the immense pressures that healthca systems are facing after a year of dealing with the COVID-19 pandemic.

Keeping facilities operational for routine patient care and protecting patients and staff while caring for COVID-19 patients creates tremendous economi hurdles to overcome. There is not a one-size-fits-all solution to address these issues. What may work for an academic medical center may not be right for a community or critical access hospital. The purpose of this document is to concisely outline the potential strategic, operational, and design considerations, based on the scale of the system or facility, demographics, and the rate of infection in t community-and the increasing likelihood of more frequent and deadly pandemics in the future.

Many of these strategies, which were initially considered short-term, may become long-term solutions to correct deficiencies in population health, process, patient care, and infection control. The pandemic has pushed us to quickly pivot and re-think longstanding processes and proceduressome of which were long overdue for examination and reinvention.

	As the world adopts new ways of working, learning,
are	and living in response to the COVID-19 pandemic,
	SmithGroup is taking immediate action to help our
	clients and communities develop rapid responses
	and long-term solutions. This includes converting a
	convention center into a hospital decompression site,
c	mobilizing public-private partnerships, and using 3D
C	printing to create shields for healthcare workers.
	By surveying our client partners, hosting virtual
	discussions, and using predictive analysis tools such
	as scenario mapping, we continuously gain insight
	into how COVID-19 is impacting our clients. This paper
	is a compilation of this research, as well as our work
-	assisting multiple clients across the country to adapt
he	facilities, add capacity through temporary negative
	pressure and anterooms, implement new safety and
	patient flow protocols, and ramp up testing sites.
	This knowledge is also summarized in a decision
	matrix that includes all potential strategic, operationa
	and physical design changes, and the associated cost

impact, technical complexity, and duration.

STRATEGIC CONSIDERATIONS

01

Develop a contingency plan with options for alternate care in pandemic situations. Note, many of these strategies would be considered sub-optimal in normal circumstances but given the surge of patients presenting at hospitals with severe symptoms, these scenarios may be useful to provide additional bed capacity.

- Investigate all current real estate assets that could be utilized for patient observation or patient care. Many health systems got creative developing makeshift triage and observation spaces in lobbies or utilizing shuttered patient units for patient care.
- Partner with community leaders to leverage large open spaces in the community that can be retrofitted for patient observation or treatment. Conduct facility assessments to determine suitability of these spaces for conversion. Develop a plan for how to quickly convert space for the appropriate function. Going through a lengthy design process is not necessary or feasible.
- It should be acknowledged that Alternate Care Sites (ACS) developed in the early months of the pandemic were largely under-utilized due to lack of staffing and access to hospital support services. Patient comfort and safety would have been an issue in these "pop-up" locations—typically convention centers or large exhibition spaces—where cots were planned in lieu of patient beds. In addition, there would have been long walks to access patient amenities and toilet rooms, which may not be feasible for many ill patients. Consequently, planning for capacity expansion within the existing hospital campuses is the recommended course of action to prepare for pandemic situations.
- Determine if private patient rooms could be subdivided to accommodate additional patients in an emergency.

- Consider providing an entire patient care unit or units with negative pressure; preferably an ICU unit and a medical/surgical unit. This strategy allows all COVID-positive patients to be cared for on the same unit and helps to conserve PPE. There should also be several negative pressure rooms on all other units.
- With COVID patients typically in the ICU for 2-3 weeks, consider designing future patient rooms as acuity adaptable. Code officials have been relaxing certain regulations due to the pandemic. Now might be the time to push back on codes, such as the requirement to provide ADA-compliant toilet rooms in ICU rooms. Per Joyce Durham, a director of strategic facilities planning at an academic health system, "Perhaps it is time to err on the side of capacity and flexibility,"
- Consider building new inpatient rooms to ICU ventilation and utility support standards or provide 100% outside air to allow them to adapt to more airborne conditions.
- Determine if making the entire emergency department negative pressure is a safety measure to consider. Special consideration needs to be given to the location of the ambulance entrance in negative pressure situations so that ambulance fumes are not drawn into the ED treatment space.
- For the ED, consider providing the capability to switch to 100% outside air and a negative pressure relationship to the adjoining hospital on an asneeded operational basis.
- Consider providing the ability to alternate between positive and negative pressure in ORs and endoscopy procedure rooms. During the first COVID wave, elective procedures were halted, leaving these valuable spaces unoccupied. A mechanism to convert the mechanical system to negative pressure would allow for patient care in these locations during an emergency.
- Consider utilizing pre/post-op bays for care. Typically, some bays are equipped with negative pressure. Note, this solution is only feasible should there be another halt to elective procedures.
- Consider utilizing clinics, multi-purpose rooms, or exam rooms to treat patients who are improving but are still testing positive. This practice will free up valuable bed space when the need is critical.

02

Consider transferring COVID positive patients to tertiary hospitals to allow smaller community hospitals with fewer ICU beds to continue routine healthcare services. "This is exactly what St. Joseph Health System in Mishawaka, Indiana did. If a patient presented in Plymouth with COVID-like symptoms, they were transported immediately to South Bend or Mishawaka," stated Julie Kent Director of Facilities Planning for Trinity Health System. This strategy cohorts COVID patients together in larger facilities with more resources to allow smaller community hospitals to focus on addressing the routine health concerns of non-COVID patients.

03

As a result of the COVID-19 pandemic, there must "Honestly, I think the thing that distresses me the be renewed focus on population health and health most about this pandemic is not allowing visitors. I disparities within communities. COVID-19 seems think that it has been quite possibly one of the most to have had the most devastating impacts on detrimental things that the pandemic has brought us," the most vulnerable populations. How can health states Dr. Varsha Moudgal, CMO and Infectious Disease Specialist at St. Joseph Mercy Livingston Hospital. systems help to encourage populations to address underlying health conditions and unhealthy "It is challenging. You have on the one hand the need behaviors such as smoking, obesity, diabetes, and to connect. It is one of the strongest things that helps lack of physical activity which may adversely affect people recover. And then on the other hand you have outcomes? personal safety and safety of the community. They are competing interests."

Lack of private transportation can be a challenge for those living in lower income communities when it comes to keeping doctor's appointments. In the early months of the pandemic there was concern about possible transmission of the virus via public transportation due to lack of social distancing. More recently, this concern has leveled off, but will there be lingering effects?

Should health systems consider deploying smaller community-based clinics or mobile health clinics in underserved neighborhoods that might be more easily accessible for residents? With an increased focus on telemedicine, we must ensure that these communities are not further marginalized.

04

An increased focus on mental health will be needed. Many individuals are battling depression due to isolation, loss of a job, a change in routine, or school closures. Patients have been forced to fight COVID-19 on their own without the support of family members. Healthcare workers have been working long hours and are stressed to the limit. Visitors are restricted from nursing homes, assisted living facilities, and hospitals. Support is needed for the grieving.

05

Assess the needs of critical access hospitals and prepare for how to address future outbreaks or a resurgence of the virus. Critical access hospitals have fewer available staff, real estate, bed capacity, or open space available for conversion. How can health systems or groups of health systems, communities, and private industry partner with one another to improve care and patient outcomes?

OPERATIONAL CONSIDERATIONS

01

To limit contact and infection exposure/transfer between patients, rethink registration and the patient rooming process. Consider pre-registering patients online to streamline the patient intake process.

- Upon arrival, the patient parks in a designated parking area (Figure 2, #2) and calls to notify staff of their arrival. Staff meet the patient outdoors or in testing/triage space just inside the main entrance (Figure 3, #5), where a temperature check and questionnaire is administered. If compliant with requirements, the patient is immediately escorted to an exam room or treatment area, and bypasses the waiting room. This is the no registration/no wait model. Treatment areas are sanitized between patients.
- If a waiting room is needed, consider a hybrid model where most of the intake process is done online or possibly from the patient's vehicle. Provide plexiglass dividers or shields at locations where face-to-face interaction is required (Figure 3, #8). Minimize the number of waiting room seats and space them at least 6' apart (Figure 3, #9).
- Consider utilizing the outdoors as an extension of the waiting room, should the climate allow (Figure 3, #3). In urban areas, where many patients do not drive or park in a parking deck, consider staging them in the lobby or outside. Consider providing seats outside the waiting room that could be used for the next patient or a family member.

02

Provide infrastructure to support an increase in telehealth visits.

- Per a 2020 report from McKinsey & Company¹, "Providers have rapidly scaled offerings and are seeing 50 to 175 times the number of patients via telehealth than they did before." But there is uncertainty whether this trend will continue in the future. If telehealth visits continue to be reimbursed, we anticipate that a significant portion of the visits will remain virtual.
- Younger patients and those with access to technology are more likely to gravitate to telehealth visits. Older patients are more likely to utilize telehealth if they have a family member that can help them to navigate the system.
- Consider utilizing telehealth triage of potential COVID patients. This practice prevents exposure to staff and does not require PPE. Less acute patients can then have follow-up visits via telemedicine.
- Pre-pandemic, we were designing approximately 2.5-3 exam rooms per clinician; with the increase in telehealth visits, reducing this ratio may be appropriate. However, since exam time may increase for patients that do require an in-person visit, any potential reduction may be minimal. More likely is a restructuring versus a reduction of space to accommodate more private telemed spaces.
- The health provider needs a private, quiet space with access to a computer with integrated camera, high speed internet connection, and appropriate lighting for an effective telehealth visit. Telehealth visits could be conducted from a physician's office or exam room.
- For patients without reliable access or no access to technology, telehealth hubs are being created by community organizations. Telehealth hubs are private rooms outfitted with technology where patients can conduct virtual visits in a private and secure setting, allowing them to access primary care, mental health, and counseling resources.

¹Bestsennyy, O., Gilbert, G., Harris, A., & Rost, J. (2020, May 29). Telehealth: A quarter-trillion-dollar post-COVID-19 reality? [Web post]. Retrieved from https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollarpost-covid-19-reality

03

Consider utilizing wearable technology to monitor patients from home. This would be especially beneficial for patients with hypertension, cardiac problems, and diabetes. If biometrics are out of range, the system would alert the physician to contact the patient for follow-up consultation.

04

Many providers have eliminated walk-in clinic visits. All visits must be scheduled to best stagger patients. This includes treating urgent care as call-ahead. Provide the option for patients to schedule same day appointments, consider longer hours of operation, and telehealth visits to handle increased patient volumes.

05

Provide a FURI (fever/upper respiratory infection) clinic that can be accessed directly from the outdoors without traversing through the hospital, a standard seen in China. Locate the FURI clinic strategically near an elevator that leads to patient floors so that patients that need to be admitted can be transferred without exposing other patients and staff (Figure 2, #9 and Figure 3, #10). Hospital administrators report that patient flow works well when clinicians pay more attention to it. Having staff accompanying patients between departments is viewed as beneficial on multiple fronts including interdepartmental communication and increased patient satisfaction. Essentially, this process resembles a patient concierge service. As we move forward, hospital administrators will need to balance the benefits of the just-in-time patient experience with the increased FTEs that this practice requires.

PHYSICAL DESIGN/ ENVIRONMENTAL CONSIDERATIONS

The patient experience begins the moment that the patient arrives on site. Physical design considerations should include clear wayfinding, efficient vehicular flow, simplified drop-off and pick-up locations, and outdoor amenities such as gardens, open space for gathering, and walking paths. We should utilize the outdoors as an extension of the indoors for certain applications (Figure 1).

$\mathbf{01}$

Consider how the hospital or clinic site may accommodate drive-through testing. This will require a tent structure(s) for staff as well as multiple lanes for queuing vehicles (Figure 2, #1).

"The tents were sub-optimal in keeping staff out of extreme weather," says Staci Bakkegard, Director of Facilities Development and Facilities Management at Sparrow Health System in Lansing, Michigan. "We opted to look for real estate that we could lease, such as an old car wash or quick oil change for drive-through testing. We were lucky that the former Sears automotive center nearby was available and, in a matter of days, the space was cleaned and retrofitted for drive-through testing. The facility has seven lanes for drive-up testing. We were originally targeting 200-300 tests per day, but by late summer were seeing approximately 700-1200 tests per day with extended hours. Patients really like the convenience of this solution."

02

Better utilize the outdoors for functions such as triage, overflow waiting, and respite, as well as space for outdoor recreation and exercise for patients, visitors, and staff. Provide benches at strategic positions to support social distancing and privacy (Figure 1, #3 and #6; Figure 3, #3).

03

Provide a designated location for storage, supply, and maintenance of mobile health vehicles (Figure 1, #4). This strategy will allow the healthcare system to meet patients where they are, rather than the patient being forced to come to the healthcare provider, which is an obstacle to care for some.

04

Provide enough flexibility on site to allow for temporary deployment of mobile units that can be used to deliver vaccinations or other services. This approach would keep people out of the hospital or health clinic but would provide nearby support should additional resources be necessary. Infrastructure must be provided to anticipate potential conditions, such as the ultra-low freezers required for SARS-CoV-2 vaccine storage.

05

Provide amenities for healthcare providers who are under tremendous amounts of stress caring for patients. "We need to be creative about how to take care of the health and wellness of the staff. You cannot take care of your patients effectively when you are stressed yourself," states Dr. Moudgal.

- Consider walking trails outside the building as well as establish walking path routes within the hospital (Figure 1, #1).
- Provide respite rooms or alcoves for private reflection on patient units.
- Provide daylight on units and within departments.
- Provide staff amenities such as physician lounges and exercise facilities with proper social distancing requirements.
- Consider providing an amenities tent for the staff treating COVID patients. It could include trailers with locker rooms and showers, food, and lounging space.



FIGURE 1 – POTENTIAL SITE PHYSICAL DESIGN CONSIDERATIONS

06

Study the main entrance to create efficient yet sepa entry pathways for patients and staff (Figures 2 & 3). It is vital to accommodate people going in and o via separate paths while carefully considering when the screening check point is located. David Raymon Director of Planning and Design for Trinity Health Michigan, states, "Flexibility is key. How do we creat access points and flow operationally through our ne state-of-the art future facilities? It is challenging, ye it is also, in some ways, a remarkably interesting tir to be involved in design. Hopefully, we can develop solutions that are affordable but also make commo sense."

Due to screening requirements and the number of FTEs required to complete the entry process, carefully evaluate which entrances must remain

	open and strategically place screeners to maintain proper flow (Figure 3, #5 and #8). Numerous health systems have indicated that limiting the number of entry points has also helped to reduce security issues.
•	The entrance point must be used to evaluate, separate, and hold patients until they can be discharged, transferred, or housed.
•	Consider touch-free, automatic doors at entrance points.
•	Consider a separate elevator designated for transport of COVID-positive and rule-out patients. This elevator should be retrofitted for card access only to eliminate potential exposure to others (Figure 2, #6).
	•

07

Create more touch-free pathways: touch-free control for lighting, temperature, doors, and sinks.

08

Utilize existing flexible space near the main entrance for staging and administration of vaccines for healthcare workers and the general population. Flexible space should be easily accessible and near the main entrance. Spaces such as conference/community rooms and multi-purpose rooms would be optimal locations for this purpose.

09

Examine patient room design (Figure 4). Where feasible, make the following accommodations:

- Consider the feasibility of acuity adaptable rooms. This will allow any type of patient to be treated in one room throughout their stay and will eliminate the need for patient transfers.
- Provide appropriate placement of vision glass to easily observe the patient from outside the room.
- Consider equipment alcoves outside the patient room where equipment can be stored and monitored without entering the room. Connections to the room can be provided through grommets in the wall that can be closed in a negative pressure situation.

 Consider providing pass-throughs from the corridor Equip patient rooms with technology, such as a to the patient room so that supplies can be delivered digital tablet that can be turned on and off from without support services entering the room and outside the room (Figure 4, #3). The digital tablet utilizing valuable PPE (Figure 4, #1). This could provides the opportunity for the patient to connect with their family members or even allows physicians also be accomplished with A.I. robots handling room deliveries. When COVID-19 hit, Bedestrian, a to examine the patient remotely. Some functionality start-up company located in Ann Arbor, Michigan, issues can occur with the tablets because patients that specializes in the development of automated are weak, their hands are shaking, and they are not delivery robots, changed their focus from delivering able to hold them up or they do not know how to turn medication within hospitals or between hospital them on. Stands with remote operability and cord buildings to virtually anything that can be delivered management would allow the patient to connect via in a hospital setting. "The conversations we were technology without having staff utilize PPE to enter having with hospitals dramatically changed," says the room and assist with technology needs. There is Bedestrian Founder Shadi Mere. "There was an also video technology coming onto the market which urgent need to assist the already strapped hospital can directly connect to the patient communication workforce with this type of technology." system/nurse call as another potential option.



FIGURE 2 – POTENTIAL SITE/MAIN ENTRANCE PHYSICAL DESIGN CONSIDERATIONS



FIGURE 3 – POTENTIAL MAIN ENTRANCE/LOBBY DESIGN CONSIDERATIONS

- Consider an exterior wall insulated panel that can be removed for installation of an in-room mechanical unit directly exhausted to the exterior in an emergency situation. Exhaust locations should be reviewed relative to outside air intakes, operable doors/ windows, sidewalks, or any other occupiable space to confirm that exhaust air will not be sucked back in or unknowingly breathed in by passers-by. HEPA filtering would reduce this risk, but not eliminate it. Note, if retrofit is required in a significant number of rooms, identify the source of makeup air to confirm central systems have enough capacity. This would allow the room to be retrofitted to provide negative air in an emergency (Figure 4, #4).
- Carefully consider the location of the handwashing sink, PPE storage, and a zone for donning and doffing of PPE within the room, yet away from the patient (Figure 4, #5). Mocking-up these changes and having staff test and provide feedback should be the first step in retrofitting existing patient rooms to accommodate these changes.

10

Consider decentralized nurse stations or a hybrid solution, with several centrally located team care areas and decentralized nurse stations positioned throughout the unit. Having nurses working closer to the patient will promote better visibility and one-on-one interactions.

11 Consider providing glass-enclosed nursing spaces to better protect staff and encourage social distancing.

12

Consider HVAC changes in line with CDC, ASHRAE, and other input. ASHRAE's <u>Epidemic Task Force</u> issued a position paper with recommendations for controlling potentially infectious aerosols, the primary transmission path of concern. In that document, ASHRAE reiterated its opposition to turning off residential or commercial HVAC systems to stem airflow as "Ventilation and filtration can reduce the airborne concentration of SARS-CoV-2." ASHRAE's document also states that:

- Naturally ventilated buildings can be engineered to achieve ventilation strategies that reduce risk from infectious aerosols.
- Research and expert opinion indicates that the most unfavorable survival for microorganisms is a relative humidity between 40% and 60%, a range that's somewhat higher than many buildings today.
- While the entire ultraviolet spectrum can kill or deactivate microorganisms, UV-C energy in wavelengths from 200 to 280 nanometers provides the most germicidal effect. Far UV-C between 207 and 222 nanometers is also shown to be effective without adverse human health issues and may be safely deployed in occupied spaces.





See SmithGroup's "<u>Climate</u> Informed Increases in HVAC <u>Relative Humidity May Help</u> Fight Viral Pandemics"

Corridor charting station with direct view of patient bed.



COVID-19 has impacted the way healthcare is currently being delivered and will inform the way it is delivered in the future. This crisis has forced us to be resilient and to think differently about how we operationalize and design healthcare spaces. We need to proactively plan for future pandemic response and treatment to avoid another crippling shut down of our healthcare system.

Beyond that, we need to think about the positive changes that have been thrust upon us and how these can become lasting improvements which positively impact the well-being of patients and staff. Many of these changes, deemed at first as temporary, will become fixtures in the way we deliver equitable care to all. This requires a robust understanding and examination of the impacts of the pandemic on population health, operational flows, infrastructure, real estate, and technology—all factors which will inform an ideal future and path forward in healthcare.



FIGURE 4 – POTENTIAL PATIENT ROOM DESIGN CONSIDERATIONS

HEALTHCARE DESIGN STRATEGIES FOR A POST-COVID WORLD

STRATEGY	SHORT-TERM SOLUTION	DURATION LONG-TERM SOLUTION	FUTURE	COST IMPACT	TECHNICAL COMPLEXITY
STRATEGIC CONSIDERATIONS (ALTERNATE CARE OPTIONS)					
Investigate all current real estate assets.				\$	$\mathbf{\Psi}$
Partner with community leaders to leverage local real estate assets for patient observation, treatment, and/or vaccination.				\$\$	←→
Provide negative pressure on entire patient care unit.				\$\$\$\$	ተተ
Sub-divide private patient rooms to accommodate an additional patient.				\$\$	1
Convert entire emergency department to negative pressure.				\$\$\$\$	ተተ
Ability to convert mechanical system between positive and negative pressure in the ORs and endoscopy procedure rooms.				\$\$\$\$	ተተተ
Utilize clinics, multi-purpose rooms, exam rooms, lobbies for treatment and observation of recovering patients.				\$	V
Consider the feasibility of acuity adaptable rooms to allow any patient type to be treated and to limit patient transfers.				\$\$\$\$	^
ADDITIONAL STRATEGIC CONSIDERATIONS					
Transfer COVID positive patients to tertiary hospitals to allow for smaller community hospitals to focus on routine healthcare services.				NA	$\mathbf{\Psi}$
Encourage and assist ALL populations in addressing underlying health conditions and unhealthy behaviors.				NA	ተተተ
Increase focus on mental health/wellness.				NA	ተተተ
Form partnerships with critical access/rural hospitals to improve outcomes and address resource shortages.				NA	^
OPERATIONAL CONSIDERATIONS					
Pre-register patients online or via telephone.				\$	\checkmark
Implement no registration/no wait model. Patient is brought into the facility when an exam room or treatment area is available. Treatment areas are sanitized between patients.				\$	¥
Implement a hybrid model for patient intake. Most of the registration process is done online. Lobby has minimal seats spaced 6' apart with plexiglass dividers or shields where interaction is required.				\$\$	¥
Utilize the outdoors as an extension of the waiting room. Provide seating appropriately distanced.				\$	↓
Adjust ratio of clinicians to exam rooms based on the number of overall telehealth visits.				Potential Cost Savings	\checkmark
Provide technology and infrastructure to support increased telehealth visits. Provide private, quiet space with access to computer and appropriate lighting for an effective telehealth visit.				\$\$	←→
Deploy wearable technology to monitor patients from home.				\$\$\$	^
Eliminate walk-in visits. All visits must be scheduled to stagger patients.				NA	V
Provide a FURI (fever upper respiratory infection clinic) that can be accessed directly from the outdoors without traversing the entire hospital; i.e., observation unit.				\$	↔

STRATEGY

SITE - PHYSICAL DESIGN/ENVIRONMENTAL CONSIDERATIONS

Site should be able to accommodate drive through testing with mullanes for queuing vehicles.

Better utilize the outdoors for functions such as triage, overflow waiting, respite and exercise.

Provides location of storage, supply, and maintenance of mobile health vehicles.

Provide space on site for temporary deployment of pre-fabricated construction that can be used to deliver vaccinations.

Provide amenities for healthcare providers - walking trails, respit rooms, more daylight, lounge space, exercise facilities, and amen tents for staff caring for COVID patients

MAIN ENTRANCE/LOBBY - PHYSICAL DESIGN/ENVIRONMENTAL CO

Limit the number of entry points.

Provide separate elevator with card access for COVID positive/ immunosuppressed patients.

Consider automatic entrance doors and other touch-free controls lighting, temperature controls, doors, and sinks.

Utilize existing flexible space near main entrance for staging and administration of vaccines. Accommodate subzero freezers.

PATIENT ROOM - PHYSICAL DESIGN/ENVIRONMENTAL

Appropriate placement of vision glass to easily observe the patie from outside the room.

Consider equipment alcoves outside the room where equipment of be monitor and stored without staff having to enter the patient ro

Consider options for delivery of medications, linens, supplies to t patient room without personnel having to enter the room; i.e., pat throughs or robotics.

Equip patient rooms with technology that allows them to virtuall communicate with family members and health care providers.

Consider removable insulated panel that can be used to retrofit room for negative air flow with installation of an in-room mechan unit that can be directly exhausted outside.

Consider location for handwashing sink, PPE storage, and a zone donning and doffing of PPE which is away from the patient.

Consider glass enclosed nursing stations to better protect staff a encourage social distancing.

Consider decentralized or hybrid solution with a several centraliz and multiple decentralized nursing stations to promote better visibility and more one-on-one interactions.

	SHORT-TERM SOLUTION	DURATION	N FUTURE CONSIDERATION	COST Impact	TECHNICAL COMPLEXITY					
tiple				\$	¥					
				\$	¥					
				\$\$	1					
d				\$\$	1					
te nity				\$\$	^					
INSIDERATIONS										
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For more on post-COVID design strategies, see SmithGroup's COVID-19: A Path Forward for Healthcare Design

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