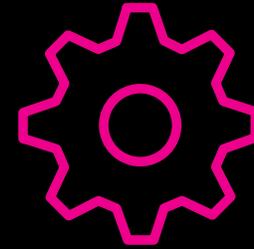


# ADAPTING TO COVID-19

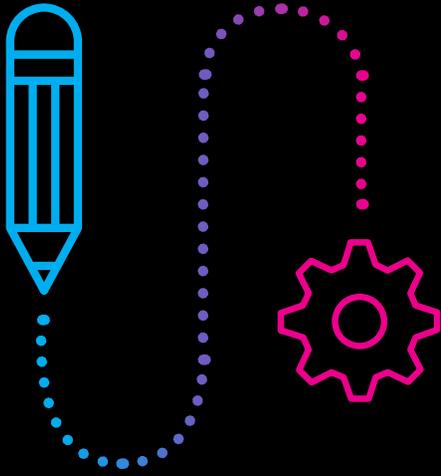
TACTICAL DESIGN AND  
OPERATIONAL STRATEGIES  
TO IMPROVE SAFETY IN  
HEALTHCARE FACILITIES

June 2020

ZGF



The COVID-19 pandemic has challenged providers and designers to adapt healthcare environments to allow continued care while simultaneously preventing the spread of disease. Over the past few months, ZGF has helped many of our clients adapt facilities at various stages of completion, from planning and construction to post-occupancy, to address safety concerns. While many of our recommendations have been tailored to the unique needs of each client and facility, we have extrapolated an overarching list of strategies that offer a strong starting point for any provider looking to make basic adjustments. Our recommendations reflect the input of multidisciplinary perspectives—healthcare designers, workplace strategists, building engineers, and facilities personnel—and underscore the need for design and operational strategies that work in tandem for maximum impact.



# DESIGN + OPERATIONAL STRATEGIES

## 01

### BUILDING-WIDE

- Establish control points for seasonal or pandemic wellness checks and symptom screenings.
- Incorporate touch-free design:
  - » Wave-to-enter door operators
  - » Touch-free devices in restrooms
  - » Touch-free water fountains
- Add privacy screens at areas where face-to-face interaction is expected.
- Use cleanable, wipeable, non-porous surfaces and materials for furniture, fixtures, and interior finishes.
- Provide hand sanitizer dispensers throughout all occupied areas
- If plan allows, consider circulation routes to encourage one-way traffic and clearly mark routes with temporary signage.
- Follow CDC guidelines to allow for six feet of separation between people.
- Consider UV light and / or other disinfecting technology.

## 02

### WAITING ROOM

- Assign facility staff to monitor the waiting room at all times to identify and isolate at-risk patients.
- Physically separate patients exhibiting symptoms.
- Encourage social distancing with individual chair seating vs. ganged chair seating in waiting and sub-waiting areas.
- Physically separate seats or create barriers between chair groupings.
- Add hands-free handwashing stations within and near waiting room entrances, outfitted with appropriate soap and hand towel capacity, storage, and trash receptacles.
- Routinely clean the waiting room and handwashing stations and prevent trash build-up.

## 03

### OFFICE / WORKSPACE

- Create physical distance between nurse stations and staff seating.
- Provide multiple hands-free handwashing stations throughout workspaces and adjacent to the entrances to patient care areas.
- Provide assigned laptops instead of shared workstations.
- Reevaluate unassigned seating / hoteling programs.
- Establish max occupancy strategies for conference rooms that can be remotely managed and modified for crowd control.
- [Review ZGF's outlook for workplace design Post COVID.](#)

# 04

## COMMON SPACES

- Frequently clean common spaces throughout the day.
- Provide disinfectant wipes and sanitizer stations throughout common spaces.

## BATHROOMS

- Provide single occupant toilets rather than multi-stall toilet rooms to minimize contact.
- Use touch-free door operators, drinking fountains, and lockers.
- Use lower flushing velocity toilets and urinals to reduce aerosolization.

## ELEVATORS

- Add destination dispatch call controls at elevator entrances.
- Use smart phone apps for elevator dispatch.
- Leverage elevator control systems to reduce occupant counts.

## FOODSERVICE AND PANTRIES

- Eliminate buffet style service and consider prepackaged meals.
- Eliminate vending machines and coffee stations.

# 05

## TELEMEDICINE

- Create universally sized patient rooms and offices that can be readily adapted to support different functions: consultations, exams, treatment, and telehealth visits.
- Within rooms, account for the space and technology requirements for telehealth:
  - » Clinicians need at least two computers to perform virtual exams while having access to electronic health records.
  - » Note that spatial requirements will vary depending on the type of telemedicine (*clinic physician to remote patient vs. clinic physician and patient to remote peer physician*).
- Plan for how an increase in telemedicine will impact demand for different types of spaces:
  - » A rise in telemedicine will reduce demand for consult and exam rooms while potentially increasing demand for procedure rooms.
  - » A rise in telemedicine will require more clinician support spaces, office space, and team collaboration areas.
  - » Understand that the ramifications of telemedicine will vary by specialty.
- [Review ZGF's outlook for the impact of telemedicine on outpatient clinics.](#)

# 06

## HVAC SYSTEMS

- Design HVAC systems in clinical spaces with the ability to alter airflow on demand.
- Provide 100% outside air, HEPA-filtered ventilation supply, and / or negative air pressurization.
- Adjust code-required air-exchange rates when changing room uses from exam to treatment / procedure.
  - » ASHRAE 170 7.1 currently prohibits switching from positive to negative room air pressurization when an exam room is used for an infectious patient. However, creating some negative pressure exam rooms can provide care to potentially infectious patients.
- Consider continuous UV-C light disinfection in interventional radiology and operating rooms\*.
- Expand use of UV disinfection in building air handling units via two levels of disinfection. Level 1 would disinfect cooling coils themselves, while Level 2 would disinfect the coils and the airflow through the unit, a higher level of disinfection. Level 2 disinfection would require approximately three times the power and air distribution to achieve one-pass air disinfection.

*Note that UV-A and visible UV light is only an effective disinfectant on bacteria and fungi.*

# 07

## IT-BASED MODALITIES

- Provide thermal imaging technologies at facility entrances to assess patient and visitor temperatures through fixed or mobile mounted scanners prior to entry. Technologies can alert staff via the building automation or security monitoring systems. Scanners can also detect if visitors are wearing face masks.
- Access controls can limit access to storage and medication rooms where high value assets like PPE and viral medications are kept.
- Use asset tracking to keep track of vital equipment such as ventilators.

# 08

## OPERATIONAL STRATEGIES

- Use mobile apps for patient check-in and check-out to reduce the demand on in-person registration or kiosks.
- Limit the capacities of waiting areas and encourage patients to wait outside or in their vehicles
- Text or signal patients when it's their turn to enter the facility to reduce crowding and minimize the amount of time patients spend in the building.
- Perform patient symptom screenings prior to check-in.
- Consider patient check-out within exam rooms. Alternatively, patients can be held in exam rooms longer to prevent queuing in the check-out area.
- Consider use of mobile apps for pharmacy pick up to better manage pharmacy volumes and allow social distancing.
- Increase telemedicine to reduce patient visits to care facilities. Ask patients to come only when they need procedures and physical exams.
  - » Providers are now able to bill for Telemedicine visits.
  - » Clinicians are acknowledging that physical exams are far less necessary than once believed.
- Consider strategies to stagger staff work hours to minimize large influx / peak times.
- Use outpatient clinics to triage patients before they are admitted to hospitals.
- Invest in flexible spaces that can adapt based on immediate model of care needs.
- Transition from “just-in-time” supplies to more on-site storage to reduce handling.
- Maintain robust housekeeping practices during outbreaks to ensure disinfection at the end of each day and at regular intervals during hours of operation.
- Upgrade capacity for security system monitoring to reduce need for on-the-ground security guard force.

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