

Outbreak Guidelines for High-Risk Institutions

Aaron Green, Chen Shen and Yaneer Bar-Yam
New England Complex Systems Institute
March 10, 2020

Retirement communities, dormitories, nursing homes, rehabilitation facilities, and prisons are High-Risk Institutions for diseases transmission. COVID-19 is a rapidly transmitting disease requiring hospitalization in about 20% of cases and resulting in death in 2-4%. Complications rapidly increase for persons 50 years old and above with comorbidities such as heart failure and coronary artery disease further increasing risk. COVID-19 can transmit even with mild symptoms (coughing, sneezing or elevated temperature) and perhaps before symptoms appear. Reducing the likelihood of transmission is imperative in high-risk institutional environments as found in China's Rencheng Prison and South Korea's Cheongdo Daenam hospital. Here are guidelines for prevention by introducing barriers to transmission from outside.

GENERAL RULES

Visitors

- Discourage non-essential visitors.
- Position someone at entrances to query the purpose of the visit and ask if the visitors have any symptoms, have recently travelled to areas of active transmission, or have been exposed to people with symptoms.
- Visiting should be spaced at intervals to avoid crowding.
- Best practices guidelines should be posted in easily readable format and relevant languages in public spaces for employees, residents and visitors to see.

Hygiene

- Increased cleaning and sanitizing of all high frequency touch-points. These include door handles, elevator buttons, sinks, table tops and frequently handled machinery, equipment, electronic devices and other items.
- Checking and ensuring that soap dispensers and paper towels in bathrooms remain adequately supplied throughout the day.
- Providing hand sanitizers at entrances, exits and high-traffic locations.
- Providing tissues and sterilizing alcohol based wipes.

Employees and Corporate environment

- Educate staff and their families, as well as residents and their families, of Coronavirus transmission and prevention
- Ensure employees know that when they have even mild symptoms they should not be at work locations or in-person meetings and they will be paid and not penalized for sick days. Set up a reporting system for any cases
- Ensure employees have appropriate health insurance policies so that they will not be afraid to seek out care when they have symptoms, even mild ones.
- Prepare for employee substitutions in case they become ill individually or collectively.
- Stay abreast of current information and advisories
- Replace in-person office meetings with virtual

ENHANCED RULES FOR AREAS OF ACTIVE TRANSMISSION

It is essential that High Risk institutions follow Safe Zone practices and remain disease free.

Visitors

- If at all possible, avoid outside contact and encourage the use of text, phone and videoconference to communicate.
- Where visitors are necessary consider setting up a separate area for visitor meetings, including enough space for everyone to remain at a safe distance (6 ft), video links for virtual contact and glass partitions.
- The use of masks (if possible N95) may be encouraged even if there are no signs of outbreak.
- Deliveries should be made by single drivers who do not have symptoms of the disease and have not recently (within 14-21 days) had known exposures.
- Whenever possible, no contact deliveries should be dropped off in a space that does not require entry into the facility.
- It is highly advisable that people allowed entrance into high-risk institutional environment have been recently tested with negative results.

Dining and Other High Contact Activities

- Sanitize areas of contact after each individual use, including table top, chair arm rest, menu. Or use washable or disposable tablecloths and menus.
- Wait and service staff should avoid contact and proximity.
- Stagger dining times to avoid crowding and sitting arrangements to avoid face-to-face dining.
- Where contact is essential for service provided, careful handling protocols should be made including effective ventilation, gloves, disposable overgarments, and masks.

EMPLOYEES, FACILITIES AND CORPORATE ENVIRONMENT:

- Emphasize to employees that their actions outside of work can lead to transmission of infection risking the lives of residents. Even if the disease has a low risk to them, any contact with individuals or surfaces in non-safe areas is extremely dangerous for those in the High-Risk facility. They should take responsibility and limit off-work non-safe contact to a minimum
- Encourage employee adoption of Safe Space protocols at home limiting their contact and others who live with them with individuals and surfaces that are not safe and record which employees are following them.
- Engage with local medical facilities to coordinate rapid testing of residents and employees for Coronavirus.
- Partition facilities to separate zones, limiting employees and residents from crossing from one zone to another, so that in case one zone becomes infected, the others will not before detection and response limit contagion.

- Transfers of residents in or out of the institution should follow safe space requirements with attention to point of origin, point of destination, contact with those performing the transfer, and the vehicles that are involved.
- When bringing in new residents or starting new employees that are not coming from a Safe Zone quarantine for 14-21 days.
- Where possible, arrange facilities for residential accommodation of employees within this or another Safe Zone.
- Arrange partnerships with sister institutions to follow Safe Zone practices for transfers and response to any outbreak.
- Arrange for office staff to work from home, develop protocols so that this is possible.
- Avoid clustering in elevators. Elevators should not take more than half of their carrying capacity
- If A/C must be used, disable re-circulation of internal air. Clean/disinfect/replace key components and filters weekly
- Check the engineering design of ventilation system to determine if air flows connect air from different rooms. Develop mitigation or alternative ventilation processes.
- Deploy air purifiers using HEPA filters around the facility.