

‘Traffic Control Building’: a model of infectious disease containment

Taipei City Hospital, Taiwan

What was the challenge?

In response to the challenge of an outbreak of SARS in 2003, the Taipei City Hospital developed the ‘Traffic Control Building’ model to protect HCWs and curtail in-hospital transmission. The TCB is an integrated infection control strategy, incorporating three key components:

- Triage prior to entering hospitals.
- Strict separation amongst different ‘zones of risk’.
- Strict requirements and protocols for PPE use coupled with checkpoint hand disinfection with 75% alcohol.

With COVID-19, the Hospital drew upon the strategy of TCB and evolved the model to ‘enhanced Traffic Control Bundling’ (eTCB).

What was the task?

In the COVID-19 eTCB updated model, the following practices were adopted:

1. Division of screening stations prior to hospital entry, using outdoor tents to treat patients by risk group based on their symptoms and travel history.
2. After screening, patients are admitted directly to special isolation wards, which incorporate a contamination zone and expanded transition zones, where suspected patients are kept under observation for a 14-day incubation period.
3. To further protect HCWs from unknown pre-symptomatic patients who are admitted to hospital clean zones for elective surgery (for example), general clean zones are further compartmentalized to block the potential spread of COVID-19, with each compartment staffed by workers designated to that compartment only.

4. Heightened environmental cleaning and disinfection measures are employed. In regard to hand hygiene, checkpoints alcohol dispensers are in wards and in public locations, such as near the entrances of elevators.
5. Requirement to check travel, occupation, contact, and cluster (TOCC) histories for all HCWs and visitors to hospitals, while also mandating that they wear face masks and disinfect their hands before entering the facility.

TCB and COVID-19: the Results

After Taiwan implemented eTCB in hospitals across the nation as part of its central response to COVID-19, coronavirus infections amongst HCWs have reduced to zero. The eTCB strategy also contributed to the curtailing of the community-hospital-community transmission cycle. Alongside national mandates for face mask wearing and alcohol-based hand hygiene initiatives, the eTCB model has helped Taiwan to maintain a zero domestic infection rate for more than 3 months*.

Moving forward with the eTCB Model

Of the key components comprising TCB/eTCB, the stage of ‘patient triage before hospital’ would no longer be needed in the aftermath of COVID-19. However, ‘zones of risk’ and ‘checkpoint hand disinfection’ can remain as transformative changes. When taking care of patients – particularly in critical care settings – hospital areas surrounding patients will be delineated and regard as contamination zones, where checkpoint hand disinfection should be mandated when moving between different zones. In addition, the widespread installation of checkpoints alcohol dispensers in general wards and public locations will be preserved to consolidate hand hygiene compliance and a zero tolerance of infection.