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Design Considerations for the Construction of an Open Decontamination Facility for Managing Civil Emergencies

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Abstract : Background: Rapid population growth and land constraints in Singapore results in a possible situation in which we face a higher number of casualties and lack of operational space in healthcare facilities during disasters and HAZMAT events, collectively known as Civil Emergencies. This creates a need for available working space within hospital grounds to be amphibious or multi-functional, to ensure the institution's capability to respond efficiently to Civil Emergencies. The Emergency Department (ED) mitigates this issue by converting the Ambulance Assembly Area used during peacetime into an Open Decontamination Facility (ODF) during Civil Emergency Response, for decontamination of casualties before they proceed to treatment areas into Ambulance Assembly Area used during peacetime. Aims: To effectively operationalize the Open Decontamination Facility (ODF) through the reduction of manual handling. Methods: From past experiences on Civil Emergency exercises, it was labor-intensive for staff to set up the Open Decontamination Facility (ODF). Manual handling to set up the Decontamination lanes by bringing down the curtains and supply of water was required to be turned on. Conclusion: The effectiveness of the design construction of an Open Decontamination Facility (ODF) is based on the use of automation of bringing down the curtains on the various lanes. The use of control panels for water supply to decontaminate patients. Safety within the ODF was considered with the installation of panic buttons, intercom for staff communication, and perimeter curtains were installed with stability arm to manage the condition with high wind velocity.

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