



The Responders' Performance Vehicle (above) features forearm immersion chairs, deep cooling chairs and an automated cold water immersion tub (right). ST PHOTOS: ONG WEE JIN



New SCDF vehicle taps technology to treat first responders' heat injuries

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Emergency responders in prolonged operations now have a rehabilitation area and can receive treatment for a range of heat injuries in a Responders' Performance Vehicle (RPV).

The Singapore Civil Defence Force (SCDF) has added the RPV to its fleet of emergency vehicles to maximise the performance of respon-

ders. The RPV is a collaboration between SCDF, medical doctors serving national service with SCDF; academic researchers from the Department of Physiology, NUS Yong Loo Lin School of Medicine; and local engineering company HOPE Technik.

Captain Edrick Lim, 4th SCDF Division, RPV project officer, said: "During major incidents, SCDF emergency responders undergo multiple cycles of work and rest.

"Despite removing their personal

protective equipment and resting at the rehabilitation area under cool shade during the rest cycle, SCDF responders' body temperatures can exceed 39.5 deg C."

In the past, firefighters have been hospitalised for heat exhaustion during prolonged incidents.

The RPV, which began operations earlier this month, serves as a mandatory triage point to assess responders when they exit the operational area. It features 28 portable

forearm immersion chairs, eight deep cooling chairs and one automated cold water immersion tub.

SCDF responders will be moved to the rapid cooling zone for a 20-minute rest cycle if their body temperature is less than 37.9 deg C. The forearm immersion chairs allow them to dip their forearms into 15 deg C water. If the responders' body temperatures are between 37.9 deg C and 38.4 deg C, they will be moved to the deep cooling zone for 20 minutes. This features forearm immersion chairs; monitoring of their vitals; and ambient lighting to optimise their mental recuperation.

But if responders show symptoms of heatstroke or have a temperature above 38.5 deg C, they will be assessed and, if needed, undergo cold water immersion in a fibreglass tub before being taken to hospital. The responder is immersed for five minutes. Despite the heat emitted by the responder, the system ensures the water remains under 5 deg C in the tub.

Said Colonel (Dr) Shalini Arulanandam, SCDF's Chief Medical Officer: "The RPV is believed to be the first of its kind in the world. It is purpose-built to provide gold standard on-site treatment for severe heat injury and also to improve our responders' recovery and quick redeployment when managing an incident."

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