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Singapore – TCPR

Dispatcher-Assisted CPR, Singapore Civil Defense Force

BRIEF BACKGROUND

The Singapore Civil Defense Force (SCDF) is the primary EMS provider in Singapore, receiving all calls for OHCA to the national emergency number, 995. Dispatcher-Assisted CPR (DACPR) was piloted in 2011, and is now a mature program in the SCDF.

Despite efforts at community CPR training, bystander CPR rates in Singapore remained constant at about 20%, with survival outcomes at just 2%. DACPR aimed to increase bystander CPR participation rates along with various other community initiatives to improve survival outcomes.

STEPS TAKEN

Emergency call takers at the SCDF Operations Center were trained in DACPR initially through training courses run with the help of international faculty, and subsequently adopted internally. The training included a rigorous quality assurance process — 100% reviews of all cardiac arrest calls, staff training and incentive programs. Subsequently, with a national program launched to install AEDs at public residential locations, the DACPR program added AED instructions to the CPR training.

The DACPR program is part of the overall SCDF response to OHCA, which includes a public response smart phone app (myResponder), as well as HP-CPR teams and other community training efforts, such as the Dispatcher-Assisted first REsponder (DARE) program.

CHALLENGES

Recognition of cardiac arrest through verbal questioning is impacted by poor caller comprehension of breathing status. Barriers to DACPR remain, such as language issues, caller cooperation and inability to move the patient. Deceased patients not requiring EMS response are increasing in number.

RESULTS

There has been a steady increase in the national bystander CPR rate, from 22% in 2011 to 56.4% in 2016. Bystander AED usage also grew from 1.8% in 2011 to 4.6% in 2016. This is associated with an improved Utstein survival rate from 11.6% in 2011 to 23.4% in 2016. Overall survival rates also improved from 2.9% in 2011 to 6.5% in 2016, with age-adjusted survival rates of 12% in 2016. Excluding non-EMS cases and EMS-witnessed cardiac arrests, the percentage of EMS-treated OHCA cases receiving DACPR was 69% in 2016 (barriers to DACPR have not been excluded from the denominator in this analysis).

OUTLOOK

A study on an alternative method to detect breathing has been completed and is pending submission for publication. Short animation clips showing correct hand placement during CPR, and use of AEDs were recently developed to be sent to callers' cell phones to enhance CPR and AED instructions. Video communications are also in development to enhance recognition of OHCA and clarity of instructions.

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