



Impact of COVID-19 on OHCA in Asia

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Background

- ▶ COVID-19 pandemic may have direct and indirect effects on the incidence of OHCA
- ▶ Management of OHCA may be adversely affected by COVID-19 concerns
- ▶ Little is known about the impact of COVID-19 on OHCA in Asia
- ▶ An ongoing OHCA registry allows us to examine its impact on OHCA incidence, pre-hospital management and outcomes



Aims and Hypotheses

- ▶ To compare the incidence, pre-hospital management and outcomes of OHCA between COVID and non-COVID periods, amongst Asian countries.
- ▶ We hypothesized that the pandemic would affect the incidence, characteristics and management of OHCA, leading to changes in outcomes



Methods

- ▶ Data source: PAROS registry
- ▶ Study period: 1st Jan 2017 to 31st Dec 2020
 - Pandemic period: date where state of emergency declared to 31st Dec 2020
 - Pre-pandemic / control period: 1st Jan 2017 to last date before state of emergency
- ▶ Study population: All EMS-attended OHCA
- ▶ Study outcomes: Transport to hospital, pre-hospital ROSC, survived to hospital discharge



Methods

Variables of interest: incidence of OHCA, demographics, event characteristics, bystander interventions, EMS timings, outcomes

Other data required: population, COVID-19 data (incidence/prevalence, case-fatality rate), response to COVID-19, key dates (first case, date of emergency/lockdown)

Statistical analysis: multi-level regression modelling is used to compare pre-COVID and COVID periods, with separate models for each country/region



Methods

- ▶ Possible subgroups:
 - adults (≥ 18 yo) versus pediatric
 - COVID-19 severity (prevalence/CFR)
 - Geographical boundaries (Southeast Asia)
 - By systems or level of development (socioeconomic, healthcare system, EMS system)



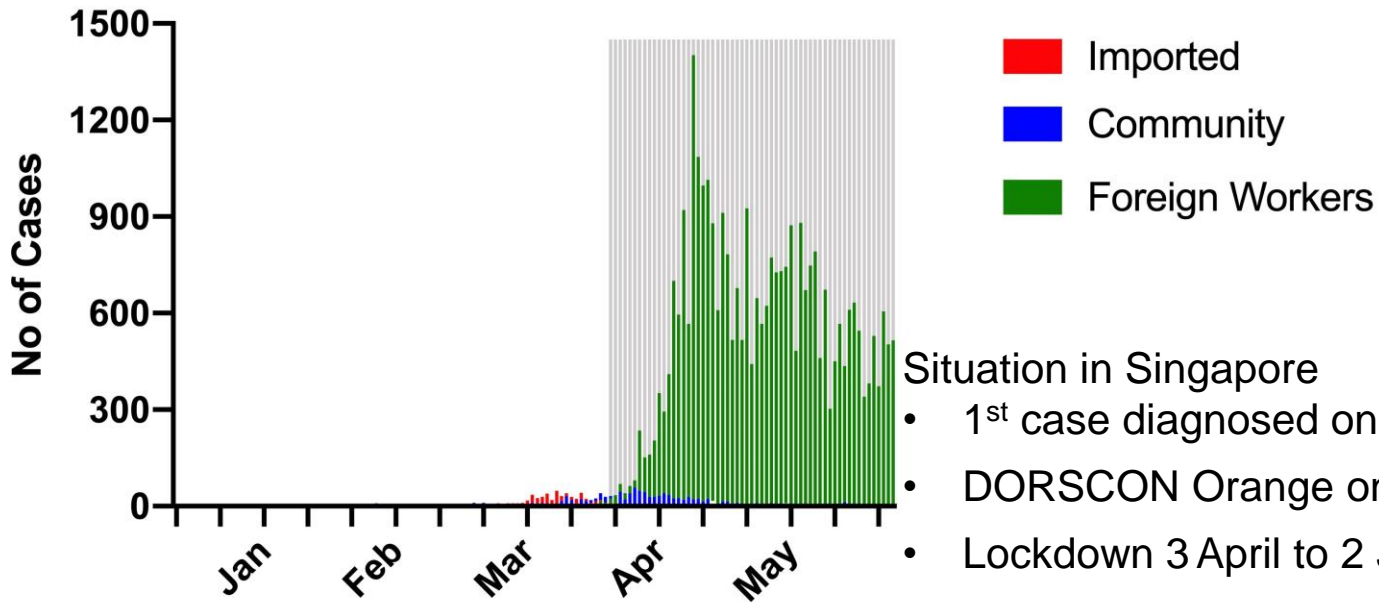
Significance

- ▶ Varying measures were imposed in each country to tackle the pandemic
- ▶ These measures may have ramifications on other aspects of healthcare.
- ▶ Knowledge of the impact on OHCA is vital for countries to adapt medical services and public health education in order to limit the collateral consequences of the pandemic

COVID-19 in Singapore



Daily COVID-19 Cases By Categories



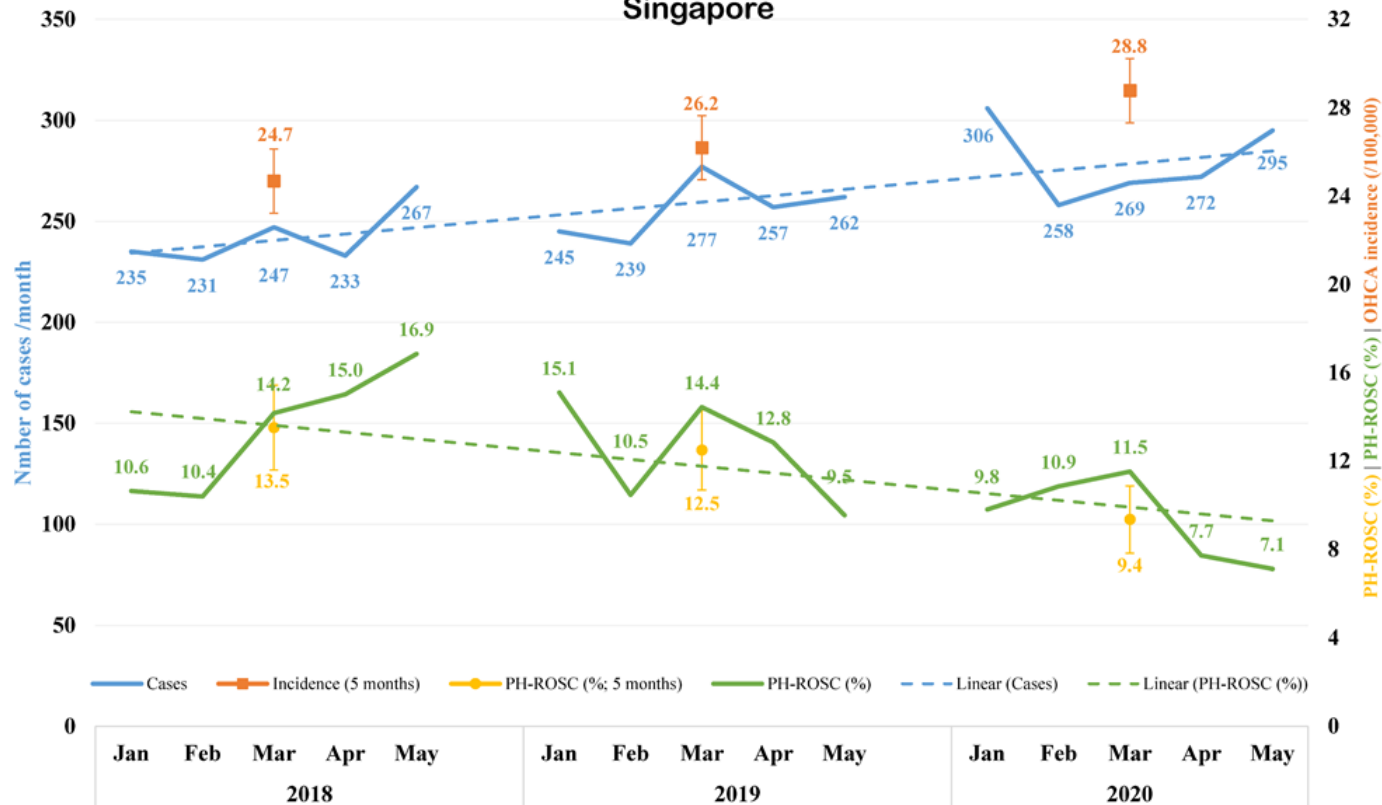
Situation in Singapore

- 1st case diagnosed on 23 Jan 2020
- DORSCON Orange on 7 Feb 2020
- Lockdown 3 April to 2 June
- 34,884 cases (612/100K), 23 deaths (CFR 0.07%)

COVID-19 in Singapore



Adult out-of-hospital cardiac arrest (OHCA) cases and pre-hospital return of spontaneous circulation (PH-ROSC) for EMS treated adult OHCA in Singapore



Potential Collaborations



- ▶ EURECA: Collaboration of registries to evaluate impact of COVID-19 on bystander CPR
- ▶ CARES: East–West comparison?



Thank you

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