**Table S1.** Methodology characteristics of included trials.

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| **Study** | **Time period – Before pandemic group** | **Time period – During pandemic group** | **Inclusion criteria** | **Exclusion criteria** | **Findings** |
| Baldi et al., 2020 | 21.02.2019 – 31.05.2019 | 21.02.2020 – 30.05.2020 | OHCA adult patients. | Not meet inclusion criteria. | Compared to 2019, during the 2020 COVID-19 outbreak we observed a lower attitude of lay- people to start CPR, while resuscitation attempts by BLS and ALS staff were not influenced by suspected or confirmed infection, even at univariable analysis. |
| Baldi et al., 2021 | 25.02.2019 – 30.04.2019 | 25.02.2020 – 30.04.2020 | OHCA adult patients. | Not meet inclusion criteria. | During the COVID-19 pandemic in Switzerland mortality increased in Cantons with high-incidence of infection, whilst not in the low- incidence ones. OHCA occurrence followed an opposite trend showing how variables related to the health-system and EMS organization deeply influence OHCA occurrence during a pandemic. |
| Ball et al., 2020 | 16.03.2017 – 12.05 - 2019 | 16.03.2020 – 12.05.2020 | Adult OHCA patients (aged>15 years). | EMS witnessed OHCA events and patients for whom a Do-Not-Resuscitate order/Advanced Care Directive was in place. | The COVID-19 pandemic period did not influence OHCA incidence but appears to have disrupted the system-of-care in Australia. However, this could not completely explain reductions in survival. |
| Biskupski et al., 2022 | 09.2019 – 02.2020 | 03.2020 – 06.2021 | All non-traumatic OHCA adult (18 years or older) patients. | Traumatic OHCA, pediatric and inpatient cardiac arrests. | There was a non-significant difference in ROSC, bystander CPR and survival to discharge in non-traumatic OHCA prior to and during the COVID-19 pandemic in the South Bronx. There was a significant difference in witnessed vs unwitnessed OHCA prior to and during the COVID-19 pandemic. |
| Breglia et al., 2022 | 01.2019 – 01.2020 | 03.2020 – 03.2021 | Subjects older than 18 years old who underwent CPR performed by the pre-hospital medical emergency service . | Subjects who did not undergo CPR by the emergency medical service team. | The higher percentage of presenting shockable rhythm reinforces the importance of bystander rule and of short time to start CPR. |
| Chavez et al., 2022 | 11.03.2019 – 31.12.2019 | 11.03.2020 – 31.12.2020 | Adult OHCA patients. | Cases witnessed by 9–1-1 responders, arrests occur- ring at healthcare facilities and pediatric cases (<18 years old). 2 EMS agencies who did not participate in CARES for the entire study period, representing 0.003% of the original data set. | Our study adds state-wide evidence to the national phenomenon of long-term increased OHCA incidence during COVID-19, worsening rates of BCPR, PAD use and survival outcomes. |
| Chugh et al., 2022 | 01.02.2015 – 28.02.2020 | 01.03.2020 – 28.02.2022 | Incident cases of presumed SCA requiring cardiopulmonary resuscitation and/or defibrillation. | All cases with an identifiable non-cardiac etiology were excluded, such as trauma, drug overdose, and chronic terminal illness (e.g., malignancy not in remission). | Hispanic residents experienced higher SCA rates during the pandemic with less favorable resuscitation profiles. These findings implicate potential ethnicity-specific barriers to acute care and represent an urgent call to action at the community and health-system levels. |
| Fothergill et al., 2021 | 01.03.2019 – 30.04.2019 | 01.03.2020 – 30.04.2020 | All OHCA patients who, during the study periods, received an EMS response from LAS (irrespective of whether a resuscitation attempt was made) | Those who were successfully resuscitated prior to EMS arrival and so did not receive resuscitation from our clinicians. | During the first wave of the COVID-19 pandemic in London, we saw a dramatic rise in the incidence of OHCA, accompanied by a significant reduction in survival. The pattern of increased incidence and mortality closely reflected the rise in confirmed COVID-19 infections in the city. |
| Hosomi et al., 2022 | 01.01.2005 – 31.12.2019 | 07.04.2020 - 31.12.2020 | Older adults (aged => 65 years) with bystander-witnessed OHCA of cardiac or noncardiac origin in whom resuscitation was attempted by citizens or emergency medical ser- vice (EMS), and who were transported to medical institutions. | EMS- witnessed and non-witnessed cases and children. Also excluded cases with missing outcomes or variables required for the multivariable logistic regression. | In this population-focused, bystander-witnessed study regarding OHCA, the analysis of nationwide registry data revealed that the COVID-19 pandemic was associated with reduced survival among older adults with OHCA in Japan. |
| Kim et al., 2023 | 19.01.2019 – 19.01.2020 | 20.01.2020 – 21.01.2021 | All patients aged ≥ 18 years in whom resuscitation was attempted by an EMS provider. | Patients with do-not-resuscitate order, with signs of obvious death (arrest with signs of rigor mortis), and unknown EMS time interval information. | This study found that the proportion of prehospital ROSC was lower during the COVID-19 period than during the non-COVID-19 period; however, there was no statistical significance when adjusting for potential confounders. |
| Lai et al., 2020 | 01.03.2019 – 25.04.2019 | 01.03.2020 – 25.04.2020 | Patients 18 years or older with out-of-hospital cardiac arrest who received EMS resuscitation. | Patients who did not undergo prehospital CPR owing to obvious signs of death or had a valid do-not- resuscitate order present at the time of arrest | In this population-based, cross-sectional study, out-of-hospital cardiac arrests and deaths during the COVID-19 pandemic significantly increased compared with the same period the previous year and were associated with older age, nonwhite race/ethnicity, hypertension, diabetes, physical limitations, and nonshockable presenting rhythms. |
| Leung et al., 2023 | 01.2018 – 12.2019 | 01.2020 – 03.2022 | All patients who presented to the ED in one of the three regional hospitals in New Territories West Cluster with cardiac arrests. | Patients with traumatic cardiac arrests, postmortem changes, and those who developed in-hospital arrest in the ED | The increase in COVID-19 incidence had an exposure–response relationship with an increased incidence of OHCA and worsened survival outcomes. |
| Li et al., 2023 | 01.01.2018 – 31.12.2019 | 01.01.2020 – 31.05.2022 | All adult patients with OHCA. | Data were missing for their sex, age, EMS arrival time or initial cardiac rhythm. | The monthly number of OHCAs doubled during the Omicron epidemic in Shanghai, and it remained elevated for another two months. OHCA affected individuals with cardiovascular and cerebrovascular diseases more during and after the epidemic than before it. |
| Lim et al., 2021 | 01.11.2019 – 31.01.2020 | 01.11.2020 – 31.01.2021 | All patients with OHCA during the study periods. | Less than 18 years old, if resuscitation was not attempted due to obvious signs of death or if they had a valid do-not-resuscitate order. Patients who were pulseless because of trauma, intoxication, or drowning. | During the COVID-19 period, there were significant changes in the EMS responses to OHCA. These changes are considered to be partly due to social distancing measures. As a result, the proportion of patients with an initial shockable rhythm in the COVID-19 period was greater than that in the pre-COVID-19 period, but the final survival rate and favorable neurological outcome were lower. |
| Liu et al., 2023 | 01.01.2018 – 31.12.2019 | 01.01.2020 - 31.12.2021 | Nontraumatic OHCA among persons aged 18 years or older attended by emergency medical services (EMS). | Not meet inclusion criteria. | In this cohort study of COVID-19 and OHCA, a substantial proportion of the higher OHCA incidence and lower survival during the pandemic was not directly due to SARS-CoV-2 infection but indirect factors that challenged OHCA prevention and treatment. |
| Liu et al., 2023b | 01.2018 – 12.2019 | 01.2020 – 12.2021 | OHCA patients. | OHCA patients aged <20 years, with effective orders of do-not-resuscitate (DNR) without transfer to the hospital for any reason, and with trauma. | The overall impact of longer EMS rescue times on survival outcomes during the pandemic was not significant, with an exception of the specific group that experienced prolonged rescue times (total EMS time > 21 min). |
| Marijon et al., 2020 | 2011-2019 | 16.03.2020 – 26.04.2020 | Non-traumatic OHCA. | Cases with obvious accidental causes, irrespective of whether resuscitation was attempted or not. | A transient two-times increase in OHCA incidence, coupled with a reduction in survival, was observed during the specified time period of the pandemic when compared with the equivalent time period in previous years with no pandemic. Although this result might be partly related to COVID-19 infections, indirect effects associated with lockdown and adjustment of health-care services to the pandemic are probable. Therefore, these factors should be taken into account when considering mortality data and public health strategies. |
| Ortiz et al., 2020 | 01.04.2017 – 31.03.2018 | 01.02.2020 – 30.04.2020 | All consecutive OHCA cases in which an emergency team performed resuscitation maneuvers or post- resuscitation care following cardiopulmonary resuscitation (CPR) attempts by a first responder. | The emergency team suspended resuscitation on-site due to confirmation of futility criteria during resuscitation. An attempt at CPR was considered futile when new data during resuscitation showed that. | The pandemic, irrespective of its incidence, seems to have particularly impeded the pre-hospital phase of OHCA care. Present findings call for the need to adapt out-of-hospital care for periods of serious infection risk. |
| Phattharapornjaroen et al., 2022 | 03.2018 – 12.2018 | 03.2020 – 12.2021 | All OHCA patients 18 years of age or older who were brought to the emergency room at Ramathibodi Hospital. | Traumatic out-of-hospital cardiac arrest, evidence of irreversible death (e.g., rigor mortis, dependent lividity), EMS-treated patients whose CPR was initiated for a short period of time but converted to Do Not Resuscitation (DNR), and patients who had a valid do-not-resuscitate order. | During the COVID-19 pandemic in Thailand, ED ROSC and survival to admission in out-of-hospital cardiac arrest patients were significantly reduced. Additionally, the witness responses and mode of chest compression were very different between the two groups. |
| Ristau et al., 2022 | 01.03.2018 – 28.02.2019 | 01.03.2020 – 28.02.2021 | All cases of OHCA from the two comparison periods in EMS with high data quality in both periods. | Not meet inclusion criteria. | Survival after OHCA significantly decreased while the bystander resuscitation rate remained stable. However, longer EMS arrival times and fewer cases of witnessed OHCA may have contributed to poorer survival. Any change to EMS systems in the care of OHCA should be critically evaluated as it may mean a real loss of life—regardless of the pandemic situation. |
| Riyapan et al., 2022 | 01.2019 – 09.2019 | 01.2020 – 09.2020 | Adults (age ≥ 18 years) with non- traumatic OHCA | Patients who had Do Not Resuscitate orders. | There was a significant decrease in the rate of survival to hospital discharge of patients with OHCA dur- ing the COVID-19 outbreak in Thailand. Maintaining the first responder response quality and encouraging prehospital advanced airway insertion might improve the survival rate during the COVID-19 outbreak. |
| Sultanian et al., 2021 | 01.01.2020 – 15.03.2020 | 16.03.2020 – 20.07.2020 | All cases of OHCA and IHCA. | Not meet inclusion criteria. | During the pandemic phase, COVID-19 was involved in at least 10% of all OHCAs and 16% of IHCAs, and, among COVID-19 cases, 30-day mortality was increased 3.4-fold in OHCA and 2.3-fold in IHCA. |
| Talikowska et al., 2021 | 16.03.2017 – 17.05.2019 | 16.03.2020 – 17.05.2020 | All OHCA cases. | Not meet inclusion criteria. | In Western Australia, with a relatively low incidence of COVID-19, OHCA incidence and survival was not significantly dierent during the initial wave of the COVID-19 pandemic compared to the three previous years. Our study suggests that OHCA survival may be more closely related to the incidence of COVID-19 in the community, rather than COVID-19 restrictions per se. |
| Uy-Evanado et al., 2020 | 01.03.2019 – 31.05.2019 | 01.03.2020 – 31.05.2020 | All OHCA adult patients. | Not meet inclusion criteria. | The community response to OHCA was altered from March to May 2020, with less bystander CPR, delays in EMS response time, and reduced survival from OHCA. These results highlight the pandemic’s indirect negative impact on OHCA, even in communities with relatively low incidence of COVID-19 infection, and point to potential opportunities for countering the impact. |
| Yu et al., 2021 | 01.02.2019 – 30.04.2019 | 01.02.2020 – 30.04.2020 | All patients with OHCA. | Patients for whom resuscitation was not attempted, those aged younger than 20 years and those with OHCA as a result of trauma. | EMS response time for patients with OHCA was prolonged during the COVID-19 pandemic. Early advanced life support by EMS personnel remains crucial for patients with OHCA. |

*Legend: ALS: advanced life support; BLS: basic life support; CARES: Cardiac Arrest Registry to Enhance Survival; CPR: cardiopulmonary resuscitation; ED: emergency department; EMS: emergency medical service; IHCA: in-hospital cardiac arrest; OHCA: out-of-hospital cardiac arrest; SCA: sudden cardiac arrest.*