Table 1 Characteristics of included studies

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| **Study** | **Setting** | **Study Design** | **Sample size** | **Population** | **Description of CAC** | **Key relevant findings** |
| Chien 2020 | Taoyuan city, Taiwan | Region-wide retrospective cohort study  2012-2016 | Total 6655  CAC 4039  nonCAC 2616  PSM  CAC 2578  nonCAC 2578 | Patients with OHCA (cardiac cause), aged >18, transported by EMS | Certification by WHO  High case volume of >100 OHCA patients admitted per year  Had a cardiovascular system emergency consulting team  PCI 24/7  TTM in ED and ICU  ECMO in ICU | * Transportation to a CAC was associated with higher probabilities of survival to discharge and good neurological outcomeat discharge in OHCA patients with shockable initial rhythms. * Transportation to a CAC in a shorter time solely increased the likelihood of survival to discharge in OHCA patients with nonshockable rhythms. |
| Chocron 2017 | Paris, France | Retrospective analysis from database Paris Sudden Death Expertise Centre 2011-2013 | Total 1436  CAC 917  nonCAC 519 | Non traumatic >18, OHCA achieved ROSC, admitted alive | High case volume with PCI 24/7 | * Care at CAC was associated with survival to discharge in univariate analysis but not in multivariate analyses |
| Cournoyer  2018 | Montreal, Canada | Retrospective cohort study using a registry of OHCA from the region of Montreal, Canada Apr 2010 until Dec 2015 | Total 4922  CAC 2389  nonCAC 2533 | Aged >18, All transported non-traumatic OHCA without ‘do-not-resuscitate’ directives or with ‘obviously deceased’ criteria | PCI-capable hospital (STEMI centre) with PCI or hemodynamic support 24/7 | * Care at CAC was associated with survival to discharge in adjusted analyses |
| Jung 2022 | Korea | Nation-wide retrospective cohort study  2015-2019 | Total 95931  CAC 23292  nonCAC 72639 | EMS-treated OHCA patients aged > 18 with presumed cardiac etiology | PCI and TTM | * Direct transport of OHCA patients to CAC was associated with significantly higher survival and favorable neurological outcomes. |
| Kim 2019 | Gyeonggi province, Korea | Nation-wide retrospective cohort study  2012-2014 | Total 9912  CAC 4036  nonCAC 5876 | EMS-treated OHCA patients with a presumed cardiac etiology | Standardized resuscitation protocol in the ED  TTM  PCI 24/7  Rehabilitation program | * CAC was associated with better neurologic outcome compared to nonCAC. |
| Kragholm 2017 | USA Cardiac Arrest Registry to Enhance Survival (CARES) | Retrospective analysis from CARES database 2012-2014 | Total 3449  CAC 1359  nonCAC 148 | Arrests of presumed cardiac cause with prehospital ROSC | PCI centre (primary PCI was available on a 24/7 basis) | * Care at CAC was associated with improved survival to hospital discharge with good neurological outcome and survival to hospital discharge in adjusted analyses |
| Matsuyama 2017# | Osaka, Japan | Retrospective analysis  Utstein Osaka Project 2005-2012 | Total 44,474  CAC (16CCMC) 17,737  nonCAC (301 non-CCMC) 26,737 | Aged >18, OHCA , resuscitated by EMS and brought to hospital, all causes | Critical care medical centre: ≥20 beds and ICU for critically ill patients, capable of ECPR or PCI and TTM 24/7. | * Care at CAC was associated with survival at 30 days with good neurological outcome, survival at 30 days and ROSC in adjusted analysese |
| McKenzie  2018 | Perth, Australia | Retrospective analysis  St John Ambulance Western Australia OHCA Database Jan 2012 to Dec 2015 | Total 539  Non CAC 26  CAC 513   * Direct 408 * Secondary 105 | Aged >18, OHCA, admitted to and survived ED care | 24/7 PCI centre and post resuscitation care | * Care at CAC was associated with survival to hospital discharge in adjusted analyses * Direct transport to CAC was associated with survival to hospital discharge in adjusted analyses * Indirect transport to CAC was associated with increased risk of death up to 12-months in adjusted analyses |
| Mumma 2015 | California, USA | Retrospective cohort using registry data 2011 | Total 7725  CAC (125 STEMI centre) 5202  nonCAC (208 non-STEMI centre) 2523 | Discharge database with cardiac arrest on care | STEMI centre: 24/7 PCI and TTM, >40 patients/yr ROSC post OHCA | * Care at CAC was associated with survival at hospital discharge with good neurological outcome (defined as discharge to home, residential care facility, prison, jail, another hospital for nonacute care, left against advice) in adjusted analyses |
| Patterson 2023 | London, UK | RCT  Jan 15, 2018 - Dec 1, 2022  Randomization paused in Mar, 2020 -  Nov, 2020 & Jan, 2021, -  Aug, 2021 (COVID-19 pandemic) | Total 827  CAC 414  nonCAC 413 | Aged >18, OHCA (cardiac cause) with ROSC. STEMI patients were excluded. | Management 24 h a day, 7 days per week  Tracheal intubation and  ventilation, haemodynamic support and monitoring, assessment of the underlying cause of arrest with on-site  diagnostics, immediate reperfusion or mechanical  support devices if necessary, temperature control, and appropriate neuroprognostication | * Expedited transfer to a CAC did not show a survival benefit compared with standard of care. |
| Soholm 2015 | Copenhagen, Denmark | Region-wide retrospective cohort study  2002-2011 | Total 1078  CAC (tertiary heart centers) 586  nonCAC (non tertiary) 492 | Aged >18, OHCA with ROSC or ongoing CPR at hospital admission. STEMI patients were excluded. | 24/7 cath lab, CAG, TTM (implemented from 2002-2004) | * Admissions to CAC was associated with a higher survival rate after OHCA compared with admissions to nonCAC in patients suffering from all-cause OHCA except STEMI |
| Spaite 2014 | Arizona, USA | Before and after 2007-2010  After: (Dec 14, 2007, to Nov 25, 2010)  Before: (Jan 1, 2007, and Dec 13, 2007) | Total 2177  CAC 1737  nonCAC 440 | Aged >18, OHCA presumed cardiac transported | Cardiac receiving centre Coronary angiography/PCI, TTM,  Statewide regionalisation | * Care at CAC was associated with survival to hospital discharge and surivival to hospital discharge with favourable neurological outcomes in adjusted analyses |
| Stub  2011 | Victoria, Australia | Retrospective analysis 2003-2010 Victoria ambulance data | Total 2706  CAC 1816  nonCAC 890 | Aged>18, OHCA presumed cardiac transported with ROSC | 24hr cardiac interventional service | * Care at CAC was associated with survival to hospital discharge in adjusted analyses |
| Sunde 2007 | Oslo, Norway | Before and after Feb, 1996 - Feb, 1998 compared with Sept 1, 2003 - May 18, 2005 | Total 119  CAC 61  nonCAC 58 | All patients with sustained ROSC in the ED after OHCA of cardiac aetiology | TTM, PCI, and standardised goals for factors such as blood glucose, haemodynamics, ventilation and handling of seizures | * Survival to hospital discharge with good neurological outcome, and 1-year survival, improved after implementation of a standardized post resuscitation care treatment protocol |
| Tagami  2012 | Aizu, Japan | Before and after 2006-2008 compared with 2009-2010 | Total 1482  CAC 712  nonCAC 770 | OHCA transported with ROSC or ongoing CPR | Post resuscitation care centre: Tertiary centre PCAS, TTM, PCI | * Care at CAC was associated with survival at 30 days with good neurological outcome and survival to discharge in adjusted analyses |
| Yeh 2021 | Taoyuan city, Taiwan | Region-wide retrospective cohort study  Jan 2014 - Jun 2018 | Total 1588  CAC 1222  nonCAC 366 | Patients with OHCA (cardiac cause), aged >20, with initial shockable rhythm at the scene | PCI 24/7  TTM  24/7 surgeon consultant after PCI failure  ICU post-cardiac care | * Patients who were directly transported to CAC had better chances of four months survival and good neurologic outcomes, regardless of the transport time |

CAC: Cardiac arrest centre; nonCAC: other institution not designated as CAC; CPC: cerebral performance category; ECPR: extracorporeal CPR; ED: emergency department; EMS: Emergency medical service; GCS: Glasgow Coma Score; ICU: intensive care unit; IHCA: in-hospital cardiac arrest; OHCA: out-of-hospital cardiac arrest; PCAS: Post cardiac arrest service; PCI: Primary Coronary Intervention; PSM: Propensity score matching; QoL: Quality of life; RCT: Randomized control trial; ROSC: Return of spontaneous circulation STEMI: ST-elevation myocardial infarction; TTM: Targeted temperature management; VF: ventricular fibrillation; WHO: World Health Organization.