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 study2012-2016 | Total 6655CAC 4039nonCAC 2616PSMCAC 2578nonCAC 2578 | Patients with OHCA (cardiac cause), aged >18, transported by EMS | Certification by WHOHigh case volume of >100 OHCA patients admitted per year Had a cardiovascular system emergency consulting teamPCI 24/7TTM in ED and ICUECMO 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.
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| Chocron 2017 | Paris, France | Retrospective analysis from database Paris Sudden Death Expertise Centre 2011-2013 | Total 1436CAC 917nonCAC 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
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| Cournoyer2018 | Montreal, Canada | Retrospective cohort study using a registry of OHCA from the region of Montreal, Canada Apr 2010 until Dec 2015 | Total 4922CAC 2389nonCAC 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
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| Jung 2022 | Korea | Nation-wide retrospective cohort study2015-2019 | Total 95931CAC 23292nonCAC 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.
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| Kim 2019 | Gyeonggi province, Korea | Nation-wide retrospective cohort study2012-2014 | Total 9912CAC 4036nonCAC 5876 | EMS-treated OHCA patients with a presumed cardiac etiology | Standardized resuscitation protocol in the EDTTMPCI 24/7Rehabilitation program | * CAC was associated with better neurologic outcome compared to nonCAC.
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| Kragholm 2017 | USA Cardiac Arrest Registry to Enhance Survival (CARES) | Retrospective analysis from CARES database 2012-2014 | Total 3449CAC 1359nonCAC 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
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| Matsuyama 2017# | Osaka, Japan | Retrospective analysisUtstein Osaka Project 2005-2012 | Total 44,474CAC (16CCMC) 17,737nonCAC (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
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| McKenzie2018 | Perth, Australia | Retrospective analysisSt John Ambulance Western Australia OHCA Database Jan 2012 to Dec 2015 | Total 539Non CAC 26CAC 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
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| Mumma 2015 | California, USA | Retrospective cohort using registry data 2011 | Total 7725CAC (125 STEMI centre) 5202nonCAC (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
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| Patterson 2023 | London, UK | RCTJan 15, 2018 - Dec 1, 2022Randomization paused in Mar, 2020 -Nov, 2020 & Jan, 2021, -Aug, 2021 (COVID-19 pandemic) | Total 827CAC 414nonCAC 413 | Aged >18, OHCA (cardiac cause) with ROSC. STEMI patients were excluded. | Management 24 h a day, 7 days per weekTracheal intubation andventilation, haemodynamic support and monitoring, assessment of the underlying cause of arrest with on-sitediagnostics, immediate reperfusion or mechanicalsupport devices if necessary, temperature control, and appropriate neuroprognostication | * Expedited transfer to a CAC did not show a survival benefit compared with standard of care.
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| Soholm 2015 | Copenhagen, Denmark | Region-wide retrospective cohort study2002-2011 | Total 1078CAC (tertiary heart centers) 586nonCAC (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
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| Spaite 2014 | Arizona, USA | Before and after 2007-2010After: (Dec 14, 2007, to Nov 25, 2010)Before: (Jan 1, 2007, and Dec 13, 2007) | Total 2177CAC 1737nonCAC 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
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| Stub 2011 | Victoria, Australia | Retrospective analysis 2003-2010 Victoria ambulance data | Total 2706CAC 1816nonCAC 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
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| Sunde 2007 | Oslo, Norway | Before and after Feb, 1996 - Feb, 1998 compared with Sept 1, 2003 - May 18, 2005 | Total 119CAC 61nonCAC 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
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| Tagami 2012 | Aizu, Japan | Before and after 2006-2008 compared with 2009-2010 | Total 1482CAC 712nonCAC 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
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| Yeh 2021 | Taoyuan city, Taiwan | Region-wide retrospective cohort studyJan 2014 - Jun 2018 | Total 1588CAC 1222nonCAC 366 | Patients with OHCA (cardiac cause), aged >20, with initial shockable rhythm at the scene | PCI 24/7TTM24/7 surgeon consultant after PCI failureICU 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
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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.