

Supplement Table S2: Characteristics of Studies included in the Scoping Review of EIT 6306: Community Initiatives to promote BLS implementation

Author Year	Design Region (Country)	Population	Intervention(S)	Main Findings	Comments
COMMUNITY TRAINING PROGRAMMES					
Eisenberg 1995²⁰³	Randomized controlled trial Washington (USA)	17,318 households: 8,659 households intervention and 8,659 household control 65 OHCA's: 31 in intervention households and 34 in control households	Self-training: via a free, mailed 10-minute CPR training videotape, a brochure and pocket card illustrating CPR steps	No impact of the intervention on rates of bystander CPR 47% vs 53% (p = NS).	Few OHCA events Unknown reach of intervention
Malta Hansen 2015²⁰⁹	Prospective cohort study, North Carolina (USA)	Community members offered training. 4,961 OHCA's	Instructor-led training offered at major civic events, in public places and to patients with cardiovascular disease and their family members. School staff were trained in the use of AEDs Community grants provided to implement CPR training programs	Associated increase rates of survival with favourable neurological outcome in patients who received CPR [7.1% (95% CI, 5.8%-8.8%) in 2010 to 9.7% (95% CI, 8.2%-11.4%) in 2013 (p = .02) and increase in bystander CPR [39.3% (95% CI, 36.5%-42.1%) in 2010 to 49.4% (95% CI, 46.7%-52.0%) in 2013 (p < .01)]. and defibrillation	Unable to isolate effect of training on outcomes Unknown reach of intervention
Fordyce 2017²⁰⁴	Prospective cohort study North Carolina (USA)	Community members offered training. 8,269 OHCA's: 5,602 in homes and 2,667 in public.	Instructor-led training offered at major civic events, in public places and to patients with cardiovascular disease and their family members. School staff were trained in the use of AEDs. Community grants provided to implement CPR training programs.	Increase in favourable neurological survival in OHCA's occurring in public (9.5% vs 14.7% p = .02) but not at-home (4.9% vs 6.1% p = 0.06). Improvement of survival to hospital discharge at home (5.7% vs 8.1% p = 0.047) and in	Unable to isolate effect of training on outcomes Unknown reach of intervention

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				public (10.8% vs 16.2% p =0 .04) Increase in bystander CPR in OHCAs in public (61% vs 70.5%, p = 0.01) and in home (28.3% vs 41.3%, p < .01).	
Bergamo 2016¹⁹⁹	Retrospective cohort study Texas, USA	Community residents 2,474 OHCAs	Take 10 10 minute peer-to-peer training with promotion via word-of-mouth, media and calls to community organizations	1.09% (n=11,242) of the population was trained Bystander CPR rates increased (Incidence 0.42 ± 0.34 vs 2013: 0.47 ± 0.30; p < 0.05).	Results are unadjusted Unable to isolate effect of training on outcomes
Boland 2017²⁰⁰	Retrospective before-after study Minnesota, USA	Community residents in areas of training 294 OHCAs	Heart Safe Communities. Community-specific action plans include educating citizens about the warning signs and symptoms of cardiac arrest, conducting training sessions on how to perform CPR and use AEDs, registering and mapping existing AEDs, and procuring and placing additional AEDs in strategic public locations	9% (n=44,293) of the population was trained Bystander CPR rates increased [83% vs 95% (OR=4.23; CI 1.80-9.98)] No difference in survival to hospital discharge (17% vs 20%, P=0.32).	Results are unadjusted Unable to isolate effect of training on outcomes
Del Rios 2018²⁰²	Prospective before-after study Chicago, USA	71 students and 347 friends and relatives	Instructor-led and self-training. Self: video/kit 1. Two in-class training sessions of 45 minutes each. 2. AHA CPR Anytime video self-instruction kit, including an instructional DVD and inflatable mannequins	Proportion of population trained: 71 students were trained for CPR, who later trained other 347 friends and family members. Proportion of population trained: 1: 4.9 people	The one-time school training used videos, peer-to-peer methods, and a DVD kit, but no CPR protocol was included.
Uber 2018²¹⁶	Retrospective before-after study	1,486 cardiac arrest patients (899 P1 and 587 P2). 2,253	Instructor-led, CO-CPR, 1 day training in Public places. On a single day, prehospital	Bystander CPR training was not associated with bystander CPR	The training was instructor-led, included CO-

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	Michigan, USA	passers were trained.	providers trained a convenience sample of 2,253 passers-by in compression-only CPR.	frequency (β -0.002 ; 95% CI $-0.16, 0.15$), compression- only CPR (β -0.06 ; 95% CI $-0.15, 0.02$), ROSC (β -0.06 ; 95% CI $-0.21, 0.25$), survival (β -0.02 ; 95% CI $-0.11, 0.06$), or favourable neurologic outcome (β -0.01 ; 95% CI $-0.07, 0.09$).	CPR, and was a one-time, non-targeted training.
Nielsen 2012 [17]Moller Nielsen 2012 ²¹⁰	Prospective cohort study Denmark, UE	11679 people trained. 35 witnessed by bystander OHCA	Short 24-min DVD-based-self-instruction BLS courses were offered to laypersons. Information about the enrolment was provided through television announcements. Laypersons could also participate in 4-h BLS/AED courses.	9226 people (22% of the population) completed the short course and 2453 (6% of the population) completed the 4-h course. For the witnessed OHCAs (N = 35) the bystander BLS rate increased [22% vs 74% (95% CI 58–86)]. No change in survival to hospital discharge [11% (95% CI 4–27)]	Not targeted, CO CPR training
Moller Nielsen 2014 ²¹¹	Prospective cohort study Denmark, UE	124 patients with OHCA in the follow up and 90 in the intervention period.	1. 24-min DVD-based-self-instruction BLS courses. 2. 4-h BLS/AED courses. 3. the local television station had approximately 50 broadcasts about resuscitation	Improvement in bystander BLS rate [70% (95% CI 61–77) vs 47% (95% CI 37–57), $p=0.001$]. No difference in the 30-day survival [6.7% (95% CI 3–13) vs 4.6% (95% CI 1–12), $p = 0.76$].	Not Targeted, CO CPR Training
Isbye, 2007 ²⁰⁵	Prospective cohort study Denmark, UE	1877 OHCAs. Population trained: 35 002 at 806 primary Schools.	Instructor-led (School: first tier) and peer to peer (Family: second tier) Training	Population trained: mean, 2.5 persons per pupil; 95% CI 2.4-2.5) Bystander CPR: not improved. (25.0% vs 27.9%; $p=0.16$)	One shot, targeted training

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Tay, 2019²¹⁵	Prospective Before-after study Singapore	1241 OHCA, 880 before, 361 after. Close to 30,000 individuals were trained in CPR	The Save-A-life (SAL) initiative offered free training in chest-compression only cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) use, with signups conducted through the local community centres and schools by different agencies, with standardized teaching material	Higher survival (3.3% vs 2.2% p=0.23), pre-hospital return of spontaneous circulation (ROSC) (9.1% vs 5.1% (p= 0.01), bystander CPR (63.7% vs 44.8% p<0.001). After adjusting: increased odds ratio (OR) for survival (OR 2.39[1.02 -5.62]), pre-hospital ROSC (OR 1.94 [1.15 - 3.25]) and bystander CPR (OR 2.29 [1.77 - 2.96]).	Program SAL, Targeted, CO CPR Instructor led training
MASS-MEDIA					
Becker, 1999¹⁹⁸	Non-randomized controlled study Seattle, USA	2,075 OHCAs, 1,786 in the "before" period and 289 in the "during" period. 1,099 in the intervention communities and 976 in the comparison communities.	Two 30-second Public Service Announcements (PSA) demonstrating CPR for 8 months. Each featured an older couple with the husband experiencing a witnessed cardiac arrest at home and the wife calling 911 and initiating CPR.	Increased bystander CPR rate (43% vs 55%, p<.05). The rate remained at 33% in the comparison community (p=.967)	The results may simply reflect a secular trend toward an increase in bystander CPR.
BUNDLE INTERVENTIONS n=9					
Wissenberg 2013²¹⁷	Prospective cohort study Denmark	A study population of 19 468 OHCA patients.	Bundle intervention 1. Mandatory education in resuscitation in elementary schools (Jan 2005) 2. New guidelines for resuscitation (Nov 2005) 3. Mandatory resuscitation course when acquiring a driver's license (Oct 2006)	Increased bystander CPR (21.1% vs 40.9% p<0.001)	Training Mandatory education in resuscitation in elementary schools and at driver's license

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Ro 2016 ²¹³	Cross-sectional study Republic of Korea	228,921 responders from 253 counties. 29,052 OHCA. 4 quartiles Q1 (lower level of capacity) to Q4 (highest level of capacities).	CPR training programs were developed in the early 2000s. The recent guideline for layperson CPR was released in 2011, which outlines 1-h layperson training on hands-only compression CPR, 1.5 to 2 h of first responder training on chest compression with rescue ventilation CPR, and advanced cardiovascular life support training for professional providers. Enforcement of the EMS Act requires mandatory training of all first responders.	Bystander CPR. Of 29,052 OHCA patients with presumed cardiac origin, 11,079 (38.1%) received bystander CPR. Bystander CPR in Q1(lower level of CPR capacity) = 33.9% vs Q4 (higher level of CPR capacity) 39.4% (p < 0.01)	Training 1-h layperson training on hands-only compression CPR
Hwang 2017 ¹³²	Prospective Before-after study Republic of Korea	581 OHCA, divided into 3 period groups: before (2009–2010) transition (2011) and after (2012–2013)	The university hospital developed the system-wide CPR program for OHCA patients which included interventions at prehospital and hospital levels. CPR education sessions were conducted at public sites. CO-CPR, in addition to standard basic life support techniques, was taught to citizens in schools and workplaces.	CPR education: 1760 people in 2009, 3394 in 2010, 682 in 2011, 3659 in 2012, and 5994 in 2013. Increased bystander CPR rate (without dispatcher assistance) (13.2% vs 27.7% (p value not reported).	Training CPR education sessions were conducted at public sites, in schools and workplaces
Ro 2019 ²¹⁴	Cross-sectional study Republic of Korea	81,250 OHCA in 254 counties. 228,452 participants responded to the survey of 247 items Classification in quartiles: the highest (Q1), higher (Q2), lower (Q3), and	Public CPR campaigns and training for laypersons	Bystander CPR: Q1 63.8% vs Q4 60.1, OR 1.16 (1.04–1.29) AOR 1.29 (1.13–1.48).	Training and media Public CPR campaigns and training for laypersons

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		lowest (Q4) counties.			
Nishiyama 2019²¹²	Prospective cohort study Japan	57 173 residents (14.7%) completed the chest compression–only CPR training and 32 423 (8.3%) completed conventional CPR training. 722 patients with OHCA were eligible for the analysis	<ol style="list-style-type: none"> 1. The Toyonaka City Fire Department has provided a conventional 3-hour CPR training consisting of chest compressions, rescue breathing, and AED use and an instructor training course to the residents at companies, governmental offices, and nursing homes. 2. A video-based CPR training program. 3. The participants used a Mr. PUSH CPR training kit to practice chest compressions and AED use. 4. Especially for schools, the Toyonaka City Fire Department introduced systematic CPR training programs with CCCPR-collaborating municipal board of education. 	23% of the residents were trained. No increase in bystander CPR 43.3% in 2010 vs 42.0% in 2015 (p=0.915). Increase in high-quality CPR 11.7% in 2010 vs 20.7% in 2015 (p=0.015). No difference in 1-month survival (AOR, 0.949; 95% CI, 0.802–1.124) and 1-month survival with favourable neurological outcome (AOR, 0.947; 95% CI, 0.751–1.194)	Conventional 3-hour CPR training at companies, governmental offices, and nursing homes. A video-based CPR training program. Mr. PUSH CPR training kit. Prop of TP 23%
Kim 2019²⁰⁶	Retrospective , Before-After Study Republic of Korea	1,155 OHCAs, 777 from the pre-intervention period and 378 from the post-intervention period	<ul style="list-style-type: none"> -“train the trainer” instruction to EMS dispatchers who are responsible for instructing bystanders in CPR. -hands-only CPR training sessions for laypersons. -The Korean Society of EMS Physicians performed lectures for dispatchers and instituted regular review of dispatch records. -dispatchers conducted the CPR 	Bystander CPR before and after intervention 13.2% vs 37.4% (risk difference [RD] 24.2%; 95% CI, 18.2%–29.4%) p value not available	Training Hands-only CPR training sessions for laypersons

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			<p>trainings for first responders, such as police officials, as well as laypersons.</p> <p>-Korea University Ansan Hospital instituted regular skills training sessions for EMTs in that service area.</p> <p>-A detailed data collection instrument to be completed by EMTs for each cardiac arrest.</p>		
Cone 2020 ²⁰¹	Retrospective cohort USA	HEARTSafe-designated communities and non-designated communities. 2922 SCA cases (CARES): 1569 (54%) occurred in towns that were HEARTSafe-designated	CPR training, availability of automated external defibrillators (AEDs) on first responder vehicles and through public access defibrillation initiatives, and availability of post-arrest therapeutic hypothermia and percutaneous coronary intervention at receiving hospitals	<p>Bystander CPR: Lay person 399 (25.45%) in HEART Safe communities vs 337 (24.91%) in non HEART Safe. CPR performed by bystander vs other</p> <p>Unadjusted OR 1.019, StE 0.1146 (95% CI 0.814, 1.275), p= 0.8722</p> <p>Adjusted OR 1.147, StE 0.1277 (95% CI 0.893, 1.473), p= 0.2838</p>	CPR training
Lockey 2021 ²⁰⁸	Retrospective observational study (UK)	OHCA patients treated by Yorkshire Ambulance Service	Restart a Heart (RSAH) and Community First Responder (CFR) schemes	Significant increase in bystander CPR rates from 38.4% in 2014 to 69.7% in 2018	
Li 2024 ²⁰⁷	Prospective, Before-After Study	13,751 Bystander-witnessed OHCA, 7,858 from the pre-intervention period and 5,893 from the post-intervention period	Emergency Medical Aid Act (mandated public CPR training and the use of AEDs, providing legal clarity on bystander responsibilities in OHCA situations)	<p>Survival to hospital discharge: Increased from 0.56% to 2.80%</p> <p>ROSC: Increased significantly (Prehospital ROSC 0.92% to 7.21%)</p> <p>Bystander CPR rate:</p>	

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				Increased from 4.10% to 18.73% Proportion of trained people: Approximately 3.7% of the population received training	