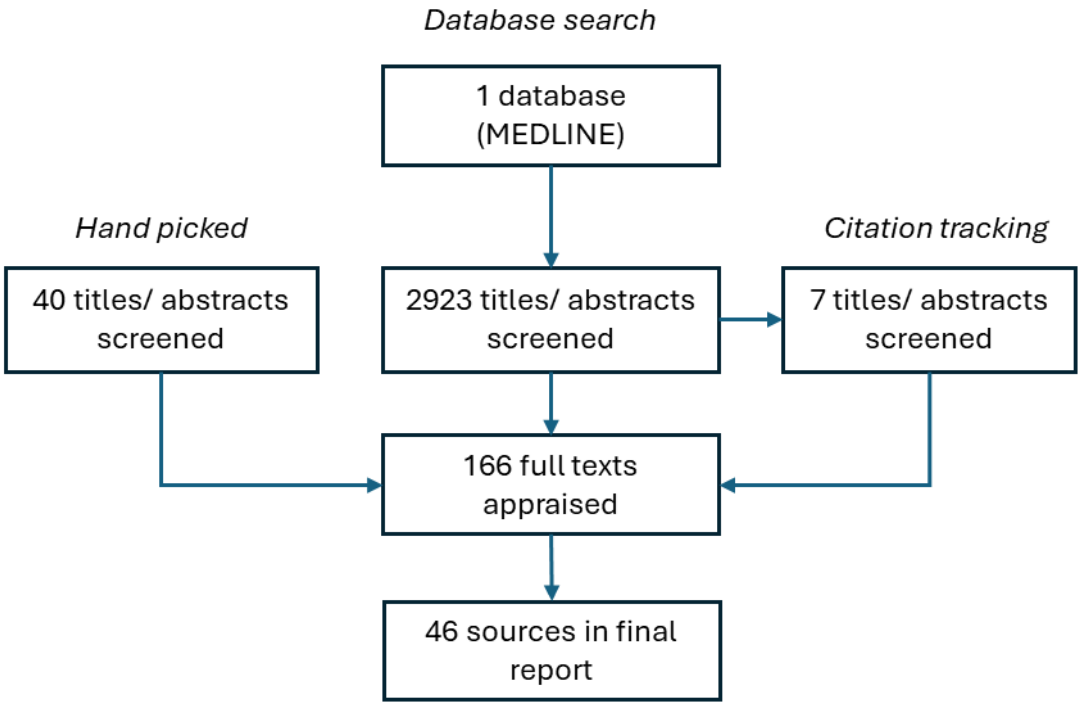
Exploring the mechanisms that underpin an effective community first aid response: a rapid realist review

Supplementary material

Supplementary Figure 1. Document selection flow diagram



Supplementary Table 1. Exclusion and inclusion criteria

PICO domain	Inclusion criteria	Exclusion criteria
Population	● Any individuals (children and adults) who may benefit from first aid interventions provided to their communities. ● Participants are defined as those delivering or receiving the Community First Aid intervention, including . recipients of first aid (patients) or providers (including parents/caregivers, teachers, etc)	● Populations in settings not relevant to UK context (Iran, Ethiopia, Saudi Arabia, China, Turkey?) ● Pedagogical mechanisms related to different modes of FA training on knowledge and skills were not included where the community characteristics were not considered. As described above, exclusion criteria were updated following initial title and abstract screening
Intervention	● Educational and training interventions (delivered in person, digitally, and through public health campaigns), service initiatives (volunteer	● Interventions delivering Mental Health First Aid in isolation (i.e. no component of physical health) will be excluded, due to the likelihood of

	led or commissioned) aimed at communities as defined in the participant/problem descriptors above.	unique programme theories arising from such interventions ● Interventions delivered primarily by medical Professionals/HCPs (or students of those disciplines) ● Dental First Aid ● Workplace/ Occupational First Aid ● Snake bites and envenomation First Aid ● Interventions testing different types of FA training modality (where the intervention was not aimed at a defined community)
Control	● This is not applicable for non-comparative studies. Control groups for any comparative studies will be standard care within the specific context and setting of the study (i.e. the absence of a community first aid response).	● None
Outcomes	● Outcomes will not be specified a priori. Any relevant clinical, experiential and attitudinal (e.g. patient-reported, knowledge, skills, confidence and willingness to act), resource-use, system indicators, or economic measures will be extracted.	● None
Study types	● Consistent with realist methodology all study types and designs are eligible for inclusion	● Guidelines, Consensus Statements or Clinical Practice Recommendations

Search strategy for Ovid MEDLINE

1 First Aid/ or ("First Aid" or "First Aids" or "Immediate Aid" or "Immediate Aids").ti. (8885)
2 exp *Teaching/ or exp *Learning/ or *Social Participation/ or *Refusal to Participate/ or exp *Community-Based Participatory Research/ or *Citizen Science/ or *Community Participation/ or *Community Support/ or *Implementation Science/ or (Taught or Teach* or Train* or Education* or Develop* or Learn* or Pedagog* or Paedagog* or Participat* or Engag* or Involv* or Implement*).ti,ab. (9780887)
3 *Community Health Planning/ or *Community Integration/ or *Community of Practice/ or *Social Cohesion/ or *Community Networks/ or *Community Health Centers/ or *Community Health Workers/ or (Witness* or Bystander* or "Members of The Public" or "Member of The

Public" or "Members of Public" or "Member of Public" or Public Member* or Lay* or Communit* or Citizen* or Volunt*).ti,ab. (1703248)
4 *Computer Simulation/ or *Augmented Reality/ or *Gamification/ or exp *Virtual Reality/ or *Feedback/ or *Drama/ or *Patient Simulation/ or *High Fidelity Simulation Training/ or *Simulation Training/ or (Augmented Realit* or Mixed Realit* or Avatar or Haptic or Humanoid or Mannequin* or Campaign* or Game* or Gamifi* or Practical or Practice or Didactic or In-Person or Face-To-Face or Online or Virtual* or Real-Time or Realtime or Feedback* or Realistic or Scenario* or Drama* or Role Play or Roleplay or Tailor* or Small Group* or Storytelling or Story-Telling or Simulat* or Demo* or Guided or Cooperati* or Constructivis*).ti,ab. (6908127)
5 (Attain* or Retain* or Maint* or Respon* or Speed* or Fast* or Quick* or Rapid* or Regular* or Incremental* or Repeat* or Repetition* or Refresh* or Retrain* or Boost* or Remind* or Reemphasi* or Re-emphasi* or Scaffold* or Deliver* or Decision* or Compassion* or Safe or Safety or Respect*).ti,ab. (11569482)
6 *Comparative Effectiveness Research/ or *Cost-Effectiveness Analysis/ or *Treatment Outcome/ or *Program Evaluation/ or *Evaluation Studies as Topic/ or *Self Efficacy/ or *Collective Efficacy/ or *Efficiency/ or *Clinical Deterioration/ or *Patient Outcome Assessment/ or *Outcome Assessment, Health Care/ or *Critical Care Outcomes/ or *Fatal Outcome/ or *Treatment Outcome/ or *"Outcome and Process Assessment, Health Care"/ or *Patient Reported Outcome Measures/ or *Patient Admission/ or *Primary Prevention/ or *Secondary Prevention/ or *Tertiary Prevention/ or *Quaternary Prevention/ or *exp Death/ or *Patient Harm/ or *Harm Reduction/ or *exp Mortality/ or *Patient Satisfaction/ or *Personal Satisfaction/ or *Psychological Distress/ or *Stress, Psychological/ or *Fear/ or *Panic/ or *Liability, Legal/ or *Resource-Limited Settings/ or *Community Resources/ or *Resource Allocation/ or *Health Resources/ or *Knowledge/ or *Behavior/ or *"Behavior and Behavior Mechanisms"/ or *Theory of Planned Behavior/ or *Information Motivation Behavioral Skills Model/ or *Social Behavior/ or *Mass Behavior/ or *Choice Behavior/ or *Helping Behavior/ or *Health Belief Model/ or *Cooperative Behavior/ or *Behavioral Sciences/ or *Applied Behavior Analysis/ or *Behavioral Research/ or (Mortality or Complications).fs. or (Effective* or Efficac* or Efficien* or Help* or Assist* or Improv* or Deteriorat* or Save* or Saving or Outcome* or Admission* or Admitted or Injur* or Prevent* or Mortalit* or Death* or Harm* or Complication* or Satisf* or Suffer* or Distress* or Stress* or Fear* or Panic* or Demand* or Resourc* or Knowledge or Skill* or Belief* or Believ* or Behaviour* or Behavior* or Confiden* or Willing*).ti,ab. (16200829)
7 *Defibrillators/ or (Equip* or Kit* or Box* or Defibrillat* or AED).ti,ab. (443626)
8 2 or 3 or 4 or 5 or 6 or 7 (24299297)
9 1 and 8 (4957)
10 exp Animals/ not Humans.sh. (5198114)
11 9 not 10 (4901)
12 limit 11 to (address or autobiography or bibliography or biography or case reports or dictionary or directory or festschrift or interview or lecture or legal case or legislation or news or newspaper article or patient education handout or periodical index or personal narrative or portrait or webcast) (266)
13 11 not 12 (4635)
14 limit 13 to no language specified (19)
15 limit 13 to english language (2904)
16 14 or 15 (**2923**)

Supplementary Table 2.
Context-Mechanism-Outcome (CMO) configurations associated with each community dimension. Contextual enablers and barriers associated with each community dimension are aligned with the TPB's 'determinants of intention'. Responses to intervention components are

represented by the TPB's 'determinants of behaviour'. The identified outcomes are theorised to be causally associated with mechanisms.

CMO	**Context**	**Mechanism (intervention component/ resource and TPB response)**	**Outcomes**
Community dimension: Locus (*communities with a sense of place*)			
CMO 1	*Control beliefs*: Limited access to FA training in deprived communities	*Perceived behavioural control*: School-based FA training and education, particularly those incorporating a pay-it-forward component (resource) enhances equitable access to FA training (response)	Increased community participation in FA training
CMO 2	*Behavioural beliefs*: Limited awareness of the value of a CFA response in emergency situations	*Attitudes*: Local health system messaging underpinning the importance of bystander intervention can promote community awareness of their role in providing FA in an emergency	Increased bystander intervention rates
CMO 3	*Behavioural beliefs: Desire to help local community and witness positive change*	*Attitudes:* CFA volunteering roles which offer opportunities to help their local place-based community (resource) can increase participation in community first responder groups (response)	Decreased use of emergency services
Community dimension: Sharing (*communities with shared interests or perspectives*)			
CMO4a and CMO4b	*Behavioural beliefs*: Lack of established FA practices and awareness of its role in responding to emergencies and injuries in high-risk interest-based communities	*Attitudes*: Linking FA guidelines and training to interest-based communities at high risk of injuries (resource) can improve uptake of FA training, enhance awareness of effective CFA responses and establish best practices (response)	Increased community participation in FA training
		Attitudes: FA training which focuses on high prevalence conditions, as well as using relatable images and data (response), increases community awareness of benefits of FA	Increased bystander intervention rates
			Decreased use of emergency services
CMO5	*Control beliefs*: Shared concerns, anxieties and experiences around performing FA for certain conditions	*Perceived behavioural control*: Group-based training that leverages shared experiences and a sense of identity to address anxieties about performing FA for specific conditions	

		(resource) can boost confidence and community efficacy in FA (response)	
CMO6	*Behavioural beliefs*: Communities may have misperceptions about the value of a CFA response for certain conditions, leading to unnecessary reliance on emergency services.	*Attitudes*: FA training or education which tackles commonly-held misperceptions about the role of FA under certain circumstances (resource) can boost awareness of the role and importance of a CFA (response)	
Community dimension: Social ties *(communities based on social connection)*			
CMO7	*Normative beliefs*: Pro-social attitudes and empathy within communities formed by social ties	*Subjective norms*: Group FA training, actively promoting peer-protective or pro-social attitudes, interactive sessions, and peer-trainers (resource) can enhance community bonds and encourage a willingness to help others (response)	Increased bystander intervention rates
Community dimension: Diversity (*socio-economic complexities within communities)*			
CMO8	*Control beliefs*: Financial and logistical barriers to participating in FA training	*Perceived behavioural control*: Strategies to decrease costs and/ or practicalities of attending FA training (resource) can improve uptake of and engagement with FA training opportunities (response)	Increased community participation in FA training
CMO9	*Control beliefs*: People with low confidence in their ability may feel they cannot offer helpful FA in an emergency, leading them to believe someone else is better suited to respond	*Perceived behavioural control*: Training which emphasizes self-worth and value and explores ways people of differential abilities can perform FA (resource) can improve confidence and community efficacy (response)	Increased bystander intervention rates
CMO10	*Behavioural beliefs*: When first aid (FA) is guided by misinformation or cultural practices that do not align with best medical practices, it can lead to less effective FA responses	*Attitudes*: FA training which involves tackling misinformation and common myths (resource) can improve awareness of appropriate FA responses (response)	Improved health outcomes of CFA responses

CMO11	*Normative beliefs*: Stigmatisation and discrimination can result in a reluctance to perform FA for certain conditions or community groups	*Subjective norms*: Educational campaigns addressing stigmatising and discriminatory beliefs about specific groups or conditions (resource) can promote community compassion (response)	Increased bystander intervention rates
Community dimension: Joint action (*communities of purpose)*			
CMO12	*Behavioural beliefs*: Fear of legal liability and making mistakes can deter FA intervention	*Attitudes*: FA training on protective laws and Good Samaritan legislation (resource) can ease legal liability concerns by improving awareness (response)	Increased bystander intervention rates
CMO13	*Normative beliefs*: Discomfort with touching strangers or disinterest in helping others can hinder people from providing FA	*Subjective norms*: Group-based training (resource) can enhance ease of interacting with strangers and establish a sense of social responsibility (response)	