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EMCASH Emergency Care After Self Harm

UNIVERSITY OF LEEDS

EMERGENCY CARE FOR YOUNG PEOPLE AFTER SELF-HARM: A REALIST REVIEW PROTOCOL

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ABSTRACT

Introduction. In England, increasing numbers of young people seek help from emergency healthcare services, such as ambulances and emergency departments (EDs), after they self-harm. One contributing factor is a lack of meaningful and available community-based alternative sources of support for self-harm. It is not clear what helps young people in this context, how or why. This research aims to understand which resources are available in the emergency setting for young people (aged ≤25 years) who self-harm in England, and how and why they produce their intended and unintended effects.

Methods and analysis. Realist review is a theory-driven interpretive approach to evidence synthesis. It provides realist logic of inquiry to produce an explanatory analysis of how and why resources work, for whom, and in what circumstances. This review has two key components; one will identify resources available in England for young people who self-harm in the emergency setting, the other will identify initial programme theories from the international literature. The review will closely follow Pawson's five iterative stages: (1) Clarifying scope, (2) Evidence search, (3) Article selection, (4) Data extraction and organisation, and (5) Evidence synthesis. Published and grey literature will be reviewed and included. Three key stakeholder groups will be involved throughout the review process, namely two patient and public involvement (PPI) groups (one for young people, one for parents and carers) and an interdisciplinary group of healthcare professionals.

Ethics and dissemination. Ethical approval is not required for this review. Results will be reported according to RAMESES publication and quality standards. Findings will be disseminated via a peer-reviewed publication in a scientific journal, conference presentations, a study website, an animated video shared via social media, and other avenues identified by our PPI groups.

PROSPERO registration number: CRD42025638539.

Keywords: self-harm, young people, emergency care, realist review, evidence synthesis.

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STRENGTHS AND LIMITATIONS OF THIS STUDY

- This is the first realist review of emergency care for young people who self-harm; it will improve our understanding of which resources are available for young people in England immediately after they self-harm, and how and why different resources may work in different settings.
- Our review includes contributions from three key stakeholder groups, namely two separate patient and public involvement (PPI) groups (one for young people, one for caregivers of young people who self-harm), and an interdisciplinary advisory group of diverse healthcare professionals who work with young people in different settings.
- The inclusion of multiple stakeholder groups may create issues in reaching consensus and in configuring, consolidating and prioritising programme theories.
- Our review is exploratory and iterative in nature; it may be limited by publication bias and the richness and relevance of evidence available in the literature.
- Only articles written in the English language will be included, representing a limitation and source of language bias.

DEFINITION OF TERMS TABLE

Resource	Given this review's exploratory aim and its focus on the complicated and diverse landscape of mental health programmes, interventions and services, the term "**resource**" will be used to capture **anything (economic, material, emotional, social)** that might be offered to a young person after they self-harm.
Context	Greenhalgh and Manzano (2022) identify two distinct but overlapping conceptualisations of "context" in realist research[1], both referring to background features that interact with mechanisms to shape how and why an intervention works (or not): 1. Tangible, observable and static features or things (e.g., demographics, policy, geographical setting) that shape a mechanism 2. Relational, emergent and dynamic features or forces (e.g., interpersonal relationships, institutional settings, cultural norms) that shape a mechanism.
Mechanism	The underpinning generative force that leads to outcomes (both intended and unintended), usually divided into two constituent parts[2]: 1. The **resources** offered by an intervention (formal and informal) 2. How people **respond** to and **reason with** those resources
Outcome	The measurable impact (intended or unintended) at the behavioural, clinical or system level, based on context-mechanism interactions.

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Context-mechanism-outcome configuration (CMOC)	An analytical tool within the realist approach which aims to articulate what works, for whom, how and why, and in what circumstances. For example: *Young people present to hospital-based mental health crisis teams following a self-harm episode (**context**). If crisis team policy requires clinicians to follow-up every patient every two days (**mechanism resource**), then patients will gain the sense that they are not alone and that somebody cares about their wellbeing (**mechanism response**), leading to a reduction in self-harm ideation (**outcome**).*
Initial programme theory	A hypothetical statement, often in the form of "if…then", that is developed at the start of a realist synthesis or evaluation, to explain how a programme or programme component is thought to work (or not work). For example: ***If** a young person calls a crisis telephone line when they are experiencing self-harm ideation, and the call handler calmly encourages them to engage in mindfulness and breathing exercises, **then** they will feel supported, increasing the likelihood of the young person engaging in such exercises, leading to somatic relaxation and improved emotional processing.*
Rival theory	A hypothetical statement that shows how the same programme resources can lead to different (even opposite) responses and outcomes. For example: ***If** a young person calls a crisis telephone line when they are experiencing self-harm ideation, and the call handler calmly encourages them to engage in mindfulness and breathing exercises, **then** they will feel that the call handler is minimising the intensity and complexity of their feelings and not adapting their approach to the young person's specific needs, leading to a sense of not feeling listened to and subsequent frustration, increasing the likelihood of engaging in self-harm.*
Retroduction	A form of reasoning that moves between empirical observations and theoretical explanations to identify the underlying causal mechanisms and structures that generate observed patterns or regularities. It combines elements of both inductive and deductive reasoning but goes beyond them by seeking to explain what must be true for observed phenomena to occur.
RAMESES	Acronym for "Realist And Meta-narrative Evidence Synthesis: Evolving Standards", two NIHR-funded projects aiming to produce quality and publication standards and training materials for realist research approaches[3].

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BACKGROUND

Self-harm refers to any intentional self-injury or self-poisoning, regardless of intent[4], and it encompasses a broad spectrum of behaviours with diverse functions[5]. It is common in young people, with one quarter of 17-year-olds in the UK having self-harmed at least once in the previous 12 months[6]. Self-harm is a significant public health concern; it is the single best predictor of suicide[7], a key priority of the NHS Long Term Plan[8], and "everybody's business" according to NICE guidance[4].

Internationally, options for young people seeking emergency care following self-harm include emergency departments, specialist community mental health teams, school services, social care initiatives, charities and helplines[9]. In England, there is a growing focus on collaborative working between healthcare and other services, but this has not materialised in practice. Waiting lists for specialist child and adolescent mental health services (CAMHS) vary significantly across the country and sometimes exceed two years[10]. Some regions only provide specialist services within office hours[11].

Increasing numbers of young people are attending hospital emergency departments (EDs) after self-harm[12]. They report feeling let down by the healthcare system, only attending the ED because appropriate alternatives are lacking[13]. Assessment in hospital is not always necessary, and often the busy environment can have negative implications on the young person's mental state[14]. There are often long waits to be seen, and frontline staff such as ambulance[15] and ED[14] clinicians lack training and confidence in managing mental health presentations.

There is a paucity of evidence linking emergency interventions for young people who self-harm with outcomes. A recent Cochrane review of psychosocial interventions for young people who self-harm only identified low-quality evidence from 17 trials[16]. Nonetheless, there are national standards of care for young people experiencing acute mental health difficulties[17]; for example, care should be immediately available and community-based wherever possible. Recent national implementation guidance from NHS England also emphasises multi-agency working and hospital prevention as important guiding principles[18].

Despite the existence of national standards, it is still not clear what young people find helpful when seeking support immediately after they self-harm: a better understanding of this is important to inform evidence-based decision-making and therefore influence policy and commissioning. By summarising which resources exist, and how people respond to them, it may be possible to adapt existing services or develop new ones to improve outcomes for young people at regional and national levels. A realist approach is an appropriate methodological choice when exploring such information[19].

Realist reviews use theory to explore how contexts, such as societal norms and service infrastructure, interact with underlying mechanisms to produce outcomes, both intended and unintended[20]. They reveal important information about the effectiveness and mechanism of different resources, enabling service providers and clinicians to design and implement services or interventions comprising only

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effective components for particular people in particular contexts[21]. Medical Research Council guidance suggests that programme theories facilitate the inter-setting transferability of interventions and the production of evidence that is useful to decision-makers[22].

OBJECTIVES

The aim of this research is to understand **which** resources (anything that might be offered by a programme, intervention, service or individual) are available in the emergency setting for young people (aged ≤25 years) who self-harm in England, and **how** and **why** they produce their effects, both intended and unintended.

The research questions are as follows:

1. What efforts exist in the emergency setting across England to provide young people with a positive and helpful experience after they self-harm? (**mechanism resources + outcomes**)
2. How do these efforts and initiatives help young people? (**mechanism responses + outcomes**)
3. What are the barriers and enablers to providing emergency care for young people after they self-harm? (**context**)

METHODS AND ANALYSIS

Realist review using systematic methods comprising two components (mapping component and theory-building component), with distinct but overlapping search strategies. The protocol is registered on PROSPERO: CRD42025638539. The completed PRISMA-P checklist[23] can be found in Supplementary file 1.

Pilot searches have confirmed the originality and feasibility of this review. In the context of long waiting lists[10] for specialist children's mental health services, this review will be helpful in synthesising the evidence base to identify the principles of providing effective and timely care in the emergency setting for young people after they self-harm.

Realist review

A realist review is an interpretive, theory-driven approach[24] to evidence synthesis from multiple sources, such as published research, policy documents and grey literature[20]. The realist approach acknowledges that resources work in some contexts and not others, and for some people but not others. It applies realist logic of inquiry to produce an explanatory analysis of what a resource is, how it works, for whom and in what circumstances[25]. Realist reviews are typically used to understand complex interventions[24], comprising multiple components and outcomes and long pathways to the desired outcome(s)[26].

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Realist reviews are retroductive, focusing on identifying underlying causal mechanisms, with causation being represented as context+mechanism=outcome[27]. **Context** refers to "background" features that interact with mechanisms to shape how and why interventions work (or not); they can be tangible and static features (e.g., demographics, policy, geographical setting) or relational and dynamic features (e.g., interpersonal relationships, cultural norms)[1]. The realist approach recognises micro (individual), meso (organisational) and macro (systemic) contexts[28]. **Mechanisms** refer to causal forces that are activated in particular contexts to bring about outcomes. They explain how and why observed outcomes occur and usually comprise two parts, the "resources" offered by an intervention, and the cognitive, emotional and/or behavioural "reaction" or "response" to the resource[2]. **Outcomes** are the intended or unintended effects of the intervention, which are generated by the interaction between context and mechanism[26].

One of the central processes in a realist review is the development of **programme theories**, referring to hypotheses for what a programme comprises and how it is expected to work[26]. Programme theories are particularly useful for complex and varied programmes, interventions and services which are context-sensitive[22], such as is the case in mental healthcare. They are conventionally presented as context-mechanism-outcome configurations (CMOCs), an analytical tool intended to gain generative causal understanding of the most important resources on offer[29].

Stakeholder engagement throughout the realist review process is encouraged to promote the inclusion of multiple perspectives[27]. Three stakeholder groups will be actively engaged in the review process: one interdisciplinary group of healthcare professionals working clinically with young people who self-harm, and two patient and public involvement (PPI) groups, one for young people and one for parents and carers of young people who self-harm. Stakeholder groups will help to identify and refine initial programme theories through discussions via emails and workshops (remote or in-person, according to individual preferences).

At present, there is little understanding of how and why different resources lead to particular outcomes for young people who self-harm. The realist review will not provide a summative judgement on whether particular resources are "good" or "bad", but will instead explain how and why they work, in what contexts, for whom and to what extent.

Reporting standards for realist syntheses exist, although specific methods for conducting them vary[30]. Pawson and colleagues outline 5 stages of realist synthesis[20] which will be followed in this review. The review design and methods are explained in detail below.

1. Clarifying scope

As a first step, we will carry out exploratory, informal searches of the published and grey literature to identify initial programme theories and a draft programme architecture. The exploratory searching of Step 1 differs from the formal data searches outlined in Step 2, in that it aims to sample the literature to quickly identify the diversity of possible theories and resources. Relevance will be prioritised over methodological rigour.

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These searches will be supplemented by consulting with key stakeholder groups and topic experts. This will be achieved through a combination of stakeholder meetings and e-mail exchanges. Formal ethical approval will not be required but informed participation will be sought.

For this review, the term "resource" will be used to refer to anything (economical, material, emotional, social) that might be offered to a young person in England immediately after they self-harm. Sources of these resources are likely to include:

- NHS telephone lines (111, mental health crisis lines)
- NHS walk-in centres and urgent care centres
- Ambulances
- Emergency departments (EDs)
- Specialist mental health services (CAMHS, adult crisis services)
- Non-NHS text-based services
- Non-NHS telephone lines (e.g., Samaritans)
- Education-based support (school, University)
- Non-NHS community-based support (charities, crisis cafes, safe spaces)
- Emergency social care interventions

Building a set of initial programme theories will require iterative discussions within the team and with key stakeholder groups and topic experts.

2. Search strategies

Two distinct but overlapping search strategies will be conducted and continually refined, in line with the realist approach[31]:

- **Strategy 1** will identify initial programme theories from the international literature (both published and grey). Suitable literature will include qualitative research, service reports, think pieces and theory-driven literature.
- **Strategy 2** will identify resources available in the emergency setting to young people who self-harm in England. It will identify routinely offered services and interventions, as well as examples of current best practice, pilots, and other relevant initiatives. There will be a focus on the interface between NHS services and community-based psychosocial interventions.

We will search the following electronic databases from 2004 (coinciding with the publication of the first NICE Guideline, CG16, on the management of self-harm in over 8s[32]) to 2 December 2024: MEDLINE, PsycINFO, EMBASE, HMIC, CINAHL, Science and Social Sciences Citation Index and The Cochrane Library. Search strategies were co-developed with a senior information specialist (JW) and translated across databases using Polyglot[33]. See supplementary files 2 and 3 for theory-building and mapping search strategies for MEDLINE.

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Targeted grey literature searches (ProQuest Dissertations and Theses, Google Scholar) will identify other relevant literature, such as opinion pieces, books, guidelines, policies, editorials and dissertations. In addition, the following methods will be used to identify relevant evidence from diverse sources for inclusion in the review:

- A Google Scholar search will be conducted to ensure that key results are not missed. After ranking by relevance, the top 100 results will be screened. This will be facilitated by Publish Or Perish[34].
- Reference lists from relevant primary studies and systematic reviews will be checked (snowballing).
- Citation searches, for example, using the "Cited by" option on Google Scholar, and/or Publish Or Perish[34] (lateral searching).
- Input will be sought from the review team and stakeholder advisory groups to uncover other relevant publications, guidelines and policies.

Specific website searches will also be conducted; these have been selected based on input from key stakeholder groups, topic experts and relevant service providers:

- https://www.mentalhealth.org.uk/
- https://www.rcpch.ac.uk/
- https://www.rcpsych.ac.uk/
- https://rcem.ac.uk/
- https://www.rcgp.org.uk/
- https://www.rcn.org.uk/
- https://collegeofparamedics.co.uk/
- https://www.nhs.uk/
- https://www.youngminds.org.uk/
- https://www.samaritans.org/
- https://www.mind.org.uk/
- https://nspa.org.uk/
- https://www.barnardos.org.uk/
- https://www.papyrus-uk.org/
- https://www.selfharm.co.uk/
- https://www.selfinjurysupport.org.uk/
- https://sossilenceofsuicide.org/
- https://www.nspcc.org.uk/
- https://www.place2be.org.uk/
- https://www.mindwell-leeds.org.uk/
- https://sites.manchester.ac.uk/mash-project/support-for-improving-community-based-care-for-self-harm/
- https://www.gov.uk/
- https://committees.parliament.uk/publications/
- https://www.yas.nhs.uk/

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- https://www.samaritans.org/
- https://www.bacp.co.uk/

The realist approach to evidence searching is iterative[31], focusing on identifying relevant programme theories and testing them against empirical data. It is acknowledged that realist search strategies aim to uncover fragmented data; search strategies will therefore be iteratively extended and refocused as the review progresses. This may involve purposive sampling and snowballing to confirm, refine or refute the theories as new evidence emerges.

All retrieved records will be imported into EndNote[35] for organisation and de-duplication, before transferring to Rayyan[36] to facilitate title and abstract screening.

Titles and abstracts, where available, will be screened to assess eligibility for full-text inclusion. Eligibility criteria for the main search will be broad to ensure identification of qualitative, quantitative and mixed methods studies. Table 1 summarises the inclusion and exclusion criteria we have developed to focus the review, although these may be refined and updated as programme theories are developed. Given the anticipated high volume of relevant literature, additional criteria may be added in line with stakeholder group feedback.

	Strategy 1 (theory-building)	**Strategy 2 (mapping)**
Inclusion criteria		
Population (P)	Young people (aged ≤25 years) who self-harm and/or any of their caregivers (e.g., family, friends, partners etc) Any professional who provides support to young people after they self-harm (e.g., doctors, nurses, paramedics, social workers, support workers, volunteers, etc.)	Young people (aged ≤25 years) who self-harm
Intervention (I)	Any programme, service, intervention or initiative, including routinely offered services, examples of best practice and pilots	Any programme, service, intervention or initiative, including routinely offered services, examples of best practice and pilots
Comparator (C)	None	None
Outcome (O)	Outcomes of interest will depend on the intervention but could include any measurable impact (intended or unintended) on young people, their caregivers, healthcare professionals and/or healthcare services	None

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Healthcare context (H)	Any urgent or emergency setting, or anything between act of self-harm and access to support	Any urgent or emergency setting, or anything between act of self-harm and access to support
Design	No restriction	No restriction
Location	Worldwide (but only in English)	England only
Exclusion criteria		
	Non-English papers	Self-management strategies (e.g., mobile phone apps)

Table 1. Review inclusion and exclusion criteria.

All citations will be reviewed by DR to determine if they match the eligibility criteria. For Strategy 1, a random sample of 10% of all citations will be reviewed independently by FA to ensure consistency around the application of the eligibility criteria. However, in cases of uncertainty, discussion with a third reviewer (CB) will be used to prevent premature exclusion of potentially pivotal papers. For Strategy 2, all citations will be independently screened by FA, given the objectivity of anticipated findings. Disagreements will be resolved through discussion with a third reviewer (CB) to ensure consistency in paper inclusion.

3. Selecting articles

In line with the realist approach, quality assessments of the full-text articles will be completed according to three criteria: relevance, richness and rigour[37]. Documents will be selected for coding based on their relevance to contributing to an understanding of which resources are available in the emergency setting for young people who self-harm in England, and how and why they produce their effects (both intended and unintended).

Having completed the eligibility screening, DR will screen the full texts of all articles retrieved by the formal searches for relevance and richness. Criteria from the published literature[21] will be adapted and used to rank the relevance and conceptual richness of studies to help with the study selection process. A random sample of 10% of documents selected will be independently assessed for relevance by FA to ensure that screening and selection decisions are made consistently. Any disagreements will be resolved through discussion with a third reviewer (CB).

Table 2 summarises the ranking criteria for relevance that will allow the review team to distinguish between conceptually rich and weaker evidence to achieve the review's aims. This is likely to be developed iteratively throughout the review process.

High relevance	• Relates to young people who self-harm and describes the implementation of programmes, services, interventions and/or initiatives, or describes the

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	provision of resources in the emergency setting • Describes the perspectives and factors affecting the decision-making of young people seeking emergency care for self-harm and/or their caregivers • Relates to supporting young people who self-harm and includes descriptions of professional views and experiences of providing support • Related to managers and/or commissioners of programmes, services, interventions and/or initiatives involving the provision of resources to young people who self-harm • Describes training of practitioners who provide care to young people who have self-harmed in the emergency setting
Moderate relevance	• Relates to young people who self-harm and describes their experiences of interacting with resources provided in the emergency setting • Describes experiences of young people who self-harm and/or caregivers who have chosen not to seek help or support immediately after an act of self-harm • Describes young people's support needs after self-harm
Low relevance	• Quantitative data on programmes, services, interventions and/or initiatives for young people who self-harm in the emergency settings • Describes implementation and/or delivery of programmes, services, interventions and/or initiatives for young people who self-harm at other stages of their journey (i.e., not the emergency setting)
No relevance	Does not meet any of the above criteria

Table 2. Criteria to rank likely relevance of study to theory identification and development.

Rigour will be assessed with reference to credibility and trustworthiness, as outlined by RAMESES standards[26]. Central to the realist approach is that a conventional "hierarchy of evidence" is not applicable, as valuable causal insights for programme theory development can arise from seemingly poor quality studies[38]. We will therefore consider evidence of lesser quality if relevant for identifying and developing programme theories and/or resources on offer to young people in England after they have self-harmed. A realist synthesis appraisal form will be developed on Google Forms by adapting an existing template[39] and this will be completed for each article. Specific design limitations will be documented where identified and caveats will be included in the narrative results.

Depending on the number of papers included, further refinement of the review scope may be decided by the review team. Any decisions regarding additional searches will depend on whether they are anticipated to contribute to the review's aims.

4. Extracting and organising data

Once article selection has been finalised and the core dataset established, DR will re-read the full texts of the included articles in reverse chronological order and carry out initial categorical coding. During this familiarisation stage, an analytical journal will be completed in parallel, outlining potential contexts, mechanisms, outcomes and configurations, as well as reflections on the "big picture" that emerge

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through the dataset. Bespoke Excel data extraction forms will be developed for both searches, based on examples in the literature[40].

The theory-building data extraction tool (theory-building component) will include sections for study design, sample, resources and potential contexts (C), mechanisms (M) and outcomes (O) to aid interpretation and facilitate the identification of programme theories. As per the realist approach, data will focus on author explanations and discussions about how a particular resource was thought to work (or not). Individual papers may include segments that contribute to different parts of a programme theory. DR will then re-read the dataset, extract relevant data segments and collate them into the corresponding sections of the theory-building data extraction tool. A random sample of 10% of documents selected will be independently reviewed and data extraction by FA to ensure consistency. DR will continue to complete the analytical journal throughout to enable contemporaneous documentation of how data has contributed to theory-building.

The mapping component data extraction tool will summarise key study information including: study aims, design and methods, study participants, setting, and staff. Given the objectivity of the anticipated findings, all citations will be independently screened by FA. Particular attention will be paid to gaps in resource provision and the consistency of funding and resource provision across the country. Resources identified will be broadly divided into healthcare, school-based, University-based, social care and third sector organisations, although this will be determined and refined through exploration of the data.

5. Data synthesis

Electronic versions of all articles will be uploaded to NVivo 15[41] for further analysis. The data within the data extraction forms will be re-read, and where appropriate, re-coded and -classified. Coding will be continually refined in NVivo and relationships (a NVivo function) will be used to create links between contexts, mechanisms and outcomes where possible across the dataset[42,43]. A combination of an inductive (codes emerging from the literature) and deductive (codes created in advance informed by programme theories, stakeholder discussions and exploratory literature searching) approach will be used. The reflective journal will continue to be completed in parallel. A retroductive logic of analysis will be used to analyse and synthesise the data throughout.

Having identified potential contexts, mechanisms, outcomes and CMOCs, analysis will continue iteratively using the realist inquiry of explanatory logic. Starting from relevant outcomes, we will seek to interpret and explain how different stakeholders respond to resources offered to a young person following self-harm and to identify the specific contexts or circumstances when relevant mechanisms are likely to be triggered. This analysis will be repeated throughout the review to enable the construction of CMOCs to explain how and why different resources offered in the emergency setting help young people after they self-harm (or not), and in what circumstances.

Data synthesis will involve reflection and discussion among the review team. We will question the integrity of each programme theory by examining whether it is supported by empirical evidence,

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adjudicate between competing theories, consider the same programme theory in different contexts and compare the programme theories to practical experiences of service users and providers[44].

Identified initial programme theories will be presented to the three stakeholder advisory groups. These key informants will facilitate programme theory prioritisation for refinement and testing in future WPs, based on an a priori criterion of 70% stakeholder agreement[45]. Advisory group discussions, outcomes and justifications will be captured as field notes.

The final output of this review will be a detailed summary of the nature and diversity of resources available in the emergency setting to young people in England after they self-harm, and a final realist programme theory, outlining how and why these resources produce their effects. Findings will be summarised through narrative synthesis, using text, summary tables, a logic model, and where appropriate, graphics to summarise individual papers and draw insights across papers. We acknowledge that this may represent partial knowledge due to the necessary prioritisation of programme theories and information sources limiting the ground that can be covered by a single review[20].

Patient and Public Involvement

Members of the public were involved in the development of this protocol. Two separate patient and public involvement (PPI) groups have reviewed this protocol and contributed to the grey literature search strategy. Both PPI groups will help to identify and refine initial programme theories through discussions via emails and/or workshops (remote or in-person, according to their preferences).

ETHICS AND DISSEMINATION

This review does not require ethical approval as no primary data will be collected or analysed.

Results will be reported according to the Realist And Meta-narrative Evidence Synthesis: Evolving Standards (RAMESES) quality and publication standards[3]. Findings will be presented in a way that offers contextual advice rather than general conclusions. This allows policymakers to adapt resources to specific contexts, providing practical insights instead of “one size fits all” recommendations.

We will disseminate findings via a peer-reviewed article in a suitable academic journal, conference presentations, a report to the funder (National Institute for Health and Care Research, NIHR), a study website (in development), animated videos via social media, and any other avenues identified by our PPI groups. Existing contacts with Integrated Care Boards (ICBs), NHS England and clinical networks represent avenues for broader dissemination.

This review is being undertaken as part of the wider EmCASH (Emergency Care After Self-Harm) study, a mixed-methods realist synthesis and evaluation of emergency care for young people who self-harm in England. Findings will be used to inform the next stages of the project and have the potential to

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benefit multiple stakeholders involved in developing, implementing and evaluating sources of emergency care for young people who self-harm.

AUTHORS CONTRIBUTIONS

DR conceptualised the review and acquired funding with supervision from CB, DC and EG. DR and JW developed the search strategies. AB has contributed to the design and methodology of the review process. DR wrote the first draft of the manuscript and is guarantor. FA, CB, JW, AB, DC and EG reviewed the manuscript and provided feedback. All authors have read and approved the final manuscript.

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COMPETING INTERESTS

None declared.

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Supplementary file 2. Theory-building search strategy for MEDLINE.

Ovid MEDLINE(R) ALL <1946 to January 14, 2025>

1 Self-Injurious Behavior/ 10817
2 suicide/ or suicide, attempted/ or Suicide, Completed/ 61900
3 Drug Overdose/ 15535
4 Self Mutilation/ 3257
5 (selfharm* or selfinjur* or selfinflict*).tw,kf. 98
6 ((self or themsel* or onesel*) adj2 (aggress* or harm* or cutt* or immolat* or inflict* or injur* or mutilat* or poison* or damag* or destruct*)).tw,kf. 29883
7 (automutilat* or "auto mutilat*" or auto-mutilat*).tw,kf. 147
8 (autoaggress* or "auto aggress*" or auto-aggress).tw,kf. 1079
9 suicidality.tw,kf. 10422
10 (suicid* adj2 (death or die* or morality or complete)).tw,kf. 5138
11 (suicid* adj2 (attempt* or behavio* or intent* or intend* or commit*)).tw,kf. 36938
12 (parasuicid* or para-suicid*).tw,kf. 687
13 (poison adj2 (deliberat* or intentional or intended)).tw,kf. 19
14 (overdos* adj2 (deliberat* or intentional or intended)).tw,kf. 712
15 NSSI.tw,kf. 2303
16 or/1-15 [self harm] 119551
17 exp Community Health Services/ 341812
18 Crisis Intervention/ 6412
19 emergency medical services/ or call centers/ or emergency medical dispatch/ or emergency medical service communication systems/ or exp emergency service, hospital/ or emergency services, psychiatric/ or hotlines/ or poison control centers/ or exp "transportation of patients"/ 171576
20 exp emergency responders/ or paramedics/ 16628
21 ((phone* or call* or telephone* or "hot line*") adj5 service*).tw,kf. 6679
22 ("nhs 111" or helpline* or help-line*).tw,kf. 1501
23 (pre-hospital or prehospital).tw,kf. 23743
24 (ambulance* or paramedic*).tw,kf. 23538
25 (crisis adj5 (intervention* or service* or centre* or center* or cafe*)).tw,kf. 4731
26 (emergency adj5 (intervention* or service* or centre* or center* or department*)).tw,kf. 175707
27 "accident and emergency".tw,kf. 5293
28 (Emergency adj5 (technician? or assistant?)).tw,kf. 1963
29 or/17-28 [Emergency pre hospital setting] 640998
30 samaritans.tw. 150
31 touchstone.tw. 263
32 "battle scars".tw. 9

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33	sane.tw.	1123
34	selfharmUK.tw.	0
35	"rethink mental illness".tw.	1
36	papyrus.tw.	423
37	calm.tw.	5010
38	"recover your life".tw.	0
39	"mental health matters".tw.	58
40	"self injury support network".tw.	0
41	or/30-40 [Self harm organisations]	7035
42	29 or 41 [NHS and other mental health service providers]	647618
43	triage/	15908
44	Critical Pathways/	8221
45	exp Decision Making/	245050
46	pathway*.tw,kf.	1610187
47	(help adj1 seek*).tw,kf.	14238
48	exp "Delivery of Health Care"/	1350526
49	"Health Services Needs and Demand"/	55961
50	(demand* adj2 manage*).tw,kf.	1605
51	((service or delivery) adj2 model*).tw,kf.	10748
52	(service? adj3 ("use" or used or utili#ation or utili#ed or utili#ing or access* or engage*)).tw,kf.	79648
53	health-care service*.tw,kf.	20972
54	health* service*.tw,kf.	187726
55	attend*.tw,kf.	241890
56	(present* adj3 (selfharm* or self-harm* or suicid*)).tw,kf.	2358
57	or/43-56 [Choosing or Accessing Services]	3488579
58	(policy or policies or guideline* or recommendation* or position).ti.	276177
59	guideline/ or practice guideline/	39978
60	policy/ or public policy/ or exp health policy/	178490
61	(theor* or concep* or logic).ti.	257021
62	((theor* or concep* or logic) adj (framework* or model* or analy* or evaluat*)).ab.	109276
63	or/58-62 [Policy, Guideline or overt Theory]	773803
64	Comment/	1046598
65	Letter/	1284762
66	Editorial/	717997
67	news/ or newspaper article/	245899
68	"Comment on".ti.	38864
69	(letter* adj3 editor*).ti.	30813
70	opinion*.ti.	19573
71	(view or views).ti.	66312
72	or/64-71 [Discussion papers Hidden Theory]	2626202
73	63 or 72 [Theory Search]	3324702

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74 (Literature review* or (systematic adj2 review*) or (narrative adj2 review*) or (critical adj2 review*) or scoping review* or synthesis or meta-analys* or ((realist adj2 review*) or meta-ethnograph*)).ti. 878833
75 ("review of reviews" or ((overview* or umbrella) adj5 review*)).ti. 4380
76 ("Search filter*" or "search strateg*" or "literature search*").ab. 112786
77 meta-analysis/ or "systematic review"/ 372619
78 or/74-77 [Systematic review search] 1000677
79 73 or 78 [Theory or Systematic review search] 4280597
80 16 and 42 and 57 and 79 [Theories or systematic reviews around access, choice or demand for health services and providers for self-harm] 364
81 limit 80 to yr="2004 -Current" 309

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Supplementary file 3. Mapping search strategy for MEDLINE.

Ovid MEDLINE(R) ALL <1946 to January 14, 2025>

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4 Self Mutilation/ 3257
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6 ((self or themsel* or onesel*) adj2 (aggress* or harm* or cutt* or immolat* or inflict* or injur* or mutilat* or poison* or damag* or destruct*)).tw,kf. 29883
7 (automutilat* or "auto mutilat*" or auto-mutilat*).tw,kf. 147
8 (autoaggress* or "auto aggress*" or auto-aggress).tw,kf. 1079
9 suicidality.tw,kf. 10422
10 (suicid* adj2 (death or die* or morality or complete)).tw,kf. 5138
11 (suicid* adj2 (attempt* or behavio* or intent* or intend* or commit*)).tw,kf. 36938
12 (parasuicid* or para-suicid*).tw,kf. 687
13 (poison adj2 (deliberat* or intentional or intended)).tw,kf. 19
14 (overdos* adj2 (deliberat* or intentional or intended)).tw,kf. 712
15 NSSI.tw,kf. 2303
16 or/1-15 [self harm] 119551
17 exp Community Health Services/ 341812
18 Crisis Intervention/ 6412
19 emergency medical services/ or call centers/ or emergency medical dispatch/ or emergency medical service communication systems/ or exp emergency service, hospital/ or emergency services, psychiatric/ or hotlines/ or poison control centers/ or exp "transportation of patients"/ 171576
20 exp emergency responders/ or paramedics/ 16628
21 ((phone* or call* or telephone* or "hot line*") adj5 service*).tw,kf. 6679
22 ("nhs 111" or helpline* or help-line*).tw,kf. 1501
23 (pre-hospital or prehospital).tw,kf. 23743
24 (ambulance* or paramedic*).tw,kf. 23538
25 (crisis adj5 (intervention* or service* or centre* or center* or cafe*)).tw,kf. 4731
26 (emergency adj5 (intervention* or service* or centre* or center* or department*)).tw,kf. 175707
27 "accident and emergency".tw,kf. 5293
28 (Emergency adj5 (technician? or assistant?)).tw,kf. 1963
29 or/17-28 [Emergency pre hospital setting] 640998
30 samaritans.tw. 150
31 touchstone.tw. 263
32 "battle scars".tw. 9

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33 sane.tw. 1123
34 selfharmUK.tw. 0
35 "rethink mental illness".tw. 1
36 papyrus.tw. 423
37 calm.tw. 5010
38 "recover your life".tw. 0
39 "mental health matters".tw. 58
40 "self injury support network".tw. 0
41 or/30-40 [Self harm organisations] 7035
42 29 or 41 [NHS and other mental health service providers] 647618
43 triage/ 15908
44 Critical Pathways/ 8221
45 exp Decision Making/ 245050
46 pathway*.tw,kf. 1610187
47 (help adj1 seek*).tw,kf. 14238
48 exp "Delivery of Health Care"/ 1350526
49 "Health Services Needs and Demand"/ 55961
50 (demand* adj2 manage*).tw,kf. 1605
51 ((service or delivery) adj2 model*).tw,kf. 10748
52 (service? adj3 ("use" or used or utili#ation or utili#ed or utili#ing or access* or engage*)).tw,kf. 79648
53 health-care service*.tw,kf. 20972
54 health* service*.tw,kf. 187726
55 attend*.tw,kf. 241890
56 (present* adj3 (selfharm* or self-harm* or suicid*)).tw,kf. 2358
57 or/43-56 [Choosing or Accessing Services] 3488579
58 exp United Kingdom/ 401844
59 (national health service* or nhs*).ti,ab,in. 306886
60 (english not ((published or publication* or translat* or written or language* or speak* or literature or citation*) adj5 english)).ti,ab. 138546
61 (gb or "g.b." or britain* or (british* not "british columbia") or uk or "u.k." or united kingdom* or (england* not "new england") or northern ireland* or northern irish* or scotland* or scottish* or ((wales or "south wales") not "new south wales") or welsh*).ti,ab,jw,in. 2632240
62 (bath or "bath's" or ((birmingham not alabama*) or ("birmingham's" not alabama*) or bradford or "bradford's" or brighton or "brighton's" or bristol or "bristol's" or carlisle* or "carlisle's" or (cambridge not (massachusetts* or boston* or harvard*)) or ("cambridge's" not (massachusetts* or boston* or harvard*)) or (canterbury not zealand*) or ("canterbury's" not zealand*) or chelmsford or "chelmsford's" or chester or "chester's" or chichester or "chichester's" or coventry or "coventry's" or derby or "derby's" or (durham not (carolina* or nc)) or ("durham's" not (carolina* or nc)) or ely or "ely's" or exeter or "exeter's" or gloucester or "gloucester's" or hereford or "hereford's" or hull or "hull's" or lancaster or "lancaster's" or leeds* or leicester or "leicester's" or (lincoln not nebraska*) or ("lincoln's" not nebraska*) or (liverpool not (new south wales* or nsw)) or ("liverpool's" not (new south wales* or nsw)) or ((london not (ontario* or ont or toronto*)) or ("london's" not (ontario* or ont or toronto*)) or manchester or

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"manchester's" or (newcastle not (new south wales* or nsw)) or ("newcastle's" not (new south wales* or nsw)) or norwich or "norwich's" or nottingham or "nottingham's" or oxford or "oxford's" or peterborough or "peterborough's" or plymouth or "plymouth's" or portsmouth or "portsmouth's" or preston or "preston's" or ripon or "ripon's" or salford or "salford's" or salisbury or "salisbury's" or sheffield or "sheffield's" or southampton or "southampton's" or st albans or stoke or "stoke's" or sunderland or "sunderland's" or truro or "truro's" or wakefield or "wakefield's" or wells or westminster or "westminster's" or winchester or "winchester's" or wolverhampton or "wolverhampton's" or (worcester not (massachusetts* or boston* or harvard*)) or ("worcester's" not (massachusetts* or boston* or harvard*)) or (york not ("new york*" or ny or ontario* or ont or toronto*)) or ("york's" not ("new york*" or ny or ontario* or ont or toronto*))))).ti,ab,in. 1909850

63 (bangor or "bangor's" or cardiff or "cardiff's" or newport or "newport's" or st asaph or "st asaph's" or st davids or swansea or "swansea's").ti,ab,in. 77514

64 (aberdeen or "aberdeen's" or dundee or "dundee's" or edinburgh or "edinburgh's" or glasgow or "glasgow's" or inverness or (perth not australia*) or ("perth's" not australia*) or stirling or "stirling's").ti,ab,in. 280945

65 (armagh or "armagh's" or belfast or "belfast's" or lisburn or "lisburn's" or londonderry or "londonderry's" or derry or "derry's" or newry or "newry's").ti,ab,in. 37626

66 or/58-65 3377715

67 (exp africa/ or exp americas/ or exp antarctic regions/ or exp arctic regions/ or exp asia/ or exp australia/ or exp oceania/) not (exp great britain/ or europe/) 3521364

68 66 not 67 [NICE UK Search Filter] 3164655

69 16 and 42 and 57 and 68 656

70 limit 69 to yr="2004 -Current" 517

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BMJ Open

Emergency care for young people after self-harm: a realist review protocol

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Manuscript ID	bmjopen-2025-099554.R1
Article Type:	Protocol
Date Submitted by the Author:	26-Feb-2025
Complete List of Authors:	Romeu, Daniel; University of Leeds Ambler, Faye; University of Leeds Brennan, Cathy; University of Leeds Wright, Judy; University of Leeds Booth, Andrew; The University of Sheffield Cottrell, David; University of Leeds Guthrie, Elspeth; University of Leeds
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Secondary Subject Heading:	Emergency medicine, Evidence based practice, Health services research, Paediatrics
Keywords:	Suicide & self-harm < PSYCHIATRY, Child & adolescent psychiatry < PSYCHIATRY, ACCIDENT & EMERGENCY MEDICINE, Paediatric A&E and ambulatory care < PAEDIATRICS, Community child health < PAEDIATRICS, Review

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EMERGENCY CARE FOR YOUNG PEOPLE AFTER SELF-HARM: A REALIST REVIEW PROTOCOL

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ABSTRACT

Introduction. In England, increasing numbers of young people seek help from emergency healthcare services, such as ambulances and emergency departments (EDs), after they self-harm. One contributing factor is a lack of meaningful and available community-based alternative sources of support for self-harm. It is not clear what helps young people in this context, how or why. This research aims to understand which resources are available in the emergency setting for young people (aged ≤25 years) who self-harm in England, and how and why they produce their intended and unintended effects.

Methods and analysis. Realist review is a theory-driven interpretive approach to evidence synthesis. It provides realist logic of inquiry to produce an explanatory analysis of how and why resources work, for whom, and in what circumstances. This review has two key components; one will identify resources available in England for young people who self-harm in the emergency setting, the other will identify initial programme theories from the international literature. The review will closely follow Pawson's five iterative stages: (1) Clarifying scope, (2) Evidence search, (3) Article selection, (4) Data extraction and organisation, and (5) Evidence synthesis. Published and grey literature will be reviewed and included. Three key stakeholder groups will be involved throughout the review process, namely two patient and public involvement (PPI) groups (one for young people, one for parents and carers) and an interdisciplinary group of healthcare professionals.

Ethics and dissemination. Ethical approval is not required for this review. Results will be reported according to RAMESES publication and quality standards. Findings will be disseminated via a peer-reviewed publication in a scientific journal, conference presentations, a study website, an animated video shared via social media, and other avenues identified by our PPI groups.

PROSPERO registration number: CRD42025638539.

Keywords: self-harm, young people, emergency care, realist review, evidence synthesis.

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STRENGTHS AND LIMITATIONS OF THIS STUDY

- A comprehensive search strategy has been developed with a senior information specialist to capture the most relevant literature; this includes systematic searches of electronic databases and grey literature sources, and strategies such as citation searching and snowballing.
- Our review includes contributions from three key stakeholder groups, namely two separate patient and public involvement (PPI) groups (one for young people, one for caregivers of young people who self-harm), and an interdisciplinary advisory group of diverse healthcare professionals who work with young people in different settings.
- The inclusion of multiple stakeholder groups may create issues in reaching consensus and in configuring, consolidating and prioritising programme theories.
- Our review is exploratory and iterative in nature; it may be limited by publication bias and the richness and relevance of evidence available in the literature.
- Only articles written in the English language will be included, representing a limitation and source of language bias.

DEFINITION OF TERMS TABLE

Resource	Given this review's exploratory aim and its focus on the complicated and diverse landscape of mental health programmes, interventions and services, the term "**resource**" will be used to capture **anything (economic, material, emotional, social)** that might be offered to a young person after they self-harm.
Context	Greenhalgh and Manzano (2022) identify two distinct but overlapping conceptualisations of "context" in realist research[1], both referring to background features that interact with mechanisms to shape how and why an intervention works (or not): 1. Tangible, observable and static features or things (e.g., demographics, policy, geographical setting) that shape a mechanism 2. Relational, emergent and dynamic features or forces (e.g., interpersonal relationships, institutional settings, cultural norms) that shape a mechanism.
Mechanism	The underpinning generative force that leads to outcomes (both intended and unintended), usually divided into two constituent parts[2]: 1. The **resources** offered by an intervention (formal and informal) 2. How people **respond** to and **reason with** those resources
Outcome	The measurable impact (intended or unintended) at the behavioural, clinical or system level, based on context-mechanism interactions.

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Context-mechanism-outcome configuration (CMOC)	An analytical tool within the realist approach which aims to articulate what works, for whom, how and why, and in what circumstances. For example: *Young people present to hospital-based mental health crisis teams following a self-harm episode (**context**). If crisis team policy requires clinicians to follow-up every patient every two days (**mechanism resource**), then patients will gain the sense that they are not alone and that somebody cares about their wellbeing (**mechanism response**), leading to a reduction in self-harm ideation (**outcome**).*
Initial programme theory	A hypothetical statement, often in the form of "if…then", that is developed at the start of a realist synthesis or evaluation, to explain how a programme or programme component is thought to work (or not work). For example: ***If** a young person calls a crisis telephone line when they are experiencing self-harm ideation, and the call handler calmly encourages them to engage in mindfulness and breathing exercises, **then** they will feel supported, increasing the likelihood of the young person engaging in such exercises, leading to somatic relaxation and improved emotional processing.*
Rival theory	A hypothetical statement that shows how the same programme resources can lead to different (even opposite) responses and outcomes. For example: ***If** a young person calls a crisis telephone line when they are experiencing self-harm ideation, and the call handler calmly encourages them to engage in mindfulness and breathing exercises, **then** they will feel that the call handler is minimising the intensity and complexity of their feelings and not adapting their approach to the young person's specific needs, leading to a sense of not feeling listened to and subsequent frustration, increasing the likelihood of engaging in self-harm.*
Retroduction	A form of reasoning that moves between empirical observations and theoretical explanations to identify the underlying causal mechanisms and structures that generate observed patterns or regularities. It combines elements of both inductive and deductive reasoning but goes beyond them by seeking to explain what must be true for observed phenomena to occur.
RAMESES	Acronym for "Realist And Meta-narrative Evidence Synthesis: Evolving Standards", two NIHR-funded projects aiming to produce quality and publication standards and training materials for realist research approaches[3].

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BACKGROUND

Self-harm refers to any intentional self-injury or self-poisoning, regardless of intent[4], and it encompasses a broad spectrum of behaviours with diverse functions[5]. It is common in young people, with one quarter of 17-year-olds in the UK having self-harmed at least once in the previous 12 months[6]. Self-harm is a significant public health concern; it is the single best predictor of suicide[7], a key priority of the NHS Long Term Plan[8], and "everybody's business" according to NICE guidance[4].

Internationally, options for young people seeking emergency care following self-harm include emergency departments, specialist community mental health teams, school services, social care initiatives, charities and helplines[9]. In England, there is a growing focus on collaborative working between healthcare and other services, but this has not materialised in practice. Waiting lists for specialist child and adolescent mental health services (CAMHS) vary significantly across the country and sometimes exceed two years[10]. Some regions only provide specialist services within office hours[11].

Increasing numbers of young people are attending hospital emergency departments (EDs) after self-harm[12]. They report feeling let down by the healthcare system, only attending the ED because appropriate alternatives are lacking[13]. Assessment in hospital is not always necessary, and often the busy environment can have negative implications on the young person's mental state[14]. There are often long waits to be seen, and frontline staff such as ambulance[15] and ED[14] clinicians lack training and confidence in managing mental health presentations.

There is a paucity of evidence linking emergency interventions for young people who self-harm with outcomes. A recent Cochrane review of psychosocial interventions for young people who self-harm only identified low-quality evidence from 17 trials[16]. Nonetheless, there are national standards of care for young people experiencing acute mental health difficulties[17]; for example, care should be immediately available and community-based wherever possible. Recent national implementation guidance from NHS England also emphasises multi-agency working and hospital prevention as important guiding principles[18].

Despite the existence of national standards, it is still not clear what young people find helpful when seeking support immediately after they self-harm: a better understanding of this is important to inform evidence-based decision-making and therefore influence policy and commissioning. By summarising which resources exist, and how people respond to them, it may be possible to adapt existing services or develop new ones to improve outcomes for young people at regional and national levels. A realist approach is an appropriate methodological choice when exploring such information[19].

Realist reviews use theory to explore how contexts, such as societal norms and service infrastructure, interact with underlying mechanisms to produce outcomes, both intended and unintended[20]. They reveal important information about the effectiveness and mechanism of different resources, enabling service providers and clinicians to design and implement services or interventions comprising only effective components for particular people in particular contexts[21]. Medical Research Council guidance

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suggests that programme theories facilitate the inter-setting transferability of interventions and the production of evidence that is useful to decision-makers[22].

OBJECTIVES

The aim of this research is to understand **which** resources (anything that might be offered by a programme, intervention, service or individual) are available in the emergency setting for young people (aged ≤25 years) who self-harm in England, and **how** and **why** they produce their effects, both intended and unintended.

The research questions are as follows:

1. What efforts exist in the emergency setting across England to provide young people with a positive and helpful experience after they self-harm? (**mechanism resources + outcomes**)
2. How do these efforts and initiatives help young people? (**mechanism responses + outcomes**)
3. What are the barriers and enablers to providing emergency care for young people after they self-harm? (**context**)

METHODS AND ANALYSIS

Realist review using systematic methods comprising two components (mapping component and theory-building component), with distinct but overlapping search strategies. The protocol is registered on PROSPERO: CRD42025638539. The completed PRISMA-P checklist[23] can be found in Supplementary file 1.

Pilot searches have confirmed the originality and feasibility of this review. In the context of long waiting lists[10] for specialist children's mental health services, this review will be helpful in synthesising the evidence base to identify the principles of providing effective and timely care in the emergency setting for young people after they self-harm.

Study status

Study start date: August 2024
Expected end date: January 2026

At the time of writing, the study status is as follows:

- Clarifying scope: started
- Search strategies: started
- Title and abstract screening: started
- Full-text screening: not started
- Data extraction: not started

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- Quality assessment: not started
- Data analysis and synthesis: not started

Realist review

A realist review is an interpretive, theory-driven approach[24] to evidence synthesis from multiple sources, such as published research, policy documents and grey literature[20]. The realist approach acknowledges that resources work in some contexts and not others, and for some people but not others. It applies realist logic of inquiry to produce an explanatory analysis of what a resource is, how it works, for whom and in what circumstances[25]. Realist reviews are typically used to understand complex interventions[24], comprising multiple components and outcomes and long pathways to the desired outcome(s)[26].

Realist reviews are retroductive, focusing on identifying underlying causal mechanisms, with causation being represented as context+mechanism=outcome[27]. **Context** refers to "background" features that interact with mechanisms to shape how and why interventions work (or not); they can be tangible and static features (e.g., demographics, policy, geographical setting) or relational and dynamic features (e.g., interpersonal relationships, cultural norms)[1]. The realist approach recognises micro (individual), meso (organisational) and macro (systemic) contexts[28]. **Mechanisms** refer to causal forces that are activated in particular contexts to bring about outcomes. They explain how and why observed outcomes occur and usually comprise two parts, the "resources" offered by an intervention, and the cognitive, emotional and/or behavioural "reaction" or "response" to the resource[2]. **Outcomes** are the intended or unintended effects of the intervention, which are generated by the interaction between context and mechanism[26].

One of the central processes in a realist review is the development of **programme theories**, referring to hypotheses for what a programme comprises and how it is expected to work[26]. Programme theories are particularly useful for complex and varied programmes, interventions and services which are context-sensitive[22], such as is the case in mental healthcare. They are conventionally presented as context-mechanism-outcome configurations (CMOCs), an analytical tool intended to gain generative causal understanding of the most important resources on offer[29].

Stakeholder engagement throughout the realist review process is encouraged to promote the inclusion of multiple perspectives[27]. Three stakeholder groups will be actively engaged in the review process: one interdisciplinary group of healthcare professionals working clinically with young people who self-harm, and two patient and public involvement (PPI) groups, one for young people and one for parents and carers of young people who self-harm. Stakeholder groups will help to identify and refine initial programme theories through discussions via emails and workshops (remote or in-person, according to individual preferences).

At present, there is little understanding of how and why different resources lead to particular outcomes for young people who self-harm. The realist review will not provide a summative judgement on whether

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particular resources are “good” or “bad”, but will instead explain how and why they work, in what contexts, for whom and to what extent.

Reporting standards for realist syntheses exist, although specific methods for conducting them vary[30]. Pawson and colleagues outline 5 stages of realist synthesis[20] which will be followed in this review. The review design and methods are explained in detail below.

1. Clarifying scope

As a first step, we will carry out exploratory, informal searches of the published and grey literature to identify initial programme theories and a draft programme architecture. The exploratory searching of Step 1 differs from the formal data searches outlined in Step 2, in that it aims to sample the literature to quickly identify the diversity of possible theories and resources. Relevance will be prioritised over methodological rigour.

These searches will be supplemented by consulting with key stakeholder groups and topic experts. This will be achieved through a combination of stakeholder meetings and e-mail exchanges. Formal ethical approval will not be required but informed participation will be sought.

For this review, the term “resource” will be used to refer to anything (economical, material, emotional, social) that might be offered to a young person in England immediately after they self-harm. Sources of these resources are likely to include:

- NHS telephone lines (111, mental health crisis lines)
- NHS walk-in centres and urgent care centres
- Ambulances
- Emergency departments (EDs)
- Specialist mental health services (CAMHS, adult crisis services)
- Non-NHS text-based services
- Non-NHS telephone lines (e.g., Samaritans)
- Education-based support (school, University)
- Non-NHS community-based support (charities, crisis cafes, safe spaces)
- Emergency social care interventions

Building a set of initial programme theories will require iterative discussions within the team and with key stakeholder groups and topic experts.

2. Search strategies

Two distinct but overlapping search strategies will be conducted and continually refined, in line with the realist approach[31]:

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- **Strategy 1** will identify initial programme theories from the international literature (both published and grey). Suitable literature will include qualitative research, service reports, think pieces and theory-driven literature.
- **Strategy 2** will identify resources available in the emergency setting to young people who self-harm in England. It will identify routinely offered services and interventions, as well as examples of current best practice, pilots, and other relevant initiatives. There will be a focus on the interface between NHS services and community-based psychosocial interventions.

We will search the following electronic databases from 2004 (coinciding with the publication of the first NICE Guideline, CG16, on the management of self-harm in over 8s[32]) to 2 December 2024: MEDLINE, PsycINFO, EMBASE, HMIC, CINAHL, Science and Social Sciences Citation Index and The Cochrane Library. Search strategies were co-developed with a senior information specialist (JW) and translated across databases using Polyglot[33]. See supplementary files 2 and 3 for theory-building and mapping search strategies for MEDLINE.

Targeted grey literature searches (ProQuest Dissertations and Theses, Google Scholar) will identify other relevant literature, such as opinion pieces, books, guidelines, policies, editorials and dissertations. In addition, the following methods will be used to identify relevant evidence from diverse sources for inclusion in the review:

- A Google Scholar search will be conducted to ensure that key results are not missed. After ranking by relevance, the top 100 results will be screened. This will be facilitated by Publish Or Perish[34].
- Reference lists from relevant primary studies and systematic reviews will be checked (snowballing).
- Citation searches, for example, using the "Cited by" option on Google Scholar, and/or Publish Or Perish[34] (lateral searching).
- Input will be sought from the review team and stakeholder advisory groups to uncover other relevant publications, guidelines and policies.

Specific website searches will also be conducted; these have been selected based on input from key stakeholder groups, topic experts and relevant service providers:

- https://www.mentalhealth.org.uk/
- https://www.rcpch.ac.uk/
- https://www.rcpsych.ac.uk/
- https://rcem.ac.uk/
- https://www.rcgp.org.uk/
- https://www.rcn.org.uk/
- https://collegeofparamedics.co.uk/
- https://www.nhs.uk/
- https://www.youngminds.org.uk/
- https://www.samaritans.org/

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- https://www.mind.org.uk/
- https://nspa.org.uk/
- https://www.barnardos.org.uk/
- https://www.papyrus-uk.org/
- https://www.selfharm.co.uk/
- https://www.selfinjurysupport.org.uk/
- https://sossilenceofsuicide.org/
- https://www.nspcc.org.uk/
- https://www.place2be.org.uk/
- https://www.mindwell-leeds.org.uk/
- https://sites.manchester.ac.uk/mash-project/support-for-improving-community-based-care-for-self-harm/
- https://www.gov.uk/
- https://committees.parliament.uk/publications/
- https://www.yas.nhs.uk/
- https://www.samaritans.org/
- https://www.bacp.co.uk/

The realist approach to evidence searching is iterative[31], focusing on identifying relevant programme theories and testing them against empirical data. It is acknowledged that realist search strategies aim to uncover fragmented data; search strategies will therefore be iteratively extended and refocused as the review progresses. This may involve purposive sampling and snowballing to confirm, refine or refute the theories as new evidence emerges.

All retrieved records will be imported into EndNote[35] for organisation and de-duplication, before transferring to Rayyan[36] to facilitate title and abstract screening.

Titles and abstracts, where available, will be screened to assess eligibility for full-text inclusion. Eligibility criteria for the main search will be broad to ensure identification of qualitative, quantitative and mixed methods studies. Table 1 summarises the inclusion and exclusion criteria we have developed to focus the review, although these are likely to be refined and updated as the review progresses, and as programme theories are developed. Given the anticipated high volume of relevant literature, additional criteria may be added in line with stakeholder group feedback.

	Strategy 1 (theory-building)	**Strategy 2 (mapping)**
Inclusion criteria		
Population (P)	Young people (aged ≤25 years) who self-harm and/or any of their caregivers (e.g., family, friends, partners etc)	Young people (aged ≤25 years) who self-harm

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	Any professional who provides support to young people after they self-harm (e.g., doctors, nurses, paramedics, social workers, support workers, volunteers, etc.)	
Intervention (I)	Any programme, service, intervention or initiative, including routinely offered services, examples of best practice and pilots	Any programme, service, intervention or initiative, including routinely offered services, examples of best practice and pilots
Comparator (C)	None	None
Outcome (O)	Outcomes of interest will depend on the intervention but could include any measurable impact (intended or unintended) on young people, their caregivers, healthcare professionals and/or healthcare services	None
Healthcare context (H)	Any urgent or emergency setting, or anything between act of self-harm and access to support	Any urgent or emergency setting, or anything between act of self-harm and access to support
Design	No restriction	No restriction
Location	Worldwide (but only in English)	England only
Exclusion criteria		
	Non-English papers Studies in non-emergency settings, such as within-hours primary care, inpatient wards and prison settings.	Self-management strategies (e.g., mobile phone apps)

Table 1. Review inclusion and exclusion criteria.

All citations will be reviewed by DR to determine if they match the eligibility criteria. For Strategy 1, a random sample of 10% of all citations will be reviewed independently by FA to ensure consistency around the application of the eligibility criteria. However, in cases of uncertainty, discussion with a third reviewer (CB) will be used to prevent premature exclusion of potentially pivotal papers. For Strategy 2, all citations will be independently screened by FA, given the objectivity of anticipated findings. Disagreements will be resolved through discussion with a third reviewer (CB) to ensure consistency in paper inclusion.

3. Selecting articles

In line with the realist approach, quality assessments of the full-text articles will be completed according to three criteria: relevance, richness and rigour[37]. Documents will be selected for coding based on their

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relevance to contributing to an understanding of which resources are available in the emergency setting for young people who self-harm in England, and how and why they produce their effects (both intended and unintended).

Having completed the eligibility screening, DR will screen the full texts of all articles retrieved by the formal searches for relevance and richness. Criteria from the published literature[21] will be adapted and used to rank the relevance and conceptual richness of studies to help with the study selection process. A random sample of 10% of documents selected will be independently assessed for relevance by FA to ensure that screening and selection decisions are made consistently. Any disagreements will be resolved through discussion with a third reviewer (CB).

Table 2 summarises the ranking criteria for relevance that will allow the review team to distinguish between conceptually rich and weaker evidence to achieve the review's aims. This is likely to be developed iteratively throughout the review process.

High relevance	• Relates to young people who self-harm and describes the implementation of programmes, services, interventions and/or initiatives, or describes the provision of resources in the emergency setting • Describes the perspectives and factors affecting the decision-making of young people seeking emergency care for self-harm and/or their caregivers • Relates to supporting young people who self-harm and includes descriptions of professional views and experiences of providing support • Related to managers and/or commissioners of programmes, services, interventions and/or initiatives involving the provision of resources to young people who self-harm • Describes training of practitioners who provide care to young people who have self-harmed in the emergency setting
Moderate relevance	• Relates to young people who self-harm and describes their experiences of interacting with resources provided in the emergency setting • Describes experiences of young people who self-harm and/or caregivers who have chosen not to seek help or support immediately after an act of self-harm • Describes young people's support needs after self-harm
Low relevance	• Quantitative data on programmes, services, interventions and/or initiatives for young people who self-harm in the emergency settings • Describes implementation and/or delivery of programmes, services, interventions and/or initiatives for young people who self-harm at other stages of their journey (i.e., not the emergency setting)
No relevance	Does not meet any of the above criteria

Table 2. Criteria to rank likely relevance of study to theory identification and development.

Rigour will be assessed with reference to credibility and trustworthiness, as outlined by RAMESES standards[26]. Central to the realist approach is that a conventional "hierarchy of evidence" is not

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applicable, as valuable causal insights for programme theory development can arise from seemingly poor quality studies[38]. We will therefore consider evidence of lesser quality if relevant for identifying and developing programme theories and/or resources on offer to young people in England after they have self-harmed. A realist synthesis appraisal form will be developed on Google Forms by adapting an existing template[39] and this will be completed for each article. Specific design limitations will be documented where identified and caveats will be included in the narrative results.

Depending on the number of papers included, further refinement of the review scope may be decided by the review team. Any decisions regarding additional searches will depend on whether they are anticipated to contribute to the review's aims.

4. Extracting and organising data

Once article selection has been finalised and the core dataset established, DR will re-read the full texts of the included articles in reverse chronological order and carry out initial categorical coding. During this familiarisation stage, an analytical journal will be completed in parallel, outlining potential contexts, mechanisms, outcomes and configurations, as well as reflections on the "big picture" that emerge through the dataset. Bespoke Excel data extraction forms will be developed for both searches, based on examples in the literature[40].

The theory-building data extraction tool (theory-building component) will include sections for study design, sample, resources and potential contexts (C), mechanisms (M) and outcomes (O) to aid interpretation and facilitate the identification of programme theories. As per the realist approach, data will focus on author explanations and discussions about how a particular resource was thought to work (or not). Individual papers may include segments that contribute to different parts of a programme theory. DR will then re-read the dataset, extract relevant data segments and collate them into the corresponding sections of the theory-building data extraction tool. A random sample of 10% of documents selected will be independently reviewed and data extraction by FA to ensure consistency. DR will continue to complete the analytical journal throughout to enable contemporaneous documentation of how data has contributed to theory-building.

The mapping component data extraction tool will summarise key study information including: study aims, design and methods, study participants, setting, and staff. Given the objectivity of the anticipated findings, all citations will be independently screened by FA. Particular attention will be paid to gaps in resource provision and the consistency of funding and resource provision across the country. Resources identified will be broadly divided into healthcare, school-based, University-based, social care and third sector organisations, although this will be determined and refined through exploration of the data.

5. Data synthesis

Electronic versions of all articles will be uploaded to NVivo 15[41] for further analysis. The data within the data extraction forms will be re-read, and where appropriate, re-coded and -classified. Coding will be

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continually refined in NVivo and relationships (a NVivo function) will be used to create links between contexts, mechanisms and outcomes where possible across the dataset[42,43]. A combination of an inductive (codes emerging from the literature) and deductive (codes created in advance informed by programme theories, stakeholder discussions and exploratory literature searching) approach will be used. The reflective journal will continue to be completed in parallel. A retroductive logic of analysis will be used to analyse and synthesise the data throughout.

Having identified potential contexts, mechanisms, outcomes and CMOCs, analysis will continue iteratively using the realist inquiry of explanatory logic. Starting from relevant outcomes, we will seek to interpret and explain how different stakeholders respond to resources offered to a young person following self-harm and to identify the specific contexts or circumstances when relevant mechanisms are likely to be triggered. This analysis will be repeated throughout the review to enable the construction of CMOCs to explain how and why different resources offered in the emergency setting help young people after they self-harm (or not), and in what circumstances.

Data synthesis will involve reflection and discussion among the review team. We will question the integrity of each programme theory by examining whether it is supported by empirical evidence, adjudicate between competing theories, consider the same programme theory in different contexts and compare the programme theories to practical experiences of service users and providers[44].

Identified initial programme theories will be presented to the three stakeholder advisory groups. These key informants will facilitate programme theory prioritisation for refinement and testing in future WPs, based on an a priori criterion of 70% stakeholder agreement[45]. Advisory group discussions, outcomes and justifications will be captured as field notes.

The final output of this review will be a detailed summary of the nature and diversity of resources available in the emergency setting to young people in England after they self-harm, and a final realist programme theory, outlining how and why these resources produce their effects. Findings will be summarised through narrative synthesis, using text, summary tables, a logic model, and where appropriate, graphics to summarise individual papers and draw insights across papers. We acknowledge that this may represent partial knowledge due to the necessary prioritisation of programme theories and information sources limiting the ground that can be covered by a single review[20].

Patient and Public Involvement

Two patient and public involvement (PPI) groups have been assembled to support this review and associated studies; one for young people with experience of self-harm, and one for caregivers. PPI representatives were identified by contacting local charities, sharing information through relevant mailing lists, and through existing PPI networks.

Members of the public were involved in the development of this protocol. Both PPI groups have reviewed this protocol and contributed to the grey literature search strategy. They will help to identify

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and refine initial programme theories through discussions via emails and/or workshops (remote or in-person, according to their preferences).

ETHICS AND DISSEMINATION

This review does not require ethical approval as no primary data will be collected or analysed.

Results will be reported according to the Realist And Meta-narrative Evidence Synthesis: Evolving Standards (RAMESES) quality and publication standards[3]. Findings will be presented in a way that offers contextual advice rather than general conclusions. This allows policymakers to adapt resources to specific contexts, providing practical insights instead of "one size fits all" recommendations.

We will disseminate findings via a peer-reviewed article in a suitable academic journal, conference presentations, a report to the funder (National Institute for Health and Care Research, NIHR), a study website (in development), animated videos via social media, and any other avenues identified by our PPI groups. Existing contacts with Integrated Care Boards (ICBs), NHS England and clinical networks represent avenues for broader dissemination.

This review is being undertaken as part of the wider EmCASH (Emergency Care After Self-Harm) study, a mixed-methods realist synthesis and evaluation of emergency care for young people who self-harm in England. Findings will be used to inform the next stages of the project and have the potential to benefit multiple stakeholders involved in developing, implementing and evaluating sources of emergency care for young people who self-harm.

AUTHORS CONTRIBUTIONS

DR conceptualised the review and acquired funding with supervision from CB, DC and EG. DR and JW developed the search strategies. AB has contributed to the design and methodology of the review process. DR wrote the first draft of the manuscript and is guarantor. FA, CB, JW, AB, DC and EG reviewed the manuscript and provided feedback. All authors have read and approved the final manuscript.

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COMPETING INTERESTS

None declared.

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EMERGENCY CARE FOR YOUNG PEOPLE AFTER SELF-HARM: A REALIST REVIEW PROTOCOL

Supplementary file 2. PRISMA-P 2015 Checklist

This checklist has been adapted for use with protocol submissions to *Systematic Reviews* from Table 3 Moher D et al: Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews* 2015 **4**:1

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
ADMINISTRATIVE INFORMATION					
Title					
Identification	1a	Identify the report as a protocol of a systematic review	X	☐	1-2
Update	1b	If the protocol is for an update of a previous systematic review, identify as such	☐	X	N/A
Registration	2	If registered, provide the name of the registry (e.g., PROSPERO) and registration number in the Abstract	X	☐	37, 132
Authors					
Contact	3a	Provide name, institutional affiliation, and e-mail address of all protocol authors; provide physical mailing address of corresponding author	X	☐	4-10
Contributions	3b	Describe contributions of protocol authors and identify the guarantor of the review	X	☐	455-468
Amendments	4	If the protocol represents an amendment of a previously completed or published protocol, identify as such and list changes; otherwise, state plan for documenting important protocol amendments	☐	X	N/A

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
Support					
Sources	5a	Indicate sources of financial or other support for the review	X	☐	470-474
Sponsor	5b	Provide name for the review funder and/or sponsor	X	☐	470-474
Role of sponsor/funder	5c	Describe roles of funder(s), sponsor(s), and/or institution(s), if any, in developing the protocol	X	☐	449-474
INTRODUCTION					
Rationale	6	Describe the rationale for the review in the context of what is already known	X	☐	68-111
Objectives	7	Provide an explicit statement of the question(s) the review will address with reference to participants, interventions, comparators, and outcomes (PICO)	X	☐	113-126, 312 (table 1)
METHODS					
Eligibility criteria	8	Specify the study characteristics (e.g., PICO, study design, setting, time frame) and report characteristics (e.g., years considered, language, publication status) to be used as criteria for eligibility for the review	X	☐	296-310, 312 (table 1), 314-320, 341 (table 2)
Information sources	9	Describe all intended information sources (e.g., electronic databases, contact with study authors, trial registers, or other grey literature sources) with planned dates of coverage	X	☐	243-300
Search strategy	10	Present draft of search strategy to be used for at least one electronic database, including planned limits, such that it could be repeated	X	☐	Supplementary files 2 and 3

Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
STUDY RECORDS					
Data management	11a	Describe the mechanism(s) that will be used to manage records and data throughout the review	X	☐	289-290, 345-369, 373-388
Selection process	11b	State the process that will be used for selecting studies (e.g., two independent reviewers) through each phase of the review (i.e., screening, eligibility, and inclusion in meta-analysis)	X	☐	305-320, 341 (table 2), 343-354, 358-374
Data collection process	11c	Describe planned method of extracting data from reports (e.g., piloting forms, done independently, in duplicate), any processes for obtaining and confirming data from investigators	X	☐	358-382
Data items	12	List and define all variables for which data will be sought (e.g., PICO items, funding sources), any pre-planned data assumptions and simplifications	X	☐	358-382
Outcomes and prioritization	13	List and define all outcomes for which data will be sought, including prioritization of main and additional outcomes, with rationale	X	☐	312 (table 1)
Risk of bias in individual studies	14	Describe anticipated methods for assessing risk of bias of individual studies, including whether this will be done at the outcome or study level, or both; state how this information will be used in data synthesis	X	☐	343-350
DATA					
Synthesis	15a	Describe criteria under which study data will be quantitatively synthesized	X	☐	386-420
	15b	If data are appropriate for quantitative synthesis, describe planned summary measures, methods of handling data, and methods of combining data from studies, including any planned exploration of consistency (e.g., I^2, Kendall's tau)	☐	X	N/A
	15c	Describe any proposed additional analyses (e.g., sensitivity or subgroup analyses, meta-regression)	☐	X	N/A

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Section/topic	#	Checklist item	Information reported		Line number(s)
			Yes	No	
	15d	If quantitative synthesis is not appropriate, describe the type of summary planned	X	☐	386-420
Meta-bias(es)	16	Specify any planned assessment of meta-bias(es) (e.g., publication bias across studies, selective reporting within studies)	X	☐	343-350
Confidence in cumulative evidence	17	Describe how the strength of the body of evidence will be assessed (e.g., GRADE)	X	☐	343-350

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Supplementary file 2. Theory-building search strategy for MEDLINE.

Ovid MEDLINE(R) ALL <1946 to January 14, 2025>

1 Self-Injurious Behavior/ 10817
2 suicide/ or suicide, attempted/ or Suicide, Completed/ 61900
3 Drug Overdose/ 15535
4 Self Mutilation/ 3257
5 (selfharm* or selfinjur* or selfinflict*).tw,kf. 98
6 ((self or themsel* or onesel*) adj2 (aggress* or harm* or cutt* or immolat* or inflict* or injur* or mutilat* or poison* or damag* or destruct*)).tw,kf. 29883
7 (automutilat* or "auto mutilat*" or auto-mutilat*).tw,kf. 147
8 (autoaggress* or "auto aggress*" or auto-aggress).tw,kf. 1079
9 suicidality.tw,kf. 10422
10 (suicid* adj2 (death or die* or morality or complete)).tw,kf. 5138
11 (suicid* adj2 (attempt* or behavio* or intent* or intend* or commit*)).tw,kf. 36938
12 (parasuicid* or para-suicid*).tw,kf. 687
13 (poison adj2 (deliberat* or intentional or intended)).tw,kf. 19
14 (overdos* adj2 (deliberat* or intentional or intended)).tw,kf. 712
15 NSSI.tw,kf. 2303
16 or/1-15 [self harm] 119551
17 exp Community Health Services/ 341812
18 Crisis Intervention/ 6412
19 emergency medical services/ or call centers/ or emergency medical dispatch/ or emergency medical service communication systems/ or exp emergency service, hospital/ or emergency services, psychiatric/ or hotlines/ or poison control centers/ or exp "transportation of patients"/ 171576
20 exp emergency responders/ or paramedics/ 16628
21 ((phone* or call* or telephone* or "hot line*") adj5 service*).tw,kf. 6679
22 ("nhs 111" or helpline* or help-line*).tw,kf. 1501
23 (pre-hospital or prehospital).tw,kf. 23743
24 (ambulance* or paramedic*).tw,kf. 23538
25 (crisis adj5 (intervention* or service* or centre* or center* or cafe*)).tw,kf. 4731
26 (emergency adj5 (intervention* or service* or centre* or center* or department*)).tw,kf. 175707
27 "accident and emergency".tw,kf. 5293
28 (Emergency adj5 (technician? or assistant?)).tw,kf. 1963
29 or/17-28 [Emergency pre hospital setting] 640998
30 samaritans.tw. 150
31 touchstone.tw. 263
32 "battle scars".tw. 9

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33	sane.tw.	1123
34	selfharmUK.tw.	0
35	"rethink mental illness".tw.	1
36	papyrus.tw.	423
37	calm.tw.	5010
38	"recover your life".tw.	0
39	"mental health matters".tw.	58
40	"self injury support network".tw.	0
41	or/30-40 [Self harm organisations]	7035
42	29 or 41 [NHS and other mental health service providers]	647618
43	triage/	15908
44	Critical Pathways/	8221
45	exp Decision Making/	245050
46	pathway*.tw,kf.	1610187
47	(help adj1 seek*).tw,kf.	14238
48	exp "Delivery of Health Care"/	1350526
49	"Health Services Needs and Demand"/	55961
50	(demand* adj2 manage*).tw,kf.	1605
51	((service or delivery) adj2 model*).tw,kf.	10748
52	(service? adj3 ("use" or used or utili#ation or utili#ed or utili#ing or access* or engage*)).tw,kf.	79648
53	health-care service*.tw,kf.	20972
54	health* service*.tw,kf.	187726
55	attend*.tw,kf.	241890
56	(present* adj3 (selfharm* or self-harm* or suicid*)).tw,kf.	2358
57	or/43-56 [Choosing or Accessing Services]	3488579
58	(policy or policies or guideline* or recommendation* or position).ti.	276177
59	guideline/ or practice guideline/	39978
60	policy/ or public policy/ or exp health policy/	178490
61	(theor* or concep* or logic).ti.	257021
62	((theor* or concep* or logic) adj (framework* or model* or analy* or evaluat*)).ab.	109276
63	or/58-62 [Policy, Guideline or overt Theory]	773803
64	Comment/	1046598
65	Letter/	1284762
66	Editorial/	717997
67	news/ or newspaper article/	245899
68	"Comment on".ti.	38864
69	(letter* adj3 editor*).ti.	30813
70	opinion*.ti.	19573
71	(view or views).ti.	66312
72	or/64-71 [Discussion papers Hidden Theory]	2626202
73	63 or 72 [Theory Search]	3324702

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74 (Literature review* or (systematic adj2 review*) or (narrative adj2 review*) or (critical adj2 review*) or scoping review* or synthesis or meta-analys* or ((realist adj2 review*) or meta-ethnograph*)).ti. 878833
75 ("review of reviews" or ((overview* or umbrella) adj5 review*)).ti. 4380
76 ("Search filter*" or "search strateg*" or "literature search*").ab. 112786
77 meta-analysis/ or "systematic review"/ 372619
78 or/74-77 [Systematic review search] 1000677
79 73 or 78 [Theory or Systematic review search] 4280597
80 16 and 42 and 57 and 79 [Theories or systematic reviews around access, choice or demand for health services and providers for self-harm] 364
81 limit 80 to yr="2004 -Current" 309

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Supplementary file 3. Mapping search strategy for MEDLINE.

Ovid MEDLINE(R) ALL <1946 to January 14, 2025>

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2 suicide/ or suicide, attempted/ or Suicide, Completed/ 61900
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4 Self Mutilation/ 3257
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6 ((self or themsel* or onesel*) adj2 (aggress* or harm* or cutt* or immolat* or inflict* or injur* or mutilat* or poison* or damag* or destruct*)).tw,kf. 29883
7 (automutilat* or "auto mutilat*" or auto-mutilat*).tw,kf. 147
8 (autoaggress* or "auto aggress*" or auto-aggress).tw,kf. 1079
9 suicidality.tw,kf. 10422
10 (suicid* adj2 (death or die* or morality or complete)).tw,kf. 5138
11 (suicid* adj2 (attempt* or behavio* or intent* or intend* or commit*)).tw,kf. 36938
12 (parasuicid* or para-suicid*).tw,kf. 687
13 (poison adj2 (deliberat* or intentional or intended)).tw,kf. 19
14 (overdos* adj2 (deliberat* or intentional or intended)).tw,kf. 712
15 NSSI.tw,kf. 2303
16 or/1-15 [self harm] 119551
17 exp Community Health Services/ 341812
18 Crisis Intervention/ 6412
19 emergency medical services/ or call centers/ or emergency medical dispatch/ or emergency medical service communication systems/ or exp emergency service, hospital/ or emergency services, psychiatric/ or hotlines/ or poison control centers/ or exp "transportation of patients"/ 171576
20 exp emergency responders/ or paramedics/ 16628
21 ((phone* or call* or telephone* or "hot line*") adj5 service*).tw,kf. 6679
22 ("nhs 111" or helpline* or help-line*).tw,kf. 1501
23 (pre-hospital or prehospital).tw,kf. 23743
24 (ambulance* or paramedic*).tw,kf. 23538
25 (crisis adj5 (intervention* or service* or centre* or center* or cafe*)).tw,kf. 4731
26 (emergency adj5 (intervention* or service* or centre* or center* or department*)).tw,kf. 175707
27 "accident and emergency".tw,kf. 5293
28 (Emergency adj5 (technician? or assistant?)).tw,kf. 1963
29 or/17-28 [Emergency pre hospital setting] 640998
30 samaritans.tw. 150
31 touchstone.tw. 263
32 "battle scars".tw. 9

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33 sane.tw. 1123
34 selfharmUK.tw. 0
35 "rethink mental illness".tw. 1
36 papyrus.tw. 423
37 calm.tw. 5010
38 "recover your life".tw. 0
39 "mental health matters".tw. 58
40 "self injury support network".tw. 0
41 or/30-40 [Self harm organisations] 7035
42 29 or 41 [NHS and other mental health service providers] 647618
43 triage/ 15908
44 Critical Pathways/ 8221
45 exp Decision Making/ 245050
46 pathway*.tw,kf. 1610187
47 (help adj1 seek*).tw,kf. 14238
48 exp "Delivery of Health Care"/ 1350526
49 "Health Services Needs and Demand"/ 55961
50 (demand* adj2 manage*).tw,kf. 1605
51 ((service or delivery) adj2 model*).tw,kf. 10748
52 (service? adj3 ("use" or used or utili#ation or utili#ed or utili#ing or access* or engage*)).tw,kf. 79648
53 health-care service*.tw,kf. 20972
54 health* service*.tw,kf. 187726
55 attend*.tw,kf. 241890
56 (present* adj3 (selfharm* or self-harm* or suicid*)).tw,kf. 2358
57 or/43-56 [Choosing or Accessing Services] 3488579
58 exp United Kingdom/ 401844
59 (national health service* or nhs*).ti,ab,in. 306886
60 (english not ((published or publication* or translat* or written or language* or speak* or literature or citation*) adj5 english)).ti,ab. 138546
61 (gb or "g.b." or britain* or (british* not "british columbia") or uk or "u.k." or united kingdom* or (england* not "new england") or northern ireland* or northern irish* or scotland* or scottish* or ((wales or "south wales") not "new south wales") or welsh*).ti,ab,jw,in. 2632240
62 (bath or "bath's" or ((birmingham not alabama*) or ("birmingham's" not alabama*) or bradford or "bradford's" or brighton or "brighton's" or bristol or "bristol's" or carlisle* or "carlisle's" or (cambridge not (massachusetts* or boston* or harvard*)) or ("cambridge's" not (massachusetts* or boston* or harvard*)) or (canterbury not zealand*) or ("canterbury's" not zealand*) or chelmsford or "chelmsford's" or chester or "chester's" or chichester or "chichester's" or coventry or "coventry's" or derby or "derby's" or (durham not (carolina* or nc)) or ("durham's" not (carolina* or nc)) or ely or "ely's" or exeter or "exeter's" or gloucester or "gloucester's" or hereford or "hereford's" or hull or "hull's" or lancaster or "lancaster's" or leeds* or leicester or "leicester's" or (lincoln not nebraska*) or ("lincoln's" not nebraska*) or (liverpool not (new south wales* or nsw)) or ("liverpool's" not (new south wales* or nsw)) or ((london not (ontario* or ont or toronto*)) or ("london's" not (ontario* or ont or toronto*)) or manchester or

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"manchester's" or (newcastle not (new south wales* or nsw)) or ("newcastle's" not (new south wales* or nsw)) or norwich or "norwich's" or nottingham or "nottingham's" or oxford or "oxford's" or peterborough or "peterborough's" or plymouth or "plymouth's" or portsmouth or "portsmouth's" or preston or "preston's" or ripon or "ripon's" or salford or "salford's" or salisbury or "salisbury's" or sheffield or "sheffield's" or southampton or "southampton's" or st albans or stoke or "stoke's" or sunderland or "sunderland's" or truro or "truro's" or wakefield or "wakefield's" or wells or westminster or "westminster's" or winchester or "winchester's" or wolverhampton or "wolverhampton's" or (worcester not (massachusetts* or boston* or harvard*)) or ("worcester's" not (massachusetts* or boston* or harvard*)) or (york not ("new york*" or ny or ontario* or ont or toronto*)) or ("york's" not ("new york*" or ny or ontario* or ont or toronto*))))).ti,ab,in. 1909850

63 (bangor or "bangor's" or cardiff or "cardiff's" or newport or "newport's" or st asaph or "st asaph's" or st davids or swansea or "swansea's").ti,ab,in. 77514

64 (aberdeen or "aberdeen's" or dundee or "dundee's" or edinburgh or "edinburgh's" or glasgow or "glasgow's" or inverness or (perth not australia*) or ("perth's" not australia*) or stirling or "stirling's").ti,ab,in. 280945

65 (armagh or "armagh's" or belfast or "belfast's" or lisburn or "lisburn's" or londonderry or "londonderry's" or derry or "derry's" or newry or "newry's").ti,ab,in. 37626

66 or/58-65 3377715

67 (exp africa/ or exp americas/ or exp antarctic regions/ or exp arctic regions/ or exp asia/ or exp australia/ or exp oceania/) not (exp great britain/ or europe/) 3521364

68 66 not 67 [NICE UK Search Filter] 3164655

69 16 and 42 and 57 and 68 656

70 limit 69 to yr="2004 -Current" 517

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