

BMJ Open Potentially avoidable and ambulatory care sensitive hospitalisations among forced migrants: a protocol for a systematic review and meta-analysis

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ABSTRACT

Introduction: There is an increasing number of forced migrants globally, including refugees, asylum seekers, internally displaced persons and undocumented migrants. According to international law, forced migrants should enjoy access to health services free of discrimination equivalent to the host population, but they face barriers to healthcare worldwide. This may lead to a delay in care and result in preventable hospital treatment, referred to as potentially preventable hospitalisation (PPH) or ambulatory care sensitive hospitalisation (ACSH). There is as yet no overview of the prevalence of PPH in different countries and groups of forced migrants, and it is unknown whether the concept has been used among these migrant groups. We aim to systematically review the evidence (1) on the prevalence of PPH among forced migrants and (2) on differences in the prevalence of PPH between forced migrants and the general host population.

Methods and analysis: A systematic review will be conducted searching databases (PubMed/MEDLINE, Web of Science/Knowledge, Cochrane Library, CINAHL, Google Scholar) and the internet (Google). Inclusion criteria: observational studies on forced migrants reporting PPH or ACSH with or without comparison groups published in the English or German language. Exclusion criteria: studies on general migrant groups or hospitalisations without clear reference to avoidability. Study selection: titles, abstracts and full texts will be screened in duplicate for eligibility. Data on the prevalence of PPH/ACSH among forced migrants, as well as any reported prevalence differences between host populations, will be systematically extracted. Quality appraisal will be performed using standardised checklists. The evidence will be synthesised in tabular form and by means of forest plots. A meta-analysis will be performed only among homogeneous studies (in terms of design and population).

Ethics and dissemination: Ethical clearance is not necessary (secondary research). The results will be disseminated via publication in open access journals, conferences and public media.

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Strengths and limitations of this study

- The first systematic review and meta-analysis on observational studies on preventable hospitalisations and ambulatory care sensitive conditions among forced migrants.
- Will provide highest evidence on access to timely and effective primary care for forced migrants.
- A broad search in five databases and consideration of the grey literature will show if and how the concepts of preventable hospitalisations and ambulatory care sensitive conditions have been applied among the heterogeneous population of forced migrants.
- The analysis on differences in the outcome of interest between forced migrants and the general host population will be strongly dependent on the existence of comparative studies.
- Comparability of findings may be limited due to the heterogeneity of *both* the group of forced migrants *and* the policy contexts at country level.

BACKGROUND

Millions of people have been forced globally from their homes by civil conflicts, regional wars and political violence. The latest figures from the United Nations High Commissioner for Refugees (UNHCR) are alarming: in 2014, forced displacement has demonstrated an accelerated growth reaching unparalleled numbers with the highest recorded number of people being displaced since records began. At the end of 2014, 59.5 million people were forcibly displaced globally, accounting for an increase of 8 million individuals compared with 2013.¹ More than half (53%) of all refugees came from three countries: the Syrian Arab Republic (3.88 million), Afghanistan (2.59 million) and Somalia (1.11 million).¹ The largest refugee-hosting countries worldwide were Turkey, Pakistan, Lebanon and the Islamic Republic

of Iran.¹ In 2014, 51% of the 59.5 million refugees were under the age of 18.¹

A large proportion of refugees are internally displaced persons, who have searched for shelter and safety within the international borders of their home country. The Internal Displacement Monitoring Centre (IDMC) highlighted that internal displacement induced by conflict and violence affected over 38 million people at the end of 2014, which amounts to around 64% of forcibly displaced persons worldwide.² Disaster-induced displacement accounted for an average of 26 million people per year since 2008, an equivalent of one person being displaced every second.³

A smaller but still significant number is that of asylum seekers, whose claim for refugee status has not yet been definitively evaluated. They accounted for around 1.8 million people in 2014.¹ However, owing to failed recognition as refugees, visa overstay or irregular entry into respective countries, there is a considerable number of irregular or undocumented migrants, with trends expected to grow. Data on flows and trends of irregular migration vary widely and are usually imprecise, especially on a global level. The overall estimate for the 27 European Union Member States ranged from 1.9 to 3.8 million undocumented migrants in 2008.⁴

These different groups of migrants can be referred to as forced mixed migrant flows, a heterogeneous group comprising refugees, internally displaced persons, asylum seekers and undocumented migrants.

The 1951 Refugee Convention states that refugees should enjoy access to health services equivalent to that of the host population.⁵ Under international law, everybody has the right to the highest standards of physical and mental health and this includes the right to healthcare free of discrimination, according to article 12 of the International Covenant of Economic, Social and Cultural Rights.⁶ Access to healthcare is, however, mostly limited or actively restricted for refugees and other forcibly displaced migrants.^{7–10} Barriers to healthcare—which are shaped by inequalities in availability, access and quality of services, by the financial burden these may impose on people, and even by linguistic, cultural and gender-based factors¹¹—can lead to a delay in seeking and receiving care, which in return can result in costly—and possibly preventable—hospital treatment.¹²

Regarding the many possible stages¹³ throughout the migration process, in which (forced) migrants can be exposed to health risks, there is a broad range of potential health conditions migrants may have to deal with. Influences on health in the 'predeparture' stage of the migration process could be local chronic disease patterns and pathogens, local cultures and lifestyle, as well as environmental factors. Political or personal circumstances, such as human rights violations or interpersonal violence, may affect the psychological and physical health status throughout the journey, particularly in the case of forced migrants.¹³ During the perimigration phase, health influences are closely related to the mode

of transport and circumstances of travel. Furthermore, in this phase, pathogens may be acquired or carried across different zones of disease prevalence. Once migrants settle down in their intended location, irrespective of the duration, attention may be required for non-communicable diseases, mental health and socio-economic influences on health.¹³ Forced migrants also often experience situations of temporary detention or interim residence: immigration detention centres or refugee camps may have deleterious effects on mental or physical health and may be unhygienic or unsafe.¹³

The concept of potentially preventable hospitalisations (PPH) or its specific subcategory ambulatory care sensitive hospitalisations (ACSH) have been used as population-based indicators to assess the quality and strength of primary care.¹⁴ The concept of ACSH is based on the assumption that hospitalisation rates can be reduced by effective ambulatory care, whereas PPH use a much broader approach and include a spectrum of population-based interventions and social measures.¹⁵ Accordingly, sets of ambulatory care sensitive conditions (ACSCs) often include conditions for which acute management should prevent admission, for example, dehydration and gastroenteritis, and chronic conditions where preventative care should prevent later admission, for example, complications of diabetes.¹⁶ It can also include infectious diseases, which could have been managed by timely and effective immunisation. The relationship between the quality of ambulatory care and ACSH is influenced by various exogenous factors,¹⁷ including patient demographics,^{18–21} disease burden,^{21–23} behavioural risk²² socioeconomic factors,^{18 21 23–29} the structure of the hospital sector,^{24 30} patient preferences regarding use of care²² and compliance.³¹ The structure of the healthcare system³² (and thus the role of primary and hospital care) may also be of importance in the concept of ACSCs and ACSH. Recent systematic reviews confirm the validity of using hospitalisations for ACSCs as an indicator of primary care quality conditional on the application of appropriate adjustment factors.³²

The concept of PPH with its specific category of ACSH could thus be a useful indicator to assess the quality of primary care accessible to forced migrants or specific vulnerable subgroups (such as children, pregnant women or people with disabilities) in different settings and countries. It could also be used to assess disparities in access between forced migrants and the host population. There is, however, no overview of the prevalence of PPH or ACSH in different countries or groups of forced migrants, and it is unknown whether the concept has been used at all among these migrant groups. An initial search in the Cochrane Library of Systematic Reviews and a prospective register of systematic reviews (PROSPERO) using the terms *asylum** or *refugee** linked with terms for ACSH identified no reviews.

The objectives of this study are thus to systematically review:

1. The evidence on the prevalence of PPH among forced migrants and specific vulnerable subgroups (children, pregnant women, people with disabilities).
2. The evidence for differences in the prevalence of PPH between forced migrants and the general host population.

METHODS AND DESIGN

Study design

We will conduct a systematic review according to the 'Cochrane Handbook for Systematic Reviews of Interventions'.³³ The guidelines for the inclusion of non-randomised studies will be taken into special consideration.³⁴

Review questions

We used the PICO criteria (population, intervention, comparison and outcome) to formulate the questions to be addressed by the systematic review:

1. What is the prevalence of PPH among forced migrants and specific vulnerable subgroups (children, pregnant women, people with disabilities)?
2. Are there differences in the prevalence of PPH between forced migrants and the general host population?

Search strategy for identification of studies

The search strategy includes searching databases for relevant articles, which match our predefined inclusion criteria (see below) as well as searching the internet for grey literature.

Search strategy 1: databases

We designed the search strategy according to the 'Cochrane Handbook for Systematic Reviews of Interventions'.³³ The following electronic bibliographic databases will be searched for studies:

- ▶ PubMed/MEDLINE;
- ▶ Web of Science Core Collection, including:
 - Social Sciences Citation Index (SSCI);
 - Science Citation Index Expanded (SCI-EXP).
- ▶ Cochrane Library (without limitation to specific databases);
- ▶ CINAHL.

The search engine 'Google Scholar' will be used to search further academic databases.

Search strategy 2: internet search

To identify grey literature, an internet search will be carried out using the search engine Google. This search may present further relevant studies not published in conventional academic journals.

Search terms

The search terms (table 1) were developed according to PICO criteria. Medical Subject Headings (MeSH) terms were used to identify synonyms for the population and

Table 1 Search terms for the systematic review

Population	Intervention	Comparison	Outcome
asylum seeker*; asyl*; refugee*; displaced; migra* forced migra*; undocumented; sans papier; irregular; illegal; unauthorized	–	general population	ambulatory care ambulatory care sensitive-preventable-avoidable-hospitali* admission* condition

the outcome. Terms for the comparison (the general host population) were not included in the search combination to allow for the inclusion of descriptive epidemiological studies without comparison groups. A librarian based at the University Heidelberg was consulted to develop the Boolean search combination.

The search terms within columns will be linked by the operator 'OR' and terms between columns by the operator 'AND' to search for potentially relevant articles in titles, abstracts and full texts. The aforementioned databases and search engines will thus be searched without restrictions using the following search term combination:

(asylum seeker* OR asyl* OR refugee* OR forced migra* OR migra* OR displaced OR undocumented OR sans papier* OR unauthorized OR illegal* OR irregular) AND ('ambulatory care' OR 'ambulatory care sensitive' OR avoidable OR preventable) AND (hospitali* OR admission* OR condition).

The internet search will be restricted to the English language and PDF documents. An overview of the exact search terms used by the database/search engine is provided in online supplementary file 1.

Data management

Records will be downloaded and stored in a reference management software (EndNote). After exclusion of duplicates, an excel file will be created to perform the screening process.

Selection of studies—eligibility criteria

Inclusion criteria

Studies will be considered as eligible for inclusion if they fulfill the following criteria:

- ▶ *Population*: Refugees, (forcibly) displaced persons, asylum seekers and sans papiers, undocumented, illegal, irregular or unauthorised migrants as the study population. We will only include studies on 'migrants' if there is a clear distinction between forced migrants (refugees, asylum seekers, displaced persons and sans papiers, undocumented, illegal,

irregular or unauthorised migrants) and regular forms of migration.

- ▶ *Study design:* Quantitative observational studies, that is, cohort and case-control studies, cross-sectional studies, and descriptive surveys using primary data or routine/secondary data on PPH.
- ▶ *Types of articles:* Original articles/reports of primary research; systematic and non-systematic reviews of observational studies.
- ▶ *Outcome measure:* Studies on PPH or related concepts as reported by primary studies (eg, avoidable hospitalisations, ACSH or hospitalisations avoidable through prevention).
- ▶ *Geographical area:* All articles irrespective of their geographical area or geographical focus will be included.
- ▶ *Language:* Articles published in German or English.
- ▶ *Date of publication:* No restrictions on the date of publication.

Exclusion criteria

- ▶ *Population:* Migrants without clear reference to forced migration (asylum seeker status/refugee status, internally displaced persons and sans papiers, undocumented, illegal, irregular or unauthorised migrants).
- ▶ *Study design:* Qualitative studies.
- ▶ *Types of articles:* Newspaper articles, expert opinions, commentaries, discussion papers, journalistic interviews, policy reports, books, conference proceedings, abstracts.
- ▶ *Outcome measure:* Studies reporting hospitalisations without a clear link to preventability of these hospitalisations or sensitivity to ambulatory care.
- ▶ *Language:* Articles not published in German or English.
- ▶ *Accessibility:* Articles that are not available in full text.

Screening process

The screening process will consist of two steps:

1. Title and abstract screening;
2. Full-text screening.

Title and abstract screening

After removal of duplicates, two reviewers will independently screen 10% of the articles by title and abstract, and decide on inclusion or exclusion of the articles based on the previously defined criteria. If the screening process of the initial 10% of articles indicates the necessity to perform alterations in inclusion and exclusion criteria, redefinitions will be executed at this stage. In the next step, two reviewers will independently screen all article titles and abstracts taking the (potentially redefined) inclusion/exclusion criteria into consideration. Articles that prove to be suitable for inclusion from the initial and subsequent screening processes will be recorded in an Excel File/EndNote database. If the two reviewers disagree on the eligibility of an article, the whole review team will discuss it until a consensus is achieved. In the

case of discrepancies in judgement on eligibility in the absence of clear exclusion criteria, all publications that are considered to be relevant by at least one reviewer will be obtained as full text and assessed for eligibility in the next stage.

Full-text screening

After screening titles and abstracts, two reviewers will independently screen the full text of the previously selected articles to assess their eligibility for inclusion in the final review. Discrepancies in judgements between the two reviewers will be discussed within the review team. Only references that are considered to be eligible by all members of the review team will be included.

Data extraction and critical appraisal

Data extraction and critical appraisal will be performed after full-text screening.

Data extraction

On the basis of the STROBE³⁵ checklist and information relevant to the objective of the study, a preliminary data extraction form (see online supplementary file 2) has been designed to systematically extract the following pieces of information:

- ▶ Generic bibliographic information (author, year published);
- ▶ Study characteristics (year of study/study period/research method);
- ▶ Study objectives/research questions;
- ▶ Population (age, sex, migrant status, country of origin, vulnerability, ie, affiliation to subgroups such as children, pregnant women, people with disabilities);
- ▶ Context characteristics (study setting, country in which study is performed);
- ▶ Form of hospitalisation described: potentially avoidable/preventable or ACSH;
- ▶ Measures of frequency/association for the analysed outcomes including SEs and/or 95% CIs;
- ▶ For analytical studies: exposures and covariables and cofounders on individual and/or contextual level;
- ▶ Main results and limitations of the study as reported;
- ▶ Results of the critical appraisal.

If needed, the data extraction form will be adapted and re-evaluated as the research proceeds. Two reviewers will perform data extraction in duplicate independently. All articles will be checked vice versa by the senior author of the protocol. Authors of primary studies will be contacted if necessary to obtain or confirm relevant data.

Critical appraisal

Case-control and cohort studies will be evaluated by means of the Newcastle-Ottawa Scale for non-randomised studies (NOS).³⁶ Cross-sectional studies will be assessed using the tool for 'Critical Appraisal of Cross-sectional Studies' by the National Collaborating

Centre for Environmental Health.³⁷ The AMSTAR tool, a validated 11-item tool to assess the quality of systematic reviews of intervention studies, will appraise the quality of reviews.³⁸ This tool will also be used to assess non-systematic reviews in order to evaluate their quality against the 'gold standard' of systematic reviews. Non-applicable items will not be weighted in order to avoid inappropriate judgements on the quality caused by the (potential) non-applicability of AMSTAR items.

The aim of the critical appraisal process will be to evaluate the risk of bias in reported results, not to exclude literature.

Analysis and evidence synthesis

Tables will be created to give an overview on the data that have been extracted from the data extraction forms (ie, a description of included studies, study populations, methods, results and quality). We will draw one or more forest plots of the extracted data on the prevalence of PPH and/or respective measures of association from comparative studies using reference groups from the general population. If sufficient detail is provided in primary reports, the results will be presented stratified by sex and/or special subgroups such as children, pregnant women or people with disabilities. A meta-analysis according to the guidelines for meta-analysis of observational studies in epidemiology (MOOSE) guidelines³⁹ will be performed only among studies which are homogeneous with respect to both study design and population. To assess inconsistencies across studies and their impact on pooled estimates, the percentage of the variability in effect estimates that is due to statistical heterogeneity rather than chance (I^2) will be calculated. Random-effects meta-analysis will be performed in case of substantial heterogeneity ($I^2 > 50\%$) that cannot be explained among studies that would otherwise be considered suitable for a meta-analysis. Otherwise, fixed-effects meta-analysis will be performed.

DISCUSSION

This systematic review will provide an overview and synthesis of research on the prevalence of PPH and ACSH among forced migrant populations. Given the challenges of refugee flows and later refugee resettlement, it is important for governments, public health professionals and health service providers in resettlement countries to obtain evidence on humanitarian arrivals' access to primary care and preventable hospitalisations.⁴⁰

The outcomes of PPH have been known to be difficult to assess and we would like to assemble the information on the concept itself and further explore the extent of its application in studies, thus evaluating if it has been established as a useful measurement tool in healthcare research among forced migrants.

The results could serve as a foundation for future research on this topic in order to provide evidence for internationally comparative research or for interventions to reduce PPH among forced migrants. The results of our

review are a cornerstone in evidence related to PPH in this specific population. Hence, they can be used to identify potential targets related to avoidable hospitalisations and areas for interventions, aimed at improving both health status and appropriate access to healthcare among forced migrants through sufficient access to primary care, population-based interventions and preventive measures.

The strength of this review is the inclusion of observational studies, the clearly defined inclusion and exclusion criteria, the transparent and systematic search strategy, and its approaches for screening, extracting and assessing the available research. It also follows clear steps for the analysis of search results by evidence mapping and narrative description of the findings.

Owing to our broad search in five databases and the inclusion of grey literature, we will have an answer to the overall question if and how the concepts of preventable hospitalisations and ambulatory care sensitive conditions among the heterogeneous population of forced migrants have been applied. The analysis on differences in the outcome of interest between forced migrants and the general host population will be strongly dependent on the existence of comparative studies. We will have to consider that comparability of findings may be limited due to the heterogeneity of both the group of forced migrants and the policy contexts at country level.

With this review, we aim at providing essential information for health professionals and policymakers to improve understanding of persisting barriers and potential benefits of improved access (ie, availability, geographic accessibility, social acceptability and financial affordability) to primary care for forced migrants and to increase evidence-based decision-making. We hope that the information gained on PPH among forced migrants will be of use to policymakers when evaluating their approaches on access to healthcare for forced migrants.

Targeting both a lively discussion of this topic and a wide dissemination of our findings to different levels of the healthcare system, including policymakers, healthcare providers and researchers, we will publish this review in an open access journal and circulate the results via conferences, civil society organisations and academic institutions.

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Contributors KB conceived the study. CL, SCG and KB planned and designed the protocol. CL and SCG wrote the first draft. CL, SCG and KB wrote the subsequent drafts. SN and JS contributed in the critical review and provision of important intellectual content. All the authors have approved and contributed to the final written manuscript.

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Competing interests None declared.

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Data sharing statement The results will be disseminated via publication in open access journals, conferences and the public media.

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