

Barriers and Facilitators to De-Labeling Antimicrobial Allergies: A Qualitative Meta-Synthesis

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Background

- Six to 25 percent of inpatients have documented antimicrobial allergies; approximately 15 percent of patients report allergies to penicillins.
- Ninety to 95 percent of penicillin allergy labels are inaccurate.
- Patients reporting penicillin allergies are at higher risk of surgical site infections, lengthened hospital stays, receipt of expensive antibiotics, and nosocomial infections with resistant pathogens (*MRSA*, *VRE*, or *C. difficile*).
- De-labeling is the removal of inaccurate antimicrobial allergy labels from patients' medical records.
- De-labeling requires a change in behavior.

Objective

1. To describe barriers and facilitators to de-labeling spurious antimicrobial allergies from patient health records using the Theoretical Domains Framework (TDF).
2. To use the Behavior Change Wheel to map barriers to antimicrobial de-labeling to corresponding Behavior Change Intervention (BCI) function and policy categories.

Methods

Design

- Qualitative meta-synthesis

Databases

- MEDLINE (OVID), EMBASE (OVID), CINAHL, Google Scholar, Agency for Healthcare Research and Quality, and National Institute for Health and Clinical Excellence

Inclusion criteria

- Studies with qualitative methods or mixed methods, research conducted in high income countries, discussion of barriers and facilitators to antimicrobial de-labeling

Exclusion criteria

- Studies published in abstract only

Figure 1. PRISMA Flow Diagram

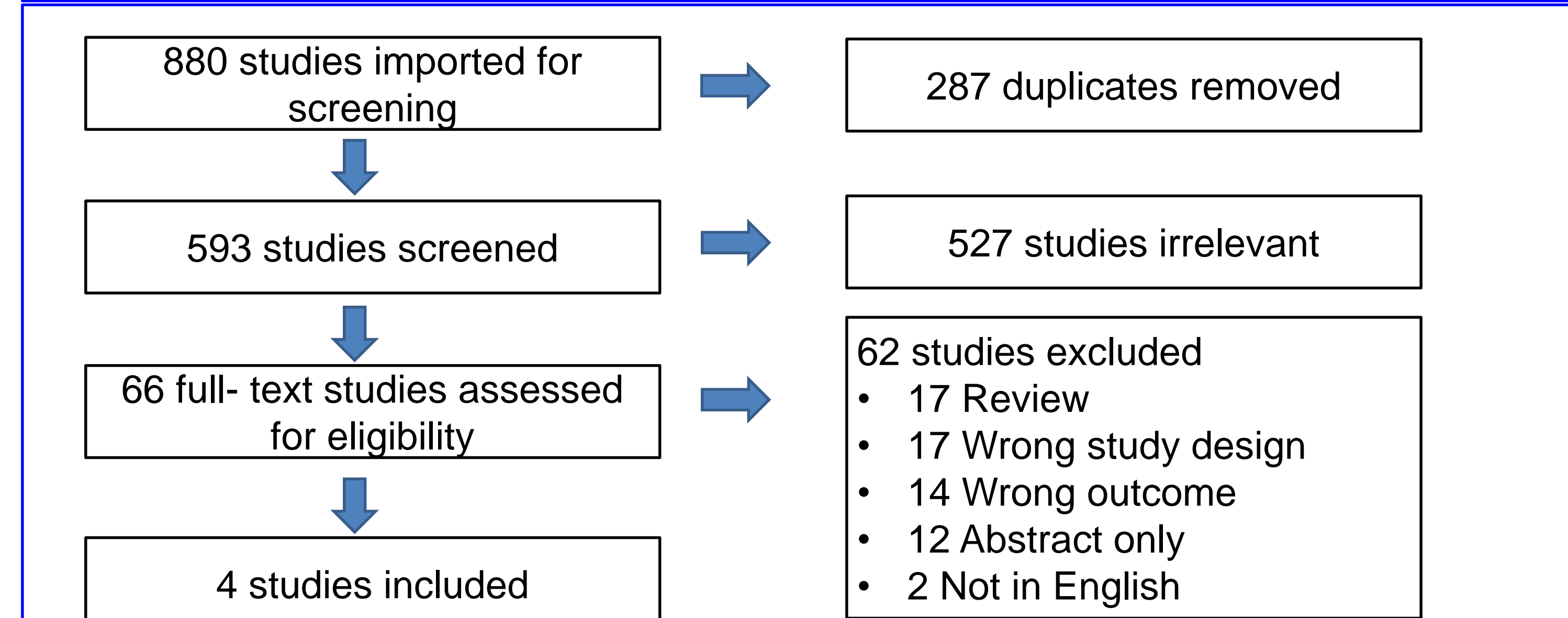


Table 1. Barriers

TDF category	Quote
Environmental context & resources	<i>"What I encounter is that we don't share the data" "Fewer options and nuances for documentation in EHRs" "You don't have much time... balancing the amount of information to record with the time"</i>
Skills	<i>"...it is difficult for them to distinguish an allergy from an adverse effect, and said there is a need for a clear definition..." "... for most their clinical judgment alone was not enough to change the medical records"</i>
Social or professional role and identity	<i>"...participants across care settings expressed the opinion that these actions were outside the nurses' scope of practice"</i>
Knowledge	<i>"Many participants were unaware of the potential negative when using second-choice antibiotics"</i>
Beliefs about consequences	<i>"They were worried about being responsible for causing someone to have an allergic reaction."</i>

Table 2. Facilitators

TDF category	Quote
Environmental context & resources	<i>"Electronic communication among general practices, pharmacies, and hospitals should be improved to ensure optimal connection of their EHR systems"</i>
Skills	<i>"I would really like to have tools to know how I should register this."</i>
Social or professional role and identity	<i>"Participants did agree that responsibility should lie with either clinicians or pharmacists because they are able to evaluate the symptoms"</i>
Knowledge	<i>"Participants suggested that nurses be provided with an educational algorithm to specify the differences between true allergic reactions and drug intolerances."</i>
Beliefs about consequences	<i>"Some family physicians were aware that inappropriate documentation has consequences"</i>

Table 3. Suggested Interventions

Themes	BCI functions
Capability <ul style="list-style-type: none"> • Skills • Knowledge 	<ul style="list-style-type: none"> • Education/ training • De-labeling algorithm/ toolkit • Guidelines/ policies
Opportunity <ul style="list-style-type: none"> • Electronic health records (EHR) • Communication between health care professionals • Time 	<ul style="list-style-type: none"> • Changes to EHRs • Policies • Incentivize correct labeling • Audit system • Removal of "unknown allergy" • Dedicated personnel
Motivation <ul style="list-style-type: none"> • Fears about allergic reaction • Professional roles 	<ul style="list-style-type: none"> • Education/ training • De-labeling toolkit/ policy

Rigor and Trustworthiness

- Using the CASP tool, we rated three studies to be moderate to high quality and one study to be low quality. Exclusion of the low quality study did not affect results.
- Using the GRADE-CERQual approach, we found moderate confidence in our findings based on the criteria of methodological limitations, coherence, adequacy, and relevance.

Discussion

Strengths

- First qualitative meta synthesis assessing barriers and facilitators to antimicrobial allergy de-labeling
- Multidisciplinary perspective (physicians, nurses and pharmacists)

Limitations

- Small sample size
- Study centers not in North America (UK, Netherlands and US)
- Clinical practice and EHRs may not be comparable to North America

Conclusions

- Key barriers and facilitators to antimicrobial allergy de-labeling were identified and coded to the TDF.
- Themes generated pertained to skills, knowledge, EHRs, communication, time, fears about allergic reaction, and professional roles.
- BCIs with the potential to overcome identified barriers to antimicrobial allergy de-labeling were identified..

Future Initiatives

- To add local context to results, conduct a qualitative study to determine site specific barriers and enablers to antimicrobial allergy de-labeling at IH facilities.
- Implement and evaluate BCIs for antimicrobial allergy de-labeling that address barriers and facilitators identified in this study at IH facilities.

