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Population-based interventions for reducing the burden of anemia in pregnant and postpartum women in Africa: a scoping review protocol

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ADMINISTRATIVE INFORMATION

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Review Stage at time of this submission - Preliminary searches.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 June 2026 and was last updated on 24 June 2026.

INTRODUCTION

Review question / Objective The aim of this scoping review is to map the available evidence on population-based interventions across different settings (e.g., facility based, community based, and public health level) in Africa for the prevention and treatment of anemia among pregnant and postpartum women, including reported maternal, perinatal, and infant outcomes.

Background Anemia, defined as less hemoglobin (Hgb) level relative to the normal range, decreases oxygen-carrying capacity of red blood cells to tissues[1]. Anemia is one of the major public health concerns that disproportionately affects the women and children in low- and middle- income countries (LMICs). This is usually due to socio-cultural issues such as poverty, lack of knowledge, poor dietary habits, parasitic infection, blood loss,

and diseases like, tuberculosis, malaria, short inter-pregnancy interval, high parity, harmful cultural beliefs, practices regarding nutrition, late booking of pregnant women at antenatal care (ANC) units as well as a shortage of iron, folate and vitamins in many settings[2].

The consequences of maternal anemia extend far beyond fatigue and shortness of breath. A robust body of global evidence shows associations between maternal anemia and adverse pregnancy outcomes, including low birth weight (LBW) or preterm birth (PTB) stillbirth, intrauterine growth restriction (IUGR), perinatal mortality, postpartum hemorrhage (PPH), and increased maternal mortality[3]. Addressing maternal anemia is a global health issue and is aligned with the Sustainable Development Goals 3 (SDG 3) "Good Health and Well-being"

Iron deficiency anemia (IDA) represents the most widespread nutritional problem worldwide,

contributing to roughly 50% of anemia cases globally and about 75% of anemia occurring during pregnancy[4, 5]. When a woman becomes pregnant, the body's iron requirement increases by approximately two to three times, while the need for folate rises by about ten to twenty times[2]. However, other forms of anemia are also prevalent in SSA, including hemoglobinopathies such as sickle cell disease, infection-related anemia (notably malaria and helminth infections), and other nutritional deficiencies, particularly folate and vitamin B12 deficiency anemia[6].

Rationale Despite the availability of effective interventions, maternal anemia remains highly prevalent in many LMICs, including countries in Africa. Understanding what population-based interventions have been designed and implemented in LMICs, and the effectiveness of interventions (if available) is essential to determining which interventions show promise and what factors influence uptake and adherence. This in turn could inform future clinical practice and health policy.

A scoping review is an appropriate approach to identify and map the available interventions for preventing and treating maternal anemia during pregnancy. Because interventions can vary widely, such as iron-folic acid supplementation, Intravenous (IV) iron administration, food fortification, deworming programs, and nutrition education, a scoping review enables a comprehensive examination of the range of interventions that have been designed and implemented in Africa, the settings (e.g., hospitals, community-based programs, or primary care settings) where they have been implemented, barriers and facilitators to uptake and adherence, and the clinical and resource-related outcomes following successful implementation.

METHODS

Strategy of data synthesis The search will be conducted with the help of a health information specialist with a focus on implementation strategies. A comprehensive search strategy combining database specific controlled vocabulary and keywords will be developed.

The following electronic databases will be searched:

- Ovid Medline
- Ovid Embase
- Global health
- African Index Medicus
- African Journals Online (AJOL)

Because terminology in implementation science is often inconsistent, our search strategy will rely on

a combination of terminology for the following four concepts: prevention and treatment of anemia (including iron deficiency anemia, hemoglobinopathies, sickle cell disease, infection-related anemia, vitamin B12 deficiency anemia), pregnancy and postpartum, population-level or population-based interventions or implementation strategies, and Africa. A pilot search will be conducted to refine the final search strategy. No restrictions will be applied with regards to publication date or language.

Eligibility criteria Any original research studies and study protocols including observational studies, mixed methods studies, randomized controlled trials and novel research methods such as human-centered design, that describe or evaluate interventions aimed at preventing or treating anemia during pregnancy and the postpartum period will be included.

Source of evidence screening and selection

Two reviewers will independently review the titles and abstract to check inclusion and exclusion criteria on Covidence software [7]. In case of any disagreements, it will be resolved by discussion or adjudication by a third reviewer. The two reviewers will also independently screen full texts. The results of the search and literature screening process will be presented using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) flow diagram.

Data management All references and duplicate records will be managed and screened using EndNote citation management software and Covidence software[7].

A data extraction form will be developed to capture the following information: Author(s), year of publication, title of the study, aim of the study, country, study setting, study design and methodology, population characteristics, definition and severity of anemia, timing of anemia measurement, interventions for prevention and/or treatment of anemia, implementation strategies categorized according to the Expert Recommendations for Implementing Change (ERIC) framework, key findings related to the interventions and implementation approaches, barriers and facilitators to uptake of interventions, adverse pregnancy outcomes measured, and implementation outcomes described.

Data will be synthesized descriptively. We will aim to summarize details on interventions proposed and implemented, barriers and facilitators to adherence and uptake, measures of success and satisfaction with the intervention which may include clinical (maternal, perinatal and infant

outcomes), resource-related and other patient-important outcomes. Descriptive statistics will be used to summarize characteristics of the included studies and key features of the reported interventions.

Reporting results / Analysis of the evidence

Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines[8] will be used for reporting the study results. Given the nature of the review, we will only perform a narrative synthesis listing all proposed and implemented interventions.

Presentation of the results

Tables will be used to provide a descriptive summary of the included studies, including intervention type, study design, country, population, setting, and outcomes assessed. The tables will be organized by categorization of interventions aimed at preventing and treating maternal anemia among pregnant and postpartum women in Africa, as implemented, evaluated, or proposed and by level of intervention delivery (within health systems or community settings). Where available, maternal, perinatal, and infant outcomes, as well as information related to intervention delivery and barriers and facilitators will also be summarized.

Language restriction No language restriction will be imposed in the search strategy.

Country(ies) involved Canada and Ethiopia.

Keywords Anemia; Iron deficiency anemia; infection-related anemia; pregnant and postpartum women with anemia; population-level interventions; strategies; Africa.

Dissemination plans The findings of this scoping review will be shared through an open-access peer reviewed publication, as well as presentations at national and international conferences.

Contributions of each author

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