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Can providing Social Norms Feedback (SNF) intervention strategies to primary care institutions reduce inappropriate antibiotic prescribing?

Submission date
12/06/2026

Recruitment status
Recruiting

Registration date
08/07/2026

Overall study status
Ongoing

Last Edited
06/07/2026

Condition category
Other

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[X] Record updated in last year

Plain English summary of protocol

Background and study aims

Antimicrobial resistance (AMR) is a growing global health threat driven largely by the overuse and misuse of antibiotics, causing significant deaths and increasing healthcare burdens. Despite international efforts and national policies, inappropriate antibiotic use remains widespread worldwide, including high rates in primary healthcare settings, particularly in China. Social norm feedback (SNF), which uses peer comparison to influence behaviour, shows promise in improving prescribing practices but has not been fully integrated into routine systems. This study aims to test an optimized SNF approach in primary healthcare institutions in Guizhou Province to achieve sustained improvements in antibiotic use.

Who can participate?

Adult patients aged 18 years and above who have at least one record of receiving antimicrobial drug treatment at the sampled medical institutions during the study period, and physicians who directly engage in clinical or pharmacy-related work at primary medical institutions.

What does the study involve?

This study first piloted four distinct intervention measures (educational intervention, peer comparison, real-time warning pop-ups, and auxiliary intervention) in a small sample of primary medical institutions. Based on operational data, questionnaire surveys and interview findings, the most effective combination of intervention components was screened out, and evaluation criteria for the subsequent formal trial were established. A multi-arm cluster randomised controlled trial was carried out in the formal trial phase, where multiple primary medical institutions were cluster-randomised into five trial arms with different combinations of intervention components. The independent and interactive effects of each component were systematically verified to identify the optimal intervention combination. A 6-month follow-up assessment was then conducted. Guided by the RE-AIM framework, the sustainability of the optimised programme in large-scale real-world settings was evaluated across five dimensions: reach, effectiveness, adoption, implementation fidelity and maintenance. Finally, a generalisable

toolkit of Social Norm Feedback (SNF) interventions for antimicrobials was developed to address the difficulty of long-term intervention sustainability.

What are the possible benefits and risks of participating?
Overall, the main benefit of participating in this SNF intervention study is the standardisation of physicians' prescribing behaviours, improvement of primary healthcare quality and mitigation of antimicrobial resistance risks. The primary risks include challenges to the long-term sustainability of intervention effects, as well as multiple organisational and individual barriers encountered during real-world implementation.

Where is the study run from?
Guizhou Medical University, China.

When is the study starting and how long is it expected to run for?
July 2026 to December 2028.

Who is funding the study?
Guizhou Provincial Science and Technology Department, China.

Who is the main contact?
Prof Yue Chang, yangjunli@gmc.edu.cn

Contact information

Type(s)
Principal investigator, Scientific, Public

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Study information

Scientific Title
Multi-stage optimization trial study on improving antibiotic prescriptions in primary medical institutions using Social Norms Feedback (SNF) intervention strategies

Study objectives
A multi-arm cluster randomized controlled trial was adopted to verify the implementation effect of each component of the SNF strategy, so as to develop an SNF intervention strategy for antibiotics suitable for outpatient services of local primary medical institutions. Meanwhile,

relevant process indicators during implementation were collected to comprehensively evaluate the feasibility and scalability of the intervention measures in primary medical institutions, laying a foundation for their subsequent promotion.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 05/03/2025, The Ethics Committee of GuiZhou Medical University Ethics Committee (Guizhou Medical University, Guian new district, Guizhou Province, GuiYang, 561113, China; +86 0851-88576281; a@a), ref: (70) of 2025

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Historical

Assignment
Parallel

Purpose
Health services research

Study type(s)

Health condition(s) or problem(s) studied
Inappropriate use of antibiotics in primary care institutions

Interventions
Randomisation method: First, simple random sampling was used to select 5 prefecture-level administrative regions from the 9 prefecture-level divisions in Guizhou Province. Next, based on the list provided by the Guizhou Provincial Health Commission, computer-generated random numbers were applied for simple random sampling to recruit 8 primary medical institutions from each of the 5 selected regions, resulting in a total of 40 participating institutions. Finally, a random number table was adopted to randomly allocate the 5 prefecture-level regions into five study arms (Groups A, B, C, D and E), each receiving a distinct combination of intervention strategies.

(1) Peer comparison: Regularly send doctors data on their antibiotic prescription rates, irrational prescription rates and their rankings within the institution or administrative region, so as to motivate doctors to voluntarily standardize their prescribing behavior through peer pressure.
(2) Real-time alert pop-up windows: When a doctor writes an irrational prescription, a prompt window will pop up in the upper left corner of the computer screen to immediately prevent potential inappropriate medication use.

(3) Education and training for medical staff and patients: Conduct online and offline training, and distribute manuals, videos, posters and other materials to improve doctors' ability of rational medication use and patients' awareness, and reduce medication-related demands from patients. (4) Supplementary intervention measures: Appoint dedicated intervention personnel within the institution, display top and underperforming practitioners in feedback reports, and set up appeal channels. These measures strengthen the organizational driving force and operability of the interventions.

Intervention Type
Behavioural

Primary outcome(s)
1. Inappropriate antibiotic prescription rate, defined as the proportion of inappropriate antibiotic prescriptions during the study period relative to the total number of antimicrobial agents prescribed, measured using data collected from records in the hospital's HIS system, at baseline, 6, 12, 15, and 18 months

2. Antibiotic prescription rate, defined as the number of antibiotic prescriptions divided by the total number of prescriptions in study period, measured using data collected from hospital pharmacy stock records, at baseline, 6, 12, 15, and 18 months

Key secondary outcome(s)

Completion date
31/12/2028

Eligibility

Key inclusion criteria
Physicians
1. Directly engage in clinical or pharmacy-related work at primary medical institutions
2. Have worked at the aforesaid primary medical institution for more than one year
3. Hold an intermediate or higher professional title
4. Volunteer to participate in this study

Patients
1. Patients who have at least one record of receiving antimicrobial drug treatment at the sampled medical institutions during the study period
2. Patients aged 18 years and above
3. Individuals who are fully informed of and willing to cooperate with this study

Healthy volunteers allowed
Yes

Age group
Mixed

Lower age limit
18 Years

Upper age limit

80 Years

Sex
All

Total final enrolment
0

Key exclusion criteria
Physicians
1. Off-duty outpatient doctors and pharmacists
2. Advanced trainees

Patients
1. Patients with severe visual and hearing impairments or aphasia
2. Patients who refuse to participate

Date of first enrolment
01/07/2026

Date of final enrolment
31/12/2026

Locations

Countries of recruitment
China

Sponsor information

Organisation
Guizhou Medical University

Funder(s)

Funder type

Funder Name
Guizhou Provincial Science and Technology Department

Alternative Name(s)
Guizhou Science and Technology Department, Guizhou Science and Technology Department, , Science and Technology Foundation of Guizhou Province, Department of Science and Technology of Guizhou Province, Department of Science and Technology, Guizhou Province

Funding Body Type
Government organisation

Funding Body Subtype
Local government

Location
China

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available