

Additional file 1: The universal framework for the guide of the antimicrobial social norm feedback (SNF) intervention strategy based on the Consolidated Framework for Implementation Research (CFIR). (across all groups)

CFIR domains/constructs	Interview questions on SNF intervention strategy
1. Intervention Characteristics	
Intervention Source	Would you prefer the standards or intervention strategies developed by an external research team like ours, or would you rather have them decided through internal hospital discussions? Why?
Evidence Strength and Quality	What information do you typically reference to assess the potential effectiveness of an intervention strategy (e.g., published literatures, guidelines, patient feedback, personal experience, or expert judgment)?
Relative Advantage	Does your institution currently have assessments or interventions for antimicrobial use? How does the antimicrobial SNF intervention strategy compare to existing measures? Which approach do you prefer and why?
Adaptability	What adjustments or optimizations do you recommend for the antimicrobial SNF intervention? How should these be implemented?
Trialability	What prerequisites or resources are required to pilot this intervention strategy in your institution? How do existing resources align with these needs? What is lacking?
Complexity	How difficult would it be for physicians in your institution to follow the operational steps of this intervention strategy?
Design Quality and Packaging	Which design elements of this intervention strategy would facilitate or hinder its implementation and promotion?
Cost	What major costs might arise from implementing this intervention strategy? Are these costs acceptable?
2. Inner Setting	
Structural Characteristics	Can you describe your institution's organizational structure (e.g., social

	architecture, age, maturity, and size)?
Networks and Communications	How effectively do different departments collaborate in routine work at your institution?
Culture	How would you describe your institution's organizational culture? How might this culture influence the implementation of the intervention strategy?
Implementation Climate	In your experience, how does your institution promote and implement new measures?
Tension for Change	Do you believe daily work requires measures like this intervention strategy to provide feedback on antimicrobial use?
Compatibility	Can the SNF intervention strategy be seamlessly integrated into physicians' current workflows?
Relative Priority	If implemented in primary care institutions, would this intervention strategy take priority over other competing priorities?
Organizational Incentives and Rewards	Would your institution consider adopting incentives or rewards to enhance compliance with the intervention strategy?
Goals and Feedback	In your experience, does your institution set clear goals and establish feedback mechanisms when implementing new measures? What channels are used?
Learning Climate	Does your institution encourage self-directed learning or provide training sessions when adopting new measures?
Readiness for Implementation	Do you believe institutional leaders would invest time and effort to monitor the implementation of the intervention strategy? If so, how?
Leadership Engagement	Do you perceive that institutional or health department leaders would actively engage in overseeing the intervention strategy? If so, how?
Available Resources	Are existing resources at your institution sufficient to support the implementation of this intervention strategy? What gaps exist?
Access to Knowledge and Information	Have you encountered challenges in accessing information on antimicrobial use in the past?

3. Characteristics of Individuals

Knowledge and Beliefs about the Intervention	Do you believe this intervention would assist your daily work? If so, in what aspects?
Self-efficacy	If implemented, how confident are you in the successful application of this intervention strategy?
Individual Identification with Organization	What is your overall impression of your institution? What shapes this impression?

4. Outer Setting

Patient Needs and Resources	What information or support do patients most desire regarding antimicrobial use? What barriers might hinder effective patient education?
Cosmopolitanism	Has your institution participated in collaborative projects with other organizations on antimicrobial use or similar interventions?
Peer Pressure	If other primary care institutions implement antimicrobial intervention strategies, would you support similar strategies in your institution?
External Policy and Incentives	Are you aware of existing policies or incentives that could facilitate the implementation of this intervention strategy?

5. Implementation Process

Planning	In your experience, does your institution develop detailed plans when implementing new measures? If so, how?
Engaging	If tasked with nominating a coordinator for this intervention strategy, whom would you recommend? What strengths or weaknesses would they bring? Are there other colleagues likely to support the intervention strategy?
Execution	What practical difficulties or obstacles might arise during the execution of this intervention strategy?
Reflecting and Evaluating	Does your institution conduct periodic reflections or evaluations during implementation? How does this contribute to individual or team growth?
