

Acceptability, appropriateness, and feasibility of antimicrobial stewardship interventions among Swiss primary care physicians

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INTRODUCTION

- Antimicrobial stewardship is defined by the set of measures aimed at using antimicrobials responsibly [1].
- With most of the antibiotic prescriptions occurring in primary care, antimicrobial stewardship (AMS) interventions must be **known, welcomed, and used** by primary care physicians (PCPs).
- Due to their high propensity for inappropriate antibiotic prescription, **respiratory tract infections (RTIs)** represent a critical target for AMS efforts.
- The main objective of this study was to evaluate the **use, awareness, acceptability, appropriateness, and feasibility** of a broad range of AMS interventions available for Swiss PCPs.

METHODS

A **mixed-methods, cross-sectional** survey targeting PCPs throughout Switzerland, distributed through Family Medicine Departments' mailing lists (University of Lausanne, University of Luzern), professional newsletters, and medical education events, from December 2023 to March 2024.

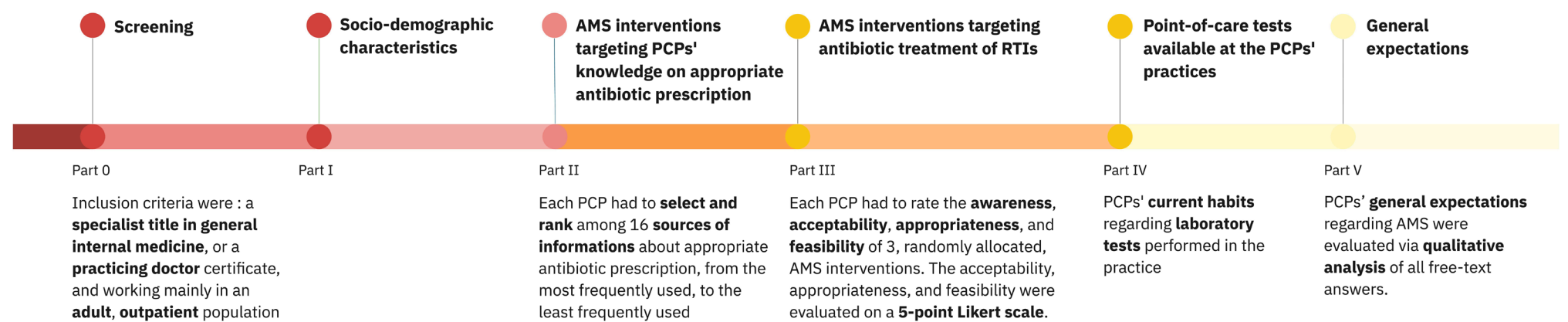


Figure 1 : summary of study design and survey structure

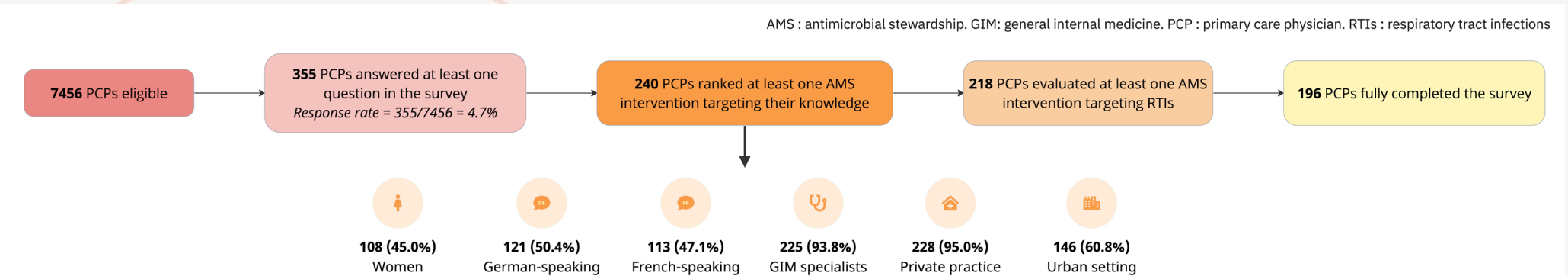


Figure 2 : Study flowchart and characteristics of study population

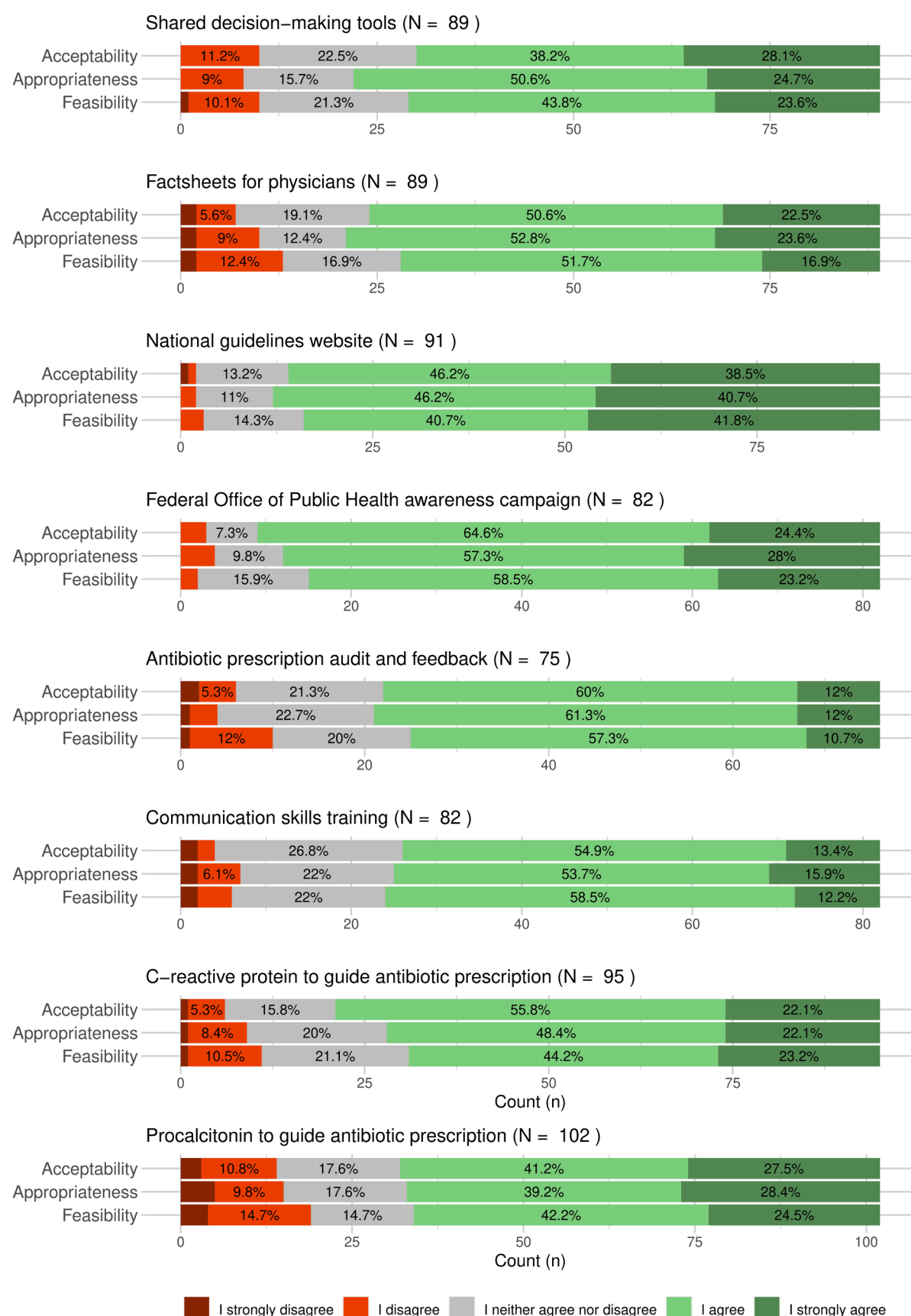


Figure 3 : Acceptability, appropriateness, and feasibility of AMS interventions targeting respiratory tract infections

Table 1 : Proportion of primary care physicians' aware of specific AMS interventions

Intervention	Awareness, n/N (%)
PCT to guide antibiotic prescription [2]	69/102 (67.6)
CRP to guide antibiotic prescription [3]	58/95 (61.1)
FOPH information material [4]	47/82 (57.3)
National guidelines website [5]	48/91 (52.7)
Antibiotic prescription audit and feedback [6]	27/75 (36.0)
Shared decision-making tools [7]	24/89 (27.0)
Factsheets for physicians [7]	20/89 (22.5)
Communication skills training programme [8, 9]	14/82 (17.1)

CRP : C-reactive protein. FOPH : federal office of public health. PCT : procaltitonin.

MAIN FINDINGS

- Medium to low** awareness (except for biomarkers) (*tab. 1*)
- Overall, **good acceptability, appropriateness, and feasibility** of most evaluated interventions (*fig. 3*)
- National guidelines : highest **acceptability, appropriateness, and feasibility**, but **medium awareness** (52.7%) (*fig. 3*) (*tab.1*)

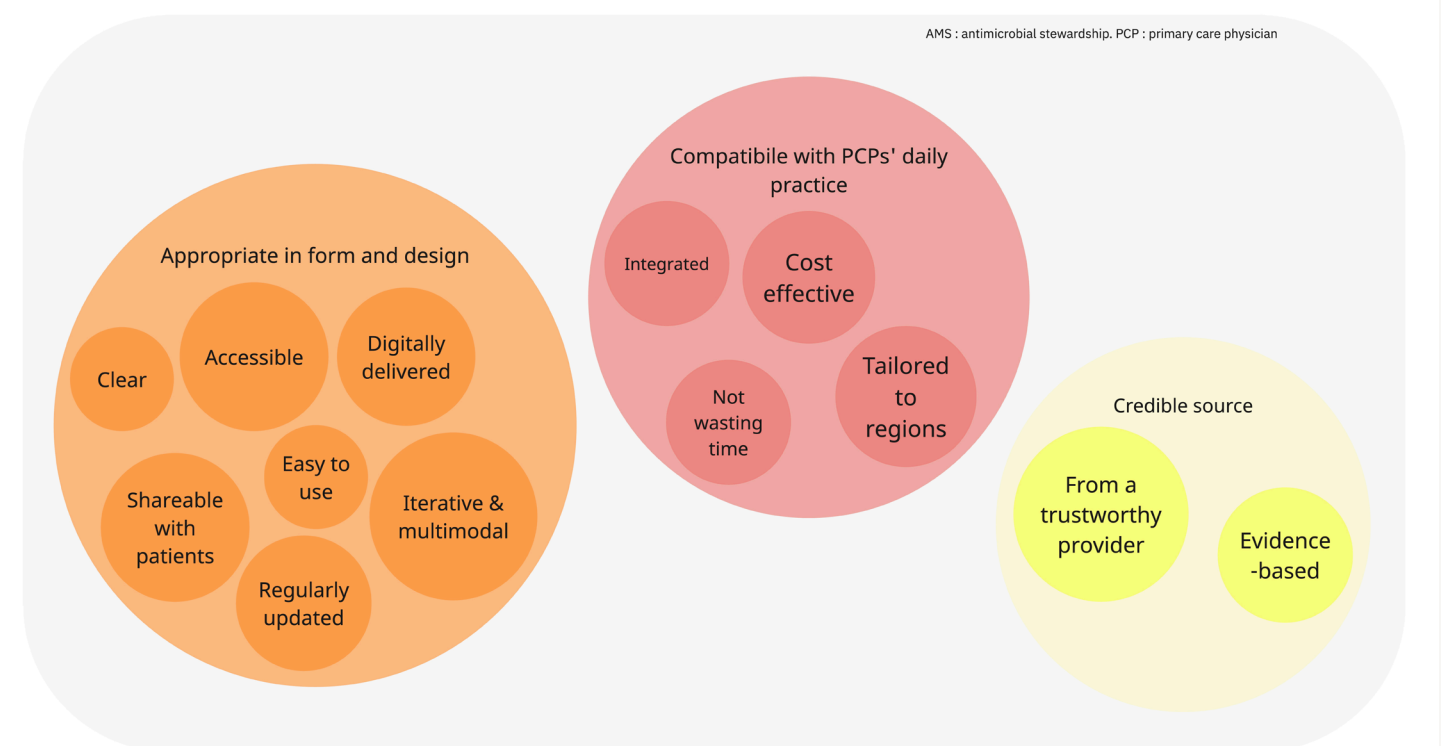


Figure 4 : PCPs expectations regarding an AMS intervention

LIMITATIONS

- Low response**: Response rate : 4.7%
- Selection bias** (inclusion of teaching physicians)
- Desirability bias** (answering according to what people expect of you)

- Dyar, O. J., et al. (2017). "What is antimicrobial stewardship?" Clinical Microbiology and Infection 23(11): 793-798.
- "Community acquired pneumonia - guidelines.ch." from <https://ssi.guidelines.ch/guideline/3007/fr>. Klinische Guidelines für Schweizer Gesundheitsfachpersonen
- NICE. Suspected acute respiratory infection in over 16s: assessment at first presentation and initial management [Clinical Guideline]. National Institute for Health Care Excellence; 2023 [updated 2023.11.16. Available from: <https://www.nice.org.uk/guidance/ng237>.
- FOPH. Antibiotika richtig einsetzen - Startseite [Available from: <https://www.antibiotika-richtig-einsetzen.ch/en/>.
- SSI. Guidelines.ch: Swiss Society of Infectious Diseases; [Available from: <https://ssi.guidelines.ch/>]
- Aghlmandi S, Halbeisen FS, Saccolotto R, Godet P, Signorelli A, Sigrist S, et al. Effect of Antibiotic Prescription Audit and Feedback on Antibiotic Prescribing in Primary Care: A Randomized Clinical Trial. JAMA Intern Med. 2023;183(3):213-20.

- Tools to facilitate shared decision-making: Institute of Primary Health Care (BIHAM); 2023 [updated 2023/09/20. Available from: https://www.biham.unibe.ch/research/tools_to_facilitate_shared_decision_making/index_eng.html.
- Anthierens S, Tonkin-Crine S, Douglas E, Fernandez-Vandellos P, Krawczyk J, Llor C, et al. General practitioners' views on the acceptability and applicability of a web-based intervention to reduce antibiotic prescribing for acute cough in multiple European countries: a qualitative study prior to a randomised trial. BMC family practice. 2012;13(1):101.Yardley L, Douglas E, Anthierens S, Tonkin-Crine S, O'Reilly G, Stuart B, et al. Evaluation of a web-based intervention to reduce antibiotic prescribing for LRTI in six European countries: quantitative process analysis of the GRACE/INTRO randomised controlled trial. Implement Sci. 2013;8:134.
- Yardley L, Douglas E, Anthierens S, Tonkin-Crine S, O'Reilly G, Stuart B, et al. Evaluation of a web-based intervention to reduce antibiotic prescribing for LRTI in six European countries: quantitative process analysis of the GRACE/INTRO randomised controlled trial. Implement Sci. 2013;8:134.