Factors associated with use of important drugs for humans in companion animals in Japan

-Evidence from a nationwide Japanese small-animal clinic survey-

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Why this matters: One Health

- Antimicrobial resistance threatens treatment options for both people and animals.
- Dogs and cats live in close contact with their owners and veterinary teams.
- Understanding prescribing decisions is essential for practical stewardship.

The question is not only how much is used — but why particular drugs are chosen.

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From the Japan Veterinary Medical Association (JVMA) 2021 study to the 2025 follow-up

2021 | How much?

Estimated 29.9 tonnes/year
61.8% human-approved drugs
Mass-based antimicrobial use

2025 | Why and how often?

Frequency of human-drug use
Veterinary knowledge and attitudes
Clinic stewardship practices

Different denominators: 2021 mass ≠ 2025 treatment-use frequency

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Study design and definition

- Two questionnaires: antimicrobial use and AMR awareness / practice
- Survey period: November 2021 – February 2022; 260 clinics approached
- Important human drugs: Rank I antimicrobials defined by Japan’s Food Safety Commission
- Analyses: clinic-level use, share of important drugs, and drug-level frequency

Questionnaire-based observational study — associations, not causal effects

How widespread was use?

71.2%

Use-survey response rate

72.3%

Awareness-survey response rate

57.1%

Clinics using important human drugs (93/163)

All responding facilities with use data reported some human antimicrobial use.

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One in five human-drug uses involved important drugs

21.7%

7,342 of 33,896 annual uses of human antimicrobials



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What did clinics report about stewardship?



Testing and communication practices offer actionable stewardship entry points.

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Practices linked to a lower share of important drugs

Adjusted odds ratios for proportion of important drugs among human-drug uses



OR < 1: associated with a lower proportion; not proof of causality

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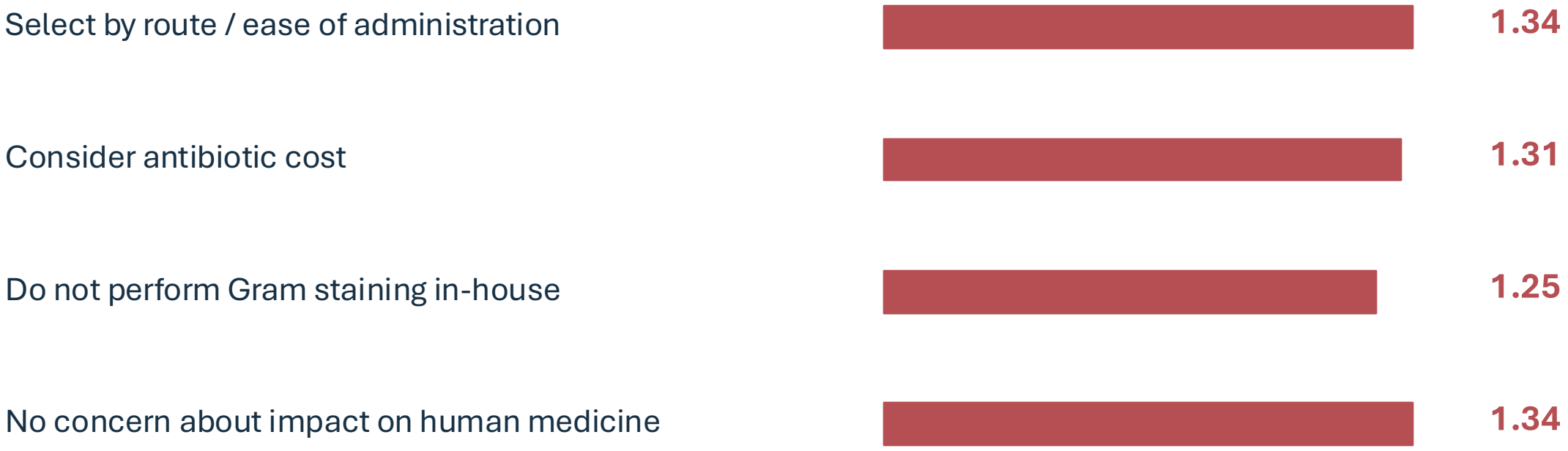
Practices linked to a higher share

Adjusted odds ratios for proportion of important drugs among human-drug uses



Convenience and price may compete with stewardship priorities.

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A key distinction: use versus proportion

Any important-drug use?

Clinic-level binary outcome

No statistically significant predictors remained in the multivariable model.

Share of important drugs?

Proportion among human-drug uses

Multiple knowledge, attitude and practice factors were associated.

Appropriate knowledge and attitude matters may determine the AMU.

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Implications for Asia-Pacific veterinary practice

- Make first-line options and drug classifications easy to understand.
- Support microbiological diagnosis and susceptibility-guided treatment.
- Discuss cost and administration barriers without compromising stewardship.
- Communicate correct antibiotic use and AMR risks to animal owners.
- Build clinic-level antimicrobial-use monitoring and feedback.

Conclusions: stewardship is a clinical decision

21.7% of human antimicrobial uses involved important drugs.

Knowledge, diagnostic practices and prudent-use attitudes were associated with lower shares.

Cost and convenience considerations were associated with higher shares.

Thank you | Discussion



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