

Real-World Impact of MeMed BV, a Rapid Host Response Test for Distinguishing Bacterial and Viral Infections, in an Urgent Care Network

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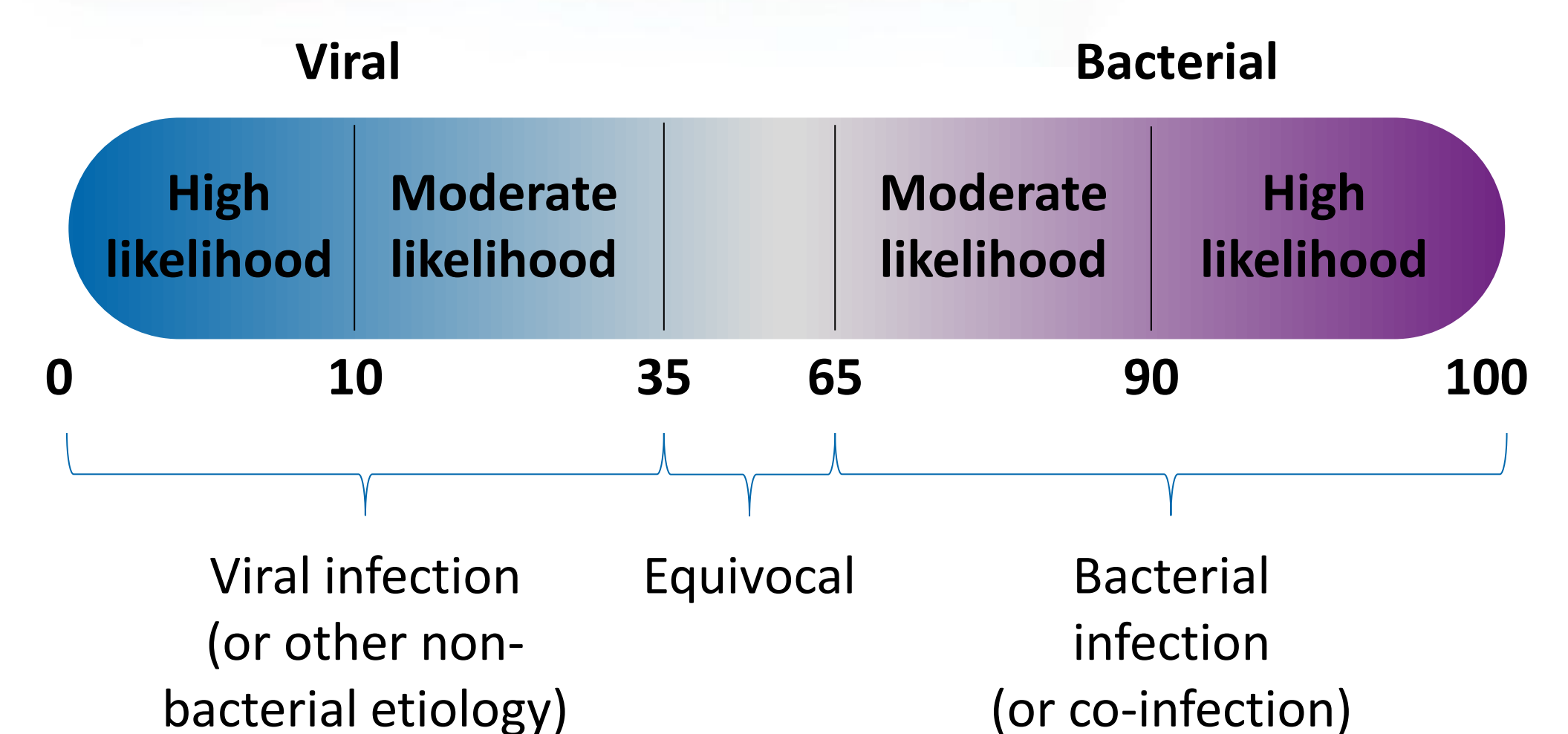
Background

Antibiotic misuse is a major driver of antimicrobial resistance and is particularly prevalent in the urgent care setting. A leading cause of misuse is uncertainty regarding infection etiology.

MeMed BV® (MMBV) is an FDA-cleared test designed to aid physicians in differentiating between bacterial and viral infections based on computational integration of the blood levels of three host proteins into a score. Here we examined the real-world impact of integrating MMBV in the urgent care workflow on clinical decision-making.

Methods

A pragmatic implementation study, conducted between April 2022 and March 2023. MMBV introduced into routine care at ten UCCs nationwide. The tests were ordered at physicians' discretion for patients with suspected infection. Physicians reported electronically upon ordering MMBV (in real time) whether they intend to prescribe antibiotics before ordering MMBV. Physicians' intention was compared to practice after receiving MMBV results. Upon discharge, physicians reported whether MMBV influenced management and ED referral. ED visits and hospitalizations were recorded for 7-days-post-discharge.



Results

- MMBV was ordered at the physician's discretion for 3920 adults, of these 3262 had actionable MMBV results (Figure 1). Despite intending to prescribe, physicians adhered to MMBV in 397/629 (63.1%), avoiding potentially unwarranted antibiotics. Similarly, despite no intention to prescribe, physicians prescribed antibiotics to 283/405 (69.9%) potentially missed bacterial infections. Adherence to MMBV was associated with fewer hospitalizations in 7-day follow up (7.8% vs. 30.3%, $p < 0.01$).
- Physicians reported MMBV aided in patient management decisions for 86% of cases (Figure 2), either changing (24%) or supporting (62%) the decision-making process. Physicians' reports were consistent across different clinical syndromes and for patients ≥ 65 years old. In addition, MMBV influenced ED referral decisions for 700/2901 (24%) patients. In 105/700 (15.0%), MMBV contributed to the decision to refer and in 595/700 (85.0%) to avoid referral.

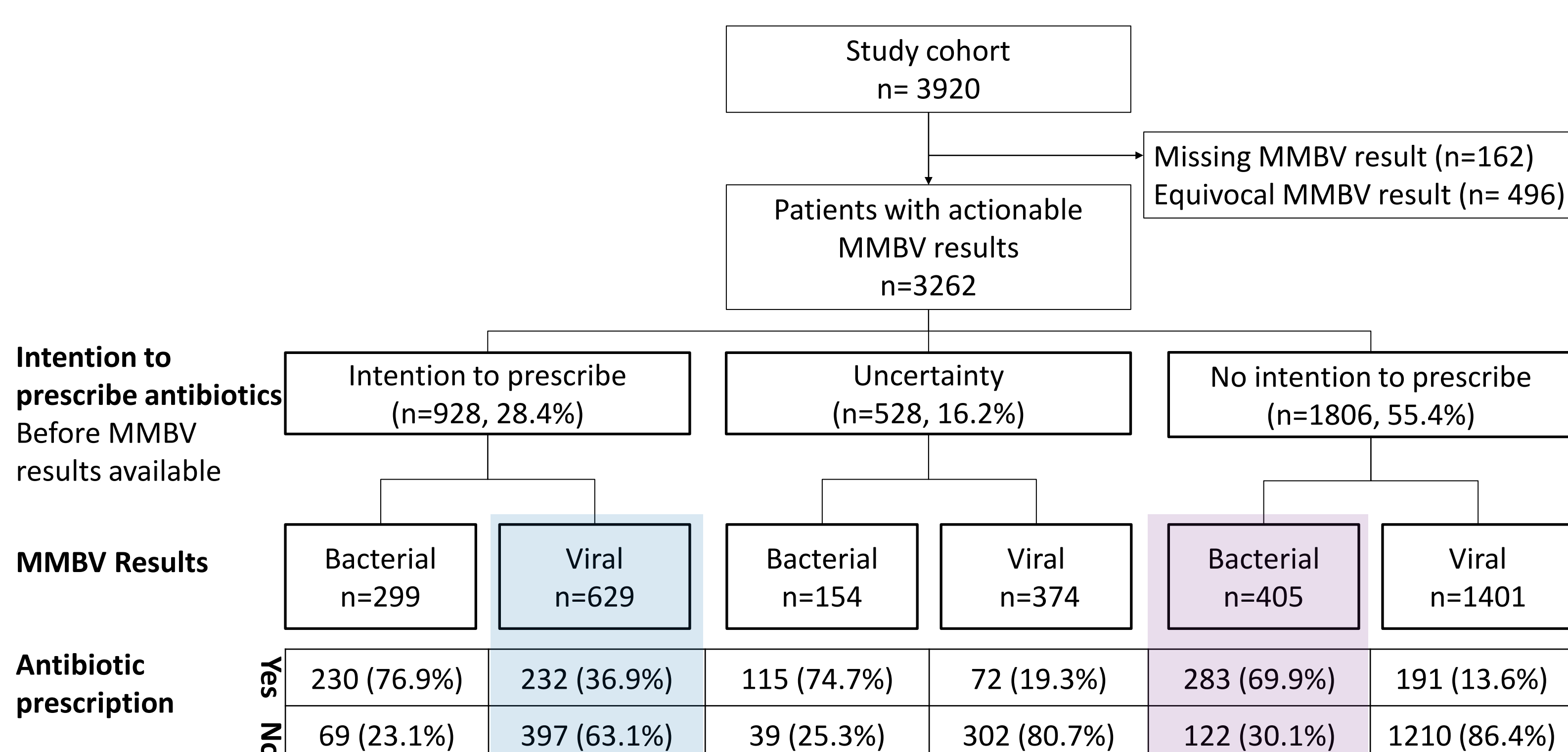


Fig. 1 Patient flow, intention to prescribe antibiotics, the MMBV results and final prescription practice decision

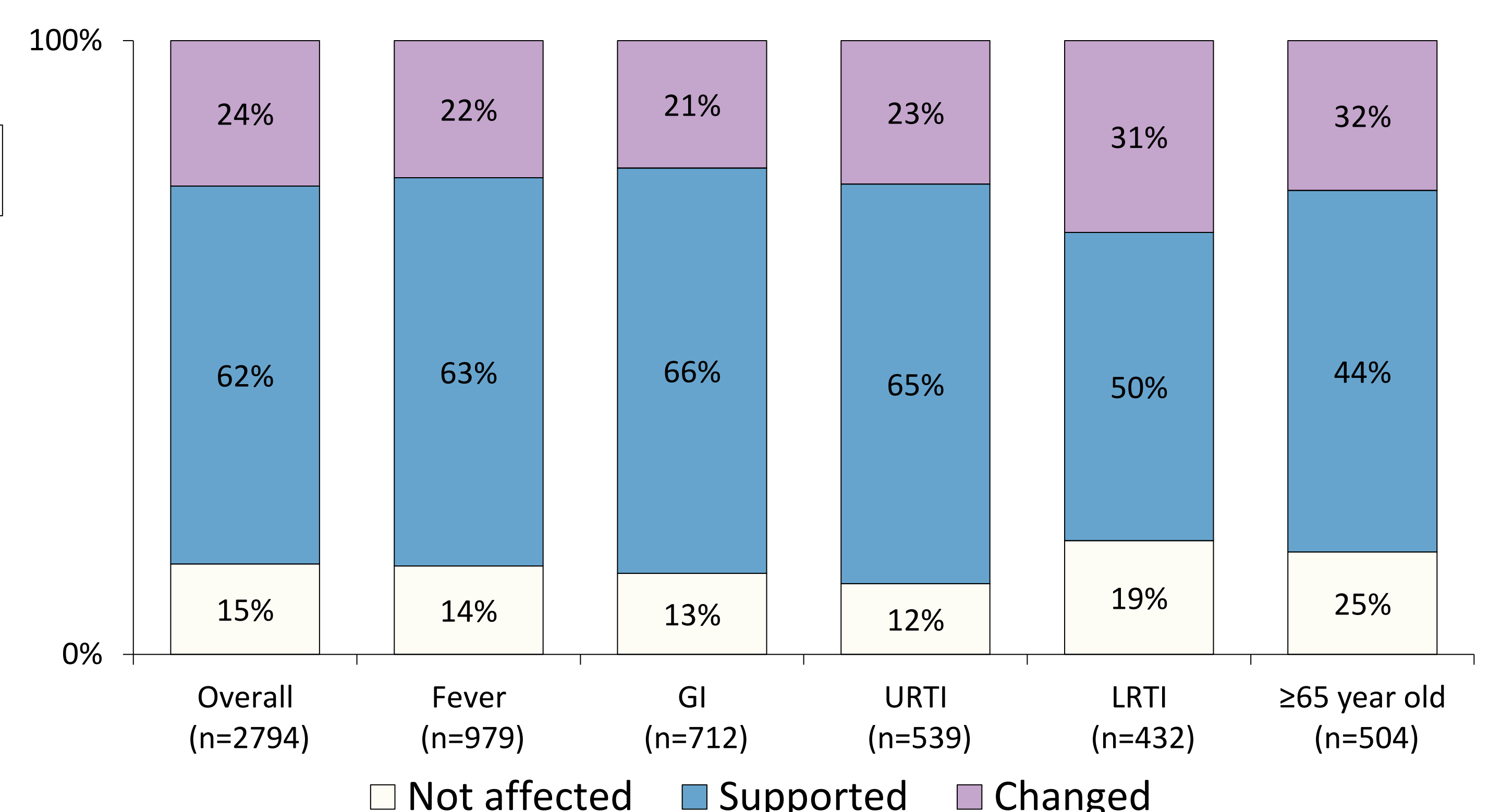


Fig. 2 Answers to the discharge question "How did the MeMed BV test affect your decision-making process?"

Conclusion

MMBV supported physicians in managing adult patients with suspected infections presenting to UCCs. Implementation into routine care aided in judicious antibiotic stewardship and referral.