



# Impact of Microbiology Laboratory Result Presentation on Antibiotic Stewardship

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## BACKGROUND

Advancement in laboratory monitoring is constantly occurring and accuracy of interpretation of lab results directly effects optimal patient care.<sup>2,3</sup>

## PURPOSE

To assess the efficacy of our current presentation of microbiology results in facilitating appropriate clinical decisions and antibiotic stewardship.

## DESIGN

Six question multiple choice surveys were provided to physicians, residents, advanced practice professionals, pharmacists, and pharmacy residents. Each question presented a hypothetical clinical case and included examples of our current presentation of the microbiology result being assessed.

## SURVEY RESPONDENTS

Role	n	%
Attending Physician	14	22
Advanced Practice Professional	3	5
Physician Resident	28	44
Pharmacist	11	17
Pharmacy Resident	8	13

## RESULTS

Several trends were seen in the 64 responses received (n, %):

- Detailed comments** included in the lab results led to the **highest percentage of appropriate responses**:
  - C. difficile* (59, 92%) and *S. pneumoniae* urine antigen (61, 95%)

### Example Survey Question

```
CLOSTRIDIODES DIFFICILE DNA Final 07/18/19-1325
TOXIN A/B POSITIVE FOR CLOST. DIFFICILE TOXIGENIC B GENE BY PCR
NAP1 NEGATIVE BY EIA
027-NAP1-B1 PRESUMPTIVE NEGATIVE BY PCR
CONTACT PRECAUTIONS SHOULD BE IMPLEMENTED

PCR+/ EIA TOX- patients are likely COLONIZED. Treatment of
these patients may not be necessary. Clinical correlation is
required. Isolation precautions are required.
```

### What is your treatment plan?

- A. Initiate PO vancomycin for the treatment of acute *Clostridiodes difficile* infection.
- B. The patient is likely colonized. Hold off on initiating PO vancomycin and assess for alternative causes and monitor for improvement of diarrhea.

- Presumed susceptibilities** and/or **lack of guidance** had **lower rates of appropriate interpretation**:
  - H. influenzae* (55, 86%), Group C *Streptococcus* (46, 72%), blood culture results by PCR (37, 58%)

### Example Survey Question

```
Organism 1 STREPTOCOCCUS GROUP C
.HEAVY GROWTH
```

### What is your treatment plan?

- A. Narrow to penicillin as the organism is most likely susceptible, as Group C *Streptococcus* has known susceptibilities.
- B. Continue vancomycin and await further culture results.

- MICs** were **frequently misinterpreted** (46, 72%)
- Detailed interpretations** stated on microbiology lab results led to **>90%** selection of the desired clinical outcome

## CONCLUSIONS

- Addition of detailed interpretations to microbiology results may lead to improved de-escalation and antibiotic selection.
- Stewardship programs should include close partnership with their microbiology lab to determine effective presentation of results.

## REFERENCES

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## DISCLOSURES

- The authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.
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