Unmet Diagnostic Needs in Infectious Disease

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ABSTRACT

Background: Accurate and timely diagnosis can improve patient care and antibiotic stewardship. New technologies for infectious disease (ID) are emerging but gaps remain in test development and availability. The Emerging Infectious Diseases (EID) and members of the IDSA Diagnostic Task Force surveyed clinical ID physicians to assess their unmet diagnostic needs.

Methods: 1272 EID members were surveyed in March 2013. Respondents ranked or scored (1) least important to (5 or 6) greatest need for infectious syndromes, pathogens, and antibiotic resistance. Additional free-text answers were encouraged. Respondents were also asked to choose syndromes and pathogens not specifically addressed in the survey; free text answers were encouraged.

RESULTS

• 700 members (44.5%) completed the survey.
  • Identification of resistant Gram-negative bacilli and rapid ESBL testing ranked 1st in the pathogen and resistance categories.
  • Cultural-negative endocarditis was the syndrome with greatest unmet need followed by infectious diarrhea.
  • Pathogen-based testing for respiratory infection (18% of write-ins), followed by tests to distinguish viral vs. bacterial infection (16%) were named most frequently as potentially useful tests not available in respondents' current practice.
  • Accuracy and turn around time were the most important test characteristics (mean scores 4.72 and 4.61, outranking cost (4.07).
  • A majority (67%) of respondents felt that some testing is too complex for non-ID physicians; 79% thought there should be stewardship for complex or expensive tests (e.g., multiplex testing for respiratory viruses [13% of write-ins] and broad range PCR [9%]).

CONCLUSIONS

This study was determined to be exempt from review by the University of Iowa Institutional Review Board and is not considered human subject research.

METHODS

An online electronic survey of all EID members in the spring of 2013 regarding their perceived unmet diagnostic needs in infectious diseases. Members were informed of the study and asked to participate in a Web-based questionnaire. The survey included an online electronic survey of all EID members in the spring of 2013 regarding their perceived unmet diagnostic needs in infectious diseases. Members were informed of the study and asked to participate in a Web-based questionnaire. The survey included questions of importance of some infectious syndromes and pathogens as well as what unmet need for clinical care was most helpful.

Data Source

The EID maintains demographic data on individual members including scope of practice, public health, academic practice, or both; areas of geography, academic setting and practice type. The survey included questions of the importance of some infectious syndromes and pathogens as well as what unmet need for clinical care was most helpful.

Survey Questions

Respondents were asked to rank or score from (1) least important to (5 or 6) greatest need the unmet need for diagnostic testing for infectious syndromes and pathogens. Six syndromes and six pathogens were specifically listed in the survey; free text answers were also encouraged to suggest syndromes or pathogens not specifically addressed in the survey with significant unmet diagnostic needs. Respondents were also asked to choose syndromes and pathogens not specifically addressed in the survey with significant unmet diagnostic needs.

Analysis

Data were analyzed using SAS version 9.3 (SAS Institute, Cary, NC).

INTRODUCTION

Accurate and timely diagnosis can improve patient care and antibiotic stewardship. New technologies for infectious disease (ID) are emerging but gaps remain in test development and availability. The Emerging Infectious Diseases (EID) and members of the IDSA Diagnostic Task Force surveyed clinical ID physicians to assess their unmet diagnostic needs.

CLINICALLY USEFUL TURN AROUND TIME FOR SELECTED TESTS

Other resistance markers mentioned in open text field: drug-resistant Pneumococcus, Carbapenem resistance, VISA, erythromycin resistance in Mycoplasma, and ampicillin resistance in Haemophilus influenzae. Information gained from this survey can help inform recommendations for new diagnostic test development in the future.

CONCLUSIONS

The call for tests to identify resistant Gram-negative bacteria reflects increasing drug-resistant infections and limited drug development. Recognition of the importance of judicious testing through stewardship parallels increased awareness of rising healthcare costs. Information gained from this survey can help inform recommendations for new diagnostic test development in the future.