**Supplemental Table 1. Survey Instrument**

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| Question | Responses |
| Please indicate your role | 1. Critical care attending physician  2. Critical care fellow  3. Critical care nurse practitioner  4. Critical care hospitalist physician  5. Infectious diseases attending physician  6. Infectious diseases fellow  7. Infectious diseases nurse practitioner  8. Pulmonary attending physician  9. Pulmonary attending physician  10. Pediatric resident  11. PICU Nurse  12. PICU Respiratory Therapist |
| For pulmonary or infectious diseases clinicians only: I provide consultative services in the PICU | Yes  No – If no, no further questions asked and clinician excluded |
| Questions for attending physicians, fellows, residents, nurse practitioners, and hospitalist physicians | |
| *Knowledge and beliefs about respiratory cultures* | |
| *Please indicate how likely you are to obtain a bacterial respiratory culture in each of the following scenarios if you encountered this situation clinically. For the purposes of answering these questions, presume you are the only person making the decision. If you are a subspecialty consultant, please answer based on how likely you are to suggest a respiratory culture be obtained by the primary team. (Note: if a specific symptom is not mentioned, you can assume it is NOT present.)* | |
| A previously healthy 2 month old who you have just intubated for respiratory failure from RSV who has a patchy right peri-hilar infiltrate. | 1. Definitely would send a culture  2. Likely to send a culture  3. Unlikely to send a culture  4. Definitely would not send a culture |
| A newly admitted 4 year old patient with a tracheostomy/ventilator dependence with increased secretions/suctioning requirement and a 1 L supplemental oxygen requirement for the past 2 days, without other ventilator changes. He has not had fever and his chest x-ray shows no infiltrate. Testing for RSV, flu, and COVID-19 are all negative. | 1. Definitely would send a culture  2. Likely to send a culture  3. Unlikely to send a culture  4. Definitely would not send a culture |
| A hospitalized 14 year old patient with tracheostomy/ventilator dependence in whom fever and increased and foul-smelling secretions are reported on rounds. You note that over the past 72 hours, he has been on and o# 1 L supplemental oxygen, though he has been on room air for the past 12 hours. | 1. Definitely would send a culture  2. Likely to send a culture  3. Unlikely to send a culture  4. Definitely would not send a culture |
| *Knowledge and beliefs about respiratory cultures* | |
| *Please rate your agreement with the following statements:* | |
| A gram stain with moderate or many WBC strongly supports a diagnosis of bacterial lower respiratory tract infection | 1. Strongly agree  2. Agree  3. Disagree  4. Strongly disagree |
| A respiratory culture that is positive for heavy growth of Pseudomonas aeruginosa strongly supports a diagnosis of infection due to this organism, independent of clinical symptoms. | 1. Strongly agree  2. Agree  3. Disagree  4. Strongly disagree |
| In a patient with increased and thicker secretions, a respiratory culture that is positive for heavy growth of Pseudomonas aeruginosa strongly supports a diagnosis of infection due to this organism. | 1. Strongly agree  2. Agree  3. Disagree  4. Strongly disagree |
| Respiratory cultures are not helpful in determining if bacterial infection is present or absent, but are helpful in determining what antibiotics should be given to treat a clinically diagnosed infection | 1. Strongly agree  2. Agree  3. Disagree  4. Strongly disagree |
| Tracheal aspirate cultures have no value in the diagnosis or management of ventilator-associated pneumonia or ventilator-associated tracheitis | 1. Strongly agree  2. Agree  3. Disagree  4. Strongly disagree |
| *Decision-making around ordering respiratory cultures* | |
| *Rate the following in terms of how strongly these factors influence your decision to send a bacterial respiratory culture in a mechanically ventilated child.* | |
| Nursing or respiratory therapy concern about clinical symptoms | 1. Strongly influences my decision  2. Moderately influences my decision  3. Mildly influences my decision  4. No influence on my decision |
| Parental concern and desire for testing | 1. Strongly influences my decision  2. Moderately influences my decision  3. Mildly influences my decision  4. No influence on my decision |
| My attending or a colleague of my own specialty will expect this test to be sent | 1. Strongly influences my decision  2. Moderately influences my decision  3. Mildly influences my decision  4. No influence on my decision |
| An attending or colleague from a different specialty will expect this test to be sent | 1. Strongly influences my decision  2. Moderately influences my decision  3. Mildly influences my decision  4. No influence on my decision |
| Unit-specific/institutional guidelines for collecting respiratory cultures | 1. Strongly influences my decision  2. Moderately influences my decision  3. Mildly influences my decision  4. No influence on my decision |
| My own personal views on the value of a respiratory culture in a given clinical scenario | 1. Strongly influences my decision  2. Moderately influences my decision  3. Mildly influences my decision  4. No influence on my decision |
| Questions for nurses and respiratory therapists | |
| *Knowledge and beliefs about respiratory cultures* | |
| *Please indicate how likely you would be to suggest to the ordering provider that a bacterial respiratory culture be obtained in the following scenarios. If a specific symptoms is not mentioned, you can assume it is NOT present.* | |
| A previously healthy 2 month old who has just been intubated for respiratory failure from RSV who has a possible pneumonia on his chest X-ray. | 1. Would definitely suggest  2. Very likely to suggest  3. Unlikely to suggest  4. Definitely would not suggest  5. I generally would not make suggestions to the provider team about obtaining diagnostic tests |
| A 3 year old with a tracheostomy/ventilator dependence and a central venous catheter who is now post-op day 5 following a VEPTR insertion. He develops a new fever without any specific localizing symptoms, including no hypoxia or increase in FiO2 requirement, and no change in ventilator support. | 1. Would definitely suggest  2. Very likely to suggest  3. Unlikely to suggest  4. Definitely would not suggest  5. I generally would not make suggestions to the provider team about obtaining diagnostic tests |
| A newly admitted 4 year old patient with a tracheostomy/ventilator dependence with increased secretions/suctioning requirement and a 1 L supplemental oxygen requirement for the past 2 days, without other ventilator changes. He has not had fever and his chest x-ray shows no infiltrate. Testing for RSV, flu, and COVID-19 are all negative. | 1. Would definitely suggest  2. Very likely to suggest  3. Unlikely to suggest  4. Definitely would not suggest  5. I generally would not make suggestions to the provider team about obtaining diagnostic tests |
| A hospitalized 14 year old patient with tracheostomy/ventilator dependence in whom fever and increased and foul-smelling secretions are reported on rounds. You note that over the past 72 hours, he has been on and off 1 L supplemental oxygen, though he has been on room air for the past 12 hours. | 1. Would definitely suggest  2. Very likely to suggest  3. Unlikely to suggest  4. Definitely would not suggest  5. I generally would not make suggestions to the provider team about obtaining diagnostic tests |
| *Decision-making around ordering respiratory cultures* | |
| *Rate the following in terms of how strongly these factors influence your decision to ask the team if a bacterial respiratory culture should be sent in a mechanically ventilated child.* | |
| I know from experience that the critical care team generally expects respiratory cultures to be sent in certain scenarios | 1. Strongly influences my decision  2. Has moderate influence on my decision  3. Has little influence on my decision  4. Has no influence on my decision  5. I generally would not make suggestions to the provider team about ordering diagnostic tests |
| Parental concern and desire for testing | 1. Strongly influences my decision  2. Has moderate influence on my decision  3. Has little influence on my decision  4. Has no influence on my decision  5. I generally would not make suggestions to the provider team about ordering diagnostic tests |
| I know from experience that some consulting subspecialty services (for example, pulmonary or infectious diseases) expect this test to be sent | 1. Strongly influences my decision  2. Has moderate influence on my decision  3. Has little influence on my decision  4. Has no influence on my decision  5. I generally would not make suggestions to the provider team about ordering diagnostic tests |
| My own clinical experience regarding the utility of this testing | 1. Strongly influences my decision  2. Has moderate influence on my decision  3. Has little influence on my decision  4. Has no influence on my decision  5. I generally would not make suggestions to the provider team about ordering diagnostic tests |
| The patient's clinical symptoms | 1. Strongly influences my decision  2. Has moderate influence on my decision  3. Has little influence on my decision  4. Has no influence on my decision  5. I generally would not make suggestions to the provider team about ordering diagnostic tests |
| Questions for all survey respondents | |
| *Please answer the following questions regarding respiratory culturing practices in the PICU.* | |
| *Knowledge and beliefs about respiratory cultures* | |
| Bacterial respiratory cultures are over-utilized (e.g., collected too often) in the PICU. | 1. Strongly agree  2. Agree  3. Neutral  4. Disagree  5. Strongly disagree |
| Reducing inappropriate collection of respiratory cultures would help reduce inappropriate antibiotic use in the PICU. | 1. Strongly agree  2. Agree  3. Neutral  4. Disagree  5. Strongly disagree |
| It is important to reduce overuse of antibiotics in the PICU setting. | 1. Strongly agree  2. Agree  3. Neutral  4. Disagree  5. Strongly disagree |
| *Standardization of practices within the PICU* | |
| Standardizing practices surrounding collection of respiratory cultures in the PICU is a priority. | 1. Strongly agree  2. Agree  3. Neutral  4. Disagree  5. Strongly disagree |
| I have the skills to determine when it is appropriate to collect a respiratory culture. | 1. Strongly agree  2. Agree  3. Neutral  4. Disagree  5. Strongly disagree |
| It is easy to standardize collection of respiratory cultures. | 1. Strongly agree  2. Agree  3. Neutral  4. Disagree  5. Strongly disagree |
| Patients benefit from standardizing practices for respiratory culture collection in the PICU. | 1. Strongly agree  2. Agree  3. Neutral  4. Disagree  5. Strongly disagree |
| In your opinion, what are the benefits of standardizing practices surrounding collection of respiratory cultures in the PICU? | Free text response |
| In your opinion, are there potential harms with standardizing practices surrounding collection of respiratory cultures in the PICU? | Free text response |