Antimicrobial Use Knowledge and Attitudes Survey

We need your help to evaluate antimicrobial stewardship at CHEO. This stewardship involves the optimal use of antimicrobials to improve patient outcomes and minimize harm or side effects. The return of this completed survey will act as your implied consent to your participation.

1. What is your role at CHEO?
   - Staff physician
   - Junior resident in pediatrics (year 1 or 2)
   - Senior resident/Fellow in pediatrics (year 3 or 4)
   - Resident from another service (family medicine etc.)
   - Medical student
   - Other, please specify: _____________________

2. Where do you conduct the majority of your clinical work?
   - Emergency
   - General Pediatrics
   - PICU
   - NICU
   - Outpatient
   - Oncology
   - Surgery
   - Outside of CHEO
   - Other, please specify _____________________

3. Do you prescribe antimicrobials?
   - Yes
   - No

4. In an average day, how many times do you prescribe antibiotics?
   - 0-1 times/day
   - 2-4 times/day
   - >4 times/day
5. In the past year, have you had any formal education of antimicrobial prescribing (indication, dosing)? Exclude informal discussion on rounds but include any specific education sessions.

☐ Yes, go to question 5a) and 5b)  
☐ No, skip to question 6

5a) IF YES, how many hours of antimicrobial prescribing education have you had in the past year?

☐ 1-4 Hours  
☐ 5-7 Hours  
☐ >8 Hours

5b) Who taught the education session(s)?

*Please check all that apply.*

☐ Infectious Disease Physician  
☐ Pharmacist  
☐ Pediatrician  
☐ Other, please specify ______________________

6. In the past year, have you had any formal education on antimicrobial stewardship (de-escalation, optimization of dosing, relating to antibiograms)? Exclude informal discussion on rounds but include any specific education sessions.

☐ Yes, go to question 6a) and 6b)  
☐ No, skip to question 7

6a) IF YES, how many hours of antimicrobial stewardship education have you had in the past year?

☐ 1-4 Hours  
☐ 5-7 Hours  
☐ >8 Hours

6b) Who taught the education session(s)?

*Please check all that apply.*

☐ Infectious Disease Physician  
☐ Pharmacist  
☐ Pediatrician  
☐ Other, please specify ______________________
7. Have you treated any patients in the last year that had resistant bacteria such as (ESBL, MRSA or penicillin resistant *Strep. Pneumoniae*)?

- Yes
- No
- Cannot recall

8. For each of the following pairs of prescriptions, which contributes MOST to promoting antimicrobial resistance?

*Circle only one of each pair.*

a) Lower doses or Higher doses
b) Longer courses or Shorter courses (≤ 7 days)
c) Ampicillin or Piperacillin (for equivalent time)
d) Gentamicin or Ceftriaxone (for equivalent time)
e) Azithromycin or Clarithromycin (for equivalent time)

9. In your opinion, how many days of antibiotics does it take to change the flora (bacteria) in the gut and pharynx to more resistant bacteria?

*Please check only one.*

- 3 days
- 6 days
- 9 days
- Unsure

10. According to the CHEO 2010 antibiogram, what is the % resistance that was found for the following bacteria?

a) Group A streptococcus resistant to clindamycin

- 1%  □ 3%  □ 5%  □ 10%  □ 20%  □ Unsure

b) Streptococcus pneumonia resistant to penicillin

- 1%  □ 3%  □ 5%  □ 10%  □ 20%  □ Unsure

c) Escherichia coli (E. coli) resistant to gentamicin

- 1%  □ 3%  □ 5%  □ 10%  □ 20%  □ Unsure
11. Which one of the following antibiotics would be MOST likely to increase the risk of development of *Clostridium difficile* infection?

- □ cefotaxime
- □ clindamycin
- □ piperacillin
- □ vancomycin
- □ Unsure

*The following are scenarios about principles of antimicrobial stewardship.*

12. You are asked to write antibiotic orders for a teenager who is having a spinal fusion for insertion of spinal rods. What would you likely recommend for the pre-surgical prophylaxis drug and length of antimicrobial post-operatively?

- □ Not applicable to my specialty
- □ Antibiotic: ________________________
  - □ Unsure
  
  Length of post-operative treatment:  
  Please check only one.

- □ 24 hours
- □ 48 hours
- □ 72 hours
- □ Unsure

13. You are asked on rounds about a child who has had 10 days of antibiotics following resection of a cystic adenomatoid malformation with a chest tube in the pleural space. The new medical student asks if this is appropriate or inappropriate use of antimicrobials. What would your likely response be?

- □ Appropriate
- □ Inappropriate
- □ Unsure

14. You are admitting a 3 year old child who has received all recommended immunizations to CHEO. The child had cough, fever and chest pain for 4 days. He has a temperature of 38.5°C, a RR of 30/min, a HR of 90/minute and an oxygen saturation of 98% on room air. His radiograph shows a moderate size RML infiltrate. What would be the most narrow spectrum recommended empiric antimicrobial therapy?

- □ Not applicable to my specialty
- □ cefuroxime
- □ ampicillin or penicillin
- □ cefuroxime and clindamycin
- □ Unsure
14a) The child shows clinical improvement (afebrile after 48 hours and eating) and the blood cultures are negative. What would you likely prescribe as outpatient oral antimicrobial therapy?

☐ cefuroxime axetil
☐ amoxicillin
☐ Clavulin® (amoxillin and clavulinate)
☐ Unsure

14b) What is the recommended total length of the outpatient prescription assuming no complications?

☐ 5 days
☐ 7 days
☐ 10 days
☐ Unsure

15. A previously healthy 6 year old girl presents to the Emergency Department with burning upon urination for 2 days. She is febrile and is admitted. The urine analysis has > 50 WBC and after 48 hours, the urine culture has *E. coli* that is susceptible to all cephalosporins. The child is now afebrile, has normal urinary tract anatomy and you would like to send her home to complete the antibiotics. Which antibiotic would be the most appropriate as outpatient oral antimicrobial therapy in this case?

☐ Not applicable to my specialty

*Please check only one.*

☐ oral cefuroxime axetil
☐ oral cephalaxin (Keflex)
☐ oral cefixime
☐ Unsure

16. You are asked to write antibiotic orders for a previously well 11 year old child who has clinical appendicitis and is going to the operating room. Which of the following antimicrobials are recommended as first line therapy?

☐ Not applicable to my specialty

*Please check only one.*

☐ cefotaxime and metronidazole
☐ cefotaxime alone
☐ gentamicin and clindamycin
☐ gentamicin and metronidazole
☐ Unsure
17. Which one of the following activities do you think contributes MOST to bacterial resistance worldwide?

Please check only one.

- Use of antibiotics in animals
- Use of antibiotics in humans
- Transmission of resistant bacteria in hospitals
- Other, please specify ____________________________

18. In making antimicrobial decisions on individual patients who or what do you rely on the MOST when you have questions?

Please check only one.

- Staff/Peer recommendation / Senior resident recommendation
- Pharmacist
- CHEO / HSC manual / Lexicomp / Sanford guide / Red Book
- Other, please specify ____________________________

19. When prescribing an antibiotic for a patient, which type of bacterial resistance rates or resistance information do you think about before prescribing the antibiotic?

Please check only one.

- Local rates
- National rates
- World reports on resistance
- Other, please specify ____________________________
- None

20. Which of the following parameters would likely have the GREATEST impact in decreasing antimicrobial use in the unit you work?

Please check only one.

- Discontinuing antimicrobials if there is no documented infection
- Decreasing the length of antimicrobial therapy
- Early conversion from intravenous to oral therapy
- Narrow spectrum antibiotics versus broad spectrum antibiotics
- Other, please specify ____________________________
21. In terms of influencing what you prescribe, to what extent do you feel the infectious disease service serves as a role model for stewardship on hospital wards?

*Please check only one.*

- □ Not at all
- □ Some of the time
- □ Most of the time
- □ All the time

22. Which **ONE** of the following tasks do you consider being **MOST DIFFICULT** to do with respect to modifying antimicrobial therapy?

*Please check only one.*

- □ Discontinuing antimicrobials when there is no documented infection
- □ Decreasing the length of antimicrobial therapy
- □ Early conversion from intravenous to oral therapy
- □ Narrow spectrum antibiotics versus broad spectrum antibiotics

Thank you for your participation!