Supplement Table 1. Questionnaire_Survey_prescribers_NDUTH_Nigeria_Jul26_2021

1. **Have you prescribed an antibiotic within the past 3 months?**
   - ○ Yes
   - ○ No

2. **How many patients do you see on a daily basis?**
   - ○ Less than 25
   - ○ Between 25-49
   - ○ Between 50-100
   - ○ Over 100

3. **Among the patients you see, approximately what percentage are children under 12 years old?**
   - ○ less than 10%
   - ○ between 10-24%
   - ○ between 25-50%
   - ○ over 50%

4. **How many prescriptions for antibiotics have you written in the last 7 days?**
   - ○ Less than 50
   - ○ Between 50-99
   - ○ Between 100-149
   - ○ Over 150

5. **To what extent do you agree or disagree with each of the following statements:**

	Strongly Disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
• I know what antibiotic resistance is	☐1	☐2	☐3	☐4	☐5
• I know what information to give to individuals about prudent use of antibiotics and antibiotic resistance	☐1	☐2	☐3	☐4	☐5
• I know sufficient knowledge about how to use antibiotics appropriately for my current practice	☐1	☐2	☐3	☐4	☐5

6. **Please answer whether you believe each of these statements to be True (T) or False (F):**

	True	**False**	
• **Antibiotics are effective against viruses**	☐	☐	
• **Antibiotics are effective against cold and flu**	☐	☐	
• **Unnecessary use of antibiotics makes them become ineffective**	☐	☐	
• **Taking antibiotics has associated side effects such as diarrhea, colitis, or allergy**	☐	☐	
• **Every person treated with antibiotics is at an increased risk of antibiotic resistant infection**	☐	☐	
• **Antibiotic resistant bacteria can spread from person to person**	☐	☐	
• **Healthy people can carry antibiotic resistant bacteria**	☐	☐	

7. **Do you think antibiotic resistance is a problem in Nigeria?**

- ○ Yes
- ○ No
- ○ Unsure

8. Do you think antibiotic resistance is a problem in your health care facility?

- ○ Yes
- ○ No
- ○ Unsure

9. How do you suggest the problem of antibiotic resistance can be tackled in Nigeria? (Choose ALL that apply)

- ○ Increase testing for antibiotic susceptibility
- ○ Increase awareness among patients
- ○ Enforce prescription laws for the dispensing of antibiotics
- ○ Improved training of doctors
- ○ Other_____

10. To what extent do you agree or disagree that the following environmental and animal health factors are important in contributing to antibiotic resistance in bacteria from humans?

	Strongly Disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
• Environmental factors such as waste water in the environment	☐1	☐2	☐3	☐4	☐5
• Excessive use of antibiotics in livestock and food production	☐1	☐2	☐3	☐4	☐5

11. To what extent do you agree or disagree with each of the following statements:

	Strongly Disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
• I have easy access to guidelines I need on managing infections	☐1	☐2	☐3	☐4	☐5
• I have easy access to the materials I need to give advice on prudent antibiotic use and antibiotic resistance	☐1	☐2	☐3	☐4	☐5
• I have good opportunities to provide advice on prudent use to individuals (patients/public)	☐1	☐2	☐3	☐4	☐5
• I am confident making antibiotic prescribing decisions	☐1	☐2	☐3	☐4	☐5
• I have confidence in the antibiotic guidelines available to me	☐1	☐2	☐3	☐4	☐5
• I consider antibiotic resistance when treating a patient	☐1	☐2	☐3	☐4	☐5
• I feel supported to not prescribe antibiotics when they are not necessary	☐1	☐2	☐3	☐4	☐5

12. To what extent do you agree or disagree with the following statements:

	Strongly Disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
• There is a connection between my prescribing of antibiotics and emergence and spread of antibiotic resistant bacteria	☐1	☐2	☐3	☐4	☐5
• I have a key role in helping control antibiotic resistance	☐1	☐2	☐3	☐4	☐5

13. Can you list the WHO's five moments of hand hygiene?

- ○ Yes
- ○ No
- ○ Unsure

14. Do you need to perform hand hygiene (as often as recommended) if you have used gloves in contact with patients or biological material?

- ○ Yes
- ○ No
- ○ Unsure

15. In your facility, do you follow Standard Treatment Guidelines (or a guide specific to prescribing antibiotics)?

- ○ Yes
- ○ No

16. Does your facility have a Drug and Therapeutic Committee?

- ○ Yes
- ○ No

17. a. Is there a Hospital Formulary or an Essential Medicine List?

- ○ Yes
- ○ No

b. If yes, which:

- ○ Hospital formulary
- ○ Hospital or National Essential Medicine List
- ○ Both

18. a. Is it possible to perform laboratory antibiotic susceptibility testing on-site or off-site?

- ○ Yes
- ○ No
- ○ Not applicable

b. If yes, is it on-site or off-site?

- ○ On-site
- ○ Off-site

19. How many patients, on average, do you see in a month?

- ○ 0 – 99
- ○ 100 – 199
- ○ 200 – 299
- ○ 300 or more

20. How often do you see treatment failure within a month (no response to therapy, switch to new antibiotic, or addition of new antibiotic)?

- ○ Less than 10%
- ○ Between 11 – 25%
- ○ Between 26 – 50%
- ○ 50% or more

21. a. Are antibiotic susceptibility tests performed before antibiotic selection?

- ○ Yes
- ○ No

b. If not, why? (Please, check all that apply)

- ○ Availability
- ○ Time pressure
- ○ Other. Please specify_____

c. If yes, how often?

- ○ Always
- ○ Frequently
- ○ Infrequently

d. If yes, in what cases are antibiotic susceptibility tests usually used? (List up to three)

_____

_____

_____

22. Please select the top three antibiotics that you usually prescribe?

	First Choice	Second Choice	Third Choice
• **Amoxicillin (including amoxicillin-clavulanate)**	☐	☐	☐
• **Azithromycin**	☐	☐	☐
• **Cefuroxime**	☐	☐	☐
• **Ciprofloxacin**	☐	☐	☐
• **Co-trimoxazole**	☐	☐	☐
• **Metronidazole**	☐	☐	☐
• **Other: (Please list) _____**	☐	☐	☐
• **Other: (Please list) _____**	☐	☐	☐
• **Other: (Please list) _____**	☐	☐	☐

23. What is your main consideration for prescribing antibiotics? (Please, specify all that apply)

- ○ Antibiotic susceptibility testing information
- ○ Symptoms of patient
- ○ Clinical severity of case
- ○ Other: Please, specify _____

24. What are the top three things you considered for antibiotic CHOICE when you prescribe?

	First	Second	Third
• **Availability of antibiotic in the facility**	☐	☐	☐
• **Antibiotic susceptibility testing information**	☐	☐	☐
• **Broad-spectrum nature of antibiotic**	☐	☐	☐
• **Symptoms of patient**	☐	☐	☐
• **Other: (Please list) _____**	☐	☐	☐
• **Other: (Please list) _____**	☐	☐	☐
• **Other: (Please list) _____**	☐	☐	☐

25. When you prescribe antibiotics for a patient, do you usually prescribe? [Combination products count as 1]

- ○ 1
- ○ 2-3
- ○ >3

26. Please indicate which GROUPs are MOST FREQUENTLY prescribed for the following infections?

	RTI	UTI	GIT Diseases	Dental Infections	Skin and Soft Tissue infections
• Penicillins	☐1	☐2	☐3	☐4	☐5
• Cephalosporins	☐1	☐2	☐3	☐4	☐5
• Fluoroquinolones	☐1	☐2	☐3	☐4	☐5
• Macrolides	☐1	☐2	☐3	☐4	☐5
• Trimethoprim	☐1	☐2	☐3	☐4	☐5
• Others (please specify): _____	☐1	☐2	☐3	☐4	☐5

27. Do you feel pressured to prescribe antibiotics?

- ○ Yes. If yes, why? _____
- ○ No

28. Are any of these reasons that you feel pressured to prescribed antibiotics:

	Strongly Disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
• Patient demand	☐1	☐2	☐3	☐4	☐5
• Condition of patient	☐1	☐2	☐3	☐4	☐5
• Fear of complications	☐1	☐2	☐3	☐4	☐5
• Need to provide rapid relief	☐1	☐2	☐3	☐4	☐5

Please specify any other reasons that you feel pressured to prescribe antibiotics:
_____

29. Do you usually prescribe antibiotics by generic or brand name?

- ○ Generic
- ○ Brand

30. If you prescribe by brand, what are your reasons for doing so? (Please, specify all that apply)

- ○ Clinical efficacy (high bacterial resistance to generics)
- ○ Better quality
- ○ Other (please specify) _____

31. To optimize the use of antibiotics, the WHO has classified antibiotics as Access, Watch, & Reserve.

a. Have you heard about these categories?

○ Yes

○ No

b. If yes, do they affect your prescribing?

○ Yes

○ No

32. What measures do you think would be the most helpful in improving antibiotic prescribing?

	Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful
• Educational sessions on prescribing	☐1	☐2	☐3	☐4	☐5
• Availability of local / national guidelines / policies / protocols	☐1	☐2	☐3	☐4	☐5
• Availability of local/national resistance data	☐1	☐2	☐3	☐4	☐5
• Computer-aided prescribing	☐1	☐2	☐3	☐4	☐5
• Presence of an antimicrobial management team	☐1	☐2	☐3	☐4	☐5
• Readily accessible microbiological advice	☐1	☐2	☐3	☐4	☐5
• Readily accessible advice from Infectious Disease physician	☐1	☐2	☐3	☐4	☐5
• Readily accessible advice from a pharmacist	☐1	☐2	☐3	☐4	☐5

• Readily accessible advice from infection control team	☐1	☐2	☐3	☐4	☐5
• Advice from senior colleagues	☐1	☐2	☐3	☐4	☐5
• Speaking to a pharmaceutical representative	☐1	☐2	☐3	☐4	☐5
• Restriction of prescription of certain antibiotics	☐1	☐2	☐3	☐4	☐5
• Restriction of prescription of **all** antibiotics	☐1	☐2	☐3	☐4	☐5
• Regular audit and feedback on antibiotic prescribing in your PHC	☐1	☐2	☐3	☐4	☐5

33. How many years of practice experience do you have?

- ○ Less than 1 year
- ○ 1 – 5 years
- ○ 6 – 10 years
- ○ 11 – 15 years
- ○ 15 years or more

34. What is your specialty?

- ○ Medicine
- ○ Surgery
- ○ Pediatrics
- ○ Anesthetics
- ○ Obstetrics / Gynecology
- ○ Psychiatry
- ○ Other

35. Do you have additional comments you find relevant?

_____
_____
_____

Thank you very much for taking part in this survey!