**Additional File 1. Full-scale questionnaire.**

*This questionnaire is addressed at surgeons who regularly perform emergency or trauma surgery in their activities.*

*The estimated time to answer the questionnaire is 10 minutes.*

**1. Do you regularly perform emergency or trauma surgery in your duties?** Yes No

 [ ] 1 [ ] 2

*If yes, please continue.*

*If no, thanks for your collaboration.*

*Working setting and professional profile*

**2. In which country are you currently working?**

 Please, choose from the list.

**3. Please, tell us your gender.**

 Male [ ] 1

 Female [ ] 2

**4. Which of the following surgeries do you regularly perform as part of your duties?**

 Multiple choice is allowed: select all that apply.

 Abdominal [ ] 1

 Gynaecologic [ ] 2

 Cardiac surgery [ ] 3

 Neurosurgery [ ] 4

 Orthopaedic [ ] 5

 Paediatric [ ] 6

 Thoracic [ ] 7

 Urological [ ] 8

 Vascular [ ] 9

 Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] 10

**5. Including residency training, how many years of experience do you have as a surgeon?**

Less than 10 years [ ] 1

 10-20 years [ ] 2

 21-30 years [ ] 3

 More than 30 years [ ] 4

**6. What type of hospital are you working in? If you are working in more than one hospital, please take into account the one where you practice the most of your time.**

University Hospital [ ] 1

 Community Hospital [ ] 2

 Community teaching Hospital [ ] 3

 Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [ ] 4

**7. How many inpatient beds has the hospital where you practice the most of your time?**

Less than 100 [ ] 1

 100-500 [ ] 2

 501-1000 [ ] 3

 More than 1000 [ ] 4

 Unsure [ ] 5

**8. Does your hospital have an antimicrobial stewardship team?**

Yes No Unsure

[ ] 1 [ ] 2 [ ] 3

**9. Does your Surgical Unit/Department have local guidelines for therapy of infections?**

Yes No Unsure

[ ] 1 [ ] 2 [ ] 3

**10. Does your Surgical Unit/Department periodically receive reports on local antibiotic resistance data?**

Yes No Unsure

[ ] 1 [ ] 2 [ ] 3

*Participants’ perceptions of the importance of the problem of antibiotic resistance and of causes of antibiotic resistance*

**11. Do you think that antibiotic resistance is a worldwide problem?**

Strongly agree Agree Disagree Strongly disagree

[ ] 1 [ ] 2  [ ] 3 [ ] 4

**12. Do you think that antibiotic resistance is a problem in your hospital?**

Strongly agree Agree Disagree Strongly disagree

[ ] 1 [ ] 2  [ ] 3 [ ] 4

**13. Tell us your perceptions for each of the following statements regarding their relevance as contributing factors to the development or spread of antimicrobial resistance:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Very important | Moderately important | Slightly important | Not important |  |
| 1. Use of antibiotics for self-limited non bacterial infections
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |  |
| 1. Use of antibiotics with a broader-than-necessary spectrum
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |  |
| 1. Use of antibiotics for longer than standard duration
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |  |
| 1. Use of antibiotics for shorter than standard duration
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |  |
| 1. Poor hand hygiene
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |  |
| 1. Poor infection control practices by healthcare professionals
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |  |
| 1. Wrong practices in management of invasive devices
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |  |
| 1. Poor environmental cleaning practices
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |  |

**14. Do you think that your antibiotic prescriptions contribute to the problem of antibiotic resistance?**

 Highly likely Likely Unlikely Highly unlikely

 [ ] 1 [ ] 2  [ ] 3 [ ] 4

**15. Do you think that your colleagues’ prescriptions contribute to the problem of antibiotic resistance?**

 Highly likely Likely Unlikely Highly unlikely

 [ ] 1 [ ] 2  [ ] 3 [ ] 4

**16. Do you expect that antibiotic resistance will be a greater clinical problem for your patients in the future?**

 Highly likely Likely Unlikely Highly unlikely

 [ ] 1 [ ] 2  [ ] 3 [ ] 4

**17. Do you expect that new antibiotics will be developed in the next 10 years will keep up with the problem of resistance?**

 Highly likely Likely Unlikely Highly unlikely

 [ ] 1 [ ] 2  [ ] 3 [ ] 4

*Participants’ attitudes during the antibiotic prescribing process, perceptions of the factors influencing the antibiotic prescribing process and perceptions of the helpfulness of potential interventions to improve antibiotic prescribing*

**18. In the last month, have you personally used or consulted local guidelines for therapy of infections when considering an antibiotic for a patient?**

Please, select “Not applicable” if you did not prescribe any antibiotic in the last month or if your Surgical Unit/Department has no local guidelines for therapy of infections.

Yes No Unsure Not applicable [ ] 1 [ ] 2 [ ] 3 [ ] 4

**19. In the last month, have you personally used or consulted national guidelines for therapy of infections when considering an antibiotic for a patient?**

Please, select “Not applicable” if you did not prescribe any antibiotic in the last month.

Yes No Unsure Not applicable [ ] 1 [ ] 2 [ ] 3 [ ] 4

**20. In the last month, have you personally consulted reports on local resistance data to select an antibiotic empiric therapy for a patient?**

Please, select “Not applicable” if your hospital does not provide you any resistance data report.

Yes No Unsure Not applicable [ ] 1 [ ] 2 [ ] 3 [ ] 4

**21. Considering your daily clinical activities at the moment, how confident do you feel in the following scenarios when prescribing an antibiotic?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Very confident | Confident | Unconfident | Very Unconfident |
| 1. Making an accurate diagnosis of infection
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Deciding not to prescribe an antibiotic if you are not sure about your diagnosis
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Choosing the correct antibiotic
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Choosing the correct dose and interval of administration
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Choosing between intravenous and oral administration
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Interpreting microbiological results
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Planning the duration of the antibiotic treatment
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |

**22. In the last 12 months, have you received formal** **training in antibiotic prescribing?**

Yes No Unsure

[ ] 1 [ ] 2 [ ] 3

**23. Would you like to receive more training in antibiotic prescribing in your hospital?**

Yes No Unsure

[ ] 1 [ ] 2 [ ] 3

**24. Please evaluate, in your opinion, the helpfulness of the following measures to improve antibiotic prescribing at the moment:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Very helpful | Moderately helpful | Slightly helpful | Not helpful |
| 1. Advice from a senior surgeon
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Advice from an infectious disease specialist
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Advice from a microbiologist
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Advice from a pharmacist
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Implementation of persuasive ASPs
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Implementation of restrictive ASPs
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Availability of locally developed guidelines for therapy of infections
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Availability of systematic reports about resistance data
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Implementation of monitoring systems of used antibiotics
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |
| 1. Computer-aided prescribing
 | [ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 |

**25. Do you think locally developed guidelines for antibiotic treatment are more useful than national ones?**

Strongly agree Agree Disagree Strongly disagree

 [ ] 1 [ ] 2  [ ] 3 [ ] 4