

Antibiotic Stewardship Survey - Status Quo in Switzerland

1. Personal details and hospital demographics

1. Your details

Name of your hospital

Name of the person
completing this survey

Your position

Your department

Your email address

2. What type of hospital do you work in?

- University Hospital
- Kantonsspital/Hôpital cantonal
- Private hospital
- Regionalspital/Hôpital regional
- Rehabilitation hospital
- Other, please explain

3. What is the number of acute care beds in your hospital?

4. What is the number of intensive care unit beds (including intermediate care unit beds)?

5. Do you have access to the following resources on site?

- Infectious diseases consultant
- Clinical microbiologist
- Ward pharmacist
- None of the above

2. Antimicrobial stewardship at your institution

6. Does your hospital provide any salary support for dedicated time for antibiotic stewardship activities?

- Yes
- No
- I do not know

7. Does your hospital have the following

- Drug and Therapeutic committee
- Antimicrobial stewardship committee
- Antimicrobial stewardship strategy
- Antimicrobial stewardship annual report
- Antimicrobial stewardship policy
- Annual report of antimicrobial stewardship activities
- None of the above

8. Is there a pharmacist leader responsible for improving antibiotic use at your hospital?

- Yes
- No
- I do not know

9. Is there a pharmacist leader responsible for evaluating antimicrobial drug use and/or quality of use in your hospital?

- Yes
- No
- I do not know

10. Is there an infectious diseases leader responsible for improving antibiotic use at your hospital?

- Yes
- No
- I do not know

11. Is there an infectious diseases leader responsible for evaluating antimicrobial use and/or quality of use in your hospital?

- Yes
- No
- I do not know

12. Do you have an official antimicrobial stewardship program at your hospital?

- Yes
- No

13. If an antimicrobial stewardship program is present at your hospital,

How many years has it been present at your hospital?

How many hours per week of dedicated resources for this program are available?

14. If an antimicrobial stewardship program is present at your hospital, how could it be improved?

15. Are there any barriers to providing an effective antimicrobial stewardship program?

- Yes
- No
- Not applicable (stewardship program present)

16. Which barriers are present?

- Funding
- Lack of personnel
- Lack of support from administration
- Opposition from prescribers
- Lack of IT support and/or ability to get data
- Not applicable (stewardship program present)

Other, please explain

17. What are or will be the three key objectives for your current or planned antimicrobial stewardship program?

- Reduce/stabilize resistance
- Reduce *Clostridium difficile* infections
- Reduce cost
- Improve clinical outcomes
- Prevent unintended harm
- Reduce antimicrobial drug use
- Reduce use of broad-spectrum antimicrobial drugs
- Reduce mortality and/or length of stay
- Improve prescribing of antimicrobial drugs
- An antimicrobial stewardship program is not planned in the next 2 years

Other, please explain

18. Which are the requirements for an effective antimicrobial stewardship program in your hospital?

- Support from the hospital administration
- Dedicated resources (financial, manpower and IT support) for stewardship
- Establishment of a multidisciplinary antimicrobial stewardship team
- Data on hospital-specific antimicrobial resistance
- Electronic prescribing
- Antimicrobial prescribing and management policy
- Measurable and defined goals and outcomes for antimicrobial stewardship
- Data on hospital-/ward-specific antimicrobial use
- National reporting and benchmarking of antimicrobial use and prescribing quality
- Other, please explain

19. Which core and optional elements should an antimicrobial stewardship program consist of in Swiss hospitals?

	Core/compulsory	Optional	Not feasible/possible in my hospital
Implementation of (national or in-house) clinical treatment guidelines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Implementation of (national or in-house) diagnostic evaluation guidelines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Antimicrobial formulary restriction and approval systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review of antimicrobial prescribing with intervention and direct feedback (ward rounds)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monitoring of performance of prescribing (e.g. point prevalence surveys)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monitoring of hospital-specific antimicrobial resistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Selective reporting of susceptibility testing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Education of prescribers about good antimicrobial prescribing practice and resistance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of information technology such as clinical decision-support or online approval systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Annual publication of hospital-specific antimicrobial susceptibility data	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Point-of-care interventions including streamlining, optimisation of dose and treatment duration or IV to oral switch	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Therapeutic drug monitoring with stewardship advice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of rapid diagnostic tests with or without stewardship advice (e.g. rapid viral testing)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reporting of prescribing performance and resistance to prescribers and relevant staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surveillance of positive blood cultures with direct feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Allergy assessments/diagnostic pathways for patients with reported betalactam allergy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of procalcitonin as an intervention to decrease antibiotic treatment duration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other, please explain

20. Do you think a national antimicrobial stewardship strategy including compulsory and optional stewardship elements for Swiss hospitals is desirable?

- Yes
- No
- Other, please explain

21. Do you think that your hospital and your patients would benefit from an antimicrobial stewardship program?

- Yes
- No
- Other, please explain

3. Guidelines

22. Does your hospital have hospital-specific treatment recommendations?

- Yes
- No
- Other, please explain

23. Who has access to these recommendations?

- Only infectious diseases physicians
- All doctors/staff
- No recommendations available
- Other, please explain

24. In which year were these recommendations last updated?

25. How do you communicate changes in treatment recommendations?

- Only within the department
- Hospital-wide
- Booklets
- Intranet
- Newsletter
- Staff/department meetings
- No recommendations available
- Other, please explain

26. Does your hospital have a separate antimicrobial stewardship policy?

- Yes
- No

27. Who has access to this policy?

- Only infectious diseases physicians
- All doctors/staff
- No antimicrobial stewardship policy available.
- Other, please explain

28. In which year was this policy last updated?

29. How do you communicate changes in antimicrobial stewardship policy?

- Only within the department
- Hospital-wide
- Booklets
- Intranet
- Newsletter
- Staff/department meetings
- No antimicrobial stewardship policy available
- Other, please explain

30. Which of the following do your treatment recommendations or antimicrobial stewardship policy contain?

- Emphasis on avoidance of broad-spectrum antimicrobials and risk of resistance
- Emphasis on importance of documenting indication and severity of illness
- Guidelines on specimen collection before antimicrobial treatment initiation
- Advice on duration of treatment
- Antibiotic formulary (restricted antibiotics etc.)
- Review of IV therapy at 48 to 72 hours
- IV to oral switch guidance
- Advice on therapeutic drug monitoring
- Treatment for specific indications
- Situations when antibiotic therapy is NOT needed
- Antifungal guidelines
- Antiviral guidelines
- Surgical prophylaxis guidelines
- Alternative antibiotic choices (e.g. if allergic)
- Dosage for special populations (e.g. renal impairment)
- Information on side effects
- OPAT guideline
- No treatment recommendations or antimicrobial stewardship policy available
- Other, please explain

4. Education

31. Do you or your colleagues provide education to hospital staff on antimicrobial resistance and on improving antibiotic prescribing?

- Yes
- No

32. Which hospital staff do you or your colleagues provide the above mentioned education to?

- Senior medical staff
- Junior medical staff
- Nurses
- Pharmacists
- No education provided
- Other, please explain

33. Which modes of education do you use?

- Face to face
- E-learning
- Written information provided
- Short courses
- No education provided
- Other, please explain

34. Do you or your colleagues conduct antimicrobial stewardship ward rounds?

- Yes
- No
- If yes, on how many days per week (average)?

5. Antimicrobial formulary and approval system

35. Does your hospital have a defined formulary of antimicrobial agents?

- Yes
- No

36. Does your hospital formulary specify restrictions on the use of broad-spectrum antimicrobials or selected antimicrobials?

- Yes
- No
- No hospital formulary present

37. If formulary restrictions are present,

Which antimicrobials are restricted?

Do you specifically restrict antibiotics that are associated with a high risk of *Clostridium difficile* colitis?

Which approval system do you use (electronic, phone-based...)?

Who has the authority to provide approval for restricted antimicrobials?

6. Strategies to support optimal antibiotic use

38. Are antimicrobial prescriptions reviewed with point of care intervention and direct feedback (excluding patients with a formal consultation)

- Yes
- No

39. If you have answered "yes" at the previous question:

How many hours per week?

Which wards are included (e.g. ICU, medical wards...)?

Who performs this review (e.g. AMS team, ID specialist...)?

40. Which antimicrobial prescription reviews are conducted?

- Indication and compliance with policy/guideline
- Appropriate dose, route and planned duration
- Potential for de-escalation
- Therapeutic drug monitoring
- Directed therapy according to culture results
- IV to oral switch
- No reviews are conducted
- Other, please explain

41. Are any of the following interventions implemented in our hospital?

	Yes, in all areas	Yes, in some areas (e.g. ICU)	No	I do not know
Selective reporting of antimicrobial susceptibilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time-sensitive automatic stop/review orders for specified antibiotic prescriptions and/or all IV antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alert and/or intervention for dose adjustments in case of organ dysfunction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alerts and/or standardized criteria for changes from IV to oral antibiotic therapy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alerts and/or intervention for therapeutic drug monitoring for selected antimicrobials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Systematic monitoring of positive blood cultures with immediate feedback by an infectious diseases specialist or clinical microbiologist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Systematic monitoring of <i>S. aureus</i> and/or <i>Candida</i> spp. bloodstream infections with active involvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy for all clinicals to review the appropriateness of all antibiotics 48 to 72 hours after the initial orders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Specific review of selected (e.g. novel) agents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Procalcitonin testing to prevent initiation of antibiotics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Procalcitonin testing to stop antibiotics early	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computerized decision support for antimicrobial use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interventions for specific infections (e.g. diagnostic or therapeutic pathway for community-acquired pneumonia or neutropenic fever)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interventions to reduce duration of antibiotic treatment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other, please explain

42. Does your internal or external microbiological laboratory report local susceptibility data (cumulative antibiogram) for your hospital?

- Yes
- No
- Other, please explain

43. Who has access to these susceptibility data?

- Only infectious diseases physicians
- All doctors/staff
- Other, please explain

44. Does your internal or external microbiological laboratory use selective reporting of susceptibility data?

- Yes
- No
- I do not know
- If yes, please provide an example of selective reporting at your hospital

7. Auditing/Monitoring

45. Do you have electronic prescribing available?

- Yes
 No

46. Do you or your colleagues conduct regular audits on antimicrobial prescribing?

- Yes
 No

47. If you have answered "yes" at question 45, which data are used for the audit?

- Antimicrobial consumption at hospital level
 Antimicrobial consumption at ward level
 Antimicrobial consumption at department level
 Antimicrobial cost
 Specific drug data
 Data on quality of antimicrobial use
 Data from point prevalence surveys
 Other, please explain

48. Do you know trends in antimicrobial consumption (e.g. cephalosporin use) over the last 3 years in your hospital?

- Yes
 No

49. Which of the following antimicrobial audits do you conduct at your hospital?

- Time to first dose in sepsis
- Surgical antibiotic prophylaxis
- Cultures taken before starting antibiotic therapy
- Adherence to treatment guidelines
- Percentage of patients on IV antibiotics after 48-72 hours
- De-escalation of antimicrobial therapy within 48-72 hours
- Duration of antimicrobial therapy
- IV to oral switch
- Use of therapeutic drug monitoring for vancomycin and/or aminoglycosides
- Dedicated audit of specific antibiotics
- Dedicated audit of restricted antibiotics
- Dedicated audits of specific units/wards
- Dedicated audits of specific clinical conditions (e.g. pneumonia)
- None
- Other, please explain

50. Do you or your colleagues provide regular feedback to prescribers about the outcomes of these audits?

- Yes
- No

51. If you have answered "yes" at question 50, how is feedback given?

- Letter/email to heads of unit
- Letter/email to individual prescribers
- Presentation at ward or unit meetings
- Presentation at grand rounds or quality committee meetings
- Other, please explain

52. Is antimicrobial resistance monitored at your hospital?

- Yes
- No

53. Are rates of *Clostridium difficile* infection monitored at your hospital?

Yes

No