

Key messages for hospital prescribers

Tasks

1. As hospital prescribers your tasks related to improving antibiotic use include [31,42,43,52-54,56,70,71,90]:
 - a) Prescribing according to evidence-based hospital antibiotic guidelines for common infections and for surgical prophylaxis;
 - b) Identifying relevant individual patient background when evaluating the need for an antibiotic prescription, including recent antibiotic use, drug allergies, use of immunosuppressive therapy, recent hospitalisation or institutionalisation, recent travel outside of Europe, and microbiology results for the previous 3 months;
 - c) Documenting the indication for antibiotic treatment, drug choice, dose, route of administration and duration of treatment, in the patient chart, when you prescribe an antibiotic;
 - d) Follow infection prevention and control guidance;
 - e) Ensuring that relevant cultures are taken before starting antibiotics;
 - f) Re-evaluating treatment after 48-72 hours, or when results from microbiological samples are available;
 - g) Initiating antibiotic treatment as soon as possible in patients with severe infection;
 - h) Considering local microbiology and antibiotic resistance patterns when prescribing empirical antibiotic treatments;
 - i) Informing your patients of any antibiotics prescribed, and their potential adverse effects; and,
 - j) Participating in annual training courses on prudent antibiotic use.

Things you should know

2. Using antibiotic guidance and attending educational rounds improve antibiotic prescribing [78].
3. Documenting indication, drug choice, dose, route of administration and duration of treatment in the patient chart leads to better use of antibiotics [71].
4. Prescribing the shortest evidence-based duration of antibiotic treatment reduces emergence of antibiotic-resistant bacteria [54,56,71,91].
5. Correct timing and optimal duration of antibiotic prophylaxis for surgery leads to fewer surgical site infections, and decreases the emergence of antibiotic-resistant bacteria [73].
6. Taking microbiology samples before starting empirical antibiotic therapy and streamlining antibiotic treatment based on culture results help improve antibiotic use [31,70,71].

7. Reviewing initial antibiotic treatment after 48–72 hours and switching from parenteral to oral administration (when possible), reduces antibiotic resistance rates and improves clinical outcomes [37,54,57,71,92,93].
8. Consulting the antibiotic stewardship team increases the quality of drug prescribing and improves patient outcome [56,83].

Example

9. *A pharmacist-led parenteral-to-oral switch resulted in shortened parenteral therapy durations without negatively impacting on clinical outcomes [56].*
10. *Infectious disease specialist interventions have been associated with a significant improvement in the quality of antibiotic prescribing and leading a reduction in antibiotic use [83].*

Things you can do

11. Follow antibiotic treatment protocols, based on evidence-based guidelines, and apply infection prevention and control measures that are established in your setting [31] [expert consensus].
 12. Consult the antibiotic stewardship team when needed, for examples when you prescribe an antibiotic outside of normal guidelines [31,56] [expert consensus].
 13. Only start antibiotic treatment if there is evidence of a bacterial infection, and do not treat colonisation [31,72].
 14. Avoid unnecessary antibiotic prophylaxis [31,73].
 15. If you see staff members at the hospital or healthcare setting who breach guidelines or protocols, ask them why they are doing so and provide them with tools to understand what they are doing wrong [expert consensus].
 16. Answer the following key questions to optimise antibiotic therapy. If in doubt, consult with antibiotic stewardship team [31,42,53,70,71]:
 - a) Is there a high probability of a bacterial infection, rather than colonisation or a viral infection?
 - b) Have the appropriate cultures been taken before starting antibiotic therapy?
 - c) Have you checked for recent antibiotic use, drug allergies, use of immunosuppressive therapy, recent hospitalisation or institutionalisation, recent travel outside of Europe, and microbiology results for the previous 3 months?
 - d) Does the patient have an infection that will respond to antibiotics?
- If yes:
- i. Is the patient on the correct antibiotic(s), correct dose, and correct route of administration?
 - ii. Could an antibiotic with a narrower spectrum be used to treat the infection?
 - iii. For how long should the patient receive the antibiotic(s)?
17. Document the indication of antibiotic treatment, drug choice, dose, route of administration and duration of treatment in the patient chart [31,42,70,71].
 18. Be a good source of information for your patients and help them understand the importance of prudent antibiotic use. Ensure that patients (and their families) understand the reasons for antibiotic therapy, and key points related to antibiotic

use, including to [expert consensus]:

- a) Take antibiotics exactly as prescribed;
- b) Never save antibiotics for later use;
- c) Never use leftover antibiotics from previous treatments;
- d) Never share leftover antibiotics with other people.