

Key messages for intensive care unit - physicians and managers

Tasks

Core tasks to improve the use of antibiotics in your department include:

1. Following antibiotic treatment protocols, based on evidence-based guidelines (e.g. for sepsis) [90].
2. Remain aware of local antibiotic resistance patterns in your department, your hospital and in the community [31,72].
3. Organising regular multidisciplinary staff rounds and case discussions to improve the quality of antibiotic treatment [72].
4. Reassessing antibiotic treatments in light of clinical conditions at 48–72 hours, or as soon as microbiological results are available, to [31,42,70-72]:
 - change to a narrow-spectrum antibiotic;
 - continue or stop antibiotic therapy;
 - switch to oral antibiotic therapy.
5. Implementing infection prevention and control strategies, including [86,87,105]:
 - staff education,
 - hand hygiene,
 - environmental cleaning,
 - active screening,
 - contact precautions,
 - evidence-based practices,
 - establishing surveillance systems for healthcare-associated infections.
6. Participating in education activities regularly, as well as proactive audits and feedback together with the antibiotic stewardship team [54,56].

Things you should know

7. Narrowing or streamlining antibiotic therapy leads to better patient outcomes [106].
8. Following infection prevention and control measures reduces the incidence of healthcare-associated infections. For example:

a) Complying with a central-line care protocol (for insertion and maintenance), reduces central-line-associated bloodstream infections in all types of intensive care units (adults and neonatal) [107].

b) Care bundles can prevent ventilator-associated pneumonia in adult intensive care units [108].

Things you can do

9. Implement guidance (guidelines, protocols and checklists) for infection prevention and control measures, together with the infection prevention and control team [86,87] [expert consensus].

10. Follow antibiotic treatment protocols, based on evidence-based guidelines that are established in your setting [31] [expert consensus].

11. Only start antibiotic treatment if there is evidence of a bacterial infection, and do not treat colonisation [31].

12. Avoid unnecessary antibiotic prophylaxis [31].

13. Take a thorough patient history when you prescribe an antibiotic, including recent antibiotic use, drug allergies, use of immunosuppressive therapy, and risk factors for antibiotic resistance (for example, recent hospitalisation, recent procedure or recent travel outside of Europe) [31].

14. If in doubt before you prescribe an antibiotic, you should [25,26,53,70] [expert consensus]:

- Check local, regional and national epidemiological data;
- Seek guidance and advice from a senior colleague or a member of the antibiotic stewardship team.

15. Document the indication of antibiotic treatment, drug choice, dose, route of administration and duration of treatment in the patient chart [31,42,70,71].

16. For patients with sepsis, initiate effective antibiotic treatment via the intravenous route as soon as possible [90].

17. Ensure that cultures are appropriately taken and send to the microbiology laboratory, before starting antibiotics [31,42,70,71].

18. Answer the following key questions when reassessing antibiotic therapy after 48-72 hours (or as soon as microbiological results are available) [42,70]:

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)?

19. 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 [69] [expert consensus].

20. Regularly participate in training courses and in meetings that support the implementation in the hospital of: a) prudent antibiotic use, b) evidence-based, local antibiotic guidelines, and c) infection prevention and control measures [52,53].