



A summary of prescribing recommendations from NICE guidance

Antimicrobial stewardship

NICE NG15: 2015

This guideline provides good practice recommendations on systems and processes for effective use of antimicrobials.

Antimicrobial stewardship is defined as an organisational or healthcare-system-wide approach to promoting and monitoring judicious use of antimicrobials to preserve their future effectiveness.

Commissioners and providers

Antimicrobial stewardship programmes

- ◆ Ensure that antimicrobial stewardship operates across all care settings as part of an antimicrobial stewardship programme and includes the following:
 - monitoring and evaluating antimicrobial prescribing and how this relates to local resistance patterns,
 - feedback to individual prescribers about their antimicrobial prescribing e.g. by using professional regulatory numbers for prescribing as well as prescriber (cost centre) codes,
 - feedback on patient safety incidents related to antimicrobial use, including hospital admissions for potentially avoidable life-threatening infections, or infections with *Clostridium difficile* or adverse drug reactions such as anaphylaxis,
 - education and training about antimicrobial stewardship and antimicrobial resistance,
 - integrates audit into existing quality improvement programmes.
- ◆ Ensure roles, responsibilities and accountabilities are clearly defined.
- ◆ Involve lead health and social care practitioners in establishing processes for developing, reviewing, updating and implementing local antimicrobial guidelines in line with national guidance and informed by local prescribing data and resistance patterns.
- ◆ Develop systems and processes for providing regular updates (at least every year) to individual prescribers and prescribing leads on:
 - individual prescribing benchmarked against local and national antimicrobial prescribing rates and trends,
 - local and national antimicrobial resistance rates and trends,
 - patient safety incidents related to antimicrobial use, including hospital admissions for potentially avoidable life-threatening infections, infections with *C. difficile* or adverse drug reactions such as anaphylaxis.
- ◆ Develop systems and processes for identifying and reviewing whether hospital admissions are linked to previous prescribing decisions in patients with potentially avoidable infections (e.g. *Escherichia coli* bacteraemias, mastoiditis, pyelonephritis, empyema, quinsy or brain abscess).

Antimicrobial stewardship teams

- ◆ Organisations should ensure the antimicrobial stewardship team has core members (including an antimicrobial pharmacist and a medical microbiologist) and can co-opt additional members depending on the care setting and the issue being considered.

- ◆ Support antimicrobial stewardship teams, by developing processes that promote antimicrobial stewardship or by allocating resources, to:
 - review prescribing and resistance data and identify ways of feeding this information back to prescribers in all care settings,
 - promote education for prescribers in all care settings,
 - assist the local formulary decision-making group with recommendations about new antimicrobials (see [NICE pathway: local formulary development](#)),
 - update local formulary and prescribing guidance,
 - work with prescribers to explore the reasons for very high, increasing or very low volumes of antimicrobial prescribing, or use of antimicrobials not recommended in local or national guidelines,
 - provide feedback and advice to prescribers who prescribe antimicrobials outside of local guidelines when it is not justified.

Antimicrobial stewardship interventions

Consider the following interventions:

- ◆ Review of prescribing by antimicrobial stewardship teams.
- ◆ Promotion of antimicrobials recommended in local or national guidelines.
- ◆ Education-based programmes for health and social care practitioners e.g. academic detailing, clinical education or educational outreach.
- ◆ Provide IT or decision support systems that prescribers can use to decide whether:
 - to prescribe an antimicrobial or not,
 - alternatives to immediate antimicrobial prescribing may be appropriate e.g. delayed prescribing or early review.
- ◆ Develop systems and processes to ensure the following information is provided when a patient is transferred to another care setting:
 - current or recent antimicrobial use, and when to review,
 - who a patient should contact, and when, if they have concerns about infection.
- ◆ Prioritise monitoring of antimicrobial resistance, to support antimicrobial stewardship across all care settings, taking into account resources and programmes needed.
- ◆ Supply antimicrobials in pack sizes that correspond to local and national guidelines on course lengths.
- ◆ Evaluate effectiveness of antimicrobial stewardship interventions by reviewing rates and trends of antimicrobial prescribing and resistance.

Communication

- ◆ Encourage and support prescribers only to prescribe antimicrobials when clinically appropriate – see [NICE pathway](#).

Laboratory testing – see [NICE pathway](#)

Recommendations – wording **used** such as ‘offer’ and ‘consider’ denote the **strength of the recommendation**.

Drug recommendations – the guideline assumes that prescribers will use a drug’s [Summary of Product Characteristics \(SPC\)](#) to inform treatment decisions

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Prescribers

Clinical assessment

Before prescribing an antimicrobial:

- ◆ Undertake a clinical assessment and document clinical diagnosis (including symptoms) in the patient's record and clinical management plan.
- ◆ Take microbiological samples and review prescription when results are available for patients in:
 - primary care who have recurrent or persistent infections,
 - hospital who have suspected infection.
- ◆ For patients who have non-severe infections, consider taking microbiological samples and awaiting results before a decision about prescribing an antimicrobial is made, providing it is safe to do so.
- ◆ Consider point-of-care testing in primary care for patients with suspected lower respiratory tract infections as described in [NICE pathway: pneumonia](#).
- ◆ Discuss with the patient /family members/ carers:
 - the likely nature of the condition,
 - why prescribing an antimicrobial may not be the best option and alternative treatment options,
 - their views on antimicrobials, taking into account their priorities or concerns for their current illness and whether they want or expect an antimicrobial,
 - the benefits and harms of immediate antimicrobial prescribing,
 - what they should do if their condition deteriorates or they have problems as a result of treatment,
 - whether they need any written information about their medicines and possible outcomes.

New antimicrobials

Commissioners and providers

- ◆ Consider establishing processes for reviewing national horizon scanning to plan for release of new antimicrobials.
- ◆ Consider using an existing local decision-making group to approve introduction of new antimicrobials locally. See [NICE pathway: local formulary development](#).
- ◆ Include representatives from different care settings and other local organisations to minimise the time to approval.
- ◆ Consider multiple approaches to support the introduction of a new antimicrobial, including:
 - electronic alerts to notify prescribers,
 - guidance about how to use the antimicrobial,
 - issuing new or updated formulary and antimicrobial prescribing guidelines,
 - peer advocacy and advice from other prescribers,
 - education or informal teaching on ward rounds,
 - shared risk management strategies for antimicrobials that are potentially useful but may be associated with patient safety incidents.
- ◆ Following local approval, organisations should consider ongoing monitoring by:
 - conducting an antimicrobial use review (reviewing whether prescribing is appropriate and in line with the diagnosis and local and national guidelines),
 - costing use of the new antimicrobial,
 - reviewing non-formulary antimicrobial prescribing,
 - evaluating local prescribing and resistance patterns,
 - reviewing clinical outcomes such as response to treatment, treatment rates, emerging safety issues, tolerability and length of hospital stay.

Local decision-making groups

See [NICE pathway: local decision-making groups](#)

Prescribing

- ◆ **Do NOT** issue an immediate prescription for an antimicrobial to a patient who is likely to have a self-limiting condition.
- ◆ Discuss with the patient/family/carers other options such as:
 - self-care with over-the-counter preparations,
 - back-up (delayed) prescribing,
 - other non-pharmacological interventions, e.g. draining site of infection.
- If an antimicrobial is needed:**
 - ◆ Take into account the risk of antimicrobial resistance.
 - ◆ Follow local or national guidelines on prescribing:
 - the shortest effective course,
 - most appropriate dose,
 - route of administration.
 - ◆ Take into account the benefits and harms associated with the particular antimicrobial, including:
 - possible interactions with medicines/food/drink,
 - patient's other illnesses, e.g. dose adjustment in a patient with renal impairment,
 - any drug allergies (these should be documented in the patient's records),
 - risk of selection for organisms causing healthcare-associated infections e.g. *C. difficile*.
 - ◆ Document in the patient's records the:
 - reason for prescribing, or not prescribing, an antimicrobial,
 - care plan as discussed with the patient, their family member /carer, including planned duration of any treatment,
 - reason for prescribing if outside guidelines.
 - ◆ **Do NOT** issue repeat prescriptions for antimicrobials unless needed for a particular clinical condition. Avoid issuing repeat prescriptions for >6 months without review and ensure adequate monitoring to reduce adverse drug reactions and to check if continuing an antimicrobial is really needed.

Intravenous (IV) antibiotics

- ◆ Use an IV antimicrobial from the agreed local formulary and in line with local (where available) or national guidelines for a patient who needs an empirical IV antimicrobial for a suspected infection but has no confirmed diagnosis.
- ◆ Consider reviewing IV antimicrobial prescriptions at 48 to 72 hours in all health and care settings (including community and outpatient services). Include response to treatment and microbiological results in any review, to determine if the antimicrobial needs to be continued and, if it can be switched to an oral antimicrobial.

Further resources

- ◆ Further resources are available from NICE to support implementation of this guideline: www.nice.org.uk/guidance/NG15/chapter/2-Implementation-getting-started
- ◆ Antimicrobial prescribing and stewardship competencies (Public Health England, 2013): www.gov.uk/government/uploads/system/uploads/attachment_data/file/253094/ARHAlprescrcompetencies_2_.pdf
- ◆ For primary care, the TARGET antibiotics toolkit designed to support CPD, audit, training and self-assessment for the whole primary care team within a GP practice or out-of-hours setting: www.rcgp.org.uk/clinical-and-research/toolkits/target-antibiotics-toolkit.aspx