The 5x5 Antimicrobial Audit

FREQUENTLY ASKED QUESTIONS

General Questions

1. I'm getting enquiries about the audit. How can I summarise the basics?

The 5x5 Antimicrobial Audit tool is a continuous audit, intervention and feedback activity that captures information on antimicrobial prescribing within a targeted population. Data is collected on quality measures such as whether indications have been documented and whether the choice of antimicrobial therapy is consistent with prescribing guidelines. Auditors are prompted to make interventions that promote best practice prescribing, and audit results are fed back to prescribers and other stakeholders at regular intervals.

2. Why is it called the 5x5 Antimicrobial Audit?

This audit methodology requires auditors to collect data on 5 questions per patient for 5 patients per week, which led to the "five by five" idea. Collecting a set amount of data from only 5 patients per week is advantageous in that the audit is considerably more sustainable and flexible than many other antimicrobial audit methodologies, and data collection can usually be incorporated into an auditor's regular duties and chart reviews.

3. Who should be the audit coordinator within my facility and what is their role?

An ideal audit coordinator will have a strong interest in antimicrobial stewardship and/or quality use of medicines, and be committed to the project as a long term responsibility. Audit coordinators will need to train, support and provide direction for auditors and may also be an auditor themselves. Coordinators will have a more active role during the initial implementation of the audit, but will also be responsible for ensuring data collection is sustained and feedback to target prescribers and other stakeholders occurs on a regular basis. Audit coordinators will ideally work full time, however the role may be shared between two people if necessary.

Are your questions still unanswered?

If you can't find an answer to your question below, speak to your Audit Coordinator or contact the Quality Use of Antimicrobials in Healthcare (QUAH) program team for advice.

CEC-AMS@health.nsw.gov.au

4. What are the criteria for being an auditor?

Data collection for this audit is designed to be undertaken by clinically-educated healthcare professionals, including (but not limited to) pharmacists, medical officers or registered nurses with an interest in antimicrobials. All auditors must receive training covering the purpose of the audit, the methodology and evidence base (i.e. cycles of audit, intervention and feedback) and the data collection procedure. As part of their induction auditors should receive copies of relevant documents from the audit package as well as a list of indications for which locally endorsed guidelines exist. Auditors must consent to being an auditor, be informed of their expectations and be made aware of who to speak to if they are have questions or difficulties in their role.

5. Will use of the 5x5 Antimicrobial Audit count as evidence of monitoring antimicrobial usage for accreditation?

Use of the 5x5 Antimicrobial Audit may contribute to meeting accreditation criteria outlined in the National Safety and Quality Health Service Standards, however full implementation must be evidenced by continuous data collection, regular feedback to stakeholders and use of the results to inform the local antimicrobial stewardship program plan. This audit should not be the sole method of monitoring antimicrobial use at your facility, but is a viable option to assist in capturing long-term data on the quality of empirical antimicrobial prescribing.

Data Collection

6. Why is a patient deemed ineligible if it has been greater than 5 days since the indication was identified in hospital?

Empirical prescribing guidelines are most useful for early management of specific conditions and often suggest that decisions regarding ongoing care are based on the patient's clinical response and microbiological findings. Trials of the audit tool found that the more time that had elapsed since the indication was first identified, the more difficulties auditors had in making decisions regarding patient eligibility and guideline concordance. This resulted in a significant amount of inter-rater variability and a decision was made to exclude patients if it had been greater than 5 days since the indication was identified.

Please note, this rule specifies 5 days from the indication being identified during the current hospital encounter and therefore does not include time elapsed between an outpatient diagnosis and admission to hospital. Similarly, should a patient have been recently discharged and readmitted with the same indication for therapy, the 5 days should be counted from the readmission date as these are separate periods of hospitalisation.

7. Are patients eligible if they have been transferred from another ward or hospital?

If there is enough information available about a patient's previous care at a different site of hospitalisation, transferred patients are eligible for the audit. If the patient was already receiving antimicrobial therapy upon arrival to the ward, 5 days should be counted from when the indication for therapy was first identified whilst hospitalised (regardless of location).

8. Are we able to collect data from more than 5 patients per week?

If a facility has the resources for additional auditing and there are enough eligible patients in the target population, there is no reason why the goal of 5 patients per week cannot be exceeded. Increased sample sizes will lead to more reliable and precise indicator results, however auditors must not be pressured into routinely delivering more audit records than is sustainable in the long-term.

9. Exactly how clear and specific does the documentation have to be?

In deciding whether or not documentation is clear, auditors should consider whether other health professionals would be able to answer the question based only on the information presented. Auditors should disregard prior knowledge about the patient, and should be prepared to use their discretion and/or discuss the case with their audit coordinator when documentation clarity is considered borderline.

Documentation of indication

A diagnosis that requires antimicrobial therapy needs to be linked to the act of prescribing antimicrobials and documentation should correspond to the date that the antimicrobial therapy was prescribed. Whilst some diagnostic uncertainty is acceptable, an indication must be listed with sufficient detail to be matched to a diagnosis or condition in the antimicrobial prescribing guidelines (note: specifying a severity is not necessary – for further advice see question 10).

The listing of "*?Dermatitis ?Cellulitis*" followed later in the same entry by "*Plan: IV Flucloxacillin*" (or other evidence that the antibiotics were subsequently charted), would be considered clear documentation of an indication. "*Pneumonia*" or "*?chest infection*" would not be considered clear enough documentation, as based on this information an auditor cannot match the indication to a specific guideline (and thus cannot determine concordance with guidelines).

Documentation of reason for non-concordance

Whilst the auditor may know the doctor/medical team's reason for diverging from the guidelines (e.g. from rounds or by putting together clinical clues), a reason needs to be clearly documented. Reasons should always be given within a clinical context or rationale, except where therapy has been recommended by a microbiologist or infectious diseases (ID) physician.

Statements such as "*suspected Pseudomonas spp. (recurrent infections)*" or "*quinolones avoided due to epilepsy*" would both qualify as documented reasons for diversion from the guidelines. Non-specific and/or non-clinical statements such as "*ceftriaxone prescribed*" or "*charted meropenem as per previous hospital*" is not adequate. "*Voriconazole per Dr Adams*" is only an appropriate reason if Dr Adams is a microbiologist or ID physician.

10. What if the patient has an indication for which guideline recommendations are based on severity?

Where guideline recommendations are based on severity, the auditor should look for direct or indirect markers of severity in the notes, chart or electronic medical record. Direct markers will be obvious (e.g. using the phrase "*moderate CAP*") whilst indirect markers are in the form of clinical parameters that may create an overall picture of severity. Auditors should use the information that is available to them to make a clinical judgement, and should refer to guideline advice to assist in determining severity. If the auditor feels that there is not enough information documented to determine a severity, the patient should be categorised as not having an indication clearly documented (as there is limited evidence that the prescriber could have made a suitably informed prescribing decision).

As the guidelines for community acquired pneumonia are quite complicated, the CEC has developed a Cheat Sheet for this indication, which all auditors should receive.

11. What if the documented indication for antimicrobial therapy is a fever?

Fever or pyrexia is not a sufficient 'indication' for antimicrobial therapy, and requires further clarification. The doctor or team must suspect an infectious disease process or diagnosis that routinely warrants antimicrobial therapy, such as "sepsis" or "febrile neutropenia", for which a fever may be a clinical sign.

12. Which set of guidelines do I use?

If the facility has locally-endorsed therapeutic guidelines for antimicrobial prescribing, these should be used to determine concordance. Locally endorsed guidelines are those which have been approved by the local committee that oversees antimicrobial prescribing – often the Drug and Therapeutics Committee or the Antimicrobial Stewardship Committee. If the facility does not have locally endorsed guidelines for the given indication, the current version of *Therapeutic Guidelines: Antibiotic* should be used. If neither locally endorsed guidelines nor the *Therapeutic Guidelines: Antibiotic* have recommendations for the indication listed, the patient is deemed out of scope for the audit and any data collected for the patient should be discarded.

13. What if there are no guidelines that exist for the indication listed?

The audit is designed to capture information on antimicrobial therapy for indications in locally endorsed guidelines or the *Therapeutic Guidelines: Antibiotic*. When a patient is found to have a clear and specific indication that is not included in either set of guidelines, the patient is considered outside the audit scope and their data should be discarded.

14. What if an indication is documented or clarified by someone other than a doctor or medical team responsible for the patient?

If information about the indication was provided by a third person, this does not count as an indication being documented or confirmed with a doctor attending to the patient. The auditor can either contact the doctor/medical team to confirm the indication provided by the third person, or they can choose not to and the audit for the patient is considered complete. By contacting a doctor to confirm an indication, auditors are reinforcing a need for this documentation to occur on future occasions.

15. What if the documented indication for therapy appears to be inaccurate?

Assessing the accuracy of the antimicrobial indication is beyond the scope of this audit. Auditors are not expected to critically assess the accuracy of a diagnosis or rationale provided by the doctor/medical team – for audit purposes, the indication is what the doctor believes they are treating. If an auditor is concerned about the accuracy of information provided, they are encouraged to discuss their concerns with the doctor/medical team directly.

16. What if the reason given for guideline non-concordant therapy is a bad one?

As this audit focuses on prescribing processes, deciding whether or not a reason for diverging from guidelines is considered a 'good enough' rationalisation is beyond the audit scope (reasons do however, require a clinical context – see question 9). Auditors are only asked to record whether or not a reason is documented – specific concerns regarding its validity or accuracy can be recorded in the comments or discussed with the doctor/medical team directly.

17. What if a patient is prescribed a range of antimicrobials to treat multiple indications?

All indications for therapy need to be clearly documented in the notes, chart or electronic medical record in order to answer "Yes" for question 1. Antimicrobial therapy as a whole needs to be considered concordant with guidelines in order to answer "Yes" for question 3 – some rationalisation of therapy may be expected and accepted (auditors are encouraged to consult their audit coordinator for advice if necessary).

18. How do I determine concordance with guidelines where there are single/stat doses of antimicrobials prescribed?

For therapy to be deemed concordant, all single dose antimicrobials prescribed on the day of the audit must match what is recommended in the guidelines. If the patient has been prescribed a stat dose of an antimicrobial on the day, and this does not match guidelines, then therapy should be deemed non-concordant.

19. If antimicrobial therapy has diverged from guidelines due to an allergy, is this considered non-concordant therapy?

If a specific drug allergy has been included in the guidelines with a recommended alternative, and the prescribed therapy matches this recommendation, this is considered 'guideline concordant'. If the specific drug allergy is not referred to in the guidelines, then therapy is considered 'non-guideline concordant' and the allergy should be documented in the notes as a reason (note: both 'guideline concordant' and 'guideline non-concordant with a documented reason' are considered positive results for this audit).

20. What do I do if the guidelines for an indication say "seek expert advice"?

If your local guidelines and/or the *Therapeutic Guidelines: Antibiotic* refer to 'expert advice', the indication (or your patient's specific clinical context) is likely to be too complex for set recommendations to be provided. Where a guideline recommends seeking 'expert advice', the patient is considered outside the audit scope and their data should be discarded.

21. What if I contact a doctor to with a view to recommending guideline concordant therapy and they then give me a reason for non-concordance?

Question 5 is asking if contact was made with intent to recommend guideline concordant therapy, given that there is no clear reason for non-concordance documented. If the doctor then provides a reason and/or chooses not to accept the recommendation, this is not relevant to the question as contact has still been made. The auditor should answer 'yes' to question 5, but may wish to record the outcome of this interaction in the comments section.

22. Why are we recording data on whether or not doctors were contacted?

As well as providing continuous data on indication documentation and guideline concordance, this audit also provides information on the extent to which interventions are being made by the auditors in clinically appropriate situations. Whilst there are some situations where a prompted intervention may not be appropriate, low rates of intervention overall may require some investigation of factors influencing the rate of interventions (such as time pressures, auditor confidence/training and perceived importance or impact).

High rates of clinically appropriate interventions should be commended as evidence of action taken to improve clinical practice, and contributes to raising the profile of antimicrobial stewardship within your healthcare facility.

23. What if my patient has been prescribed antimicrobial therapy in response to micro results (e.g. blood culture, urine culture, aspirate culture, wound swab, etc.)?

The 5x5 Antimicrobial Audit is designed to collect data on empirical prescribing only. Antimicrobial therapy that is guided by microbiology results is 'targeted' or 'directed' therapy, as more specific information is known about the patient's infection. If microbiology information was available at the time of prescribing the antimicrobial therapy, the patient is outside the audit scope and their data should be discarded.

24. What if I think other auditors are interpreting or applying the rules differently to me?

It is important that auditors are consistent with their interpretation of data collection rules and definitions. Where more than one auditor is collecting data, regular discussion of difficult cases is strongly recommended to reduce the impact of inter-rater variability.

25. My facility does not keep the antimicrobial that has been recommended in the guidelines. How do I measure concordance?

If your facility does not stock an antimicrobial agent that is recommended in the *Therapeutic Guidelines: Antibiotic*, or the recommended agent is unavailable, there should be a local guideline which provides recommendations that are reflective of your hospital formulary. Where no local guideline exists, therapy that differs from the *Therapeutic Guidelines: Antibiotic* recommendations should be deemed non-concordant and auditors should also raise the issue with their audit coordinator so that this scenario can be discussed with the Drug any Therapeutics Committee and/or the Antimicrobial Stewardship Committee.

26. I'm encountering a lot of complex audit patients. What do I do if I'm not very confident with my answers?

The simple and time-efficient design of the 5x5 Antimicrobial Audit is well-suited for basic patient care scenarios, but may be somewhat limiting in data collection for more complex cases. At times, auditors will have to use their discretion and those that are not confident in some of their answers are encouraged to discuss these issues with their audit coordinator and other auditors. Further questions can also be directed to the Quality Use of Antimicrobials in Healthcare (QUAH) program team at the CEC by emailing CEC-AMS@health.nsw.gov.au).

Auditors should also attempt to be as consistent as possible in their pattern of audit decisions. This means that if a complex case is handled in a particular way, subsequent similar cases should be handled in the same way and this should be made clear when providing feedback to prescribers and other stakeholders.

Data Entry & Review

27. Does the CEC collect our audit data?

Whilst audit data was submitted to the CEC during a pilot project for the 5x5 Antimicrobial Audit, this data was submitted, collated and analysed manually. Unfortunately there is currently no capacity to automate this process for general audit use, however the CEC will continue to explore options to collect data from individual NSW audit sites with a view to produce a 'statewide average' result for each indicator.

28. What is the best way to collate and review our audit data?

It is recommended that audit sites collate and review their data using the *Data Entry & Review System,* which is an MS Excel file provided in the audit resource package. This spreadsheet allows audit sites to collate their data and generate statistics and graphs based on up to four selected data parameters (e.g. date, hospital, location and specialty). A *Guide to the Data Entry & Review System* is also available, which provides basic instruction on using the file to support the data analysis process.

29. Who should have access to the Data Entry and Review System?

Anyone who has read the *Guide to the Data Entry and Review System* is able to perform data entry, however it is recommended that this number is kept to a minimum to reduce the likelihood of problems or duplications. Use of the review functionality within the database may be quite challenging, and users will need to be competent in basic Microsoft Excel concepts and operations.

The 5x5 Antimicrobial Audit: Frequently Asked Questions
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