

The New Zealand Guideline for Reporting of Antimicrobials in Microbiology Laboratories: an opportunity for laboratory based antimicrobial stewardship activities in New Zealand

Juliet Elvy, on behalf of the New Zealand National Antimicrobial Susceptibility Testing Committee (NZNAC)

Box 1. Key points.

1. Microbiology laboratories play a key role in antimicrobial stewardship efforts.
2. Reporting of antimicrobial susceptibility results can directly influence antibiotic prescribing.
3. Selective reporting can improve prescribing by reducing unnecessary antibiotic choices, including for situations where an antibiotic is not likely to be required.

It is well known that antimicrobial usage in New Zealand is high compared with other countries, such as Australia and the UK (1,2). Recent data suggest the trend in antimicrobial consumption in New Zealand may be reversing, but there still is a long way to go before we can match the enviably low usage rates seen in countries like The Netherlands (3). Inappropriate prescribing for conditions which do not need antibiotics (such as asymptomatic bacteriuria or viral upper respiratory tract infections) is commonplace within our health system, despite the well-established link between antimicrobial usage and antimicrobial resistance (AMR) (1,2). Antimicrobials are often seen as “safe” medicines with an under-appreciation for the risk of adverse events and harm for individual patients. However, unnecessary “just-in-case” prescribing is increasingly reckless and threatens the availability of safe and effective treatment options for our future generations.

As a response to the global AMR crisis, coordinated antimicrobial stewardship (AMS) efforts aim to improve prescribing and promote the prudent use of antibiotics (4). Specifically, AMS is about using the right antibiotic, for the right indication, at the right dose, for the right duration, by the right route, and with the least toxicity or impact on AMR (4). Using unnecessarily broad-spectrum or long courses of antibiotics, or antibiotics for conditions which do not require them, are everyday examples which AMS programmes attempt to address. To date, AMS in New Zealand has not been highly valued or well-resourced and is not equitably distributed across our health sector (5,6). And whilst the vast majority of antimicrobial usage occurs in the community (2,7), most AMS activities are hospital based and rely on a small number of enthusiastic individuals. Ideally, AMS should be a collective responsibility, integrated across each of the various health services and an expected practice for all prescribers; AMS in New Zealand has a long way to go to reach this goal (5).

Microbiology laboratories are uniquely placed to influence prescribing behaviour by the susceptibility results which are released to the clinician (4). Studies demonstrate how restricting what is released as “S” on the microbiology report

can reduce the use of unnecessarily broad spectrum antimicrobials and improve adherence with antimicrobial guidelines for common conditions (8,12). Reporting of second-line (or last resort) antimicrobials should be reserved for resistant isolates or other specific clinical situations, such as reported antibiotic allergy. This approach is an example of behavioural nudging strategy, designed to guide choice and decision making whilst maintaining the autonomy of the prescriber. Such selective reporting of antimicrobial susceptibilities (also known as restrictive or cascade reporting) has been rightly recognised as a key component of AMS and recommended by professional bodies such as the European Centre for Disease Prevention and Control (ECDC) (13), the Infectious Diseases Society of America (IDSA) (4), the Society of Healthcare Epidemiology of America (SHEA) (4), and the Royal College of Pathologists of Australasia (RCPA) (14). The microbiology laboratory must therefore acknowledge its responsibility towards AMS and be empowered to implement selective reporting, particularly for scenarios where the balance of risk does not favour reporting the result. This approach has been shown to be safe and effective (11,12,15,16) and is well aligned with important Choosing Wisely principles (17). Understanding this responsibility and the important role of the microbiology laboratory for AMS has been a crucial culture change over recent years.

In 2019 the RCPA published its guideline for Selective Reporting of Antimicrobials (14). Whilst this is an important and highly relevant document, it was developed primarily for the Australian diagnostic sector. Because of important differences in reporting and prescribing in New Zealand and following on from discussions about these differences with the RCPA, the New Zealand National Antimicrobial Susceptibility Testing Committee (NZNAC) embarked upon putting together a set of standards specifically for the New Zealand setting. Following a prolonged hiatus in development throughout 2020 we are delighted to finally publish the New Zealand Guideline for Reporting of Antimicrobials, included in this current edition of the *New Zealand Journal of Medical Laboratory Science*. Contained within the guidelines are 11 key reporting recommendations (summarised in the Box 2 below) as well as specific reporting guides for common organisms. The document is endorsed by the New Zealand Microbiology Network (NZMN), as well as the RCPA, and consolidates our commitment to AMS, Choosing Wisely, and patient safety.

It is entirely possible that most New Zealand microbiology laboratories already adhere to the many recommendations included in this guideline, and if so, we applaud you. However, laboratories are still encouraged to read, align and, where necessary, implement these reporting principles.

The guideline is not intended to cover all possible drug-bug scenarios but aims to encompass the commonly encountered ones. It has been circulated to the International Accreditation New Zealand (IANZ) for consideration.

We welcome any feedback and include for interest some questions which can contribute towards continuing professional development (CPD).

Box 2. Overarching principles for reporting of antimicrobials.

1. Antimicrobial susceptibility reporting has a direct influence on prescribing practices by clinicians.
2. Antimicrobial susceptibility reporting should be restricted to clinically relevant isolates.
3. Antimicrobial agents which are not effective at the likely site of infection should not be reported.
4. Laboratories need not routinely report susceptibility results for intravenous antibiotics for community samples unless limited oral options are available.
5. Routine susceptibility testing results should align with local antibiotic treatment guidelines.
6. Antibiotic agents which are used only as indicator antibiotics for resistance mechanisms should not be directly reported.
7. Clinically relevant antimicrobial resistance should be identified and reported.
8. The narrowest spectrum effective agents should be preferentially reported.
9. Reporting of second-line antibiotics such as quinolones, 3rd generation cephalosporins, piperacillin-tazobactam, clindamycin, and carbapenems should be restricted.
10. Report alternative treatment options wherever allergy is indicated.
11. Clinical microbiologists should be available for clinical consultation for all laboratories providing microbiology services.

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