

Rate calculations for topical antimicrobials

NAUSP rate calculations

Participation in the National Antimicrobial Utilisation Surveillance Program (NAUSP) allows users to track antimicrobial usage at their facility via both reports and rate calculations. Rate calculations allow users to track usage of an antimicrobial formulation, agent or class via the following:

- > The **Quantity** dispensed
- > The number of Defined Daily Doses (**DDDs**) dispensed
- > The number of **Grams** dispensed
- > The usage **Rate** (the number of DDDs per 1000 occupied bed days)
- > The usage **Rate MA** (which is a moving average of the usage rate over time - see section 6.1 of the [NAUSP Portal User Guide](#) for further information)

DDDs for topical agents

In January 2019, NAUSP added topical antimicrobial agents to the list of agents included in NAUSP data. Due to wide person-to-person variation in the daily usage of some topical agents (e.g. creams), the World Health Organization (WHO) does not assign DDDs to many topical formulations. Table 1 outlines the new topical formulation categories added to the NAUSP Portal in January 2019 and whether the WHO has assigned DDDs.

Table 1: Topical formulation categories added to the NAUSP

| Formulation type | WHO assigned DDD? |
|----------------------------------|-------------------|
| Cream, ointment, gel, lotion | No |
| Eye drop, ear drop | No |
| Shampoo | No |
| Pessaries, vaginal cream and gel | Yes |
| Oral gel, lozenge | Yes |


For topical agents where WHO have not assigned a DDD, NAUSP has arbitrarily assigned a DDD of 1. The assignment of a DDD was required to enable rate calculations from the NAUSP Portal. Nystatin liquid, capsules and tablets have been assigned a DDD in units by the WHO and have also been assigned a DDD of 1, because rate calculations in units are not possible through the NAUSP Portal.

How to interpret topical rate calculations

Topical rate calculations will appear the same as other NAUSP rate calculations, and will allow portal users to track the quantity of topical antimicrobials used in both **quantity dispensed** and **grams dispensed** (see figure 1 below). Although the DDD, rate and rate MA columns will appear in these rate calculations, these will not be as useful for many topical agents, due to the arbitrary assignment of a DDD of 1 by the NAUSP team.

Figure 1: Example of output from a topical rate calculation

| Date | Antibiotic | Contributor Name | Code | Quantity | Denom | DDD | Grams | Rate | Rate MA |
|------------|--|------------------|------|----------|-------|--------|--------|----------|---------|
| 01/12/2018 | CLOTRIMAZOLE CREAM 1%, 50 grams, 500mg, TOPICAL | Test | Test | 90 | 7256 | 45.000 | 45.000 | 6.201764 | 0.153 |
| 01/01/2019 | CLOTRIMAZOLE CREAM 1%, 50 grams, 500mg, TOPICAL | Test | Test | 48 | 8888 | 24.000 | 24.000 | 2.70027 | 0.153 |
| 01/12/2018 | CIPROFLOXACIN EYE DROPS 0.3%, 5ml, 15mg, TOPICAL | Test | Test | 33 | 4333 | 0.495 | 0.495 | 0.11424 | 0.001 |
| 01/01/2019 | CIPROFLOXACIN EYE DROPS 0.3%, 5ml, 15mg, TOPICAL | Test | Test | 40 | 6505 | 0.600 | 0.600 | 0.092237 | 0.001 |



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For more information

National Antimicrobial Utilisation Surveillance Program
Communicable Disease Control Branch
11 Hindmarsh Square
Adelaide SA 5000
Telephone: 1300 232 272
Email: Health.NAUSPhelp@sa.gov.au
www.sahealth.sa.gov.au/nausp

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