

NAUSP Quality Assurance Processes

The aim of NAUSP Quality Assurance activities is to confirm all data submitted to the NAUSP Portal comply with NAUSP definitions. This assists to ensure accuracy in the reports generated and the data used as part of the national surveillance of antimicrobial use for AURA. This fact sheet provides an outline of the Quality Assurance (QA) processes conducted by the NAUSP team.

The Quality Assurance Process

Every six months (after submission of June and December data) hospitals are flagged for Quality Assurance (QA) and participants are asked to check, and then send their completed Denominator Record to the NAUSP team.

The NAUSP team undertakes verification of occupied bed day (OBD) and ED/theatre presentation figures uploaded in the portal against the record, identifying any entry errors such as translocation. The sources of usage data (wards and locations) are cross-checked against the denominator record to ensure both numerator and denominators are being captured for any given area. This assists with identifying any inconsistencies in the data or enabling further stratification where appropriate.

In a typical QA cycle, the NAUSP team identifies an error in approximately 25% of all months checked. This ranges from simple translocation denominator errors to full data reloads where extracts are incomplete or incorrectly categorised. This highlights the importance of continuing this process to ensure data accuracy and integrity, and benchmarking between hospitals can occur with confidence.

Numerator Review

Dispensing data by agents, wards and locations

The NAUSP team summarises six (or 12) months of dispensing data into a table containing the number of unique antimicrobial products dispensed to each ward per month. These records are organised by NAUSP locations, which allows confirmation that wards are consistently assigned to the correct location each month. These are then reviewed to check for any missing data, or abnormally high/low figures. In the example below, Maternity Unit, Operating Theatre and Emergency Department have all be mis-categorised. “Emergency department Clean” makes only one appearance for the year – this would be queried with the contributor as to whether there should be data captured for the other 11 months.

Ward data included in error can also be identified by reconciling the areas captured for antimicrobial distribution against the ward inclusions in the denominator record.



Count of Product description (name, strength, form, pack/liq qty/ml)	Co	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Critical Care (ICU/HDU)		27	25	24	21	25	26	22	23	24	45	26	25
Level 3		27	25	24	21	25	26	22	23	24	25	26	25
Maternity Unit											20		
Emergency Department		37	40	38	49	34	38	30	38	43	38	41	43
Emergency Department		37	40	38	34	34	38	30	38	43	38	41	43
Emergency Department Clean					15								
Hospital in the Home		11	11	12	11	9	5	20	9	13	14	17	6
Hospital in the Home Grafton		11	11	12	11	9	5	20	9	13	14	9	6
Operating Theatre												8	
Other/Unspecified acute		125	119	120	94	120	107	107	121	133	109	115	111
Emergency Department		3											
Level 1		50	50	57	46	52	40	49	47	52	46	44	43
Level 2		54	60	48	39	53	54	45	56	65	62	59	55
Maternity Unit		18	9	15	9	15	13	13	18	16	1	12	13
Theatre and Recovery		10	10	11	10	6	4	7	7	12	7		7
Day Surgery Unit			4	4	2		1	1		4			
Operating Theatre		10	6	7	8	6	3	6	7	8	7		7
Grand Total		210	205	205	185	194	180	186	198	225	213	199	192

Dispensing data feasibility (raw quantity check)

The data are scrutinised to assess whether the quantities of antimicrobials dispensed are feasible. If a member of the NAUSP team suspects that a quantity is erroneous they will contact the NAUSP user at the hospital involved. It is at this point that other specific details are also reviewed: variable dose infusions (should be submitted as milligrams not devices), liquid quantities (should be submitted as bottles not millilitres), and inclusion of bone cements or other impregnated devices. This step is often undertaken by viewing the summary by NAUSP location, to confirm 'typical' agents expected in theatre, or the Emergency Department.

Product description (name, strength, form, qty)	Jan	Feb	Mar	Apr	May	Jun	Grand Total	
ABACAVIR 300mg TABLETS (60)		0					0	
ACICLOVIR 200mg TABLETS (90)		0	90	90	180	-180	180	360
ACICLOVIR 250mg/10mL INJECTION (5)		275	365	185	185	85	260	1355
ACICLOVIR 5% (5g) CREAM (1)		5	3		4	2	2	16
ACICLOVIR 500mg/20mL INJECTION (5)		110	-30	20	55	-10	30	175
ACICLOVIR 800mg TABLETS (35)		35						35
AMOXICILLIN-CLAVULANIC ACID 1g-200mg INJECTION (10)		331	440	440	5750			7421
AMOXYCILLIN 1g TABLETS (14)			40	1	2			45
AMOXYCILLIN 250mg CAPSULES (20)		60	0	80	0	20		
AMOXYCILLIN 250mg/5mL (100mL) SUSPENSION (1)				2	2	100		
AMOXYCILLIN 500mg CAPSULES (20)		1000	580	1442	1560	1134		
AMOXYCILLIN-CLAVULANIC ACID 400mg-57mg/5mL (60mL)		6	2	8	13	6	2	37
AMOXYCILLIN-CLAVULANIC ACID 500mg-125mg TABLETS (10)		70	63	30	20	50	50	283
AMOXYCILLIN-CLAVULANIC ACID 875mg-125mg TABLETS (10)		1260	614	610	930	850	710	4974
AMPHOTERICIN (Liposomal) 50mg INJECTION (1)		587	47	75	6	28	14	757
AMPHOTERICIN 10mg LOZENGES (20)		60		160	20	140	20	400
AMPHOTERICIN B [ADDITIVE] (Liposomal) 50mg INJECTION (1)							14	14
AMPICILLIN 1g INJECTION (5)		750	280	305	495	350	465	2645
AMPICILLIN 500mg INJECTION (10)		20		20	20			60
ANIDULAFUNGIN 100mg INJECTION (1)		32	28	34		20	15	129

For example, if we identify a quantity that is an order of magnitude less or more than other months (see quantity highlighted above) the NAUSP team will alert the relevant NAUSP user. The NAUSP team also checks that antifungals, antivirals and topical antimicrobials are included in data submissions (as well as antibacterials).



Denominator Review

The denominator figures in the contributor hospital's completed record should match the numbers submitted to the NAUSP Portal. For example, this contributor entered the Haematology/Oncology figure in the other/unspecified acute field:

Upload NAUSP Pharmacy/Dispensing Data
Enter Denominator Data and choose a NAUSP data file for the submission

Submission Parameters

- Seattle Grace Test Hospital: submission for 07/2023
- Expected filename is SEA_2023_07.xlsx

Ward/Location	Denominator
Critical Care (ICU/HDU)	116 OBD
Haematology/Oncology	3319 OBD
Other/Unspecified acute	854 OBD
Theatre and Recovery	1679 Theatre cases
Emergency Department	2170 ED pres.
Mental Health	499 OBD
Other/Unspecified subacute	116 OBD
Aged Care	499 OBD

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Critical Care (ICU/HDU)	135	147	142	146	84	142	116	127	0	0	0	0
Haematology/Oncology	776	844	788	798	668	849	854	789	0	0	0	0
Other/Unspecified acute	3239	3489	3167	3203	2987	3406	3319	3037	0	0	0	0
Theatre and Recovery	1508	1647	1209	1580	1406	1467	1679	1365	0	0	0	0
Emergency Department	1953	2177	2102	2152	1999	2071	2170	1939	0	0	0	0
Mental Health	424	466	448	468	455	497	499	446	0	0	0	0
Other/Unspecified subacute	135	147	142	146	84	142	116	127	0	0	0	0
Aged Care	424	466	448	468	455	497	499	446	0	0	0	0

How data anomalies are resolved

NAUSP will communicate directly with contributors in all cases where data appears to be incorrect or missing. If discrepancies are found, the NAUSP team works with contributors to resolve any errors and update the information in the Portal prior to reporting.

Other common quality assurance queries:

- There is usage for a location but there are either no matching denominator values for that location or the denominator is zero for that month.
 - All usage needs a corresponding denominator. Please ensure the naming in your usage files and denominator template are either consistent or can be cross identified using the suggested ward legend. When there is clear usage for that location but the denominator record for the same location shows zero, a review will occur.

2. There are denominator values for a ward/location, but that ward/location does not appear in the usage files.
 - Your denominator template might report the OBDs for 'General Medicine A' and 'General Medicine B' separately. However, the usage file only shows usage for 'General Medicine A', so the NAUSP team will query where the usage is for 'General Medicine B'. If General Medicine A and B share the same cost centre of 'General Medicine A', adding this information to your denominator legend will help reduce NAUSP queries and speed up the QA process.
3. A particular location has a sudden increase or decrease in the denominator value.
 - If this is a result of a ward closure or change, please annotate your denominator template.
4. There is a location included in the 'excluded wards' section of your denominator template that requires clarification.
 - A common example of this is ED or Day Surgery OBDs placed in the 'excluded section' as they have already been accounted for in the number of Emergency Department presentations and the number of theatre cases.. Adding a comment to your denominator template to specify that they have been accounted for will reduce this type of QA query.

NAUSP is funded by the Australian Government of Department of Health and Aged Care and is administered by the Communicable Disease Control Branch, Department of Health and Wellbeing, South Australia.

For more information

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