



22<sup>nd</sup> Nov 2023



# Are we looking after our antibiotics in Hunter New England?

2023 World Antimicrobial Resistance Awareness Week

Bianca Mills – District Antimicrobial Stewardship Governance Pharmacist

Dr Catherine Berry – District Antimicrobial Stewardship Physician

ANTIBIOTIC RESISTANCE IS A MAJOR ISSUE  
FOR THE ENTIRE POLUATION AND NO ONE  
KNOWS ABOUT IT

BUT THAT'S NONE OF MY  
BUSINESS

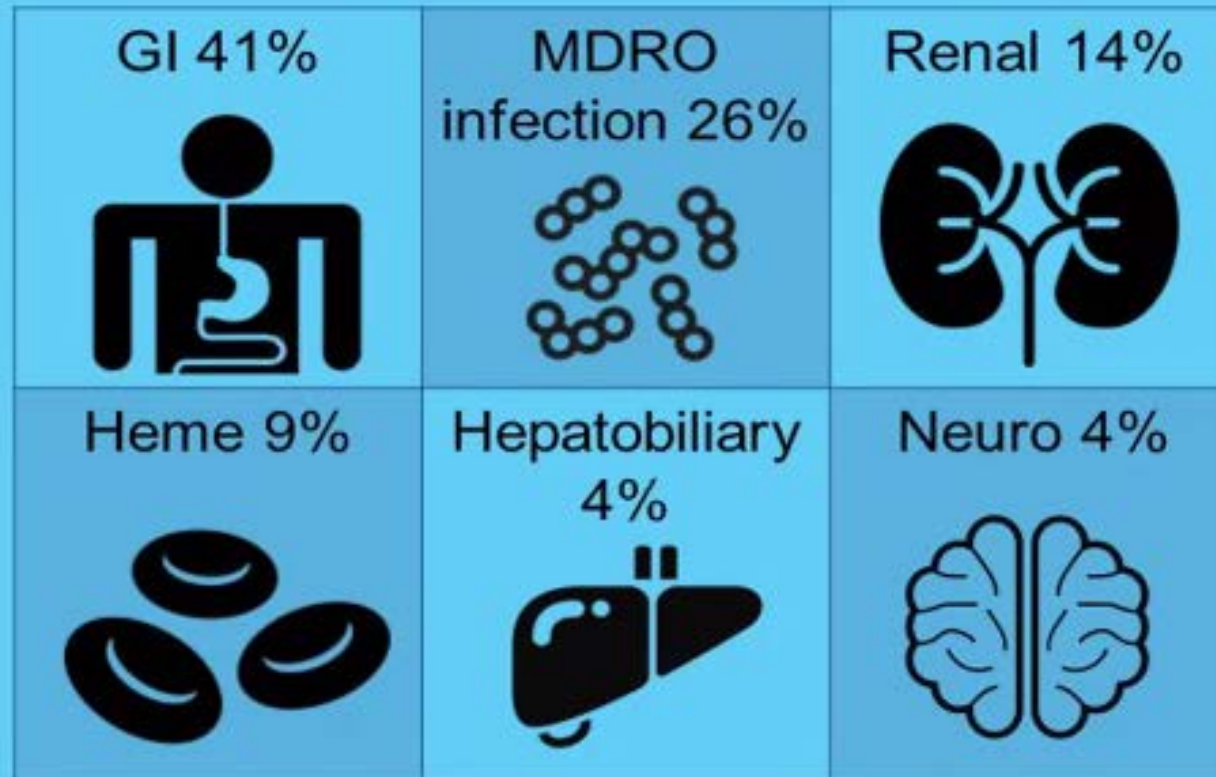
# 1 in 5 inpatients treated with antibiotics is harmed

Retrospective cohort study of 5,579 adult internal medicine inpatients at Johns Hopkins Hospital

- 27% received antibiotics
- 20% developed at least 1 adverse antibiotic event
- 19% of antibiotic regimens not clinically indicated



## 324 antibiotic adverse events:



# How do we know?

EVERY HNELHD hospital audits their antimicrobial use!

In HNE we use FOUR auditing tools for AMS:

Qualitative audits



**HOSPITAL**  
**NAPS** National Antimicrobial Prescribing Survey

**SURGICAL**  
**NAPS** National Antimicrobial Prescribing Survey

**AGED CARE**  
**NAPS** National Antimicrobial Prescribing Survey

Quantitative audits



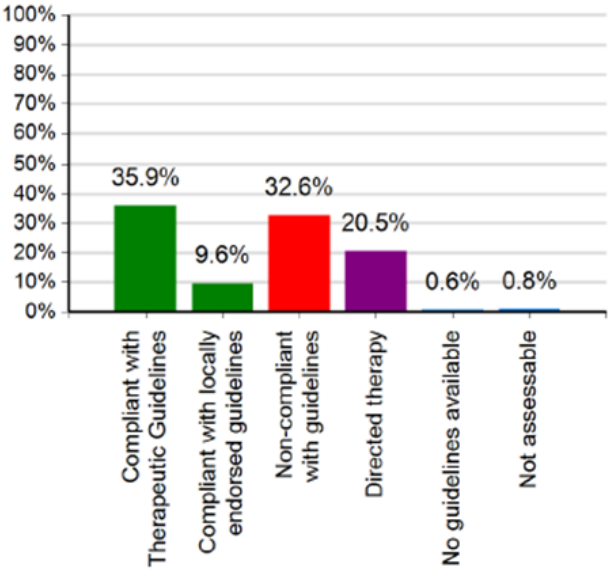
# 2023 Results

Hospital NAPS across HNE

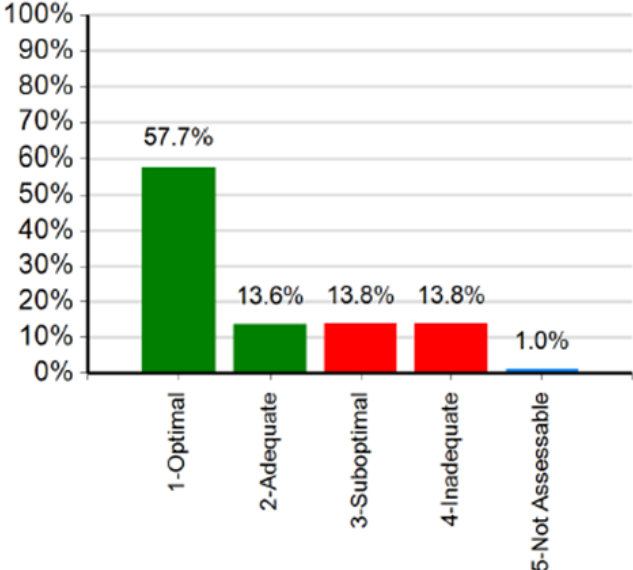
# Combined HNE Hospital NAPS 2023



Compliance with Guidelines



Appropriateness of Antimicrobial



Number of prescriptions = 1940  
 Number of facilities = 33

Compliant with Guidelines 45.5%  
 Noncompliant with Guidelines 32.6%  
 Directed Therapy 20.5%  
 Other 1.4%


































Appropriate 71.3%  
 Inappropriate 27.6%  
 Not Assessable 1.0%

*'Optimal' and 'Adequate' are deemed as being appropriate (displayed in green).  
 'Suboptimal' and 'Inadequate' are deemed as being inappropriate (displayed in red)*

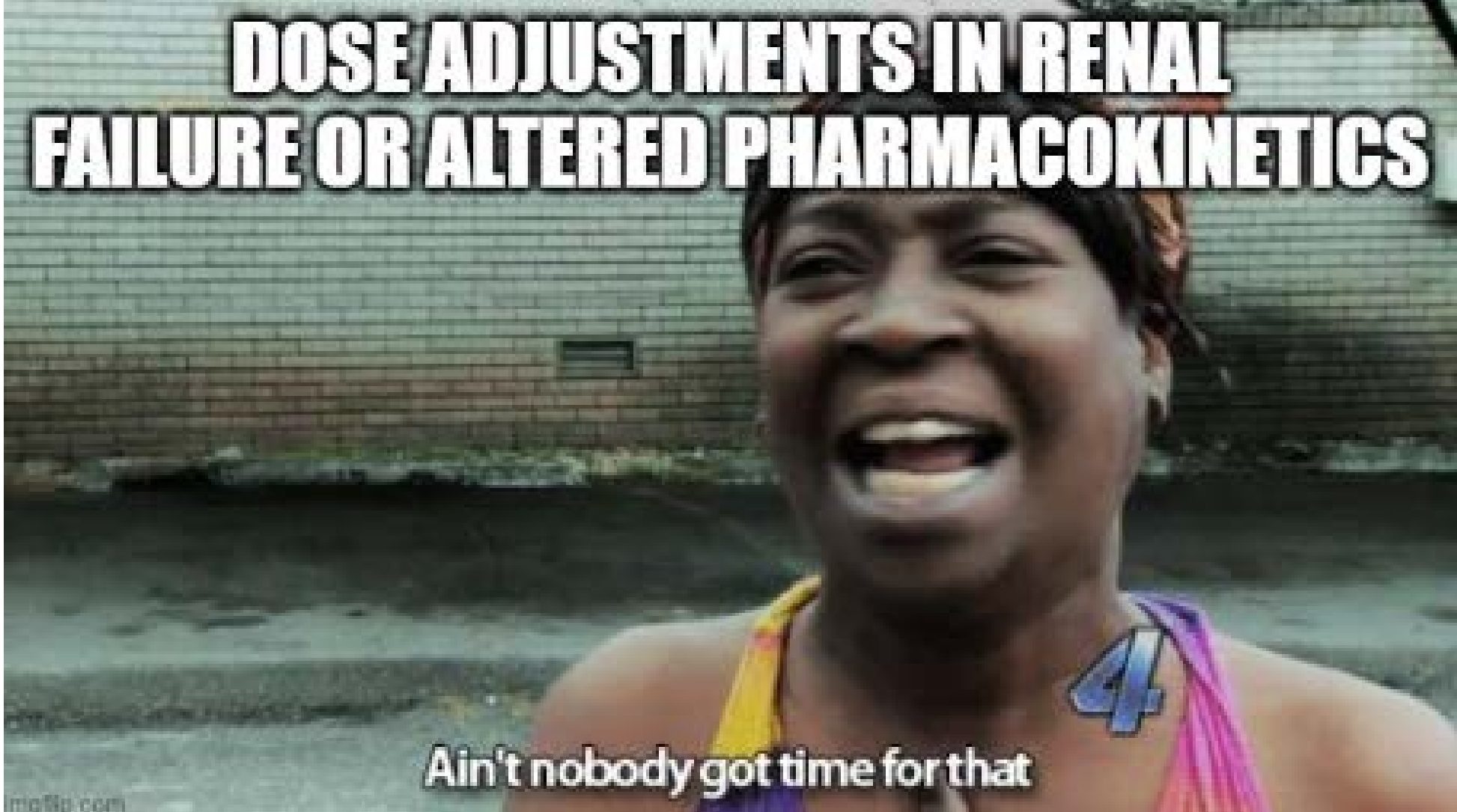
*Therapeutic Guidelines' and 'Local Guidelines' are deemed as being compliant with guidelines (displayed in green). None Available and Not Assessable are grouped as 'Other' (displayed in blue).*



# Combined HNE Hospital NAPS 2023

	Yes	No	Not specified
Indication Documented	1835; 94.6% 	104; 5.4% 	1; 0.1% 
Surgical prophylaxis >24 hours	46; 66.7% 	23; 33.3% 	0; 0.1% 
Allergy Mismatch	2; 0.1% 	1938; 99.9% 	0; 0.1% 
Microbiology Mismatch	31; 1.6% 	1909; 98.4% 	0; 0.1% 
	Yes	No	Not specified
Incorrect Route	23; 1.2% 	1842; 94.9% 	75; 3.9% 
Incorrect Dose Or Frequency	246; 12.7% 	1619; 83.5% 	75; 3.9% 
Incorrect Duration	165; 8.5% 	1700; 87.6% 	75; 3.9% 
Spectrum Too Broad	222; 11.4% 	1643; 84.7% 	75; 3.9% 
Spectrum Too Narrow	98; 5.1% 	1767; 91.1% 	75; 3.9% 
Antimicrobial Not Indicated	75; 3.9% 	1865; 96.1% 	0; 0.0% 
	Yes	No	Not applicable
If restricted: Approval Given	113; 5.8% 	209; 10.8% 	1618; 83.4% 

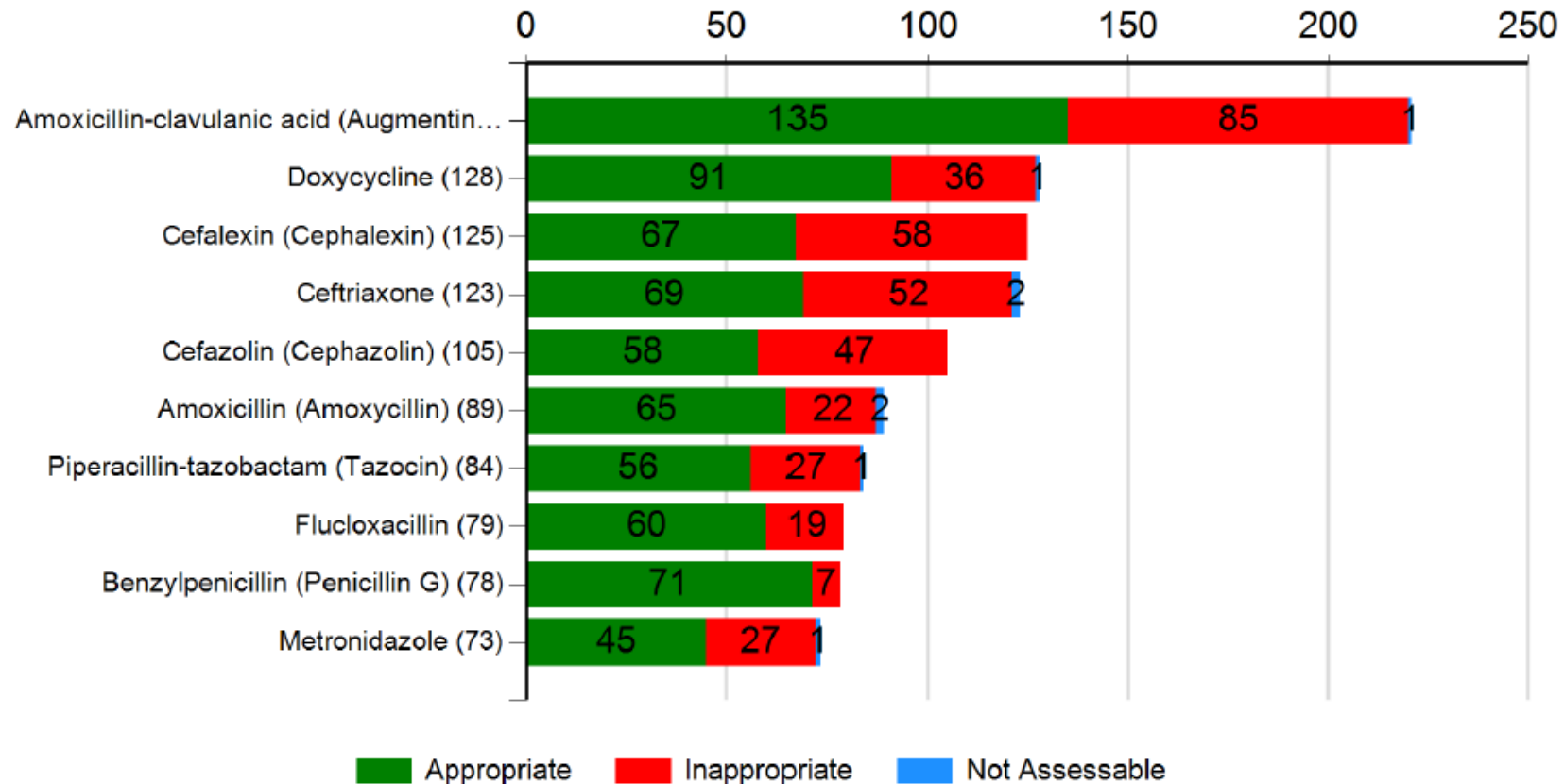
Primary reason for inappropriate antimicrobials is incorrect dose or frequency – for the 3<sup>rd</sup> year in a row.



# Combined HNE Hospital NAPS 2023

## Antimicrobials most often prescribed:

**Most commonly prescribed antimicrobials**  
Total number of antimicrobial prescriptions: 1940

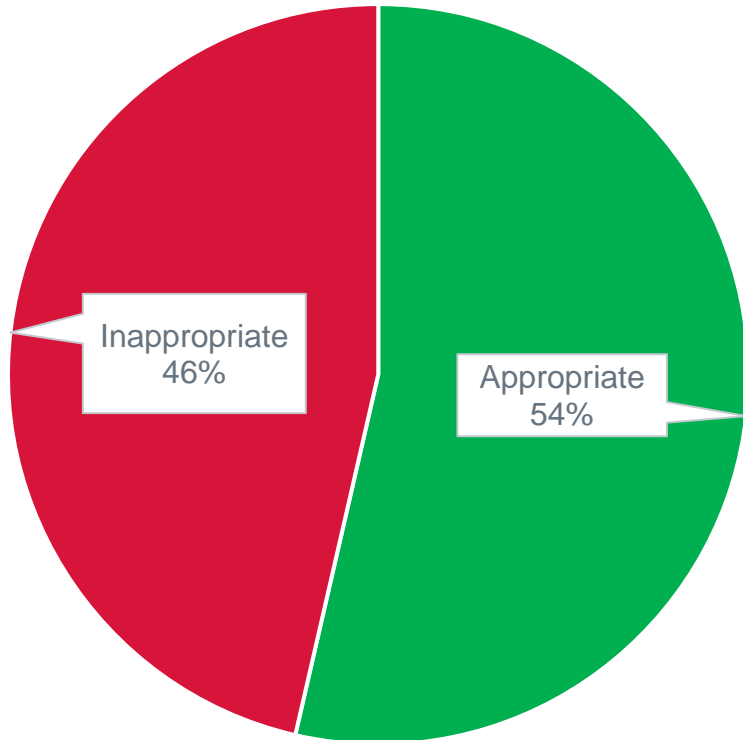


Note: the total number of prescriptions is displayed next to each antimicrobial name.

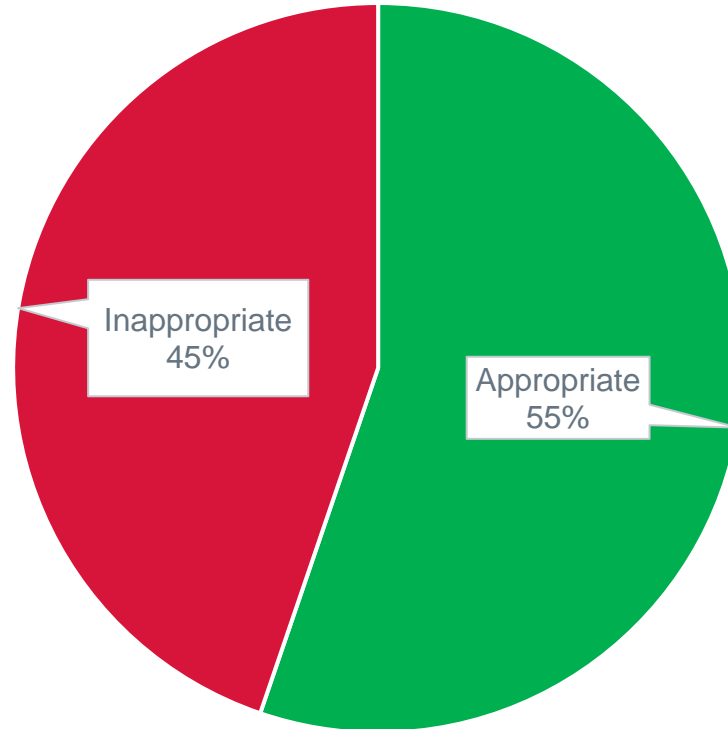
# Combined HNE Hospital NAPS 2023

## Antimicrobials most often prescribed inappropriately:

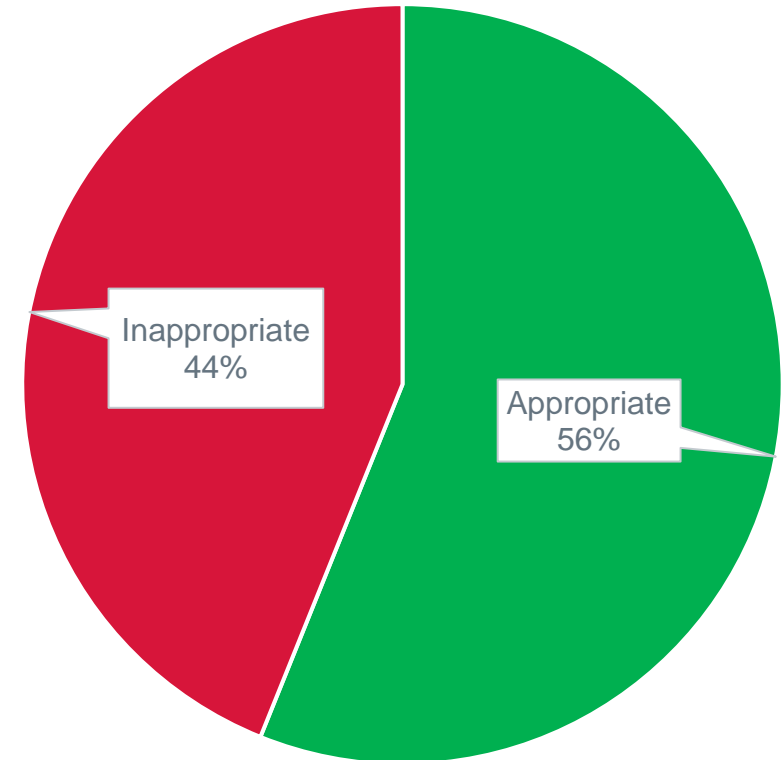
Cefalexin Use



Cefazolin Use



Ceftriaxone Use



■ Appropriate

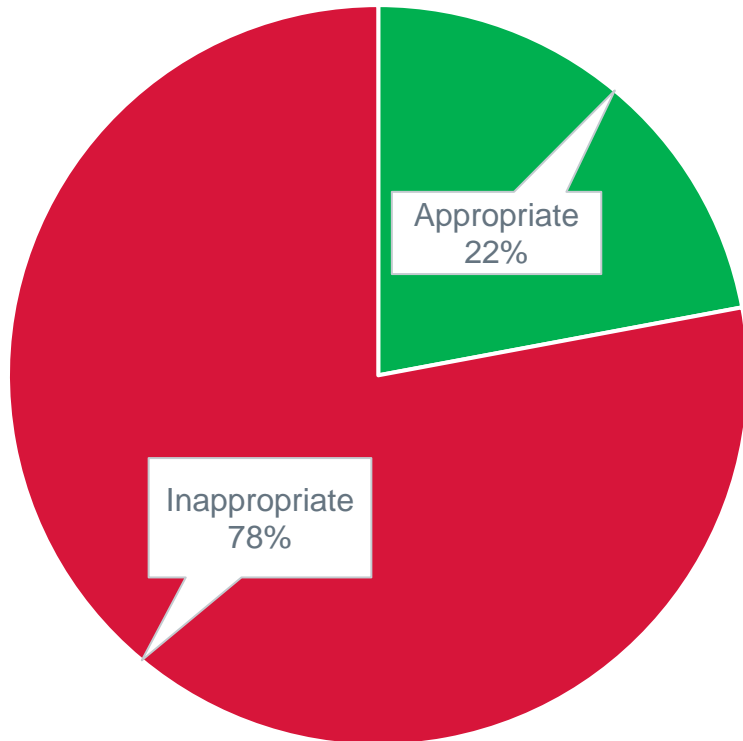
■ Inappropriate



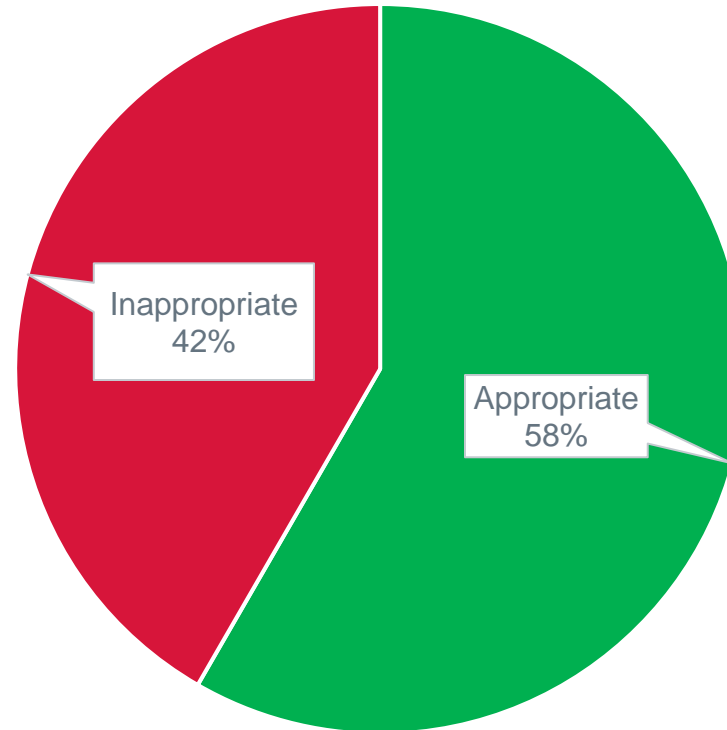
# Combined HNE Hospital NAPS 2023

## Indications most often prescribed inappropriately:

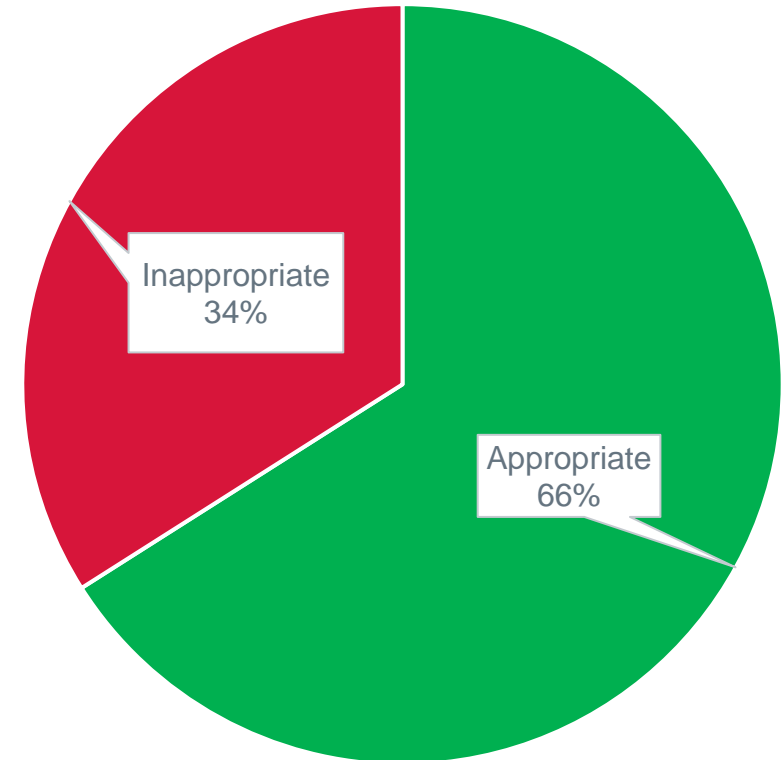
Surgical Prophylaxis



Peritonitis



Sepsis



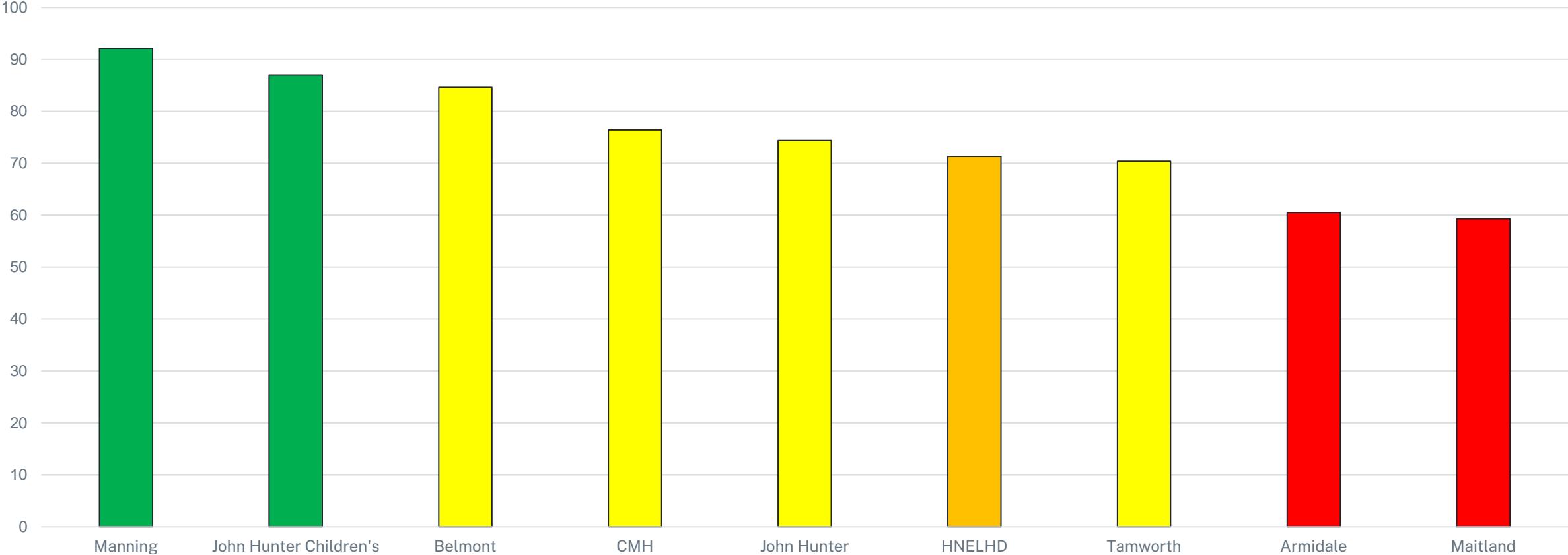
■ Appropriate

■ Inappropriate

# Combined HNE Hospital NAPS 2023 Group B Peer Group or Larger Hospitals



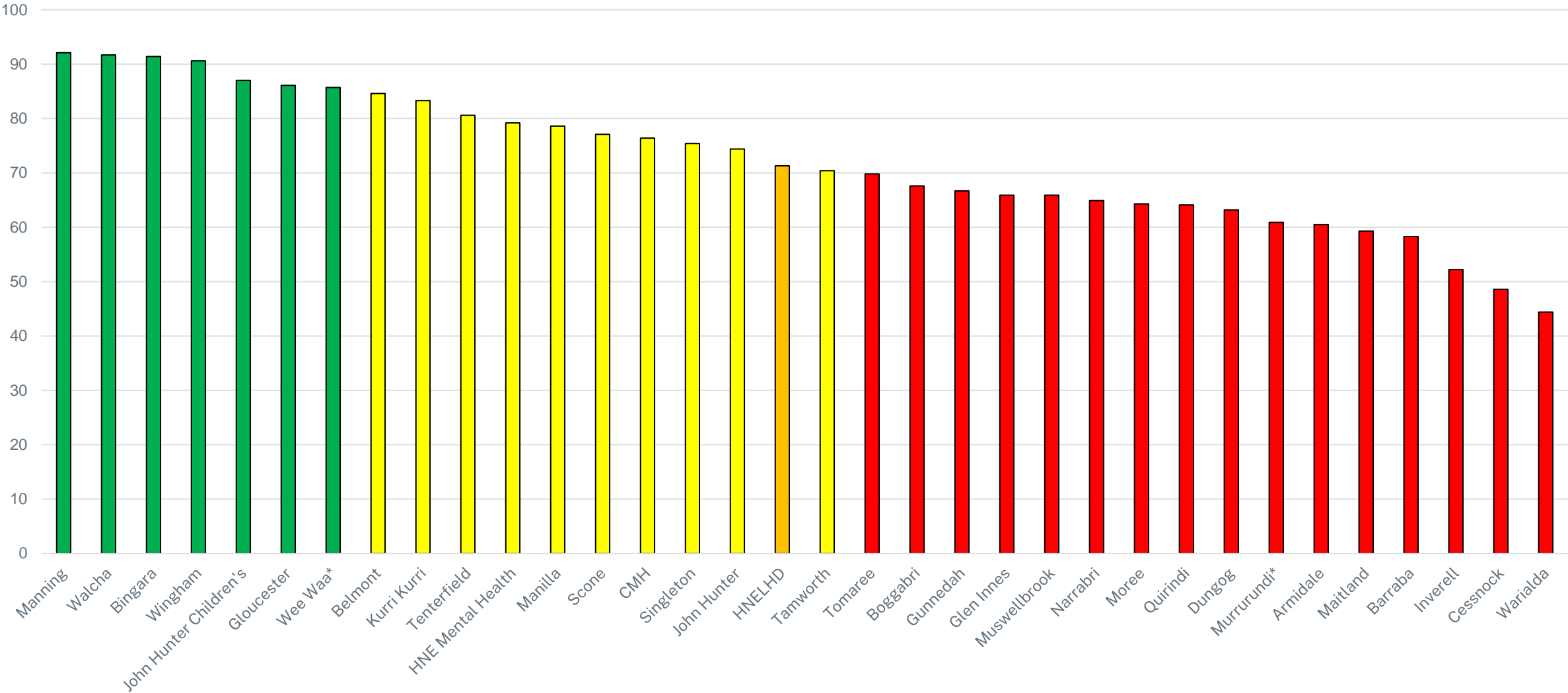
2023 Appropriateness of Antimicrobial %



# Combined HNE Hospital NAPS 2023



2023 Appropriateness of Antimicrobial %



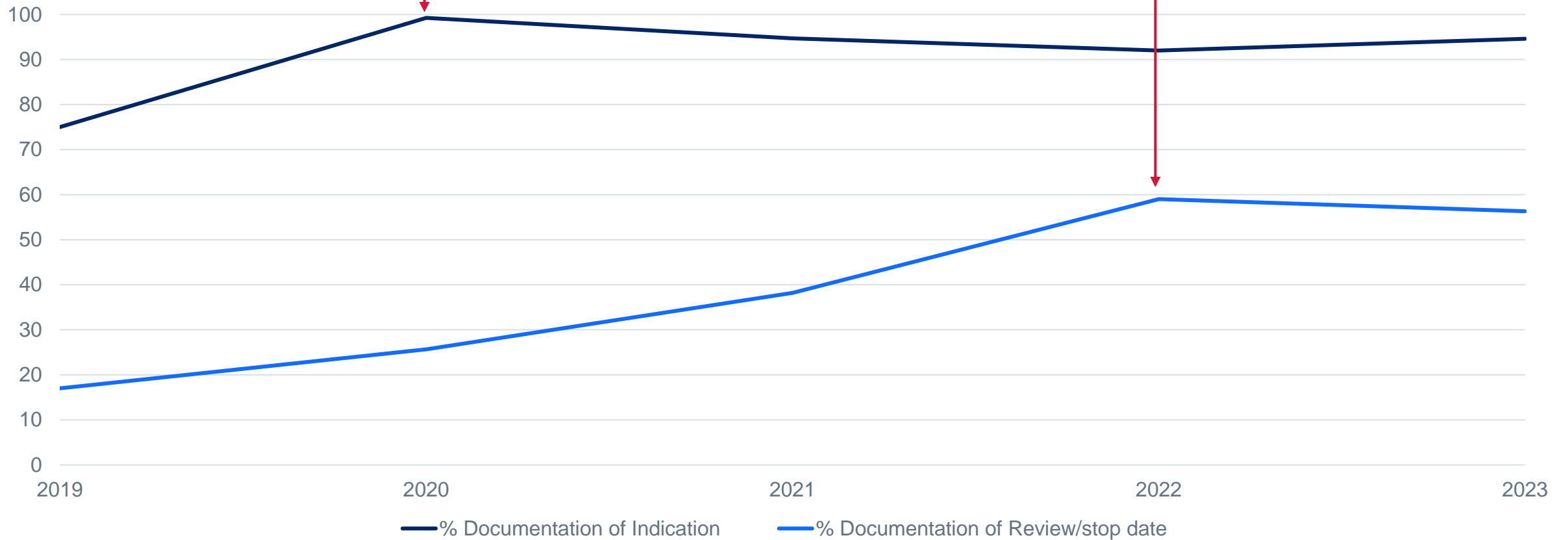
# Combined HNE Hospital NAPS 2023



MedChart mandatory indication field for IV/PO antibiotics

MedChart Quick Lists for PO antibiotics include durations

## Antimicrobial Documentation KPIs



When you edit an antibiotic prescription to add indication and duration



Winner of the GOLD STAR - MOST  
CONSISTENT Hospital NAPS results  
award:

Manning Base  
Hospital

Winner of the MOST IMPROVED  
Hospital NAPS results award:

Gloucester  
Soldiers' Memorial  
Hospital

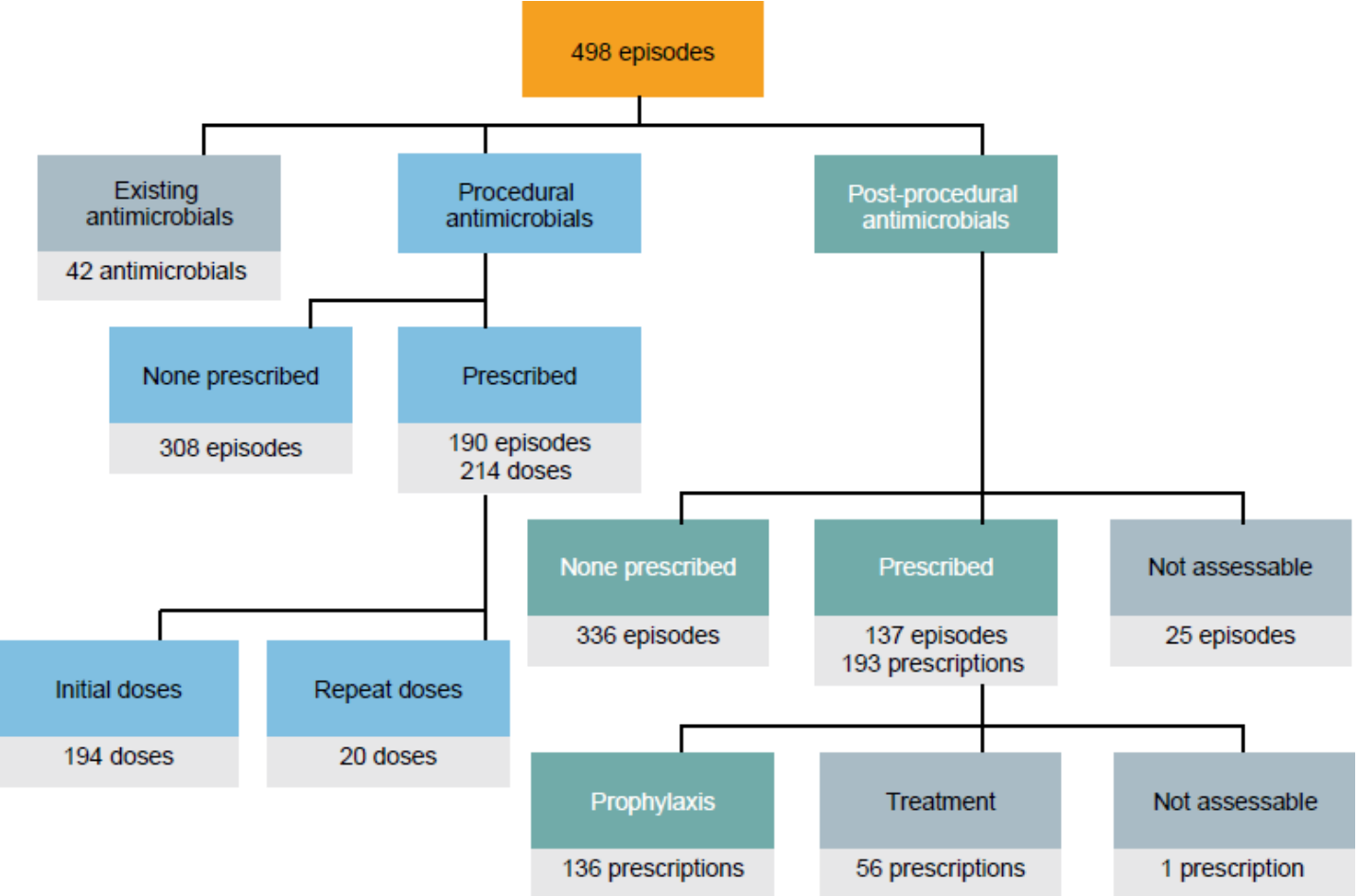
Winner of the ALWAYS DOCUMENTS  
AN ANTIMICROBIAL PLAN award:

Dr Deng Abiem –  
Walcha Hospital

# 2023 Results

Surgical NAPS across HNE

# Combined HNE Surgical NAPS 2023



Number of facilities = 15

### 1. Correct Administration Time

- Range 0% to 100%
- HNE Overall 82%

(2022 = 66%)

### 2. Overall Appropriateness of prophylaxis

- Range 24% to 95%
- HNE Overall 66%

(2022 = 62%)

### 3. Prophylaxis ≥ 24 hours

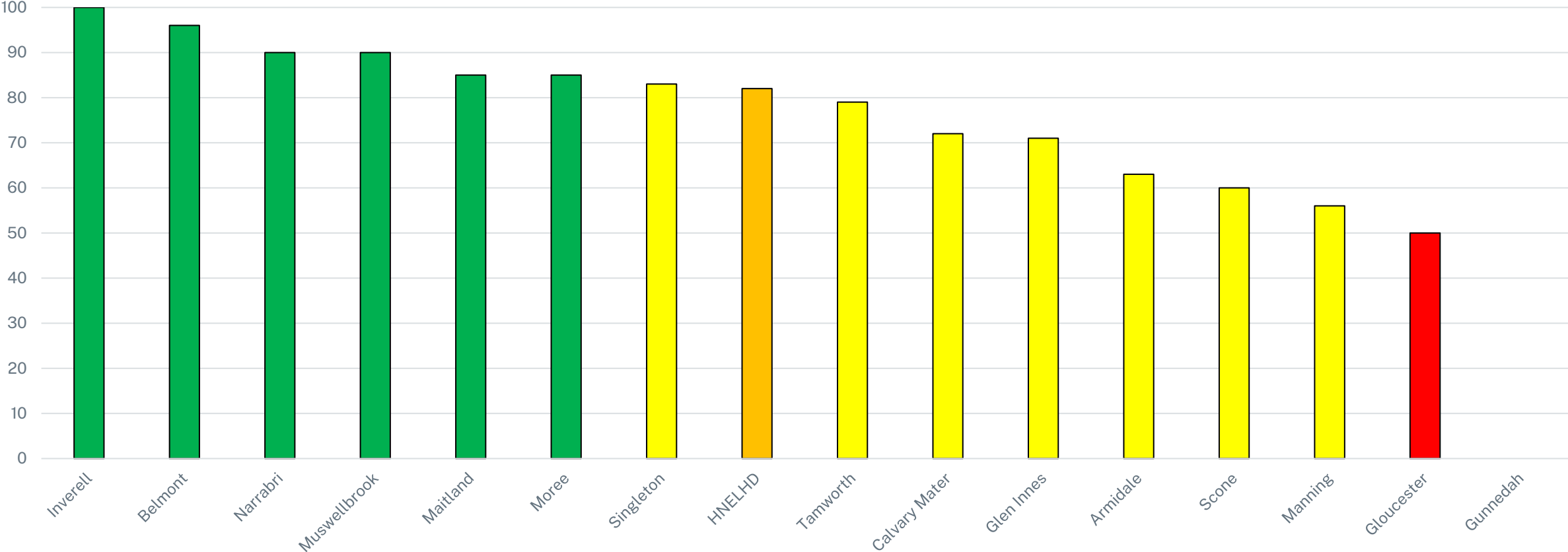
- HNE Overall 11%

(2022 = 22%)

# Combined HNE Surgical NAPS 2023



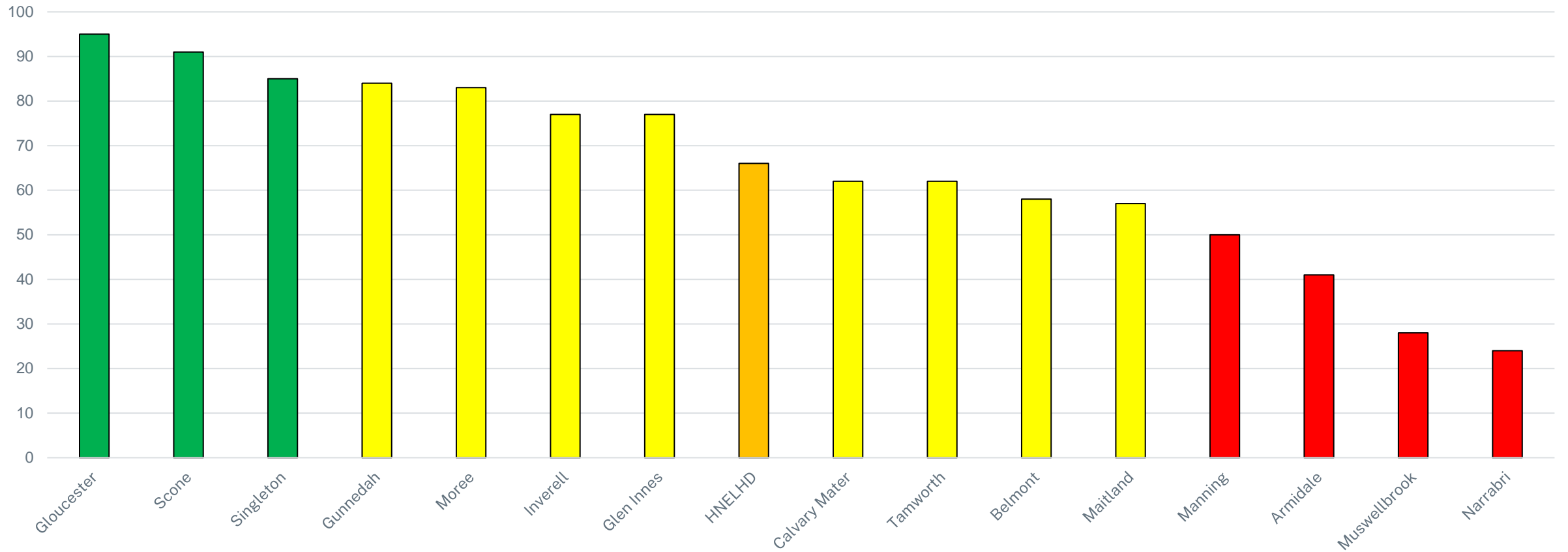
2023 Correct timing vs knife-to-skin %



# Combined HNE Surgical NAPS 2023



2023 Overall Appropriateness %





Winner of the EVERYONE GETS FIVE  
DAYS POST OP ANTIBIOTICS NO  
MATTER WHAT award:

Tamworth Rural  
Referral Hospital

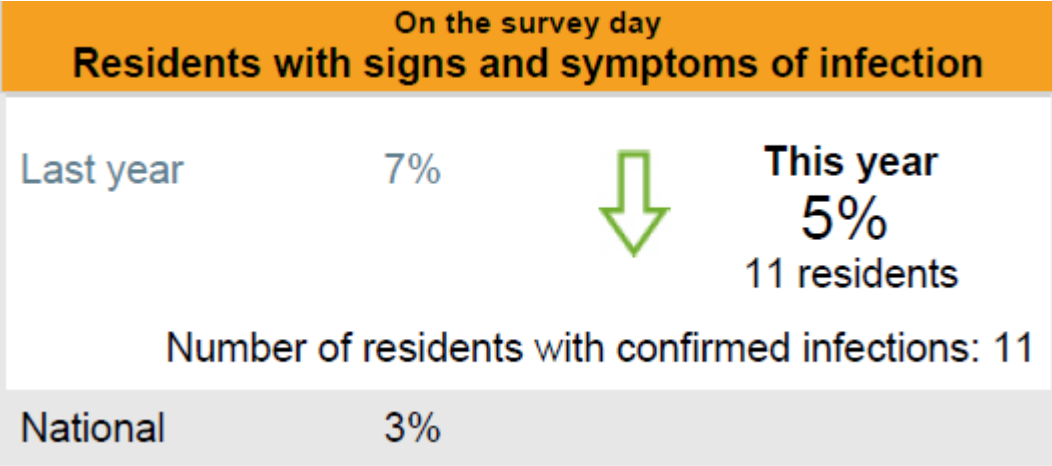
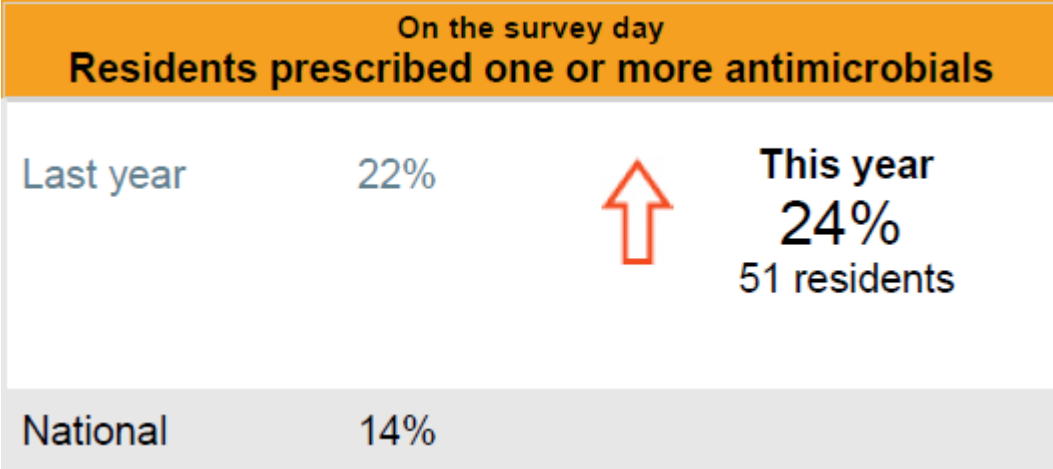
# 2023 Results

Aged Care NAPS across HNE

# Combined Aged Care NAPS 2023



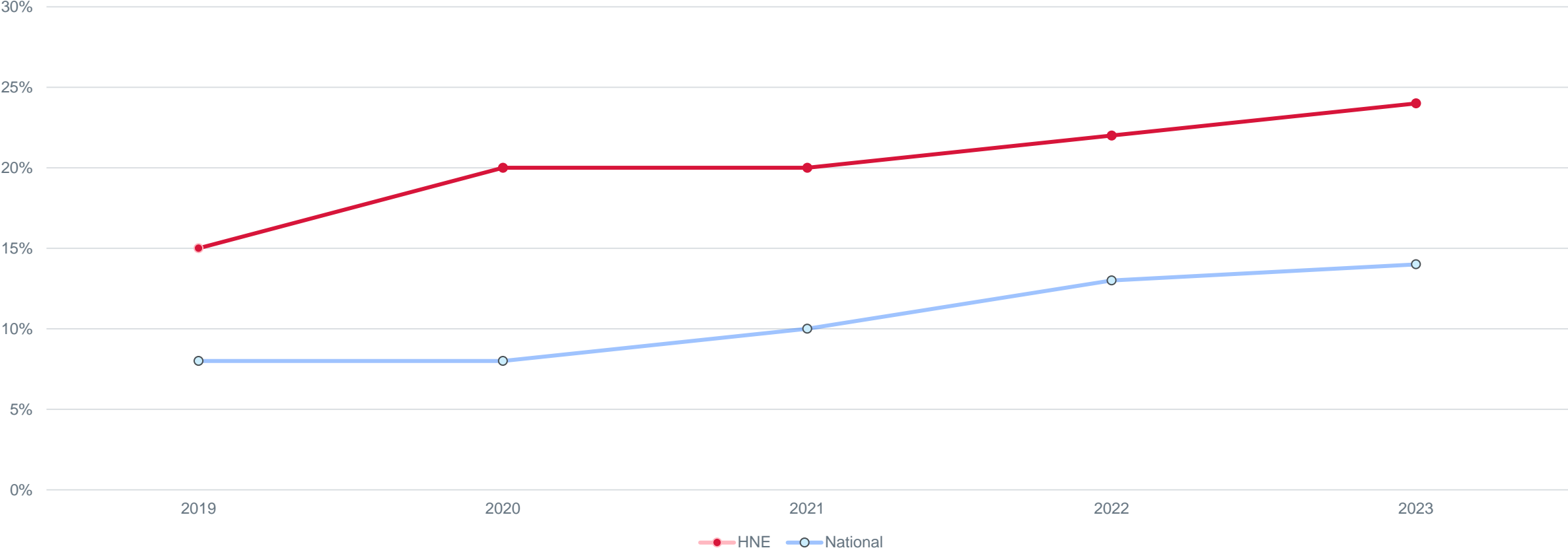
Number of residents surveyed = 215  
Number of antimicrobials prescribed = 100



# Combined Aged Care NAPS 2023



% Aged Care Residents Prescribed Antimicrobials







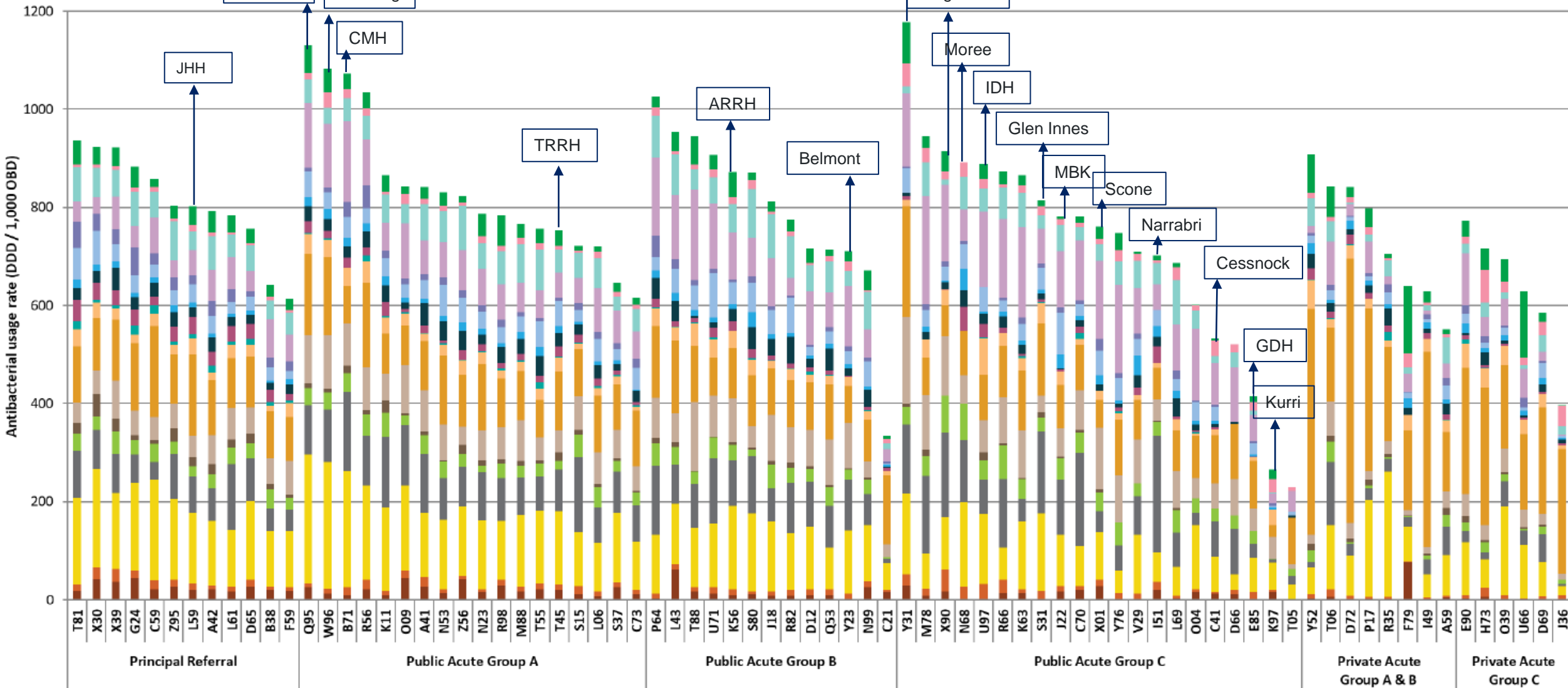
Winner of the AGED CARE  
STEWARDS award:

Merriwa Multi-  
Purpose Service

# 2023 Results

NAUSP across HNE

# Total Hospital Use

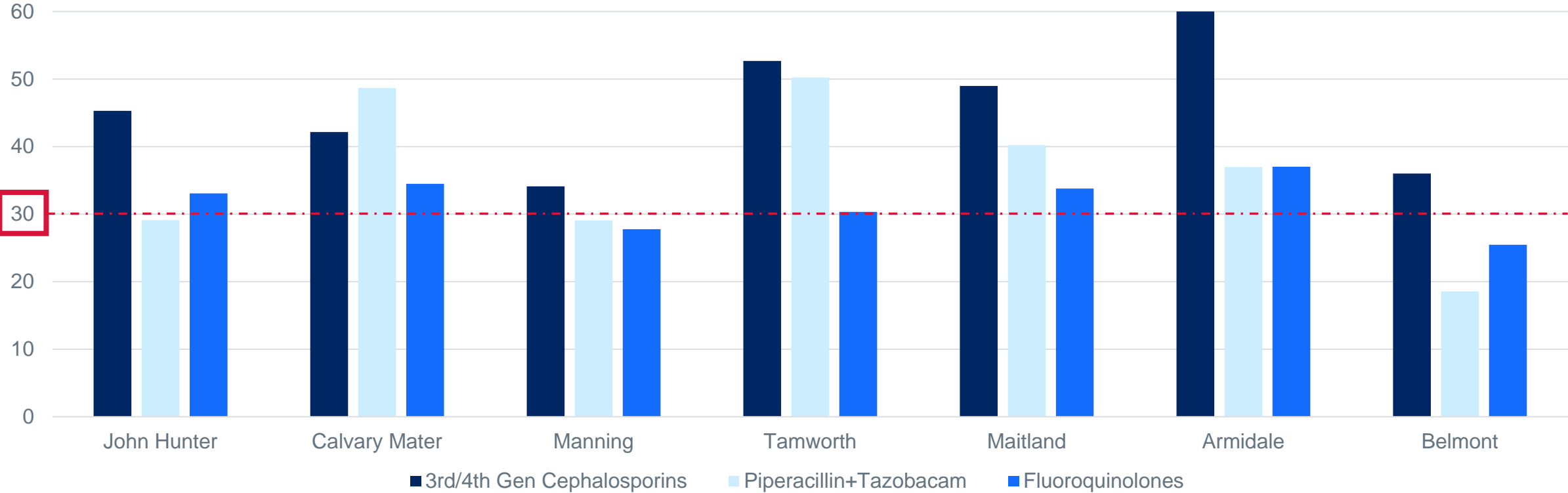


- Alimentary antibiotics
- Aminoglycosides (excl streptomycin)
- $\beta$ -lactamase inhibitor combinations
- $\beta$ -lactamase resistant penicillins
- $\beta$ -lactamase sensitive penicillins
- Carbapenems
- Extended spectrum penicillins
- First-generation cephalosporins
- Fluoroquinolones
- Fourth-generation cephalosporins
- Glycopeptides
- Metronidazole
- Lincosamides
- Macrolides
- Sulfamethoxazole-trimethoprim
- Tetracyclines
- Third-generation cephalosporins
- Trimethoprim
- \*Other

# High Risk Antimicrobials – NAUSP



Divided Daily Doses/1000 Occupied Bed Days – Nov 2022 to Oct 2023



Hunter New England Health Target is to remain **BELOW 30 DDD/1000 OBD**

Me: antimicrobial  
stewardship is important.  
Also me:



Winner of the CEFTRIAXONE HELPS  
ME SLEEP award:

Armidale Hospital

Winner of the PIPTAZ IS MY  
PASSWORD award:

John Hunter  
Hospital

Gmail Account:

[REDACTED]@  
gmail.com

Password: PIP taz.36192

[REDACTED]

Winner of the MVP (Most Valuable Pharmacist) award:

**Katrina Doherty –  
Singleton Hospital**

Winner of the “I forgot to chart the inappropriate antibiotics my boss ordered, and my patient is well enough for discharge” award:

Tamworth Hospital  
JMOs

Winner of the CEASING ANTIBIOTICS THE  
TRANSFERRING REFERRAL HOSPITAL FORGOT TO  
CEASE WHEN THE COURSE ENDED award:

Dr Neil Wearne –  
Bingara Hospital

Winner of the MVN (most valuable nurse) award:

Michelle Bolte –  
Infection Prevention  
CNC Tamworth  
Hospital