Antimicrobial Stewardship (AMS) Interpretations of Inpatient AWaRe Quality Indicator Dashboard

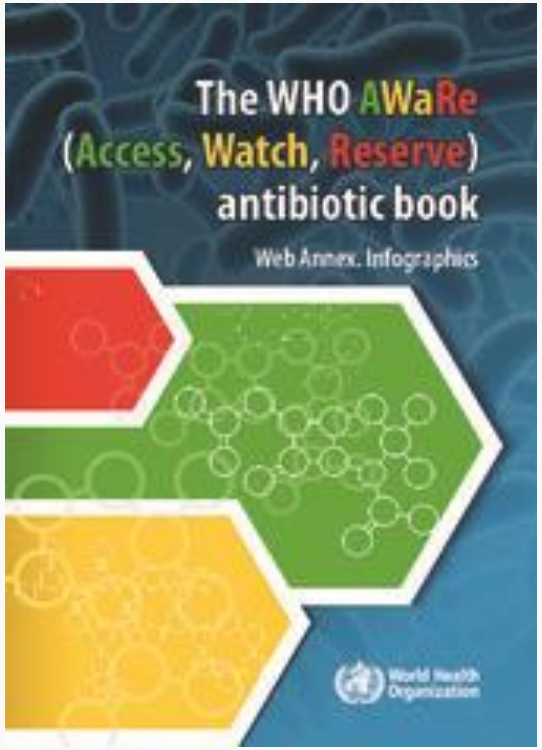
Antimicrobial Stewardship (AMS)

- The analysis based on AWaRe quality indicators highlights the disease areas where **empiric** antibiotic prescribing aligns with AWaRe guidance.
- Some areas may demonstrate good performance, while others may show low or no alignment and may require further investigation or targeted antimicrobial stewardship (AMS) actions.
- These slides provide guidance on how to interpret the QI analysis results and identify potential triggers for AMS interventions.

REMINDER: AWaRe QIs follow WHO AWaRe Book guidance. Low alignment may be due to several reasons (see next slide).

Do my results show low or no alignment?

- AWARe QIs are based on guidance from the WHO AWaRe Book.

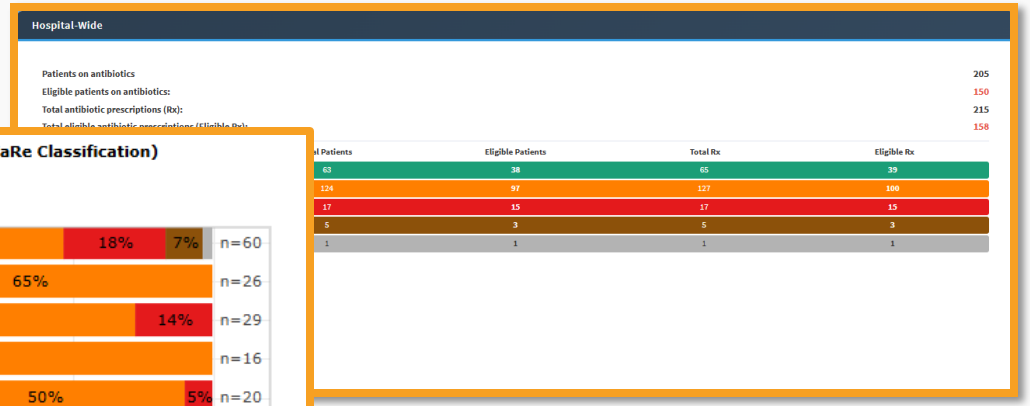


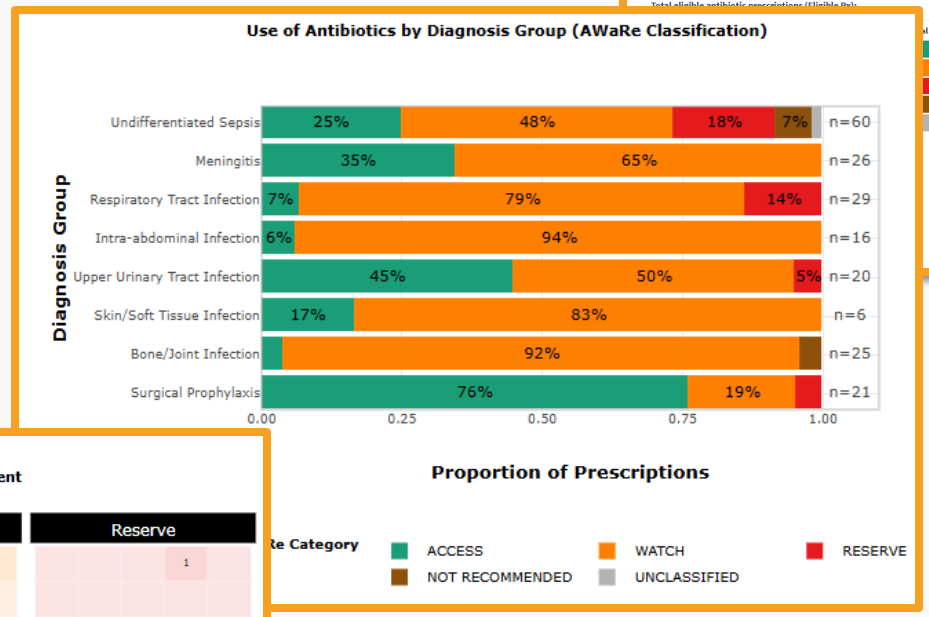
- If your results show low or no alignment, ask YOURSELF?
  - Do my local guidelines differ from those of AWaRe book?
    - If they differ, the indicator has to be interpreted in context
  - If your local guideline and AWaRe guidelines have the same antibiotic recommendations, then this is a problem area and can be marked as an opportunity area for targeted stewardships intervention.

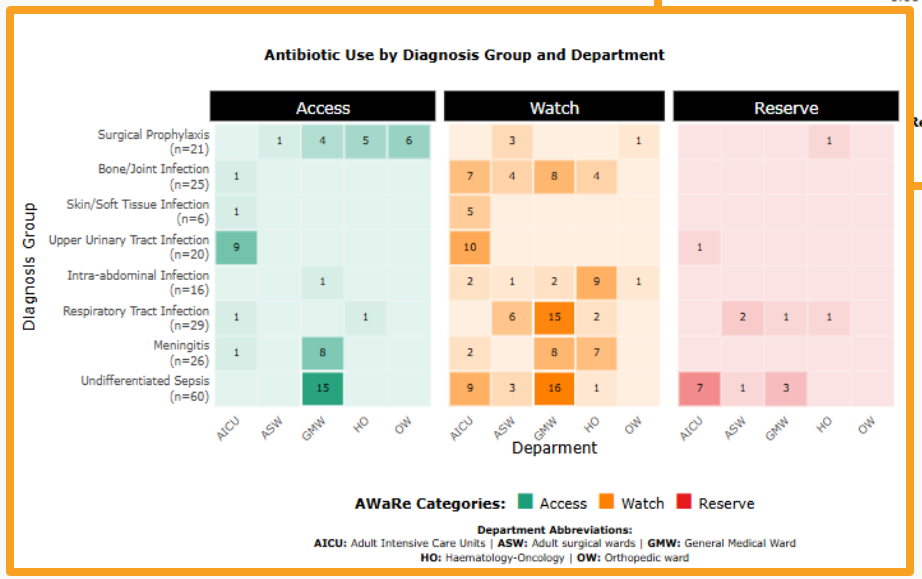
Overall Antibiotic Use

If you see many **Reserve** in any of these graphs:

- check your national/local guidelines to see if these antibiotics are recommended
- If not, investigate which departments and why they use these antibiotics
- Make interventions to reduce Reserve antibiotic use







If you see many **Watch** in any of these graphs:

- Check your guidelines if that is the first line treatment recommendation
- Are the Access antibiotics not available? Supply chain issues?
- What actions can I do to minimise their use in unnecessary cases?

If you see many **Not Recommended** in any of these graphs:

- investigate which departments/wards use them
- Are the recommended options available? Supply chain issues?
- What actions can I do to minimise their use?

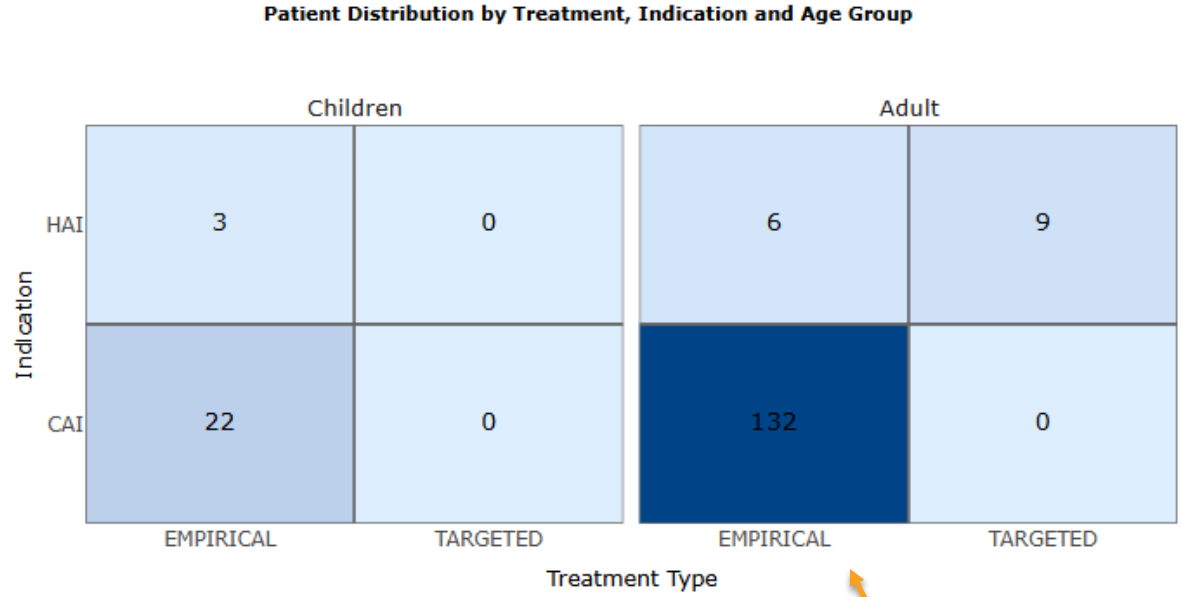
Empiric vs Targeted Treatment by Age

Use this graph to explore how prescribing aligns with local policies and diagnostic stewardship practices.

Examining these trends helps identify where antibiotics are most used and where stewardship interventions could have the greatest impact, particularly if there's a high proportion of HAIs.

Ask yourself:

- Does my hospital have an active diagnostic stewardship program?
- Are the numbers I expect for empiric and targeted treatment reflective?



Ask yourself:

- In which wards was the PPS conducted?
- If the PPS was conducted in a ward such as ICU, a higher proportion of targeted therapy would be expected.
- Conversely, a predominance of empiric therapy could indicate: limited culture or diagnostic activity, delays in microbiology results, or a cross-sectional data effect (few patients on targeted therapy at the survey time).

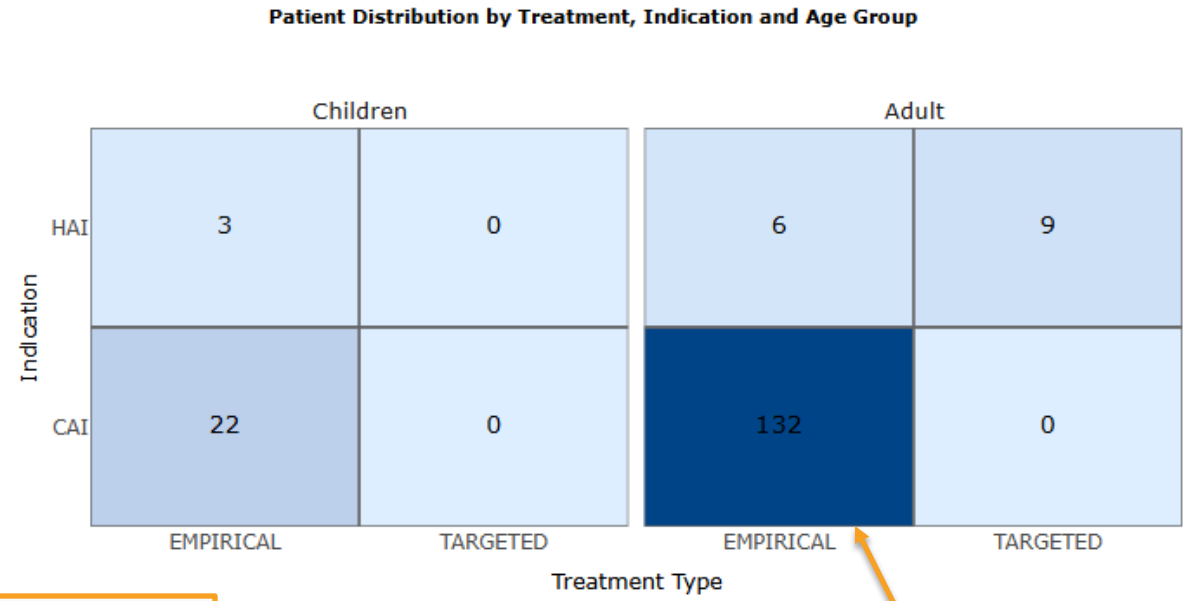
REMEMBER: AWaRe QIs currently focus on ADULTS with COMMUNITY-ACQUIRED INFECTIONS on EMPIRIC ANTIBIOTIC TREATMENT.

Empiric vs Targeted Treatment by Age

💡 **Interpreting Empiric vs Targeted Use Graph**

📊 Check alignment with local policy. Use this graph to explore how prescribing aligns with local policies and diagnostic stewardship practices.

🎯 **High targeted use** → good diagnostic stewardship / ICU effect
🧫 **High empiric use** → delayed results, few cultures, or data timing
💾 Lots of HAI cases? Review infection sources & diagnostic practices
🚀 Focus stewardship where antibiotic use is highest



💡 **Ask Yourself...**
🧬 **Does my hospital have an active diagnostic stewardship program?**

💊 **Are the numbers I expect for empiric and targeted treatment reflective of best practice?**

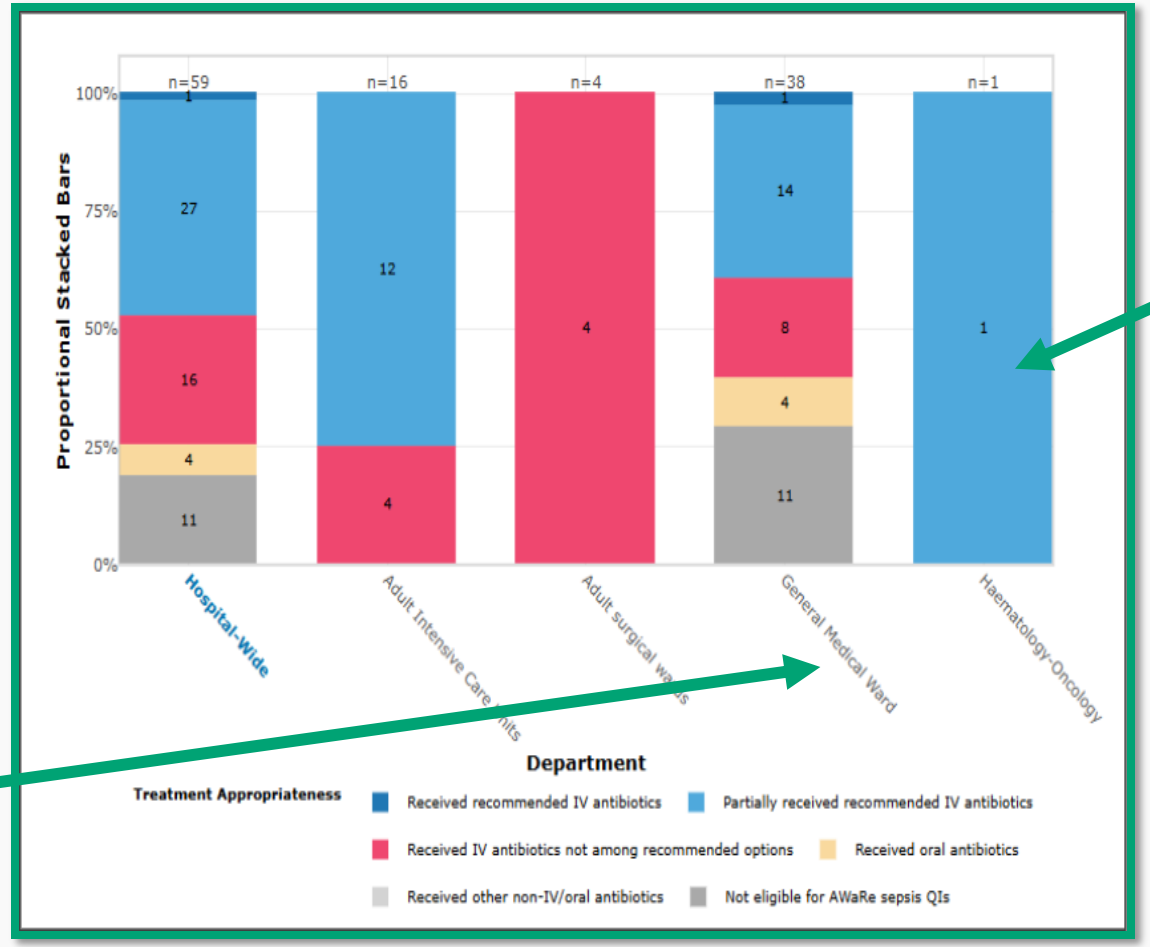
- Do our prescribing patterns align with stewardship goals?

REMEMBER: AWaRe QIs currently focus on ADULTS with COMMUNITY-ACQUIRED INFECTIONS on EMPIRIC ANTIBIOTIC TREATMENT.

Choice Alignment with AWaRe Book

🔍 **Tip:** Focus on departments with higher patient numbers where greater impact with interventions can be achieved.

For example, the general medical ward in this graph



⚠**Note:** Departments with low patient numbers may not be ideal to prioritise for interventions.

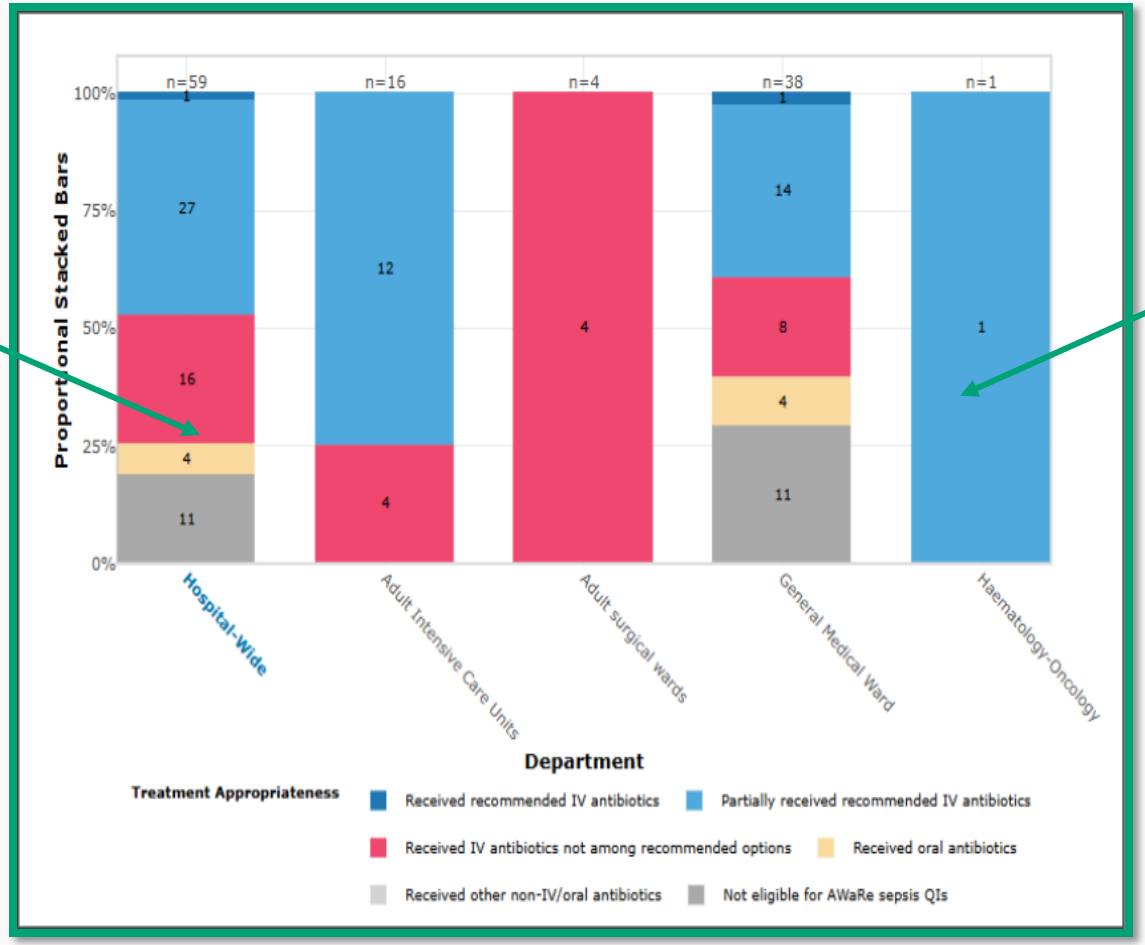
For example, the haematology ward in this graph

Choice Alignment with AWaRe Book

In case of high proportions of antibiotics used NOT among WHO AWaRe Book recommended options, further investigation is needed

Ask yourself:

- Do my local guidelines differ from the AWaRe book (in which case this QI may not be useful to you).
- Is it a true case of low compliance? What can we do to improve compliance?



In case of high proportion of patients **partially receiving recommended** antibiotics, investigate which antibiotic might be missing and why

- Look at the specific ward where there is concern

🔍 **Tip:** Focus on departments with higher numbers, for example, in this graph, the general medical ward, as greater impact can be achieved through any interventions or improvement efforts."

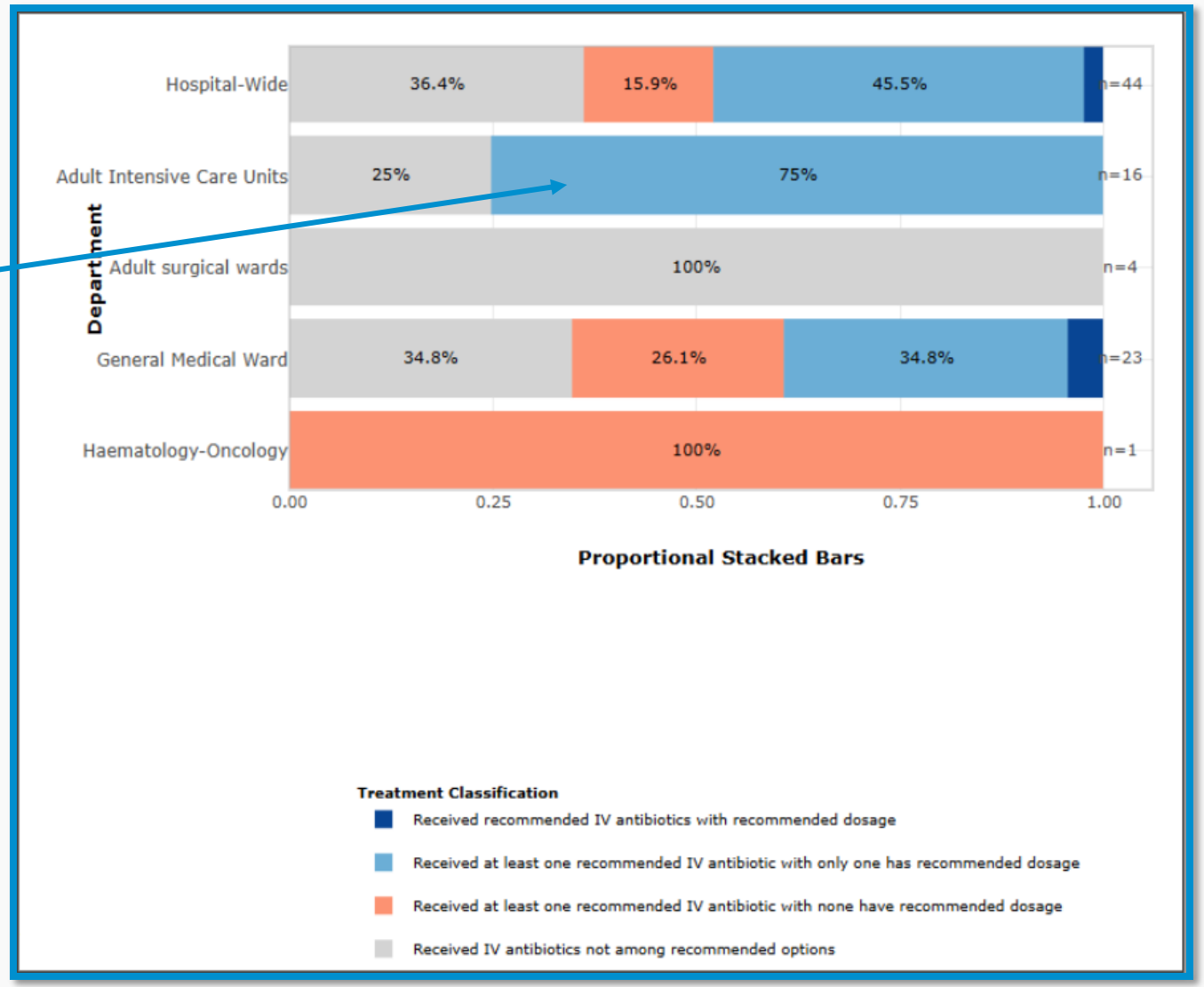
Dosage Alignment

In case of high proportion of patients receiving partially recommended dose of antibiotic, investigate which antibiotic might be omitted and why.

- Potentially the local/hospital guidelines differ from WHO AWaRe recommendation
- Explore which wards/departments where this is happening

*Please note: patients receiving oral antibiotics are not included in this graph

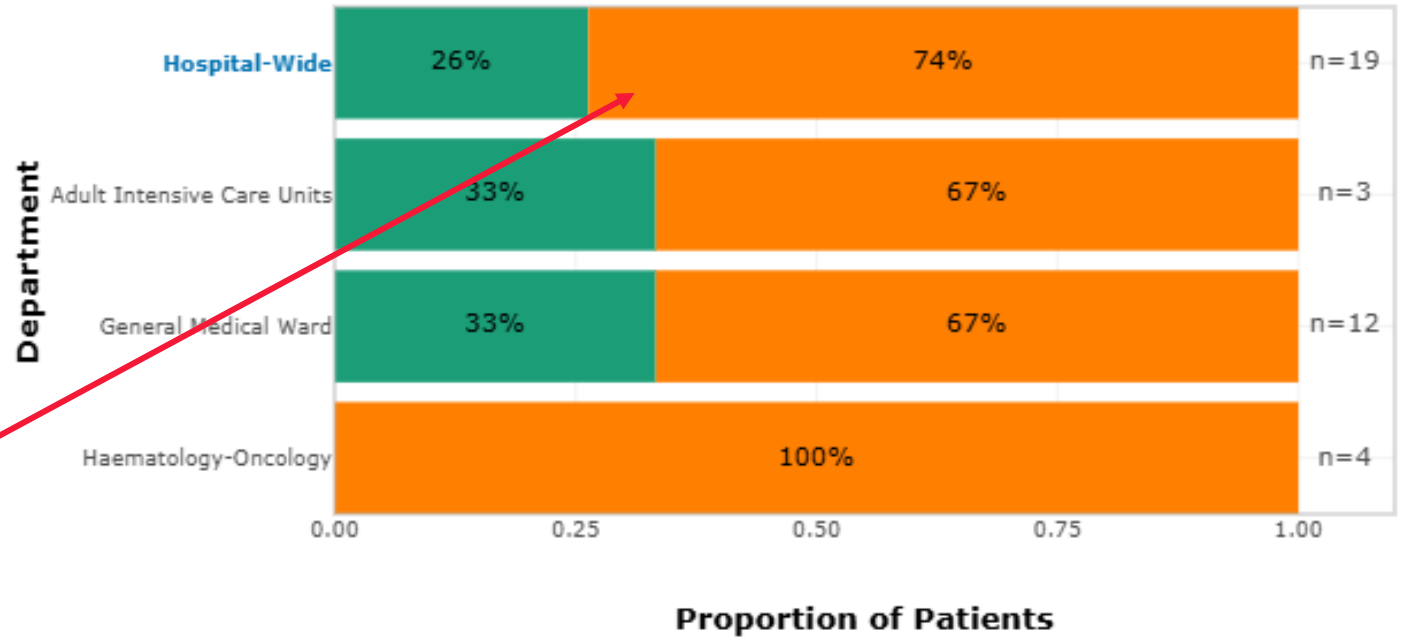
If you see a high % of patients receiving not recommended options, this may not be useful in creating targets



Alignment by AWaRe Category

If the AWaRe book recommended antibiotics include both Watch and Access, and you see mostly Watch antibiotics on your graph, potentially investigate, as you may be using more Watch antibiotics than needed

- The Access antibiotics might not be available
- Potentially your local/hospital guidelines differ than AWaRe book recommendations



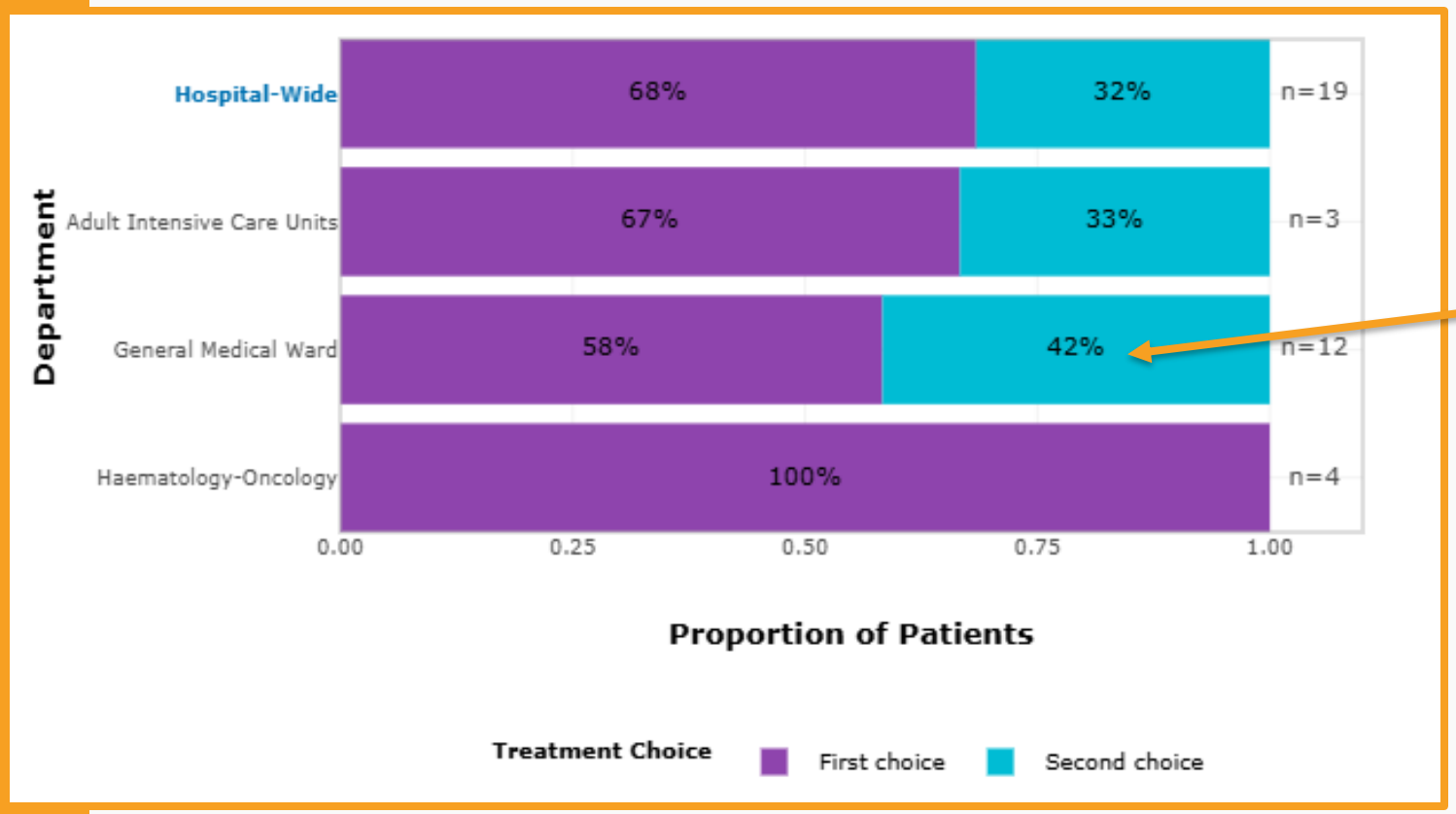
💡 **Ask Yourself...**

💉 **Does my hospital have an active diagnostic stewardship program?**

💊 **Are the numbers I expect for empiric and targeted treatment reflective of best practice?**

- Do our prescribing patterns align with stewardship goals?

Alignment by Line of Treatment



Do I have a high proportion of patients given the second line treatment?

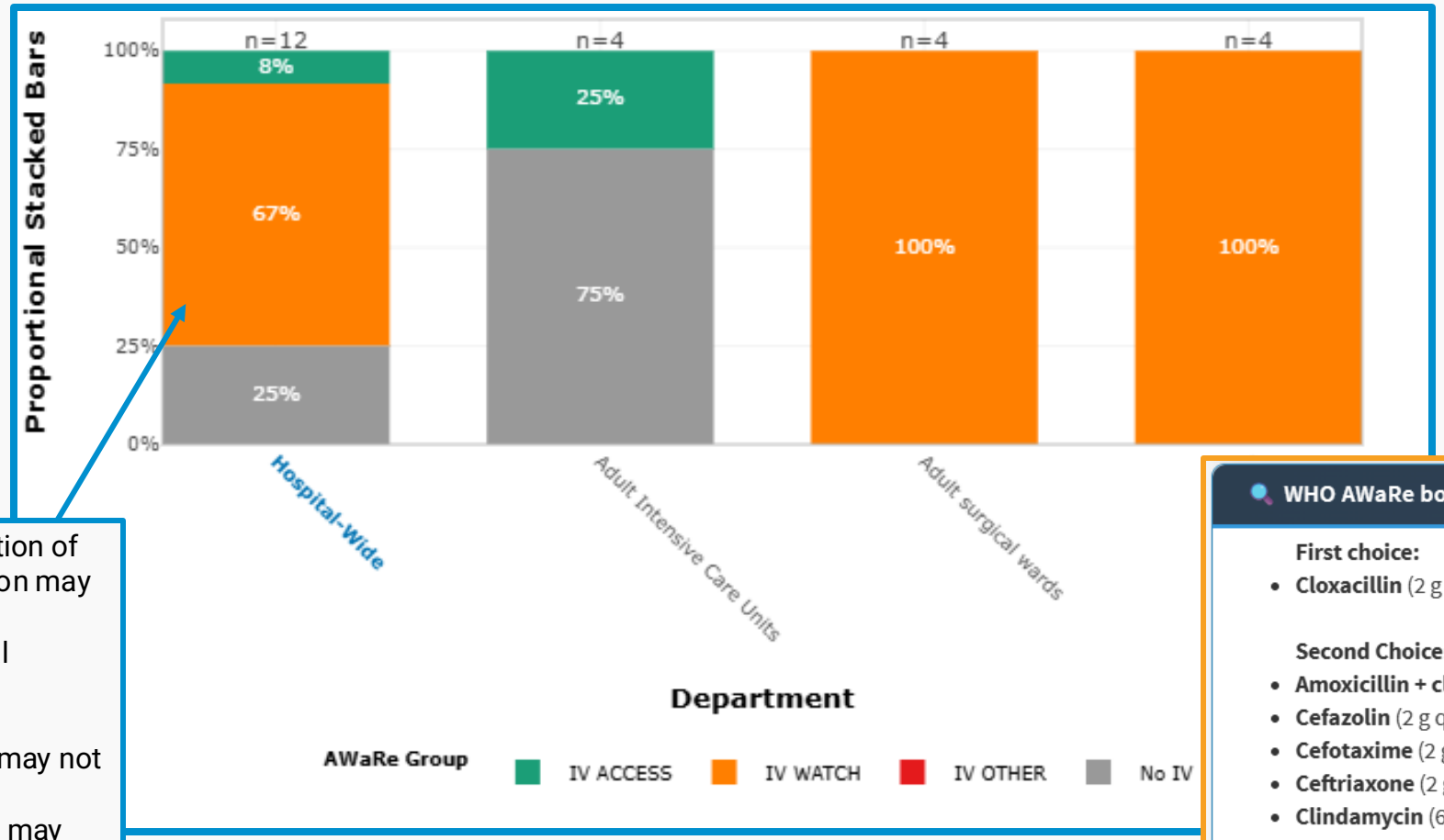
Ask yourself:

- Do I need to investigate this further?
- Do my local guidelines differ significantly from the AWaRe Book?
- Is the first line treatment available or unavailable?

Bone and Joint Infections: Treatment by AWaRe Category

The AWaRe book recommends both Watch and Access antibiotics for treatment of Bone and Joint Infections, but the first line treatment recommended is Cloxacillin (ACCESS)

This graph shows all antibiotics by AWaRe category (regardless of whether they are recommended by the AWaRe book)



In case of high proportion of Watch antibiotics, action may be required

- Check local/hospital guidelines to check alignment
- Access antibiotics may not be available
- Severity of infection may have contributed to antibiotic choice

WHO AWaRe book Recommendation:

First choice:

- **Cloxacillin** (2 g q6h IV)

Second Choice:

- **Amoxicillin + clavulanic acid** (1 g + 200 mg q8h IV)
- **Cefazolin** (2 g q8h IV)
- **Cefotaxime** (2 g q8h IV)
- **Ceftriaxone** (2 g q24h IV)
- **Clindamycin** (600 mg q8h IV/ORAL)

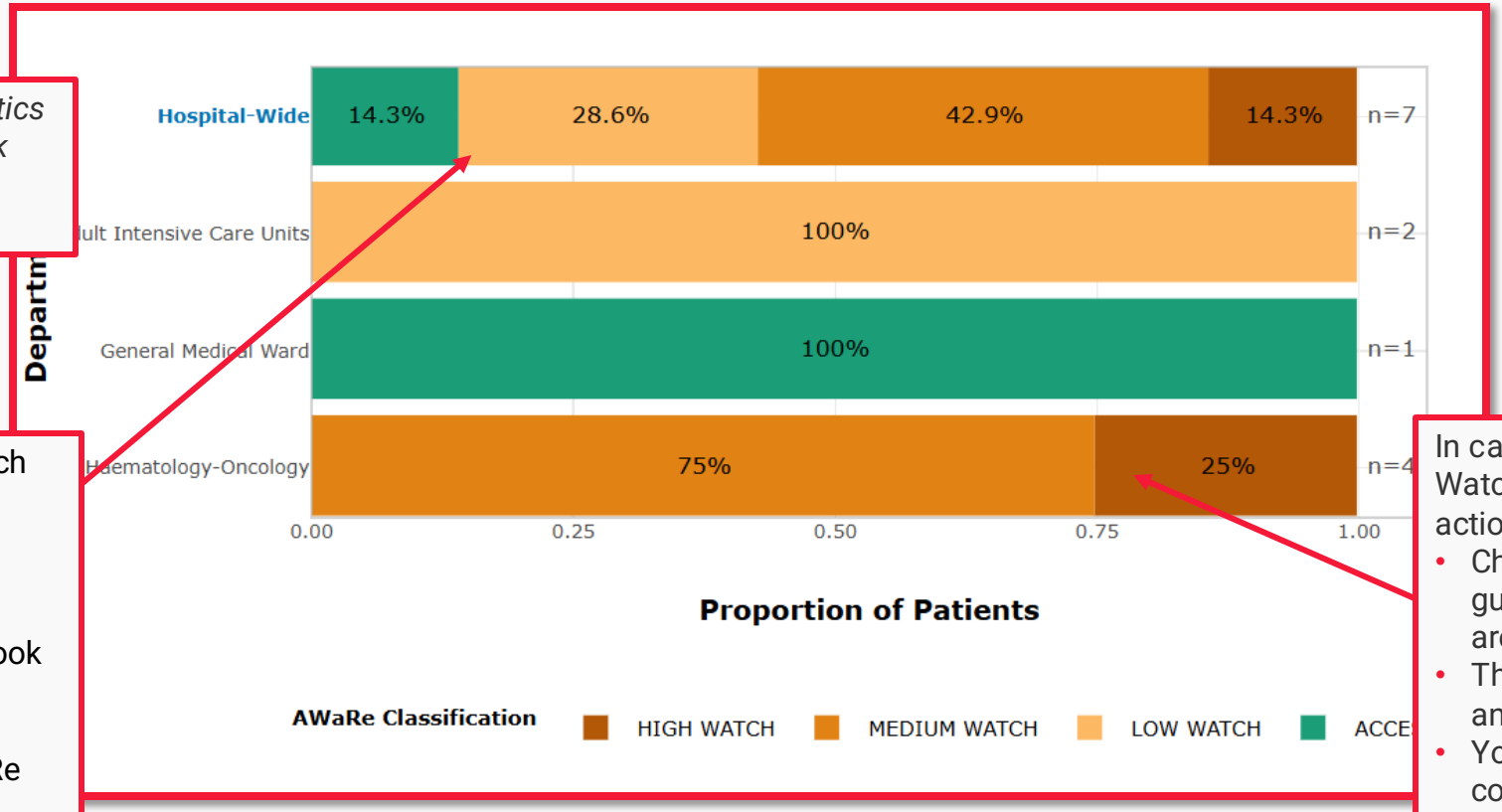
Treatment by Watch Level- category definitions

- *The 'Watch' category is divided into three subgroups to guide use based on resistance risk; and to reserve higher-priority antibiotics for when lower-priority options are ineffective or unsuitable.*

Bar Colour	Meaning	Note
Low watch (Lightest brown)	Included in the WHO AwaRe Book guidance (and Essential Medicines List), e.g. third generation cephalosporins.	This graph only appears in the indicators for intra-abdominal infections (IAI)s, as at least one AWaRe book's recommended antibiotic for IAIs falls within the different Watch subcategories.
Medium Watch (Medium brown)	Regimens with partial anti-extended-spectrum beta-lactamase (ESBL) or pseudomonal activity (e.g., piperacillin-tazobactam, ceftazidime, fluoroquinolone-based)	
High Watch (Darkest brown)	Carbapenems e.g. meropenem	

Intra-Abdominal Infection: Treatment by Watch Level

This graph shows only the antibiotics recommended by the AWaRe book and their AWaRe group.



If your graph has Access and Watch bars, review the wards using more Watch antibiotics than Access. Possible reasons include:

- The Access antibiotics recommended by the AWaRe book may not be available
- Possibly the local/hospital guidelines differ from the AWaRe book recommendations
- Your facility may deal with more complicated or resistant prone cases

In case of large proportion of High Watch and Medium Watch, further action is needed

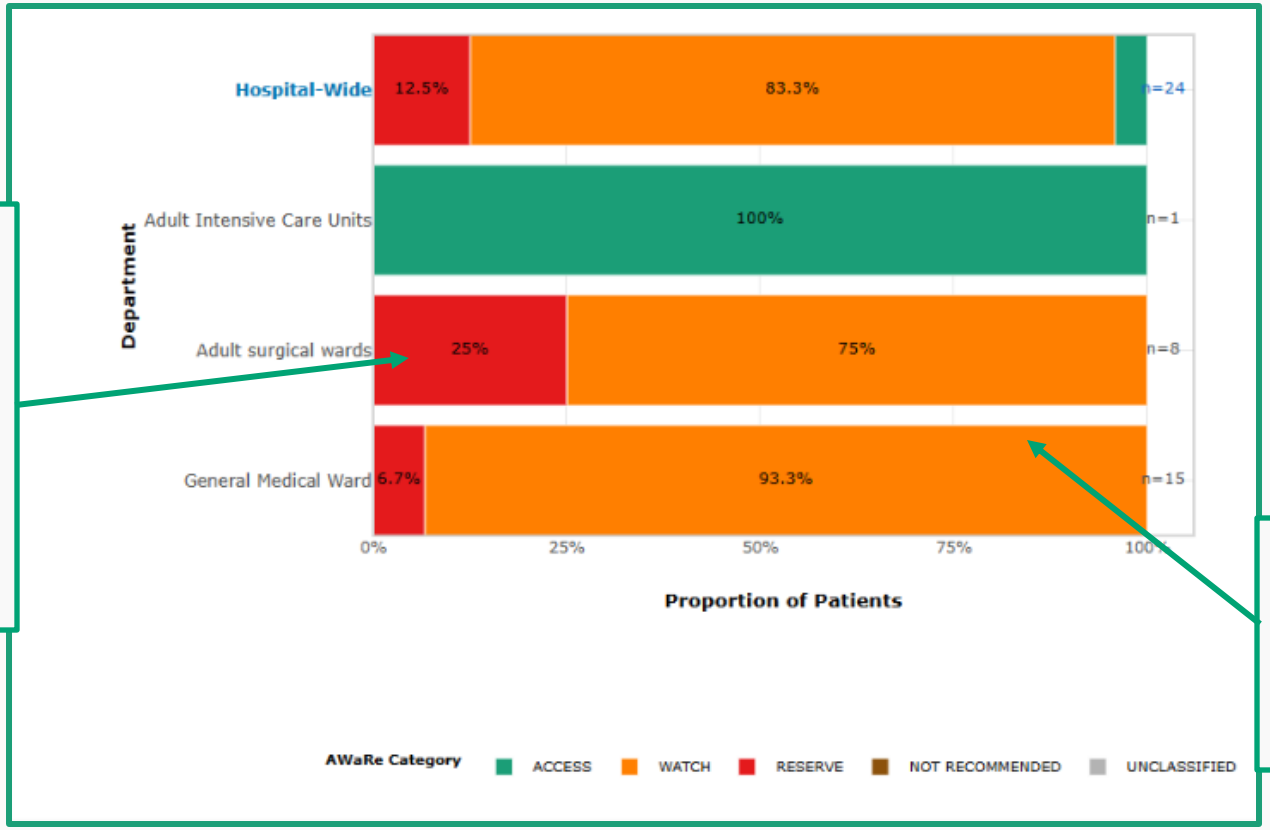
- Check your local/hospital guidelines for what antibiotics are recommended for IAI
- The Low Watch or Access antibiotics may not be available
- Your facility may deal with more complicated cases that required Medium and High Watch antibiotics

Keep in mind the number of patients qualifying for this indicator, if this is a small proportion of your total Intra-abdominal patients, then majority of your patients are not receiving the AWaRe recommended option.

Pneumonia: Treatment by AWaRe Classification

This graph shows all eligible patients who received an antibiotic for pneumonia, (not necessarily only those antibiotics recommended by the AWaRe book) split by different AWaRe categories.

In case of any Reserve or Not Recommended antibiotics, investigate the specific ward and determine why



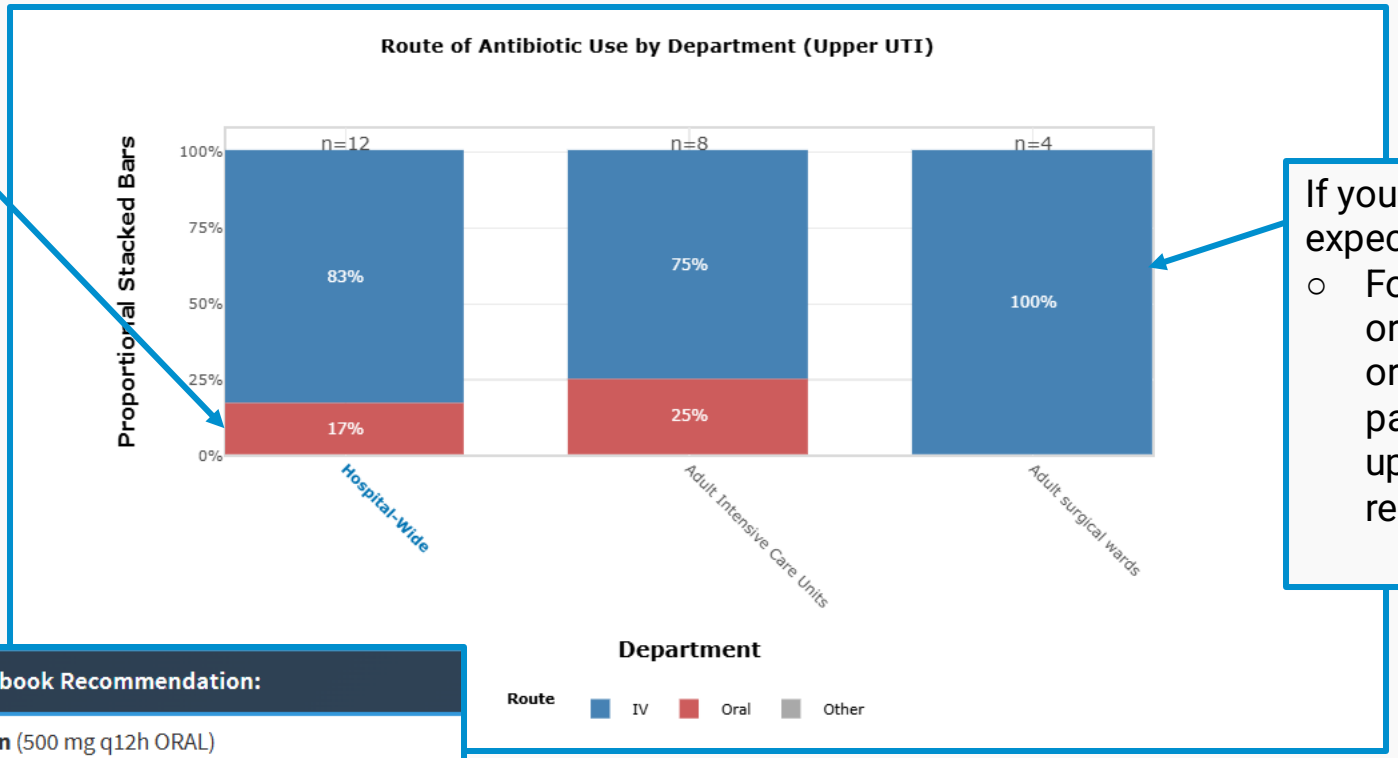
The AWaRe Book recommends Access antibiotics for mild to moderate community-acquired pneumonia

If your facility has higher cases of severe pneumonia, you will expect to see more watch antibiotics.

Upper UTIs: Route of administration

If you see more oral proportions than expected, look into the cause

- For example, it could be these are milder cases, or the patient has been switched to oral treatment after IV/Oral switch review



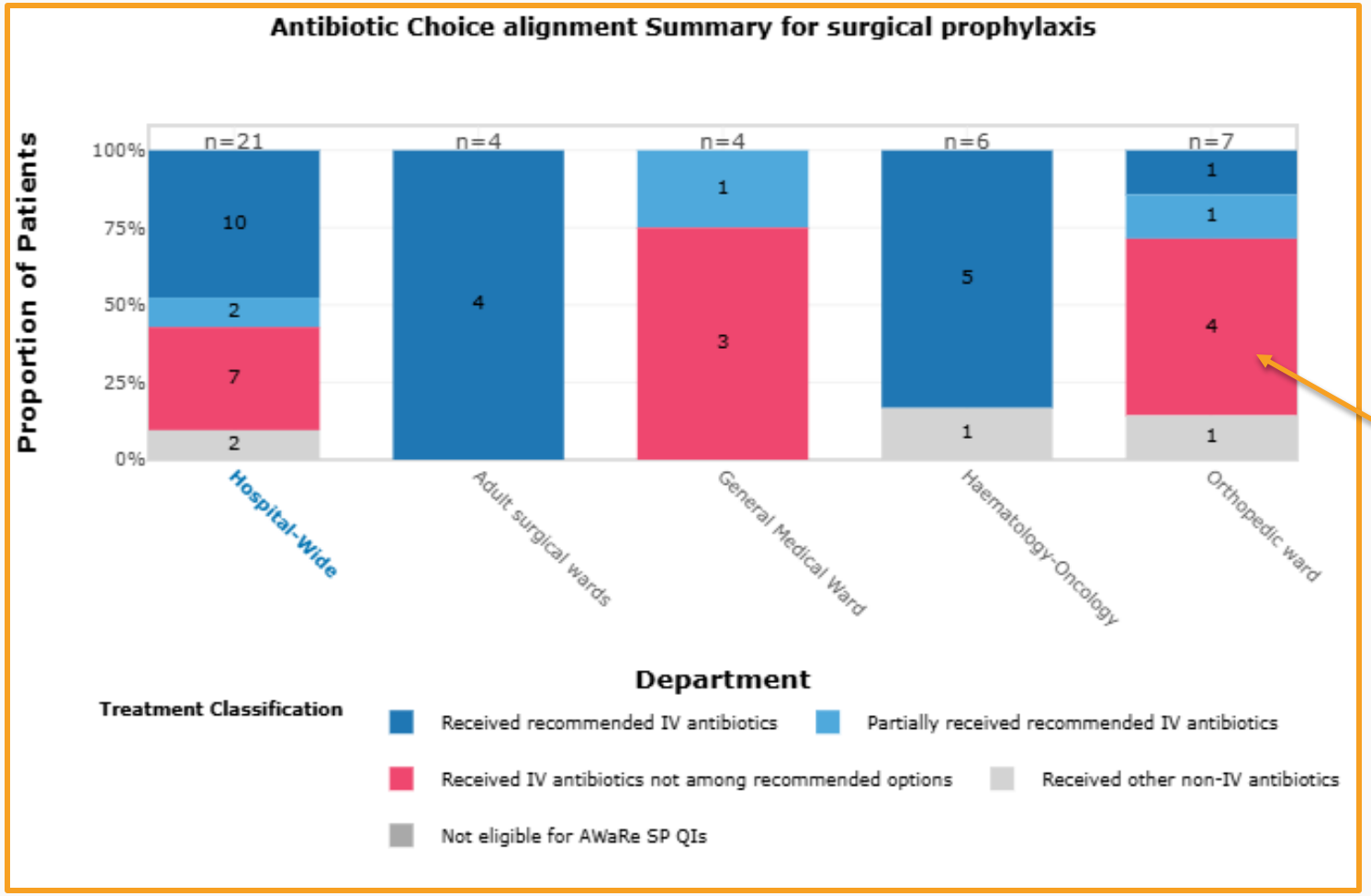
If you see more IV cases than expected, look into the cause

- For example, it could be that oral option was not available or suitable for specific patient, or they were severe upper UTI cases that required IV treatment.

WHO AWaRe book Recommendation:

- **Ciprofloxacin** (500 mg q12h ORAL)
  OR
- **Cefotaxime** (1 g q8h IV/IM) **OR Ceftriaxone** (1 g q24h IV/IM)
  AND/OR
- **Amikacin** (15 mg/kg q24h IV)
  AND/OR
- **Gentamicin** (5 mg/kg q24h IV)

Surgical prophylaxis- choice alignment



A large proportion of patients receiving non-recommended antibiotics. Ask yourself:

- Why?
- Are local guidelines different from AWaRe Book?
- Are guidelines available?
- What can I do to improve the situation?

Surgical prophylaxis- dosage alignment

In case of high proportion of patients receiving partially recommended dose of antibiotic, investigate which antibiotic might be omitted and why.

- Potentially the local/hospital guidelines differ from WHO AWaRe recommendation
- Explore which wards/departments where this is happening