# Graph Interpretations of Inpatient AWaRe Quality Indicator Dashboard


[PROJECT NAME] is supported by [FUNDER] [GRANT NUMBER]

# Introduction

- This is a guide to help you interpret the types of graphs found in the AWaRe-QI dashboard.

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# Types of graphs in the AWaRe QI dashboard

**The dashboard provides a variety of AWaRe Quality Indicator (QI) outputs in text, graphs, and table formats, illustrating prescribing patterns and their alignment with AWaRe Book recommendations.**

## Core Graphs

*The following graphs are generated for most clinical conditions:*

- **Choice Alignment:** Shows how antibiotic selection aligns with recommended guidelines.
- **Dosage Alignment:** Indicates the extent to which prescribed doses match recommended dosing standards.
- **AWaRe Categories:** Displays the distribution of antibiotic prescriptions across the AWaRe categories (Access, Watch, and Reserve).

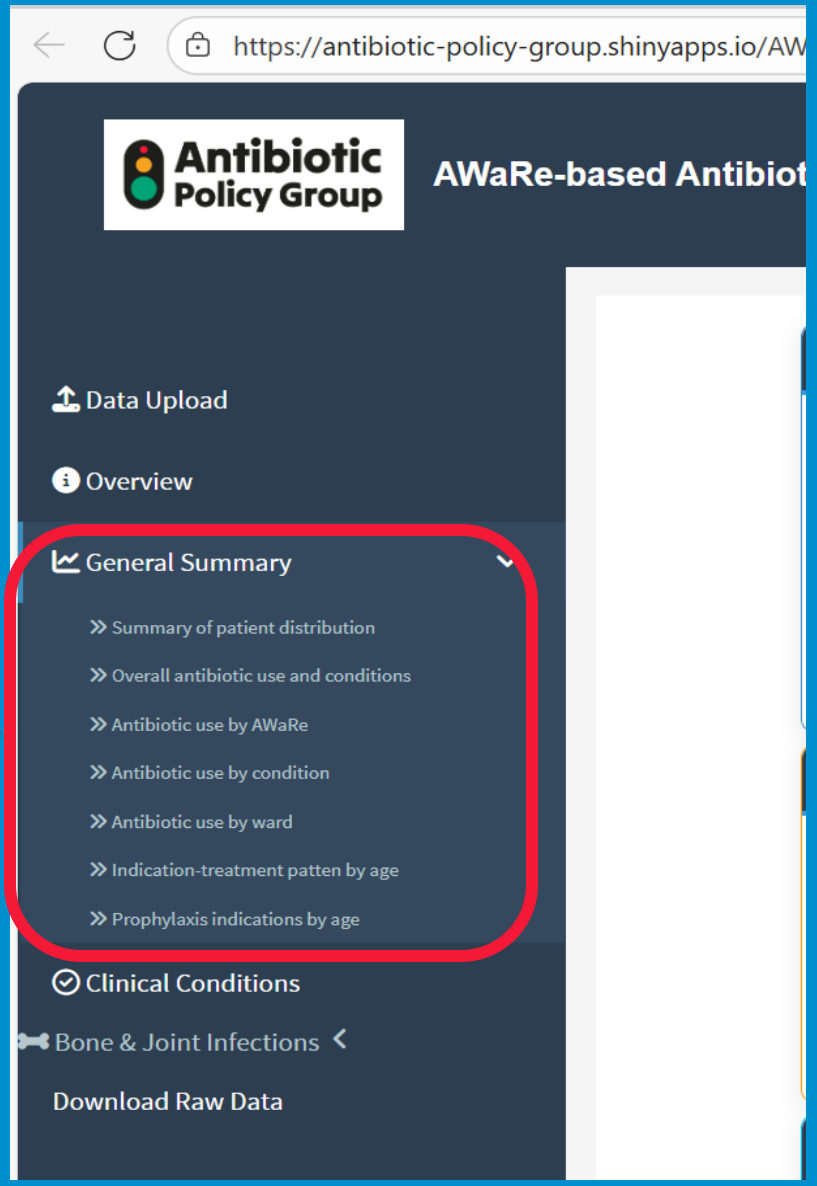
## Condition-Specific Graphs

*For some clinical conditions, **additional** graphs are available to provide further insights:*

- **Line of Treatment:** Illustrates whether the prescribed antibiotics were recommended as first-line or second-line treatments according to the AWaRe Book
- **Route of Administration:** Breaks down antibiotic use by administration route (Intravenous, Oral, or Other).
- **Proportion of Watch Antibiotics:** Highlights the share of Watch-category antibiotics used
- **Watch Antibiotics Classification:** Categorises Watch antibiotics into **Low**, **Medium**, or **High Watch** groups

*Further explanations and detailed interpretations of each graph are provided in the following slides.*

# General Summary Graphs



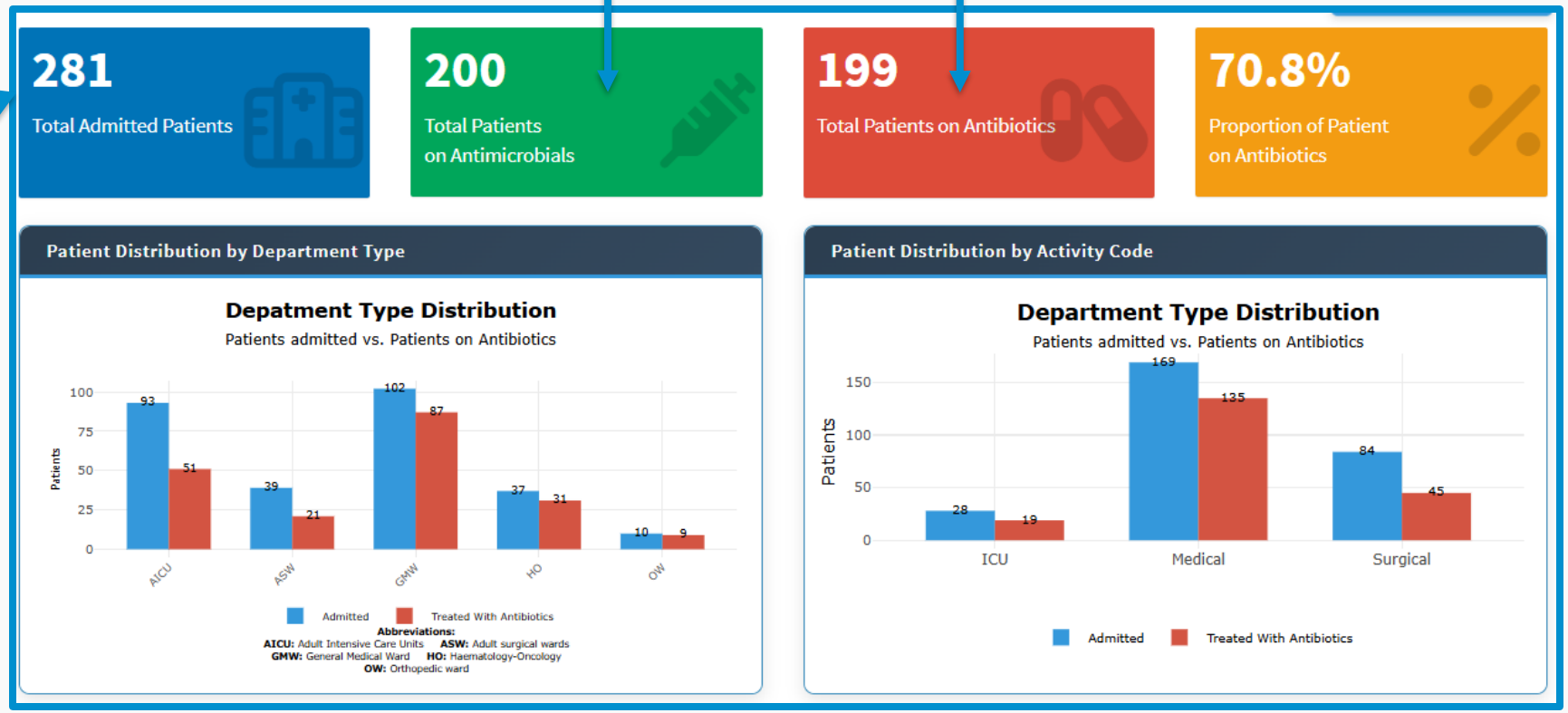
# Summary of Patient Distribution

This is the number of patients prescribed **antimicrobials of all types** including antibiotics, antimalarials, antifungals, antivirals.

This is the number of total patients prescribed **ANTIBIOTICS.**

This is the number of total patients assessed for that round of the PPS.

**Note:** One patient can have more than one antibiotic prescribed.

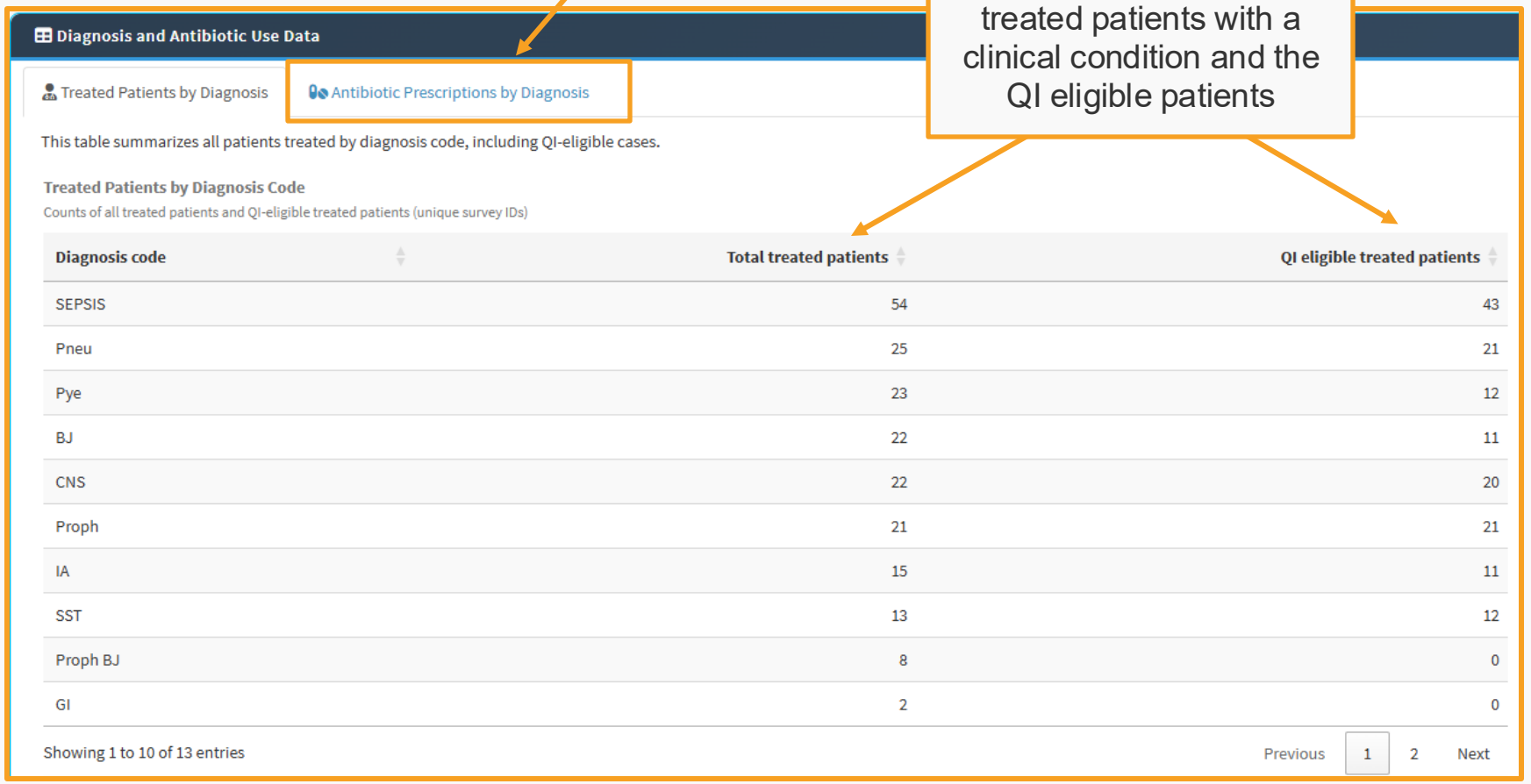


# Overall Antibiotic use and conditions

This table shows the disease make up of your facility based on Global PPS diagnosis codes

You can click this button to see the total prescriptions and QI eligible prescriptions within each clinical condition

The table shows the total treated patients with a clinical condition and the QI eligible patients




**Note:** One patient can have more than one clinical condition or antibiotic prescribed.

# Overall Antibiotic Use

The **Green row** shows the number of patients that received/prescriptions of **Access** antibiotics

These columns show the **total patients** on antibiotics and **total antibiotic prescriptions** in your facility/ward

These columns show the eligible patients and the eligible prescriptions for the QI analysis. This is **all adult (>18) patients who received empiric treatment for a community-acquired infection**

**Hospital-Wide**

| | |
|---|---|
| Patients on antibiotics: | 205 |
| QI-Eligible patients on antibiotics: | 150 |
| Total antibiotic prescriptions (Rx): | 215 |
| Total QI-Eligible antibiotic prescriptions (QI-Eligible Rx): | 158 |

| Category | Total Patients | QI-Eligible Patients | Total Rx | QI-Eligible Rx |
|---|---|---|---|---|
| Access | 62 | 37 | 64 | 38 |
| Watch | 124 | 97 | 127 | 100 |
| Reserve | 18 | 16 | 18 | 16 |
| Not Recommended | 5 | 3 | 5 | 3 |
| Unclassified | 1 | 1 | 1 | 1 |

**Note:** One patient can have more than one antibiotic prescribed.

The **Red row** shows the number of patients that received prescriptions of **Reserve** antibiotics

The **Orange row** shows the number of patients that received/prescriptions of **Watch** antibiotics

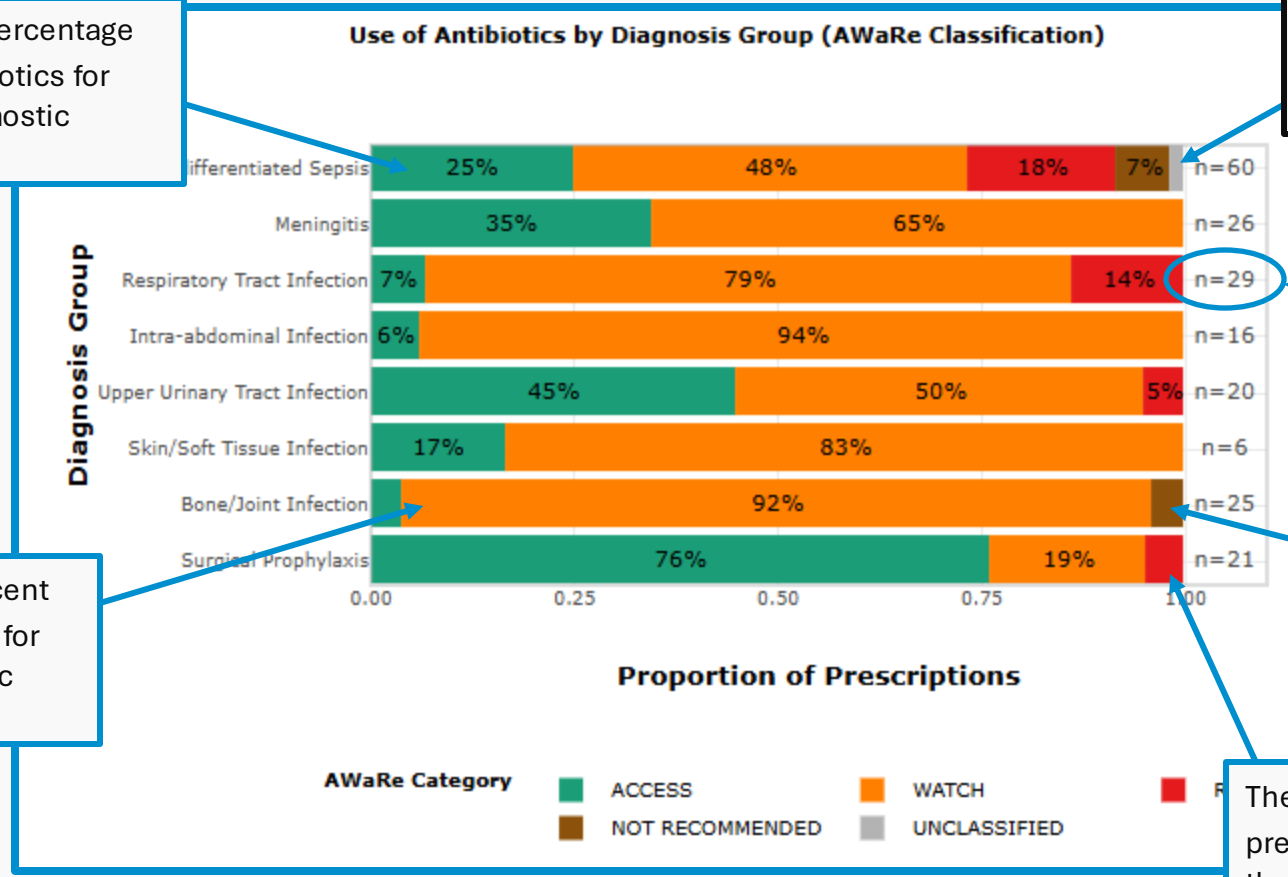
The **Grey row** shows the number of patients that received prescriptions of antibiotics **Unclassified** by AWaRe

The **Brown row** shows the number of patients that received prescriptions of **Not Recommended** antibiotics

# Condition-Specific Antibiotic Use

The **Green bar** shows the percentage of prescribed **Access** antibiotics for that specific condition (Diagnostic Group)

The **Grey bar** shows the percent of prescribed **Not Classified** antibiotics by AWaRe for that specific condition (Diagnostic Group)




The **n** here indicates the total number of prescriptions in your facility that were given to patients diagnosed with that specific clinical condition

The **Orange bar** shows the percent of prescribed **Watch** antibiotics for that specific condition (Diagnostic Group)

The **Brown bar** shows the percent of prescribed **Not Recommended** antibiotics for that specific condition (Diagnostic Group)

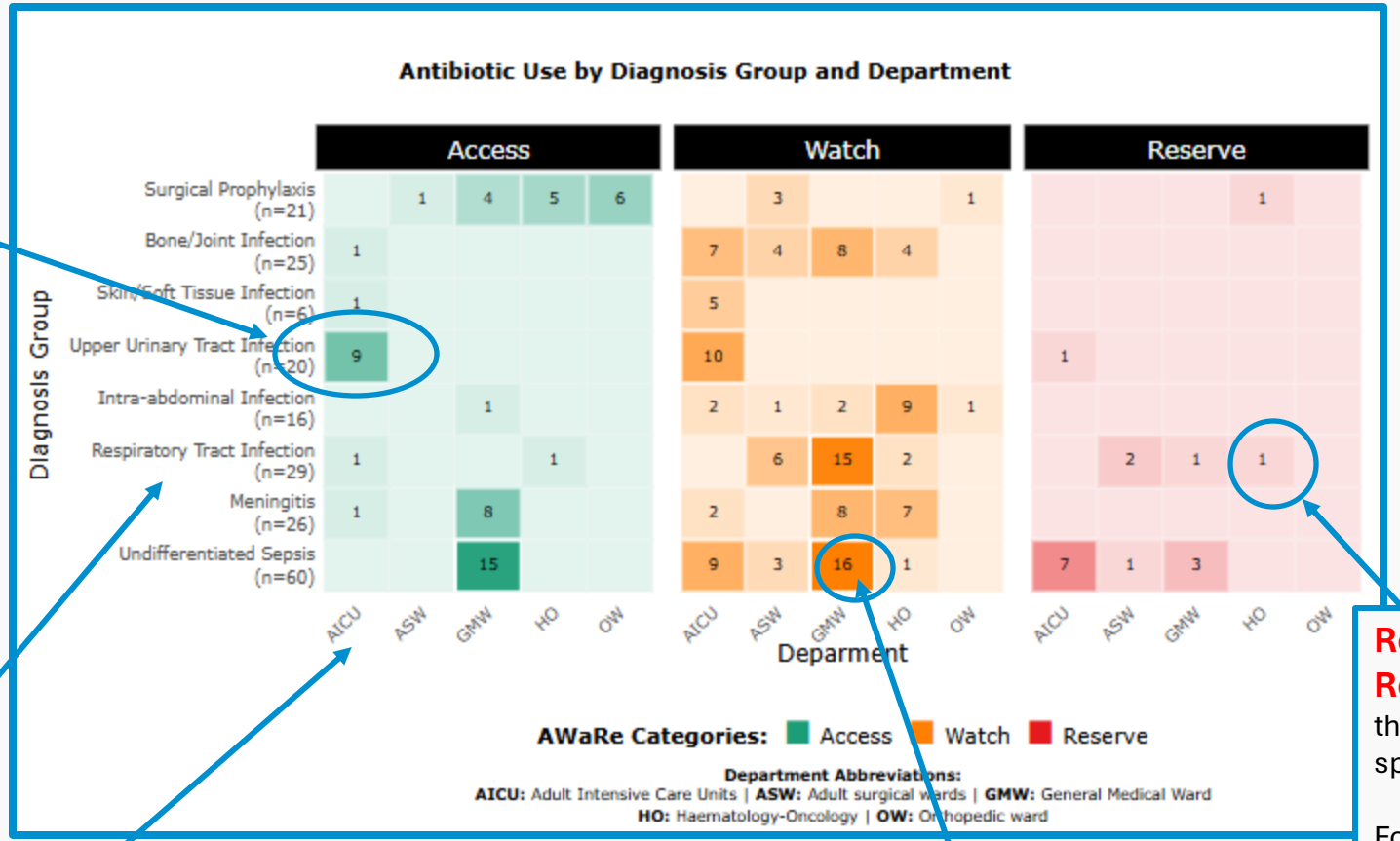
The **Red bar** shows the percent of prescribed **Reserve** antibiotics for that specific condition (Diagnostic Group)

Please note these are your **total number of prescriptions for ALL** patients with that condition, it is **not only** for the patients eligible for the QI analysis.

# Condition-Department-Specific Antibiotic Use

**Green boxes** show total **Access** prescriptions in that specific ward for that specific condition.

For example, there are 9 prescriptions of Access antibiotics for Upper UTI in the Adult Intensive Care Unit (AICU) .




The darker the colours are on this graph, the more prescriptions you have in that specific ward for that specific condition.

**Your departments might look different to the examples shown here.**

The **y-axis** has the clinical conditions. '**n**' is the total number of prescriptions hospital wide for that condition listed.

The **x-axis** has the wards in your health facility.

**Orange boxes** show total **Watch** prescriptions in that specific ward for that specific condition.

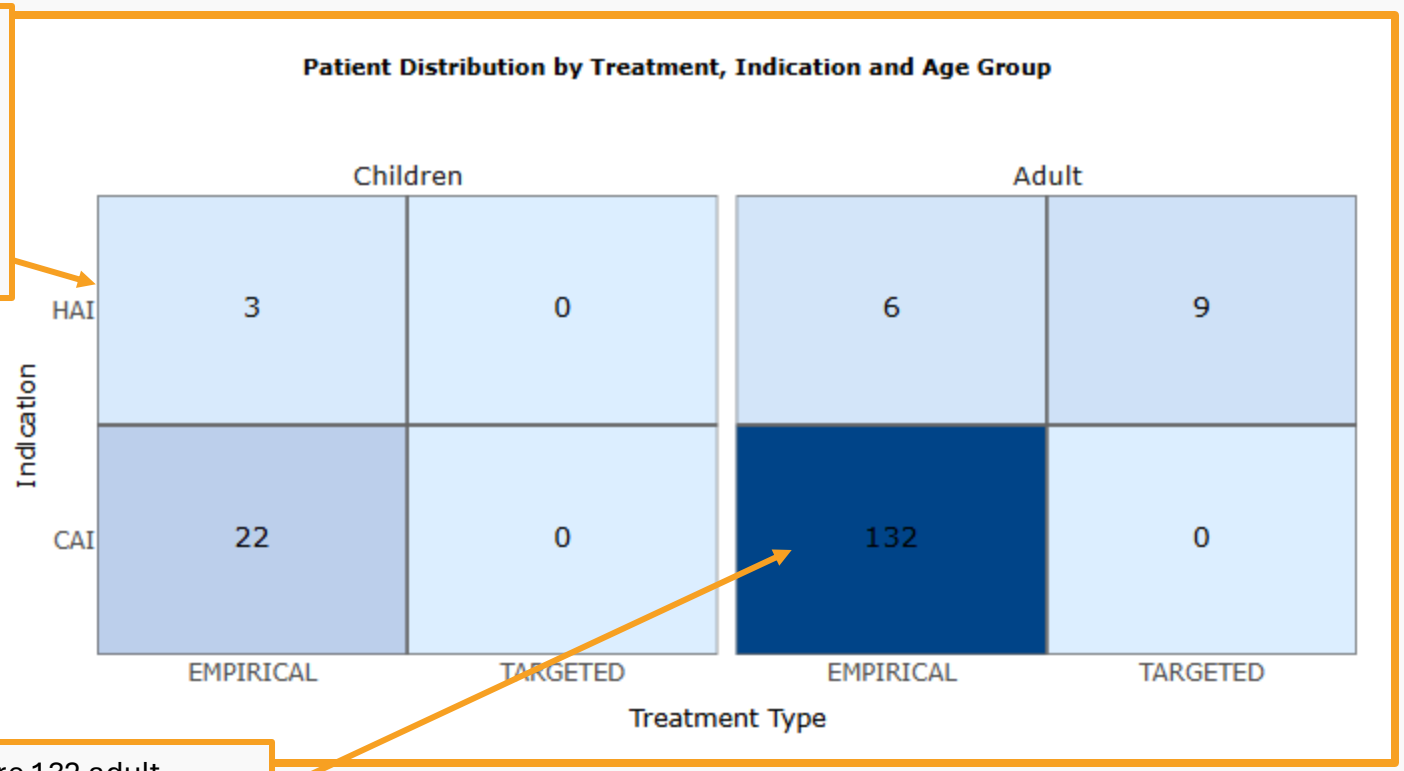
For example. There are 16 prescriptions for Sepsis in the General Medical Ward (GMW) that involved Watch antibiotics.

**Red boxes** show total **Reserve** prescriptions in that specific ward for that specific condition.

For example. There is 1 prescriptions for RTI in Haematology-Oncology Ward that involved Reserve antibiotics

# Empiric vs Targeted Treatment by Age

Each box represents the number of patients that received either empirical/targeted treatment for a hospital/community-acquired infection. The boxes are divided into the child patients and adult (>18) patients)




The darker the colours are on this graph, the more patients you have in that specific ward with that specific condition

Your departments might look different to the examples shown here.

For example, there are 132 adult patients with community-acquired infections who received empiric treatment

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

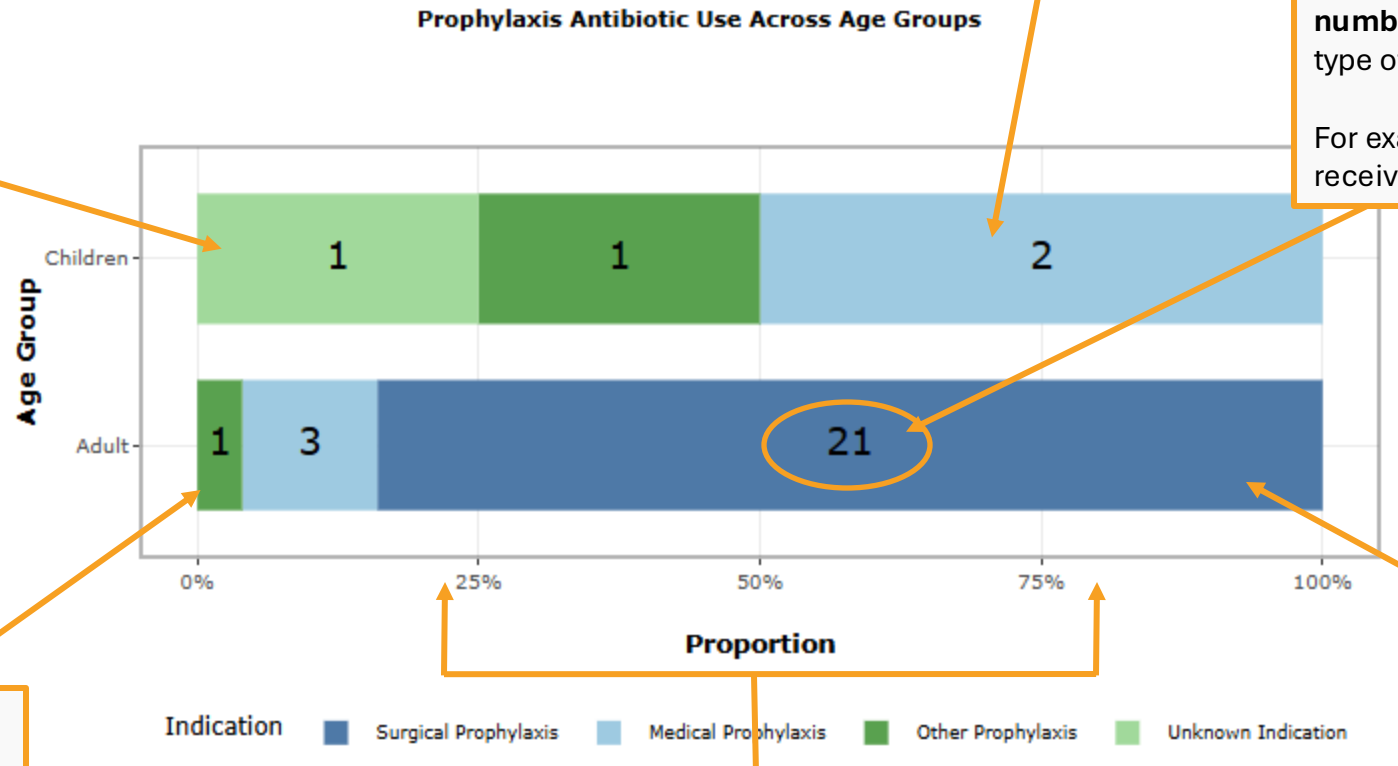
# Age-Specific Prophylaxis

The **light blue bar** represents the proportion of patients who received **medical** prophylaxis

The **light green bar** represents the proportion of patients who received **treatment with unknown indication**

The number in the bar represents the **number of patients** who received that type of prophylaxis

For example, there are 21 adults who received surgical prophylaxis



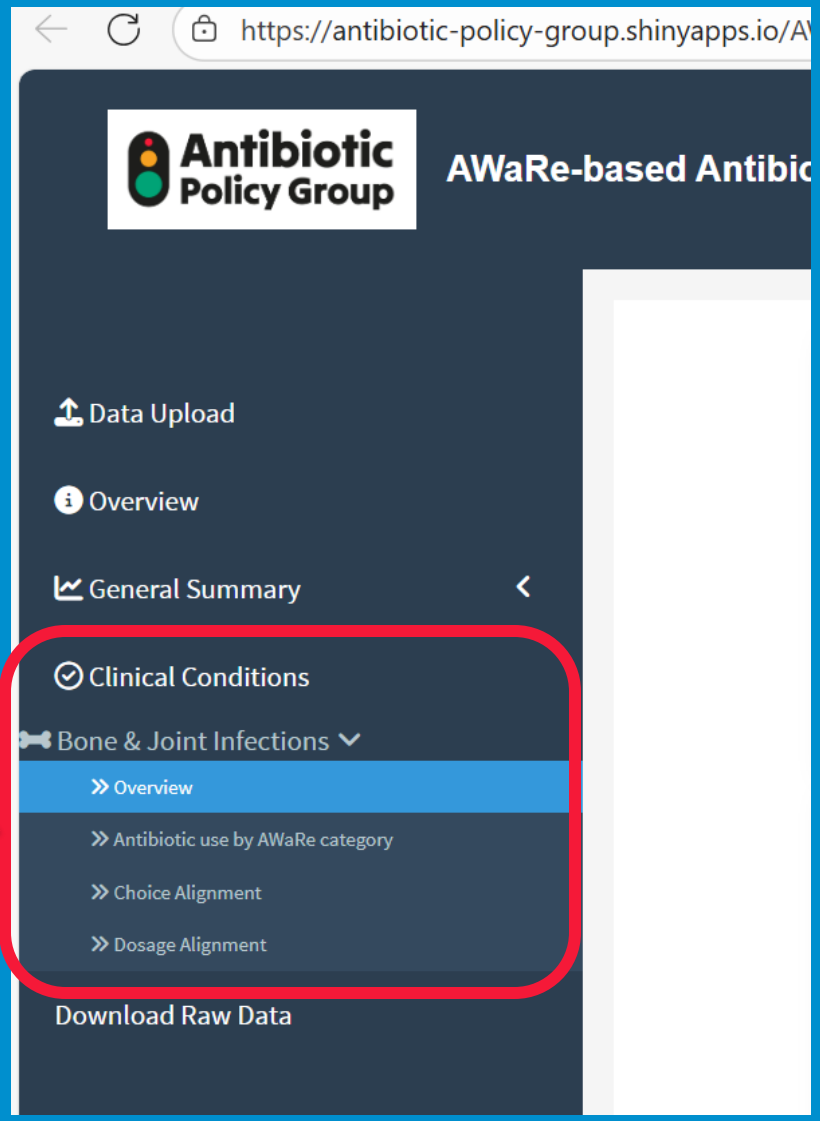

The bars are divided into the child patients and adult (≥18) patients)

The **dark blue bar** represents the percentage of patients who received **surgical** prophylaxis

The **dark green bar** represents the proportion of patients who received **prophylaxis besides surgical or medica**l.

X axis and the size of the bar relates to the percentage of Children/Adults on Prophylaxis

# Clinical Conditions Graphs



# Definitions for choice alignment

- Choice alignment

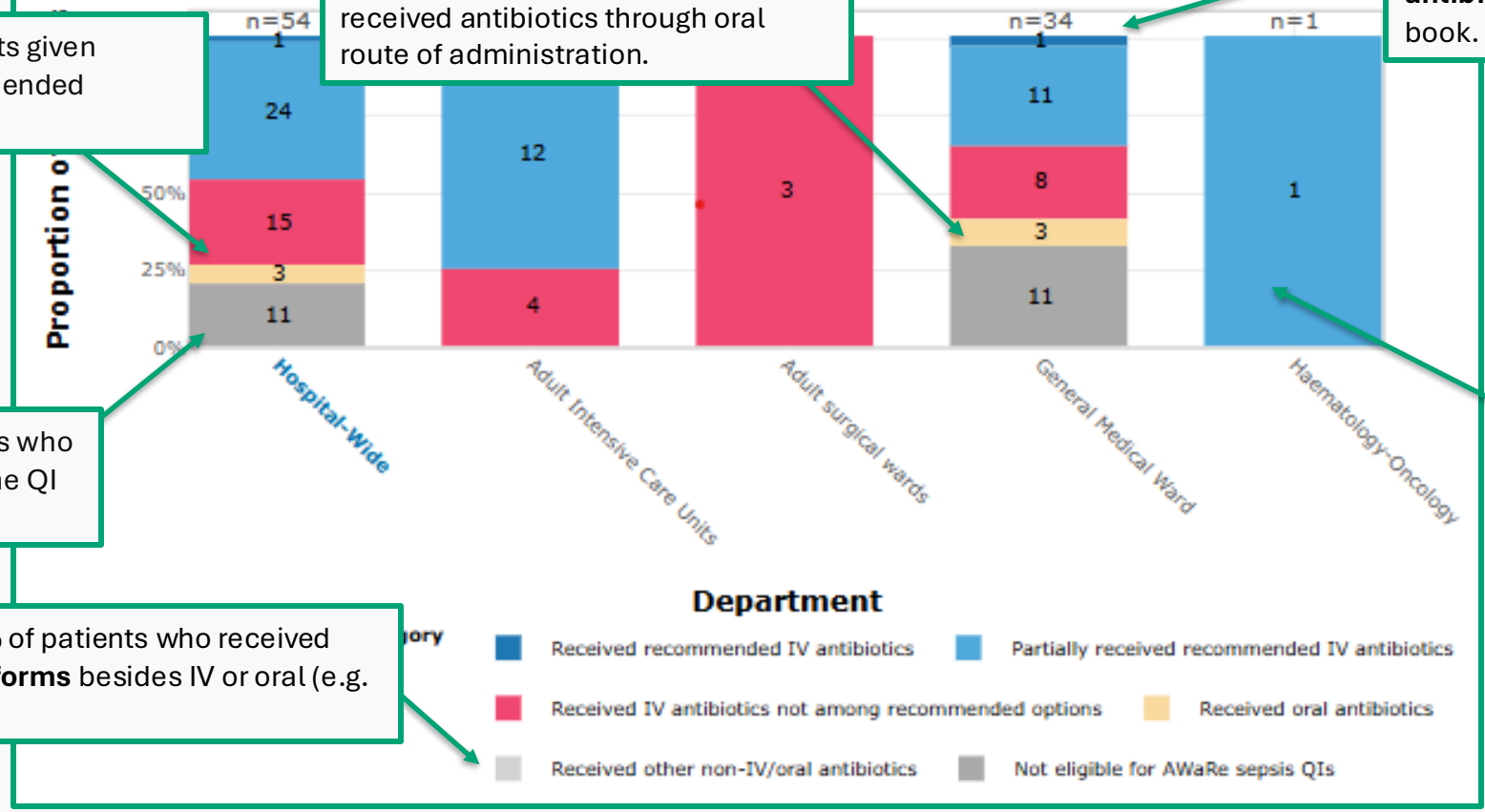
| Bar Colour | Meaning | Interpretation |
|---|---|---|
| Dark Blue | Received recommended IV antibiotics with recommended dosage | Ideal |
| Light Blue | Shows patients who received at least one AWaRe-recommended antibiotic but whose overall treatment does not fully align with the AWaRe recommendations for that condition | Investigate why |
| Yellow | Antibiotics received via the oral route | |
| Red | **NONE** of the antibiotics prescribed align with AWaRe Book recommendations | Not ideal. Investigate why |
| Light Grey | Antibiotics prescribed via other routes (Not oral or IV) | |

# Choice Alignment with AWaRe Book

**Dark Blue bar** = % of patients who received the **recommended antibiotics** based on the AWaRe book.

**Yellow bar** = % of patients who received antibiotics through oral route of administration.

**Red bar** = % of patients given antibiotics not recommended by **AWaRe Book**




**Light Blue bar** = % of patients who received both recommended and not recommended antibiotics by the AWaRe Book

**Dark Grey bar** = % of patients who were **not eligible** to measure the QI for appropriate drug choice.

The **Light Grey** = % of patients who received antibiotics i**n other forms** besides IV or oral (e.g. rectal).

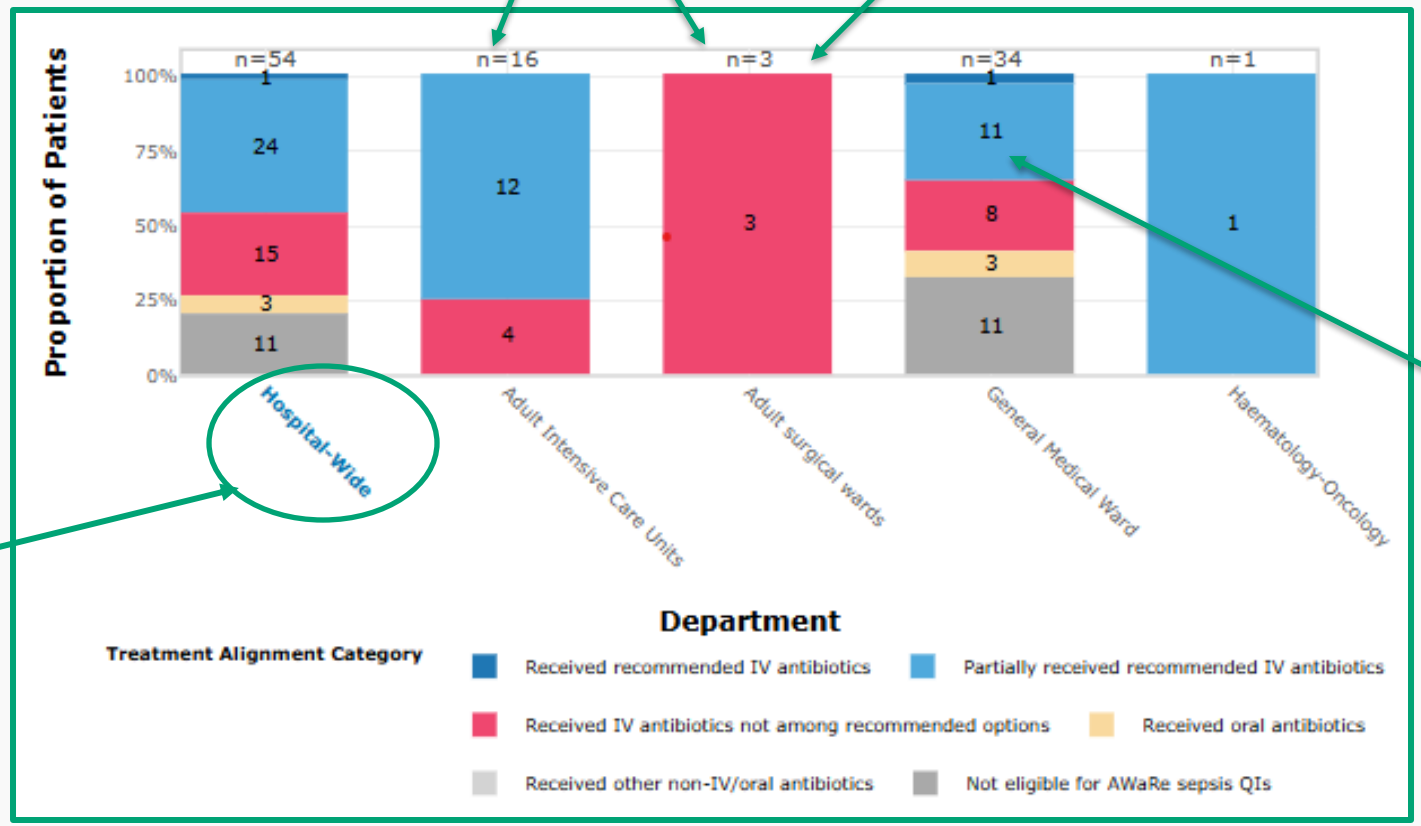
# Choice Alignment Example

The following bars show the antibiotic choice per department/ward.

For example, in this adult surgical ward, the bar is all **red** because all 3 eligible patients in this ward received treatment **NOT** align with the AWaRe Book.

Be cautious of the number of patients in each ward when analysing data

i.e., there are only 3 eligible patients in the adult surgical ward



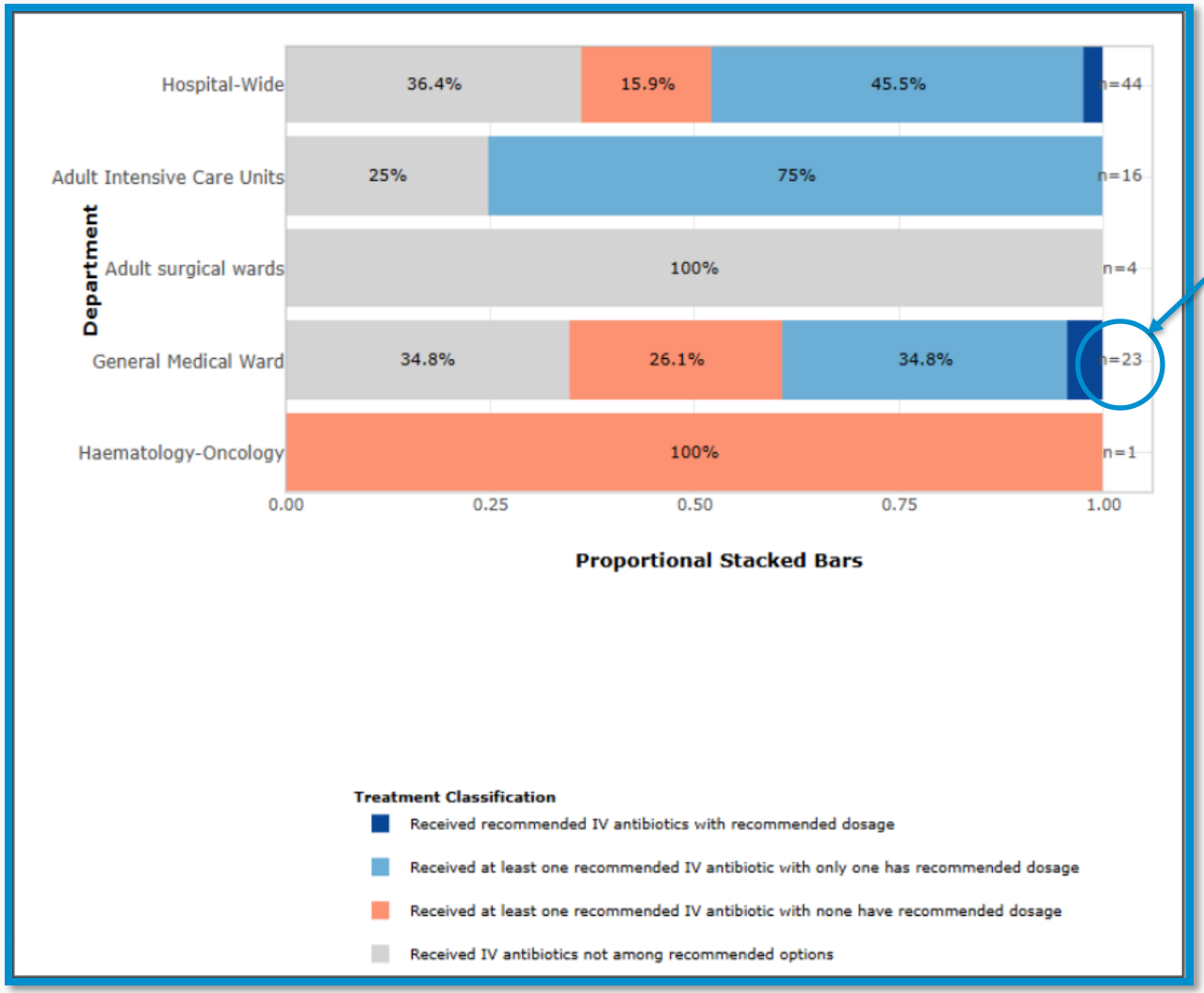

The first column shows hospital-wide info on how the antibiotic choice aligns with the AWaRe Book.

If the **light blue** bar. is bigger than the **dark blue** bar, that means more patients received a **partially recommended treatment** in that department.

# Definitions for dosage alignment options

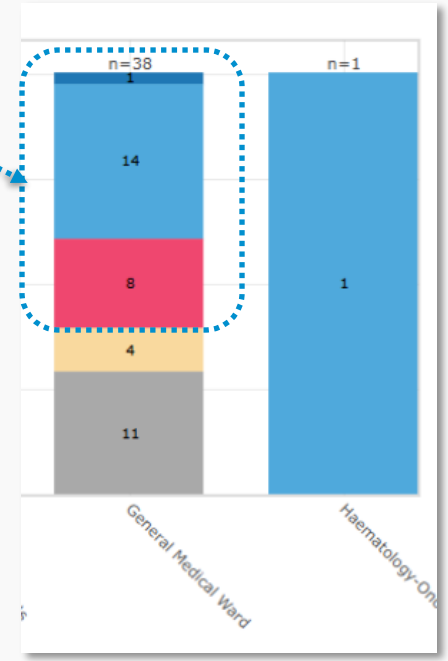
| Bar Colour | Meaning | Interpretation |
|---|---|---|
| Dark Blue | Received recommended IV antibiotics with recommended dosage | Ideal |
| Light Blue | Shows patients who received at least one AWaRe-recommended antibiotic at a dosage consistent with AWaRe guidance, but whose overall treatment regimen does not fully align with AWaRe recommendations for that condition. | Investigate why |
| Light Orange | Shows patients who received at least one AWaRe-Book recommended antibiotic, but **NOT** the recommended dosage | Investigate why |
| Light Grey | None of the IV antibiotics received was among the recommended choices in the AWaRe Book | Investigate |

# Dosage Alignment with AWaRe Book: Denominator



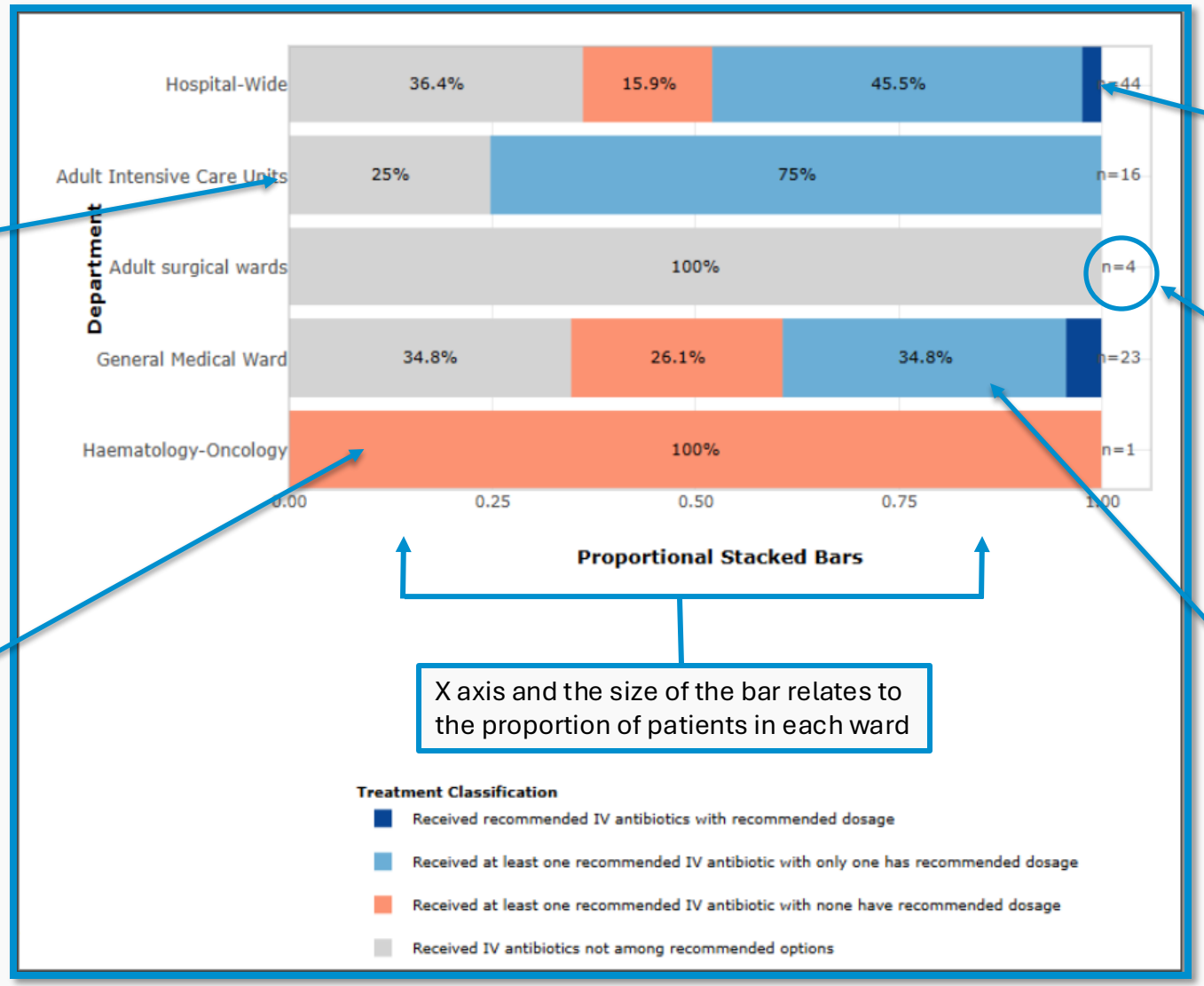

*The denominator is the same as in the appropriate choice graph but **EXCLUDES** patients who received oral antibiotics when IV was recommended and those ineligible for the QI measure (e.g., targeted treatment after microbiological testing, age < 18, or hospital-acquired infections).*

***For example:** 23 (out of 38) patients in the general medical ward were prescribed IV antibiotics.*



# Dosage Alignment with AWaRe Book

**Light grey** bar = proportion of patients who did not receive any of the recommended antibiotics by the AWaRe book.
This line is the same as the red line in the Choice Alignment graph.




**Dark blue** = the proportion of patients who received the recommended antibiotic and the recommended dose as per the AWaRe guidelines

**"n"** refers to the total number of eligible patients in the ward

**Light orange** = proportion of patients who received at least one of the antibiotics was recommended by AWaRe, however the dose of all antibiotics used was not recommended

X axis and the size of the bar relates to the proportion of patients in each ward

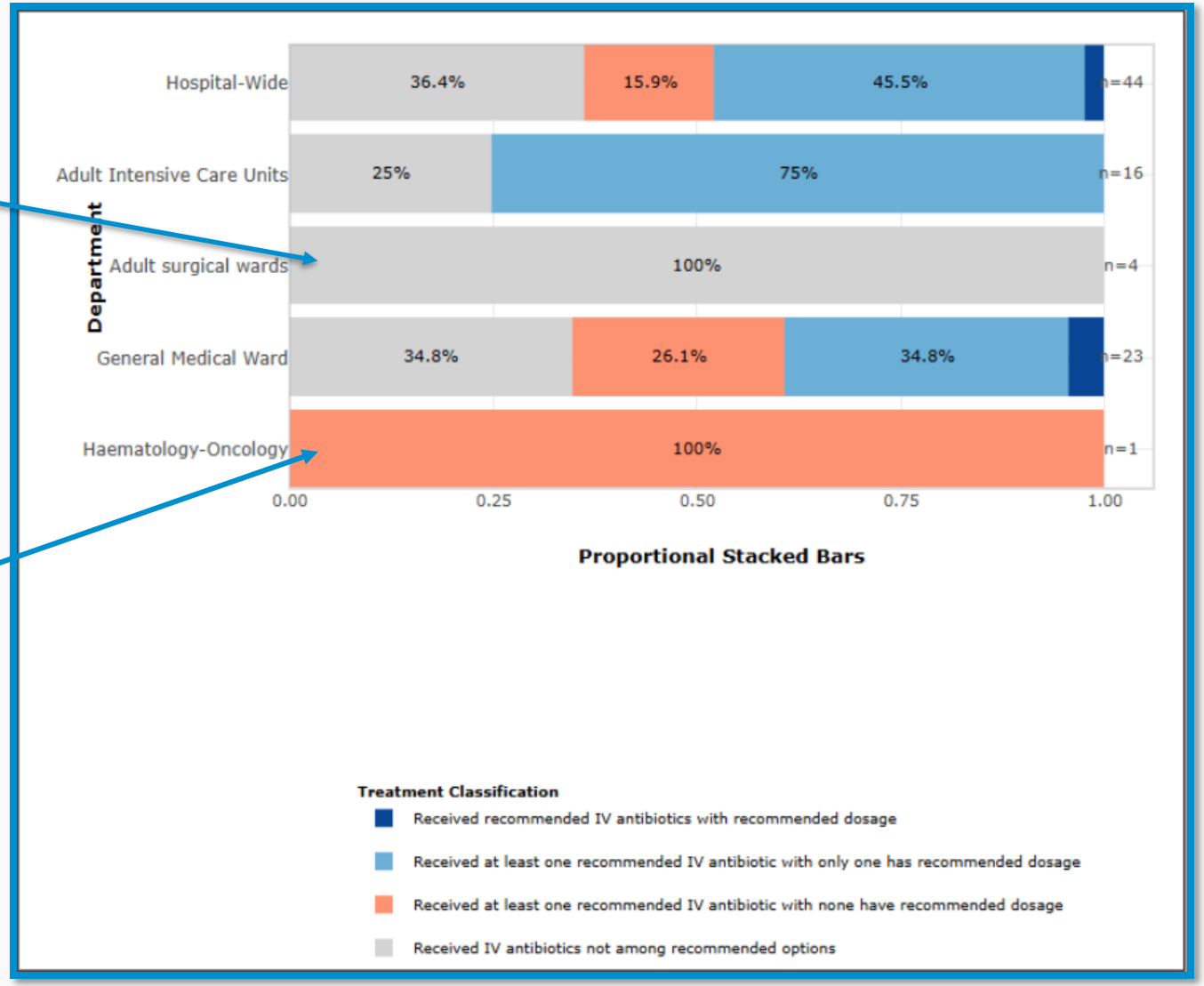
**Light blue** bar = proportion of patients who received at least one of the recommended antibiotics with the **recommended dose**

# Dosage Alignment Example

A large proportion of light grey could mean several options:

- Local guidelines differ significantly from AWaRe Book
- Guidelines were not adhered to
- Recommended antibiotics were not

If you see a large section of **light orange** in your graph, this means that most patients are receiving the recommended antibiotic, but the dose does not follow the recommendation by the AWaRe book

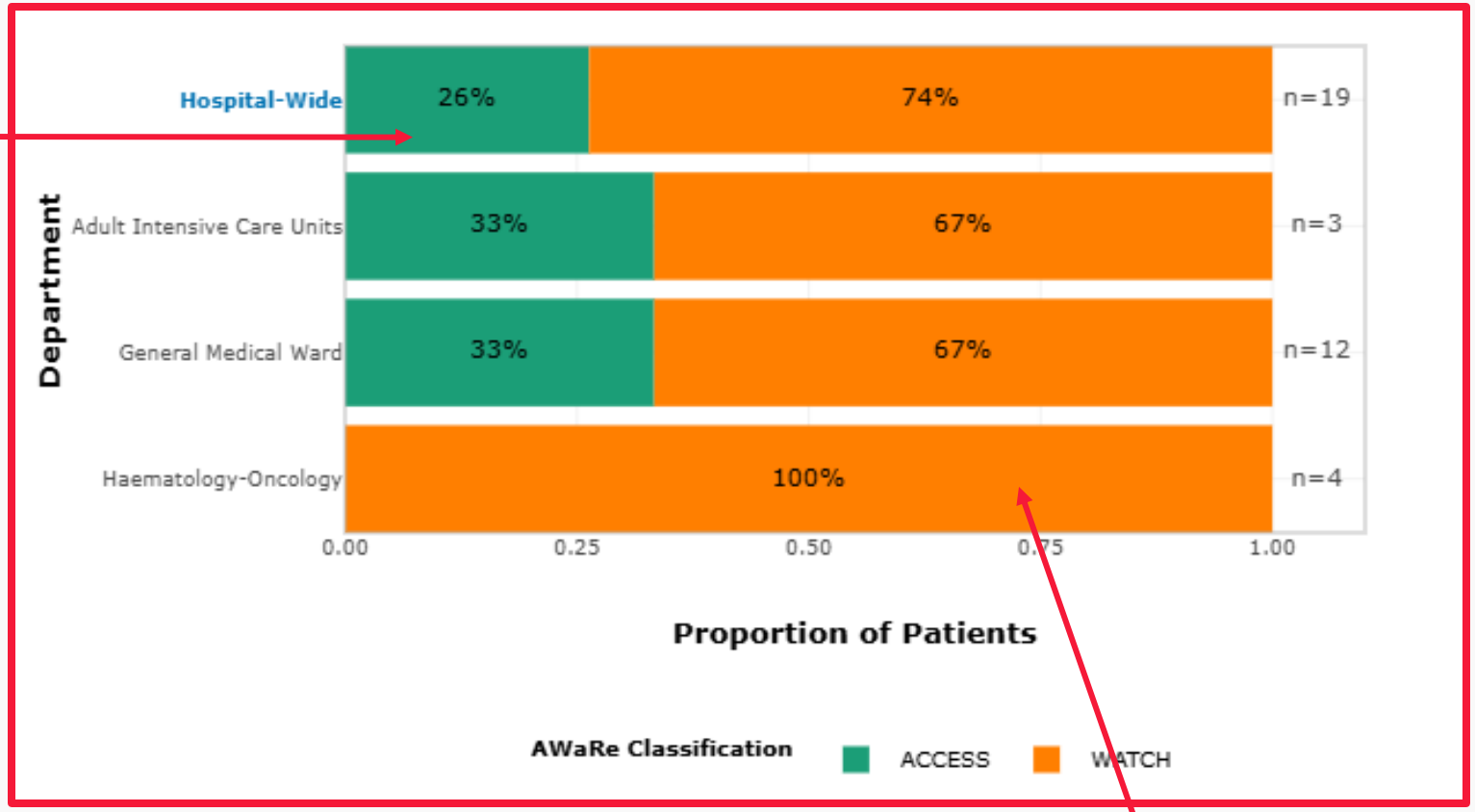


# Antibiotic Choice Alignment by AWaRe Category

The **green bar** represents the proportion of patients who received Access antibiotics recommended by the AWaRe Book.

**NOTE:** This graph **INCLUDES ONLY** patients receiving **fully or partially recommended** antibiotics.

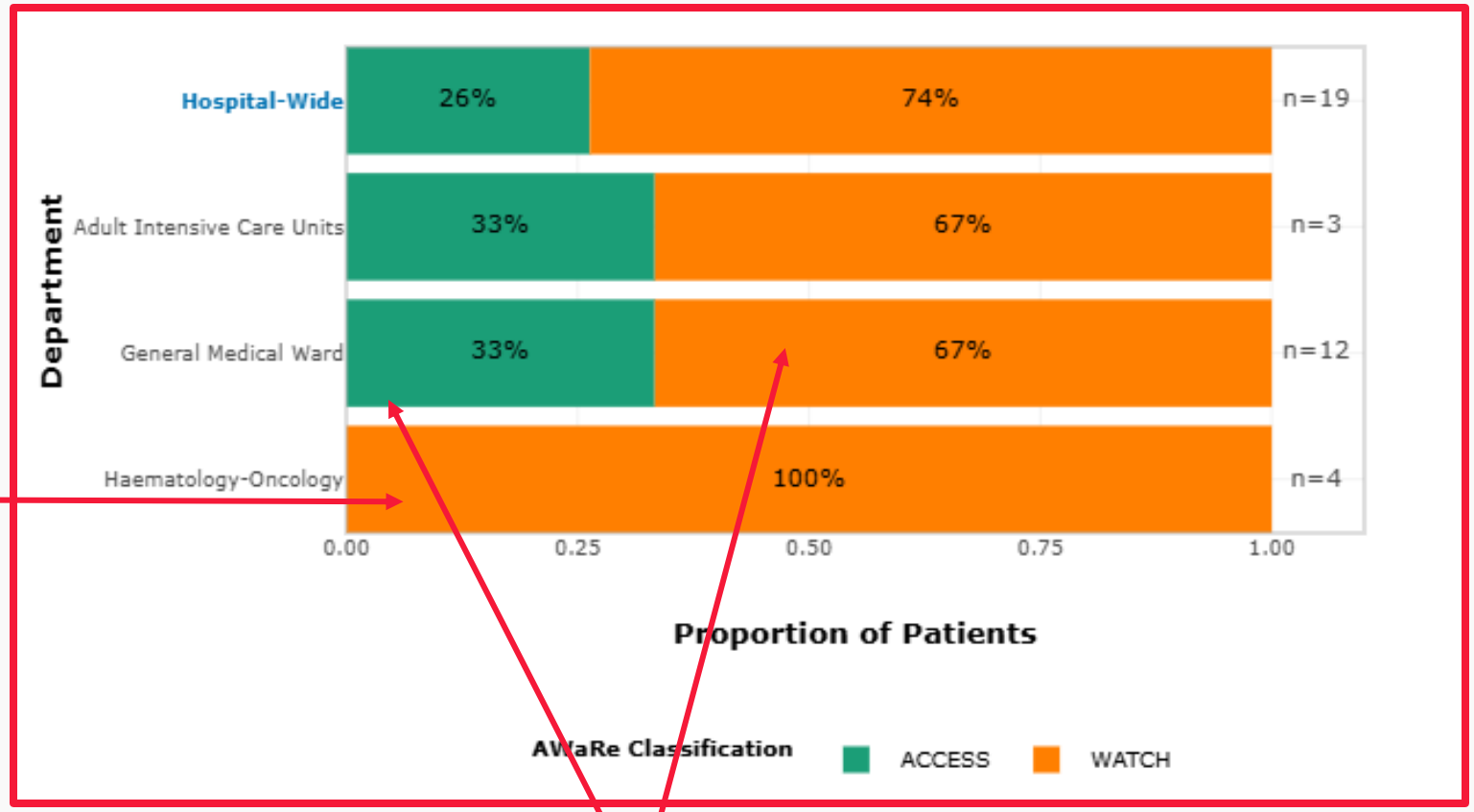
It **does not** include not recommended.




The **orange bar** represents the proportion of patients who received Watch Antibiotics recommended by the AWaRe Book.

# Alignment by AWaRe Category Example

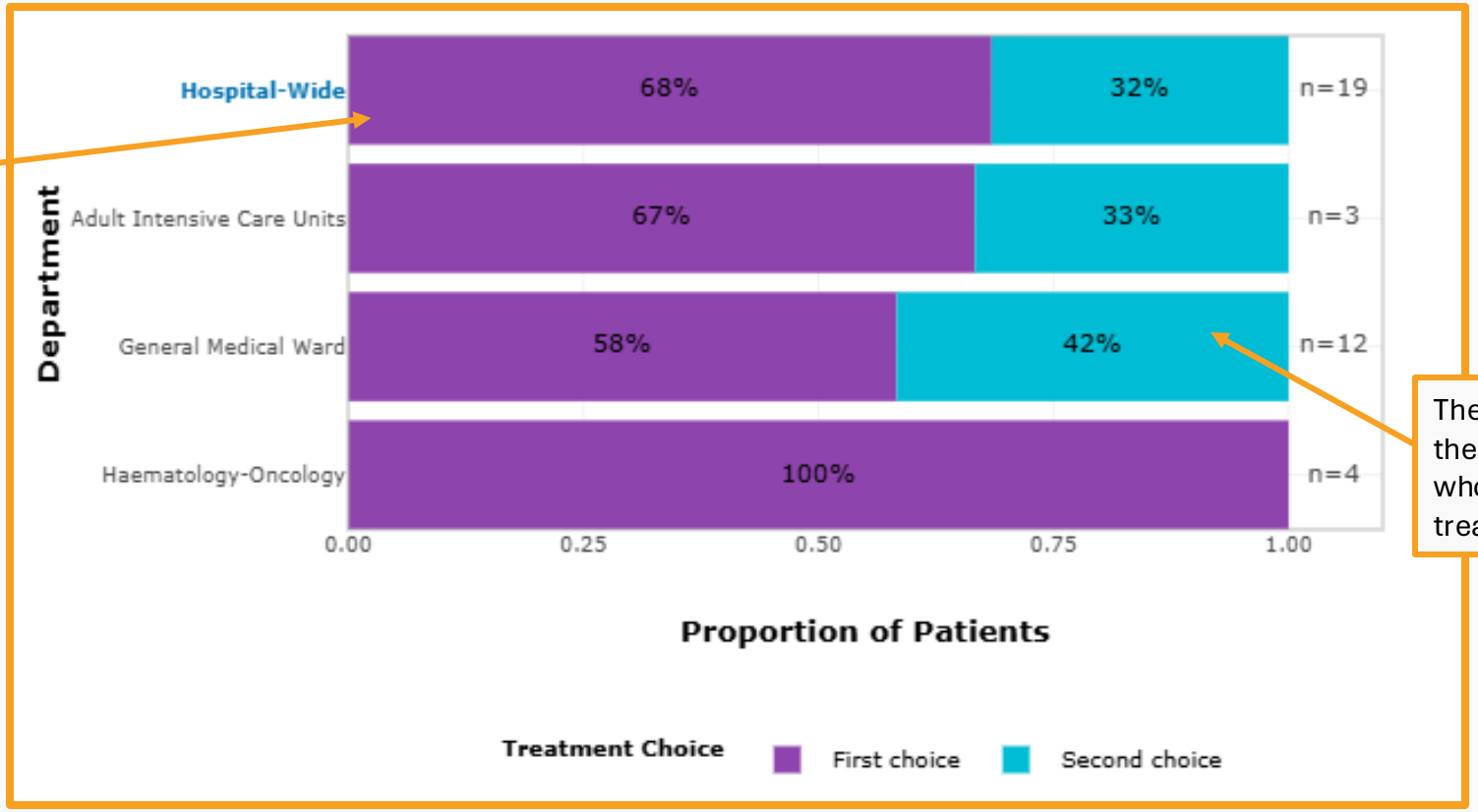
If your bar is mostly **orange**, this means that majority of your patients in that department **received an appropriate antibiotic that was Watch**




If your bar has both **green** and **orange** on it, it means that patients received recommended antibiotics by the AWaRe book are both Access and Watch

# Antibiotic Choice Alignment by Line of Treatment

The **purple bar** indicates the percent of patients who received first line treatment

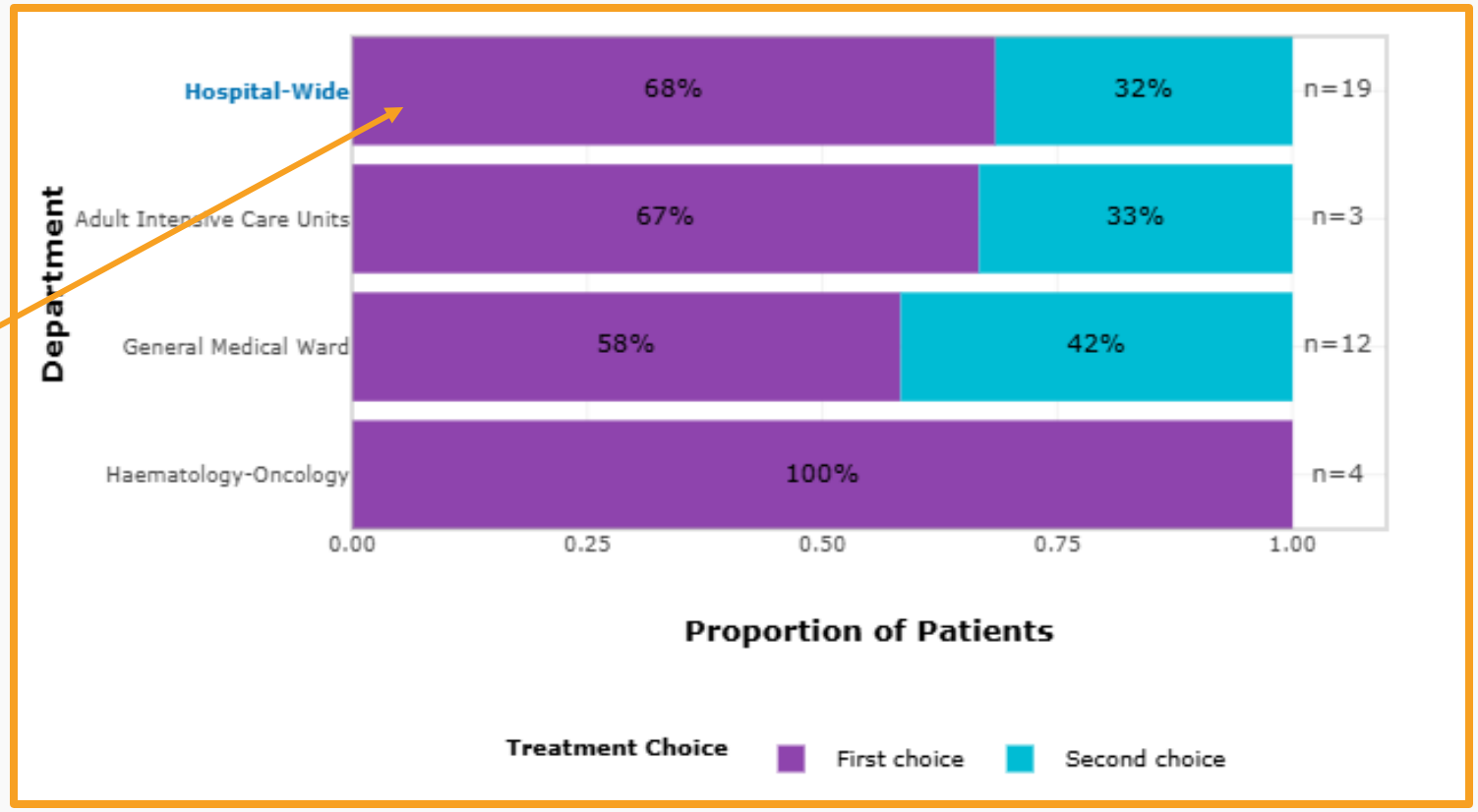



The **blue bar** indicates the percent of patients who received second line treatment

**NOTE:** This graph **INCLUDES ONLY** patients receiving **fully or partially recommended** antibiotics. It **does not** include patients receiving antibiotics not recommended by the AWaRe book.

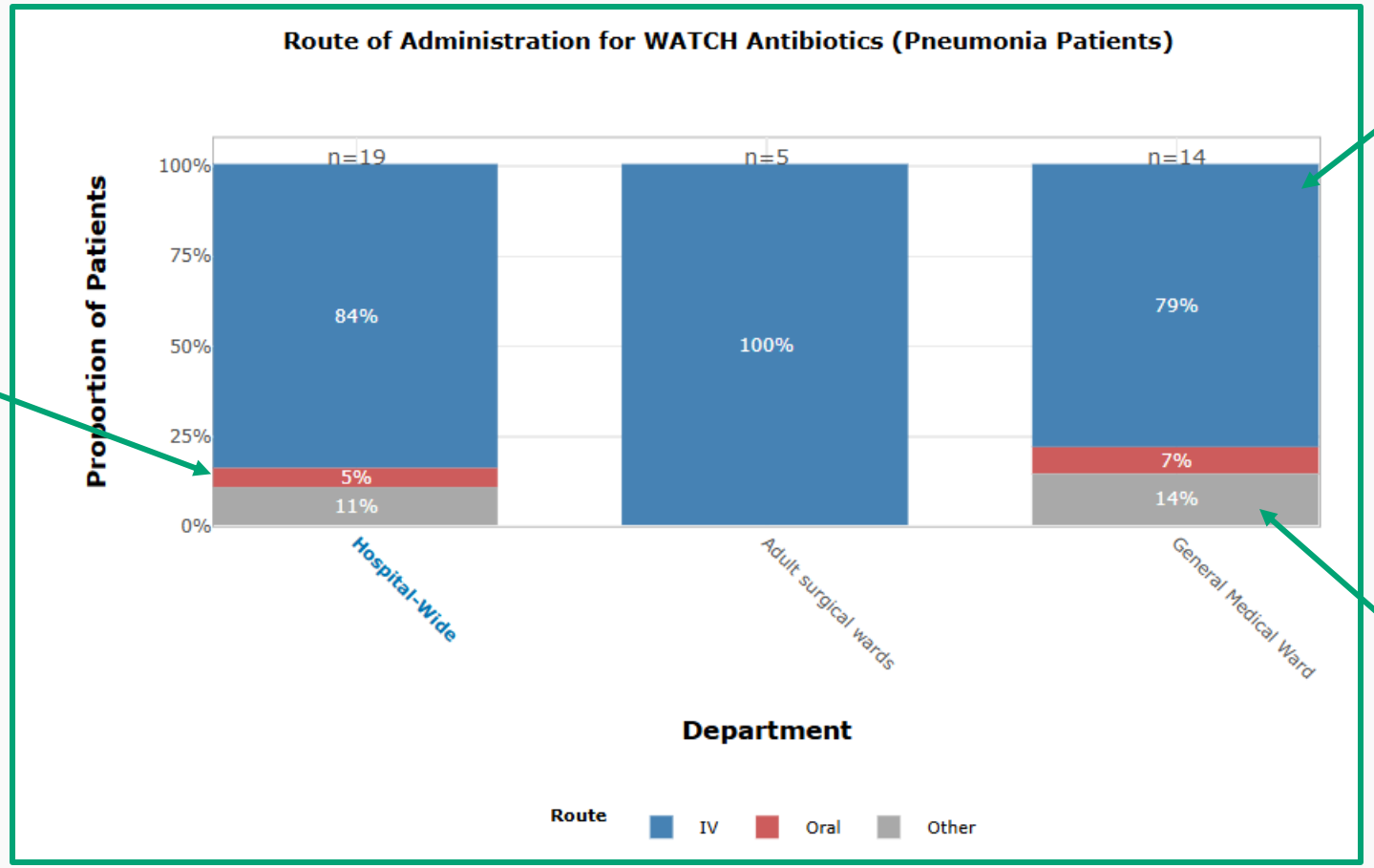
# Alignment by Line of Treatment Example

If you see more **purple** than **blue** in your graph. This means that more patients receive first line treatment antibiotics recommended by the AWaRe Book




*This graph will only show for indications that have First and Second line treatment recommendations by the AWaRe book*

# CAP: Watch antibiotics by Route of Administration



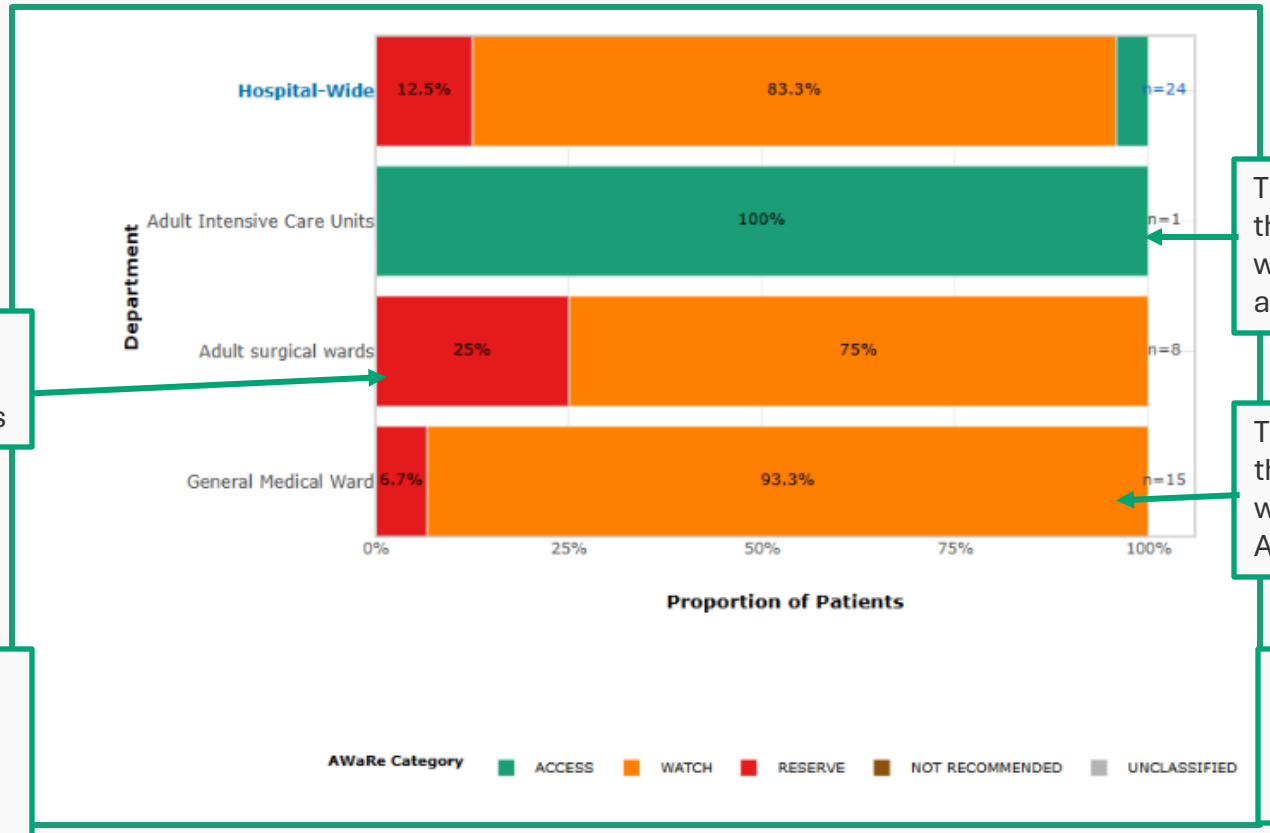

The **red bar** represents the proportion of patients who received Watch oral antibiotics

The **blue bar** represents the proportion of patients who received IV Watch antibiotics

The **grey bar** represents the proportion of patients who received IV Watch antibiotics

# CAP: 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




The **red bar** represents the proportion of patients who received **Reserve** antibiotics

The **green bar** represents the proportion of patients who received **Access** antibiotics

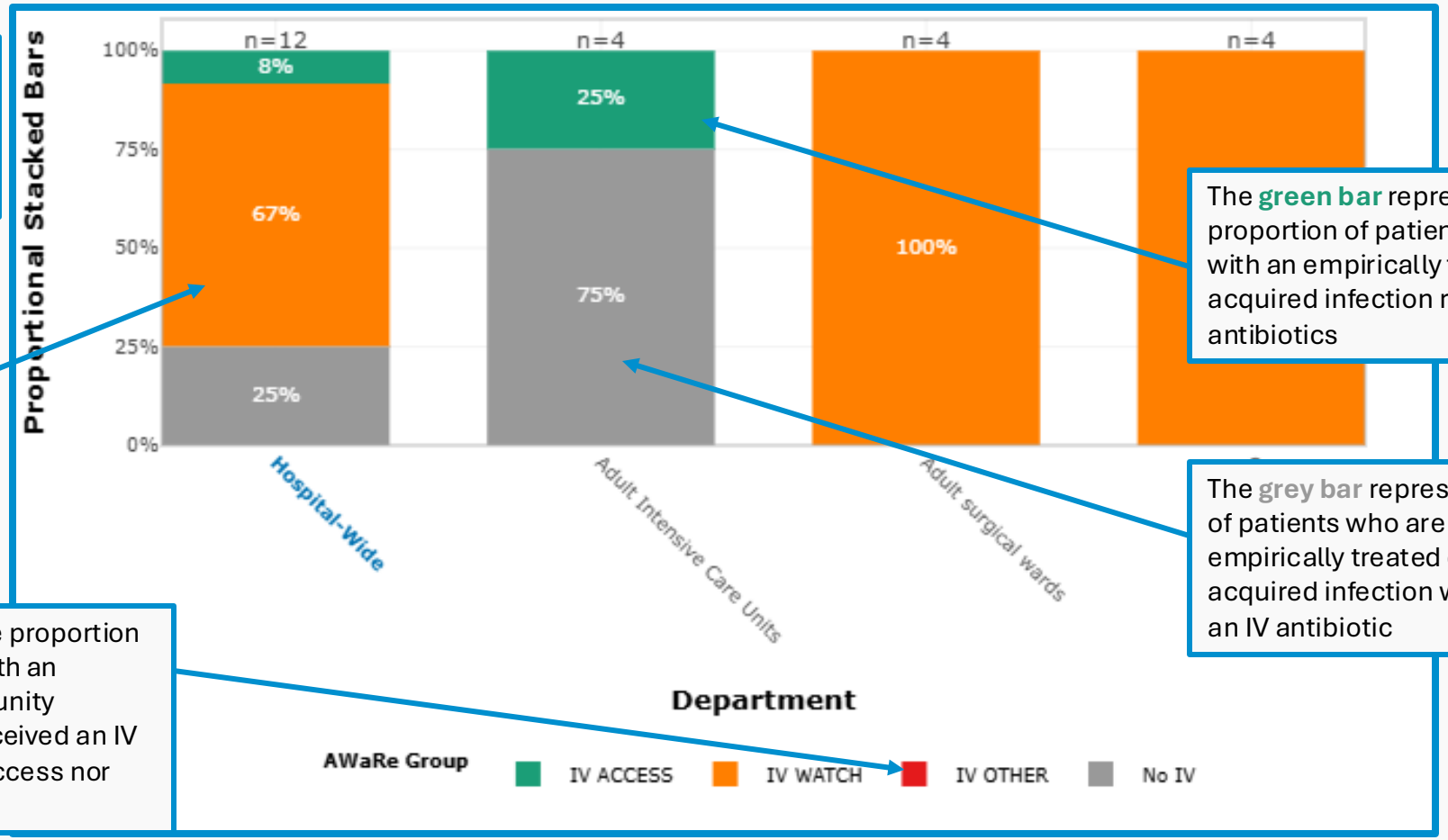
The **orange bar** represents the proportion of patients who received **Watch** Antibiotics

The **grey bar** represents the proportion of patients who received Antibiotics **not assigned a category** by the AWaRe system

The **brown bar** represents the proportion of patients who received **Non-recommended** antibiotics

# Bone and Joint Infections: Treatment by AWaRe Category

***NOTE:*** *These graphs represent* ***all antibiotic treatment*** *not just treatment recommended by the AWaRe book*



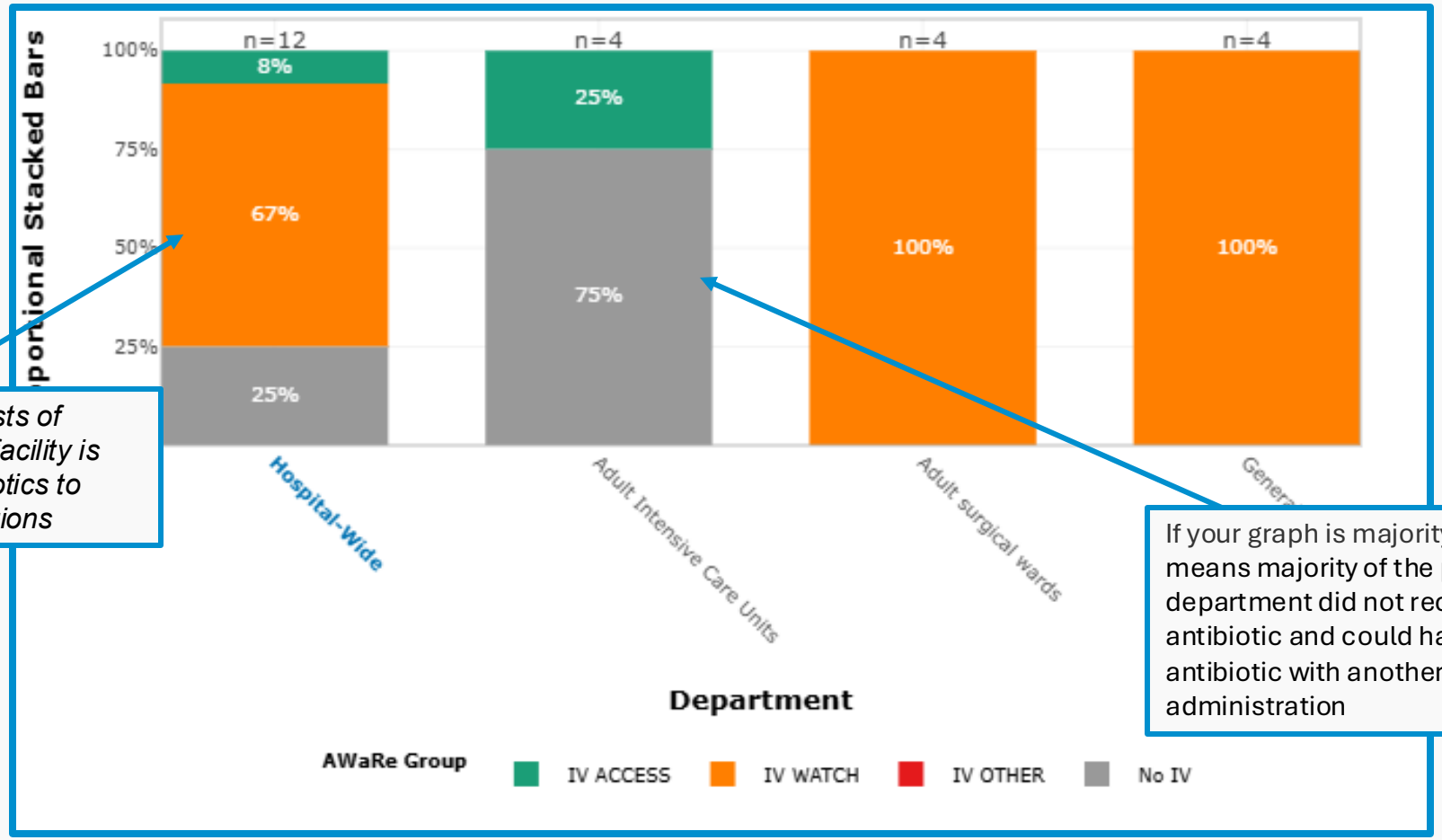

The **orange bar** represents the proportion of patients who are >18 with an empirically treated community acquired infection who received IV Watch antibiotics

The **green bar** represents the proportion of patients who are >18 with an empirically treated community acquired infection received IV Access antibiotics

The **red bar** represents the proportion of patients who are >18 with an empirically treated community acquired infection who received an IV antibiotic that is neither Access nor Watch

The **grey bar** represents the proportion of patients who are >18 with an empirically treated community acquired infection who did not receive an IV antibiotic

# Bone and Joint Infections: Treatment by AWaRe Category Example




*If your graph mostly consists of **Orange**, this means your facility is mostly using Watch antibiotics to treat Bone and Joint Infections*

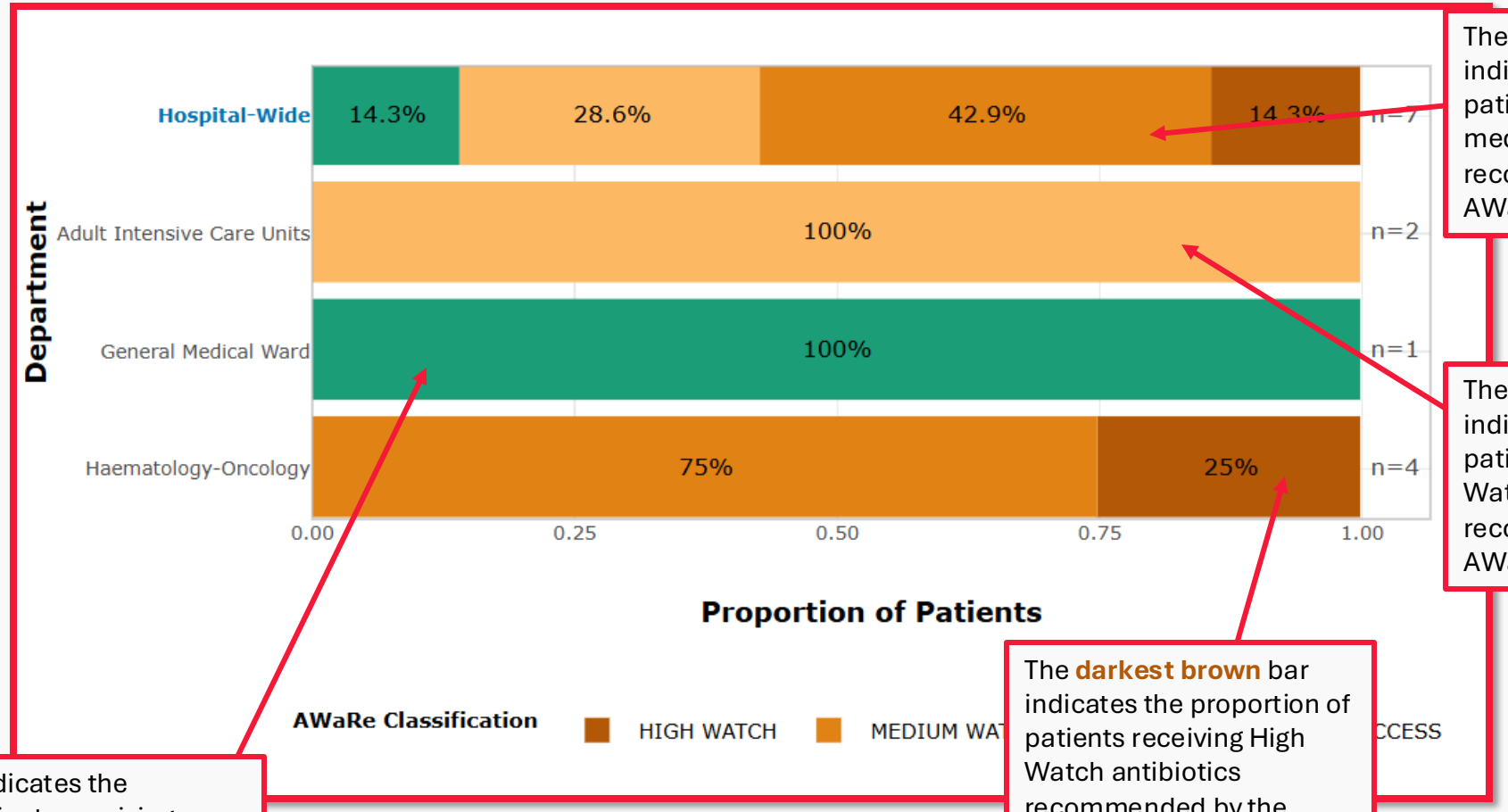
If your graph is majority **grey** this means majority of the patients in that department did not receive an IV antibiotic and could have received an antibiotic with another route of administration

# 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



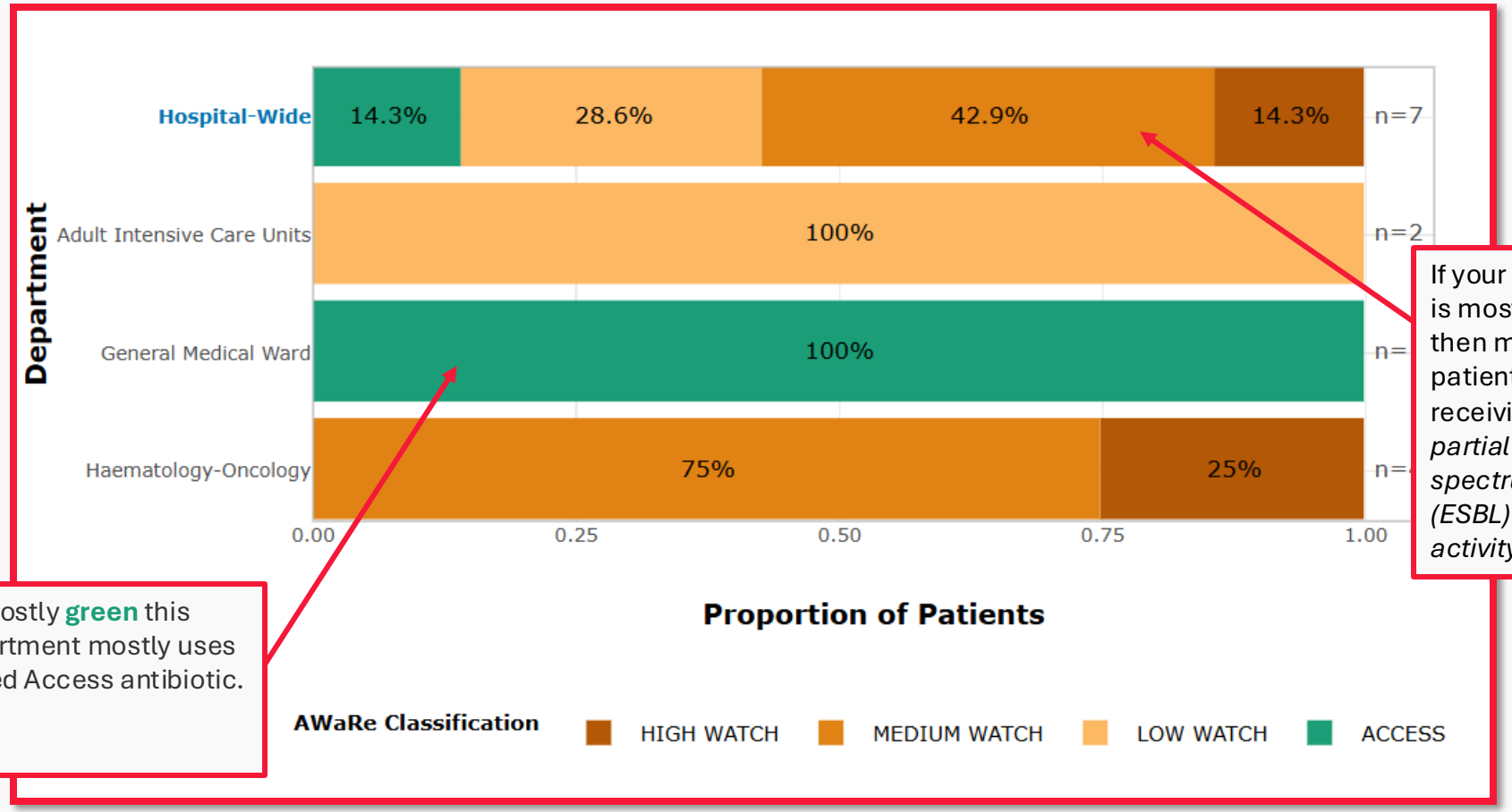

The **medium brown** bar indicates the proportion of patients receiving medium Watch antibiotics recommended by the AWaRe Book

The **lightest brown** bar indicates the proportion of patients receiving Low Watch antibiotics recommended by the AWaRe Book

The **darkest brown** bar indicates the proportion of patients receiving High Watch antibiotics recommended by the AWaRe Book

The **green bar** indicates the proportion of patients receiving Access antibiotics recommended by the AWaRe Book

# Intra-Abdominal Infection: Treatment by Watch Level Example




If your graph is mostly **green** this means that department mostly uses the recommended Access antibiotic.

If your hospital-wide graph is mostly **Medium Brown**, then majority of your patients are receiving *regimens with partial anti-extended-spectrum beta-lactamase (ESBL) or pseudomonal activity*