

Prospective audit of compliance with antimicrobial guidelines in Galway University Hospital (GUH) in Q1 2021 on the Red COVID and Green non-COVID streams

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Background: Antimicrobial resistance (AMR) is a growing problem accelerated by misuse and overuse of antimicrobial drugs that can contribute to increased mortality worldwide. The COVID-19 pandemic has put pressure on healthcare systems, and data suggests antimicrobials are being overprescribed in COVID patients despite low rates of bacterial or fungal co-infection. Antimicrobial stewardship teams (AST) are one of the main implementations in healthcare dedicated to optimising the use of antimicrobials thereby contributing to the reduction in AMR through education, antimicrobial prescribing guidelines and restricted antimicrobial policies

Aim: To examine and compare antimicrobial prescribing trends (prevalence, duration and indication documentation, appropriateness, IV to Oral switching and guideline compliance) on both COVID-positive (Red) and COVID-negative (Green) wards at Galway University Hospital (GUH) in the first quarter (Q1) of 2021.

Study design

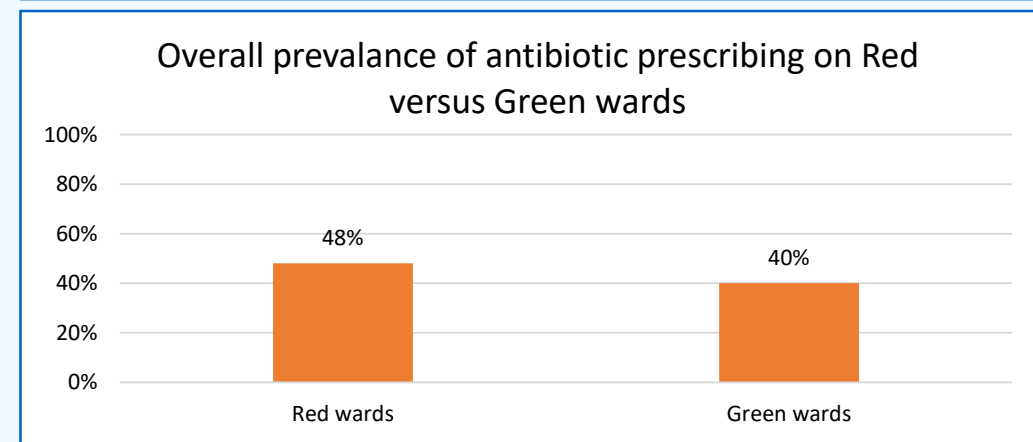
- Audit carried out over 11 weeks from January to April 2021
- GUH antimicrobial pharmacist team split into Red (COVID-positive and query COVID patients) and Green (COVID-negative patients)

- Ward rounds conducted weekly at 9am on red and green wards
- Red wards included patients under the care of geriatrics, infectious disease, and respiratory teams.
- ICU A&E, maternity, obstetrics and gynaecology, haematology, oncology and paediatrics excluded from the audit
- Topical agents, antivirals, anthelmintic agents and antiprotozoals also omitted.

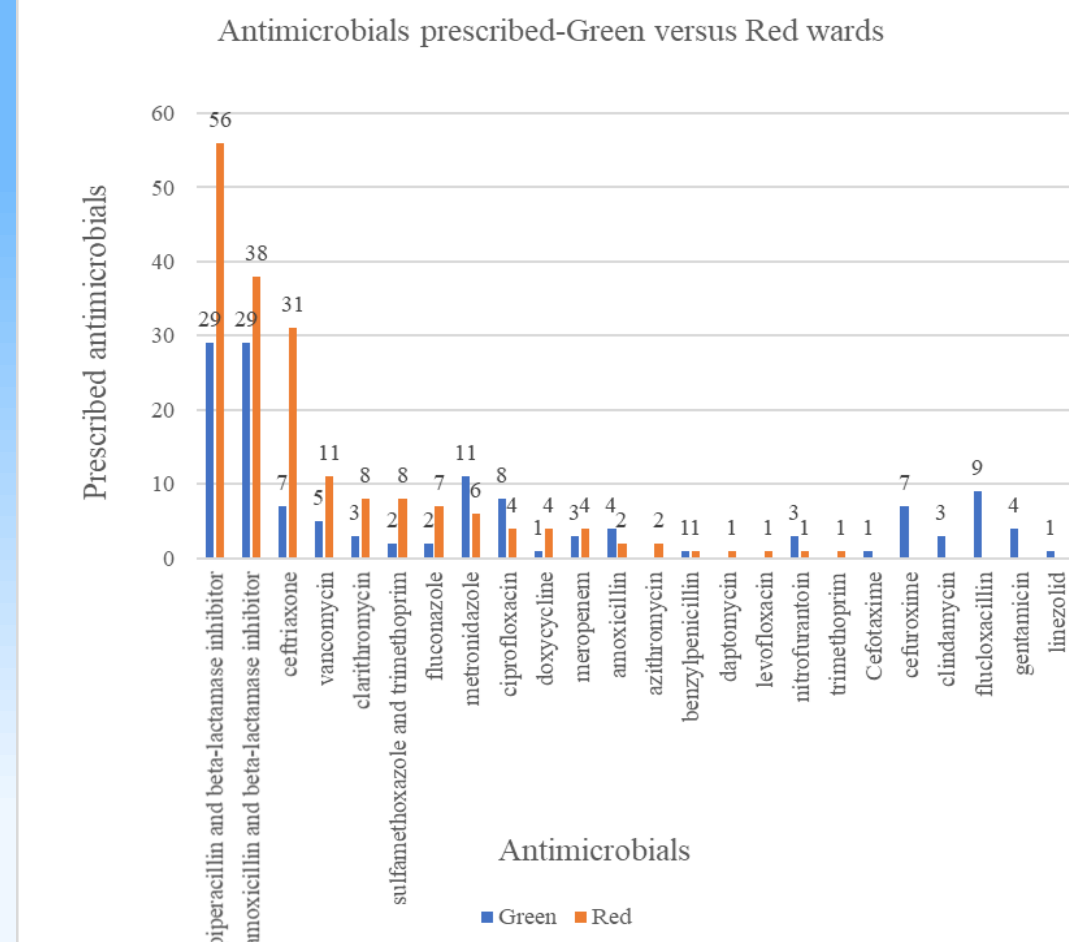
Ward	Speciality	Sub-speciality	Total number of inpatients on ward	Average % prevalence of antimicrobial use
Red	Medical	Geriatrics	50	51%
		Infectious Disease	82	36%
		Respiratory	76	50%
		Admissions red stream	113	51%
Green	Medical		166	40%
	Surgical		111	

Methods:

- ❑ 321 red stream patients and 277 green stream patients analysed.
- ❑ Patient data collection form used by Antimicrobial stewardship pharmacists on weekly AST ward rounds.
- ❑ Data fully anonymised and compliant with saolta audit guidance
- ❑ Microsoft excel sheet based off national point-prevalence survey
- ❑ Codes used for indication and diagnosis site
- ❑ Data audited against Galway antimicrobial prescribing guidelines (GAPP) and national PPS for comparison purposes



Results: Average prevalence of antimicrobial prescribing in Red wards was 48% compared to 40% in Green wards in Q1 2021. Piperacillin-Tazobactam, Co-amoxiclav and Ceftriaxone were the most prescribed antimicrobials in Red wards. 70% of COVID-positive patients on antimicrobials had a diagnosis of pneumonia. 99% of all antibiotic agents on Red wards were deemed in line with guidelines or had infectious disease or microbiology approval compared to 85% on Green wards. 100% of restricted agent use in Red wards was in line with local restriction policies compared to 50% on green wards.



Discussion: Results show that the majority of AST standards were upheld in GUH during the COVID pandemic in Q1 2021, including documentation of treatment indication and adherence to restrictive policies. However, antimicrobial prescribing was high compared to an average prevalence of 36.7% from the GUH point-prevalence survey 2020. Increased usage of Ceftriaxone continues for COVID-positive patients which was also seen in Q2 2020. Use of ceftriaxone was in line with interim GUH

guidance update for COVID associated pneumonia. ASTs continue to have an important role in ensuring appropriate antimicrobial treatment of COVID-positive patients while minimising overuse of antimicrobials as the pandemic progresses.

KPI	Red wards (COVID-positive and query COVID)	Green Wards (COVID-negative)	GUH PPS 2020 (*note this includes all areas and patient cohorts)
Prevalence	48%	40%	36.7%
Administration route	74% IV	67% IV	63% IV
Indication documented	96%	89%	94%
Agent as per guidelines	99%	85%	93%
Restricted agent compliant with policy	100%	50%	100%
Right dose/frequency of treatment	99%	97%	97.6%
Duration appropriate	87%	83%	96.4%
Duration documented	53%	53%	59%
IV suitable for PO switch	14%	24%	13%

Conclusions and future recommendations:

- Compliance to guidelines on red wards regarding documentation of indication, drug choice being in line with guidelines, right dose and frequency of treatment, and restrictive agents being prescribed in line with policy was high.
- Red COVID-positive wards had changes in prescribing trends that can be attributed to the COVID-19 pandemic, such as higher use of IV agents as well as continued high use of ceftriaxone.
- Green wards had lower compliance than red wards in a number of different parameters especially in adherence to restricted antimicrobials prescribing policy.
- ASTs will continue to have importance in the COVID-19 pandemic to ensure prescribing guidelines are continually being adhered to.
- Clinical audit tools will need to be updated for COVID-specific parameters if the pandemic continues.