

# Final Report: Real Approaches to the Study of Antimicrobials During the Pandemic (2020-2024)

**Authors:** [Rasha Abdelsalam Elshenawy<sup>1</sup>](#)

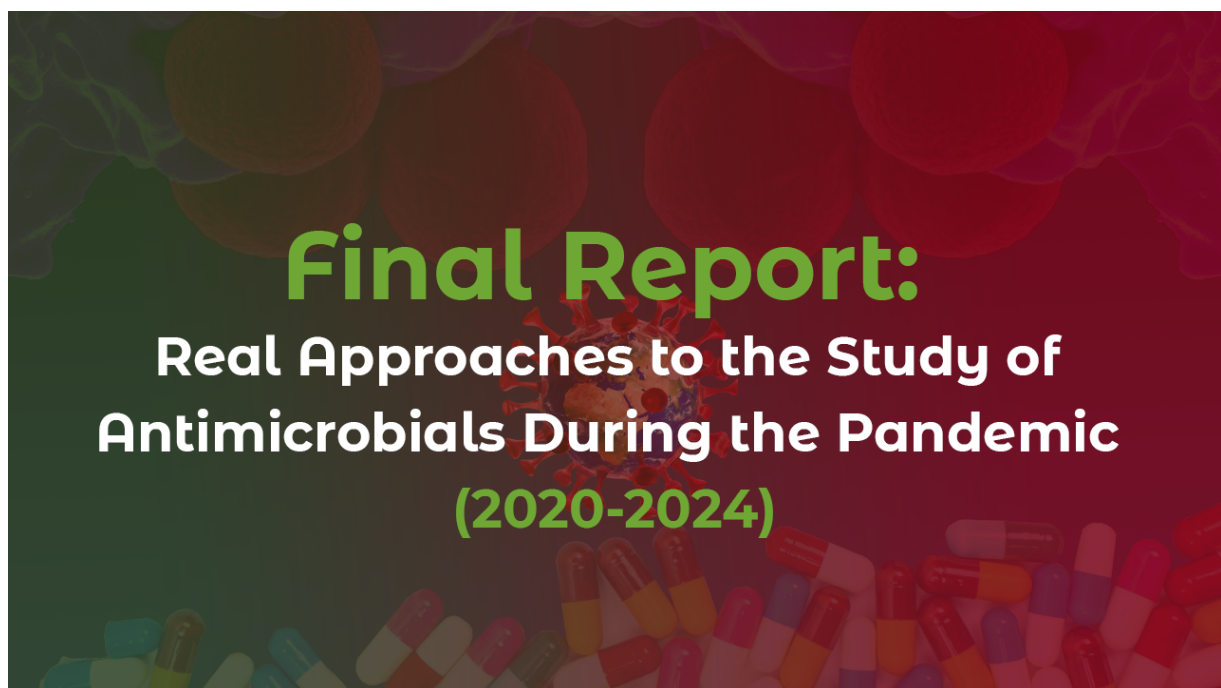
**Publication Type:** Real World Application

**Publication Date:** 13<sup>th</sup> May 2024

**Language:** EN

**License Type:** CC BY 4.0

**DOI:** [10.57874/5kvv-sf51](#)



Introducing the "**Final Report: Real-World Insights on Antimicrobial Use Study During the Pandemic (2020 - 2024).**"

This extensive report delves into four years of research, providing in-depth analysis of antimicrobial usage trends amidst the COVID-19 pandemic and offering crucial insights for shaping future public health approaches.

This report shedding light on various aspects of antimicrobial stewardship (AMS) and antibiotic safety before and during the COVID-19 pandemic.

The antimicrobial research study (2020-2024) aimed to tackle antimicrobial resistance (AMR) through comprehensive research and impactful dissemination.

---

## Research Phases:

**1. Systematic Literature Review (2020-2021): A thorough literature review was conducted to establish a foundational understanding of antimicrobial resistance and stewardship.**

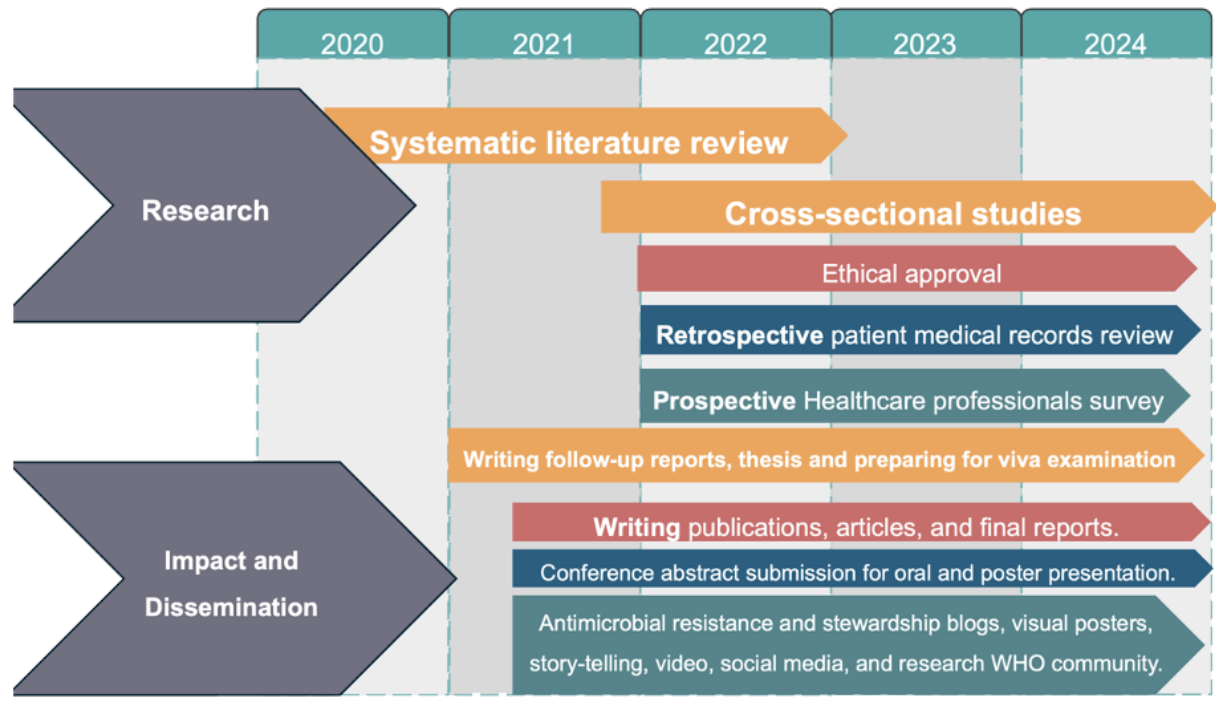
### **2. Cross-Sectional Studies (2021-2023):**

- **Ethical Approval (2021):** Ethical clearance was obtained for the study.
- **Retrospective Patient Medical Records Review (2021-2022):** Data was collected from historical patient records to identify trends in antimicrobial use.
- **Prospective Healthcare Professionals Survey (2021-2023):** Surveys were conducted to capture healthcare professionals' perspectives and practices regarding antimicrobial stewardship.

### **3. Writing and Preparing Reports (2022-2024):**

- Writing follow-up reports, thesis, and preparing for viva examination.
- Drafting and submitting publications, articles, and final reports.

## Summary of Antimicrobial Research Study (2020-2024)



## Impact and Dissemination:

**1. Conference Abstract Submission (2023-2024):** Findings were shared through abstracts submitted for oral and poster presentations.

**2. Engagement via Media (2023-2024):** Dissemination of results and stewardship strategies through blogs, posters, storytelling, videos, social media, and the WHO research community.

The study highlighted crucial shifts in antibiotic use during the COVID-19 pandemic and reinforced the need for effective antimicrobial stewardship strategies to combat AMR.

**The key findings from this research project, include:**

- One crucial aspect explored in the report is the implementation of AMS strategies before and during the pandemic. The [systematic review conducted](#) in acute care settings reveals key findings regarding the effectiveness of AMS interventions and measures. It emphasises the importance of selecting appropriate AMS strategies to combat the increasing threat of antimicrobial resistance (AMR), particularly in crisis situations like the COVID-19 pandemic. Additionally, the systematic review highlights the need for further empirical research to evaluate the efficacy of different strategies in different contexts, ensuring preparedness for future health crises.
  - Another focal point of the report is the evaluation of antibiotic safety practices, particularly the adherence to the '[Five Rights of Antibiotic Safety](#),' in an NHS Foundation Trust. The study highlights significant shifts in antibiotic prescribing patterns during the pandemic, with concerning increases in inappropriate dosing and administration routes. These findings emphasised the critical role of robust AMS practices in ensuring the appropriate use of antibiotics, safeguarding patient safety, and combating AMR.
  - Furthermore, the report delves into the classification of antibiotics using the [WHO AWaRe Classification](#), providing insights into antibiotic prescribing trends and shifts during the pandemic. The study reveals changes in antibiotic utilisation patterns, emphasising the urgency of implementing comprehensive AMS measures to address the evolving threat of AMR.
  - Lastly, the report discusses the impact of the COVID-19 pandemic on AMS implementation at an NHS Foundation Trust, in the [duration of prescribed antibiotics](#), and the UKHSA stewardship toolkit, [Start Smart Then Focus](#), and focused on [how pharmacists can contribute to effective antimicrobial reviews](#). It highlights the importance of sustained stewardship efforts to ensure adherence to guidelines and combat resistance both during and after the pandemic era.
- 

## Antimicrobial Stewardship Action Plan or Actionable Recommendation

1. Implement Tailored AMS Strategies: Utilise findings to develop targeted interventions addressing shifts in prescribing patterns, focusing on reducing inappropriate dosing and administration routes.
2. Enhance AMS Education and Training: Develop comprehensive training programmes for healthcare professionals on antibiotic safety practices, emphasising adherence to the 'Five Rights of Antibiotic Safety.'
3. Strengthen Antibiotic Review Processes: Implement systematic antibiotic review protocols, leveraging tools like the UKHSA stewardship toolkit to optimise antibiotic use and combat antimicrobial resistance.

4. Foster Interdisciplinary Collaboration: Encourage collaboration between healthcare professionals, including pharmacists, to enhance antimicrobial reviews and ensure adherence to guidelines.
5. Promote AMS Awareness: Raise awareness among healthcare staff and patients about the importance of antimicrobial stewardship in safeguarding public health and combating AMR.

**[Download the report for actionable recommendations to shape effective antimicrobial stewardship practices and safeguard patient health.](#)**



The "Final Report: Real-World Insights on Antimicrobial Use Study During the Pandemic (2020 - 2024)" provides crucial findings shaping antimicrobial stewardship. Key insights include shifts in prescribing patterns, emphasizing robust AMS strategies to combat antimicrobial resistance and safeguard patient health. Download now for actionable recommendations.

In conclusion, the report emphasises the critical importance of AMS and antibiotic safety practices in mitigating the threat of AMR, particularly in the context of the COVID-19 pandemic. It calls for continued research, collaboration, and implementation of evidence-based strategies to safeguard public health and save lives worldwide.

## Additional parts of this work hosted elsewhere

- **Download the Final Report of Real-World Applications from the Study of Antimicrobials (2020-2024).**

Discover the insights on antimicrobial use study during 2020-2024. Download the Final Report now for comprehensive real-world applications and vital findings.

[Link to Download the Final Report of Real-World Applications from the Study of Antimicrobials \(2020-2024\).](#)

- **Combating Antimicrobial Resistance: Insights from Antimicrobial Stewardship Research**

View the full report of the research project on investigating effective antimicrobial stewardship to fight the antimicrobial resistance (2020-2024).

[Link to Combating Antimicrobial Resistance: Insights from Antimicrobial Stewardship Research](#)

## Affiliations

1. University of Hertfordshire: Hatfield, GB

## References

Antimicrobial Stewardship School (2018). *Roadmap to Antimicrobial Stewardship Program*.

[online] FADIC. Available at: .

<https://fadic.net/courses/antimicrobial-stewardship-program-in-acute-care-setting/>

Antimicrobial Stewardship Implementation (2019). *Antimicrobial Stewardship Strategies*. [online] FADIC. Available at: [Accessed 10 May 2024].

<https://fadic.net/antimicrobial-stewardship-strategies/>

Abdelsalam Elshenawy, R., Umaru, N. and Aslanpour, Z. (2024a). Impact of COVID-19 on 'Start Smart, Then Focus' Antimicrobial Stewardship at One NHS Foundation Trust in England Prior to and during the Pandemic. *COVID*, [online] 4(1), pp.102–116. doi:

<https://doi.org/10.3390/covid4010010>

Elshenawy, R.A., Umaru, N. and Aslanpour, Z. (2024b). An Evaluation of the Five Rights Antibiotic Safety Before and During COVID-19 at an NHS Foundation Trust in the United Kingdom. *Journal of Global Antimicrobial Resistance*. [online] doi:

<https://doi.org/10.1016/j.jgar.2023.12.019>

Elshenawy, R.A., Umaru, N. and Aslanpour, Z. (2024c). Protocol to Investigate Factors Impacting Antimicrobial Stewardship (AMS) Implementation Before and During ... *www.protocols.io*.

[online] Available at: [Accessed 13 May 2024].

<https://www.protocols.io/view/protocol-to-investigate-factors-impacting-antimicrob-yxmvmenj9g3p/v1>

Frontiers Microbiology (2023). *WHO AWaRe classification for antibiotic stewardship: tackling antimicrobial resistance – a descriptive study from an English NHS Foundation Trust prior to and during the COVID-19 pandemic*. [online] Available at: .

<https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2023.1298858/full>

Nature, R.C. by S. (2022). *Antimicrobial Stewardship Implementation Before and During the COVID-19 Pandemic in Acute-care settings*. [online] Research Communities by Springer Nature.

Available at: .

<https://communities.springernature.com/posts/antimicrobial-stewardship-implementation-before-and-during-the-covid-19-pandemic-in-acute-care-settings>

Rasha Abdelsalam Elshenawy, Nkiruka Umaru, Amal Bandar Alharbi and Aslanpour, Z. (2023). Antimicrobial stewardship implementation before and during the COVID-19 pandemic in the acute care settings: a systematic review. *BMC Public Health*, 23(1). doi:

<https://doi.org/10.1186/s12889-023-15072-5>

Rasha Abdelsalam Elshenawy, Nkiruka Umaru and Aslanpour, Z. (2024c). Shorter and Longer Antibiotic Durations for Respiratory Infections: To Fight Antimicrobial Resistance—A Retrospective Cross-Sectional Study in a Secondary Care Setting in the UK. *Pharmaceuticals*, 17(3), pp.339–339. doi:

<https://doi.org/10.3390/ph17030339>

Rasha Abdelsalam Elshenawy, Nkiruka Umaru and Aslanpour, Z. (2024c). Novel survey distribution methods: impact on antimicrobial resistance research outcomes. *JAC-antimicrobial resistance*, [online] 6(2). doi:

<https://doi.org/10.1093/jacamr/dlae055>

## Parent publications

[Interpretation of Comparative Analysis on Antibiotic Stewardship Pre and During COVID-19 in UK Secondary Care](#)

## Funders

No sources of funding have been specified for this publication.

## Conflict of interest

This publication does not have any specified conflicts of interest.