

Empowering Nurses in Antimicrobial Stewardship

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Hosted by Francine Paquette

IFIC Scientific Program Committee



Influencing Antimicrobial Stewardship Behaviour in Nursing Teams

International Federation of Infection Control Teleclass: Empowering
Nurses in Antimicrobial Stewardship
24th July 2025

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Declaration of Interests

Talk only my opinion and not necessarily my employers' or affiliated institutions':

- UK Health Security Agency, UK
- Imperial College London (hon), UK
- University of Balearic Islands (hon), Spain
- Universitat Oberta de Catalunya, Spain

The Global Threat of AMR and the Untapped Nursing Potential

- Antimicrobial resistance (AMR) is a planetary threat, with millions of deaths linked to bacterial AMR annually.¹ The need for effective Antimicrobial Stewardship (AMS) programmes has never been more urgent.
- AMS encompasses coordinated actions to promote appropriate antibiotic use, optimising clinical outcomes whilst minimising adverse events, limiting resistance development, and reducing healthcare costs.²
- Despite their crucial position at the frontline of patient care, nurses remain the unsung heroes of AMS—their contributions often under recognised and underutilised.³



Nurses: Already at the Heart of AMS⁴

Administration Excellence

Ensuring antimicrobials are administered via the correct route, at the right time, and in the proper dosage—creating the foundation for effective treatment.

Vigilant Monitoring

Continuously observing patients for treatment effectiveness, adverse reactions, and changes in clinical condition—providing crucial data for treatment decisions.

Specimen Management

Collecting appropriate microbiology specimens and diligently following up on results—enabling targeted antimicrobial therapy.

Infection Prevention

Implementing proper infection prevention and control practices, including hand hygiene and invasive device management—reducing infection transmission.

"Good nursing is good antibiotic stewardship"⁵

Despite these inherent contributions to AMS goals through their daily activities, **nurses' roles have often been poorly defined⁶** or only marginally included in formal AMS guidelines, interventions, and programmes.

Navigating the Obstacles: Knowledge and Awareness Barriers



52% of nurses report being unfamiliar with the term "antimicrobial stewardship" despite performing AMS activities daily.⁷

Knowledge Gaps Hinder Engagement⁸

- Insufficient understanding of AMS concepts, antibiotic use, and AMR prevention principles
- Limited recognition of how routine nursing activities contribute to broader AMS goals
- Inadequate formal education on antimicrobial stewardship in undergraduate nursing programmes
- Few opportunities for nursing CPD specifically on AMS

These knowledge barriers prevent nurses from confidently engaging in antibiotic decision-making processes and from advocating for appropriate antimicrobial use.

Navigating the Obstacles: Interprofessional and Organisational Barriers

Interprofessional Tensions

- Non-inclusive antibiotic discussions exclude nursing perspectives⁹
- Hierarchical dynamics create hesitancy to question prescribing practices¹⁰
- Communication barriers between nurses and prescribers undermine collaboration¹¹
- Misaligned information sharing tools hinder effective interprofessional exchange

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Organisational Constraints

- High workload and staffing shortages limit time for AMS activities¹²
- Inadequate IT systems fail to support AMS-related documentation
- Absence of formal policies defining nurses' AMS roles creates uncertainty¹³
- Competing priorities diminish focus on antimicrobial stewardship

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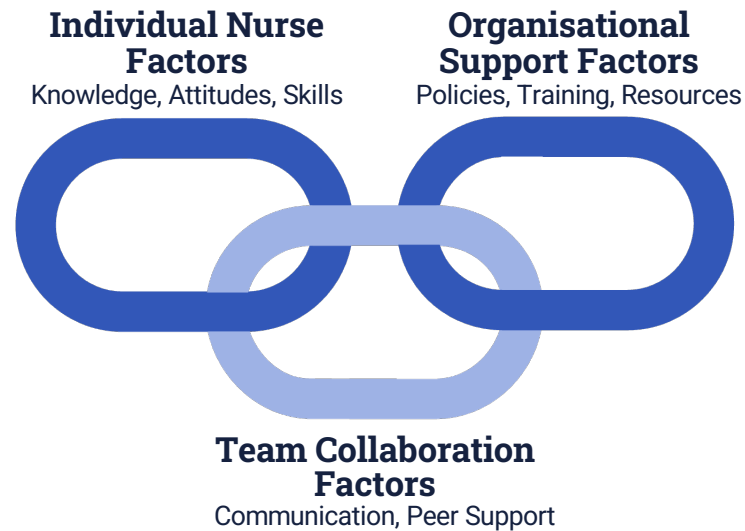
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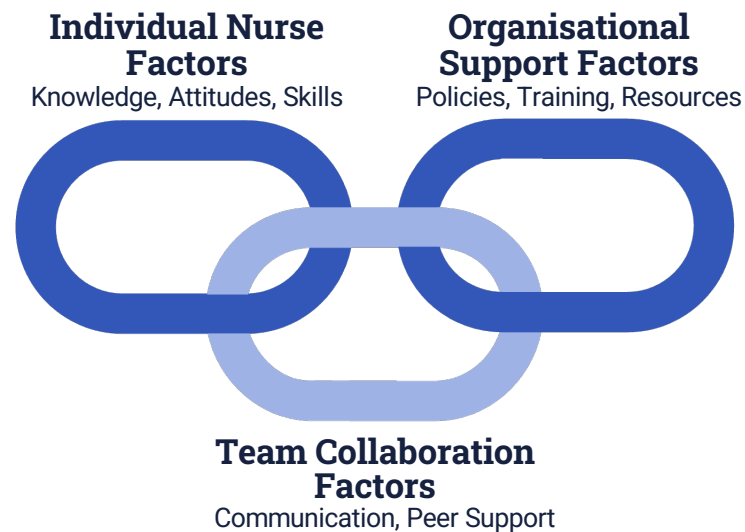
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These barriers collectively create **environments where nurses' contributions to AMS are neither supported nor prioritised**, despite their critical position in medication management and patient care.

A Framework for Action: Creating Supportive Contexts



A Framework for Action: Creating Supportive Contexts



Insights from Luo et al.'s (2025)¹⁴ realist review highlight two critical contextual factors that must be established before implementing AMS nursing interventions:

Multidisciplinary Team Collaboration

AMS programmes must prioritise interdisciplinary approaches where nurses are equal partners in decision-making processes, with clearly defined roles and responsibilities within antimicrobial management team.

Hospital Organisational Support

A purposeful culture change fostering psychological safety and collaborative practice is essential, where nurses feel empowered to question prescribing decisions and contribute their unique patient insights.

Empowering Nursing Teams: Key Strategies for Change

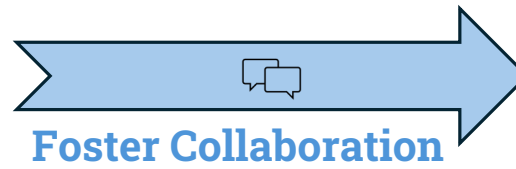


- Integrate AMS content in nursing curricula¹⁵
- Provide in-hospital training and e-learning modules
- Implement coaching-on-the-job and role modelling¹⁶
- Utilise patient care rounds for targeted discussions

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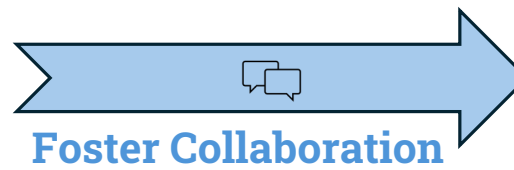


- Promote respectful team communication¹⁷
- Clarify roles within the AMS framework¹⁸
- Include nurses in AMS committees
- Empower nurse leadership in stewardship

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- Provide cognitive reminders and checklists
- Implement nurse-driven protocols¹⁹
- Create feedback mechanisms
- Measure and celebrate successes²⁰

Moving Forward: Fully Integrating Nurses and Nursing into AMS

Acknowledge & Formalise

Prioritise formal recognition and explicit integration of nurses into AMS policies, guidelines, and teams at all levels of healthcare governance.



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Invest & Support

Develop systems and resources that support AMS nursing, evaluating organisational determinants before expanding interventions.²¹



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Remember: Organisational determinants must be evaluated before starting or expanding any AMS nursing interventions, and AMS programmes must consider interdisciplinarity to succeed.



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Nurses tackling the antimicrobial resistance in a middle-income country: sharing experiences

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Member of CAMO-Net Brazil study group





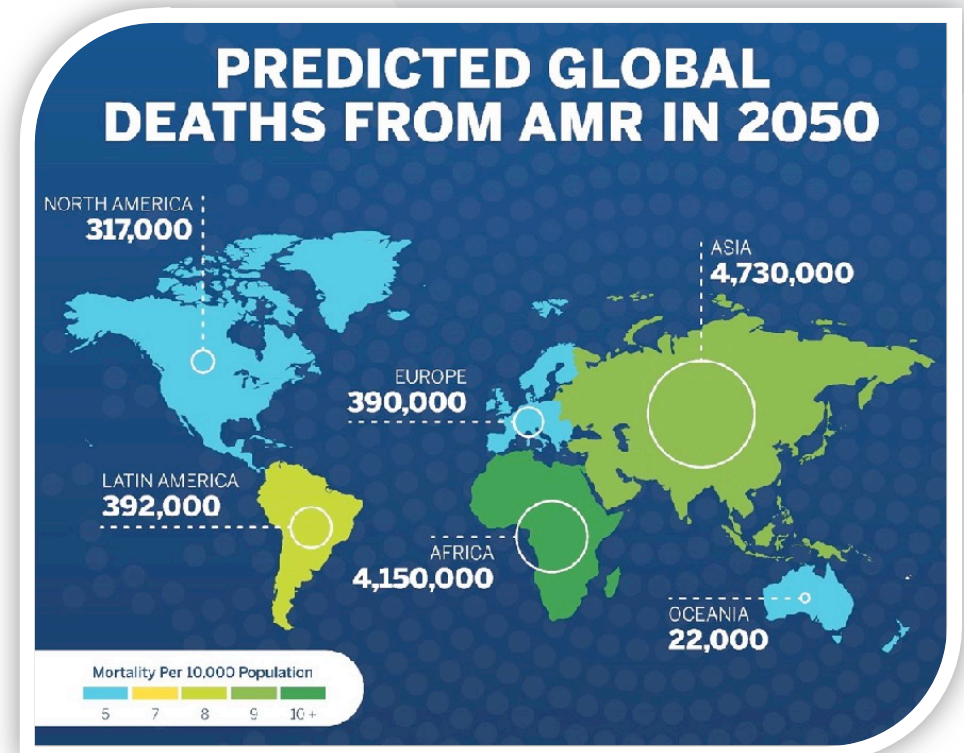
Declaration of interest

I have no conflict of interest related to this presentation

I would like to thank Viviane C de Lima Gusmão to support the preparation of this slide set
Also thanks to Rosely Moralez Figueiredo and the team of REBRAN coordination for the contributions.

- Nurses provide patient and family care, at all the levels of health care system
- LMIC: the impact of nurses' engagement to fight AMR resistance is still underestimated

Castro-Sánchez et al. Nurses: an underused, vital asset against drug-resistant infections. Lancet. (2022)

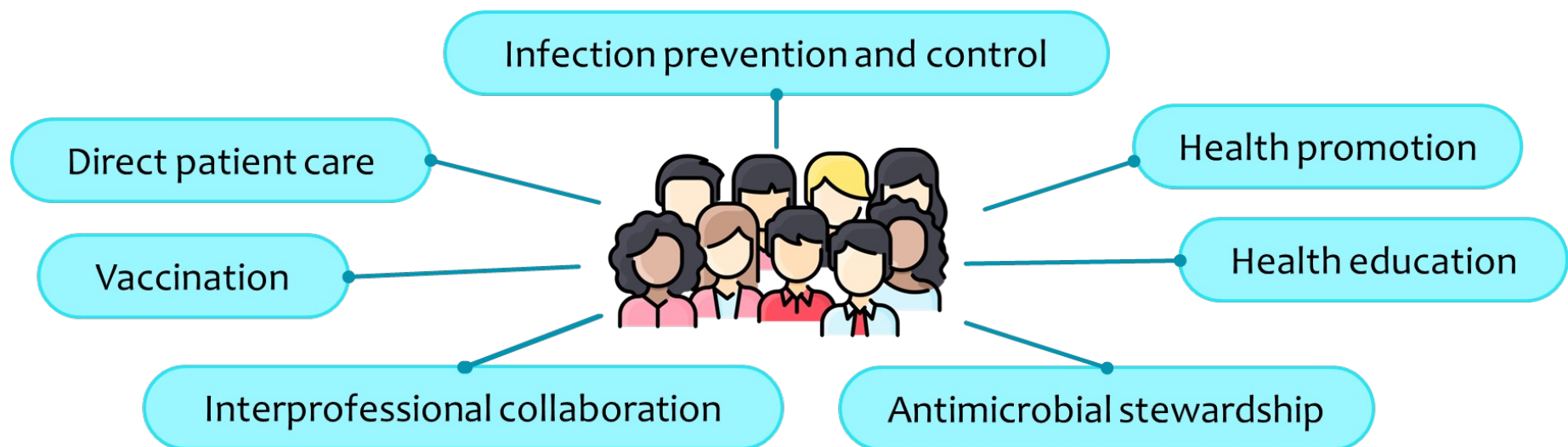


Source: <https://www.biomerieux.com/us/en.html>. Based on: Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis . Lancet. (2022)

Nurses' contribution to AMR response



Nurses: various functions pivotal to raising awareness of AMR and success of AMS programs:



Castro-Sánchez E et al. Nurses: an underused, vital asset against drug-resistant infections. *Lancet* 2022.
Courtenay M et al. Preparing nurses for COVID-19 response efforts through involvement in antimicrobial stewardship programmes. *Journal of Hospital Infection*, 2020

The case of Brazil: nursing in numbers

3 204 582 nursing staff



784 737 (24.5%) registered nurses

Source: Federal Nursing Council (COFEN), 2025



**>212 000 000
inhabitants**

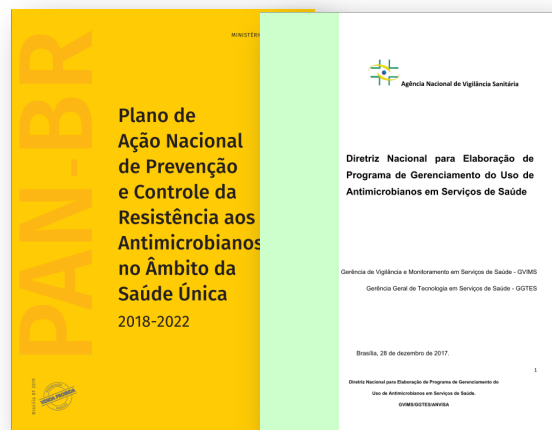


**>250 000
health care settings**

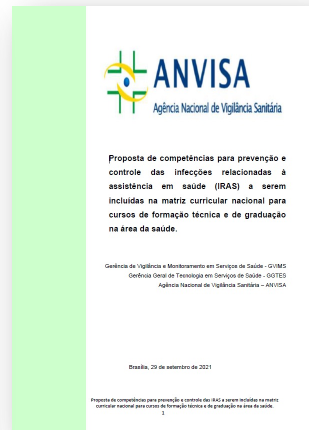


National Brazilian guidances

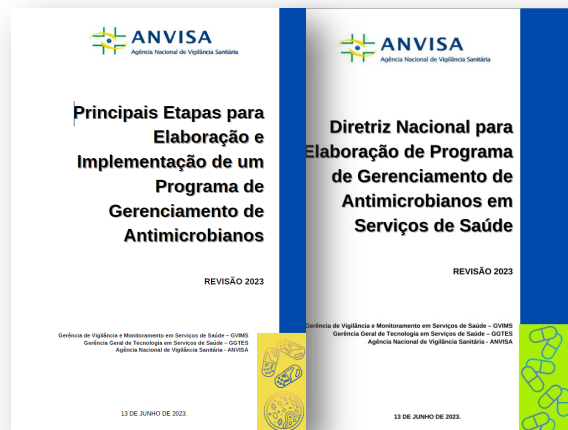
2017



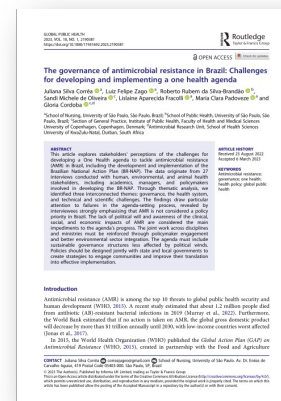
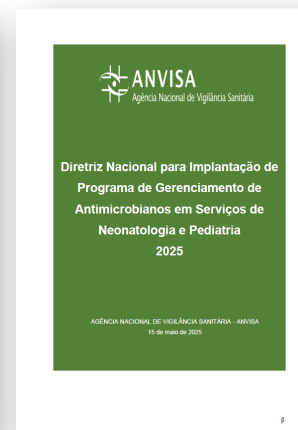
2021



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2025

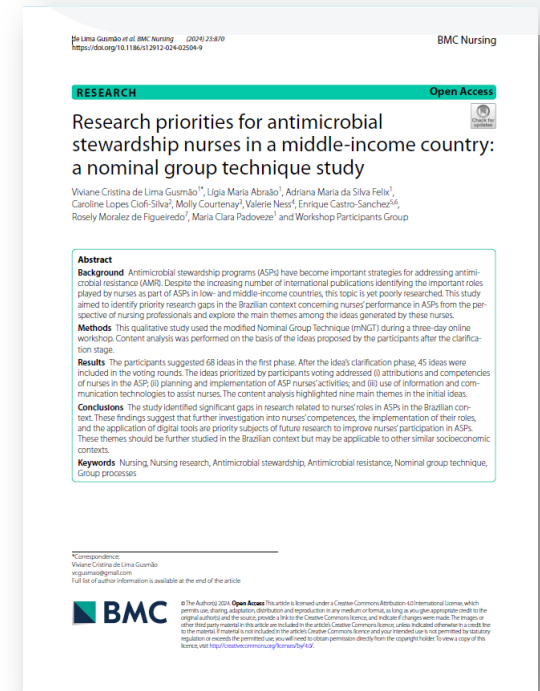


Corrêa JS, Zago LF, Da Silva-Brandão RR, de Oliveira SM, Fracoli LA, Padoveze MC, et al. The governance of antimicrobial resistance in Brazil: Challenges for developing and implementing a one health agenda. Glob Public Health (2023).

Identifying and prioritizing research gaps



- ▶ AMR require coordinated and multisectoral efforts
- ▶ Brazilian national action plan was created, but AMR is not considered a policy priority in Brazil.
- ▶ Nursing research priorities (2024):
 - ▶ attributions and competencies of nurses
 - ▶ planning and implementation of ASP nurses' activities;
 - ▶ use of information and communication technologies to assist nurses



Corrêa JS et al. Antimicrobial resistance in Brazil: an integrated research agenda. Rev Esc Enferm USP. (2022)
Corrêa JS et al. The governance of antimicrobial resistance in Brazil: Challenges for developing and implementing a one health agenda. Glob Public Health. (2023)
de Lima Gusmão VC, et al. Research priorities for AMS nurses in a middle-income country: a nominal group technique study. BMC Nurs. 2024

In primary health care

- AMS programs are not yet established
- Brazil antimicrobial pharmacy dispensing control relatively recent
- The prescription of antimicrobials is highly physician-centered
- Communication during the consultation is mainly characterized by a lack of shared knowledge and trust in the doctor-patient relationship
- Home care givers are relevant stakeholders

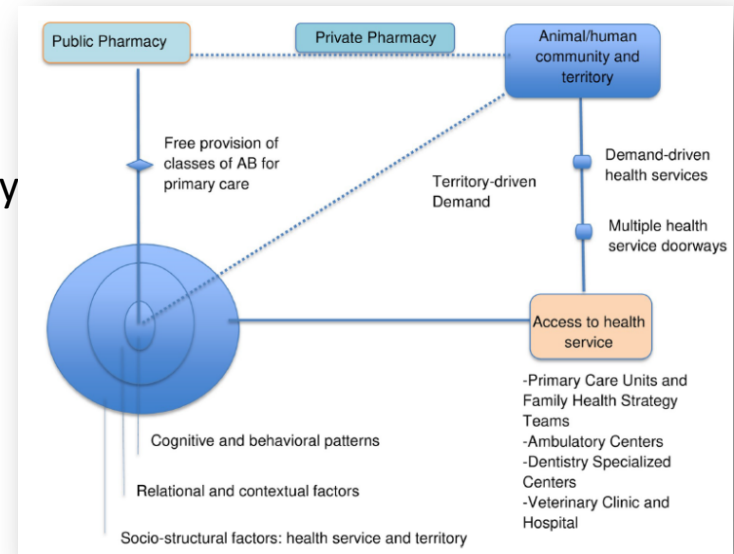


Figure: In-locus overlapping factors informing prescription and dispensing antimicrobials in primary care.

Zago LF et al. Experiences of antibiotic use among Brazilian healthcare users: An exploratory study. Health Expect (2023)
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 Levin AS et al. Launch of the São Paulo Wellcome Trust-funded multidisciplinary research program on optimising antimicrobial use in highly populated urban environments. Lancet Reg Health Am.(2023)
 Britto-Costa LF et al. Understanding context to plan antimicrobial stewardship: A mixed-method study in a Brazilian urban primary care. Am J Infect Control. (2025)

In primary health care

- » Nurses don't know about AMS program
- » They not always recognize their contribution to fight AMR through:
 - » Patient and care givers education to increase literacy about AMR
 - » Nursing pre-natal care



Inpatients settings

- ▶ **Barriers for timely administration of antimicrobials**
 - ▶ Online countrywide survey with 158 participants:
 - ▶ Many hospitals does not have protocols for antimicrobial administration
 - ▶ Nurses work overload and obstruction of venous access are barriers for timely administration of antimicrobials
- ▶ **Opportunities to convert from intravenous to oral therapy**
 - ▶ Online survey with 167 participants:
 - ▶ Lack of medication with adequate oral bioavailability or not available in the institution, lack of engagement from prescribers
- ▶ **In long-term care facilities**
 - ▶ Online countrywide survey with 35 settings participants
 - ▶ Full time doctor in less than 50%
 - ▶ Nurses' awareness to early identification of infection

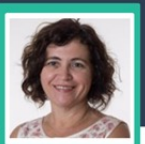
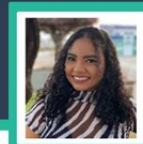
Education on AMS

- Development of online free courses to increase nurses education on AMS programs

<https://cursos.poca.ufscar.br/>

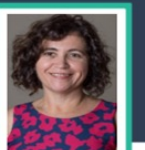
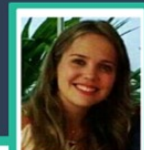
Programa de Gerenciamento de Antimicrobianos: formação para Enfermeiros

Profa. Daniela Sanches Couto
Profa. Rosely Moralez de Figueiredo



Estratégia educativa para o ensino sobre o Programa de Gestão de Antimicrobianos

Profa. Lívia Scalon da Costa Perinoti
Profa. Rosely Moralez de Figueiredo



Perinoti LCS da C, Couto DS, Flausino TG do C, Silva DM da, Félix AM da S, Figueiredo RM de. Antimicrobial stewardship for nursing graduates: development and evaluation of educational technology. Texto Context - Enferm [Internet]. 2024;33:1–12.

Couto DS, Flausi TG do C, Abraão LM, de Figueiredo RM. Estratégia educativa para atuação do enfermeiro no programa de gerenciamento de antimicrobianos para enfermeiros: elaboração e validação de material. Brazilian J Infect Dis [Internet]. 2024 Oct;28:103884.



Brazilian Nurses Network Tackling the Antimicrobial Resistance (REBRAN)



2022



Brazilian Nurses Network Tackling the Antimicrobial Resistance (REBRAN)



Aim:

to bring together nurses with the interest in discussing and developing effective actions to tackle AMR, and increase nurses engagement in antimicrobial stewardship.



Brazilian Nurses Network Tackling the Antimicrobial Resistance (REBRAN)

- » Free membership 540 participants
- » Whats app group:
 - Diffusion of relevant papers / guidelines / related scientific events
- » Regular scientific meetings:
 - On line lectures and informal lives (16 meetings and 7 lives)
 - Face to face meetings during bi-annual Brazilian Congress of IPC
- » Development of research based on the priorities identified
- » Development of educational material



Brazilian Nurses Network Tackling the Antimicrobial Resistance (REBRAN)

- » Active and planned use of social media:
 - Awareness and educational posts
 - Thematic posts
- » Diffusion of AMR related news
- » Strong correlation ($r=0.98$) between the number of media followers and REBRAN's members



Grant number 408322/221-7 from National Council for Scientific and Technological Development support studies on the achievements of REBRAN
 Abraão LM et al. Can social media be an effective strategy for disseminating knowledge about antimicrobial resistance (AMR)?. Abstract submitted to ICPIG, Geneva, to be presented September 2025



Brazilian Nurses Network Tackling the Antimicrobial Resistance (REBRAN): publication time line



2022



2024



In the pipeline
for 2025:

Antimicrobial drug-drug / food
interactions and pharmaceutical
incompatibilities





Conclusion

We demonstrated Brazil as a study case for the potential of nurses engagement to tackle antimicrobial resistance in a middle-income country.

The creation of REBRAN has promoted the diffusion of knowledge and strengthening of collaboration for research.

Thank you



@rebran2022



AUGUST

- 7 ... How Do Perceptions of Hygiene and Cleanliness Influence Infection Prevention Behaviours in Our Homes and Everyday Lives, and in Healthcare Settings?
With Dr. Sally Bloomfield, UK
- 12 ... Barriers to Implementing IPC Programs in Low Resource Settings and How to Overcome Them
With Prof. Shaheen Mehtar, South Africa
- 20 ... Insertion and Maintenance of Bundles for Peripheral IVs
Australasian Teleclass With Dr Gillian Ray-Barruel, Australia

SEPTEMBER

- 18 ... Resource Sustainability and Challenges in the Supply Chain: Implications for Infection Prevention
With Prof. Ruth Carrico, US
- 23 ... Patience, Patients and Persistent Antimicrobial Resistance
Afro-European Teleclass With Colm Dunne, UK
- 25 ... Development of Food Safety Training Materials Through Memory Anchors and Elevated Learning
With Prof. Keith Warriner, Canada

OCTOBER

- 15 ... What Can Knowing Something About the Evolution of *Clostridium difficile* Teach Us About IPAC?
Australasian Teleclass With Prof. Thomas Riley, Australia
- 20 ... Special Lecture for International Clean Hospitals Day
With Prof. Didier Pittet (and friends), Switzerland
- 21 ... Discussion: Are Current Healthcare Cleaning Guidelines Sufficient to Fight Antimicrobial Resistance Spread?
With Dr. Jon Otter, UK & Dr. Curtis Donskey, US
- 28 ... Research Priorities to Strengthen Environmental Cleaning in Healthcare Facilities: the CLEAN Group Consensus
Afro-European Teleclass With Dr. Giorgia Gon, UK

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