

# READ-ing antimicrobial stewardship in the Caribbean: a tri-nation document review

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## ABSTRACT

**Objective.** To explore the antimicrobial stewardship policy landscape in three English-speaking Caribbean countries (Barbados, Guyana, and Saint Lucia) and examine the key enablers and challenges to the design and implementation of formal antimicrobial stewardship programs.

**Methods.** A document analysis that searched for existing policy, communications, and contributions on antimicrobial stewardship from these three countries, adapting the READ (Ready materials; Extract data; Analyze data; Distill findings) approach, a systematic procedure for health policy document review.

**Results.** The search strategy identified 726 initial records. Of those, 15 (2%) met the inclusion criteria. The analysis included official policy documents ( $n = 3$ ), scholarly works/reviews ( $n = 3$ ), advocacy documents ( $n = 2$ ), news articles ( $n = 4$ ), and confidential reports ( $n = 3$ ) from the three countries.

**Conclusions.** Critical matters such as cross-programmatic coordination, the significance of individual action, and the need for bidirectional knowledge discourse are prominent in optimizing antimicrobial stewardship adaptation in these countries. CARICOM regional coordination has positively impacted the integration of infection prevention and control with antimicrobial stewardship across this knowledge network.

## Keywords

Review; antimicrobial stewardship; drug resistance, microbial; Caribbean region.

Antimicrobial resistance (AMR) is the ability of microorganisms to resist the effects of antibiotics adaptively. It is a leading cause of death globally, especially in low- and middle-income countries and the most vulnerable populations (1, 2). The rapidly growing mortality rate associated with AMR is considered one of the top ten threats to humanity. Researchers estimated bacterial AMR-associated mortality in 2019 to be 4.95 million worldwide, with direct mortality reported as 1.27 million (1). These numbers far exceed estimates by O'Neill et al. in 2014, who projected 700 000 deaths per year (3). Alarmingly, their predicted estimate of 10 million deaths attributable to AMR per year in 2050 steadily approaches reality despite interventions (3). In the Caribbean, expanding AMR surveillance has confirmed that there is regional spread of diverse and highly virulent pathogens resistant to commonly used antibiotics (4). Meanwhile, the rate of development of new medications to tackle this upsurge is insufficient (5).

AMR burden is not just reflected in the number of deaths; its pernicious impact on patient morbidity and the overall socioeconomic landscape is expanding (1, 2). Therefore, without deliberate, coordinated, and targeted interventions, poorer outcomes are expected in not only human but also animal and environmental health sectors (6).

Antimicrobial stewardship programs (ASP) are an effective organizational tool integral to healthcare systems that monitor and improve antibiotic use, thereby prolonging the effectiveness and relevance of these medicines (7). The core principle of antimicrobial stewardship (AMS) is to demonstrate a solid commitment to the judicious use of antimicrobials by creating policies and evidence-based guidelines that control antibiotic prescribing and improve antibiotic selection (8). In human health, by educating both clinical staff and patients on the proper use of antimicrobials and collaborating with other sectors to analogously promote AMS, health systems may impact

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the overprescription of antibiotics and minimize the emergence and spread of AMR (9).

There is, however, a need to demonstrate a causal relationship between public health programs such as ASPs and health outcomes in health systems research to identify pathways to successful program implementation and progression (10). The World Health Organization (WHO) Practical Toolkit recommends that, before developing an action plan for AMS, a situation analysis should be carried out to ensure facilities build on existing infrastructure in ASP design (7). Situation analysis marries a range of research methods, including using standardized tools to obtain a baseline policy assessment and underline existing opportunities (11).

Document analysis is a well-defined qualitative research method that involves the systematic review of documents on the subject of interest. The process requires the selection of relevant documents, assessment and evaluation of the documents, and extraction of the relevant data needed to promote an idea or hypothesis (10). It is an effective tool in health care policy-making and research (10). The information that is gathered could then be used to add justification or give meaning to an idea (10, 12).

The Caribbean Community (CARICOM) represents a complex regional health systems partnership, in which overlapping political, sociocultural, and economic elements may underscore fundamental interactions influencing health outcomes (13). The three English-speaking Caribbean countries we assess in this document analysis (Barbados, Guyana, and Saint Lucia) emerged as early adopters of the WHO Global Action Plan (GAP) on AMR, drafting national action plans (NAPs) between 2017 and 2019. As of 2022, the majority of the CARICOM country NAPs remain in draft with limited progression toward implementation of stewardship activities. This document review, therefore, aims to explore the antimicrobial stewardship policy landscape in three English-speaking Caribbean countries (Barbados, Guyana, and Saint Lucia) and examine the key enablers and challenges to the design and implementation of formal antimicrobial stewardship programs.

## MATERIALS AND METHODS

### Search strategy

We first conducted a systematic search of a range of documents produced by policymakers, providing context to AMS policy strategies or aiming to generate discourse on AMS among users in these settings. Using the READ Approach to health policy review (10), one author (TR) searched for formal documents, informal or working policy documents, gray literature, and media communications from key international and regional sources, and from the hospital, district, and national levels, as described in the following section. While the READ Approach lists a range of types of documents that can be consulted in studies of health policy (10), we were particularly interested in accessing working and implementation documents and guidelines.

To improve the discovery of relevant documents for inclusion, we used the online international and regional databases that specifically access government archives and regional health sciences information: MEDLINE®/PubMedCentral – U.S. National Library of Medicine, Bethesda, MD, United States of America;

SciELO – Scientific Electronic Library Online, Latin American and Caribbean Center on Health Sciences Information, São Paulo, Brazil; MedCarib – University of the West Indies, Mona Library, MED Carib Regional Coordinating Centre, this database contains information on all aspects of health and medicine relating to the English-speaking Caribbean and Suriname; Virtual Health Library (VHL) Regional Portal – VHL accesses national databases of scientific publications in Argentina, Cuba, and Jamaica; PAHO IRIS – the Pan American Health Organization’s (PAHO) Institutional Repository for Information Sharing (IRIS); LILACS – Latin American and Caribbean Center on Health Sciences Information, PAHO/WHO, São Paulo, Brazil.

Author TR supplemented the database search with a search for titles from the Oxford University Library online resource (Search Oxford Libraries Online; SOLO) and Google Scholar. The search strategy used a combination of first- and second-string terms summarized in Table 1. In addition, we directly contacted regional stakeholders from relevant institutional and government sectors (infection prevention and control [IPC]; water, sanitation, and hygiene [WASH]; national public health institutes; and clinical faculties) via email, as publicly available or referred by PAHO, The University of the West Indies, or government sources in this process – a “snowballing technique” (14).

Table 2 shows the inclusion and exclusion criteria employed. Author TR assessed the records for duplicates, which were removed. Then, each document’s title and abstract were screened and those ineligible were omitted. Authors TR, PR-P, and NEO reviewed the selected documents in full for a final decision on eligibility (Figure 1). The complete search result lists from MEDLINE and VHL are available upon request.

### Data extraction

The data were collated in a Microsoft Excel spreadsheet outlining the following variables from all documents meeting the inclusion criteria: title; type of document; country/region of origin; date of publication; authors; intended audience; brief summary, including motivation and impact.

Using NVivo, we developed a coding guide for the thematic content analysis drawing on deductive (linked to a priori themes) and inductive (generated from the data) approaches, through line-by-line reading to identify codes arising from AMS content. We characterized codes under themes including key structure, process, and outcome measures in the WHO Practical Toolkit for AMS programs in low- and middle-income countries (LMICs) (7) and the Donabedian Framework (15), as applicable. Although presented as a linear, step-by-step procedure, the research analysis was an iterative and reflexive process (16).

We then sorted the segments of text, and through data retrieval, organized the codes or clustered codes for each project document across the three country data sets (16). The analysis served to frame the current composition of AMS activities in these three countries, provide a general description of implementation status, and highlight imperatives such as enablers and challenges in AMS policy.

## RESULTS

The search strategy identified 719 relevant records, and 7 were added manually for a total of 726 initial records. After

**TABLE 1. Search strategy used for each database**

Database	Search terms
MEDLINE®/PubMedCentral	<b>TITLE/ABSTRACT:</b> First-string: “antibio*” OR “antimicro*” OR “drug” AND “resis*” AND “steward” OR “safe” OR “responsible” AND “policy” OR “plan” OR “guide*” AND <b>ALL FIELDS:</b> “Country Name”
The Virtual Health Library Regional Portal, including LILACS and MEDCarib	<b>ALL FIELDS:</b> “antimicrobial” or “drug” or “antibact*” or “antibio*” and “resistance” or “resis*” or “amr” and “steward*” or “action” or “policy” or “guide*” and <b>ALL FIELDS:</b> “Country Name”
SciELO	<b>ALL FIELDS:</b> “antimicrobial” or “drug” or “antibact*” or “antibio*” and “resistance” or “resis*” or “amr” and “steward*” or “action” or “policy” or “guide*” and <b>ALL FIELDS:</b> “Country Name”
Google/SOLO	<b>ALL FIELDS:</b> “antimicrobial resistance stewardship surveillance” AND “Country Name”; “_Specific Titles_”
PAHO IRIS	<b>ALL FIELDS:</b> “antimicrobial resistance stewardship surveillance” AND “Country Name”

Source: Prepared by the authors.

**TABLE 2. Study inclusion and exclusion criteria**

Inclusion	Exclusion
The document was selected if it: 1. Included relevant country name within the title or abstract of the document. 2. Was dated between 2010 and April 2021. 3. Was a formal health policy document on antimicrobial stewardship from credible sources such as government archives.	The document was excluded if it: 1. Was published before 2010. 2. Was discovered from an unreliable source (e.g., blogs, forums, or personal social media accounts). 3. Showed up on the search but was a bad link or inaccessible through any of the avenues previously described. 4. Referred to drugs other than antimicrobials. 5. Was developed for a setting outside of the countries within this review.

Source: Prepared by the authors.

duplicates were removed and irrelevant title/abstracts were excluded, the remaining 34 documents were screened in full for AMS content eligibility. Of those, 15 (2% of the total records) met the inclusion criteria. Official policy documents accounted for 20% (n = 3) of the records, scholarly works/reviews accounted for 20% (n = 3), advocacy documents 13% (n = 2), news articles 27% (n = 4), and confidential reports 20% (n = 3).

Documents supporting public communication play an important role in underlining political priorities as the language of AMS evolves in this region. The independent media, reporting to the public, facilitated the introduction of the WHO-GAP-aligned NAPs for two countries by high-ranking officials in the Ministry of Health and Wellness (Barbados), Ministry of Public Health (Guyana), and the livestock and agricultural industry, signaling early high-level political buy-in, multisectoral involvement in AMR strategies, and country compliance with international standards (Table 3). Similarly, newsletters

and articles published through international organizations (PAHO/WHO) reinforced international commitment to the region and encouraged regional cooperation to increase competency in AMS (Table 4). This message is contextualized using local stewardship success stories, highlighting regional “AMS champions,” and providing direct country feedback for the NAP, identifying priority actions for AMS.

Within the formal policy documents (Table 5), all of which are NAPs, each country attempts to align policy with the WHO-GAP. In some cases, the NAPs remain in the draft phase pending situation analysis, integration of WHO recommendations following institutional point-prevalence surveys (PPS), multistakeholder contribution, and clear sustainable funding streams. The One Health approach to policy development outlines a multistakeholder consensus, encouraging collaboration between the animal, human, and environmental health sectors in AMR strategy design. Nevertheless, AMS as a priority area for human health and ASP implementation strategies are not explicitly outlined. For instance, there was no specific programmatic AMS content except to state that ASPs will be established by specific dates, for which no further updates have been accessed. At the same time, confidential reports from conduct of WHO hospital antibiotic use point prevalence surveys (PPS) and Tripartite AMR Country Self-Assessment Survey (TrACSS) (Guyana) highlight the lack of formal stewardship programs at an institutional and national level, challenging policymakers to design and implement ASPs through national coordination.

Finally, local research and publication of scholarly work (Table 6) contribute to stewardship discourse, shaping targeted AMS policy, and achieving major quality improvement milestones. In this way, a WHO PPS and one-year prevalence study in Barbados predated and informed the establishment of an institutional ASP and the national adaptation of the WHO action plan. Scholarly work from contributors at The University of the West Indies, Cave Hill, published in late 2020, underlined a critical need to focus on AMR priorities during the COVID-19 pandemic (8, 30, 31).

These works (Table 6) amplify the message of AMS, advocating for stronger clinical AMS teams, providing a description of stewardship as a concept in clinical practice requiring core competency development. Local advocacy for enhanced pre-service training (preclinical) and involvement of university/health professional training programs in national stewardship activities also emerges within scholarly sources.

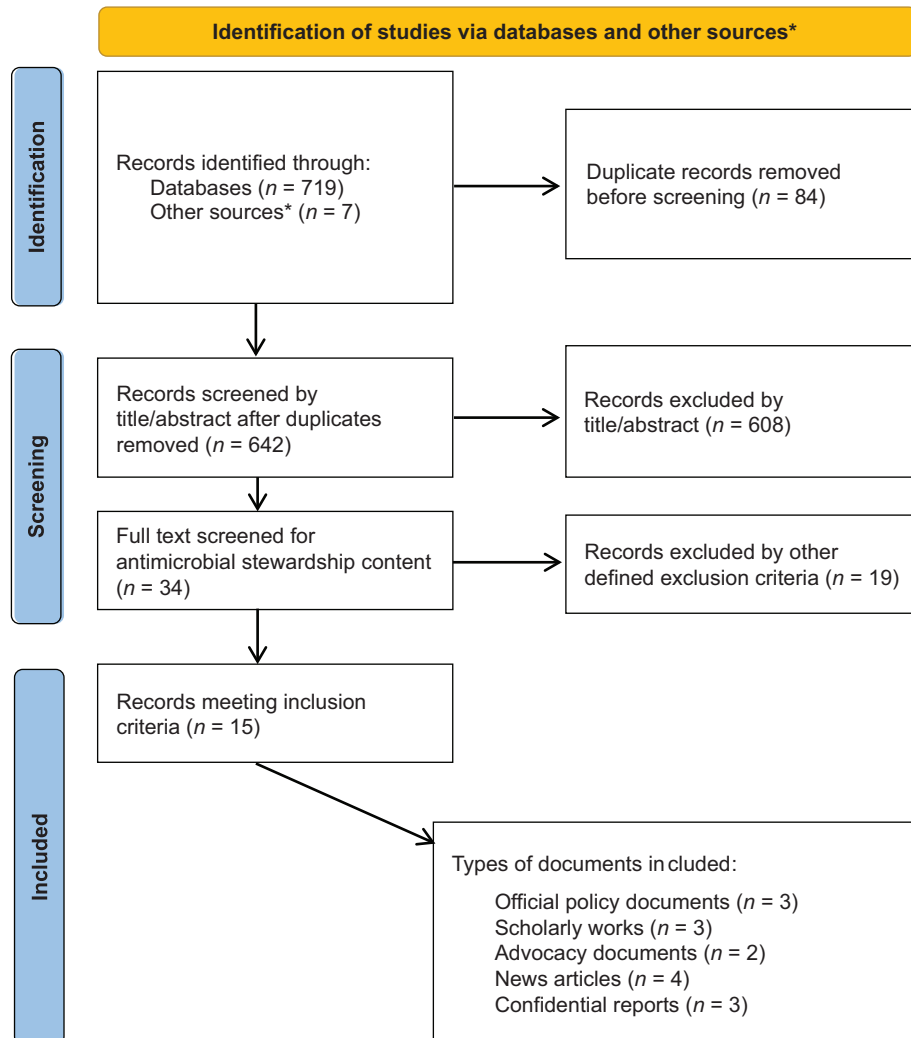
## DISCUSSION

### AMS policy process

Taken together, the document content creates a narrative of salient events and actors within and between these three countries, highlighting influences and barriers to policy strategy development and implementation. Starting with the carbapenemase-resistant *Klebsiella pneumoniae* (CRKP) outbreak investigation in Barbados, referenced in 4 of the 15 documents found (1 official policy, 1 newsletter, 1 scholarly work, 1 news report), we now outline what has emerged as a snapshot of the policy landscape between these three CARICOM states.

In Barbados, 2012, the infectious disease specialist at the national referral hospital was alerted by laboratory services of a CRKP outbreak (29, 32). The infectious disease specialist

FIGURE 1. Search strategy flowchart



**Note:** \*Other sources: PAHO/government internal database or confidential record obtained with permissions.  
**Source:** Prepared by the authors.

contacted the PAHO AMR team, who coinvestigated the outbreak using the WHO PPS, adapted as an IPC evaluative tool. The investigation was followed by a one-year CRKP prevalence surveillance study in 2014, which identified significant CRKP risk factors associated with infection/colonization, such as using specific antimicrobials, including fluoroquinolones and piperacillin/tazobactam (29). The investigation informed targeted institutional ASP development and implementation in this institution by 2015 (comprising an AMS committee, antibiotic use guidelines, and regular antibiogram publication) (33). IPC leadership in Barbados furthermore committed to establishing a regional IPC network to combat AMR in 2014 (18).

By 2015, the WHO-GAP was introduced globally, urging that “all Member States would have, by 2017, a national action plan (NAP) aligned with the GAP objectives” (20). The Barbados “success story” was shared at a regional conference for IPC leaders in 2016, and the country’s NAP was drafted in May 2017. The results of the Barbados WHO PPS and one-year point prevalence survey were published, coauthored by the Head of

Infectious Diseases and PAHO AMR Director the same month. By January 2018, Guyana and Saint Lucia had drafted their NAPs, and the WHO PPS protocol was published, streamlining its conduct globally. By July 2018, both countries also carried out WHO PPS on antibiotic use in hospitals.

In summary, in Barbados, the WHO PPS adapted as an IPC investigative tool led to the implementation of an institutional ASP that informed the NAP, influencing the PAHO AMR team’s advocacy activities on AMS in the subregion. Of note, although conducted in 2012, the results of the CRKP outbreak were published in 2017; therefore, no documents specifically on AMS were discovered using the search strategy between 2010 and 2017.

### Bidirectional pathway – actions of an individual

The actions of an individual appear to have driven targeted AMS strategies “from the bottom up,” positioning actors in Barbados as early innovators in the region for PPS and stewardship policy design and implementation. The 2019 WHO Practical

**TABLE 3. Communication for public consumption: independent news media**

Title	Date published	Type of document	Authors	Document summary	Audience
National Action Plan on Antimicrobial Resistance drafted, stakeholders consulted (17)	27 Jun 2017	News article	Department of Public Information (DPI), Guyana. Article by Delicia Haynes.	This news article introduces the draft of the National Action Plan (NAP) for Guyana, spearheaded by the Pan American Health Organization (PAHO). It refers to a series of multisectoral consultations to gain consensus in finalizing the document. The Minister of Public Health makes a statement highlighting the importance of the NAP in responding to antimicrobial resistance (AMR) as a global health threat. The Minister also references the alignment with the World Health Organization Global Action Plan (WHO-GAP) and the utilization of the One Health model to minimize threat to the Sustainable Development Goals. The Chief Executive Officer of the Livestock Development Authority additionally reinforces its commitment to “building capacity” for AMR testing and screening in collaboration with the University of Ohio. Country focal points are stated and the timeline for achieving these objectives was stated as “between 2017–2020.”	General public
Antimicrobial resistance a growing public health threat (18)	26 Jun 2018	News article	Nation News website. Article by the Barbados Government Information Services (BGIS).	This news article describes a press conference conducted by the Health and Wellness Minister in Barbados and introduces the National Action Plan, including tertiary and community level institutional antimicrobial stewardship (AMS) policy and surveillance as strategies to combat AMR. The minister explains that there is a need for consensus between human and veterinary practitioners to ensure continued availability of effective medications. Authors also refer to an integrated laboratory system in 2017 to enhance the efficiency and effectiveness of laboratory services in the country. Of note, there is clear description of the evidence from the WHO point-prevalence survey (PPS) and outbreak investigation carried out in 2012–2013 that has driven these policy efforts. Finally, the NAP alignment to the WHO-GAP is referenced.	General public
Antimicrobial Resistance Programme to Roll Out This Week (19)	24 Sep 2019	News article	The Guyana Chronicle. Staff reporter	A news article referencing the Triangular Cooperation Project on Strengthening National and Regional Antimicrobial Resistance (AMR), Detection and Surveillance; a joint effort between PAHO and the Caribbean Community (CARICOM) “rolled out in 14 member states in 2 yrs”. The main focus of this program is to ensure medical personnel (primarily nurses and doctors) are capable of high-quality testing for the detection of AMR; collate and analyze AMR laboratory data; and finally use the laboratory results to monitor trends and improve prescribing practices. Although there is not explicit mention of AMS programs, its strategies such as multisectoral partnerships, the need for improvement in infection prevention and control practices, optimizing laboratory capacity and usage are described.	General public

Source: Prepared by the authors; references stated in the table.

Toolkit (7) later noted that “it is often the same people involved in issues related to IPC and AMS both at the facility level and the national (state/regional) level,” using the case study of the CRKP outbreak investigation in this country as an example of the uses of PPS, and the overlapping responsibilities in LMICs. Using this case study, the “AMS champion” concept as an enabler of stewardship appears to comprise three fundamental attitudes or behaviors: competence, influence, and persistence, demonstrating AMS “software” elements influencing action at the prescriber level (7).

The 2018 WHO *Competency Framework for Health Workers’ Education and Training on Antimicrobial Resistance* (34) maintains that the foundation of AMR awareness-building is ensuring health-care workers’ competency to “promote awareness of AMR and appropriate antimicrobial use amongst all health care workers, patient communities and the general public,” and “act to protect the effectiveness of antimicrobials as an ethical imperative”; that is, act on resistance (34). The AMS champion in Barbados was an infectious disease specialist trained in outbreak investigation, research, and AMS, which placed this individual in an influential leadership position. In LMIC settings, limitations in

human resources may increase the likelihood of overlapping roles in AMR objectives such as IPC/AMS/AMR surveillance and, as seen in this case, highlight this as a crucial area for capacity-building, as these individuals could potentially influence and shape implementation of policy and intervention strategies.

### Horizontal (cross-programmatic) integration

Ensuring patient safety is an overarching principle of AMR strategies toward health system strengthening; therefore, successful integration of targeted AMS may require cross-programmatic integration. WHO cross-programmatic efficiency analysis (35) stresses the importance of interconnectedness between programmatic activities and enables countries to detect and analyze duplications, overlaps, and misalignments within and across programmatic activities. It is evident from this review that policy structures and processes exist for IPC and tertiary education clinical research institutions, which either have overlapping agendas or human resources to contribute to activities involving AMS. Therefore, identifying areas

**TABLE 4. Communication for public consumption: international organizations**

Title	Date published	Type of document	Authors	Document summary	Audience
Driving change in antimicrobial stewardship in a low-resource setting (20)	1 Jan 2017	Newsletter	World Health Organization GAP AMR Newsletter No .20	This article references the success story of the outbreak investigation of carbapenemase-resistant <i>Klebsiella pneumoniae</i> conducted in Barbados in 2012 with the use of the World Health Organization (WHO) point-prevalence survey (PPS). It highlighted the understaffed infection prevention and control (IPC) department in the institution, which at the time of the article had expanded from one nurse to five persons including an infectious disease specialist. This initial investigation led to further research in areas of quality targets such as length of stay and cost analyses. Supported by WHO/Pan American Health Organization (PAHO), the institution was able to achieve “a gap analysis, assessment of laboratory and pharmacological capacity, staff training, and a targeted approach starting in the intensive care units.” They also developed job descriptions for necessary staff and impacted the region’s antimicrobial stewardship (AMS) strategies.	Health sector (regional)
The AMR Review, Guyana: Progress in the Implementation of the National Action Plan on Antimicrobial Resistance (AMR) (21)	10 Jul 2018	Advocacy document	Pan American Health Organization	This is a PAHO/WHO advocacy document called “The AMR Review.” It identified current “hits” from the country, priority areas for action, and opportunities for action in the National Action Plan (NAP) on antimicrobial resistance (AMR) implementation for the period 2018–2019. It confirms that the NAP was developed in line with “Regional and Global” action plans on AMR, addresses the full One Health Spectrum, has a laboratory that participates in external quality assurance and produces reports on resistance levels – specifically malaria and tuberculosis resistance – and plans to establish an AMS program at the national level. It makes recommendations for stewardship expansion including policy and guideline development for both community and hospital healthcare settings.	Regional health systems
Sub-Regional Meeting on Infection Prevention and Control (IPC) and Health-Care Associated Infection Surveillance in Castries, St. Lucia on 15 to 17 October 2018 (22)	17 Oct 2018	Newsletter	Pan American Health Organization	An article highlighting the subregional meeting between multiple Caribbean IPC delegates in Saint Lucia. The purpose of this meeting was to enhance capacities and promote a working agenda for IPC and healthcare-associated infection surveillance. They met primarily to learn “IPC and AMS best practices” and share success stories. The initiative was supported by PAHO, and the article also mentions that this was a part of the Caribbean Infectious Disease week organized by “regional stewards.”	Regional health systems

**Source:** Prepared by the authors; references stated in the table.

for integrating AMS in IPC and the health education sector could improve efficiency in achieving programmatic objectives in the broader health system.

Firstly, actors in IPC appear to lead AMS policy activities from the local to the regional level in the Caribbean; therefore, IPC may have a strong network of regional influence for AMS policy development and implementation (29). For instance, IPC networks conduct regional conferences (initiated by Barbados following the CRKP study in 2014) in relevant skills training, sharing success stories on IPC and AMS (29). They also promote the identification of “regional stewards” for AMS in the Caribbean (22). Furthermore, IPC and AMS core competencies overlap; the WHO Competency Framework for healthcare workers (2018) urges policy actors to understand and promote this linkage (34). This multimodal approach to quality improvement is also described in the 2018 WHO manual on improving IPC at the health facility (36).

Secondly, because of the health education infrastructure currently in place, pre-service and in-service AMS education and training could be supported by health education and research institutions such as regional and state universities. In Barbados, the WHO PPS principal investigator and AMS champion was on staff at the university and the national referral hospital during the CRKP outbreak. The other tertiary care institutions examined, in addition to their dual roles as the national referral hospitals and largest public tertiary hospitals in these countries, are also both clinical training/research institutions (17, 29). Notably, all three scholarly works found in this document

review were contributed by preclinical and clinical university researchers. As scholarly works suggest, pre-service training may be a crucial step to nurturing an ethos of AMS championing among newly graduated prescribers.

### Challenges to AMS policy development and implementation from structure, process, outcome (SPO) elements

AMS falls under the five strategic objectives in the WHO-GAP and NAPs to “optimize the use of antimicrobial medicines in human and animal health” (6). However, the NAPs do not contain a clear description of elements of the formal AMS program at the institutional level, although the tertiary hospitals of all three countries are governed at the national level. Drawing on the Donabedian structure, process, outcome approach for measuring quality care (17), we explore limitations to ASP implementation by analyzing elements of the WHO-GAP-aligned NAPs.

**Structure.** The One Health approach, emphasizing multisectoral consensus in AMR policy development, is one recurrent and demonstrable cause of delayed rollout of the NAP; yet, the purpose of One Health is to encourage strategic leadership among all stakeholders (37). In its 2021 Policy Guidance on integrated AMS activities (33), WHO acknowledges that “effective implementation of AMS activities in health-care facilities requires a comprehensive approach, beyond the facilities, at national policy and programme levels,” citing a request from Member States for further guidance on “how to facilitate the

TABLE 5. Internal documents

Title	Date published	Type of document	Authors	Document summary	Audience
Barbados: National Action Plan on Combatting Antimicrobial Resistance 2017–2022 (23)	17 May 2017	Formal policy document	Ministry of Health and Wellness, Barbados (Hon. John DE Boyce)	This is the first national action plan (NAP) developed of the three countries under review. It is meant to be aligned with the World Health Organization Global Action Plan (WHO-GAP), which is explicitly stated and referenced throughout the document. This is a working document that has been rolled out as is, although the record has not been updated or stated as such since 2017. Developed following the conduct of the WHO point-prevalence survey (PPS).	Drug and Laboratory Service, tertiary care, Ministry of Health, One Health sectors
Guyana: National Action Plan for Antimicrobial Resistance (Draft) (24)	1 Oct 2017	Formal policy document	Ministry of Health, Guyana	This is the second NAP developed and is currently still in the draft phase, mostly pending multisectoral contributions as explained throughout the document. This draft was developed prior to conduct of the WHO PPS. Although aligned with the WHO-GAP, attempts made to contextualize further as evidenced by the Tripartite AMR Country Self-Assessment Survey (TrACSS) and AMR Newsletter in 2018.	Multisectoral: drug service, lab, tertiary care, Ministry of Health, agriculture/animal (One Health)
Saint Lucia: National Action Plan for Antimicrobial Resistance (Draft) (25)	1 Jan 2018	Formal policy document	Ministry of Health, Saint Lucia	This is the last of the three NAPs developed and is currently still in draft phase. This NAP does not contain a clear source of funding or cost analysis for the plan, as yet. It is also pending contributions from multiple sectors including animal and agricultural.	Multisectoral: drug service, lab, tertiary care, Ministry of Health, agriculture/animal (One Health)
Final report Pan American Health Organization/World Health Organization (WHO/PAHO) Point Prevalence Survey on Antibiotic Use in Hospitals in Saint Lucia (26)	26 Jul 2018	Confidential report	PAHO/WHO–Saint Lucia collaboration	From the conduct of the WHO PPS in Saint Lucia, July 2018. Investigated individuals at the national referral hospital. Summary of findings: 121 records; antibiotic use prevalence 47.1%.	Ministry of Health: technical, policymakers, leadership
Final report WHO/PAHO Point Prevalence Survey on Antibiotic Use in Hospitals Guyana (27)	19 Jul 2018	Confidential report	PAHO/WHO–Guyana collaboration	From the conduct of the WHO PPS in Guyana, July 2018. Investigated individuals at the national referral hospital. Summary of findings: 333 records; antibiotic use prevalence 48.6%.	Ministry of Health: technical, policymakers, leadership
2020 Tripartite AMR Country Self-Assessment Survey (TrACSS) Country Report on the Implementation of National Action Plan on Antimicrobial Resistance (AMR) Guyana (28)	1 May 2020	Country report	PAHO/WHO–Guyana collaboration (Food and Agriculture Organization of the United Nations [FAO], World Organisation for Animal Health, [WOAH, formerly OIE], and WHO).	In 2019, countries were encouraged to submit the Tripartite AMR Country Self-Assessment Survey to assess the country's implementation of the national action plan on antimicrobial resistance (AMR). It assesses implementation on a five-point scale from: A, No capacity; to E, Sustained capacity, in five indicators: 1. AMR multisector working groups. 2. AMR surveillance activities in human health. 3. Monitoring antimicrobial consumption in human health. 4. National implementation of infection prevention and control (IPC) programs. 5. Adoption of AWaRe Classification into national essential medicines list (EML).	Ministry of Health: technical, policymakers, leadership

Source: Prepared by the authors; references stated in the table.

implementation of national AMS activities in an integrated and programmatic approach” (33). This includes, but is not limited to, the design of locally relevant antibiotic use guidelines, establishing leadership structures (national coordinating committee), and ensuring physical infrastructure and human resources are in place before implementation (33). In this case, leadership structures, guidelines, and human resources “hardware” may not be enough to ensure implementation, particularly due to the perceived “software” interdependency of consensus.

**Process.** Limitations related to process have also resulted in programmatic delays in monitoring and surveillance, antibiotic use surveillance, financial commitment, and education and training. A key recommendation for using the WHO PPS is that it is carried out at least annually to monitor and evaluate the ASP (38). However, it has only been carried out as a monitoring tool once in each of these countries in the last 4–8 years – a delay that may extend due to reassigning of resources to the COVID-19 efforts across the subregion (8, 29). Additionally, overlapping recommendations for training prescribers and

allied healthcare professionals in AMR, IPC, AMR surveillance, One Health, and WASH through decentralized strategies can lead to oversaturation and clouding of the message on AMS (6). For example, in one of the three NAPs there are two separate objectives related to corresponding competencies. Firstly, this highlights a potential duplication of efforts, and furthermore, there is no reference to the core elements within the WHO Competency Framework (34), developed in 2018, which could guide pre- and in-service educational activities. Finally, limited funding source is described in two of the three NAPs to mobilize and allocate resources. Without adequate funding, there is low potential for successfully sustained NAP or ASP (33). Following review of the NAP in Guyana in 2019, one priority WHO recommendation was to “create a funded National Antimicrobial Stewardship Strategy, to support healthcare facility Antimicrobial Stewardship Programs (ASP)/ interventions and strategies” (28).

**Outcome.** Van den Bosch et al. (39) describe 51 internationally agreed-upon quality indicators concerning appropriate

TABLE 6. Scholarly works

Title	Date published	Type of document	Authors	Document summary	Audience
Carbapenem-resistant <i>Klebsiella pneumoniae</i> in Barbados: Driving change in practice at the national level (29)	25 May 2017	Quantitative analysis with expert recommendations	Forde C, Stierman B, Ramon-Pardo P, Dos Santos T, Singh N.	Research conducted in Barbados, triggered by an outbreak of involving carbapenemase-resistant <i>Klebsiella pneumoniae</i> (CRKP). Authors describe the World Health Organization (WHO) point-prevalence survey (PPS) followed by a one-year longitudinal study involving active surveillance helped to identify CRKP hospital-acquired infections and the associated high-risk groups, including patients in which specific antimicrobials were used, older and catheterized (urinary) patients. It states, "In the hospital, there were no policies guiding the use of carbapenems and there was no formal antimicrobial stewardship program (ASP). The hospital instituted an ASP which was highlighted in the January 2017 WHO-AMR newsletter."	Hospital and wider health sector; academic community; regional and global public health
Tackling Antimicrobial Resistance by promoting Antimicrobial stewardship in Medical and Allied Health Professional Curricula (30)	17 Aug 2020	Peer-reviewed publication	Majumder MAA, Singh K, Gittens-St Hilaire M, Rahman S, Sa B, Haque M.	This paper is a narrative literature review written by contributors from multiple campuses of The University of the West Indies across the Caribbean and the National Defence University of Malaysia. It provides a comprehensive rationale to establish and evaluate antimicrobial stewardship (AMS) in undergraduate degree programs. Additionally, it contends that continued medical and allied health professional training is a useful intervention to sustain AMS strategies started in undergraduate levels. The authors use global evidence to recommend horizontal and vertical integration of AMS, using multiple educational modalities that are locally contextualized and evidence-based for optimal results.	Medical and allied health professionals; health and science education; academic medical community; regional and global public health
Antimicrobial Stewardship: Fighting Antimicrobial Resistance and Protecting Global Public Health (8)	29 Dec 2020	Literature review	Majumder MAA, Rahman S, Cohall D, Bharatha A, Singh K, Haque M, et al.	This literature review around the urgent value of AMS as a critical approach to "containing and mitigating AMR" [antimicrobial resistance]. It gives evidence as to AMR's clinical and financial burden, examining the additional burden of multidrug resistance (MDR) and extensive drug resistance (XDR), with a review of the effect of COVID-19 as a double burden on the backdrop of the antibiotic pipelines' recognizable dwindling innovation and funding support. The core elements of AMS are explored in detail, specifically as crucial to quality public health service delivery, especially highlighting the need for bidirectional dual pathway exchange in AMS knowledge. An argument is proffered for more targeted language for AMS in animal health and the shared responsibility implied by One Health. Finally, it describes a way forward including mention of the WHO Global Action Plan (GAP) and global commitments in stewardship to minimize antibiotic pressure. This document doubly serves as a policy brief on AMS to the region.	Medical and allied health professionals; health and science education; academic medical community; regional and global public health

Source: Prepared by the authors; references stated within the table.

antibiotic use in hospitalized adults. Yet within the NAPs, which represent the only formal policy toward AMS discovered in all three countries, measures of outcome focus solely on antimicrobial consumption, ESKAPE pathogen decline, and *Clostridium difficile* infection at the national level, with no recommendations for the institutional level. Key indicators highlighted in the WHO AMS Toolkit (7) not seen within NAPs are: process indicators around proper documentation, oral-switch, and surgical prophylaxis (7); outcome indicators such as percentage of hospital patients receiving antibiotics according to the AWaRe (Access, Watch, Reserve) classification, patient length of stay (relative to specified indications), in-hospital mortality, and readmission rates (7, 39).

These indicators describe validated measures for assessing the impact of ASP to optimize clinical outcomes. The 2021 WHO global Policy Guidance (33) recommends the need for a national coordinating committee that would ensure the "development of AMS implementation plans aligned with

national action plans with well-defined goals and indicators" (33).

### Study limitations

Although search criteria looked for current documents, most formal policies were drafted in 2017 and remained in the draft phase. Because of this, we could not analyze how the policy is being implemented in each sector; e.g., education, public engagement, or non-human health sectors. Social media pages by reputable government agencies were not included in the document review but are becoming more formalized and used for community health education. However, these platforms were not detailed in policy documents. We received no response from stakeholders in any of the three countries, which led to a dearth of working documents that would aid in exploring current processes and implementation activities. We did not analyze documents from the private sector, through which health care is steadily growing in LMICs, influencing AMR rates (40).



## Conclusion

This document review sheds light on how different sources of information move through bidirectional knowledge exchange in the regional policy landscape between these countries. Formal policy documents officially establish political position and national guidance on stewardship. However, at this nascent stage of policy development, governmental bodies appear to have encountered difficulty coordinating the integration of AMS and achieving the ideal of multisectoral collaboration outlined in international policy recommendations. International organizations such as PAHO/WHO encourage contextualizing stewardship as a first step, endorsing adaptation of high quality, “bottom-up” local evidence. Correspondingly, one key theme was the significance of individual action by AMS champions in programmatic design and implementation, which suggests that successful national policy could have a global impact, as LMICs learn from each other. CARICOM regional coordination has positively impacted IPC-AMS integration across this knowledge network.

**Author contributions.** TR conceived the original idea and planned the search strategy and collected the data. All authors

analyzed the data and interpreted the results. TR and A-AU wrote the paper. All authors reviewed and approved the final version.

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## REFERENCES

1. Antimicrobial Resistance Collaborators. Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *Lancet*. 2022;399(10325):629–55. [https://doi.org/10.1016/s0140-6736\(21\)02724-0](https://doi.org/10.1016/s0140-6736(21)02724-0).
2. World Health Organization. The evolving threat of antimicrobial resistance: options for action. Geneva: WHO; 2012 [cited 2022 Nov 11]. Available from: <https://apps.who.int/iris/handle/10665/44812>.
3. Review on Antimicrobial Resistance. Antimicrobial Resistance: Tackling a crisis for the health and wealth of nations. London: [Review on AMR]; 2014. Available from: <https://amr-review.org/Publications.html>.
4. Dozois A, Thomsen I, Jimenez-Truque N, Soper N, Pearson A, Mohamed-Rambaran P, et al. Prevalence and molecular characteristics of methicillin-resistant *Staphylococcus aureus* among skin and soft tissue infections in an emergency department in Guyana. *Emerg Med J*. 2015 Oct;32(10):800–3. <https://doi.org/10.1136/emered-2013-203373>.
5. World Health Organization [Internet]. Geneva: WHO; 2021 Nov 17. Antimicrobial resistance. Available from: <https://www.who.int/news-room/fact-sheets/detail/antimicrobial-resistance>.
6. World Health Organization. Global Action Plan on Antimicrobial Resistance. Geneva: WHO; 2015. Available from: <https://apps.who.int/iris/handle/10665/193736>.
7. World Health Organization. Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries: a WHO practical toolkit. 1st edition. Geneva: WHO; 2019. Available from: <https://apps.who.int/iris/handle/10665/329404>.
8. Majumder MAA, Rahman S, Cohall D, Bharatha A, Singh K, Haque M, et al. Antimicrobial Stewardship: Fighting Antimicrobial Resistance and Protecting Global Public Health. *Infect Drug Resist*. 2020;13:4713–38. <https://doi.org/10.2147/IDR.S290835>.
9. Septimus EJ, Owens RC Jr. Need and Potential of Antimicrobial Stewardship in Community Hospitals. *Clin Infect Dis*. 2011;53(Suppl 1):S8–S14. <https://doi.org/10.1093/cid/cir363>.
10. Dalglish SL, Khalid H, McMahon SA. Document analysis in health policy research: the READ approach. *Health Policy Plan*. 2020;35(10):1424–31. <https://doi.org/10.1093/heapol/czaa064>.
11. Martin W, Pauly B, MacDonald M. Situational Analysis for Complex Systems: Methodological Development in Public Health Research. *AIMS Public Health*. 2016;3(1):94–109. <https://doi.org/10.3934/publichealth.2016.1.94>.
12. Bowen GA. Document analysis as a qualitative research method. *Qual Res J*. 2009;9(2):27–40. <https://doi.org/10.3316/QRJ0902027>.
13. Caribbean Community Secretariat [Internet]. Georgetown: CARICOM Secretariat; c2021 Who we are. [cited 2021 Aug 8]. Available from: <https://caricom.org/our-community/who-we-are/>.
14. Oxford Reference [Internet]. Oxford: Oxford University Press; c2023. Snowballing technique. [cited 2021 Jul 18]. Available from: <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803100514607>.
15. National Health Service, England. Quality, Service and Redesign Tools: A model for measuring quality care. [no place]: NHS England; 2018. Available from: <https://www.england.nhs.uk/wp-content/uploads/2022/02/qsir-measuring-quality-care.pdf>.
16. Watt D. On Becoming a Qualitative Researcher: The Value of Reflexivity. *Qual Rep*. 2007;12(1):82–101. <https://doi.org/10.46743/2160-3715/2007.1645>.
17. Guyana, Department of Public Information [Internet]. Georgetown: DPI; 2017 Jun 27. National Action Plan on Antimicrobial Resistance drafted, stakeholders consulted. [cited 2021 May 30]. Available from: <https://dpi.gov.gy/national-action-plan-on-antimicrobial-resistance-drafted-stakeholders-consulted/>.
18. Nation News [Internet]. St. Michael, Barbados: Nation News; 2018 Jun 26. Antimicrobial resistance a growing public health threat. [cited 2023 May 11]. Available from: <https://www.nationnews.com/2018/06/26/antimicrobial-resistance-a-growing-public-health-threat/>.
19. The Guyana Chronicle [Internet]. Georgetown: Guyana Chronicle; 2019 Sep 24. Antimicrobial Resistance Programme to Roll Out This Week. [cited 2021 May 30]. Available from: <https://guyanachronicle.com/2019/09/24/antimicrobial-resistance-programme-to-roll-out-this-week/>.
20. World Health Organization. Driving change in antimicrobial stewardship in a low-resource setting. *WHO Glob Action Plan AMR Newsl*. 2017;(20).
21. Pan American Health Organization. The AMR Review, Guyana: Progress in the Implementation of the National Action Plan on Antimicrobial Resistance (AMR). Washington, DC: PAHO; 2019. Available from: <https://www.paho.org/en/node/63931>.

22. Pan American Health Organization [Internet]. Washington, DC: PAHO; 2018 Oct 26. Sub-Regional Meeting on Infection Prevention and Control (IPC) and Health-Care Associated Infection Surveillance in Castries, St. Lucia on 15 to 17 October 2018. [cited 2023 May 11]. Available from: [https://www3.paho.org/hq/index.php?option=com\\_content&view=article&id=14756:-sub-regional-meeting-on-infection-prevention-and-control-ipc-and-health-care-associated-infection-surveillance-in-castries-st-lucia-on-15-to-17-october-2018&Itemid=0&lang=en#gsc.tab=0](https://www3.paho.org/hq/index.php?option=com_content&view=article&id=14756:-sub-regional-meeting-on-infection-prevention-and-control-ipc-and-health-care-associated-infection-surveillance-in-castries-st-lucia-on-15-to-17-october-2018&Itemid=0&lang=en#gsc.tab=0).
23. Barbados, Ministry of Health and Wellness. Barbados National Action Plan on Combatting Antimicrobial Resistance. Bridgetown: Barbados; 2017. Available from: <https://medbox.org/document/barbados-national-action-plan-on-combatting-antimicrobial-resistance-2017-2022#GO>.
24. Guyana, Ministry of Health. Draft National Action Plan on Antimicrobial Resistance. Georgetown: Ministry of Health; 2017.
25. Saint Lucia, Ministry of Health and Wellness. Draft National Action Plan on Antimicrobial Resistance. Castries: Ministry of Health and Wellness; 2018.
26. Pan American Health Organization. Confidential Report; Final Country Report, WHO/PAHO Point Prevalence Survey on Antibiotic Use. Saint Lucia. Castries; PAHO: 2018.
27. Pan American Health Organization. Confidential Report; Final Country Report, WHO/PAHO Point Prevalence Survey on Antibiotic Use. Guyana. Georgetown; PAHO: 2018.
28. World Health Organization. Tripartite AMR Country Self-Assessment Survey (TrACSS) Country Report on the Implementation of National Action Plan on Antimicrobial Resistance (AMR) Guyana. [no place]: WHO; 2020.
29. Forde C, Stierman B, Ramon-Pardo P, Dos Santos T, Singh N. Carbapenem-resistant *Klebsiella pneumoniae* in Barbados: Driving change in practice at the national level. *PLoS One* [Internet]. 2017;12(5):e0176779. [cited 2020 Dec 29]. Available from: <https://doi.org/10.1371/journal.pone.0176779>.
30. Majumder MAA, Singh K, Gittens-St Hilaire M, Rahman S, Sa B, Haque M. Tackling Antimicrobial Resistance by promoting Antimicrobial stewardship in Medical and Allied Health Professional Curricula. *Expert Rev Anti Infect Ther*. 2020;18(12):1245–58. <https://doi.org/10.1080/14787210.2020.1796638>.
31. Courtenay M, Burnett E, Castro-Sánchez E, Du Toit B, Figueiredo RM, Gallagher R, et al. Preparing nurses for COVID-19 response efforts through involvement in antimicrobial stewardship programmes. *J Hosp Infect*. 2020;106(1):176–8. <https://doi.org/10.1016/j.jhin.2020.06.011>.
32. Mulani MS, Kamble EE, Kumkar SN, Tawre MS, Pardesi KR. Emerging strategies to combat ESKAPE pathogens in the era of antimicrobial resistance: a review. *Front Microbiol*. 2019 Apr 1;10:539. <https://doi.org/10.3389/fmicb.2019.00539>.
33. World Health Organization. WHO policy guidance on integrated antimicrobial stewardship activities. Geneva: WHO; 2021. Available from: <https://apps.who.int/iris/handle/10665/341432>.
34. World Health Organization. WHO competency framework for health workers' education and training on antimicrobial resistance. Geneva: WHO; 2018. Available from: <https://apps.who.int/iris/handle/10665/272766>.
35. Sparkes S, Durán A, Kutzin J. A system-wide approach to analysing efficiency across health programmes. *Health Finance Diagnostics and Guidance No. 2*. Geneva: World Health Organization; 2017. Available from: <https://apps.who.int/iris/handle/10665/254644>.
36. World Health Organization. Improving infection prevention and control at the health facility: Interim practical manual supporting implementation of the WHO guidelines on core components of infection prevention and control programmes. Geneva: WHO; 2018 [cited 2021 Aug 20]. Available from: <https://apps.who.int/iris/handle/10665/279788>.
37. World Health Organization [Internet]. Geneva: WHO; 2017 Sep 21 [cited 2022 Mar 16]. One Health. Available from: <https://www.who.int/news-room/questions-and-answers/item/one-health>.
38. Zumaya-Estrada FA, Alpuche-Aranda CM, Saturno-Hernandez PJ. The WHO methodology for point prevalence surveys on antibiotics use in hospitals should be improved: Lessons from pilot studies in four Mexican hospitals. *Int J Infect Dis*. 2021 Jul;108:13–17. <https://doi.org/10.1016/j.ijid.2021.04.079>.
39. Van den Bosch CMA, Geerlings SE, Natsch S, Prins JM, Hulscher MEJL, Perl TM. Quality Indicators to Measure Appropriate Antibiotic Use in Hospitalized Adults. *Clin Infect Dis*. 2015;60(2):281–91. <https://doi.org/10.1093/cid/ciu747>.
40. Denny KJ, Gartside JG, Alcorn K, Cross JW, Maloney S, Keijzers G. Appropriateness of antibiotic prescribing in the Emergency Department. *J Antimicrob Chemother*. 2019;74(2):515–20. <https://doi.org/10.1093/jac/dky447>.

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## El método READ y la administración de antimicrobianos en el Caribe: una revisión trinacional de documentos

### RESUMEN

**Objetivo.** Explorar el panorama de las políticas de optimización del uso de antimicrobianos en tres países caribeños de habla inglesa (Barbados, Guyana y Santa Lucía) y examinar los principales facilitadores y desafíos para elaborar y aplicar programas formales de optimización del uso de antimicrobianos.

**Métodos.** Se adaptó el método READ (acrónimo en inglés de "materiales listos; extraer los datos; analizar los datos; destilar los resultados"), un procedimiento sistemático para la revisión de documentos sobre políticas de salud, a fin de realizar un análisis de documentos que buscó las políticas, comunicaciones y contribuciones existentes sobre la optimización del uso de antimicrobianos en esos tres países.

**Resultados.** La estrategia de búsqueda permitió localizar 726 documentos iniciales. De ellos, 15 (el 2%) cumplían los criterios de inclusión. El análisis abarcó documentos oficiales de políticas ( $n = 3$ ), trabajos académicos o revisiones ( $n = 3$ ), documentos de promoción de la causa ( $n = 2$ ), artículos de noticias ( $n = 4$ ) e informes confidenciales ( $n = 3$ ) de los tres países.

**Conclusiones.** Varios aspectos críticos, como la coordinación interprogramática, la importancia de la acción individual y la necesidad de una comunicación bidireccional del conocimiento, son preponderantes para adaptar de la mejor manera la optimización del uso de antimicrobianos en estos países. La coordinación regional de la CARICOM ha influido positivamente para integrar la prevención y el control de infecciones con la optimización del uso de antimicrobianos en toda esta red de conocimientos.

### Palabras clave

Revisión; programas de optimización del uso de los antimicrobianos; farmacorresistencia microbiana; región del Caribe.

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## Uso racional de antibióticos no Caribe com base na abordagem READ: revisão de documentos de três países

### RESUMO

**Objetivo.** Explorar o cenário da política para uso racional de antibióticos em três países anglófonos do Caribe (Barbados, Guiana e Santa Lúcia) e examinar os principais fatores facilitadores e desafios para a elaboração e implementação de programas formais de uso racional de antibióticos.

**Métodos.** Análise de documentos em busca de políticas, comunicações e contribuições existentes sobre o uso racional de antibióticos nesses três países, adaptando a abordagem READ (sigla em inglês para preparar materiais, extrair e analisar dados e destacar os principais achados), um procedimento sistemático para a revisão de documentos de políticas de saúde.

**Resultados.** A estratégia de busca identificou 726 registros iniciais. Desses, 15 (2%) atenderam aos critérios de inclusão. A análise incluiu documentos oficiais de políticas ( $n = 3$ ), trabalhos acadêmicos/revisiones ( $n = 3$ ), documentos em defesa da causa ( $n = 2$ ), reportagens ( $n = 4$ ) e relatórios confidenciais ( $n = 3$ ) dos três países.

**Conclusões.** Questões críticas, como a coordenação interprogramática, a importância da ação individual e a necessidade de um discurso bidireccional de conhecimento, se destacam na adaptação otimizada das diretrizes de uso racional de antibióticos nesses países. A coordenação regional da Comunidade do Caribe (CARICOM) contribuiu para integrar a prevenção e o controle de infecções ao uso racional de antibióticos em toda essa rede de conhecimento.

### Palavras-chave

Revisão; gestão de antimicrobianos; resistência microbiana a medicamentos; região do Caribe.

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