

# ENHANCING SPAIN'S AMR NATIONAL ACTION PLAN



## BACKGROUND

Antimicrobial resistance (AMR) occurs when microorganisms, including bacteria, viruses, fungi and parasites, adapt and multiply in the presence of medications that once impacted them.<sup>1</sup> The European Centre for Disease Prevention and Control (ECDC) reported that resistant bacteria infect almost two million people in the European Union (EU) yearly, leading to 30,000 annual deaths.<sup>2</sup> AMR rates continue to increase. The World Health Organization (WHO) developed a Global Action Plan (GAP) on AMR.<sup>3</sup> However, recent reviews highlight that most national AMR strategies are underfinanced and/or are insufficiently aligned with the GAP goals and guidelines.<sup>4,5</sup>

## OBJECTIVE

The objective of this document is to review and analyse Spain's National Action Plan (NAP) on AMR.<sup>6</sup> It aims to identify gaps, assess alignment with the WHO Global Action Plan, and offer recommendations for improvement.

## METHODS

To assess the NAP, a modified assessment tool developed by the European Commission in the Overview report Member States' One Health National Action Plans against Antimicrobial Resistance was used.<sup>7</sup> Using the tool, a qualitative analysis was carried out in which the presence or absence of indicators was determined. If indicators were apparent, the quality of the measures was assessed using the SMART (specific, measurable, achievable, relevant, time-bound) criteria.<sup>8</sup>

## FINDINGS

### Epidemiological perspective

#### 1. Antibiotic resistance

From 2005 to 2021, Spain has witnessed a general increase in AMR, with rates reaching 23.5% by 2021, slightly above the EU/EEA mean population-weighted AMR rate of 21.8%.<sup>9</sup> This rise in reported AMR can, in part, be attributed to the initiation of surveillance for *Acinetobacter* spp. in 2012.

While *Acinetobacter* spp. exhibited a high resistance rate of 56.6% upon inclusion in the survey, it is noteworthy that a subsequent decline in resistance has been observed. Similarly, *Enterococcus faecium* demonstrated a substantial AMR level at 36.0%. However, recent trends indicate a potential decrease in AMR for both strains in Spain.

## 2. Antibiotic consumption

Spain has experienced an upward trend in community antibiotic consumption, culminating in a rate of 21.56 defined daily doses (DDD) per 1,000 inhabitants per day in 2022. In contrast, the average for the EU/EEA in the same year was 16.94 DDD.<sup>10</sup> Notable increases in antibiotic use occurred in 2016, with a 45.1% increase compared to the previous year. However, there has been a decline in antibiotic use in recent years, following the COVID-19 pandemic. In contrast, antibiotic consumption in hospitals has shown a clear downward trend.

## 3. Antibiotic sales for animal use

Between 2010 and 2021, sales of antibiotics for food-producing animals saw a significant reduction of 39.4%, which is reflected in both the metric tonnes and milligrams per Population Correction Unit (mg/PCU) measurements. In 2021, Spain's antibiotic sales reached 157.2 mg/PCU, compared to the EU/EEA average of 74.06 mg/PCU. Additionally, the Population Correction Unit (PCU) for Spain stood at 8,245 per 1,000 tonnes, which is significantly higher than the EU/EEA average of 1,994 per 1,000 tonnes.<sup>11</sup> Notwithstanding the overarching trend of reduction, there was a notable increase of 18.6% in Spain's PCU-adjusted figures during the same period.

## 4. Healthcare-Acquired Infections

Spain has recorded a healthcare-acquired infection prevalence rate of 7.8%, which stands above the EU/EEA's average of 5.9%. Within Spain, surgical site infections are the predominant category, constituting 26% of all cases. Urinary tract infections and pneumonia/lower respiratory tract (LRT) infections are equally prevalent, each accounting for 20% of the incidences.<sup>12</sup>

## National Actions Plan (NAP)

Spain's updated 2022 NAP is comprehensive, structured around six main categories that cover surveillance, resistance control, prevention, research, training, and public awareness.

### 1. National strategy and action plan evaluation

The NAP is designed with a One Health perspective and aligns with the overarching objectives and guiding principles of the WHO's Global Action Plan on AMR. However, the NAP primarily focuses on human and animal health, giving limited attention to environmental aspects, with no explicit mention of plant health. The situational analysis in Spain's NAP is relatively generic and relies heavily on revising the previous NAP rather than conducting a detailed analysis of areas of intervention. While there is high-level commitment to the NAP, with approval by a Minister or high-level coordinator, the plan does not estimate the resources required for multi-year budgetary provisions. Spain's goals and strategic objectives are clearly defined, but the plan lacks detailed timelines and performance indicators for evaluating its progress. Regarding outbreaks, Spain promotes the use of the AMR Surveillance Program for determining emerging resistance mechanisms and molecular epidemiology. The plan aims to integrate whole genome sequencing in surveillance but lacks a specific plan for managing outbreaks.

### 2. Intersectoral coordination mechanism (ICM)

The Spanish NAP incorporates an ICM. However, the specific roles and responsibilities of these actors in the NAP's implementation are not clearly defined, and it remains uncertain whether there is oversight provided by a steering committee, for example.

### 3. Awareness and understanding of AMR

Spain's plan primarily emphasises promoting the responsible use of antibiotics, with a particular focus on human health and the veterinary sector. However, it does not address food safety or the environmental sector. In terms of training and professional education, the plan predominantly centres on promoting the prudent use of

antibiotics within the human health and veterinary sectors, with again less emphasis on educational efforts within the farming sector, food safety, and environmental considerations.

#### **4. Monitoring and surveillance**

Concerning antibiotic consumption, Spain aims to establish consumption reduction targets, enhance data accessibility, and create a National Antimicrobial Resistance Surveillance System, expanding surveillance efforts. In terms of antibiotic resistance, the NAP focuses on establishing consumption reduction targets and indicators to improve data dissemination, although it doesn't specify the responsible national body. Regarding environmental matters, Spain has plans for monitoring but is currently in the research phase, moving towards implementation of a comprehensive monitoring system. Spain demonstrates a strong commitment to surveillance across multiple sectors, with progress towards establishing an environmental monitoring system on the horizon. However, the specific entity responsible for managing these data remains unspecified.

#### **5. Strengthening infection and prevention and control measures (IPC)**

Spain's NAP emphasises IPC measures for human health but lacks national IPC guidelines. Monitoring and auditing practices are a key focus, aiming to complete the healthcare-acquired infections surveillance system and integrate it into the Royal Decree on Public Health. In animal health, the plan primarily promotes prudent antibiotic use, with few specific animal health-related measures.

#### **6. Prudent use of antimicrobials**

Spain's NAP prioritises optimising antimicrobial use in both human and animal health. In human health, they're enhancing the implementation of Antibiotic Use Optimisation Programmes in healthcare settings among other specific programmes. However, there are no measures to restrict the use of specific antimicrobials in

humans. In the animal health sector, Spain's "Reduce" programme promotes prudent antibiotic use and consumption reduction in various species. They're also improving antimicrobial container design, promoting "Antimicrobial Prescribing Guides: One Health," and working to expand the availability of veterinary drugs while adhering to new legislation. Nevertheless, specific measures to restrict usage of critical antimicrobials in human medicine and discourage inappropriate use in animals are lacking, with no mention of actions against improper prophylactic and metaphylactic use in animals.

#### **7. Investment / research programmes in AMR**

Spain's NAP includes references to programmes aimed at supporting the development of new medicines, diagnostic tools, and vaccines. They express intentions to align regulatory and financing actions with European countries and participate in research and investment programmes across various domains. Furthermore, Spain engages in international collaborative efforts, particularly through the Joint Programming Initiative-AMR (JPI-AMR). However, the NAP lacks concrete details regarding the extent and breadth of these initiatives. Spain's approach appears relatively passive, focusing on participation in existing programmes without demonstrating substantial leadership or outlining its comprehensive, independent projects in this regard.

#### **8. Availability of new and old antimicrobial agents**

Spain's NAP addresses both old and new antimicrobial agents. They have specific plans to ensure the availability of older antibiotics through regulatory measures. However, for newer antibiotics, Spain takes a more passive approach, relying on European consensus and aiming to adapt regulatory and financial actions accordingly. Importantly, their plan lacks details about supporting manufacturers, suppliers of antimicrobials, and monitoring shortages.

## RECOMMENDATIONS

### National strategy and action plan

1. Conduct an in-depth situation analysis to identify key areas for intervention, with a focus on specific regions or facilities with higher resistance rates.
2. Estimate the resources required and make for multi-year budgetary provisions to ensure adequate funding for NAP implementation.
3. Include specific timelines and performance indicators for each strategic objective and monitor progress over time.

### Intersectoral Coordination and Governance

4. Clearly define the roles and responsibilities of actors involved in the Intersectoral Coordination Mechanism (ICM).
5. Establish a steering committee with well-defined objectives to enhance coordination and effectiveness of NAP implementation.

### Awareness and Training

6. Balance awareness and training efforts to encompass all sectors, including food safety and the environment.
7. Develop comprehensive national Infection Prevention and Control (IPC) guidelines that cover human, animal, and environmental aspects.

### Antibiotic Use, Resistance and Monitoring

8. Balance awareness and training efforts to encompass all sectors, including food safety and the environment.
9. Develop comprehensive national Infection Prevention and Control (IPC) guidelines that cover human, animal, and environmental aspects.
10. Form a structured monitoring framework for AMR in the environment and create an environmental AMR surveillance network.

### Research and Investment Programmes

11. Take a proactive leadership role in the development and coordination of research and investment programs in the AMR field. Ensure public return on public investment. Support international efforts including CARBX and GARDP.
12. Ensure transparency in regulation of antimicrobial agents and promote collaboration with all stakeholders.

### Availability of Antimicrobial Agents

13. Assist manufacturers and suppliers of antimicrobial agents by enhancing their ability to develop and sustain a reliable supply of these essential medications.
14. Design, implement and evaluate periodically a system to monitor the availability of antimicrobial agents, to prevent shortages that could affect patient care. Work closely with manufacturers and suppliers to address potential supply issues.

#### TIP:

For more resources and information, scan the QR code to visit the HAI AMR Toolkit.



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