

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Opportunities and challenges in antimicrobial resistance policy including animal production systems and humans across stakeholders in Argentina: a context and qualitative analysis
<b>AUTHORS</b>	Allel, Kasim; Fernandez-Miyakawa, Mariano; Gaze, William; Petroni, Alejandro; Corso, Alejandra; Luna, Federico; Barcelona, Laura; Argentina, AMR policy research group; Boden, Lisa; Pitchforth, Emma

### VERSION 1 – REVIEW

<b>REVIEWER</b>	Milevska-Kostova, Neda Studiorum Center for Regional Policy Research and Cooperation, Health Policy and Management
<b>REVIEW RETURNED</b>	28-Jan-2024

<b>GENERAL COMMENTS</b>	<p>Authors could consider reversing the order of words 'qualitative' and 'context' in the title to accurately reflect the methodological approach and process undertaken.</p> <p>In part 'How this study might affect research, practice, or policy?' (lines 23-27), authors mostly refer to the data from interview but not from the context analysis; e.g. does the policy provide sufficient enabling environment for improving the situation with limited governance structures. Combining the findings especially to respond to this question will provide additional value for the readership, in particular policy/decision makers.</p> <p>Methodology section does not describe in sufficient detail the process of translation of interviews from Spanish to English and how the translation bias was minimised. Authors may want to look into the work of Bogusia Temple (e.g. Temple, B., &amp; Young, A. (2004). Qualitative research and translation dilemmas. <i>Qualitative research</i>, 4(2), 161-178; emple, B., &amp; Edwards, R. (2002). Interpreters/translators and cross-language research: Reflexivity and border crossings. <i>International journal of qualitative methods</i>, 1(2), 1-12.).</p> <p>The public and patient involvement does not provide information on PPI, and should be revised and amended with more precise description of the (non)involvement.</p> <p>In the results section, themes are not very well defined and authors should consider reviewing the thematic analysis. Theme I "Cultural factors and socio-political context" is not sufficiently supported with evidence and quotes from the relevant table (Table 2). Theme III. "Antibiotics" is very broad and should be more precisely defined, in line with the findings used to support it (e.g. antibiotic use, access to antibiotics in animal care, antibiotic acquisition, etc.).</p> <p>Authors may want to consider amending the Theme V. "AMR control" with surveillance, in line with the presented findings.</p> <p>Theme VI. "National action plan" does not offer sufficient data to be</p>
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	<p>coded as a theme.</p> <p>Discussion section would benefit from reviewing based on the findings presented under the themes; e.g. the statement "Cross-sector coordination including animal, environmental and human sectors was highlighted as crucial by interviewees and constituted an essential element of short-term action towards tackling AMR and improve policy design." cannot be drawn from the presented findings.</p> <p>While the topic is very relevant and the approach chosen appropriate, the manuscript would benefit from a major revision of description of methods section, review of thematic analysis findings (themes) and revisiting the discussion section.</p>
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<b>REVIEWER</b>	Otto, Simon University of Alberta
<b>REVIEW RETURNED</b>	30-Jan-2024

<b>GENERAL COMMENTS</b>	<ul style="list-style-type: none"> <li>- This is a well-written paper on the opportunities, barriers, strengths, and overall context of Argentina's actions to tackle AMR across the One Health sectors. It provides valuable insight into this system at a national level based on a policy scan, stakeholder mapping, and stakeholder interviews. Together, these data provide a relatively robust perspective of Argentina's policy environment for and actions towards AMR.</li> <li>- My main concern and reason for "No" to methods description and clear presentation of results is related to Tables 1 and 2. What do the light blue/white boxes indicate under the Themes in Table 1? There is an explanation for these in Table 2, but not Table 1. There is reference to the Table 1 colour scheme in Line 194 on Page 7 that should be added to the Table 1 caption. What does the oval around "External Drivers" at the bottom of Table 1 indicate?</li> <li>- Tables 1 and 2: How were these relative colour assessments derived for each of the Tables? The explanations for each make sense, but how these determinations were made is not explained clearly in the text of the methods or results. For example, the specificity assessment for the Themes in Table 1. I am trying to wrap my head around the relative specificity assessment. I would like to see some brief justification for each specificity assessment. For example, the AMR knowledge and awareness theme seems less specific to me, but it is hard to judge because I am not clear on the "specific to what" context.</li> <li>- These things need to be clarified. Without this, they could be perceived as somewhat arbitrary and subjective.</li> <li>- Some additional specific comments are listed below.</li> <li>- Just an editorial comment. There were multiple instances where spaces were missing between words and references or punctuation. Maybe this is an artifact of the pdf process, but it should be addressed. I did not mark these throughout.</li> <li>- Page 2 (Line 38): "...qualitative analyses identified six themes.." and then the authors list seven themes and specify seven themes in the results.</li> <li>- Page 5 (Lines 68-70): did the authors use any systematic, rapid review, or other methods to identify the literature included within their legal framework review and stakeholder mapping? How were experts consulted and for what within the stakeholder mapping? These both require a bit more explanation to be clear on what was done in Stage 1.</li> <li>- Page 7 (Line 190): should "Two themes emerged from countries embedded values..." be "Two themes emerged from Argentina's embedded values..."</li> </ul>
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	<p>- Page 7 (Lines 197-211). The theme of “Cultural factors and socio-political context” is less specific, as described. I find this paragraph difficult to put together. The authors start by mentioning the importance of local community context, but then jumps to country level economic and political shifts. The quote supports the latter. How important are the local community contexts and variability within these? This could be brought out more, if it was important from the interview data.</p> <p>- Page 14: minor grammar errors. Line 265 – remove “were” from sentence. Line 284 – “to raise the human population’s awareness”. Line 286 –“remains”.</p> <p>- Page 14 (Line 301): the authors state that “one participant indicated that testing for critical animal pathogens [in animals] is routine.” They mentioned mastitis in dairy animals, but then Salmonella. I would like to confirm that they specifically mean/mentioned animal pathogens (e.g., the mastitis example) vs the more typical human foodborne pathogens (e.g., Salmonella) that are more typical of national AMR surveillance programs in other countries. I ask this because many national surveillance programs lack much, if any animal pathogen data, which is a large gap that needs to be filled. This is excellent if the program in Argentina is doing this. So, this is a question of being very clear in the language and pathogens that I hope the authors can clarify/confirm.</p> <p>- Page 15 (Line 326) – should be “have”.</p> <p>- Page 16 (Line 374) – “province” should be “provincial”</p> <p>- Page 17 (Lines 383-385) – just wanted to highlight the power of and how much I enjoyed this statement: “Although communication was perceived as positive due to the interpersonal relations between colleagues, adequate governance must be establish, including mechanisms to link organisations across sectors through formal channels to foster continuity.” To me, this is one of the major challenges of invoking truly One Health approaches to wicked problems like AMR. We have a lot of established relationships across One Health sectors that we rely on heavily to drive actions for things like AMR. However, they are not formal relationships, policies, or legislation. This means that when things are challenged, such as during COVID-19, the One Health approach gets lost, often in favour of human health. I leave this to you, but you could add something along this line to your argument here to bring out the One Health aspect more strongly. I think it fits with the paragraph and would link to your One Health statement later in the paragraph.</p>
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### VERSION 1 – AUTHOR RESPONSE

#### Reviewer 1’s comments

Comment #1: Authors could consider reversing the order of words 'qualitative' and 'context' in the title to accurately reflect the methodological approach and process undertaken.

Response: We thank reviewer 1 for the feedback. We have reversed the order of the words following your advice.

#### Comment #2:

In part 'How this study might affect research, practice, or policy?' (lines 23-27), authors mostly refer to the data from interview but not from the context analysis; e.g. does the policy provide sufficient

enabling environment for improving the situation with limited governance structures. Combining the findings especially to respond to this question will provide additional value for the readership, in particular policy/decision makers.

Response: We thank reviewer for the comment. We removed these sections following the editor's request. We believe these points are more integrated where discussed in the discussion section .

Comment #3: Methodology section does not describe in sufficient detail the process of translation of interviews from Spanish to English and how the translation bias was minimised. Authors may want to look into the work of Bogusia Temple (e.g. Temple, B., & Young, A. (2004). Qualitative research and translation dilemmas. *Qualitative research*, 4(2), 161-178; Temple, B., & Edwards, R. (2002). Interpreters/translators and cross-language research: Reflexivity and border crossings. *International journal of qualitative methods*, 1(2), 1-12.).

Response: We thank reviewer 1 for the comment. We have added a paragraph on details about minimising translation biases and how we performed them (lines 87-93, page 3).

Comment #4: The public and patient involvement does not provide information on PPI, and should be revised and amended with more precise description of the (non)involvement.

Response: We have revised the text to explain that patient and public involvement was not part of the study but that we did engage with the community of focus for the study and that public health experts in Argentina and the UK were consulted in relation to the study design and research questions (page 4, lines 165-169).

Comment #5: In the results section, themes are not very well defined and authors should consider reviewing the thematic analysis. Theme I "Cultural factors and socio-political context" is not sufficiently supported with evidence and quotes from the relevant table (Table 2). Theme III. "Antibiotics" is very broad and should be more precisely defined, in line with the findings used to support it (e.g. antibiotic use, access to antibiotics in animal care, antibiotic acquisition, etc.). Authors may want to consider amending the Theme V. "AMR control" with surveillance, in line with the presented findings.

Response: We thank reviewer 1 for these insightful comments. We have amended the theme "Antibiotics" to "Antibiotic access and use" and the theme V "AMR control" to "AMR surveillance" to better reflect what these themes cover. Additionally, we added upon theme I including a quote on cultural factors (lines 238-245, page 5) to more fully explain the theme and provide data to support our analysis.

It is stated here below.

"Inappropriate antibiotic use, driven by cultural norms like self-medication and seeking quick remedies is often influenced by limited healthcare access. This extends into food production, where profit motives can override caution. A shift in cultural perspective is crucial, educating on responsible use and the benefits of animal welfare and sustainable practices across the sectors" —Participant, from a public institution (ID=6), male.

Comment #6: Theme VI. "National action plan" does not offer sufficient data to be coded as a theme. Discussion section would benefit from reviewing based on the findings presented under the themes; e.g. the statement "Cross-sector coordination including animal, environmental and human sectors was highlighted as crucial by interviewees and constituted an essential element of short-term action towards tackling AMR and improve policy design." cannot be drawn from the presented findings. While the topic is very relevant and the approach chosen appropriate, the manuscript would benefit

from a major revision of description of methods section, review of thematic analysis findings (themes) and revisiting the discussion section.

Response: We acknowledge that more limited data may have been provided in support of the 'national action plan' theme. Besides the initial quote (Q18, Table 2), we incorporated a new excerpt from the 'National action plan' theme, explicitly addressing intersectoral collaboration and its key ongoing challenges (lines 390-396, page 13).

#### Reviewer 2's comments

Comment #1: This is a well-written paper on the opportunities, barriers, strengths, and overall context of Argentina's actions to tackle AMR across the One Health sectors. It provides valuable insight into this system at a national level based on a policy scan, stakeholder mapping, and stakeholder interviews. Together, these data provide a relatively robust perspective of Argentina's policy environment for and actions towards AMR.

Response: We thank reviewer 2 for the comments and feedback provided.

Comment #2: My main concern and reason for "No" to methods description and clear presentation of results is related to Tables 1 and 2. What do the light blue/white boxes indicate under the Themes in Table 1? There is an explanation for these in Table 2, but not Table 1. There is reference to the Table 1 colour scheme in Line 194 on Page 7 that should be added to the Table 1 caption. What does the oval around "External Drivers" at the bottom of Table 1 indicate?

Response: We thank the reviewer for this comment. We had been trying a more novel way to represent the qualitative data but on reflection, and with agreement from all coauthors, have removed the coloured boxes from Tables 1 and 2 as we believe they may be more of a distraction rather than adding value. We have amended the text in the methods section too to remove reference to this (page 5). We have carefully reconsidered the paper and believe this change does not detract from the manuscript but rather removes any ambiguity.

Comment #3: Tables 1 and 2: How were these relative colour assessments derived for each of the Tables? The explanations for each make sense, but how these determinations were made is not explained clearly in the text of the methods or results. For example, the specificity assessment for the Themes in Table 1. I am trying to wrap my head around the relative specificity assessment. I would like to see some brief justification for each specificity assessment. For example, the AMR knowledge and awareness theme seems less specific to me, but it is hard to judge because I am not clear on the "specific to what" context. These things need to be clarified. Without this, they could be perceived as somewhat arbitrary and subjective.

Response: See the comment above. We have removed the coloured bars and just refer to text and themes according to the number of mentions within interviews to define importance levels.

Comment #4: Just an editorial comment. There were multiple instances where spaces were missing between words and references or punctuation. Maybe this is an artifact of the pdf process, but it should be addressed. I did not mark these throughout.

Response: Thank you. We have reviewed and made editorial corrections throughout all of which are shown in tracked changes.

Comment #5: Page 2 (Line 38): "...qualitative analyses identified six themes.." and then the authors list seven themes and specify seven themes in the results.

Response: Corrected.

Comment #6: Page 5 (Lines 68-70): did the authors use any systematic, rapid review, or other methods to identify the literature included within their legal framework review and stakeholder mapping? How were experts consulted and for what within the stakeholder mapping? These both require a bit more explanation to be clear on what was done in Stage 1.

Response: We thank reviewer 2 for the comment. We have added a paragraph on the main sources used and literature (lines 71-77, page 3).

“Most sources were identified from the website of the National Commission for AMR control (CoNaCRA, “Comisión Nacional de Control de la Resistencia Antimicrobiana”) (1) and the National Institute of Infectious Diseases (INEI) (2). A recent systematic literature review was also utilised to support evidence synthesis and mapping (3). Moreover, expert knowledge was consulted for main organisations related to the AMR NAP and food-producing animals, and their interactions with stakeholders.”

References:

1. Ministry of Health. Comisión Nacional de Control de la Resistencia Antimicrobiana (CoNaCRA) 2024 [Available from: <https://www.argentina.gob.ar/salud/epidemiologia/comision-nacional-de-control-de-la-resistencia-antimicrobiana-conacra/>].
2. Instituto Nacional de Enfermedades Infecciosas (INEI) – ANLIS “DR. CARLOS G. MALBRAN. Servicio Antimicrobianos 2024 [Available from: <http://antimicrobianos.com.ar/servicio-antimicrobianos>].
3. McCormick BP, Quiroga MP, Álvarez VE, Centrón D, Tiftonell P. Antimicrobial resistance dissemination associated with intensive animal production practices in Argentina: A systematic review and meta-analysis. *Revista Argentina de Microbiología*. 2022.

Comment #7: Page 7 (Line 190): should “Two themes emerged from countries embedded values...” be “Two themes emerged from Argentina’s embedded values...”

Response: Corrected.

Comment #8: Page 7 (Lines 197-211). The theme of “Cultural factors and socio-political context” is less specific, as described. I find this paragraph difficult to put together. The authors start by mentioning the importance of local community context, but then jumps to country level economic and political shifts. The quote supports the latter. How important are the local community contexts and variability within these? This could be brought out more, if it was important from the interview data.

Response: We adjusted our narrative to focus on socio-political and country-specific characteristics, omitting community context from the revised paragraph, as our interview data does not substantiate those findings (page 5).

Comment #9: Page 14: minor grammar errors. Line 265 – remove “were” from sentence. Line 284 – “to raise the human population’s awareness”. Line 286 –“remains”.

Response: Corrected.

Comment #10:- Page 14 (Line 301): the authors state that “one participant indicated that testing for critical animal pathogens [in animals] is routine.” They mentioned mastitis in dairy animals, but then Salmonella. I would like to confirm that they specifically mean/mentioned animal pathogens (e.g., the mastitis example) vs the more typical human foodborne pathogens (e.g., Salmonella) that are more typical of national AMR surveillance programs in other countries. I ask this because many national

surveillance programs lack much, if any animal pathogen data, which is a large gap that needs to be filled. This is excellent if the program in Argentina is doing this. So, this is a question of being very clear in the language and pathogens that I hope the authors can clarify/confirm.

Response: This has been clarified now. We referred to animal pathogens (line 367, page 12).

Comment #11:- Page 15 (Line 326) – should be “have”.

Response: Corrected.

Comment #12:- Page 16 (Line 374) – “province” should be “provincial”

Response: Corrected.

Comment #13: Page 17 (Lines 383-385” – just wanted to highlight the power of and how much I enjoyed this statement: “Although communication was perceived as positive due to the interpersonal relations between colleagues, adequate governance must be establish, including mechanisms to link organisations across sectors through formal channels to foster continuity.” To me, this is one of the major challenges of invoking truly One Health approaches to wicked problems like AMR. We have a lot of established relationships across One Health sectors that we rely on heavily to drive actions for things like AMR. However, they are not formal relationships, policies, or legislation. This means that when things are challenged, such as during COVID-19, the One Health approach gets lost, often in favour of human health. I leave this to you, but you could add something along this line to your argument here to bring out the One Health aspect more strongly. I think it fits with the paragraph and would link to your One Health statement later in the paragraph.

Response: We thank reviewer 2 for the comment. We have added a sentence following the One Health aspect (line 454-458, page 15); or see below.

“ Although communication was perceived as positive due to interpersonal relations between colleagues, adequate governance must be established, including mechanisms to link organisations across sectors through formal channels to foster continuity. Effectively tackling these challenges is essential for the One Health approach, particularly given the COVID-19 pandemic's revelation of significant complexities and gaps in intersectoral collaboration, underscoring the need for integrated, human-uncentered, policies (40).”

### VERSION 2 – REVIEW

<b>REVIEWER</b>	Otto, Simon University of Alberta
<b>REVIEW RETURNED</b>	18-Apr-2024
<b>GENERAL COMMENTS</b>	- I appreciate the clarification and simplification of Tables 1 and 2 with respect to removal of the colour scheme. - My concerns have been addressed in this revised manuscript.

### VERSION 2 – AUTHOR RESPONSE

## Reviewer 2's comments

Comment #1: I appreciate the clarification and simplification of Tables 1 and 2 with respect to removal of the colour scheme. My concerns have been addressed in this revised manuscript.

Response: We thank reviewer 2 for the feedback.