ASEAN-Australia One Health Fellowship Programme Research Proposal

**Names:** DrJan Yong, Mr Alex Lew, Dr Moses Tay

**Country:**  Singapore

**Title:** Public Attitudes towards Antimicrobial Resistance (AMR) issues in Singapore

# 1         Introduction/Background

Singapore’s One Health framework comprises 5 government agencies- the Ministry of Health, the National Environment Agency, the National Parks Board, Singapore Food Agency, and the Public Utilities Board, Singapore’s national water agency (Ministry of Health, 2022). These government agencies work closely when dealing with cross-sectoral issues such as antimicrobial resistance, zoonotic disease outbreaks, vector borne diseases through a One Health approach (Ministry of Health, 2022).

The role of public education in tackling One Health issues has become more apparent (Berrian, et al, 2017) (Wu, et al., 2023) and many countries are beginning to recognise its importance and implement or integrate One Health into their education systems (Haxton et al., 2015). Decades of widespread misuse of antibiotics worldwide have contributed to the development of antimicrobial resistance (AMR), which directly endangers public health. To address AMR and ensure the continued effectiveness of antimicrobials, educational efforts aimed at promoting positive behavioural changes regarding AMR have been implemented, yielding some positive outcomes (Fletcher-Miles, H., et al).

In 2018, the UK Health Education England Department, National Health Service released a report on educational priorities to tackle antimicrobial resistance (Marvasi, et al, 2021). Singapore’s One Health framework identified increasing public awareness and understanding of antimicrobial resistance as a priority area (Ministry of Health, 2017). To achieve this, the framework mentioned the use of awareness campaigns and key messages such as “antibiotics do not work for viral infections” (Ministry of Health, 2017), with the aim of fostering a positive change in attitudes towards the use of antibiotics.

The aim of the research project is to conduct a literature review to assess the impact of public education campaigns to affect behaviour change pertaining to antimicrobial resistance in Singapore. The Research Question: Have public education campaigns on antimicrobial resistance in Singapore resulted in any change in attitudes towards the use of antibiotics?

**2**         **Methodology**

A systematic review of literature related to AMR as perceived and understood by the general public across the world will be conducted. This will include a comprehensive literature search to identify research papers that support the use of public education related to AMR, on the basis that these education efforts are effective in instilling a change in attitudes towards the use of antibiotics. This will be done via the PubMed, JSTOR, SCOPUS and Web of Science Core Collection databases then a follow-up search will be conducted on the National Archives, Publications of the Parliament and One Search database of Singapore for all related publications for public education conducted for AMR and associated attitude changes.

The inclusion criteria for the initial search will be “antimicrobial resistance”, “public education”, “public outreach”, “attitude change” and “public perception of antimicrobial resistance”. Then for the follow up, the focus will be on antimicrobial resistance in Singapore and the response of the general public to these campaigns. The time frame used will be a 10-year period from 29 April 2014 to 29 April 2024.

Data extraction and analysis will be performed using EndNote and Sumarito compare the sources and for further statistical analysis.

The methodology may not sufficiently describe the entire population of Singapore as some of the industries that affect AMR, such as local food animal production is quite limited (Singapore Food Agency, 2023).

Literature reviewed will be from open access or paid access provided by the University of Murdoch. The study does not discriminate between any demographic and does not infringe upon any GEDSI considerations. Any barriers to accessibility of any of the groups within the GEDSI will be addressed to ensure that the results will be representative of the GEDSI communities and studies included in the review will need to comply with the terms laid out in the DFAT GEDSI Analysis Good Practice Note. No ethical approval is required for the study.

# 3         Work Plan

***Gantt Chart Overview:***

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Activity*** | ***Jan 2024*** | ***Feb 2024*** | ***Mar 2024*** | ***Apr 2024*** | ***May 2024*** | ***Jun 2024*** | ***Jul 2024*** | ***Aug 2024*** | ***Sept 2024*** |
| *Literature Review & Data Collection* | *X* | *X* |  |  |  |  |  |  |  |
| *Data Analysis* |  | *X* | *X* |  |  |  |  |  |  |
| *Drafting Manuscript* |  |  | *X* | *X* | X | X |  |  |  |
| *Revision and Finalization of Manuscript* |  |  |  |  |  | *X* | X | X |  |
| *Manuscript Submission* |  |  |  |  |  |  |  |  | *X* |

# 4         References

1. Ministry of Health. (2022). Situational and Risk Assessment Reports for One Health Hazards. Retrieved from<https://www.moh.gov.sg/docs/librariesprovider5/joint-one-health-report/joint-oh-quarterly-report_nov-2022.pdf>
2. Ministry of Health. (2017). National Strategic Action Plan on Antimicrobial Resistance. Retrieved from<https://www.moh.gov.sg/docs/librariesprovider5/resources-statistics/reports/sg-national-strategic-action-plan-on-amr.pdf>
3. Berrian, A. M., Smith, M. H., van Rooyen, J., Martínez-López, B., Plank, M. N., Smith, W. A., & Conrad, P. A. (2017). A community-based One Health education program for disease risk mitigation at the human-animal interface. *One Health (Amsterdam, Netherlands)*, 5, 9–20.<https://doi.org/10.1016/j.onehlt.2017.11.002>
4. Fletcher-Miles H., Gammon J., Williams S., Hunt J. (2020) A scoping review to assess the impact of public education campaigns to affect behaviour change pertaining to antimicrobial resistance. *American Journal of Infection Control.* 48(4), 433-442, https://doi.org/10.1016/j.ajic.2019.07.011.
5. Marvasi M, Casillas L, Vassallo A, Purchase D. (2021). Educational Activities for Students and Citizens Supporting the One-Health Approach on Antimicrobial Resistance. *Antibiotics (Basel)*. 10(12):1519. doi: 10.3390/antibiotics10121519.
6. Wu, Y., Luo, L., Wang, Y., Chen, X., Mo, D., Xie, L., & Sun, A. (2023). Strengthened public awareness of one health to prevent zoonosis spill over to humans. *The Science of the Total Environment*, 879, 163200.<https://doi.org/10.1016/j.scitotenv.2023.163200>
7. Haxton, E., Lindberg, A., Troell, K., & Redican, K. J. (2015). One Health education meets science. *Infection Ecology & Epidemiology*, 5, 30264.<https://doi.org/10.3402/iee.v5.30264>
8. Singapore Food Agency. (2023). Our Singapore Food Story. Retrieved from https://www.sfa.gov.sg/food-farming/sgfoodstory/our-singapore-food-story#:~:text=Singapore%20currently%20imports%20more%20than,diversification%20is%20our%20core%20strategy.