

Proceeding Paper

# Schoolchildren as Agents of Change towards Antimicrobial Resistance <sup>†</sup>

Michael Mosha <sup>1,\*</sup>, Erick Venant <sup>1</sup>, Baltazari Stanley <sup>1</sup>, Fatuma Denis <sup>1</sup>, Dorinegrace Mushi <sup>1</sup>, Eva Ombaka <sup>2</sup> and Karin Wiedenmayer <sup>3,4</sup>

<sup>1</sup> Roll Back Antimicrobial Resistance Initiative, Dodoma P.O. Box 2125, Tanzania

<sup>2</sup> Faculty of Pharmaceutics, St. John's University of Tanzania, Dodoma P.O. Box 47, Tanzania

<sup>3</sup> Swiss Tropical and Public Health Institute, P.O. Box, CH-4123, Allschwil, Switzerland

<sup>4</sup> University of Basel, P.O. Box, CH-4003 Basel, Switzerland

\* Correspondence: michaelmosha@rbainitiative.or.tz; Tel.: +255-659752233

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**Abstract:** Schoolchildren are in their formative years, and therefore at an ideal stage in their lives to take in knowledge and best practices that will guide their future behavior. Through the Roll Back Antimicrobial Resistance (RBA) Initiative in Tanzania, antimicrobial resistance (AMR) School Clubs have successfully educated and empowered schoolchildren to become antibiotic guardians and AMR champions. Using appropriate language and consideration of the local context, the project has employed a variety of innovative activities, including AMR arts and crafts, competitions, storytelling and interactive learning that would teach children in an engaging and enjoyable manner. The School Club project has demonstrated how a mix of fun-based knowledge and skills transfer methods and rewarding competitions can change antimicrobial use knowledge and practice in schoolchildren.

**Keywords:** antimicrobial resistance; RBA Initiative; AMR School Clubs; schoolchildren



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## 1. Project Overview

Antimicrobial resistance (AMR) refers to the ability of infectious microorganisms to resist medicines [1] and is primarily caused by the misuse of medicines [2]. Educating people on the basic knowledge and best practices in the use of medicines, at an early stage in their lives, may positively shape the behavior of a future patient population. Schoolchildren are in their formative years, and therefore at an optimal stage in their lives to take in knowledge and best practices that will guide their own behavior. Moreover, as they are connected with families, communities and are future leaders and healthcare providers, they may exert a positive impact within their networks. The Roll Back Antimicrobial Resistance (RBA) Initiative is a registered non-governmental organization in Tanzania that aims to fight back AMR. The organization sees both rural and urban communities as critical players in addressing AMR. The RBA Initiative promotes the rational use of antimicrobials, conducts research on AMR, facilitates dissemination of knowledge on AMR and promotes behavioral change, with the aim of reducing the rate of infection due to AMR. The Initiative has been pioneering work with young people as agents of change to increase AMR awareness and to promote positive behavioral changes.

The RBA Initiative has implemented the AMR School Clubs project in the Dodoma region in Tanzania. The project consists of educating and empowering schoolchildren in selected schools to become agents of change who, in turn, will encourage the community to adopt positive behaviors that will prevent the spread and emergency of AMR.

The project also sensitizes on the “One Health” approach [3] as a key tool to contain AMR. The RBA Initiative uses different strategies to enhance understanding of AMR while encouraging creativity and innovation among the students. Using appropriate language

and consideration of the local context, the project employs a variety of innovative activities, including AMR arts and crafts (i.e., songs, drama, traditional dance, drawing and poems), competitions, storytelling and interactive learning as a set of fun activities, integrated with classroom teaching [4].

The main objective is to equip schoolchildren with the knowledge and skills to understand antimicrobial use and AMR and with the ability to pass the knowledge to their families, other students and the community at large.

## 2. Results and Outcomes

Through the RBA Initiative, AMR School Clubs have successfully educated and empowered schoolchildren to become antibiotic guardians and AMR champions. The RBA Initiative has reached 11,552 schoolchildren from 25 Tanzanian schools, including primary and secondary schools [5].

The organization also commissioned a hand washing station and water tank to a secondary school, dedicated to the AMR arts and crafts competition winner. This allows educating schoolchildren about hand hygiene.

Students who have completed training, but have moved to other schools in various regions to pursue further studies, are supported and guided to continue spreading key AMR messages as AMR champions in their new communities and schools. A selection of stories of some of the AMR champions is accessible via: <https://rbainitiative.or.tz/events.php> (accessed on 22 November 2022).

Rhoda, a 15-year-old student, shared her story of how the education she has received in the AMR School Club has transformed her own life and that of her community. She said, “Attending an AMR Club has made a huge difference in my life. I have learned so many things, like the importance of hand-washing and hygiene, how to identify fake medicine and the importance of always completing the full course of antibiotics (even after feeling well). I’ve also learned that we should never share our medicine with anyone”. Rhoda’s account captures the voice and experience of many schoolchildren in Tanzania. The full story is accessible via: <https://www.stopsuperbugs.co.uk/stories/story/Rhodas-story/> (accessed on 22 November 2022).

The arts and crafts work, such as songs and dramas composed by the RBA Initiative and AMR Club members, can successfully be used as educational entertainment, for instance using the YouTube channel.

The RBA Initiative has increased the AMR knowledge of School Club members. In an interventional pre-post comparative study, data were collected before and after training on antimicrobial use and resistance. Three aspects were investigated: (i) awareness of ways to reduce AMR; (ii) knowledge that antibiotics cannot be used to treat flu; and (iii) factors that contribute to AMR. Before the training, knowledge of these aspects was below 37%. Three months after the training, average knowledge had increased to above 90% [3].

The head of Mkonze Secondary School, Mr. Andrew Rumishael, explained how the RBA Initiative’s AMR School Clubs project is making a positive change, not only through AMR education, but also through improving WASH infrastructure and hand hygiene. “We are very grateful for the handwashing station. This station is a great help for current and future schoolchildren with hand hygiene. We have not only benefited from AMR education, but also the WASH infrastructure”. He further explained how AMR education, provided through this project, benefited the community and the family members through trained students. Mr. Andrew Rumishael’s account is accessible via: <https://www.youtube.com/watch?v=7hwOeXcTxCc> (accessed on 22 November 2022).

The RBA Initiative AMR School Club project has demonstrated how a mix of fun-based knowledge and skills transfer and rewarding competitions can change antimicrobial use knowledge and practice in schoolchildren. During the United Nations AMR-High-level Interactive Dialogue, the RBA Initiative AMR School Clubs project was cited as an important example of creative, community-focused support [4,6].

### 3. Future Development

In order to reach more schoolchildren across a wider geographic area in Tanzania, the RBA Initiative keeps seeking financial support to scale up the AMR School Clubs. The organization intends to utilize the lessons learned by engaging the trained students who are AMR champions to continue acting as agents of change in their communities. As part of sharing best practices and exploring how this approach could be applied in other countries, the RBA Initiative is proactively disseminating its project outcomes and findings to a broader audience at various conferences and meetings.

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