World Health Organization

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IMPACT STORY

Bangladesh

EMPOWERING BANGLADESH'S NEXT GENERATION: CONFRONTING ANTIMICROBIAL RESISTANCE THROUGH EDUCATION AND AWARENESS

END OF BIENNIUM RESULTS REPORT 2022 - 2023

Credits

Addressing AMR through education

In Bangladesh, the lack of awareness about Antimicrobial Resistance (AMR) remains a pressing concern. Despite the growing global threat of drug-resistant infections, there is limited understanding among the general population and healthcare practitioners about the responsible use of antibiotics. Overuse and misuse of antibiotics are common, leading to the development of antibiotic-resistant strains of bacteria.[1] The absence of comprehensive public health campaigns and educational initiatives perpetuates this issue, putting the effectiveness of vital antimicrobials at risk.[2] Recognizing the critical need for education on AMR, the World Health Organization (WHO) spearheaded a campaign targeting secondary school students—a demographic unfamiliar with AMR due to its absence in their curriculum. Pre- and post-campaign surveys revealed a gap in AMR understanding that was effectively addressed by the campaign, vastly improving students' knowledge. A pivotal roundtable with policymakers in October 2023, facilitated by WHO and organized by the Directorate General of Drug Administration (DGDA), resulted in a commitment from the National Curriculum and Textbook Board (NCTB) and Directorate of Secondary and Higher Education (DSHE) to address this crucial issue. Following a proposal from DGDA on 13 December 2023, the Ministry of Health and Family Welfare (MoHFW) officially requested NCTB to integrate AMR topics into the secondary educational curriculum—an impactful milestone for Bangladesh. This activity will facilitate a major activity of the "National Strategy and Action Plan for Antimicrobial Resistance Containment in Bangladesh [2023-2028]" and also aligns well with activities mentioned in the global AMR action plan.

Key WHO Contributions

- **Collaborated with Quadripartite Secretariat for One Health to organize a global consultation on AMR awareness.**
- **Conducted several educational campaigns to close knowledge gaps among children, teachers, pharmacy retailers, and healthcare providers, in partnership with the government.**
- **Developed the AWaRe classification for antibiotics to support stewardship efforts globally.**
- **Documented WHO's AMR activities with the National Regulatory Authority for Drugs (DGDA) in quarterly bulletins, reaching medical students and practitioners.**
- **Provided technical support for informative presentations, distribution of awareness materials, and engaging storytelling to convey AMR severity to secondary school children.**
- **Contributed to creating appealing AMR advocacy materials for children, including "Tinu-Minu and Superbug" comic book, "Invention of Penicillin" coloring book, comic posters, animation of "Tinu-Minu and Superbug," and WHO-AWaRe Poster.**
- **Advocated for AMR inclusion in school curriculum to high-ranking policymakers.**

How did Bangladesh, with the support of WHO, achieve this?

In 2022, the quadripartite agencies - comprising the Food and Agriculture Organization of the United Nations (FAO), the UN Environment Programme (UNEP), WHO, and the World Organisation for Animal Health (WOAH,

formerly known as OIE) - organized two consecutive global consultation meetings to engage stakeholders in discussions on the pressing issue of AMR. During the consultations, participants emphasized the importance of targeting children, students, and youth as the primary audience for AMR awareness initiatives.[3] Recognizing the urgency to raise awareness about AMR, WHO Bangladesh then collaborated with the government to initiate and conduct an educational campaign to bridge the knowledge gap in children, pharmacy retailers, and healthcare providers.

"When shall we start the practice of asking at least one question related to antimicrobial resistance in all public examinations in Bangladesh? Shall it be next year, this year, tomorrow, or today? Let us unite and declare with one voice: The time is now!"

-Professor Dr Md. Sayedur Rahman, Chairman, Department of Pharmacology, Bangabandhu Sheikh Mujib Medical University

In 2017, the WHO Expert Committee on Selection and Use of Essential Medicines introduced the AWaRe classification of antibiotics to strengthen antibiotic stewardship efforts.[4] This classification categorizes antibiotics into three groups that guides their use, considering their impact on antimicrobial resistance and emphasizing the importance of judicious antibiotic use at the local, national, and global levels. WHO Bangladesh facilitated the dissemination of the AWaRe classification to medical students and practitioners through the National Regulatory Authority for Drugs (DGDA), by developing and disseminating WHO AWaRe posters. Additionally, DGDA, with WHO's technical support, created a comic book titled "Tinu-Minu and Superbug" which played a crucial role in raising AMR awareness among school children. [5] Despite initial challenges from parents and teachers questioning their involvement, the AMR awareness campaign successfully engaged school children, nurturing a future generation equipped to address this global health threat and empowering them to promote proper antibiotic use within their families and communities.

"Let us handle medicine with care and build a healthy life together."

-Character Minu and family from AMR Animation "Tinu Minu and Super Bug"

During World Antimicrobial Awareness Week (WAAW) 2022, DGDA organized an art competition at Cox's Bazar Model High School centered on the theme of "AMR." The event featured presentations and storytelling sessions, sparking quick enthusiasm among the children who swiftly grasped the intricacies of AMR and produced impressive artwork reflecting their understanding. Notably, they expressed awareness of the detrimental effects of self-medication with antibiotics. This engagement underscored the effectiveness of involving children in the awareness campaign. Recognizing the necessity for behavioral change regarding antibiotic self-medication, it was evident that addressing such practices should commence at the school level, emphasizing the importance of integrating AMR topics into the curriculum.

Inauguration of the Antimicrobial Resistance (AMR) School campaign in Dhaka.

Photo credit: WHO Bangladesh

With technical and financial backing from WHO, DGDA developed animations, comic posters, and a coloring book titled "Invention of Penicillin." To evaluate the impact of these resources, DGDA conducted a pre-and-post survey among 199 school students at Chattogram Cantonment Public College. The survey initially revealed a lack of awareness, with students displaying little understanding of AMR and responsible antimicrobial use. However, following the campaign, the post-test revealed a significant improvement in students' knowledge level. Around 84% of students answered the questions correctly during the post-survey compared to just 33% answering them correctly in the pre-survey. The questions were focusing on antibiotic use, misuse, and antimicrobial resistance, particularly highlighting children's awareness of these issues and the effectiveness of interventions in promoting informed perspectives. This significant improvement in understanding indicates the potential for integrating AMR topics into the curriculum to positively influence both knowledge and behavior.

The findings of this survey and associated activities were presented at a roundtable meeting, a collaborative effort between WHO and DGDA, involving key policymakers. Held on October 29, 2023, the meeting aimed to spur the integration of AMR education into secondary school curricula. Attended by representatives from diverse health and education institutions, including the Ministry of Health and Family Welfare, Ministry of Education, academicians, AMR experts, and development partners, the discussion underscored the pressing need to educate school-going children about AMR. A comprehensive approach was proposed, with the Ministry of Health and Family Welfare urging the Ministry of Education to include AMR topics in secondary education textbooks. Experts emphasized the global imperative to raise awareness about AMR and commended WHO's initiatives. Subsequently, the Ministry of Health and Family Welfare officially requested the National Curriculum and Textbook Board (NCTB) to integrate AMR issues into the secondary educational curriculum, signalling a commendable step towards implementation. The presence of high-ranking policymakers garnered increased media coverage, including a full-page feature in the popular national newspaper "Daily Samakal." [6]

An AMR audiovisual animation, jointly produced by WHO and DGDA, was broadcasted during World AMR Awareness Week in November 2023 on three national channels in Bangladesh, accompanied by a children's theme song. Work is currently underway on a second comic book. Awareness materials, including poster versions of the comic books, a colouring book on antibiotics for children, AMR quarterly bulletins, and posters for communications are available on an official governmental website. [7]

Integrating AMR into school curricula represents a strategic, long-term approach to empower students as advocates within their communities, cultivating a generation knowledgeable and conscientious about antimicrobial use. This educational initiative is expected to equip future generations with the understanding to responsibly use antimicrobial medications, mitigating risks associated with misuse, overuse, and self-medication.

While involving children is crucial in shaping future attitudes and behaviours, sustaining the campaign is essential to reinforce these messages and ensure long-term impact. Additionally, political leadership is vital in driving policy changes, allocating resources, and implementing initiatives to comprehensively address AMR. The school campaign's lessons emphasize the importance of continued investment in education and awareness programs. By maintaining momentum through sustained campaigns, safeguarding public health, and mitigating the threat of antimicrobial resistance for generations to come becomes achievable.

References

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