Combatting Antimicrobial Resistance: A Faith-Based Initiative in Malawi

Evans C. Chirambo[1], Sharon Odeo[2], Dumisani Nkhoma[1], Judith Asin[2], Austine Opiata[2], Umazi Fanjo[2], Pacharo Matchere[1], Beatrice Chiweza[1], Elled Mwenyekonde[1], Happy Makala[1], Innocent Chibwe[3], Collins Mitambo[3] and Richard Neci[2]

[1]Christian Health Association of Malawi (CHAM), [2]Ecumenical Pharmaceutical Network (EPN), and [3]Ministry of Health-Antimicrobial Resistance Coordinating Centre

Abstract

Christian Health Association of Malawi (CHAM), a Malawian faith-based organisation, collaborated with Ecumenical Pharmaceutical Network (EPN), a Kenyan-based international not-for-profit Christian organisation to implement an antimicrobial resistance (AMR) Project to address the current threat of AMR.

Twenty five health facilities with 100 AMR champions (four per facility) were selected for project implementation. The champions received training and developed AMS actions plans to address their facilities' AMR problems.

The champions implemented over 90% of the AMS action plans covering all key AMS areas; rational use of antibiotics, proper hygienic practices, waste management, prevent resistant infections, microbiology tests based treatment initiation, and checking of antibiotics quality. CHAM has started addressing AMR problems and facilities embraced it. More resources are needed to scale-up the AMS programme.

Introduction

Background: Antimicrobial Resistance (AMR) poses a significant global threat. WHO estimates that over 5 million death globally are attributable to or associated with AMR (1). In Malawi, AMR related death are about 19,300 annually (2). If left unaddressed, WHO predicts a global annual mortality rate of 10 million by 2050.

In response to this threat, CHAM, the largest health faith-based organization in Malawi (3), partnered with EPN, a Kenyan-based international not-for-profit Christian organization offering pharmaceutical support services to African faith-based institutions, to implement an AMR interventions. This report details the project's implementation, outcomes, challenges, lessons learned, and recommendations.

Problem Statement: Inadequate response to antimicrobial resistance (AMR) within CHAM health facilities amidst the ongoing global AMR crisis.

Objectives: *Main objective;* to optimise the use of antimicrobials, prevent hospital infections and ensure good quality of antimicrobials in CHAM health facilities. *Specific objectives*; (1) to train HCW on AMR/AMS, (2) to establish key committees in AMS to address AMR problems, (3) to conduct 225 minilab tests to ensure adequate antibiotics quality, and (4) To conduct 333 microbiology culture and sensitivity tests.

Figure 1: AMR/AMS Training; **(a)** A physical training session in progress, **(b)** A Group photo of participants during the training, and **(c)** AMS certificate of one of the AMR/AMS Champions from Blessings Community Hospital

Methods and Materials

25 health facilities were selected based on 50-minimum in-patient beds and proximity to microbiology laboratory for culture and sensitivity testing. 100 AMR champions were selected, four per facility from clinical, pharmacy, nursing and laboratory departments to lead the project implementation.

A physical AMR and AMS training was conducted to facet an online training. Subsequently, AMR champions developed AMS action plans on AMR gaps in their facilities to guide project implementation.

CHAM partnered with Pharmacy and Medicines Regulatory Authority (PMRA) for Minilab tests, and Kamuzu Central Hospital (KCH) for microbiology cultures and sensitivity testing. Minilab tests were conducted at CHAM Minilab Laboratory while microbiology tests at KCH (delayed to secure the laboratory) . The project ran from January to December 2023.

Results

98 champions (98%) participated in physical training (**Figure 1**). A total of 122 certifications were achieved from online training, representing 61% of participants. Additionally, (100/100) AMR champions trained fellow healthcare workers (HCW). The champions successfully implemented 90% of the AMS action plans (**Figure 2**).

With AMR champions' recommendations, facilities' management teams established AMS, Drug and Therapeutic Committee (DTC), and Infection Prevention Control (IPC) committees. These committees operated in accordance with national guidelines as well as facility tailored protocols, convening monthly (**Figure 3a**) to oversee antibiotic use, hand hygiene and waste management (**Figure 3b-c**) , and strategies to combat the spread of resistant bacteria or antimicrobial superbugs within the facilities (**Figure 3d**).

CHAM tested 298 minilab samples (132%) surpassing the target with all samples passing minimum acceptable quality standard (**Figure 3e-h**). Culture and sensitivity tests have just started being conducted with 48 samples processed representing 14.4% (48).

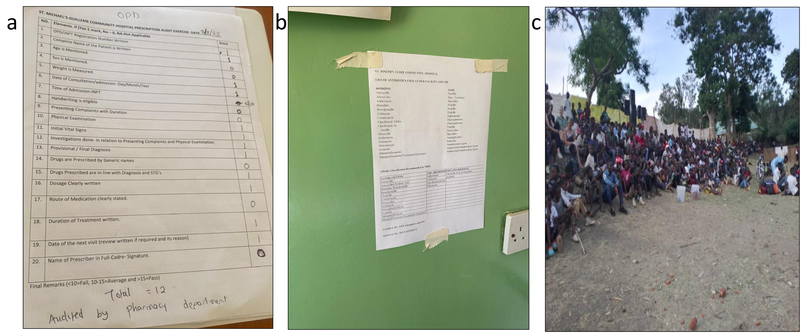

Figure 2: (a) First ever AMS activities and success stories in facilities of project implementation; **(b)** Prescription assessment results at St Michaels Guillime Community Hospital, (b) WHO's AWaRe Classification of antibiotics in consultation room at St. Joseph's Ludzi Community Hospital, and **(C)** Community AMR awareness as part of World Antimicrobial Awareness Week at St Annes Mission Hospital in Nkhotakota

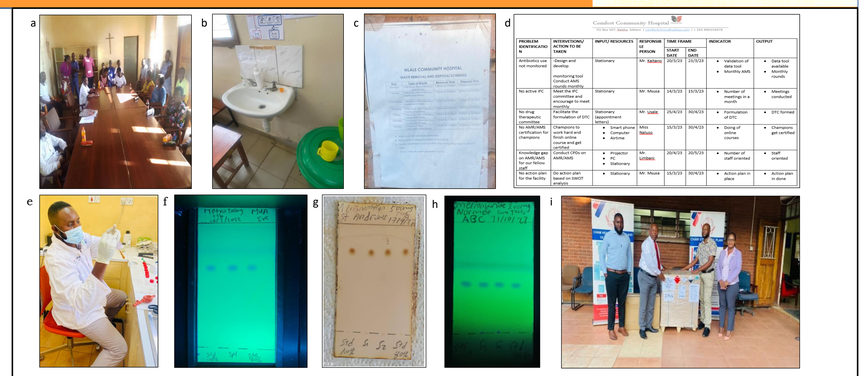

Figure 3: a-d) AMR/AMS activities; (a) monthly IPC/DTC/AMS monthly meeting at Child Legacy Community Hospital, (b) hand hygiene station installed, (c) waste collection schedule developed, (d) Part of an Action Plan for Mlale Community Hospital. (e-i) Minilab activities to ensure quality medicines; (e) Performing minilab tests at CHAM Secretariat Minilab Laboratory, (f-h) Minilab test results, and(i) CHAM Executive Director and team receiving minilab briefcase from Difaem, Germany.

Discussion

The two individuals who missed physical training completed online certification, ensuring a 100% training rate for AMR champions. The champions trained fellow HCW. However, champions encountered challenges in implementing action plans because of delays in funds disbursement during requests transitions.

Most of the AMS action plan objectives were achieved with support from facility management teams. These teams fully embraced the project and provided assistance to AMR champions in implementing feasible action points.

Minilab testing initially progressed slowly until CHAM received the minilab briefcase (**Figure 3i**), leading to completion of tests by September 2023. Challenges arose in securing a laboratory for microbiology cultures which led to switching from National Reference Laboratory (NRL) to KCH laboratory delaying implementation of this objective. KCH proved pivotal, offering a sustainable solution.

Challenges

- Frequent medicine stockouts impact treatment decisions
- Delay in securing a laboratory hindered completion of microbiology cultures.
- Supportive supervision delays impeded project advancement.
- High staff turnover disrupted project implementation at facility level.
- Project lacked preparatory and close-out phases because of funder's conditions.

Lessons and Recommendation

- CHAM utilised limited resources to significantly mitigate challenges of AMR.
- Explicit instructions are necessary when working with mid-level cadres.
- Early supervision is crucial for project implementation improvement.
- Managing high staff turnover is critical for smooth project implementation.
- Incorporating project tasks into job descriptions and KPIs is vital.

Conclusions

CHAM has initiated efforts to combat AMR in collaboration with MOH, with facilities actively embracing the initiative. It is imperative to expand the AMS program to other CHAM health facilities. Despite possessing excellent laboratory infrastructures, most of CHAM facilities lack microbiology culture laboratory equipment.

Contact

Happy Makala
Christian Health Association of Malawi (CHAM)
Email: hmakala@cham.org.mw
Website: http://cham.org.mw/
Phone: +265 882 33 27 97

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