

CONFERENCE ABSTRACTS

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Military and emergency pharmacy

Antibiotic selection in humanitarian health response: A donor perspective

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Background: The United States Agency for International Development's Bureau for Humanitarian Assistance (USAID/BHA) provides life-saving humanitarian assistance—including food, water, shelter, emergency healthcare, sanitation and hygiene, and critical nutrition services—to the world's most vulnerable and hardest-to-reach people.¹ A system of guidelines and technical guidance documents are available to support the application process for non-competitive awards.² The Pharmaceutical Guidance Document includes a Human Essential Medicines List (EML) intended to guide organizations requesting BHA funding for procurement of pharmaceuticals, a USAID restricted commodity.³ Within the EML, certain products are restricted to specific listed indications, and requests for procurement also trigger the use of additional reporting indicators. Historically, this list included several antibiotics, with the goal of limiting overuse and promoting antibiotic stewardship in BHA-funded humanitarian health programming.

In 2017, the World Health Organization (WHO) developed the Access, Watch, Reserve (AWaRe) scheme as a tool to support antibiotic stewardship by classifying products based on the potential to induce and propagate resistance.⁴ BHA pharmacy advisors wanted to update existing technical guidance and apply this scheme to the pharmaceutical selection process.

Purpose: Adoption of the WHO AWaRe classification by the USAID/BHA Human EML could allow implementing partners

more flexibility in antibiotic selection by expanding potential product indications while reinforcing principles of antimicrobial stewardship in humanitarian health response activities.

Methods: Over several months, USAID/BHA pharmacy technical advisors undertook a revision of the Human EML to address updates to clinical guidance. During this revision, antibiotics were removed from the restricted use indication list and the WHO AWaRe classification system was integrated into BHA's guidance. A retrospective review of an internal database for fiscal year 2022 was conducted to determine the number of requests for antibiotics previously considered as restricted use indication prior to this change.

Results: The database review produced 47 requests to procure antibiotics previously listed as restricted use indication during fiscal year 2022, prior to the adoption of the AWaRe classification. The three antibiotics with restricted use indications during that period were azithromycin, cefazolin, and cefixime, each with a single indication. Currently, azithromycin and cefixime are considered WATCH group, and cefazolin is considered ACCESS group by WHO. In the updated BHA guidance, requests for all antibiotics categorized in the WATCH group and listed on BHA's EML must align with at least one WHO AWaRe indication. This change now allows multiple indications for both azithromycin and cefixime, and removes restrictions for cefazolin requests. Additionally, partners are no longer required to track a separate indicator for these products.

Conclusion: Adoption of WHO AWaRe classification in BHA's EML allows tailoring of WATCH group antibiotic use to identified needs and clinical best practices while promoting appropriate use and antibiotic stewardship in humanitarian health response.

Antimicrobial resistance in conflict zones: A global concern

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Background: The increased prevalence of antibiotic-resistant bacteria poses a major healthcare threat. Challenged with an almost comprehensive absence of new antimicrobial drugs under development, antibiotic resistance has become one of the main public health problems of our time. Antimicrobial resistance in settings of war, migration, and in conflict zones has been poorly addressed.

Purpose: Shed light on this important dilemma and capture studies that have reported AMR in refugees, migrants as well as in war.

Methods: A search of electronic databases was conducted. Articles relevant to antimicrobial resistance, its effect on refugees, asylum seekers, high-migrant community settings (such as refugee camps), and access to health care were reviewed from Scopus, PubMed, and GoogleScholar using the following keywords: "AMR" OR "AMR among refugees" OR "antibiotic-resistant microorganism in refugee camps," and for policies for "AMR control". An article was excluded if it met any of the following criteria: duplicates or no English abstract. The selected articles were retrieved and assessed for relevance. Review articles were included if related and citations were made as necessary.

Results: The finding showed increased antibiotic resistance among injured individuals in war and in refugee camps and asylums. There is a need for improved living conditions, access to health care, and initiatives to facilitate detection and appropriate high-quality treatment for antibiotic-resistant infections during transit and in host countries.

Conclusion: Protocols for the prevention and control of infection and for antibiotic surveillance need to be integrated into all aspects of health care, which should be accessible during the war and for all migrants. Addressing AMR requires pragmatic, multifaceted action at different levels to detect and manage potentially high rates of multidrug-resistant infections. One of the most important strategies in addressing AMR is implementing antimicrobial stewardship in healthcare settings together with applying infection control policies.

Significance of the study: The apparent high rates of AMR among refugees, in countries hosting refugees, and in countries providing asylum, requires that the World Health Organization and other global health institutions address the causes, costs, and future considerations of conflict-related AMR as an issue of global governance.

Pharmaceutical responses to Ukrainian Refugees in Moldova

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In 2005, a major reform of humanitarian coordination, known as the Humanitarian Reform Agenda, introduced a number of new elements to enhance predictability, accountability and partnership. The Cluster Approach was one of these new elements. Clusters are groups of humanitarian organizations, both UN and non-UN, in each of the main sectors of humanitarian action, e.g. water, health and logistics. All clusters have focal points, known as Cluster Lead Agencies, which operate at the global and country level. Health Clusters exist to relieve suffering and save lives in humanitarian emergencies while advancing the well-being and dignity of affected populations.

Since 24 February 2022, increasing numbers of refugees and third-country nationals entering the Republic of Moldova have been registered amid the war in Ukraine. As of 18 April, the number of people displaced by the ongoing fighting has now surpassed the 12-million mark: over 4.9 million people have crossed international borders and at least 7.1 million have been displaced internally. Peace Winds Japan (PWJ) established a medical point in Chisinau at the request of the local government response to the increasing number of Ukrainian refugees. PWJ's medical team (ARROWS) consists of two members (doctor and nurse) in the first group and three members (doctor, nurse and pharmacist) in the second group. Here, the aim of the research is to evaluate the pharmaceutical responses for Ukrainian refugees.

The good points of the pharmaceutical responses were as following: 1) A pharmacy where prescription drugs could be purchased was secured within a 10-minute walking distance from the temporary clinic, 2) The use of illustrations in the medication instructions helped to visually explain dosage, and 3) Spreadsheets were used to manage the inventory of pharmaceuticals. On the other hand, the points for improvement were as following: 1) More time to create an application for the catalogue of medicine, and 2) Interpreters at the temporary clinic should be able to speak medical terminology. Such activities indicated that to provide appropriate health care for the refugees, the pharmacist was also required to be a medical logistician.

Role of pharmacist in arrival quarantine facility

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Background and Purpose:

Australian Medical Assistance Team (AUSMAT) are multidisciplinary health teams deployable by the Australian Government to respond to national or internationally to disasters. The teams consist of health care staff including Doctors, Nurses, Pharmacists, Allied health and Logisticians from around Australia who make up a roster. All staff on the roster have completed AUSMAT training where they are familiarised with humanitarian response and the equipment that is deployable through the WHO verified Type 1 and Type 2 Emergency Medical Teams.

In October 2020 AUSMAT was asked to led on the establishment of the Howard Springs International Quarantine Facility in response to the COVID-19 pandemic. The Facility was designed for Australian citizens and residents returning to Australia to undertake their mandatory quarantine period. While in quarantine, returnees were provided with access to full medical care including pharmaceutical services. We aim to outline the roles carried out by pharmacists in a quarantine facility.

Approach and Results:

Over the response period, 7,105 returnees passed through the quarantine facility, completing a minimum of 14 days in quarantine. Recognising the potential health barriers to returnees, some of whom had not lived in Australia for years, AUSMAT deployed pharmacy support (in addition to medical support) to the quarantine facility. The goal of the pharmacy support was to ensure access to medications for those who needed continuing supply of medicines and those who needed new supplies of medicines. The team investigated various options for the supplier of medications including the set up and management of an onsite pharmacy and determine the best option was integrate returnees back into the national health system and facilitate the supply of medicines through community pharmacies, as is the process for those not in quarantine.

After the introduction of the COVID-19 vaccine in Australia, staff working at the facility were prioritised for vaccines along with health care workers. Those working in the quarantine facility faced some challenges accessing vaccinations due to the location of the facility, the available vaccination appointments and the perception that these workers were at higher risk of infection. To alleviate these challenges the AUSMAT pharmacy team lead the role out of a COVID-19 vaccination campaign on site, vaccinating up to 50 people per day.

In addition to pharmacy services, the skill set of pharmacists was recognised as useful to provide operational support to other aspects of the running of the facility.

Conclusion:

Pharmacists play a crucial role in the delivery of health services in quarantine facilities both to staff and to those in quarantine and should be considered in the human resources design of quarantine facilities deployed to public health emergencies.

Planning for the next pandemic: A global delphi consensus study on multidisciplinary emergency response to COVID-19

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Political, socioeconomic, and behavioural factors have hindered the effectiveness of the COVID-19 pandemic response necessitating a collaborative and multidisciplinary approach to address these challenges. In this Delphi study published in Nature, we assembled a diverse panel of 386 experts from various fields, including academia, healthcare, government, and non-governmental organizations, across 112 countries and territories to propose specific actions to mitigate the pandemic's persistent long-term impact on public health.

The expert panel formulated 41 consensus statements and 57 recommendations targeting governments, healthcare systems, industry, and other crucial stakeholders across six domains: communication; health systems; vaccination; prevention; treatment and care; and inequities. After three years of disjointed global and national responses, it is worth noting that the top three recommendations emphasise the need for whole-of-society and whole-of-government approaches, while maintaining effective prevention measures using a vaccines-plus strategy. This approach incorporates various public health and financial support measures to complement vaccination efforts.

To plan for the near pandemic the panel used the Delphi method for policy recommendation development with at least 99% combined agreement to urge governments and other stakeholders across the following areas: enhance communication, rebuild public trust, and actively involve communities in managing pandemic responses. The study's findings have garnered the endorsement of 184 global organisations, highlighting points of unanimous agreement as well as six recommendations with >5% disagreement. These recommendations provide a road map for multidisciplinary action across public health, pharmacy and social care to address the inequities in the pandemic response as 29% of the world's population in low-income settings have not received a single dose of COVID-19 vaccine.

Development and implementation of a veterinary essential medicines list for use in humanitarian assistance livestock programming by the United States agency for international development's bureau for humanitarian assistance

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Background:

The United States Agency for International Development's Bureau for Humanitarian Assistance (USAID/BHA) provides life-saving humanitarian assistance for humans and livestock through an integrated One Health approach. There are a number of technical guidance documents that BHA pharmacists and livestock advisors utilize to ensure supported awards are implemented in accordance with international standards and best practices, including the BHA Emergency Application Guidelines¹, BHA Pharmaceutical & Medical Commodity Guidance², and the Livestock Emergency Guidelines & Standards³. USAID/BHA has developed the first Veterinary Essential Medicines List (VEML) to be used in humanitarian assistance settings based on analysis of implementing partners' frequently requested pharmaceuticals, review of reference manuals, and accepted global standards. Subject matter experts reviewed several drafts, providing input and feedback for the final version.

Purpose:

There are multiple purposes for the VEML, including the provision of an adequate selection of essential medicines required for basic animal care, simplify the veterinary pharmaceutical product selection process for USAID/BHA-supported animal health activities, expedite the USAID/BHA review and procurement approval for the veterinary pharmaceuticals requested, and maximize resources to provide the greatest amount of assistance to the greatest number of beneficiaries possible. Another objective of the VEML is to protect the human, animal, and ecosystem health by reducing antimicrobial resistance (AMR) risk associated with humanitarian livestock programming.

Methods:

In this case study we performed a retrospective review of all veterinary pharmaceutical procurements (including vaccines) by utilizing an internal USAID/BHA database and then analyzing these results. We describe the geographic distribution of use, types of disasters, vendors, drugs procured, quantities, and reason for use.

Results:

All USAID/BHA implementing partners must follow the Emergency Application Guidelines, adhere to the VEML or provide strong justification for the procurement of non-VEML products. Partners must also procure veterinary pharmaceuticals from USAID/BHA vetted and approved vendors; distribute pharmaceuticals only to Animal Health Providers (AHPs); build the local capacity of AHPs and private veterinary pharmacies in good storage, distribution, disposal, and documentation practices, withdrawal periods, and issues related to AMR; adhere to strict policies on the procurement and use of topical pest control products; and implement a monitoring system to ensure that only approved pharmaceuticals are used in programs. BHA funded \$2,133,045.33 worth of veterinary pharmaceuticals in 16 countries across 7 regions. Anthelmintics, antibiotics, and antiprotozoals were the top categories of funded pharmaceuticals.

Conclusion:

The USAID/BHA VEML is the first of its kind for humanitarian programming and disaster response. Together with associated requirements, it ensures that only safe and effective pharmaceuticals are used in USAID/BHA programs and reduces the risk of antimicrobial resistance while facilitating rapid humanitarian responses. Development and adoption of global standards for veterinary pharmaceuticals like the WHO Prequalification of Medicines Programme would further advance the safety and efficacy of pharmaceuticals used in humanitarian livestock programming and reduce associated AMR risk.

Malaysians' insight into substantial challenges in military field hospitals

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For the past 50 years, the Royal Medical and Dental Corps has participated in a number of medical deployments in order to better care for the Malaysian Armed Forces, rescue refugees and catastrophe victims, and lessen their suffering. Nonetheless, when a military field hospital is sent to deal with a natural disaster, man-made conflict, peacekeeping operation, as well as conventional battlefield, medical staffs experience grief challenges. Individuals are exposed to risks to their personal safety and health in a variety of settings and circumstances. By sharing their invaluable prior experience, they might facilitate the military and other organizations to carry out medical missions more successfully. Thus, the purpose of this study was to identify the numerous difficulties military healthcare personnel encountered while on deployment. A qualitative analysis was carried out utilizing a sample of twenty-one medical professionals who had participated in various field hospital deployments. Both purposeful and snowball sampling

methods were utilized to ensure a diverse pool of informants. The interviews were transcribed from audio recordings, and the researchers then looked for recurrent themes and issues in the text, which they individually categorized and verified. Four important themes were emphasized through thematic content analysis, including human resource management, environmental setting, operational, and logistical issues. With less strength to run the field hospital, varying levels of workforce competency, and maintaining motivation throughout the operational period, human resource management has become a concern. Furthermore, staffs must acclimatize to extreme hot or cold weather, danger to their personal safety which typically arises from man-made conflict, and exposure to potentially hazardous local endemic diseases. Numerous operational issues exist, such as the following: rapid deployment always leads to insufficient preparation; prolonged deployment decreases staff motivation; long working hours will result in staff fatigue; other continents spoke different languages, creating a language barrier; difficulty adjusting to different cultures; team communication issues; some patients may abuse free health services; and it is difficult to deliver varying dosing for pediatrics. There are various logistical challenges, including maintaining the pharmaceutical and medical supply chain, maintaining hospital sanitation with clean water and electricity, providing wholesome food for staff, managing blood banks with short shelf lives and heat sensitivity, managing clinical waste at the field, having sufficient financial resources, potential money loss during currency exchange, and occasionally encountering difficulty with custom border.

Pharmaceutical procurement in the emergency response of Médicos del Mundo (MdM) in the Russian-Ukrainian war

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RFMO-03 - Rapid Fire Session Monday, M1-M2, September 25, 2023, 2:30 PM - 4:00 PM

Background: Ukraine has been a central point of conflicts in Europe since 2014. On 24 February 2022, a coordinated attack from Russia officially started the Russian-Ukrainian war, dramatically changing the humanitarian response.

- Purpose: With the advent of the war, the main modality of pharmaceutical procurement for Médicos del Mundo (MdM) was based on the purchase of World Health Organization (WHO) emergency kits complemented with specific requests from the supported health facilities. However, this strategy presented many drawbacks. This work aims to analyse how MdM adapted this system to respond more efficiently over time.

Method: MdM implemented a strategy based on establishing a centralised pharmacy system, defining a standard list of essential health commodities, and shifting

from procurements only from international sources to mixed local and international.

Results: The changes in the strategy allowed the implementation of a pharmaceutical-grade warehouse, improved procurement efficiency by diversifying sources and reducing the items to be purchased based on the WHO essential medicines list and increased the acceptability of health commodities by healthcare providers and patients using national suppliers.

Conclusion: Adapting MdM's response in the first year of the Russian-Ukrainian war was crucial to ensuring a cost-efficient, sustainable, and therapeutically wise program. Moreover, it was part of a larger approach on the programmatic aspect of the mission, which could ensure an aligned response among other MdM chapters, and enhanced project implementation and reporting. This work contributes to improving the planning and execution of pharmaceutical procurement in future humanitarian emergency interventions.

Challenges of setup of the emergency clinic and the role of the pharmacist in the Ukrainian humanitarian crisis

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RFMO-03 - Rapid Fire Session Monday, M1-M2, September 25, 2023, 2:30 PM - 4:00 PM

Background

The humanitarian crisis in Ukraine which began on 24 February/02/ 2022, has resulted in a rapid increase in the number of internally displaced people that moving from eastern part to western part of Ukraine. In response, the International Federation of Red Cross and Red Crescent Societies (IFRC) opened a WHO EMT Type 1 fixed clinic in Uzhhorod which is a city in western part of Ukraine bordering Slovakia. In Ukraine, no foreign health care professional can provide medical service directly. Thus, our team supported Ukrainian health care professionals that were employed by the Ukrainian Red Cross Society.

Purpose

To consider how we as pharmacists can be involved in supporting local medical staff and ensuring the quality of the provision of medicines in situations where we cannot provide direct medical services. I was in charge of setting up and running this clinic operational from April to June 2022 as the Pharmacist/Medical Logistician of the IFRC Emergency Response Unit first rotation team led by the Finnish Red Cross.

Method

In Ukraine, no foreign health care professional can provide medical service directly. Thus, our team supported Ukrainian health care professionals that were employed by the Ukrainian Red Cross Society. I was in charge of setting up and running this clinic operational from April to June 2022 as the Pharmacist/Medical Logistician of the IFRC Emergency Response Unit first rotation team led by the Finnish Red Cross. Equipment, medicines and medical consumables were transported from Finland. As a pharmacist, I mainly set up the pharmacy and then created an inventory sheet to manage IN/OUT of medical supplies. Finally, we handed over everything to the Ukrainian health care professionals including the pharmacist and completed the mission.

Results

In this case, the medicines written in Finnish and English were illegible in Ukraine. This is often a barrier for those who manage medicines. Although we were prohibited to provide the medical service directly, I was able to provide logistical support during this atypical mission and to have a significant presence in the setup of the clinic because of the pharmacist's aspect of being a "medicines manager". In addition, since the clinic is still running today, we consider that the mission itself have been a success.

Conclusion

Red Cross Emergency Medical Relief often uses sender's medicines. The language on the package and the name of the medicines itself are sometimes different from the affected country. In this case, the medicines written in Finnish and English were illegible in Ukraine. This is often a barrier for those who manage medicines. The use of AI may help to solve these problems in the future.

In emergency medical relief, pharmacists are primarily responsible for two aspects of the mission: patient medication guidance and management of medical supplies. By using these two aspects depending on the situation, pharmacists can play an active role in any mission, whether it is a typical or atypical mission.

Rapid conditioning of Crêdo ProMed™ TIC's

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RFMO-03 - Rapid Fire Session Monday, M1-M2, September 25, 2023, 2:30 PM - 4:00 PM

Background:

During AUSMAT deployments vaccine administration can be required prior to departure, sometimes with very short notice. To enable transport of vaccines to participants Crêdo ProMed™ thermally protected medical transporters are used. Due to the sudden nature of deployments and staff movements it is not always possible to condition ice bricks on the bench as per manufacturers instructions prior to vaccine transport and so an accelerated process is required.

Purpose:

The aim of the study was to determine a method to rapidly condition TIC's (which contain a phase change material). It was proposed that soaking the ice bricks in tap water or running them under cold tap water would accelerate the condition process.

Method:

Six different condition methods were selected to trial:

- 1) Soaking in a sink of cold tap water for 1 minute
- 2) Soaking in a sink of cold tap water for 2 minute
- 3) Soaking in a sink of cold tap water for 3 minute
- 4) Running the TIC under cold tap water for 1 minute
- 5) Running the TIC under cold tap water for 2 minute
- 6) Running the TIC under cold tap water for 3 minute.

When soaking the TIC's the water was changed between each set of TIC bricks. The sink was filled with 20L of water and the TIC's were placed so that they were not touching each other in the sink.

When running the TIC's under cold tap water the TIC's were placed flat in a sink without overlap and the water was moved continually over the TIC's.

Once the allocated time was completed they were removed from the sink, dried and then placed into the Crêdo ProMed™ as per manufacturers instructions.

A data logger was placed in each Crêdo ProMed™ with the sensor in a box and then packed as per normal. The data loggers were set up to record the temperature every 5 minutes and the Crêdo ProMed™'s were then placed in a temperature controlled room (room temperature) for 48 hours. After 48 hours the data loggers were removed and the information analysed. The process was repeated a second time to check the findings.

Due to the availability of Crêdo ProMed™'s all 6 methods were trialled simultaneously, rather than sequentially using Crêdo ProMed™ Series 4 8L transporters.

Results:

All methods of conditioning the TIC's kept the temperature inside the Crêdo ProMed™ below 8°C for 48 hours however they produced different times to lower the initial temperature in the Crêdo ProMed™ before adding the vaccines. For soaking it took 30 minutes, 8 minutes and 10 minutes for 1, 2 and 3 minutes respectively and for running water this was 75 minutes, 5 minutes and 10 minutes respectively to reach between 2 and 8 degrees Celsius.

Conclusion:

When required with short notice Crêdo ProMed TIC™ coolants can be rapidly conditioned for transporting vaccines by either soaking them in a sink of cold tap or running them under cold tap water for at least 2 minutes.

Medication shelf life extension proposal for the public health institutions in South Africa

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RFMO-03 - Rapid Fire Session Monday, M1-M2, September 25, 2023, 2:30 PM - 4:00 PM

Hypothesis: To have a program to test state drugs for stability in order to extend expiration date by at least 12 months, through a government or South African Health Products Regulatory Authority (SAHPRA) initiative.

Background:

Tons of drugs are destroyed each year by States facilities in South Africa, costing the taxpayer millions of dollars. The ethical dilemma is the fact that some drugs when being taken off the shelf are still within their specifications and stability requirements.

Product expiration date extension happens sometimes in SA but often initiated by a manufacturer. A Shelf Life Extension Program (SLEP) was established in the United States (US) in 1986 (FDA, 2023). This was after the US government realised that in order for the state to successfully stockpile drugs to ensure adequate supplies during a public health emergency for both the Military and its citizens a longer shelf life was required. That's how SLEP was introduced to help reduce costs associated with replacing expired drugs.

The FDA through Emergency Use Authorisation has authorised Tamiflu capsules (not the generics) in strategic stockpiles to be used for a maximum of 20 years, provided recommended storage conditions are maintained (FDA, 2023). This means there is adequate room to explore extension for thousands of drugs even in SA.

Purpose: a. To minimise costs associated with the disposal of expired drugs
b. To help extend shelf life of usable drugs

Method: Literature review and Observational Study through my years of handling drugs, from ordering, dispensing and disposal of drugs. Data was extrapolated from my pharmacy's disposal schedule.

Results:

Literature review supports the shelf life extension for about 80% of drugs tested with an average extension period of 66 months from the SLEP. The consensus is on tablets and capsules which are regarded as more stable than liquids. Despite this in SA a lot of drugs still get disposed off due to uncertainty and fear of litigation.

Conclusion:

A specialised program to extend the shelf life of tablets, dry powders and powders for injection is recommended. This will help Military deployments and SA government in making sure that there are enough supplies of medication in times for humanitarian crisis. This will also help reduce wastage

and unnecessary expenditure due to destroying drugs that may still be safe for human consumption.