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Opinion

Strengthened primary health care for universal health coverage through improved community diagnosis and management of pneumonia in Zimbabwe

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Abstract

Pneumonia is the world's leading infectious killer, claiming the lives of an estimated 2.5 million including more than 670,000 children under five years and 1.2 million adults in 2019 alone. Caused largely by viruses, and bacteria, COVID-19 also increased the pneumonia burden, while environmental factors, poor hygiene, sanitation and underlying conditions including malnutrition predispose. The latter translates into a considerable pneumonia burden that is preventable, provided the requisite provisions are made for community-level protection such as environmental management, water, sanitation and hygiene; and key persons are informed and educated on preventive and therapeutic measures, especially what to look for and what to do at home while seeking medical attention. Irked by the high numbers of under-five deaths against a background of limited case management caused by the system-wide collapse of the health services in the country, we sought to utilize the opportunity offered by world pneumonia day 2022 to go down to the community and elicit both the disease burden and strategies to address pneumonia that can be applied within the home and community. We also wanted to hear from the community their experiences with and functionality of the referral system. This paper presents the findings, challenges and suggestions for improving primary healthcare implementation to address the current high morbidity and mortality attributable to pneumonia. We found the Goromonzi community to be literate in many health issues but need more information and training to better manage pneumonia. They were knowledgeable about pneumonia, tuberculosis, and the recent COVID-19 through their interactions with the local clinic staff, the media, and interpersonal communication. Some were members of the health center committee or were village health workers or local leaders. We had limitations of resources and time for a detailed study, but conclude that the community visited had a sound understanding of health, primary health care and pneumonia, but lacked the comprehensive education and support to effectively manage pneumonia at home. More work needs to be done to quantify the pneumonia burden, the contribution of each intervention, (environment, vaccination, exclusive breastfeeding, safe water, sanitation, hand hygiene, reduced smoke and case management) the benefit of home and community management alongside an effective referral chain.

Introduction

Pneumonia is the world's leading infectious killer, claiming the lives of an estimated 2.5 million including more than 670,000 children under five years and 1.2 million adults in 2019 alone [1].

Pneumonia is caused by viruses, bacteria, especially streptococcus pneumonia, fungi, and pre-existing conditions such as malnutrition, HIV, measles, asthma, diabetes, heart disease and age (above 65 and under 5 years old) among other underlying factors. The COVID-19 pandemic has increased the burden of respiratory infection deaths to more than 6 million in 2021 [2]. Meanwhile environmental factors such as poor



hygiene, poor water, and sanitation, air pollution, (indoor and outdoor), and cigarette smoke, also predispose to pneumonia in children.

The top four causes of DALYs in Zimbabwe are respiratory infections, HIV/AIDS, maternal & neonatal issues, and cardiovascular disease [3]. Pneumonia deaths surpass infectious diseases and conditions such as HIV, malaria and tuberculosis. However, the majority of cases of pneumonia in children are both preventable and manageable. There has not been a deliberate prioritization of strategies to address the pneumonia burden comprehensively in the country, despite its adoption of the IMNCI strategy in the late 1990s and we see an urgent need now, particularly, for a country with multiple health challenges and rising general and under-five mortality.

The country has successfully implemented the concept and philosophy of Primary Health Care since its independence in 1980, following which strong programs were designed, with a deliberate focus on maternal and child health. This led to much improved and demonstrable health indicators for mothers and children, during the first two decades post-independence [4,5]. In the intervening period, there has however, been a slackening of this momentum due to a number of challenges, notably the structural adjustment programs of the 1980s, the HIV and AIDS pandemic, sustained underfunding for health, which has never met the Abuja target of 15% apportionment of the government budget to health, and/or the WHO per capita funding for health. Looking at the WHO's six building blocks of a health system, Zimbabwe has also persistently underperformed. The management and governance problems that have seen a marked decline in health services provision and visible brain drain have resulted in very poor nurse/doctor-to-patient ratios and this has been telling in the poor performance of a once highly respected health service delivery system, touted as among the best in Africa in the 1990s. The resultant high mortality rates especially for women and children under five are visible in a thriving funeral industry, and the general public commenting on the high frequency of funerals, memorials, and tombstone events, as demonstrated by the data from the Demographic and Health Surveys (ZDHS, 2015, 2020), the Multiple Indicator Cluster Surveys, (MICS 2014, 2019) and the Population Census (2022), all of which point to lowered life expectancy to due to high levels of premature mortality in the country.

Considering the current decline in health service provision caused by systemic failures and the post-COVID-19 disruption, there is a need to adequately prioritize, quantify and qualify data to make meaningful interventions, particularly those aimed at capacitating the household or community in order to address the huge pneumonia burden, among other child killers.

The mothers, caregivers and communities must be taught to make a diagnosis of pneumonia early before the onset of complications, and adopt the right health-seeking behavior and actions, in order to avert the current complications experienced due to delays in accessing the correct case management, especially antimicrobials. This calls for firming up on Primary Health Care, (PHC) implementation and strengthening the use of the Integrated Management of Neonatal and Childhood

Illnesses, (IMNCI) guidelines within the community, at the clinics and peripheral hospitals. Furthermore, according to accounts from communities and press reports, treatment of pneumonia for those presenting timely to the health facility, is often sub-optimal as the staffing levels are poor, the diagnostics and skills, (IMNCI) limited and the required antimicrobials are often not available in the local clinics and referral centers. The tertiary and quaternary hospitals also have similar challenges with staffing and supplies, severely limiting their referral functions, including access to imaging and laboratory diagnostics to adequately manage pneumonia. This to us as community-based agents and in accordance with IMNCI guidelines, means emphasis must be placed on primary prevention, which includes improvements in environmental status, pollution reduction, provision of adequate water, sanitation and promotion of key hygiene practices for health, economic and social benefits [6] vaccination against targeted infections [7], as well as secondary measures that prevent complications and deaths, especially among children. Sustaining the positive effect of IMNCI and meeting the national developmental goals, (Agenda 2030), Universal Access To Health (UHC), and the SDGs targets will require continued political will in raising investment in health. The IMNCI strategy aims to improve child survival and development through three main pillars: (i) training of health workers on improved diagnosis and treatment measures; (ii) health systems strengthening for child health services delivery including adequate stocking of drugs, supervision, and enhanced monitoring and evaluation; and (iii) community and household interventions that address predisposing factors to childhood illnesses [6].

Meanwhile, until recently the medicines policy of the country did not allow community-based workers to store and dispense even basic antibiotics, to treat commonly occurring pneumonia in children and, the growing challenge of antimicrobial resistance mitigates against community availability of antibiotics.

Materials and methods

As a community-based organization advocating for strengthened Primary Health Care (PHC) implementation for the attainment of UHC, the achievement of the nation's developmental goals, (Agenda 2030), and the Sustainable Development Goals, (SDGs), we sought to stimulate processes and institute measures in order to raise the capacity of communities to work more closely with the local health care providers towards reducing the proportion of under-five morbidity and mortality attributable to pneumonia. We capitalized on the opportunity for community engagement on pneumonia offered by the week-long awareness and the World Pneumonia Day (WPD, 2022) commemorations held at Mwanza Rural Health Center in Goromonzi District of Mashonaland East Province, to invest in community health as an integral component of PHC. We utilized the key messages provided by the global campaign and theme, and designed locally appropriate messages aimed at raising awareness on the importance of community diagnosis and management of pneumonia, in view of the disparity between the burden of pneumonia when compared with the care seeking, available



case detection and management services. The fragile state of the health services has imposed a heavy burden on the mothers and caregivers, families and communities in attempting to manage prevalent childhood diseases such as pneumonia and measures must be put in place to capacitate them, especially using a PHC approach [8].

We conducted semi-structured discussions with healthcare workers, village health workers, community members and other identified stakeholders for consensus on identifying the local interventions aimed at the prevention, detection, diagnosis and management of pneumonia in their communities.

We also sensitized all relevant stakeholders on the right actions to take at the household and community level for treating children with pneumonia. Emphasis was placed on access to the right antimicrobials, in line with the case management guidelines, (IMNCI), while respecting the referral chain. We identified the Goromonzi District stakeholders and others, for possibly working together to quantify and begin to halt the pneumonia deaths in the under-fives in Zimbabwe, as well as identifying the effective local-level interventions for prevention and treatment. We also started the scrutiny of policies and guidelines that support the detection, diagnosis and management of pneumonia at the community level, while especially eliciting opinions, (from the healthcare workers, community-based workers and policymakers) on the possible deployment of antimicrobials to community-based workers in hard to reach areas for easier access by mothers, and their children, and recommend this for further work.

Data

We reviewed literature pertaining to pneumonia prevention and management, available policies and guidelines for case management, maternal and child health survey reports, websites, media articles and other relevant data. We elicited pneumonia information from stakeholders that participated in the various activities scheduled for the pneumonia awareness week, (6 - 12 November 2022) and the WPD commemoration on 12 November 2022 and partly explored ways of beginning to halt the pneumonia deaths in the under-fives in Zimbabwe.

We were limited by the small budget and available time to delve deeper and adequately explore community deployment of antibiotics with a view to assessing rational use against a background of medicines shortages at the health facilities and the increasing challenge of anti-microbial resistance.

Results

Our findings should be understood in light of this being an exploratory study driven by the need to address a major health challenge that has not received due attention. We did not set out to conduct a scientific study, but capitalized on a planned community event, (the WPD) to elicit the available evidence to stimulate relevant actions by all players to lower the current high levels of mortality, by addressing pneumonia through a PHC approach.

We used the opportunity offered by the week-long pneumonia awareness campaign, culminating in the World

Pneumonia Day commemoration, to stimulate the required investment in community health as an integral component of PHC by seeking out ways of empowering the mothers, families and communities to identify and manage pneumonia, while the nation's health system is on the mend.

As of 6-12 November 2022, we were within the Goromonzi community and had the opportunity to identify stakeholders for working together to quantify and begin to halt the pneumonia deaths in the under-fives in Zimbabwe, starting in Mashonaland East province. We elicited information from mothers and caregivers who are closest to the children, community leaders, village health workers, and other community-based workers, on the local interventions for the prevention and treatment of pneumonia. We targeted policymakers, public health practitioners, nurses, environmental health workers, nutritionists, nurse aides, and health center committees and elicited information from them on the possible deployment of antimicrobials within the community for easier access. We were not able to reach out to, hospital advisory boards, media, and policymakers, but we reached out to some local partners for possible future areas of collaboration with varying levels of response; Unicef, Unesco, WHO, UNFPA, Save the Children, Ministry of Health, Ministry of Education, Ministry of Women's affairs, local political, religious, traditional leadership and youths. The district had high levels of health literacy and pneumonia awareness but lacked support from the local and referral services which were poorly staffed and rarely had adequate medicines for common ailments including pneumonia. The pneumonia awareness week, therefore, yielded far more than the planned awareness activities and provided us with the required stimulation for further investment in community health as an integral component of PHC by seeking out ways of empowering mothers, families and communities to identify and manage pneumonia.

Discussion

This study provided the initial steps aimed at gathering evidence for under-five mortality reduction by addressing the proportion attributable to pneumonia through strengthening PHC. As a country that has successfully done this through the adoption of the concept and philosophy of PHC soon after independence in 1980, the integrated management of maternal, neonatal, and childhood illnesses, (IMNCI, 1990s) strategy and guidelines, and the integrated global action plan for pneumonia and diarrheal diseases (GAPPD), among other programs; it is now time, in the aftermath of a significant decline in the national health services provision compounded by the COVID-19 devastation to review all available evidence, policies, and guidelines for strengthening the implementation of PHC. Zimbabwe, being a full implementer of the IMNCI strategy along with Uganda, Tanzania, India and others must look critically at improving care-seeking and referral and community-level case management for pneumonia, diarrhea, malaria, measles and malnutrition as the biggest child killers [6,9]. This will aid in its achievement of the national and the global 2030 goals, by identifying for addressing the key predictors of child survival,



broader health and economic and social determinants of illness and deaths within the communities and the nation at large. The Ministry of Health and Child Care's Investment Case for the National Health Strategy 2021–25, states that high-impact interventions including case management of neonatal sepsis and pneumonia will yield comparably more additional lives saved than other interventions. This is also in line with the 2014 African Ministers of Health, pledge to end preventable maternal and child deaths, and further affirmed by the African Heads of State in Malabo at the African Union Conference in 2014. The Ministry of Health has a well-performing national immunization program that provides more than 80% coverage on streptococcal infection, diphtheria, tetanus, pertussis, and measles, all of which significantly increase the pneumonia burden [7], in addition to the number of children on anti-retroviral therapy and the prevention of maternal to child transmission of HIV (PMTCT) coverage is above 80% [3,10].

In our considered view, and at the mid-point of SDG reporting, there is a need to evaluate and assess the contribution of each intervention, (safe environment, safe water, sanitation, hygiene, vaccination, oral antibiotics, health/referral system) among all efforts aimed at ending preventable child illnesses and deaths [10] and adequately capacitate the communities while pushing the health systems towards UHC. The prevailing situation in the Zimbabwe health services calls for preventing and managing pneumonia starting at the community level for the achievement of UHC. In a system that has been characterized by sustained under-funding; the country never having met the 15% budgetary allocation to health, health facility closures, and institutional downsizing due to massive staff resignations, medicines and supplies shortages, there is need to not only listen to community voices, but also to capacitate them and community workers in order to fulfill the child survival targets and achieve the desired UHC. The case in point is the COVID-19 pandemic response, whereby diagnostics and treatments for malaria, HIV and other conditions were successfully delivered by community health workers, (PACT initiative, African Union) when health facilities were in lockdown and population movements were restricted. Similarly, during the cholera outbreak of 2008 – 2009, up to 60% of events happened and ended in the community as health facilities were dysfunctional.

The role of the communities in safeguarding the health and lives of children and other community members cannot, therefore, be overemphasized. Primary health care hinges on informed community actions and participation in their health. The existence of health center committees [11] provides an opportunity for local participation in the day-to-day functioning and planning activities of the health centers and promotes accountability. Indeed, health facilities with HCCs have been documented to improve client satisfaction, by improving the quantity and quality of health services.

Conclusion

We conclude within our limitations in this study that without a significant change in the current trajectory of mortality rates, Zimbabwe is unlikely to meet the Sustainable Development Goals, (SDG) targets, UHC, or national development targets, (agenda 2030). Implementation of Primary Health Care, (PHC) with a specific focus on addressing the major health challenges and investing in proven-effective interventions will greatly contribute to the achievement of the targets. Addressing the current high childhood morbidity and mortality will significantly alter the trajectory but requires urgent action at national and subnational levels closest to the children. We call upon all concerned to support actions aimed at addressing pneumonia, other childhood killers and indeed all illnesses through evidence gathering for effective policy improvements and programming.

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