

Quality Medicine Use for Children in Uganda – Acronym ChildMed

Executive summary

The use of medicines is an important aspect of child health. However, this topic has been sparsely dealt with in international research, not least in low-income societies.

With very high morbidity rates, children account for a large need of medicine consumption.

Ugandan children suffer disproportionately from parasitic infections, respiratory diseases, and a range of other acute and chronic conditions.

ChildMed's overall objectives were to contribute with a scientific foundation to improve the quality of medicine use for children in Uganda and to build research capacity at individual and institutional level.

The project was multidisciplinary and cross-cultural. 3 beneficiaries were male and 7 female.

In the inception phase a situational analysis was carried out to explore basic information about medicines supply and prescription at district and central level and lay the foundation for the project's substudies. The Project enrolled 4 PhD students, 4 Master's students and 2 Postdocs. All beneficiaries conducted research that together aimed at exploring four contrasting medication scenarios as well as policies relevant for children's medicine use. The scenarios were: Respiratory tract infection/asthma, epilepsy, HIV/AIDS and neglected tropical diseases (exemplified by schistosomiasis). In the substudies, focus was, to a varying degree, on four dimensions: diagnosis, medicines themselves, medicine use and communication. Policy was a cross-cutting issue. Field work took place in Jinja District and in the Kampala area.

Outputs comprise 4 Ugandan Master's theses, 4 PhD theses, 2 completed postdocs, 8 policy briefs, 29 articles for international scientific journals, 2 books, 3 national seminars/workshops for Ugandan stakeholders, local dissemination workshops, presentations to international and national audiences and mass media presentations. ChildMed lasted 01-01-2010 to 30-06-2015.

ChildMed's organisational structure has contributed considerably to its success.

The project completion is featured at Makerere University's website with the heading: "Five-Year ChildMed Project Completes in Record Time with Record Achievements" <http://chs.mak.ac.ug/content/five-year-childmed-project-completes-record-time-record-achievements>.

Introduction

The overall objective of this multidisciplinary project was to provide research capacity building and research to improve the quality of medicine use and management for children in Uganda. Our hypothesis was that appropriate and effective medicinal treatment depends on four key dimensions: coherency of policies relevant to children's medicine use; accurate diagnostic procedures; availability and adequate use of appropriate medicines; and effective communication of perceptions and knowledge. In addition to (1) an overall study on policies and availability of suitable medicines for children in Uganda, these dimensions were explored through case studies of four contrasting medication scenarios: (2) acute respiratory diseases/asthma, (3) epilepsy, (4) HIV/AIDS and (5) worms/schistosomiasis. Multiple quantitative and qualitative data collection and analysis methods were applied.



A boy assists with fishing at the shores at Lake Victoria. He will inevitably attract schistosomiasis

Background

The use of medicines is an important aspect of child health but this topic has been sparsely dealt with in international research, not least in low-income countries. There seems to be an assumption that children are “small adults” and, hence, can be medicated with adult medicines and in dosages according to weight; yet adult medicines may be harmful given that children’s organs are not fully developed. A wealth of problems characterize the present lack of quality medicines for children. Non-availability of appropriate pediatric dosage forms forces caretakers and health personal to administer tablets in broken, crushed and dissolved portions. Ugandan children suffer disproportionately from respiratory diseases, parasitic infections and a range of other acute and chronic conditions. For these problems children are treated in the composite health system which includes often understaffed and under-resourced public health facilities, small private clinics and drug shops. Diagnoses and treatment are often inappropriate and children may receive too much or too little medicine, and many are treated presumptively. The pharmaceutical supply system is characterized by poor quality. Children need special attention because they are dependent on adults and even older children may not be allowed to communicate effectively about their needs and medication.

Results, conclusions and implications

Research capacity building

Research capacity was built at individual level in the form of 4 PhD students, 4 Master’s students and 2 postdocs. Senior researchers’ supervision capacity was enhanced through the research collaboration. A major innovative idea was the whole project set-up. In Ugandan universities it is commonplace to work as an individual, concealing research plans and preliminary results. The ChildMed project has challenged this type of research culture by establishing the PhD students as a cohort of collaborating researchers who presented their plans and progress to their supervisors in mutual meetings. The students supported each other and, to some extent coauthored articles. The senior researchers’ supervision capacity has been enhanced through the research collaboration.

Capacity building at institutional level has taken place through provision of study space and Internet access for students and purchase of laptops, printer and maintenance hereof.

Research results

Research results are disseminated in 29 scientific articles to international journals, 2 articles in other journals, 2 books, 21 presentations to international conferences, 30 presentations to national conferences 10 dissemination in mass media and 8 local policy briefs.

Policy

Medicines that are suitable for children according to their age and weight were included in the Essential Medicines and Health Supplies List. However, there is no mention of child-friendly medicines and most of the medicines are presented in tablet form (solid) which children cannot easily swallow. Dispersible tablets, granules, pellets and sprinkles, which are more suitable for children, are not included. This means that government does not procure them.

The Uganda Medicines and Therapeutic Committee (UMTAC) was not active and there was no mechanism for rolling out technical and financial support for child-appropriate medicines. Stakeholders were not aware of the international “Make Children’s Medicines Childsize” campaign. They disagreed about suitability of “syrups” (liquid oral formulations) and this deviated attention from more suitable dosage forms such as dispersible tablets.

In health facilities in Jinja District, child suitable medicines for pneumonia were available as follows: Amoxicillin dispersible tablets were present in 40% of HC (health center) IVs, 35% of HCIIIs and none in HCIIIIs; Child suitable medicines for diarrhea: Oral Rehydration Salt (ORS) were available in all HCIIIs and HCIIIIs and, 60% in HC IVs; Zinc sulphate dispersible tablets were available in 94% of HCIIIs, all HCIIIIs and 60% of HCIVs. Child suitable medicines for malaria: dispersible tablets of COARTEM (ACT) and rectal artesunate

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for malaria were not available in any facility; artesunate injection was only present in 3 health centers. Health workers experienced problems with administration of medicines to children.

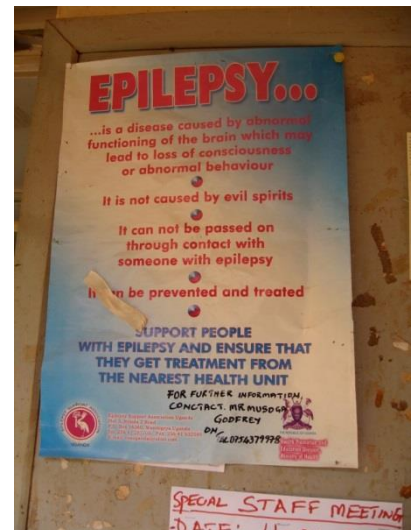
Acute respiratory diseases/asthma

Four out of 10 children initially presumed to have pneumonia had asthma and had wrongly been treated with antibiotics. This means that they did not receive treatment for asthma. This exposed them to unnecessary antibiotics and could lead to long hospital stay. One out of 502 children died among those who were treated with inhaled corticosteroids compared to 9 out of 508 who were treated with standard treatment. Even without differentiating asthma from viral and bacterial pneumonia, inhaled corticosteroids reduced death in children with cough and difficult breathing. Inhaled corticosteroids were easy to administer using a spacer and mask placed on the baby's mouth and nose. No side effects observed. The mothers were happy with the treatment since the medicine was delivered into the lungs.

Epilepsy

One third of epileptic children attending the national Mulago Hospital were treated with more than one drug, and only 3 out of 10 received appropriate doses of anti-epileptic medicines. Children using the broad acting drug Sodium Valproate were less likely to use more than one drug. Seven out of ten caretakers reported experience with unavailability of prescribed drugs at the hospital's pharmacy. Social support influenced positively on adherence rates but self-esteem was not correlated.

Patients living in the outskirts of Kampala said they missed (doses of) medicines because they could not afford transportation to the clinic. In Jinja District, epileptic children were met with perceptions of epilepsy as caused by evil spirits or being contagious and they even experienced to be beaten by their teachers. Hence, they tried to hide the condition.



Poster at a health center informs that epilepsy is not caused by evil spirits and is not contagious

HIV/AIDS

Only half of the children in Jinja district knew that they were taking medicines for HIV. Communication between children and caregivers about treatment was infrequent and focused on 'when to take the medicines' and hardly on 'what the medicines are for'. We learnt that relying on caregivers alone to communicate messages on HIV and treatment to HIV-infected children is insufficient.



Bunny reminds a girl to take her HIV medicines

Only half of the refugee children took their medicines consistently and correctly. Refugees relied less on extended family, and got more support from friends, neighbors, churches, health care workers and humanitarian organizations. Ugandan children received more material support from their families. Refugees had less knowledge and understanding of the modes of acquisition and management of HIV/AIDS. The children were given inadequate support to express and deal with their emotions. In the refugee context, violence and traumatic events like rape through which caregivers acquired HIV/AIDS affected their psychological and mental wellbeing.

Worms/schistosomiasis

Children 1-5 years-old living along Lake Victoria shoreline are at high risk of infection with schistosomiasis (40% were infected at project start). When the infected children were treated with praziquantel, 81% were cured and unpleasant effects attributable to praziquantel which included vomiting, stomach-ache and diarrhea were mild and short-lived. Although the majority of children who were cured were re-infected (35% 8 months later), the intensity of infection was lower than pre-treatment levels. Treatment of children was also associated with reduction in the size of spleen, liver and in anaemia.

Eight out of ten school-children who received an education message on schistosomiasis accepted praziquantel treatment while almost all the children who received both an education message and a snack/food before treatment took the treatment. Undesirable effects were fewer among children in the group that received the snack compared to those that did not. Similarly, schistosomiasis was lower among children in the group that received the snack compared to those in the group that did not. The improved treatment led to a reduction in schistosomiasis. Giving food also reduced the undesirable effects of praziquantel.



The schistosomiasis (bilharzia) life cycle illustrated at a health center

Recommendations

- ❖ *It is recommended to apply ChildMed’s organizational structure in similar projects.*
- ❖ *Irrespective of disease, the general recommendation is to regularly sensitize, motivate and train health workers.*

Policy

- The Ugandan Ministry of Health should revise the Clinical Guidelines and the Essential Medicines and Health Supplies List concurrently to include more suitable formulations for children.
- Government should revitalize UMTAC or establish a new multi-stakeholder committee to discuss how to improve the availability and use of child-appropriate medicines.

Acute respiratory diseases/asthma

- Revise the clinical guidelines to include assessment of children for asthma. This revision should include the following: recurrent cough (worse at night), difficult breathing and recurrent wheeze.
- Sensitize and train health workers on assessing children for asthma.
- Include use of inhaled corticosteroids for children less than five years of age admitted with cough and difficult breathing in the clinical guidelines and the Essential Medicines and Health Supplies.

Appendix 3b – Policy Brief

Epilepsy

- Revise current treatment guidelines for the treatment of epilepsy.
- Provide and maintain adequate supplies of broad spectrum anti-epileptic medicines at local community level.
- Create awareness about the nature of epilepsy at community level and train teachers in how to appropriately deal with children with epilepsy.

HIV/AIDS

- Train caregivers on benefits of disclosure and consequences of nondisclosure.
- Develop age-sensitive guidelines to communicate age-appropriate information to children on ART.
- Use peer educators to communicate messages about HIV and medicines to infected children.
- Operate a child friendly clinic and adapt adherence follow up techniques like tick sheets.
- Train children, caregivers, local communities, churches, schools, and health care workers to address the emotional, information and material needs of the children.

Worms/schistosomiasis

- Periodically screen and treat children less than 6 years for schistosomiasis with praziquantel.
- Provide food to children before praziquantel treatment.
- Educate children about schistosomiasis risks and prevention.



The ChildMed project's progress and results have been shared with stakeholders in national and local dissemination meetings

<http://childmed.ku.dk>