

LIGHTINGS

CAMEROON STRATEGIC HEALTH INFORMATION BULLETIN

Editorial:

A water-borne disease related to non-compliance with elementary hygienic rules, cholera is linked to the absence or lack of water and poor waste management of the environment.

In its 2010 report, the common programme WHO/UNICEF for monitoring of water supply and sanitation shows that 40 % of the 884 million people in the world without access to potable drinking water live in sub Saharan Africa. Only 43.9% of the Cameroonian population have access to potable drinking water in 2007 (MINEPAT/DSCE, 2009).

Cameroon has subscribed and applies Handwashing with soap strategy, which seems to contribute to a reduction by 2/3 of the children under 5 death rate by 2015 (Global Handwashing Day, 2009).

This LIGHTING edition focuses on three aspects of cholera that we deem important to the Cameroonian people: epidemiology and risk factors, importance of socio-cultural factors in the spread of cholera and the use of oral vaccines as one effective strategy to fight cholera.

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FOCUS ON CHOLERA

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CHOLERA IN THE WORLD, AFRICA AND CAMEROON: EPIDÉMOLOGY AND EFFECTIVE FIGHTING STRATEGIES

Cholera is an acute intestinal infection, transmitted by the consumption of food and water contaminated by the Vibrio cholerae. Dirty hands play an important role in the transmission.

This disease is characterized by liquid diarrhoea and vomiting resulting to a severe dehydration which can lead to death in the absence of appropriate care.

1,514,966 cases were reported between 2000 and 2008 worldwide. More than half of the cases were found in sub-Saharan Africa (WHO, 2011). Zimbabwe, Nigeria, Democratic Republic of Congo and Cameroon are the most affected countries.

10,759 cases of cholera with 657 deaths has been registered in 2010 in Cameroon (MINSANTE, 2011). In 2011, 23 152 cases including 843 deaths were reported. This mainly concerns seven of the ten regions of the country: Far North (4454 cases/187 deaths), North (4752 cases/267 deaths), Centre (3537 cases/136 deaths), South west (3111 cases/33 deaths), Littoral (5463 cases/105 deaths), West (1271 cases/76 deaths), and Adamaoua (1271 cases/76 deaths) (MINSANTE, 2011).

To control the resurgence of cholera cases, the Cameroonian Government reactivated, in 2010, regional committees

created in 1979 to fight against outbreaks. A multi-sectoral Operational Committee for the fight against Cholera has been set up at the central level of the Ministry of Public Health, including a regional Centre for Coordination and Control of Cholera (C4) in the headquarter of each region.

Strategies as Handwashing with soap, sanitation, improvement of water points, communication for behavioural changes, improvement of basic amenities (bathroom, toilet/latrine) and the management of cases have been strengthened throughout the national territory.

Despite its availability at the Centre Pasteur du Cameroon since 2009, the oral vaccine against cholera is still inaccessible due to his high cost and its unavailability throughout the national territory.

Evidence shows that oral vaccines prevent 50 to 60% of cholera episodes at a low cost (Sinclair et al., 2011) in similar context to Cameroon.

Furthermore, systematic chlorination of water has proven to be effective in the fight against cholera in developing countries (Benjamin et al., 2007).

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SOCIOCULTURAL FACTORS IN THE SPREAD OF CHOLERA IN

During the decade 2000-2011, Cameroon has experienced annual cholera outbreaks except in 2007 and 2008. The 2011 outbreak is the most severe.

During this decade, socio-cultural factors such as housing management, social practices, perceptions of dirt and diseases, and social interactions in urban areas have certainly played an important role in the spread of cholera in Cameroon.

Indeed, urbanisation is not supported by any adequate planning (Assako Assako, Rj, 2004). In most urban neighbourhoods, there are no culture of preventive management of the surrounding environment. We observe:

- coexistence of residences and animal breeding (poultry, cattle and pigs);
- resurfacing of contents of septic tanks during heavy rains;
- human waste from homes to gutters and ditches;
- uncontrolled dumping of garbage near houses and roads;
- proximity of water points (wells and streams) with latrines.

Moreover, the public perception of dirt and cholera is also crucial. Is it not said, and especially believed that "dirt does not kill the black man." This belief induces attitudes and practices of mistrust vis-à-vis the basic rules of hygiene. The portability of drinking water is not of prime concern. The consumption of fruits and vegetables, raw or poorly washed is commonly observed.

Ignorance of the real causes of cholera is the other catalyst to outbreaks. Many are those who consider diarrhoea to be caused by poisoning or witchcraft, and deny any relationship with the consumption of dirty water and hands. How then do we convince people that purifying rituals can be a potential source of contamination?

Unawareness of the relevance of vaccination as an effective means to prevent cholera especially for financial rea-

sons is obvious.

How then do we out write the misconceptions that assimilate vomiting and diarrhoea to AIDS (Tubaya Bulele Doudou, 2008) thereby delaying transfer of the patient to the nearest health facility? The delay to quickly transfer the patient worsens dehydration, principal cause of death by cholera.

Social interactions leads to population symbiosis thereby bridging the societal barriers which characterise urban functionality. Cholera strikes primarily poor people living in slumps and precarious conditions. The notions of living space and actual used space (Assako Assako et al, op. Cit.) verify this phenomenon; markets, wells, taxis, worship places, "drinking" areas, weddings and funerals are zone of high transmission of pathogens as the basic principles of hygiene are usually not respected. The anchoring of secular practices, loopholes in civic teachings, hygienic and sanitation habits of urban living conditions are a nest of cholera in Cameroon.

The persistence in the cholera outbreaks questions the efficiency and effectiveness of measures being implemented. Unsustained sensitisations of the population and the insufficient empowerment of communities in the management of their health problems are various factors that inhibit awareness and behavioural changes in the fight against cholera.

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Bibliography

- Assako Assako, R. J., (2004). Etude géographique de l'épidémie de choléra à Douala ou la qualité de vie à l'épreuve des pratiques urbaines. Espaces et sociétés, UMR 6590, <http://www.eso.cnrs.fr>.
- Mechai F. et Wyplosz B. (s.d.). Qu'est ce que le choléra ?, <http://www.cfe.fr/pages/votre-santé/guidespatho.php?id=32>.

CHOLERA: BUILDING A SOCIAL RESPONSE

Behavioural role in the appearance and re-emergence of an epidemic such as cholera seems obvious. Taking into account factors pointed out in systemic readings of cholera determinants (Guevart et al, 2004), it appears that social response is needed to breakdown the diffusion channels of this pathology spread. One of the most prominent responses is education for behaviour change that O'Niell (1979) defined as "any intervention... to positively influence change in lifestyle, or to modify physical and socioeconomic environment in order to make possible changes in life habits".

Induced behavioural changes is certainly a complex process (Moatti, Nathalie Beltzer, William Dab, 1993) in regards to the number of failures registered here and elsewhere. Three achievable elements, extracted from the six broad "basic" principles for improving prevention of infectious diseases, can help build effective differential preventive strategies:

1. Speak the same language and to establish dialogues between people and health teams:

The overall interaction between the health system and population can be summarized into a misunderstanding and/or a diverging logic of various pathology classification (Kleinman, 1978). Whereas adhesion to a health proposal implies knowledge of the disease, believe in personal vulnerability, the understanding of the severity and the effectiveness of the commitment act. It is therefore useful to undertake a dialogue with people based on their "knowledge" in order to identify all strategies and put in place effective interventions.

2. Risk analysis and concrete solutions tailored

The adoption of new behaviours always involves a negotiation between various invisible constraints (economic, cultural, family, etc..) and social representations of illnesses. The effectiveness of a health intervention in a given environment depends on its ability to adapt to the social context. In a concomitant or serial national epidemic, a multi-scale response is required.

3. Propose realistic solutions and integrate programs

Health recommendations are not always applicable: the actual campaign in Cameroon against cholera recommends Handwashing with soap, without taking into account the fact that running water and soap are not available. Many other barriers that expose the population to diseases linked to poor hygiene can be enumerated.

Cécile Renée BONONO

Bibliography

GUÉVART, J. NOESKE, J. SOLLE, J-M ESSOMBA, MBONJI ED-JENGUELE, A. BITA, A. MOUANGUE, B. MANGA, 2006, Déterminants du choléra à Douala, med tropicale

Jaffré Y. , "Dynamiques et limites socio-anthropologiques des stratégies de prévention et de contrôle des risques infectieux dans les pays en voie de développement" in la maîtrise des maladies infectieuses, un défi de santé publique, une gageure médico-scientifique. Paris : Académie des sciences, Rapport sur la science et la technologie, no 24, 2006, pp. 101-115.

Jaffré Y. & Olivier de Sardan J.-P. 1999, La construction sociale des maladies, Paris, PUF.

Hanks C. M.1955, Diphtheria immunization in Thai community, in Health Culture and community, Paul D. (ed.), New York, Russel Sage Foundation, 155-185.

Castel R.2003, L'insécurité sociale. Qu'est-ce qu'être protégé ?, Paris, Seuil.

Moatti, Nathalie Beltzer, William Dab, Les modèles d'analyse des comportements à risque face à l'infection à VIH : une conception trop étroite de la rationalité In: Population, 48e année, n°5, 1993 pp. 1505-1534.

BIBLIOGRAPHY / CHOLERA IN THE WORLD, AFRICA AND CAMEROON: EPIDÉMIOLGY AND EFFECTIVE FIGHTING STRATEGIES (ARTICLE IN PAGE 1)

- Sinclair D, Abba K, Zaman K, Qadri F, Graves PM. Oral vaccines for preventing cholera. (Review), Cochrane Database of Systematic review, 2011.
- OMS 2011. Compte rendu de la réunion transfrontalière au sujet de l'épidémie de cholera dans le bassin du lac Tchad (CAMEROUN – NIGER – TCHAD) Douala, le 20 et 21 Septembre 2011.

WHAT MORE TO HYGIENE AGAINST CHOLERA ?

Cholera usually occurs in epidemics, and is associated with poverty and poor sanitation. Proper hygiene is being prone as a prime preventive solution to this disease. Unfortunately in our society even urban settings still have a long way to go as far as sanitation is concerned. With little means at their disposal the rural population has limited chances to meet the required hygienic standards.

Effective, cheap, and easy to administer oral vaccines could help prevent epidemics in such settings. Targeting vulnerable population could help to reduce transmission, decrease the likelihood of resurgence, and put gears in motion toward amassing a global eradication. Oral vaccines have the potential to stimulate local immunity within the mucosa of the gut, preventing the colonization and multiplication of *V. cholerae* (Sinclair D et al, 2011). In Cameroon this is not yet vulgarized reasons being: their cost which is relatively unaffordable for the average citizen, its short term protection and doubts as to its efficacy.

Two types of oral cholera vaccines, similar in terms of strains are available: (i) Dukoral and (ii) Shanchol and mORCVAX.

Since cholera is transmitted orally, oral vaccines may thus have more direct effect than injected vaccines which stimulate immunity in the blood.

Evidence in Zimbabwe shows an efficacy rate of more than 50% in the first year following the vaccination. This protective efficacy gradually subsides to about 20% in the third year following the vaccination (Sinclair D et al, 2011).

The most recent and comprehensive cost-effectiveness analysis of cholera vaccination was conducted by the “Diseases of the most impoverished program”. This analysis provides estimates for 4 study sites (Biera, Mozambique; Kolkata, India; Matlab, Bangladesh; North Jakarta, Indonesia) and is based on site specific data. The analysis assumes a 1% case-fatality rate with 2 doses of Shanchol at an effectiveness rate of 60% during the first 3 years: US\$ 1.00 per dose, US\$ 0.50 as delivery cost per dose in low-income countries and US\$ 1.00 in middle-income countries (WHO, Weekly account, 2010).

Oral vaccines are potentially easier to administer, more acceptable to patients than injected vaccines, and have a reduced risk of transmitting blood borne infections.

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Bibliography::

- The Case for Reactive Mass Oral Cholera Vaccinations, Rita Reyburn, et al, January 2011 | Volume 5 | Issue 1.
- Weekly epidemiological record, No.13, 2010, 85,117–128

CDBSH ** ACTU** CDBPS

As part of the « Effective Health Care Research Consortium project», the Centre for the Development of Best Health Practices decided to translate systematic reviews as prioritized by stakeholders. The objective of this project is to disseminate pertinent evidences, for a better follow up of child and maternal health as well as health issues linked to poverty. We have at your disposal scientific summaries which could also be gotten from our website (see page 6), some of which include ;

- Interventions to reduce emigration of health care professionals from low- and middle-income countries (Review)
- Loperamide Therapy for Acute Diarrheain Children: Systematic Review and Meta-Analysis
- Strategies for integrating primary health services in low- and middle-income countries at the point of delivery (Review)
- Interventions for increasing the proportion of health professionals practicing in rural and other underserved areas (Review)

Enjoy as you read through !

FURTHER READING (1)

Thomas Clasen, Wolf-Peter et al.

Interventions to improve water quality for preventing diarrhoea: systematic review and meta-analysis. *BMJ*. 2007. doi:10.1136/bmj.39118.489931.BE

Objective: To assess the effectiveness of interventions to improve the microbial quality of drinking water for preventing diarrhoea.

Design: Systematic review.

Data sources: Cochrane Infectious Diseases Group's trials register, CENTRAL, Medline, Embase, LILACS; hand searching; and correspondence with experts and relevant organisations.

Study selection: Randomised and quas-randomised controlled trials of interventions to improve the microbial quality of drinking water for preventing diarrhoea in adults and in children in settings with endemic disease.

Data extraction: Allocation concealment, blinding, losses to follow-up, type of intervention, outcome measures, and measures of effect. Pooled effect estimates were calculated within the appropriate subgroups.

Data synthesis: 33 reports from 21 countries documenting 42 comparisons were included. Variations in design, setting, and type and point of intervention, and variations in defining, assessing, calculating, and reporting outcomes limited the comparability of study results and pooling of results by meta-analysis. In general, interventions to improve the microbial quality of drinking water are effective in preventing diarrhoea. Effectiveness did not depend on the presence of improved water supplies or sanitation in the study setting and was not enhanced by combining the intervention with instructions on basic hygiene, a water storage vessel, or improved sanitation or water supplies—other common environmental interventions intended to prevent diarrhoea.

Conclusion: Interventions to improve water quality are generally effective for preventing diarrhoea in all ages and in under 5s. Significant heterogeneity among the trials suggests that the level of effectiveness may depend on a variety of conditions that research to date cannot fully explain.

Dhaka, Bangladesh Stephen P. et al.

A community-randomised controlled trial promoting waterless hand sanitizer and handwashing with soap,

Summary and objectives : To pilot two intensive hand hygiene promotion interventions, one using soap and one using a waterless hand sanitizer, in low-income housing compounds in Dhaka, Bangladesh and assess subsequent changes in handwashing behaviour and hand microbiology.

Methods : Fieldworkers randomized 30 housing compounds: 10 received handwashing promotion with free soap, 10 received handwashing promotion with free waterless hand sanitizer and 10 were nonintervention controls. Fieldworkers assessed handwashing behaviour by structured observation and collected hand rinse specimens.

Results : At baseline, compound residents washed their hands with soap 26% of the time after defecation and 30% after cleaning a child's anus but <1% at other times. Compared with baseline, residents of soap intervention compounds were much more likely to wash their hands with soap after faecal contact (85–91%), before preparing food (26%) and before eating (26%). Compounds that received waterless hand sanitizer cleansed their hands more commonly than control compounds that used soap (10.4% vs. 2.3%), but less commonly than soap intervention compounds used soap (25%). Postintervention hand rinse samples from soap and sanitizer compounds had lower concentrations of faecal indicator bacteria compared with baseline and control compounds.

Conclusions : Waterless hand sanitizer was readily adopted by this low-income community and reduced hand contamination but did not improve the frequency of handwashing compared with soap. Future deployments of waterless hand sanitizers may improve hand hygiene more effectively by targeting settings where soap and water is unavailable.

FURTHER READING (2)

Clasen TF, Bostoen K, Schmidt WP. Et al. Interventions to improve disposal of human excreta for preventing diarrhoea. Cochrane Database of Systematic Reviews 2010, Issue 6. Art. No.:CD007180. DOI: 10.1002/14651858.CD007180.pub2.

Background: Diarrhoeal diseases are a leading cause of mortality and morbidity, especially among young children in low-income countries, and are associated with exposure to human excreta.

Objectives: To assess the effectiveness of interventions to improve the disposal of human excreta for preventing diarrhoeal diseases.

Search strategy: We searched the Cochrane Infectious Disease Group Specialized Register; the Cochrane Central Register of Controlled Trials (CENTRAL), published in The Cochrane Library; MEDLINE; EMBASE; LILACS; the metaRegister of Controlled Trials (mRCT); and Chinese-language databases available under the Wan Fang portal, and the China National Knowledge Infrastructure (CNKI-CAJ). We also handsearched relevant conference proceedings, and contacted researchers and organizations working in the field, as well as checking references from identified studies.

Selection criteria: Randomized, quasi-randomized, and non-randomized controlled trials (RCTs) were selected, comparing interventions aimed at improving the disposal of human excreta to reduce direct or indirect human contact with no such intervention. Cluster (eg at the level of household or community) controlled trials were included.

Data collection and analysis: We determined study eligibility, extracted data, and assessed methodological quality in accordance with the methods prescribed by the protocol. We described the results and summarized the information in tables. Due to substantial heterogeneity among the studies in terms of study design and type of intervention, no pooled effects were calculated.

Main results: Thirteen studies from six countries covering over 33,400 children and adults in rural, urban, and school settings met the review's inclusion criteria. In all studies the intervention was allocated at the community level. While the studies reported a wide range of effects, 11 of the 13 studies found the intervention was protective against diarrhoea.

Differences in study populations and settings, in baseline sanitation levels, water, and hygiene practices, in types of interventions, study methodologies, compliance and coverage levels, and in case definitions and outcome surveillance limit the comparability of results of the studies included in this review. The validity of most individual study results are further compromised by the non-random allocation of the intervention among study clusters, an insufficient number of clusters, the lack of adjustment for clustering, unclear loss to follow-up, potential for reporting bias and other methodological shortcomings.

Authors' conclusions: This review provides some evidence that interventions to improve excreta disposal are effective in preventing diarrhoeal disease. However, this conclusion is based primarily on the consistency of the evidence of beneficial effects. The quality of the evidence is generally poor and does not allow for quantification of any such effect. The wide range of estimates of the effects of the intervention may be due to clinical and methodological heterogeneity among the studies, as well as to other important differences, including exposure levels, types of interventions, and different degrees of observer and respondent bias. Rigorous studies in multiple settings are needed to clarify the potential effectiveness of excreta disposal on diarrhoea.

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