Africa's response to childhood infection

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CONTENTS

EDITOR'S COMMENTARY

Dear Colleagues

Welcome to the fifth edition of our newsletter.

WSPID 2015 has come and gone, attended by more than 1200 delegates. It lived up to expectations, providing cutting-edge information on a wide-range of paediatric infectious diseases. Sessions were cramped with excellent presentations and discussion. AfSPID hosted a symposium on Friday 20 November 2015, at which Professor Falade of Nigeria presented a comprehensive overview of Ebola Virus Disease in West Africa and Dr Hamdi of Egypt reviewed recent infectious diseases outbreaks in North Africa.

Since WSPID 2015, Brazil has reported a sharp increase in cases of microcephaly thought to be associated with Zika Virus infection. A growing number of studies have subsequently investigated or are exploring the relationship between Zika Virus and neurological disorders. Although the World Health Organization has recently stated that "there is strong scientific consensus that Zika virus is the cause of microcephaly, Guillain-Barré syndrome and other neurological disorders", more research is required to prove causality.

The Global Polio Eradication Initiative remains newsworthy. Only one serotype of wild poliovirus (WPV) remains, WPV type 1. Circulation of WPV type 2 stopped more than 15 years ago, and on 20 September 2015 the Global Commission for the Certification of Poliomyelitis Eradication concluded that WPV type 2 has been eradicated. Furthermore, no case of WPV type 3 has been reported globally since November 2012. Even more exciting from an African perspective is that on 24 July 2015 Nigeria achieved a significant milestone in its contribution to the global polio eradication initiative, i.e. one year without a single case of wild type polio. The absence of circulating wild type polio in Nigeria has had a huge positive impact on the rest of the African continent. Since 22 August 2014 there have been no cases of wild type polio reported in Africa. A much anticipated step in the Global Polio Eradication Initiative is the global withdrawal of trivalent oral polio vaccine and its replacement with Types 1 & 3 bivalent oral polio vaccine. This global switch is planned for April 2016. Pakistan, one of two remaining endemic countries in which wild type polio is still circulating, has recently initiated a massive vaccination campaign, which will hopefully take us closer to global eradication.

In this edition of the newsletter we publish the new Nigerian Society for Paediatric Infectious Diseases executive committee, feature three articles by Nigerian authors and conclude with our journal watch slot.

I hope that you find this edition of the newsletter interesting.

Kind regards, Brian Eley

NEW NISPID EXCO

At the recent biennial general meeting and scientific conference of the Nigerian Society for Paediatric Infectious Diseases (NISPID) that held in September 2015 in Nigeria's Federal Capital, Abuja a new executive was elected into office. The new executive members are:

HIGHLIGHTS FROM THE 2ND BIENNIAL SCIENTIFIC CONFERENCE OF THE NIGERIAN SOCIETY FOR PAEDIATRIC INFECTIOUS DISEASES

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The Nigerian Society for Paediatric Infectious Diseases (NISPID) held its 2nd bienniel general meeting and scientific conference on the 9th and 10th of September 2015 at Rockview hotel Abuja, Nigeria's federal capital. The theme was "Challenges in the Control of Childhood Infectious Diseases".

Amongst the participants were various cadres of paediatricians, other healthcare providers and infectious diseases stakeholders from across Nigeria and the USA. The Grand Opening Ceromony featured the guest lecture delivered by Prof. A. Nasidi, Director General of the Nugeria Centre for Disease Control (NCDC). It focussed on uner-five mortality and its underlying determinants. He posited that proven effective interventions are already in existance for the prevention of over two thirds of childhood infectious deaths.

The Symposia featured presentations that addressed the Conference sub-themes, including: "New Childhood Vaccines" by a Director in the National Primary Health Care Development Agency (NPHCDA), "Collaboration: a Key Tool to the Control of Childhood TB in Nigeria" by the National TB Control Programme (NTBLCP), "Challenges in the Management of Childhood TB" by the Country Representative, KNCV/TB CARE 1 and "Emerging Viral Haemorrhagic Disease: Lessons from the Control of Ebola Virus Disease" by the Nigerian CDC. Other presentations include, "Current Challenges with the Use of Antimicrobials in Paediatrics" by Prof. S.K Obaro, University of Nebraska, USA; "Expanding Access to Paediatric HIV/AIDS Services" by a Director in the National AIDS Control Programme and "Improving Adherence to ART amongst Adolescents" by Paediatric Advisor, Institute of Human Virology (IHVN), Nigeria.

The scientific papers presented included amongst others, a hospital prevalence study of childhood TB in a tertiary health facility in North-western Nigeria, which compared recent data and similar work carried out over a decade ago, and found a declining TB prevalence but with higher rate of treatment defaulters. Another study showed how Geographic Information System (GIS) was used to determine the distribution and risk factors of a cluster of cases of post-neonatal tetanus in a metropolis.

A major highlight of the Society's General meeting was the election of a new Executive Committee with Prof. Osawaru Oviawe, as the new President, Prof. Ebun A Adejuyigbe, as Vice President, Dr. Lawal W. Umar as Secretary, Dr. Mariya Mukhtar-Yola as Assistant Secretary and Dr. Titi Adesanmi as Treasurer. Prof. Kikelomo Osinusi (immediate past President) and Dr. Regina Oladokun (immediate past Secretary) emerged as Ex-Officio I and II respectively. The new Executive Committee will steer the activities of the Society for the next two years. The conference communiqué has been sent for publication and is being shared with NISPID's various stakeholders. The communiqué issued at the end of the conference made the following observations and recommendations.

Observations

1. Infectious diseases account for 4 out of the 6 leading causes of death in under five children and in 2013 alone, 800,000 under-five Nigerian children died from Vaccine Preventable Diseases. Most of these can be prevented through proven effective interventions such as routine immunisations, use of insecticide treated nets, antimalarials, access to clean water and sanitation, oral rehydration therapy, appropriate use of antibiotics and supervision of deliveries by skilled attendants.
2. Nigeria's coverage for childhood immunisation has remained low over the past decade, with a national DPT3 coverage rate of 67.73%, and only 53.01% of children being fully immunized by 1 year (NICS) in 2010. Challenges of the NPI include poor government funding, overdependence on donor funds, weak health structures and systems, recurrent industrial actions in the health sector and lack of community ownership.
3. The addition of new vaccines (Pentavalent, Pneumococcal Conjugate (PCV-10), Inactivated Polio (IPV), MenAfricVac, Rotavirus, and Human Papilloma (HPV) to Routine Immunisation schedule could save about 1.2 million lives between 2015 and 2020 in Nigeria.
4. Rational use of antibiotics is necessary to prevent development of antimicrobial resistance. Antimicrobial resistance is on the increase due to poor regulation, weak healthcare services, quack practices, poor diagnostic capacity and insufficient data on local disease burden to allow development of appropriate treatment and preventive strategies.
5. TB in children is poorly recognized and under-reported and constitutes a major public health challenge. Treatment is complicated by unavailability of child-friendly anti-TB drug formulations, HIV co-infection, poor drug adherence, weak contact tracing and poor implementation of INH prophylaxis.
6. The novel approaches in Nigeria in the control of childhood TB include a *"Roadmap to improve the control of childhood TB"* in collaboration with NISPID, establishment of paediatric DOTS centres in units/departments of tertiary health facilities, development of training and service tools/guidelines and job aids, and capacity building for healthcare workers. The NTBLCP has organized and sustained the conduct of regional capacity building workshops for healthcare providers facilitated by NISPID membership in the last 3 years. There is a growing availability and access to GeneXpert machines, as part of HIV/TB collaboration in tertiary and secondary facilities.
7. A recurrence of the EVD epidemic can be prevented in Nigeria by sustained surveillance, effective community awareness/engagement and improving on the existing response systems and management protocols.
8. Paediatric HIV/AIDS remains a global issue, with Nigeria accounting for about 30% of the global burden and 10% of cases. Lack of access to testing, treatment, and care, worsens the outlook in high burden countries such as Nigeria.
9. Innovations in diagnosis, treatment and care have allowed more children living with HIV to survive into adolescence and adulthood. Adolescents living with HIV are exposed to unique challenges, requiring adolescent focused programmes, since their needs are not adequately addressed by existing paediatric and adult focused programmes.

10. Improving adolescent access to HIV services requires that key issues be tackled, which include targeted policies, legislation on age of self testing, political commitment, improved funding, linkages to other existing health services and capacity building in adolescent HIV care.

Recommendations

The conference advocated for:

1. More political commitment to ensure and sustain adequate funding of specific programmes aimed at reduction of childhood infectious disease morbidity and mortality.
2. Strengthening of partnerships and linkages between government and stakeholders / partners towards enhancing the wellbeing of children and ensuring that programmes and policies are translated to impact on the populace.
3. Strengthening of the health system for improved diagnosis and management of childhood infectious diseases, through relevant partnerships.
4. Developing and implementing legislation to control and guide the quality of antibiotic production, and to enforce the rationale prescription and use of antimicrobials in the country.
5. Improving disease surveillance and notification of childhood and other infections at all levels to enhance control measures.
6. Extensive dissemination of national guidelines and standard operating procedures for childhood infections and training of health care providers in the use of these guidelines.
7. Encouraging community participation and ownership of programmes through need assessments and extensive / sustained health education.

AFRICAN RESEARCH SUMMIT 2015

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Merck in conjunction with the United Nations Educational Scientific and Cultural Organization (UNESCO) put together a conference to build research capacity in Africa. In the maiden edition, UNESCO-Merck brought together 100 African Scientists who converged in Geneva, Switzerland between 19 and 21st October, 2015. The UNESCO-Merck African Research Summit was aimed at putting in place mechanisms that will facilitate Africa's development as an international hub for research excellence and scientific innovation. The Summit placed emphasis on translation of knowledge into action to improve health. The Summit is scheduled to be done on an annual basis to ensure sustainable impact. The 2015 edition focused on the role of building capacities in Life Sciences to address the challenges of emerging infectious diseases most notably the Ebola crisis.

The Assistant Director-General of National Sciences of UNESCO, Flavia Schlegel said the partnership between UNESCO-MERCK was initiated to partly address the vital role of research in the improvement and sustainable development of population health with specific attention on "know-do" gap. Stefan Oschmann, Vice Chairman of the Executive Board and Deputy CEO of Merck, at the inauguration said the idea of the conference was to bring African researchers together to discuss the generation, sharing and dissemination of research data so as to identify developmental opportunities that will build research capacity, accelerate access to innovative health solutions and to sustain same in Africa. The Ugandan Minister of Health, Sarah Opendi emphasized the fact that new health challenges were anticipated and that the initiative by UNESCO/MERCK will significantly enhance policy framework, support and facilitate capacity building of researchers in low and middle income countries.

Abstracts were accepted from final year African PhD students and young investigators involved in HIV, Ebola and other infectious diseases research. They were peer reviewed by a scientific committee from the Universities of Cambridge and Rome. One fellowship award was given to the best abstract to visit a Merck R&D hub, while several categories of research awards were announced during an official dinner held at La Broche Restaurant –Salle de Rois, 1204 Geneve.

Excerpts from some of the poster presentations include the following:

Muhanguzi E. *et al.,* from University of Makerere presented on "Improving Availability of Essential Logistics for Prevention of Mother to Child Transmission of HIV through Short Message Service (SMS) Weekly Reporting in Uganda". They examined the effect of a weekly short message service (SMS) reporting system on the availability of test kits and ARV drugs in health facilities providing prevention of mother to child transmission of HIV (PMTCT) services in Uganda. Of the 1,673 health facilities which provide PMTCT services in Uganda, 1,427(85%) submit weekly reports via the SMS system. A significant decrease in stock-outs of HIV test kits was noted across all the health facilities from 74% in May 2014 to <4% by end of May 2015. Reduction in stock-outs of ARV drugs was observed: From 67% in May 2014 to 4% by end of May 2015. In conclusion, they opined that integrating a weekly reporting system into the national health information management system may help improve availability of essential logistics for PMTCT services in Uganda.

Hagos Amare *et al.,* presented on "Insulin resistance, dyslipidemia and cardiovascular disease risk in HIV infected Ethiopian adults taking Protease Inhibitor-based combined antiretroviral therapy". The objective was to assess insulin resistance, dyslipidemia and cardiovascular disease risk in HIV-1 infected adults taking protease inhibitor based HAART. A total of 134 HIV-1 patients on ART were recruited, 67 taking PI-based regimen (cases) and 67 taking NNRTI-based regimen (controls). According to homeostasis model assessment (HOMA), insulin resistance was observed on 34.3% of patients on PI-based as compared to 28.4% on NNRTI-based controls. Based on NCEP –ATP III panel criteria, 32.8% patients taking PI-based regimen were found to have metabolic syndrome compared to 17.9% of those on NNRTI-based regimen. The study showed that patients on PI-based regimen have greater risk of developing diabetes mellitus and cardiovascular disease risk compared to those on NNRTI- based regimen. Serum biochemical parameters of patients taking HAART, in particular PI-based regimen should be regularly followed as an integral part of health management.

Onoja A.B. *et al.,* from University of Ibadan, Nigeria presented on Yellow fever vaccination in Nigeria: Focus on Oyo State (Tsai *et al,* 1987; WHO, 1993; Nasidi *et al.,* 1989; Monath, 1996; Harrington *et al.,* 2001; Mutebi *et al.,*

2001; Onyango *et al.,* 2004; Weaver *et al.,* 2004 Anosike *et al.,* 2007; Fortaleza *et al.,* 2009). The study provides information on annual vaccination counts in some major vaccination centers in Ibadan, vaccination status of some patients visiting Adeoyo Teaching Hospital Yemetu for malaria and typhoid tests; and the vector density from May 2013 and June 2014. Out of 801 patients visiting Adeoyo specialist hospital Yemetu for malaria parasite examination and widal tests, 799 had no yellow fever vaccination. The childhood YFV vaccination coverage was 40%, 73 % and 63% in 2012, 2013 and 2014 respectively. Two hundred and thirty-six Aedes aegypti were caught intermittently over a period of fourteen months. In conclusion, a lot of children were vaccinated while several adults were unvaccinated. The steady presence of Aedes aegypti underscores the risk of yellow fever hence the need for sustained surveillance. Indiscriminate discarding of hollow containers increased breeding of the vectors and should be discouraged.

Novel N. *et al.,* from DST/NRF Centre of Excellence for Biomedical Tuberculosis Research and SAMRC Centre for Tuberculosis Research, Division of Molecular Biology and Human Genetics, Faculty of Medicine and Health Sciences, Stellenbosch University, South Africa presented on "Diagnostic performance of a seven-marker serum protein biosignature for the diagnosis of active TB disease in African primary health care clinic attendees with suspected pulmonary tuberculosis". The aim was to evaluate the potential of protein serum host markers to diagnose pulmonary TB in primary health care clinic attendees from five African countries. They identified a promising seven-marker serum host protein biosignature for the diagnosis of active pulmonary TB in adults regardless of HIV infection status or ethnicity. The results had 94% sensitivity and 96% negative predictive value which hold promise for further development into a field-friendly point-of-care screening test for TB.

Muhammed A. *et al.,* from the Medical Research Council Unit, Fajara, The Gambia presented on Ebola: Towards establishing a holistic approach to achieve effective management and control (Roca *et al.,* 2015). They observed that Knowledge of the virus transmission and its transmission dynamics was evolving. There was a need for prioritized use of experimental drugs in the face of limited supply and a changing dogma to accelerate development of vaccines and therapeutics. And also to remove obstacles to accelerate the pace of Ebola vaccine and treatment trials. Strengthening health systems and enforcing safe burial practices was highlighted. In conclusion, socio-cultural factors are critical determinants for the success and failure of control efforts. Integration of research with capacity development of HCPs will facilitate discovery, development, manufacture and delivery of quality, easy to use, affordable interventions and technologies for effective management and control. Multi-pronged holistic approach is more pragmatic in addressing Ebola epidemic.

Chelbi *et al.,* from 1LR 11-IPT-06 Laboratory of Medical Parasitology, Biotechnology and Biomolecules Tunisia presented on "Evaluation of QPCR- HRM assays for Cryptosporidium diagnosis and discrimination of Cryptosporidium parvum, C. hominis and C. meleagridis in stool Samples (Coupe *et al.,* 2005; Haque *et al.,* 2007; Essid *et al.,* 2008; Rasha *et al.,* 2009; Pangasaa *et al.,* 2009). The aim of the study was to develop a closed tube real time method for detection and species identification (genotyping) of Cryptosporidium oocysts in biological samples. They identified C. meleagridis, C. parvum and C. hominis with good discrimination shown by presence of three normalized curve with different forms and colors. Genotyping of Cryptosporidium sp. on the basis of melting curve analysis revealed one peak at Tm 77.2° ± 0.10^{o}C specific to C. meleagridis, one peak at Tm 77.6 ± 0.05^{o}C specific to C. parvum, one peak at Tm 77.8 ± 0.04°C specific to C. hominis. In conclusion, they reported that PCR-coupled melting-curve analysis approach was suited for the rapid screening of large numbers of Cryptosporidium oocyst DNA samples. This approach, although qualitative, is more advantageous over some electrophoretic techniques particularly in relation to analysis time, sample through-put, data storage and analysis capacities.

Ouedraogo A. from Burkina Faso Public Health Association, presented on "Preparedness of non- affected West African countries to the Ebola epidemic: the case of Burkina Faso". He concluded that despite a relatively late start, the government of Burkina Faso developed a response plan to the Ebola epidemics with help from the WHO. A synergy of action between health authorities and other non-governmental health actors led to building communities' resilience and awareness especially at land boarders and within specific groups at higher risk of importing the disease from affected countries.

Nherera B. *et al.,* from University of Zimbabwe College of Health Sciences presented on Fibrosis-4 Index: A predictor of liver fibrosis in HAART-experienced Zimbabweans (Bataller and Brenner, 2005; Patella *et al.,* 2008; Price and Thio, 2010; Tuma *et al.,* 2010, Kumar *et al.,* 2012; Hamza *et al.,* 2014; UNAIDS, 2015). The study showed that FIB-4 index can determine clinically significant fibrosis with good diagnostic accuracy. Compared with previous studies, there was comparable performance of FIB-4 index for staging significant fibrosis with FibroTest as a reference method. FIB-4 index proved to be an alternative first-line test to predict liver fibrosis because of its low cost, simplicity in calculation and widespread availability particularly in regions with constrained healthcare resources where prevalence of HIV was above average. They recommended FIB-4 index testing for pre-screening as this would provide an approach that is simple, affordable and can easily be applied in everyday clinical practice. FIB-4 index as a pre-screening test will allow reduction of the number of liver biopsies performed.

Retruyap MZ. from of University of Dschang and International Relations Institute Cameroon presented on "Cultural attributes to Ebola virus disease spread and stigmatization in Cameroon (Goffman, 1965; Stake, 1995; Yin, 2003; SAMA, 2013; Titilola, 2015). The aim of the study is to explore how cultural attributes contribute to stigmatization and spread of some infectious diseases like Ebola Virus Disease (EVD). The study showed that stigmatization and some specific cultural practices, militate against effective and speedy prevention program in Cameroon. They advocated for sensitization in 'risk zones' which included villages bordering Nigeria as well as air and sea ports. Cameroonians should be educated on obnoxious cultural practices and beliefs, especially those attributing the causes of infectious diseases to witchcraft, curse and wrath from the gods. He proposed a thorough understanding of people's cultural practices before designing any infectious disease prevention program.

Qrafli M and Sadki K. From Faculty of Sciences, Rabat, Morocco & Human Genomics Unit, National Institute of Hygiene (INH), Rabat, Morocco presented on "Cyp7a1 gene rs3808607 variant associated with susceptibility of tuberculosis in Moroccan population" (Savioli and Albonico, 2004; Hotez *et al.*, 2007; Albonico *et al.,* 2008; Mbuh *et al.,* 2012; Vercruysse *et al.,* 2011; Steinmann *et al.,* 2011). They reported a statistically significant increase in the AA homozygote genotype frequency of rs3808607 in PTB patients compared to HC (p = 0.02, OR = 1.93, 95% CI: 1.93 (1.07; 3.49). The increased risk of

developing TB was maintained when they combined the groups of patients (PTB-pTB) (p = 0.01, OR= 1.91, 95% CI = (1.07 - 3.42). In contrast, no genetic association was observed between rs8192875 or rs8192879 polymorphisms and TB. Their findings suggest rs3808607 may play a role in susceptibility to TB in Moroccan population.

References

1. Roca A., Afolabi MO, Saidu Y, Kampmann B. Ebola: A holistic approach is required to achieve effective management and control. Journal of Allergy and Clinical Immunology. 2015;856-67.
2. Coupe S, Safarti C, Hamane S, Derouin F, 2005. Detection of Cryptosporidium and identification to the species level by nested PCR and restriction fragment length polymorphism. J Clin Microbiol 43: 1017-1023.
3. Rasha H. Soliman and Ahmad A.2009 OthmanEvaluation of DNA Melting Curve Analysis Real-Time PCR for Detection and Differentiation of Cryptosporidium Species Parasitologists United Journal (PUJ) 2009;47-54
4. Essid R, Mousli M, Aoun K, Abdelmalek R, Mellouli F, Kanoun F, Derouin F,Bouratbine A. Identification of cryptosporidium species infecting humans in Tunisia. Am J Trop Med Hyg. 2008;79(5):702-5.
5. Haque R, Roy S, Siddique A, Mondal U, Rahman SM, Mondal D et al. Multiplex real-time PCR assay for detection of Entamoeba histolytica, Giardia intestinalis and Cryptosporidium spp. Am J Trop Med Hyg; 2007;76:713-7.
6. Pangasaa A., Jexa A.R., Campbella B., Botta J.N., Whippb M., Hoggb G., Stevensc A.M, Gassera R B. High resolution melting-curve (HRM) analysis for the diagnosis of cryptosporidiosis in humans. Molecular and Cellular Probes; 2009;23:10–15.
7. Palella Jr FJ, Baker RK, et al. Mortality in the highly active antiretroviral therapy era: changing causes of death and disease in the HIV outpatient study. Journal of Acquired Immune Deficiency Syndromes 2006
8. Tuma P, Medrano J, et al. Incidence of liver cirrhosis in HIV-infected patients with chronic hepatitis B or C in the era of highly active antiretroviral therapy. Antiviral Therapy 2010
9. Hamza M, Adamu SA, Maifada YA, Musa B, Nalado AM, Mijinyawa MS, et al. Prevalence and risk factors for hepatotoxicity among patients with HIV/AIDS on highly active antiretroviral therapy in North-Western Nigeria. Sub-Saharan African Journal of Medicine 2014
10. Kumar V, Abbas AK, Fausto N, Mitchell R. Robbins basic pathology. Elsevier Health Sciences; 2012
11. Stake, R. E. 1995. The arts of case study research. Sage Publications, Incorporated
12. Titilola, T.O. 2015. Ebola visus disease stigmatization; the role of societal attributes. International Archives of Medicine.
13. WHO Ebola response team. Ebola Virus Disease in West Africa - The First 9 Months of the Epidemic and Forward Projections.
14. Yin, R. K. 2003. Case study research: design and methods. Thousands Oaks, Calif; London,
15. World Health Organization. The Immunological Basis for Immunization Series. Module 8: Yellow fever global programme for vaccines and immunization expanded programme on immunization. CH-1211 Geneva 27, Switzerland 1993;1-2
16. Onyango CO, Grobbelaar AA, Gibson GVF, Sang RC, Sow A, Swanepoel R and Burt FJ. Yellow Fever Outbreak, Southern Sudan, 2003. *Emerg. Infect. Dis.* 2004;10:1668-1670.
17. Schwan K. 2012. Yellow Fever Outbreaks in Cameroon and Ghana Prompt Vaccination Campaigns Feb 9, 2012. http://healthmap.org/site/diseasedaily/article/yellow-fever-outbreaks-cameroon-and-ghana-prompt-vaccination-campaigns-2912#sthash.8A0gJd so.dpuf
18. Monath TP. Stability of Yellow Fever Vaccine. In: Brown F, editor. New Approaches to Stabilisation of Vaccines Potency: WHO Headquarters, Geneva, May, 29-31, 1995. Basel, Karger, 1996: 219-25.
19. Nasidi A., Monath TP, DeCock K, Tomori O, Cordellier R, Olaleye OD, Harry TO, Adeniyi A, A. Sorungbe O and Coker AO. Urban yellow fever epidemic in Western Nigeria, 1987. *Trans. R. Soc. Trop. Med. Hyg.* 1989;83:401-406.
20. Fortaleza CMCB, Rocha R, Aragão VDN, Almeida RAMB. Syndromic surveillance and the reemergence of yellow fever in São Paulo state, Brazil, 2009. *J. Venom. Anim. Toxins. Incl. Trop. Dis.* 2009;15:186-189.
21. World Health Organization. Yellow Fever: Eds. Vaino J, and Cutts F. Global Programme for Vacines and Immunization CH-1211 Geneva 27, Switzerland 1998; p45
22. University of Ibadan Bulletin. Request for international certificate of vaccination: yellow card. Special release: No 3274, 17 February 2014
23. Anosike JC, Nwoke EBB, Okere AN, Oku EE, Asor JE, Emmy-Egbe IO, Adimike DA. Epidemiology of tree-hole breeding mosquitoes in the tropical rainforest of Imo State, South-East Nigeria. *Ann Agric Environ Med* 2007;14:31-38
24. Tsai TF, Lazuick JS, Ngah RW, Mafiamba PC, Quincke G, Monath TP: Investigation of a possible yellow fever epidemic and serosurvey for flavivirus infections in northern Cameroon, 1984. *Bull. World Health Org.* 1987;65:855-860.
25. Mutebi J-P, Wang H, Li L, Bryant JE., Barrett ADT. Phylogenetic and evolutionary relationships among yellow fever isolates in Africa. *J. Virol.* 2001;75:6999–7008.
26. Harrington LC, Edman JD, Scott TW. Why do female Aedes aegypti (Diptera: Culicidae) feed preferentially and frequently on human blood*? J. Med. Entomol.* 2001; 38(3):411–22
27. Weaver SC, Coffey LL, Nussenzveig R, Ortiz D, Smith D. Vector Competence. In: Gillespie, SH.; Smith GL., Osbourn A., Eds. Microbe–vector Interactions in Vector-borne Diseases. Cambridge University Press; Cambridge: 2004;139-180.
28. Savioli, L. and Albonico M. *Nat. Rev. Microbiol.* 2004;2:618-619.
29. Hotez, P. J., *et al.* 2007. Control of neglected tropical diseases. *N. Engl. J. Med.* 357:1018-1027.
30. Albonico, M., H. *et al.*. Controlling soil-transmitted helminthiasis in pre-school-age children through preventive chemotherapy. *PLoS. Negl. Trop. Dis.* 2008
31. Mbuh, J. et al., The epidemiology of soil-transmitted helminth and protozoan infections in south-west Cameroon. *J. Helminthol.* 2012;86:30-37.
32. Adegnika, A. *et al.,* Increased prevalence of intestinal helminth infection during pregnancy in a Sub-Saharan African community. *Wien. Klin. Wochenschr.* 2007;119:712-716.
33. Vercruysse, J. *et al.* Assessment of the anthelmintic efficacy of albendazole in school children in seven

countries where soil-transmitted helminths are endemic. *PLoS. Negl. Trop. Dis.* 2011;5:e948

34. Steinmann, P., *et al*. Efficacy of single-dose and triple-dose albendazole and mebendazole against soil-transmitted helminths and Taenia spp.: a randomized controlled trial. *PLoS. One.* 2011;6:e25003

CONTROL OF EBOLA VIRUS DISEASE EPIDEMIC IN WEST AFRICA: SUCCESS AND CHALLENGES

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The first Ebola virus disease (EVD) epidemic in West Africa started in December 2013 in the small village of Meliandou in Guinea.[1] The epidemic is unprecedented in its spread, complexity, severity and total number of deaths. In this review, factors for the success in its control in Nigeria, Mali and Senegal are compared with difficulty in its containment in Guinea, Sierra Leone and Liberia. Attention to these factors may help to mitigate future epidemics.

Spread of EVD in Guinea, Sierra Leone and Liberia

Emile Ouamouno, the zero patient in West Africa's Ebola epidemic, infected members of his nuclear family setting off the first transmission line. His mother, three-year-old sister, and grandmother developed a similar illness and died by the second week of January 2014. Midwives, traditional healers, and staff at a hospital in the city of Guéckédou who treated them also got infected and died.[2] During the following week, members of the boy's extended family from Dawa village, who attended grandmother's funeral or took care of ill relatives, set up the second transmission line, became ill and died on returning home.[2] A Meliandou midwife became sick and sought for cure from her family in the nearby village of Dandou Pombo, passed on the disease leading to the 3rd transmission line. Before dying in the town of Guéckédou, she infected one of her attending traditional healers who later died in Macenta. After his death, four members of his family who had prepared his body for burial brought the disease home with them to Farako prefecture in Guinea (Figure 1).

In February, the virus was spread to the capital city, Conakry, by an infected member of Emile's extended family, and there were cases in four prefectures in Guinea - Macenta, Baladou, Nzerekore, and Farako – including several villages and cities along the routes to these destinations (Figure 2).

The spread of the virus was inadvertently aided through the ancient traditions of washing of and touching the corpses of those that died from the disease, with the belief that this will ensure their entry to heaven.[3]

The disease was undiagnosed for three months until mid-March 2014, when an MSF disease detective in Geneva suspected Ebola virus haemorrhagic fever. On 22 March, the Institut Pasteur in Lyon, France, a WHO Collaborating Centre, confirmed that the causative agent was the Zaire Ebola virus species. With this information, the WHO declared an outbreak of EVD on 25 March 2014 in the four southeastern prefectures of Guinea with a total of 86 suspected cases and 59 deaths.[4] By then, the epidemic had already taken root in Conakry, the capital city. On March 24, MSF opened the first Ebola treatment centre in Guéckédou, calling for international help to find and isolate infected individuals so as to stop the outbreak.[5] However, the numerous chains of transmissions that had spilled into capital cities could no longer be traced. On March 27, the WHO issued health alerts to Guinea, Liberia, and Sierra Leone.[6]

Efforts at controlling the epidemic was hampered by participation in the funeral of a famous, female traditional healer in Kenema, Sierra Leone, who claimed to have healing power over Ebola virus disease. The healer got infected with the virus and died in May. Participation in her funeral in Kenema was linked to as many as 365 mourners dying of EVD.[7] As in Guinea, the virus spread to the capital city, Freetown, where it multiplied rapidly because of the overcrowded living conditions and fluid population movements.

On 7 August, the WHO declared EVD epidemic a Public Health Emergency of International Concern.[8] The number of cases continued to increase and in September Liberia, Guinea and Sierra Leone banned traditional healers from treating patients and suspended the activities of secret societies because they were encouraging unsafe burial practices.

Majority of cases and deaths were reported between August and December 2014. The WHO introduced three phases of response to the epidemic.[9] In phase 1, there was rapid scale-up of treatment, isolation, and safe burial capacity in the three countries, after which case incidence began to decline. In the early first half of 2015, continuous refinement of surveillance, contact tracing, and community engagement interventions succeeded in driving case incidence to 5 cases or fewer per week by the end of July.[9] This is phase 2 response (Figure 3). WHO, in coordination with national and international partners designed the phase 3 Ebola response framework to effectively interrupt remaining transmission chains and manage the residual risks posed by viral persistence, incorporate new developments in Ebola control, from vaccines and rapid-response teams to counselling and welfare services for survivors.[9]

A Phase III efficacy trial of ring vaccination with replication-competent vesicular stomatitis virus-based vaccine expressing a surface glycoprotein of Zaire Ebolavirus (rVSV-ZEBOV) vaccine started on 1 April 2015 in Guinea.[10] The 'ring vaccination' strategy involves vaccinating all contacts of a person with confirmed EVD (a 'case') - and contacts of contacts. Vaccination was given immediately or delayed by three weeks to assess the ability of the VSV-EBOV vaccine to protect against the disease.

On 31 July 2015, WHO announced an interim report of the Phase III efficacy trial of Ebola vaccine in Guinea as impressive and that the study should continue, randomization should stop so that all participants could be offered the vaccine immediately.[11] Following this success, 'ring vaccination' use of the experimental Ebola vaccine started in Sierra Leone on 31 August.

Liberia was officially declared Ebola-free on 9 May, 42 days after the last known case.[12] There was re-emergence of EVD in Liberia on 29 June, seven weeks after 9 May, when a 17-year-old boy who had been treated for malaria tested positive for Ebola.[13] By 14 July the total number of new cases was six.[14] On 20 July, the last patients were discharged,[15] and on 3 September, Liberia was declared Ebola-free again.[16] In Liberia, after two months of being Ebola-free, a 15-year-old boy and two family members tested positive for Ebola in November .[17] The cases in Liberia were the result of re-emergence of the virus in a

previously infected person.[18] The infected boy died on 24 November,[19] and on 3 December the two remaining cases were released after recovering from the virus.[20] Liberia was declared Ebola-free, for the third time, on 14 January 2016.

The WHO declared Sierra Leone free of Ebola transmission on 7 November 2015,[21] and declared Guinea Ebola-free on 29 December.[22] But, on 14 January 2016, there was a flare-up in Sierra Leone resulting in one death, one patient being treated, and over 100 people being quarantined.[23]

Although EVD is no more out of control in Guinea, Liberia and Sierra Leone, the WHO has not yet declared the outbreak in the three West African countries over due to the continuation of flare-ups.[24] The virus can hide in the bodies of fully recovered survivors for as long as a year. Since March 2015 the WHO has documented 11 small flare-ups of infection following reintroduction of the virus from survivors, which were rapidly detected and quickly contained. [24]

Control of EVD Epidemic in Nigeria

Patrick Sawyer, a Liberian diplomat, cared for his sister who died from Ebola on 8 July 2014. [25] He flew out to Lagos, Nigeria, on a commercial airplane on 20 July 2014. He vomited during the flight, on arrival at Murtala Mohammed International Airport, Lagos and, in the car that drove him to a private hospital, where he denied contact with Ebola virus infected patients.[25] In the following few days, he infected nine doctors and nurses, four of whom died.[25] The protocol officer who escorted him later died of Ebola.[25] He died on 25 July 2014.[25] No one who shared a flight with him developed the disease.

A total of 894 contacts were subsequently linked to this index case, including the primary, secondary and tertiary contacts – figure 4.[25] One of the primary contacts of the index case escaped from quarantine and travelled to Port Harcourt, the capital of Rivers state, at the end of July 2014 and was cared for by a private medical doctor who contracted the infection and died on 22 August 2014.[25] This medical doctor was linked to a total of 526 contacts in Port Harcourt.[25] In all, there were 19 confirmed cases and one probable case, out of which eight died, giving a case fatality rate of 40%. As of 1 October 2014, all contacts had completed the 21-day surveillance follow-up, including those under surveillance in Rivers state, with no new report of incident cases.[26] The World Health Organization declared Nigeria free of active Ebola virus transmission on 20 October.[27]

Control of EVD in Senegal

A university student, a Guinean national who had been in contact with an Ebola patient in Guinea arrived Dakar on 20 August 2014 and sought for the treatment of fever, diarrhoea and vomiting on 23 August.[28] He received treatment for malaria but did not improve and left the facility. Still experiencing the same symptoms, he was referred to a specialized facility for infectious diseases on 26 August and was subsequently hospitalized.[28] Based on the alert issued on 28 August, by authorities in Guinea of a person who had been in close contact with an Ebola infected patient escaping their surveillance system, he was tested for Ebola at the Dakar laboratory, and the first and only case in Senegal was diagnosed in the Guinean national on 29 August.[28] Both the government and WHO responded urgently. Three senior epidemiologists dispatched by WHO to Dakar worked with staff from the Ministry of Health, MSF, and CDC to undertake urgent and thorough contact tracing coupled with airlifting of adequate quantities of medical supplies.

Seventy-four close contacts were rigorously monitored and numerous suspected cases were identified, tested, and then discharged as all test results were negative. Dakar further benefitted from the presence of the Institut Pasteur Laboratory with world-class diagnostic capacity. All contacts were monitored daily, and those with symptoms were immediately tested. All test results were negative. No onward transmission occurred. The single case fully recovered. WHO declared Senegal free of virus transmission on 17 October, 42 days after the second test on that single patient came back negative.[29]

Control of EVD Epidemic in Mali

The first case of EVD was in a 2-year-old female toddler who died of the disease on 23 October 2014 after being admitted to a hospital for two days in Kayes, Mali.[30] This girl together with her grandmother, uncle and 5-year-old sister left Guinea[31] where her father died after contracting Ebola virus in a private clinic he worked for.[32] The child, who was symptomatic upon her arrival, and her family members had travelled extensively throughout the country using public transportation, also spending some hours with relatives in Bamako before travelling to Kayes by bus.[33] Some family members also died of Ebola.
Staff from WHO and other partners, already in the country to strengthen preparedness, shifted their work to support outbreak containment. Extensive contact tracing was undertaken, with several close contacts monitored in a hospital setting. Earlier in the year, before the disease broke out in Mali, a biosafety level-3 laboratory was set up in Bamako to prepare for the possibility of an outbreak, in which samples can be processed in only a few hours instead of three weeks, hitherto.[34]

Forty-three of the estimated 300 people the child had contact with were placed in isolation.[35] By 27 October, 111 people had been traced as contacts, but the search was hampered by a lack of health care workers,[36] and 40 volunteers were trained to help with the contact tracing.[37] All identified contacts successfully completed their 21-day waiting period on 15 November.[38]

The second wave started on 25 October when a Grand Imam from Siguiri prefecture in Guinea was admitted to Bamako's Pasteur Clinic with a diagnosis of acute kidney failure. He died on 27 October. That single hospital admission ignited a chain of transmission that eventually led to seven additional cases and five deaths, including a doctor and a nurse who had treated the Imam.[39] A man who had visited the Imam while he was in the hospital, his wife and his son also died.

As a result of the efforts to contain the spread of EVD, some Malians began to change their burial rituals, to greet others by waving rather than shaking hands, and to avoid eating from the same dish, as is typically done in Mali.[40]

Discussion

Reasons adduced for the unprecedented spread of EVD in the three most affected countries in West Africa, are poverty, delay in diagnosis, damaged public health infrastructures, severe shortage of health care workers, high population mobility across porous borders, cases in most parts of the countries and their capital cities, community resistance, and public health messages that fuelled hopelessness and despair. Although all these were contributory, the most important factors for the spread were reliance on traditional healers and cultural beliefs and behavioural practices that support burial rituals which are superspreaders of Ebola virus.[41] For instance, in an

analysis of the crucial difference between the first Ebola outbreak in 1976 and the current one in West Africa, behaviour changes among the affected communities was identified as the driving power for the containment of the epidemic in the Democratic Republic of Congo.[42]

The Ebola outbreaks and responses in Nigeria, Senegal and Mali, were similar. The three countries shared a high level of vigilance that led to the rapid detection of an imported case and the rapid introduction of classical control measures. They also benefitted from government support at the highest level that treated the first case as a national emergency. Support from WHO epidemiologists at the start of the investigation was warmly welcome. All three countries established emergency operations centres and recognized the critical importance of public information campaigns that encouraged community cooperation. In Nigeria, the government generously allocated funds and dispersed them quickly. Isolation facilities were built in Lagos and Port Harcourt, as were designated Ebola treatment facilities. House-to-house information campaigns and messages on local radio stations, in local dialects, were used to ease public fears. Contact tracing reached 100% in Lagos and 99.8% in Port Harcourt.[26]

Another factor which helped in the containment of EVD in these three countries, which was not fully appreciated is that traditional healers were not allowed to treat cases. Speaking at a press briefing in Lagos, the Director of the Nigeria Centre for Disease Control said some of the affected people with EVD in neighbouring countries might want to come to Lagos, Nigeria, where there were many healing houses that claim to have a cure for diseases. He explained that in regions where EVD had killed many people, some of the victims had flocked to healing houses for a cure, but ended up spreading the virus, with the supposed healers contracting the deadly virus. The traditional and faith healers in Lagos were advised to avoid treating EVD.[43]

Conclusions

The unprecedented EVD epidemic in West Africa will soon end. Major factors that helped to achieve this task are introduction of vaccines against Ebola virus, rapid response teams, education of traditional and faith healers on EVD and behaviour changes to desist from ritual burial practices.

References

1. Baize S, Pannetier D, Oestereich L, et al. Emergence of Zaire Ebola virus disease in Guinea - preliminary report. N Engl J Med 2014; 371:1418 – 1425.
2. WHO. Origins of the 2014 Ebola epidemic, One year into the Ebola epidemic. January 2015 http://www.who.int/csr/disease/ebola/one-year-report/virus-origin/en/ (Accessed 28 December 2015).
3. Ebola's Lessons - Council on Foreign Relations, http://www.cfr.org/global/ebolas- lessons/p37015 (Accessed 28 December 2015).
4. WHO. 2014 Ebola Outbreak in West Africa. *www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa* (Accessed 28 December 2015).
5. Timeline: Ebola 2014. Issue number five: Ebola's ecologies. http://limn.it/timeline-ebola- 2014/ (Accessed 28 December 2015).
6. WHO. Ebola virus disease, Guinea (Situation as of 27 March 2014). http://www.afro.who.int/en/clusters-a-programmes/dpc/epidemic-a-pandemic-alert-and-response/4069-ebola-virus-disease-guinea-27-march-2014.html
7. WHO. Sierra Leone: a traditional healer and a funeral. http://www.who.int/csr/disease/ebola/ebola-6-months/sierra-leone/en/
8. WHO. Statement on the 1st meeting of the IHR Emergency Committee on the 2014 Ebola outbreak in West Africa http://www.who.int/mediacentre/news/statements/2014/ebola- 20140808/en/ (Accessed 16 November 2015).
9. WHO Ebola situation report. November 2015.http://apps.who.int/ebola/current- situation/ebola-situation-report-16-november-2015. (Accessed 16 November 2015).
10. Henao-Restrepo AM, Longini IM, et al. Efficacy and effectiveness of an rVSV- vectored vaccine expressing Ebola surface glycoprotein: interim results from the Guinea ring vaccination cluster-randomised trial. Lancet 2015; 386:857-866.
11. WHO. World on the verge of an effective Ebola vaccine. http://www.who.int/mediacentre/news/releases/2015/effective-ebola-vaccine/en/ (Accessed 29 December 2015).
12. Fink, Sheri (9 May 2015). Liberia is declared free of Ebola, but officials sound note of caution. The New York Times. Accessed 29 December 2015.
13. Gladstone, Rick (3 July 2015). Liberia: 200 reportedly had contact with Ebola victim. New York Times. Accessed 30 December 2015.
14. Tanya Basu (14 July 2015). Ebola.TIME.com. Accessed 30 December 2015.
15. Reuters. (20 July 2015).Liberia: Ebola patients discharged, last of the country's latest wave. New York Times. Accessed 30 December 2015.
16. Liberia declared Ebola-free for second time. Reuters *www.reuters.com/article/health-ebola-liberia-idUSL5N1192HI20150903* (Accessed 15 September 2015).
17. Liberian health officials move to control Ebola outbreak in Monrovia. The Guardian. Accessed 30 December 2015.
18. Ebola situation report – 16 December 2015. Accessed 30 December 2015.
19. ABC News. Liberia records 1st Ebola death since July. ABC News. Accessed 30 December 2015.
20. Liberia's last two Ebola patients recover, leave hospital. Yahoo News. 3 December 2015. Accessed 30 December 2015.
21. WHO – Sierra Leone stops transmission of Ebola virus. World Health Organization. Accessed 29 December 2015.
22. World Health Organization. 29 December 2015.
23. Sierra Leone puts over 100 people in quarantine after new Ebola death. Yahoo Finance. Retrieved 2016-01-24.
24. World Health Organization. WHO Director-General addresses the Executive Board, 25 January 2016. (Accessed 17 February 2016).
25. Shuaib F, Gunnala R, Musa EO, et al. Ebola virus disease outbreak - Nigeria, July - September 2014. MMWR Morb Mortal Wkly Rep. 2014;63(39):867-872.
26. Fasina F, Shittu A, Lazarus D, et al. Transmission dynamics and control of Ebola virus disease outbreak in Nigeria, July to September 2014. Eur Surveill 2014, 19 Available online: http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=20920 *webcite*
27. Nigeria is now free of Ebola virus transmission. WHO. 20 October 2014. Accessed 30 October 2014.
28. Ebola virus disease – Senegal. World Health Organization. 29 August 2014. (Accessed 1 September 2014).
29. The outbreak of Ebola virus disease in Senegal is over. Ebola situation assessment 17 October 2014. http://www.who.int/mediacentre/news/ebola/17-october-2014/en (Accessed 30 December 2015).
30. Ebola patient in Mali dies: health official. CBC. Oct 24, 2014.
31. Tom Miles. Two suspected Ebola cases reported in Mali, 57 contacts sought . Scientific American. *www.scientificamerican.com/.../two-suspected-ebola-cases- reported-in-m* October 31, 2014
32. Ebola crisis: 'Many exposed' to infected Mali girl. BBC News. 25 October 2014.
33. Mali confirms its first case of Ebola. World Health Organization. 24 October 2014.
34. Inside an Ebola testing lab in Mali.
35. Mali Ebola toddler dies, fears dozens exposed. news24.com. 2014-10-25.
36. Olivier Monnier and Francois Rihouay (28 October 2014). WHO said to track 111 people in Mali after Ebola death. Bloomberg.

37. WHO says 82 being monitored for Ebola in Mali. Fox News. Accessed 24 November 2014.
38. Mali due to declare 108 people Ebola-free after quarantine.
39. Ebola crisis: Third death confirmed in Mali. BBC News. 12 November 2014. Accessed 12 November 2014.
40. IANS (30 October 2014). Ebola takes its toll on traditional customs in Mali.
41. Pandey A, Atkins K, Medlock J, et al. Strategies for containing Ebola in West Africa. Science 2014; 21 (346) http://www.sciencemag.org/content/346/6212/991.full
42. Gholipour B. 2014. 1976 Ebola Outbreak's Lesson: Behaviors Must Change. Live Science 2014. http://www.livescience.com/48170-ebola-outbreak-in-1976-revisited.html
43. Ifeanyi H. http://cajnewsafrica.com/2014/07/31/be-careful-of-nigeria-pastors-claiming- to- cure-ebola/ (Accessed 24 October 2015).- report-16-november-2015. Accessed 16 November 2015.

JOURNAL WATCH

Cancer in HIV-infected children in South Africa

Review completed by Brian Eley

Little is known about the cancer risk in HIV-infected children in sub-Saharan Africa. In this study the incidence and risk factors of AIDS-defining and other cancers in 11,707 HIV-infected children. This is the first study to estimate the incidence rate of cancer and the impact of ART on cancer risk in HIV-infected children in South Africa. The study found that HIV-infected children were at high risk of developing cancer with the overall risk of cancer of 82 per 100,000 person-years. The majority of cancers were AIDS-defining, particularly Kaposi sarcoma and non-Hodgkin lymphoma. On multivariable analysis, the risk of developing cancer was significantly lower on ART and increased significantly with age at ART enrolment. This study confirmed another major benefit of ART namely that it is associated with a substantial reduction in the burden of cancer in HIV-infected children in sub-Saharan Africa.

Reference

Bohlius J, et al. Incidence of AIDS-defining and other cancers in HIV-positive children in South Africa – Record linkage study. Pediatr Infect Dis J 2016 Feb 19. [Epub ahead of print]

CONFERENCE & SOCIETY NEWS

The 21st International AIDS Conference will be held at the Durban International Convention Centre in Durban, South Africa, from 17 to 22 July *2016*. For more information visit the conference website: http://www.aids2016.org/

47th Union World Conference on Lung Health: This conference takes place from 25 – 29 October 2016 in Liverpool, Britain. For more information visit the conference website: http://www.theunion.org/news-centre/news/liverpool-to-host-the-47th-union-world-conference-on-lung-health

5th Biennial Congress of the African Society for Immunodeficiencies (ASID) will be held at the Zambezi Sun Hotel, Victoria Falls, Livingstone, Zambia from 12 to 14 April 2017. For more information consult the ASID website: http://www.asid.ma

10th WSPID conference takes place 2017. Information on the venue and conference dates will be made public shortly For more information visit the Paediatric Infectious Diseases Society website: http://www.pids.org/ AfSPID will once more host a dedicated symposium at this conference.

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Letters to the editor: Maximum of approximately 400 words and 6 references, with one illustration or table.

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Case report: The main elements should be an introduction, the case report and the discussion. Maximum word count of approximately 1500 words, 15 references and 3 tables, illustrations and/or pictures.

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