Vingt-septième Journée Scientifique
Twenty-seventh Scientific Day

8 juin 2017 - 8 June 2017

Résumés des communications
Presentation abstracts

epicentre
ÉPIDÉMIOLOGIE • EPIDEMIOLOGY

MEDECINS SANS FRONTIERES

Paris, 8 Juin 2017

Bonjour à tous,

Le programme de cette année nous rappelle quelques fondamentaux de l'activité d'Epicentre auprès de MSF. On y retrouve l'ambition d'éclairer la scène dans les contextes d'urgence, d'estimer l'efficacité des stratégies de soins sur le terrain, de proposer de nouvelles pistes de travail et de développement pour adapter la pratique médicale au contexte. Pour cela nous vous proposons des présentations classiques de résultats d'étude ainsi que d'autres, plus générales, qui stimuleront notre réflexion au-delà de l'action sur le terrain.

Plus de 15 ans après l'introduction des antirétroviraux dans les programmes africains de prise en charge des patients séropositifs pour le VIH de nombreuses difficultés demeurent. Nous aborderons lors de la première session du matin les questions de l'accès, ainsi que du diagnostic et des échecs sous traitement parmi des patients bien particuliers, les enfants et les adolescents.

Deux questions de santé publiques très actuelles seront ensuite abordées sous l'angle de la recherche afin de dégager des pistes de réflexion et de travail. La résistance aux antibiotiques est un sujet sur lequel Epicentre a une expérience désormais significative. Quelles études ont été menées, lesquelles sont prévues et comment peuvent-elles guider les pratiques vers une prescription plus rationnelle ? Nous verrons notamment comment la recherche sur la prévention et le contrôle des infections peut amener à limiter la prescription des antibiotiques.

La réponse aux pics saisonniers de cas de paludisme s'est appuyée ces dernières années sur le principe de la chimioprophylaxie distribuée à large échelle. Cette stratégie semble aujourd'hui questionnée, voire remise en cause. Nous essaierons d'éclairer les enjeux qui s'y rapportent à travers notre expérience.

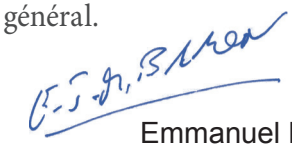
Nous débuterons l'après-midi par une session de présentations sur la contribution de l'épidémiologie à la conduite de programme dans les contextes d'urgence. Quatre situations extrêmement aiguës seront examinées : les conséquences des conflits au Nord du Nigéria, en Irak à Mossoul, la situation des réfugiés eu Nord de l'Ouganda et en Grèce.

Notre dernière session, modérée par un pionnier de l'épidémiologie d'intervention, le Dr Ron Waldman, illustrera une des spécificités de notre action, la diversité des situations d'étude. Ainsi nous présenterons un essai clinique sur la tuberculose, une investigation d'épidémie au Niger, la poursuite de nos travaux sur une échelle de la mesure de la souffrance psychique chez l'enfant, l'importance du besoin de nouveaux vaccins contre le choléra et enfin les problèmes d'accès au diagnostic et au traitement de la leishmaniose viscérale. Ces thèmes et perspectives variés ainsi que les messages qu'ils portent ont un point commun majeur : ils s'appuient sur une pratique bien réelle de la recherche où Epicentre est engagé comme acteur et non comme simple spectateur.

Nous finirons la journée par une allocution du Dr John Lawrence, président du Conseil d'Administration de MSF aux Etats-Unis, qui nous donnera son point de vue sur les différentes formes que peut revêtir l'innovation dans nos contextes d'intervention.

Enfin, nous gagnerons le dernier étage de l'Institut pour le pot de clôture où nous pourrons refaire la journée, et le monde en général.

Je vous souhaite une très bonne journée,



Emmanuel Baron
Directeur Général, Epicentre

Paris, 8 June 2017

Welcome everyone,

This year's program reminds us of several fundamental aspects of Epicentre's activities with MSF. These include the ambition to provide important information during emergency situations, evaluate the efficacy of care strategies in the field, and propose new areas of work and development for adapting medical practice to different contexts. With this in mind, there will be classic presentations of study results, as well as other, more general presentations, which will stimulate our reflection beyond our activities in the field.

More than 15 years after the introduction of antiretrovirals to African programs for managing patients who are seropositive for HIV, many challenges remain. During the first morning session, we will discuss questions of access and diagnosis, as well as treatment failure in very specific patients, children and adolescents.

Two very current public health questions will then be discussed from the point of view of research, in order to clear the way for reflection and work. Antibiotic resistance is an area in which Epicentre now has a significant level of experience. Several studies have been implemented: what is planned, and how can these studies guide practice toward more rational prescribing? Importantly, we will see how research into infection prevention and control can help lead to a decrease in antibiotic prescribing.

In the past few years, the response to seasonal peaks in malaria cases has relied on the principle of prophylactic chemotherapy distributed on a large scale. Today, this strategy seems to be called into question, and even challenged. We will try to shed light on the issues that are involved based on our experience.

We will begin the afternoon session with presentations on the contribution of epidemiology to program management in emergency situations. Four extremely severe situations will be examined: the consequences of conflicts in northern Nigeria, and in Mosul in Iraq, and the refugee situations in northern Uganda and in Greece.

Our last session, which will be moderated by a pioneer in interventional epidemiology, Dr. Ron Waldman, will illustrate one of the unique aspects of our activities, which is the diversity of study situations. We will thus present a tuberculosis clinical trial, an epidemic investigation in Niger, our continuing work toward developing a scale for measuring psychological stress in children, the extent of the need for new cholera vaccines, and finally, access and diagnosis problems for treating visceral leishmaniasis. These various themes and perspectives, as well as their messages, have one main point in common: they are based on the very real practice of research in which Epicentre is engaged as an actor and not simply as a spectator.

We will finish the day with an address from Dr. John Lawrence, president of the Board of Directors for MSF in the United States, who will give us his point of view on the different forms that innovation can take in our interventional contexts.

Finally, we will gather on the top floor of the Institute for a drinks reception where we can discuss the day, and the world in general.

I hope you have an excellent day.

Emmanuel Baron
Managing Director, Epicentre

Journée Scientifique Epicentre/Médecins Sans Frontières - Jeudi 8 juin 2017

8h45 – Accueil et café

9h30 – Introduction générale - Emmanuel Baron

9h45 – Session 1 : HIV

Modérateur : Fred Eboko, Institut de Recherche pour le Développement

- Prévalence et accès aux soins. (Nolwen Conan)
- Comprendre l'échec virologique chez les adolescents vivant avec le VIH dans le district de Chiradzulu, au Malawi : une évaluation transversale et une étude qualitative. (Birgit Schramm et Rose Burns)
- Diagnostic précoce du jeune enfant : réalités et enjeux. (David Maman)

10h30 – Session 2 : Contrôle des infections

Modérateur : Tjalling Leenstra, National Institute for Public Health and the Environment (RIVM)

- Contrôle des infections : prescrire sans nuire à l'ère de l'antibiorésistance. (Céline Langendorf)
- Discussion

11h20 – Pause café

11h50 – Table ronde : Paludisme

Modérateur : Lorenz von Seidlein, Mahidol University

- Quand et comment changer de stratégie dans une épidémie de paludisme. Aweil, Soudan du Sud, 2016. (Carrie Teicher et Aditya Nadimpalli)
- Chimioprévention du paludisme saisonnier : histoire, justification et enjeux. (Matthew Coldiron)

Participants :

- Christine Jamet, MSF-Centre Opérationnel Genève
- Louis Penali, Institut Pasteur, Abidjan
- Martin de Smet, Working Group Paludisme

13h00 – Buffet sur place

14h00 – Session posters

14h30 – Session 3 : Contribution de l'épidémiologie dans les contextes d'urgence

Modérateur : Mego Terzian, MSF – Centre Opérationnel Paris

- La crise de Borno, Nigéria. Mortalité et malnutrition dans les zones d'intervention de MSF. (Sophie Masson)
- Evaluation sanitaire dans les camps de réfugiés autour de Mossoul, Irak. (Mohamad Haidar)
- Evaluation sanitaire et surveillance dans les camps de réfugiés dans le nord de l'Ouganda. (Denis Ardiet)
- Grèce : violence, santé mentale et accès à l'information des réfugiés. (Jihane Ben-Farhat)

15h30 Pause café

16h00 - Session 4 : Générale

Modérateur : Ronald Waldman, George Washington University

- Essai RIFAVIRENZ : interaction entre la rifampicine à haute dose et l'efavirenz chez les patients avec tuberculose pulmonaire et infection VIH. (Maryline Bonnet)
- Epidémie de fièvre de la vallée du Rift au Niger. (Aboubacar Soumah)
- Validation transculturelle d'une échelle de dépistage de la souffrance chez les enfants âgés de 6 à 36 mois. (Thomas Roederer)
- Vaccins oraux contre le choléra : transformer des produits anciens en solutions nouvelles pour les populations négligées. (Francisco Luquero)
- Difficultés d'accès au diagnostic et au traitement de la leishmaniose viscérale chez les travailleurs saisonniers et les agriculteurs dans le Tigray, Ethiopie. (Rebecca Coulborn)

16h50 – Du nouveau dans l'innovation ? Keynote speaker : John Lawrence, MSF-Etats-Unis

17h30 - Pot de clôture sur place, 9ème étage Terrasse - Institut du Monde Arabe

Epicentre/Médecins Sans Frontières Scientific Day - Thursday 8 June 2017

8.45 – Welcome and coffee

9.30 – Introductory remarks – Emmanuel Baron

9.45 – Session 1: HIV

Moderator: Fred Eboko, Institut de Recherche pour le Développement

- Prevalence and linkage to care. (Nolwenn Conan)
- Understanding virological failure in adolescents living with HIV in Chiradzulu District, Malawi: evidence from a cross-sectional assessment and a qualitative study. (Birgit Schramm and Rose Burns)
- Early infant diagnosis: field practices and challenges. (David Maman)

10.30 – Session 2: Control of infections

Moderator: Tjalling Leenstra, National Institute for Public Health and the Environment (RIVM)

- Infection control: prescribe while doing no harm in the era of antibiotic resistance. (Céline Langendorf)
- Discussion

11.20 – Coffee break

11.50 – Round table: Malaria

Moderator: Lorenz von Seidlein, Mahidol University

- When and how to change strategy in a malaria epidemic? Aweil, South Sudan, 2016. (Carrie Teicher and Aditya Nadimpalli)
- Seasonal malaria chemoprevention: history, rationale and challenges. (Matthew Coldiron)

Participants:

- Christine Jamet, MSF-Operational Center Geneva
- Louis Penali, Institut Pasteur Abidjan
- Martin de Smet, Malaria Working Group

13.00 – Lunch on site

14:00 – Poster session

14.30 – Session 3: Contribution of epidemiology in emergency contexts

Moderator: Mego Terzian, MSF - Operational Centre Paris

- Borno crisis, Nigeria. Mortality and malnutrition in areas of MSF intervention. (Sophie Masson)
- Health assessment in refugee camps around Mosul, Iraq. (Mohamad Haidar)
- Health assessment and surveillance in refugee camps in Northern Uganda. (Denis Ardiet)
- Refugees in Greece: violence, mental health and access to information. (Jihane Ben-Farhat)

15.30 – Coffee break

16.00 – Session 4: General

Moderator: Ronald Waldman, George Washington University

- RIFAVIRENZ trial: interaction between high dose rifampicin and efavirenz in pulmonary tuberculosis and HIV co-infection. (Maryline Bonnet)
- Rift Valley Fever epidemic in Niger. (Aboubacar Soumah)
- Cross-cultural validation of a screening tool for psychological difficulties in children aged 6 to 36 months. (Thomas Roederer)
- Oral cholera vaccines: transforming old products into new solutions for neglected populations. (Francisco Luquero)
- Barriers to access visceral leishmaniasis diagnosis and care among seasonal workers and farmers in Tigray, Ethiopia. (Rebecca Coulborn)

16.50 – What's new in innovation? Keynote speaker: John Lawrence, MSF-USA

17.30 – Farewell drinks on site, on 9th floor Terrace - Institut du Monde Arabe

Posters

1. Lower retention in care when ART are initiated with CD4≥500 cells /ml. Isabelle **Andrieux-Meyer**

2. Knowledge of viral load and treatment failure amongst patients on second-line and third-line antiretroviral therapy regimens. A mixed methods study in MSF programmes in Malawi, Kenya and Mozambique. Rose **Burns**

3. Outcomes and side effects of patients on art for more than 10 years in Malawi. Sekai **Mathabire**

4. Viral load monitoring with SAMBA1, a semi quantitative nearly point-of-care method in Arua, a rural district in Uganda. Sarala **Nicholas**

5. Impact of expanded screening and POC on infant diagnosis and ART initiation. Alliance **Nikuze**

6. HIV incidence, cascade and testing among mothers in Western Kenya. Alliance **Nikuze**

7. Low HCV prevalence among HIV+ individuals in Sub-Saharan Africa. Anne **Loarec**

8. Hepatitis C treatment in a primary care clinic in the high HCV burden setting in Karachi, Pakistan. Dmytro **Donchuk**

9. High fatality in low weight children related to supratherapeutic doses of paracetamol in countries with unrestricted access to medication. Mohamad **Haidar**

Session 1 : HIV

Prevalence and linkage to care

Nolwenn Conan, Epicentre, South Africa

Introduction

HIV population-based surveys allow community-level measurement of key HIV outcomes to define and prioritise interventions in HIV programs. We present the results of HIV population-based surveys conducted in three sub-Saharan countries: Zimbabwe, Malawi and Uganda.

Method

Cross-sectional population surveys were implemented in Gutu (Zimbabwe), Nsanje (Malawi) and Kasese (Uganda) between September and December 2016. Using multi-stage cluster sampling, we recruited individuals aged ≥15 years living in 2400 selected households in Gutu and 2443 households in Nsanje, and individuals aged 15-69 years living in 828 households in Kasese. Individuals who agreed to participate were interviewed and tested for HIV at their homes. Viral load was measured in all participants who tested positive for HIV, regardless of whether they were undergoing anti-retroviral therapy (ART).

Results

Among 5440 adults in Gutu, 5322 adults in Nsanje, and 1812 adults in Kasese, 88.9%, 87.8% and 95.9% were included and tested respectively. The overall prevalence was 13.6% (95%CI 12.6-14.5) in Gutu, 12.0% (95%CI 11.1-13.0) in Nsanje, and 17.5% (95%CI: 15.8-19.4) in Kasese.

Also calculated were the overall coverage in terms of percentage of persons: 1) testing HIV positive being aware of their HIV status, 2) with diagnosed HIV infection receiving sustained ART and 3) receiving ART having viral suppression. Analysis of the results stratified by gender and age group is still ongoing; these findings will be available shortly.

Conclusion

These HIV- population surveys allowed measurement of HIV outcomes at the community level and highlight the remaining gaps in the HIV cascade of care in each of the three settings. Further HIV population-based surveys could be envisioned in other settings with MSF HIV programs to estimate intervention impact in the community and to define which specific population groups should be targeted in the programs.

We conducted HIV population-based surveys in three different sub-Saharan African countries to identify gaps in the HIV cascade of care and to orient operational strategies for MSF HIV programs.

Understanding virological failure in adolescents living with HIV in Chiradzulu District, Malawi: Evidence from a cross-sectional assessment and a qualitative study

Birgit Schramm and Rose Burns, Epicentre, France

Background

The number of adolescents living with HIV is rising in sub-Saharan Africa, with this patient group experiencing poor treatment and health outcomes. We assessed virological failure and drug resistance to first-line antiretroviral therapy (ART), and qualitatively explored issues influencing adherence amongst adolescents living with HIV (ALHIV) in Chiradzulu, Malawi.

Methods

A mixed-methods study was conducted between May-November 2016.
Quantitative: A cross-sectional assessment included 10-19 year olds receiving first-line ART for ≥6 months. Plasma viral load (VL) was assessed and drug resistance-genotyping performed if VL ≥500 copies/ml. Participants with VL >1000 copies/ml received counselling and a second VL test.
Qualitative: We explored individual and social influences on ART adherence through in-depth interviews with 16 adolescents, 16 caregivers, seven community members, six health workers, and eight group discussions with ALHIV and HIV-negative adolescents.

Results

Quantitative: : 409 adolescents (median age 13 years, 58% female) participated after a median of 6.8 years (IQR: 3, 9) on ART (85% AZT-3TC-NVP, 11% TDF-3TC-EFV). Thirty-two-percent of participants had VL ≥1000 copies/ml; only 16% supressed to <1000 copies/ml after counselling. Resistance testing revealed 87% of virologically failing patients were on ≤1 effective drug. Major resistance included 3TC (86%), NVP (93%) and EFV (75%).
Qualitative: Most adolescents reported difficulties adhering to ART despite understanding the importance for their health. Adherence was undermined by individual factors such as poor mental health and inadequate HIV status disclosure, family factors including precarious caretaking arrangements, community factors including stigma; and health services factors such as poor patient-provider relations and overly strict treatment-taking instructions.

Conclusions

Treatment failure and drug resistance were high amongst ALHIV in Chiradzulu. A robust once-per-day first-line regimen and frequent VL monitoring should be considered to support adherence and minimize accumulation of resistance. Family-centred approaches are needed a longside youth-friendly health services with tailored counselling and peer-support clubs to help adolescents thrive on ART.

Treatment failure is high among HIV-positive adolescents in Chiradzulu. Multiple social challenges undermine treatment adherence requiring tailored models of care involving families, peers and communities.

Early infant diagnosis: field practices and challenges

David Maman, Epicentre, South Africa

Introduction

The Impact of Expanded Screening Strategies (IESS) study evaluated the Prevention of Mother To Child Transmission (PMTCT) program in Ndhiwa sub-county, Kenya. It also piloted new Early Infant Diagnosis (EID) strategies, including expanded screening beyond PMTCT and implementation of near Point of Care PCR, to increase coverage and reduce time to ART initiation.

Methods

A cross-sectional facility-based survey with a prospective follow-up of HIV-positive infants was conducted in Ndhiwa sub-county in 2016. Mother -infant pairs at expanded programs of immunization (EPI), maternity and in- and outpatient department services were enrolled in the study. All mothers were tested for viral load (VL) regardless of their ART status. For infants, EID was performed both on the standard of care (Roche) and point of care (GenXpert). HIV incidence was estimated using the patient testing history.

Results

A total of 3814 mother-baby pairs were included. Participants were young (median age: 23 years [IQR 19-29]) and 87.9% had a monthly income lower than 50 US$. The overall HIV incidence and prevalence among mothers was 4.1 new cases per100PY (95%CI 2.9-5.7) and 23.9%, respectively. Among HIV-positive mothers, 96% (95%CI 94.5-97.2) were diagnosed and 83% (95%CI 80.4-85.5) had a VL<1,000 cp/mL.

Overall MTCT was 3.5% (32/935) and was mostly associated with late or non-initiation of ART (23/32) and virological failure (8/32) among mothers. Out of 32 positive infants, 29 were newly diagnosed infants and 25 initiated ART after a median time of 34 days [IQR 20-55]. VL suppression at 6 months was 50%.

Conclusion and recommendation

This new EID approach identified previously undiagnosed infants and supported initiation of their ART. VL suppression at 6 months was low, highlighting the need for better patient support, simplified treatment and intervention design for infants. We found a low MTCT rate and high levels of viral suppression among mothers. However, HIV incidence among mothers was also high, suggesting the need to offer new approaches like PREP and/or partner testing and ART initiation to young women.

In Ndhiwa, Kenya, we evaluated the impact of the PMTCT program on Mother To Child Transmission (MTCT) and piloted new strategies to improve Early Infant Diagnosis (EID) of HIV and reduce time to ART initiation.

Session 2: Control of infections

Infection control: prescribe while doing no harm in the era of antibiotic resistance

Céline Langendorf, Epicentre, France

Prescribing antibiotics without considering the risk of resistance is no longer possible today. First, antibiotic resistance is rising to high levels across the world, threatening ability to treat infectious diseases, even the most common ones. Second, antibiotic resistance is accelerated by the misuse of antibiotics and poor infection prevention and control.

In hospitals and community settings, ongoing research takes a holistic approach by addressing different aspects: diagnosis, treatment and prevention. We are conducting several descriptive studies with the objective of filling in data gaps on the etiologies of bacterial infections, antimicrobial resistance and to adapt therapeutic protocols. First, several etiology studies in children in sub-Saharan Africa and a study among adults in the Middle East are described. Next, documentation of how antibiotics are prescribed in the field helps to provide a more complete picture. However, there is still a need to describe gaps and opportunities to improve antibiotic formulation, especially in pediatrics.

Concerning infection prevention, an ongoing study on nosocomial infections and hygiene practices in a pediatric hospital in Niger is presented. We also discuss how the use of antibiotic prophylaxis can increase the transmission of multi-drug resistant organisms within the community. Finally, we discuss how research on infection prevention and control and antibiotic resistance can help improve the treatment protocols while reducing the impact and spread of resistance.

Antibiotic resistance is rising to high levels across the world, threatening ability to treat infectious diseases, even the most common ones.
We discuss how research on infection prevention and control and antibiotic resistance can help improve the treatment protocols while reducing the impact and spread of resistance.

Round table

Malaria

Moderator: Lorenz von Seidlein, Mahidol University

Participants:
- Christine Jamet, MSF-Operational Center Geneva
- Louis Penali, Institut Pasteur Abidjan
- Martin de Smet, Malaria Working Group

When and how to change strategies in a malaria epidemic? Aweil, South Sudan, 2016

Carrie Teicher and Aditya Nadimpalli

Introduction

The aim of the MSF project in Aweil, South Sudan is to reduce high rates of pediatric and maternal mortality, mainly by supporting the Aweil State Hospital. Malaria is a major contributor to morbidity and mortality with a seasonal peak in August /September. Over the last years there has been a notable increase of severe malaria cases. Two surveys have been conducted to contribute elements for future intervention strategies.

Methods

We report the results of two retrospective surveys: the first survey consisted of a chart review of children admitted to Aweil Hospital with severe malaria between August and September 2016. The second, a retrospective, population-based household survey, was conducted in March 2017 with a recall period starting from July 2016. It consisted of two strata: urban and rural. In each stratum, a cluster sampling strategy was used.

Results

In the chart review survey, 2013 patients were included; the median length of admission was less than 2 days and case fatality was 2.3%. The majority of patients (42%) came from Aweil Town and an additional 23% came from Aweil East (a rural community). The second survey (retrospective, population-based household) assessed health-seeking behavior in 2875 households including 10,022 children less than 15 years. Good knowledge of malaria across both rural and urban strata was found.

The majority of those assessed were seeking care at a health facility as their first choice: in Aweil Town 78.0% sought care at the hospital, whereas in rural Aweil (including Aweil Centre, East, West, North and South counties), the majority went to a primary health care center (PHCC) (54.8%) or primary health care unit (PHCU) (36.2%). Respondents in rural areas were more likely to find no drugs available to treat malaria (13.7% vs. 6.1%). Respondents cited physical access as a barrier to care; cost was also universally felt to be a barrier (73.5%).

Crude mortality in Aweil Town was 0.24/10,000/day (CI95% 0.14-0.41) versus 0.53/10,000/day (CI95% 0.43-0.65) in rural Aweil. In Aweil Town, under-five mortality was 0.37/10,000/day (CI95% 0.20-0.76) versus in rural Aweil, where the mortality among under-5 year olds was 0.9/10,000/day (CI95% 0.71-1.16), with a peak in August and September at 1.1/10,000/day (CI95% 0.69-1.7) and 1.3/10,000/day (CI95% 0.93-2.0), respectively.

Conclusions

Future intervention strategies should consider that access to the hospital is affected by patient proximity. The results of this study show that overall mortality was higher in rural Aweil than in its urban counterpart; rural inhabitants usually sought care in primary health facilities, which were often subject to drug stock-outs. From an intervention standpoint, the habit of seeking care at health facilities as a first choice can encourage facility-based decentralization as a promising strategy.

Seasonal malaria chemoprevention: history, rationale and challenges

Matthew Coldiron, Epicentre, France

Introduction

Seasonal malaria chemoprevention (SMC) is recommended in the Sahel: three-day courses of sulfadoxine-pyrimethamine and amodiaquine (SP-AQ) are administered to children aged 3-59 months once per month during the high transmission rainy season. Clinical trials showed a decrease in malaria incidence of up to 75% in areas receiving SMC. Despite high SMC program coverage, malaria continues to overwhelm health structures in Magaria District of Niger. We performed a series of studies in 2015 and 2016 to respond to concerns about the protective effectiveness of SMC (PE_{SMC}) in field conditions. Main results of three studies will be presented; this abstract focuses on a case-control study.

Methods

We conducted a prospective case-control study in two different areas, one receiving SMC with directly-observed (DOT) first doses and the other with non-directly-observed first doses. Cases of clinical malaria, defined as fever and a positive pLDH RDT, were enrolled at health centres. Three age-matched healthy controls were enrolled in the case's village of origin on the same day. Three additional age-matched RDT-negative controls were enrolled in the same health centre within 72 hours of the case's enrolment. Caregivers were asked about receipt of SMC, access to health care, demographics, diet and socio-economic status. Thick and thin smears were prepared and blood was collected to measure plasma levels of amodiaquine. Conditional logistic regression was used to compare cases and controls; PE_{SMC} was estimated as (1-OR)x100%.

Results

577 cases, 1700 community controls and 1233 health centre controls were enrolled between 1 August and 2 December 2016. When comparing cases to community controls, among children with a card proving receipt of SMC, PE_{SMC} against clinical malaria was 85.1% [95%CI: 78.7-89.6]. When also considering children with verbally-reported receipt of SMC, PE_{SMC} was 50.2% [27.6-65.7]. PE_{SMC} was significantly higher in the first-dose DOT zone than in the first-dose non-DOT zone, both when considering card-proven and card-or-orally-reported receipt of SMC: (with card: 96.8% [93.1-98.5] vs 59.1% [34.5-74.4]; with card or verbal report: 88.6% [77.7-94.2] vs 20.5% [-30.5-51.5]). Similar trends were seen for PE_{SMC} against microscopy-confirmed malaria. Point estimates of PE_{SMC} remained above 70% for 4 weeks after each SMC distribution.

Conclusion

SMC was efficacious, but seemed to be more efficacious in zones where the SP and the first dose of AQ were directly-observed than in the zones were no doses were directly observed. The observational nature of this study limits the strength of our conclusions, but the trends were pronounced. Analysis of plasma amodiaquine levels is ongoing and will provide important information about adherence to treatment.

Overall, SMC was efficacious, but important differences in PE_{SMC} were seen with different distribution strategies. As SMC is scaled up across the Sahel, ensuring high-quality implementation will be essential.

Notes

Session 3: Contribution of epidemiology in emergency contexts

Borno crisis, Nigeria: mortality and nutrition in areas of MSF intervention

Sophie Masson, Epicentre, France

Context

Since 2013, the Boko Haram insurgency and military operations have led to mass population displacement in northeastern Nigeria. Starting in June 2016, MSF was able to operate inside, and to a lesser extent outside, of Maiduguri. We present a series of surveys and surveillance results between July 2016 and May 2017 to describe the health and nutrition status of the population and to follow the situation over time.

Method

In Banki camp, 4 retrospective mortality surveys using systematic sampling and coupled with malnutrition assessments were undertaken between July and December 2016. In Maiduguri, prospective surveillance of mortality, population size and malnutrition was carried out in 12 camps throughout 2016. Retrospective mortality surveys and nutritional assessments were conducted in two unofficial camps between September and October 2016, using exhaustive and systematic sampling. A survey using spatial sampling and covering the urban area of Maiduguri, excluding camps, was carried out in November 2016. In May 2017, cross-sectional population-based surveys using spatial cluster sampling were carried out in the catchment areas of MSF nutrition programs to estimate prevalence of malnutrition and program coverage.

Results

In Banki, the initial retrospective mortality and rapid malnutrition screening in July 2016 demonstrated an extremely critical situation. However, the subsequent surveys showed a rapid decrease of both mortality and malnutrition. The surveys in the two unofficial camps in Maiduguri also showed critical situations, whereas the survey of the overall urban areas showed low mortality and malnutrition for both host communities and internal displaced people in these communities. The surveys in the Maiduguri MSF ambulatory therapeutic feeding center (ATFC) catchment areas showed a low prevalence of malnutrition. However, admissions to ATFCs remained very high.

Conclusion

The situation in camps assessed outside of Maiduguri was critical but showed a rapid improvement, despite the challenges of accessibility. In Maiduguri, where accessibility to and of the population is less challenging, overall health indicators were much better but heterogeneous. The high number of patients presenting to services can be explained more by the number of people in the area than by either high prevalence or good coverage.

Following mass displacement of the population in Borno state, Nigeria, and the subsequent MSF emergency response, various retrospective mortality surveys and rapid nutritional assessments were carried out to describe and follow over time the extent of the crisis and its evolution in the areas of intervention of MSF. The evaluation of dense urban areas remains a challenge.

Health assessment in refugee camps around Mosul, Iraq

Mohamad Haidar, Epicentre, France

Introduction

The war in Mosul, Iraq has led to mass population displacement, with almost 300,000 individuals residing in camps neighboring the city. Malnutrition assessments revealed prevalence rates beneath emergency thresholds for children 6-59 months old. However, data from the intensive therapeutic feeding centre (ITFC) in Médecins Sans Frontières (MSF) hospital is suggestive of a different trend of malnutrition, undetected by these assessments. Almost 95% of the children admitted are under the age of one with the majority being under six months. The aim of this study was to estimate the prevalence rate of malnutrition among both age groups, as well as the barriers to feeding.

Methods

An exhaustive malnutrition assessment was conducted in three major camps. Severe acute malnutrition (SAM) criteria were considered by age groups as: i) Weight-for-age z-score≤-3 or MUAC<110 mm for children 1-6 months and ii) MUAC <115 mm for children 6-11 months. Moderate acute malnutrition (MAM) was considered for children 6-11 months with a MUAC between 115-124 mm. The barriers to feeding were assessed qualitatively using a complementary approach.

Results

Preliminary results from the screening of 958 children under the age of 12 months in two sectors of one camp revealed that the overall proportion of SAM, according to the criteria used, has reached 14.1% (n=141).

Conclusion

Preliminary results of the study are suggestive of a large burden of malnutrition among children under the age of 12 months. Importantly, this study also reveals a trend of malnutrition among children less than six months of age, highlighting gaps in case management and treatment of these patients. As a response to these results, MSF reoriented the operational strategy to establish an ambulatory therapeutic feeding center (ATFC), increase the ITFC bed capacity in Qayyarah hospital, and adapt medical protocols for treatment of these children.

Despite all the screening conducted in IDP camps in Iraq, a trend of malnutrition went undetected among children under the age of 6 months. The operational implications of this trend include ambulatory or in-camp interventions in addition to adaptation of case-management and treatment of hospitalized children.

Health assessment and surveillance in refugee camps in Northern Uganda

Denis Ardiet, Epicentre, France

Context

Following escalation of violence in South Sudan in July 2016, thousands of refugees crossed the border with Uganda and were settled into the Bidibidi, then Imvepi, settlements by the Ugandan government. Because they were highly dependent on humanitarian aid and because their health status needed to be assessed, a baseline health and mortality survey was performed. This intervention was followed by the implementation of two different health surveillance systems, allowing weekly reporting of most basic health indicators.

Methods

Households were randomly selected by spatial sampling, and household structures were assessed. Nutritional status for children < 5 years was evaluated using MUAC and edema assessment. Retrospective mortality used a 5-month recall period. Two different weekly surveillance systems were implemented, the first following the Ugandan community health system and the second one, “lighter”, focusing on mortality and most epidemic diseases. A second survey was performed to collect more information about mortality in South Sudan and during the journey for new arrivals.

Results

1018 heads of household accepted to participate in the baseline survey. The population was found to be very young and split households were frequent, with 20% of household members missing; 32% of households were headed by women. Many gaps in non-food item (NFI) ownership were also found. In the settlements, malnutrition and mortality appeared to be below emergency thresholds but delays in food distributions were frequent. On the other hand, CMR was found to be high in South Sudan, with many violent deaths recorded. Surveillance systems revealed small clusters of bloody diarrhea and pockets of malnutrition in both settlements.

Conclusions

Our assessments reflected high levels of violence in South Sudan; in Ugandan settlements, health indicators were under control at the time but need to be closely monitored

Health assessment and surveillance among South Sudanese refugees are essential activities, as access of the population to food, water and health services remains fragile.

Refugees in Greece: violence, mental health and access to information

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Introduction

Since 2015, Europe has been facing an unprecedented arrival of refugees and migrants: more than one million people have entered via land and sea routes. During their travels, refugees and migrants often face harsh conditions, forced detention, violence and torture in transit countries. However, there is a lack of epidemiological quantitative evidence on their experiences and the mental health problems they face during their displacement. Here, we present the results of a survey of refugees and migrants at 7 sites in Greece documenting the types and levels of violence experienced during their journey and whilst settled, and measuring the prevalence of anxiety disorder morbidity.

Method

We conducted a cross-sectional population-based quantitative survey combined with an explanatory qualitative study from November 2016 and February 2017. The survey consisted of a structured questionnaire on experiences of violence and an interviewer-administered anxiety disorder screening tool (Refugee Health Screener 15). Furthermore we collected data on demographics, health status and access to healthcare, access to legal aid, crossed countries and project of life. The study population consisted of an exhaustive inclusion or random sampling (based on camp size) of individuals living in 7 sites: 4 camps in Ioannina and Attica regions, 1 hotspot in Samos Island, 1 hotel for refugees in Athens and 1 hotel for refugees in Ioannina.

Results

In total, 1293 individuals were included; 60.9% were aged ≥15 years and 7.8% were 0-5 years. Sixty percent were males and 64.4% were from Syria. Depending on sites, 48.7% (37.8-59.8) to 94.7% (90.1-97.2) reported fleeing from war. Twenty four percent (18.3-31.6) to 54.7% (46.6-62.6) reported having experienced at least one violent event, during the journey or in Greece. Access to an appropriate medicine for those who suffered from a chronic disease varied from 38.1% (26.0-51.9) to 83.5%. Seventy three percent of the population screened positive on the anxiety disorder screening tool. Among them, 41.2% refused to be referred to a psychologist. Access to legal assistance and information about asylum procedures are considered as non-existent for the majority of the population.

The qualitative interviews show the difficult and violent conditions of border crossings and the tense and stressful interactions with smugglers. These experiences together with experiences of war in home country stand out as traumatic experiences for the participants. Recent studies have emphasized daily stressors in relation to the high rates of psychological distress often found in conflict-driven migrants. This study underlines various daily stressors as negatively affecting the mental wellbeing of migrants and refugees in Greece. Lastly, the qualitative component also notes barriers to accessing mental health care.

Conclusions

This survey, conducted during a mass refugee crisis in a European Community country, provides important data on the living experiences in different refugee settings and reports high levels of violence experienced by refugees and migrants during their journeys, and a high prevalence of anxiety disorders.
Similar documentation should be repeated throughout Europe to better respond to the needs of this vulnerable population.

This first study conducted in Greece using quantitative and qualitative approaches to describe experiences with violence, prevalence of anxiety disorders and access to information among refugees living in different settings highlights the distress status of this displaced population. The findings document the violence perpetrated against refugees and migrants during their journey and once in Turkey and Greece as well as the low level of access to information once in Greece.

Notes

Session 4: General

Interaction between high dose Rifampicin and Efavirenz in pulmonary tuberculosis and HIV co-infection – ANRS12292 Rifavirenz trial

Maryline Bonnet, Epicentre, on behalf of IRD UMI 233 TransVIHMI - UM – INSERM U1175, France

Background

Ongoing trials are evaluating high-dose rifampicin (R) regimens to shorten tuberculosis (TB) treatment duration. The risk of drug interaction with some antiretroviral precludes the inclusion of HIV-infected patients. We assessed the effect of high-dose R on the efavirenz (EFV) metabolism in co-infected patients.

Methods

RIFAVIRENZ was a phase-2, randomized, open-label trial conducted in Uganda between 2014 and 2017. Pulmonary TB and antiretroviral therapy (ART)-naïve patients were randomized to 2-study regimens (SR) using high-dose R (20mg/Kg) with ART initiation 2-4 weeks later with 600mg/day (SR_1) or 800mg/day (SR_2) EFV; or to 1-control regimen (CR) using R10mg/Kg and EFV600mg/day. At 8 weeks, all patients were switched to standard R and EFV doses. All patients had intensive pharmacokinetic sampling 4 weeks after EFV-R co-administration, and 4 weeks after R discontinuation. HIV and TB treatment response and safety were monitored.

Preliminary Results

Of 97 included patients (SR_1: 31; SR_2: 33; CR: 33), 26.8% were females and median age, weight and CD4 count were 33 years, 53.6 kg and 141 cells/L, respectively.

Under R, the median of the EFV minimum concentration (C_{24}) was 1188, 1064 and 1078ng/mL for SR_1 (N=27), SR_2 (N=30) and CR (N=28), respectively. Five (18.5%), 6 (20.0%) and 8 (28.6%) patients had C_{24} < 750ng/mL. At 12 weeks post-ART initiation, 92.9%, 83.9% and 89.7% of patients had HIV viral load < 400 copies/mL. Week 8 TB culture conversion was 88.5% (SR_1), 88.9% (SR_2) and 90.3% (CR). During first 8 weeks, 6 (2 per arm) and 4 patients (SR1: 1; SR2: 2; CR: 1) had transaminase increase > grade 3 and neuropsychiatric events > grade 2, respectively.

Conclusions

Doubling the R dose does not seem to affect the EFV concentrations. These preliminary results need confirmation with the comparison of the EFV pharmacokinetics parameters with and without R.
Trial registration number: NCT01986543.

Trials evaluating high-dose rifampicin short regimens exclude HIV-infected patients due to risk of drug interaction with antiretroviral. Based on the preliminary RIFAVIRENZ trial results, doubling the rifampicin dose does not seem to affect the efavirenz concentrations.

An outbreak of Rift Valley Fever, Niger, 2016

Aboubacar Soumah, Epicentre, France

Background

In August 2016, several unexplained deaths were reported in the Tchintabaren District of Niger. At the same time, >700 livestock deaths and abortions were also reported. In September, ELISA on select samples was positive for IgM antibodies to Rift Valley Fever virus (RVF), a zoonotic infection transmitted to humans by mosquitoes and contact with infected animals. This was the first confirmed RVF outbreak in Niger. Given the difficult context of the epidemic zone and the incomplete nature of laboratory confirmation, an outbreak investigation was carried out in December 2016.

Methods

Standardized case definitions were established following international guidance. Data was collected both retrospectively and prospectively. Standardized forms were used to collect information on patient demographics, clinical signs and symptoms, contact with animals, travel history and dietary practices. Data was collected from patient charts and from telephone or in-person interviews. All persons responding to the case definitions were considered suspected cases. These data were crossed with PCR and ELISA results from the national reference laboratory. Data were analyzed in Stata.

Results

Between July 2016 and January 2017, a total of 377 patients met the case definition for suspected cases, of whom 203 (54%) were female (30 of whom were pregnant). The median age of suspected cases was 22 years (IQR 11-40). Among suspected cases, 317 (84%) had ≥1 blood sample taken. Of these, 15 (5%) had acute RVF infection confirmed by PCR or ELISA for IgM. Among the 302 samples negative for acute RVF infection, only 4 tested positive for other acute viral infections (1 dengue, 1 yellow fever, 2 West Nile). 30 suspected cases died (case fatality ratio 7.9%). Analysis of risk factors for RVF infection and for case fatality is ongoing.

Conclusion

An epidemic of Rift Valley Fever affected a remote region of Niger. This unexpected event was met with initial confusion, and fully describing the event has been challenging, but is important for future outbreak preparedness in this at-risk region. The large number of suspected cases with no biological confirmation highlights challenges is outbreak response in difficult to reach areas.

Rift Valley Fever is an emerging infection, and this epidemic was unexpected. Outbreak preparedness should be improved, using lessons learned from this epidemic.

Cross-cultural validation of a screening tool for psychological difficulties in children aged 6 to 36 months

Thomas Roederer, Epicentre, France

Introduction

In low-resource settings, the lack of mental health human resources and the absence of cross-culturally validated screening instruments jeopardize the implementation of mental health care, especially for very young children. We aimed to develop and cross-culturally validate a general tool, the PSYCa 6-36, to screen for psychological difficulties in children aged 6 to 36 months.

Methods

A primary validation of the PSYCa 6-36 was conducted in Kenya (n=319 children aged 6 to 36 months; 2014), followed by three secondary validations (n=215, Kenya, 2014; n=189, Cambodia, 2015; n=182, Uganda, 2016). After standardized translation procedures, lay interviewers administrated the PSYCa 6-36 in local languages to the children's caregivers at home. We assessed the psychometric properties of the tool and its external validity against a gold standard (*i.e.* clinical global impression severity [CGIS] score rated by a psychologist after clinical interview).

Results

The internal consistency was acceptable (Cronbach's alpha=0.61, Uganda; ≥70, Kenya and Cambodia). The temporal reliability was very good (intra-class correlation coefficient [ICC] ≥0.80) and the inter-rater reliability acceptable to good (ICC=0.6, Uganda; ICC=0.70, Cambodia; ICC=0.83, Kenya). The external validity was acceptable to good (area under the curve [AUC] 0.63, Uganda; AUC=0.80, Kenya and Cambodia). The prevalence of CGIS scores ≥1, indicating mental health difficulties according to the psychologist, was 5.1% in Kenya, 8.7% in Cambodia and 10.5% in Uganda.

Conclusion

The results of this study show that the PSYCa 3-36 is a promising screening tool for young children. Once adapted to the local context, the PSYCa 6-36 use was easy and quick to use for trained non-specialists. The PSYCa 6-36 also increased the awareness on children's psychological difficulties and the importance of early recognition to prevent long-term consequences. Further use and validation of the tool in settings with higher prevalence of psychological difficulties will help to further refine the scale.

The PSYCa 6-36 appears useful to screen for psychological difficulties among children aged 6 to 36 months, allowing concentrating resources to children most in need.

Oral cholera vaccines: transforming old products into new solutions for neglected populations

Francisco Luquero, Epicentre, France

Cholera vaccines have only recently become a cholera control tool despite the fact that early prototypes of the currently prequalified cholera vaccines exist since the 1880s. Key research conducted by Médecins Sans Frontières and Epicentre has shown that mass campaigns using cholera vaccines are feasible in different settings (humanitarian crises, outbreaks and endemic countries), well accepted by the population, and that the vaccines are a safe and effective tool for prevention and response. In addition, we have recently demonstrated that short term vaccine protection can be achieved with a single dose of vaccine, which represent a major logistical advantage in response to outbreaks. These key data along with the creation of a global stockpile managed by the WHO and dedicated funding have led to the doubling of the number of oral cholera vaccine doses delivered worldwide each year since 2012.

However, the significant public health benefit from OCV has not yet been realized because of cost, availability (supply) and logistical constraints. These include a recommended two doses, with the second delivered 14 days after the first, high packing volume and cold chain requirements. These factors make vaccine delivery costly and challenging in certain settings.

In addition, the complex vaccine formulation translates in suboptimal production, which has limited vaccine availability and has impeded price reduction (~$1.85 per dose), making the cost of one person fully vaccinated approximately $6.

Many of these barriers could be solved by an improved new generation cholera vaccines, which should increase public health benefits. New vaccines should be easier to produce, cheaper, heat-stable and with reduced storage volume. As one of the main responders to cholera epidemics, MSF could play an important role in pushing for improved vaccines. With improved cholera vaccines, used in conjunction with WaSH measures, many more lives could be saved and perhaps the elimination of cholera outbreaks could be foreseen in a near future.

The potential impact of cholera vaccine has not fully materialized because of limitations of current products. New vaccines should be easier to produce, cheaper, heat-stable and with reduced storage volume. MSF could play an important role in pushing for such improved vaccines.

Barriers to access visceral leishmaniasis diagnosis and care among seasonal workers and farmers in Tigray, Ethiopia

Rebecca M. Coulborn, Epicentre, France

Background

Ethiopia bears a high burden of visceral leishmaniasis (VL). Early access to VL diagnosis and care improves clinical prognosis and reduces transmission via human reservoirs, however significant obstacles exist. The hundreds of thousands of mobile seasonal workers/farmers (MSW/F) employed in the Amhara and Tigray region may be particularly at risk of VL acquisition and death.

Methods

In early 2017, using purposive sampling, 50 in-depth interviews (IDI) and 11 focus group discussions (FGD) were conducted with current/previous VL patients, caretakers, healthy MSW/F, health staff, and community members in Kafta Humera district, Tigray Region.
A preliminary thematic content analysis explored barriers to access to diagnosis and care.

Results

VL transmission was largely attributed to sand flies. Participants also implicated mosquitos, termites, unclean food/water, dirt/lack of sanitation, increased temperatures, person-to-person transmission, evil, fatigue, hunger and disease evolution (malaria evolving into VL). Peer/family/caretaker/farm owner support strongly influenced care-seeking; MSW/F unable to receive salary advances, compensation for partial work, or peer assistance for contract completion were particularly disadvantaged.

Some participants used traditional medicine; most preferred modern health facilities, though multiple visits were consistently needed to access VL diagnosis. Inadequate health staff training, diagnostic test unavailability, lack of awareness/money and prioritization of farming were significant barriers to diagnosis and care. Participants suggested the government and stakeholders intervene to ensure MSW/F access to bed nets (especially), food, shelter, water, and healthcare at farms or sick leave. Additional recommendations included: community health education; health staff training; availability of diagnostic materials at primary health facilities; surplus medications and health staff during the peak season; improved referral/feedback/reporting within the health system; and free healthcare for all VL-related services.

Conclusions

Numerous opportunities to overcome barriers to access to diagnosis and care exist. Interventions tailored to the needs of MSW/F may help reduce health disparities and the burden of VL disease.

Mobile seasonal workers/farmers lack early access to VL diagnosis. Inadequate social and economic resources compound the problem. Tailored interventions are needed to reduce VL disease.

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