Paediatrics with «Médecins sans Frontières»

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Médecins Sans Frontières (MSF) is an independent international medical humanitarian organisation, created in 1971, that delivers emergency aid in more than 60 countries to people affected by armed conflict, epidemics, natural or man-made disasters or exclusion from healthcare.
MSF rehabilitates and runs hospitals and clinics, performs surgery, battles epidemics, carries out vaccination campaigns, operates feeding centres for malnourished children and offers mental health care.
Taking care of Children is an important part of the activities of the organisation.The following program description attempts to point out several program areas where the Swiss section of MSF have to prioritise in order to bring qualitative changes in our care for children and women. The description focus on areas of challenge and doesn't claim to be comprehensive of all the programmatic and medical action of each mission.

Marie Claude Bottineau, the MSF Switzerland Paediatrics, Neonatology & Vaccine Advisor, is giving us bellow an overview of the activities and main challenges of the organisation.

1. Looking at the Emergency Triage, Assessment and Treatment (ETAT)

Eleven million children under 5 years of age die each year worldwide. More than 95% of those deaths occur in developing countries, the majority in Sub-Saharan Africa. 20 to 25% of those children die
within 24 hours of being taken to a health facility, partly because they sometimes arrive too late, but also because of a lack of adequate emergency assessment and treatment (UN Report).

Implementation of the concept of Emergency Triage, Assessment and Treatment (ETAT) improves the management of paediatric emergencies. MSF has made reinforcement of such actions one of its priorities for 2009 and the coming years.

As a humanitarian organisation, MSF works in challenging locations that may be very isolated or caught up in a conflict. The main victims in those regions of the world are women and young children, particularly the under-fives and newborn babies***.

The priority objective is to significantly lower paediatric mortality in our programmes because, unfortunately, in some cases, it is currently over 10%. Although the management of childhood illness has come a long way thanks to IMCI (Integrated management of Childhood illness), there are still two areas that require further attention: the treatment of newborns (which will be described latter) and management of paediatric emergencies in tropical regions.

When a child arrives in an emergency, the quality of the triage is essential: immediately recognising signs of life-threatening distress and performing life-saving procedures straight way, placing priority cases at the front of the queue and keeping an eye on those children who are waiting is of a parmount importance but often not carried well.

By definition, a life-threatening distress situation calls for an urgent response. The ETAT concept, «Emergency Triage, Assessment and Treatment», responds to this requirement with a standardised approach that enables systematisation and memorisation. This programme was devised by WHO in 2001 based on the APLS concepts and protocols implemented in developed countries (the Advanced Paediatric Life Support structured approach to emergency care). It was adapted for the MSF programmes by the Medical Department in 2009.

- 11 million children under 5 years old deaths/year into the world
- 25% in the first 24 hours after reaching health facilities because of:
  - ✓ Lack of high performance in the triage
  - ✓ Delay in treatment of vital distresses
  - ✓ Lack of accurate emergency treatment

- About 50 to 60% of under 5 deaths related to severe acute malnutrition
- Most of the deaths occurred in ITFCs because of:
  - ✓ Delay in seeking care and arriving to MSF
  - ✓ Severity of medical complications
  - ✓ Inaccurate diagnosis and treatment
  - ✓ Poor joint approach pediatrics and nutritional in nutrition programs
  - ✓ Lack of well trained staff in pediatrics intensive care and nut ped intensive care

The whole aim of ETAT is to improve recognition of life-threatening paediatric distress, avoid waiting times between recognition and therapeutic treatment, avoid oversights and stabilise the child before full treatment. ETAT also aims to make nurses as effective as doctors in these triage roles, to enable them to immediately perform life-saving procedures while waiting for the supervising doctor to arrive. In isolated locations, they can also take action before referring the child, if the child needs to be transported.

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*** WHO Manual http://apps.who.int/bookorders/anglais/detart1.jsp?sesslan=1&codlan=1&codcol=15&codcch=1654#

So, it's a different approach to the current set-up where, more often than not, the nurse must call the doctor who is the only person authorise to prescribe or take action. Unfortunately, it may be several minutes before the doctor arrives, which is often too long for the survival of the child, particularly survival without sequel.

To give an example, in children under the age of 5, every hour of delay in correcting a state of hypovolemic shock caused by dehydration – one of the main causes of death in many MSF programmes – reduces the chances of survival approximately by half. Accordingly, habits must be changed and nurses must be trained to enable them to start life-saving treatments, both at hospitals and in the field, before the child is transported to hospital. Starting to rehydrate the child prior to transportation could save the child's life, preventing deterioration into an irreversible condition and the child being dead or dying on arrival.

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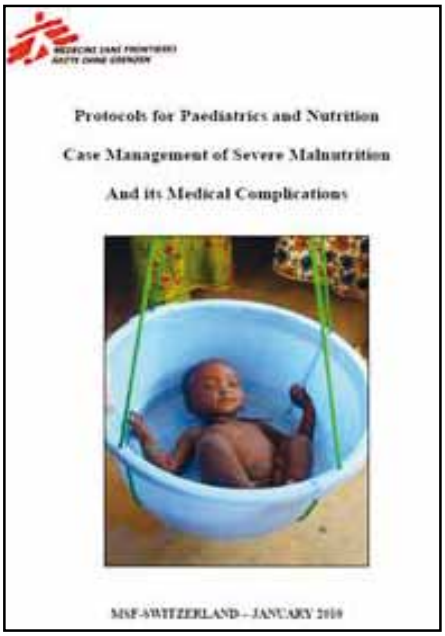
Basically, this is the main paediatric challenge for 2010: immediately recognising and treating, then carrying out a thorough examination and history-taking and transferring the child once stabilised. Ideally, this would also be backed up by community education designed to encourage parents to seek medical advice earlier. In the countries where this programme has been implemented as a pilot project, corresponding case fatality rate has fallen from 18–25% to 8–12%, depending on the project.

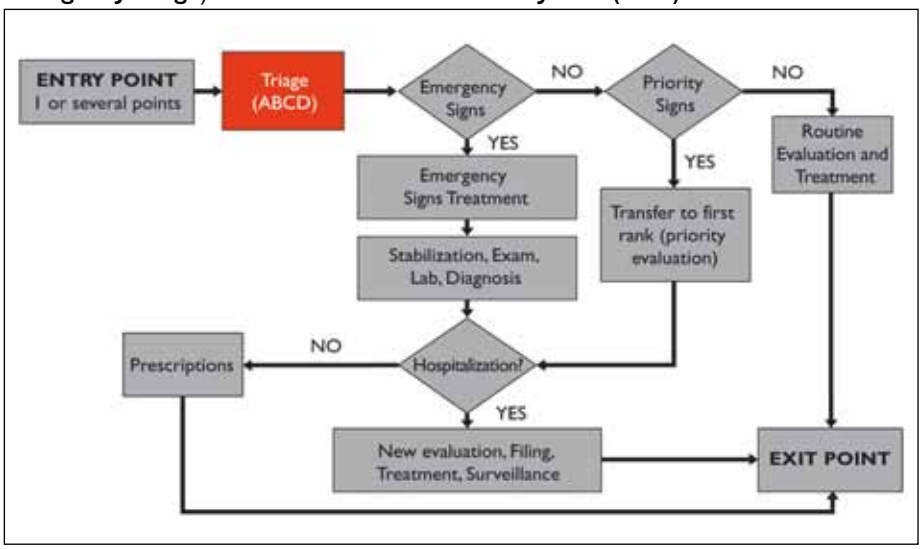
This improved programme has been presented to the board, heads of mission, medical coordinators and other MSF staff as an operational priority for 2009/2010. It is now part of the pre-departure paediatric briefing of all field doctors and nurses. It's being gradually rolled out, starting with Niger following the paediatric and nutritional training given there in March-April of this year. In Niger (programme for severe malnutrition in ambulatory and inpatient ward), the integration process has heightened the need and timeliness for such adjustment. In Bunia, Democratic Republic of Congo, (paediatrics hospital with criteria of admission based on the degree of severity), triage is also due to be introduced for outpatient consultations and maybe ICUs, where integration makes it essential too. In Djibouti (programme for severe malnutrition in ambulatory and inpatient ward and program for paediatrics tuberculosis management) ETAT is now well implemented. Although the programme was initially designed for second-category hospitals (district hospitals and Inpatients Therapeutics Feeding Centres), it can and must also be implemented at health centres and in mobile programmes. The next challenge for MSF will be to roll out ETAT training and implementation. During peak and busy periods, ETAT should also save time while preserving quality. Indeed, where there are no signs of life-threatening distress, correct triage takes just 20 seconds per child.

Once the triage has been performed and the condition of the child has been stabilised, it is the quality of the intra-hospital management that makes the difference, particularly



in intensive care units where any error could prove fatal. This quality relies on a pathophysiological analysis of the situation and an accurate diagnosis, making it possible to apply up-to-date, high-quality treatment protocols resulting from the work of the various MSF advisers, supported by an international network of experts. With this in mind, a new protocol about paediatrics and paediatrics intensive care in nutrition and tropical disease areas has been developed, based on an integrated paediatric and nutritional approach covering all the possible complications related to acute malnutrition and encompassing most major paediatric emergencies, in particular circulatory (states of shock), respiratory, neurological, digestive and haematological emergencies.

Emergency Triage, Assessment and Treatment system (ETAT)



This protocol was introduced as a pilot project in Niger, once the necessary training had been given. This training will be reproduced in the field (decentralized training course) as and when required, and is available on CD-ROM together with a teaching methodology. All of this work aims to enhance the quality of second-level paediatric care, including the intensive care units in our field projects.

MSF–CH Pediatrics in Nutrition Programs Training Course

Comparing MSF and WHO ETAT training course the overall approach of the programme is exactly the same. The whole diagnostic part and recognising signs of life-threatening stress are identical. Given the slightly better resources available to MSF there is more emphasis given to improving the the clinical care for seriously sick children like those suffering from sever acute malnutrition with complication. This strategy is consistent to the fact that MSF admission centres tend to act as referral centres where exceptionally more critical children are referred from neighbouring areas.

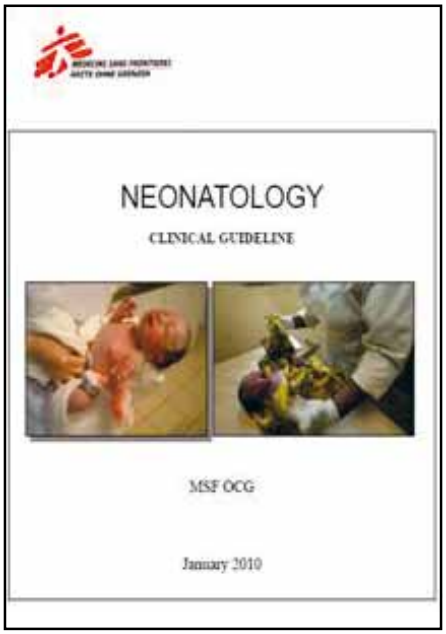
Emergency Triage, Assessment and Treatment system (adopted from WHO Manual)

2. New interest for newborn babies and neonatal care

Newborns and very young infants constitute an age group that has long been forgotten or «neglected» by humanitarian actors, yet these youngsters require a special approach. Despite the development of the Integrated Management of Pregnancy and Childbirth (IMPAC) focusing on pregnancy and peri-natal issues, very few is done for newborns after birth.

Women and children represent 70% of MSF beneficiaries. Despite IMCM have improved children below 5 years old mortality, neonatal deaths are still very high and count for 40% of the eleven million of deaths annually. While neonatal care are more and more complex and expensive in industrialized countries, in developing countries where MSF is working, newborn babies cannot benefit from adequate care – even the most basic one. Simple and cheap interventions such as better access to emergency obstetrical care, improvement of post-natal care and neonatal diagnosis, adapted antibiotic treatment, availability of oxygen therapy and updated immunizations might drastically reduce neonatal mortality. MSF was able to evaluate and innovate in this field in order to bridge the huge gap inherited from the first decades of the humanitarian action. Important neonatal programs are developed in Bunia, Ituri, Democratic Republic of Congo and in Conakry, Guinea. Neonatal guidelines and protocols were developed to improve neonatal care everywhere since newborns are present in all MSF programs around the world including countries such as Irak, The Philippines, Chad, Sudan, Haiti, etc.

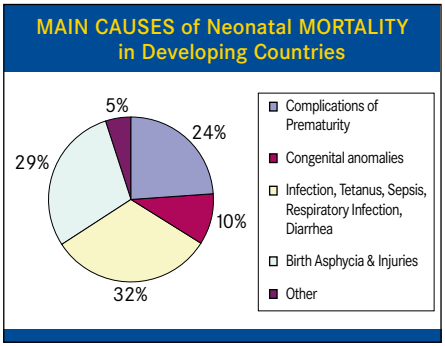
Mother and child care cannot be seen separately and any opportunity to adress one should benefit the other in order to avoid missed opportunities. Child survival decreases significantly when mother dies and the absence of birth spacing that is accentuated by neonatal deaths increases further risks for the mother.



Neonatal diseases are strongly associated with maternal diseases during pregnancy. As a way of example, birth asphyxia are related with obstetrical emergencies and poor access to emergency obstetrical care, neonatal infections are related with maternal infections during pregnancy and during partum, … and the list continues.

Obstatric Fistula (also knwn as Vesico-Vaginal-Fistula) are mutilating African women when they survive complicated deliveries because of abnormal labour. Prolonged labor in such circumstances lead to foetal and neonatal deaths or to per-natal asphyxia that in Africa is one of the main cause of epilepsy, cerebral growth retardation and/or motor impairment for the newborn. Unfortunately, in developing countries, because of the scarcity of resources, appropriate case management of such handicap is not possible. The priority is still a better access to emergency obstetrical care, particularly in conflict and inaccessible areas where such findings are rampant.

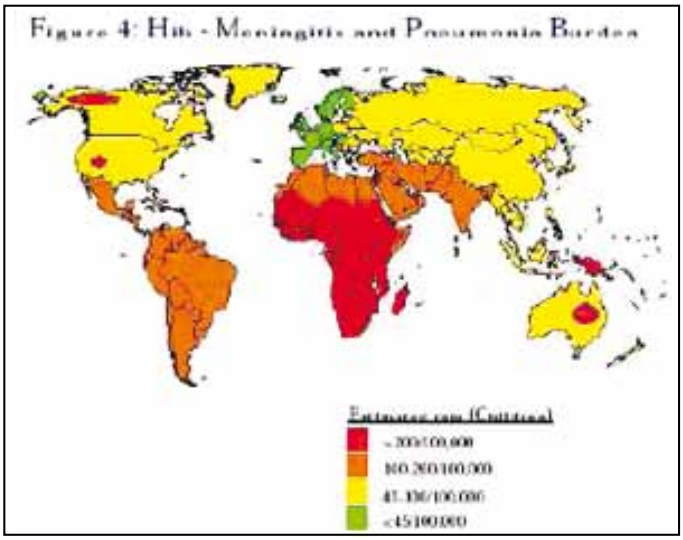
- 4 million neonatal deaths/year into the world & 1.16 million/year in Africa (75% at home)
- 3.3 million stillborn babies/year into the world
- > 20 million LBW babies born annually in developing countries
- 40% of deaths among children under 5 years old, are newborn babies (less or equals 28 days)
- Neonatal Mortality Rates in SAA 2008 equal 150 to 250/1000 live births (< 3/1000 in developed countries)

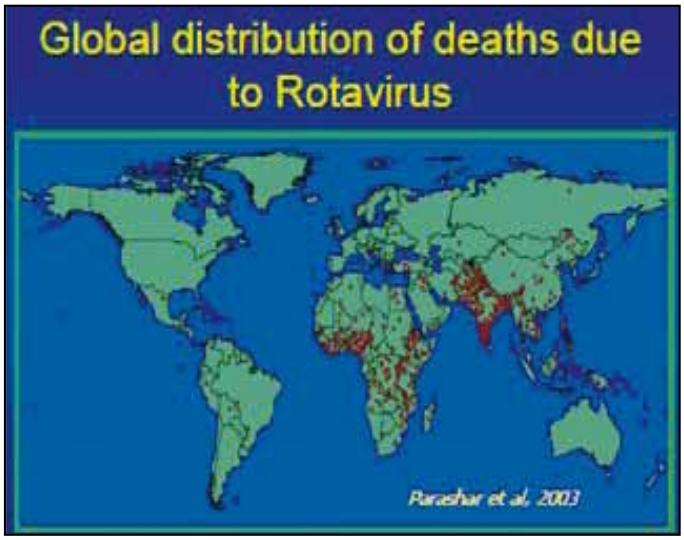


3. Making a Routine out of Vaccinations

While mass vaccination campaigns in response to epidemics are an integral part of MSF's traditional interventions, it was not until August 2007 that the organization considers as a priority the introduction of routine vaccinations in its paediatric programs. Routine immunization programs were considered the realm of Minstry of Health which were heavily supported by UNICEF in the nineties and early the last decade.

Eleven million children under age five die every year around the world. Three million of these deaths could be prevented by routine vaccination – 1.6 million of them thanks to three new vaccines against
Haemophilus type B (the pentavalent vaccine prevents against DTP, hepatitis B, and Haemophilus type B), pneumococcus, and





rotavirus. These vaccines are available on the market and have proven to be extremely effective in countries where these preventive treatments are used.

In epidemiological terms, the primary cause of death for children under age five is lower respiratory tract infections, that is to say severe cases of bacterial pneumonia. In their most serious forms, these infections lead to respiratory distress that requires putting the patient on oxygen and often result in death.

Among the bacteria to blame, two are very widespread: pneumococcus and Haemophilus type B. We have seen resistance to treatment in 20% of pneumococcus cases, and resistance to treatment for Haemophilus type B is rising quickly.

Rotaviruses are responsible for gastroenteritis. Usually this condition is minor. However, severe diarrhea without suitable rehydration (water and electrolytes) can lead to death. Waterborne diarrheas are the second leading cause of death among children under age five. They die of acute dehydration resulting from diarrhea.

In the places where we operate (conflict zones, remote regions, etc.) health education is minimal, and access to drinking water and quality care is generally difficult. Patients often arrive at our facilities too late. If a child survives, the lesions are often irreversible. We need to take action earlier in the process by using preventive treatments that are available and effective.

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By incorporating routine vaccinations into paediatric programs MSF is supporting the national Expanded Programme of Immunisation (EPI) by improving vaccine coverage, without substitution. MSF isn't in charge of country-wide vaccination programs. We offer the vaccines that are part of the national program, such as the pentavalent vaccine for Haemophilus type B. At the national level, health workers target only children less than one year old. When it's possible we expand vaccinations to children under age five, which we consider at-risk group. We also offer, subject to approval by health officials, to import and use vaccines against S. pneumoniae and Rotavirus for the most at-risk groups – namely children who are HIV-positive and/or severely malnourished. Pentavalent vaccine is already introduced in all our programs worldwide and we are dealing with health authorities in Democratic Republic of Congo, Mozambique, Kenya, Niger, Swaziland, Guinea … in an attempt to introduce the PCV10 and/or the Rotavirus vaccine.

1. Hepatitis B vaccine at birth for all newborn babies reaching MSF-CH Program
2. Pentavalent vaccine (DPT + Hep B + Hib) for all MSF-CH beneficiaries
3. Pneumococcal vaccine (PCV10) for all children at risk (HIV positive; Acute severely malnourished; Sickle cell anaemia)

- According to national strategies (national EPI)
- Autorisation to import and use new vaccines from the MoH
- Feasibility in term of coast, cold chain, etc…

The Campaign for Access to Essential Medicines (CAME) worked hard on the problem of vaccine price. These three vaccines (mentioned in the box above) were very expensive through 2008, which greatly limited their use. That's no longer the case. For example, S. pneumoniae vaccine (PCV10) cost USD 70 per dose in 2008, whereas it costs only USD 7 now. Negotiations with manufacturers made it possible to purchase the pentavalent vaccine at USD 3.50 per dose and Haemophilus at USD 0.50 per single dose.

4. Empower the paediatrics HIV-TB Co-infection

In the current context of HIV/AIDS, a better diagnostic and therapeutic approach to HIV/tuberculosis co-infection among children in MSF programmes is also one of the main priorities and a major challenge given the difficulties of this type of diagnosis in paediatrics, especially for the youngest patients. Of course, this problem has been addressed, but there is still a great deal to do, and that's what we're working on.

- 20% of severe anaemias among children under five years old are due to chronic infections such as HIV, TB and EBV infections (33% are due to malaria, 12.5% to severe sepsis – e.g. NT salmonella and 22% to severe malnutrition and micronutrient deficiencies)
- Severe anaemia + HIV are 11 times more likely for dying after discharge than other causes
- Severe anaemia + Severe sepsis are 3 times more likely for dying after discharge than other causes

Regarding children and HIV – TB co-infection, MSF is facing not only a therapeutic challenge (obtain adequate presentation of the drugs, consider the specificity of the treatment in paediatrics such as PMTCT) but also a diagnosis challenge since these infections are difficult to diagnose in poor medical settings because the para-clinical exams are missing. MSF priority for the coming years is to improve the quality of the diagnosis in order to admit more children in its specific programs such as HIV paediatrics unit in Chamanculo, Mozambic, HIV/TB programs in Swaziland, TB Paediatrics in severely malnourished children in Djibouti, HIV paediatrics in Bunia, Ituri, DRC or in severely malnourished children in Conakry, Guinea … Children are still poorly diagnosed and incredibly and unjustly the minority in most of MSF specialised programs in this area. This new approach requests motivation, involvement and health staff training with strict respect of ethics concerning not only the children but also their parents when they are alive and sometimes the entire family.

Conclusion

Care for children and newborn is time-sensitive and needs better precision in order to get good outcome from medical interventions. While respecting the fact that humanitarian work is often carried out in far from ideal places, a well organized set-up with training and the right management protocol can make a difference for a lot of children and mothers who may otherwise perish.

The fact that MSF works in setups where our activities ofter interlace with MoH and other stakholders also means MSF need to be proactive in introdcing better and simpler medical tools and protocols as widely as possible at the field level. The role of decentralized trainings tailored for field reality therefore are of significant importance.

In a non-egalitarian word, health is still a privilege and health for everyone is still a «utopian idea». Women and children (particularly the youngest) are the most affected by poor access to adequate health care. Among the large number of people working for better equity and improved basic access to care MSF is very dedicated and proactive. Our waiting room is the world and it is full of children, infants and newborn babies with their mothers expecting from us what is not accessible elsewhere. In front of the increase demand and programs that are more and more highly specialized, MSF has responded by increasing its level standard care and professional recruitment – including specialist such as paediatricians, obstetricians, as well as by organizing training courses that reflect the adapted protocols to be implemented in resource poor settings. A lot has been done but but still more remain to be done asking the participation of everyone.

Médecins Sans Frontières will be at the Annual Congress in Cran–Montana on the 17th and 18th of June 2010.
Marie Claude Bottineau will be present in order to answer directly your questions.

You can also visit the MSF website www.msf.ch to get more information about the organisation in general and about the conditions if you wish to work with MSF abroad.

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