



Time is running out

Zamfara State Lead Poisoning crisis

Six-month progress
report on the May 2012
International Conference
on Lead Poisoning





©Olga Overbeek

Children at a compound in Bagega. There are between 30 and 40 children living in the shared compound, some affected by lead poisoning, over the last two years 9 children have died in the compound. Some families are so desperate that they have started trying to remediate the compound themselves.

INTRODUCTION

On May 9th and 10th, 2012 Médecins Sans Frontières / Doctors without Borders (MSF), the Nigeria Centre for Disease Control and the Nigerian Federal Ministry of Health held an International Conference on Lead Poisoning, with a special focus on the Zamfara crisis, which brought together leading medical, environmental and mining experts, government policy makers, and traditional leadership.

The purpose of the Conference was to share lessons learnt and best practice and develop the sustainable holistic solutions needed to solve the Zamfara crisis, including a plan for immediate action.

This six-month progress report reviews the steps taken to achieve the Action Plan agreed by delegates at the Conference. **It finds that on nearly all agreed action points, very little has materialised.**

Most critically hundreds of children in the village of Bagega and surrounding areas continue to needlessly suffer the effects of lead poisoning. Urgently needed funds to remediate Bagega (environmentally clean and remove lead from the home environment) and invest in safer mining practices were promised by the President in May 2012, but have still not been released by the Secretary of the Government of the Federation.

The time for talk is over: it is time to get the lead out of Bagega.

Until these funds are released to the appropriate agencies on the ground in Zamfara State, environmental remediation in Bagega cannot begin. In the absence of remediation, children are continuously exposed to the toxins and medical treatment is useless.

MSF is ready and willing to treat children in this area, but is unable to do so until the urgently needed remediation has been completed.

As agreed by the Nigerian Federal Government, remediation of Bagega was due to begin at the end of October 2012, directly after the present rainy season. As funds still have not reached the appropriate actors in Zamfara State, however, the window for the remediation to start is closing rapidly. Remediation must start by the end of this year, or it will not be possible before the end of the next rainy season, and lead-poisoned children will continue to wait for the foreseeable future. If the funds are not released now, MSF's chance to treat the lead-poisoned children of Bagega will be drastically reduced.

With the release of this report, MSF is calling, in collaboration with other stakeholders, for the urgent intervention of the President for the immediate release of the Bagega remediation funds.

The Zamfara Crisis

In March 2010 an unprecedented epidemic of lead poisoning was discovered in Zamfara State, northern Nigeria. An estimated 400 children died as a result of lead absorption associated with artisanal gold mining and processing. While medical care has been provided to over 2,000 children, and seven villages have been remediated (environmentally cleaned), much remains to be done. Significant remediation is still needed in new sites, and this combined with continued contamination from unsafe mining and processing practices means children – and adults – remain at risk of lead poisoning.

Through its medical programmes MSF has - for the moment - significantly reduced mortality, but resolving the crisis requires much more than this. The root cause of the lead poisoning crisis is unsafe mining and ore processing. Broad implementation of safer mining and ore processing across Zamfara State is the only long-term solution.

By now many of the 2,000 children initially brought into treatment in the seven villages in Anka and Bukkuyum Local Government Authorities (LGAs) are nearing the end of their treatment. Despite the likelihood that they have sustained some permanent damage, most of these children have a real hope of a reasonably healthy life, an outcome scarcely imaginable when the crisis was first discovered.

Meanwhile, in Bagega, rather than nearly three years of life-saving treatment in a relatively lead-free environment, children continue to live in a heavily contaminated environment, and suffer the health consequences. Some of them have already died, and many others will continue to do so.

MAY 2012 INTERNATIONAL LEAD POISONING CONFERENCE – ABUJA, NIGERIA

A wide range of stakeholders attended the International Lead Poisoning Conference and the agreed Action Plan benefited from a broad consensus that included input from HRH the Emir of Anka, delegates from Zamfara State and the Federal Ministries of Environment, of Health and of Mining and Steel Development, as well as humanitarian actors, scientists, health, environmental and mining experts.

All stakeholders present at the Conference collectively agreed upon the three pillars required to solve the Zamfara crisis:

- Environmental remediation
- Establishment of safer mining and processing methods
- An integrated medical intervention including health promotion

Delegates also unanimously agreed that achieving these pillars most critically requires:

- Leadership and action from the government
- Involvement and engagement of affected communities
- Expert advice and support from the international community

Outcomes and Agreements of the Conference

At the International Lead Poisoning Conference, a consensus emerged regarding the way forward. The following specific points were unanimously agreed by all participants for immediate action.

1. Urgent funding approved and released immediately

Most urgently the federal government should make a political commitment to address this crisis by ensuring funds are made available immediately and spent appropriately. The federal Ministry of the Environment approved Tripartite Proposal Funding of 850 Million Naira (NGN) for environmental remediation and safer mining initiatives in Zamfara state, agreed in December 2011, should be released without further delay.

STATUS: Partially achieved – Requires URGENT Action at highest levels.

Remediation funds are currently awaiting release by the Secretary to the Government of the Federation.

Funds to tackle the Zamfara lead poisoning crisis – with a specific focus on the remediation of Bagega – were promised by the President in May 2012. In order for the remediation of Bagega to start by the end of this year, the funds need to be released immediately to the appropriate state actors. As far as MSF is aware, the remediation funds are awaiting release by the Secretary to the Government of the Federation. After release by this body, a key next step will be to ensure that the funds are spent in an accountable and transparent manner throughout the remediation process.

2. The remediation of Bagega must be prioritised

The planning and preparation of Bagega using the three-tiered response with allocated and committed resources, conducted with transparency and community involvement must be prioritised. All activities must begin no later than July 2012 and the environmental remediation must be finalised no later than March 2013. Responsible actors including the Federal government must ensure funding and at the state and local government level with technical support and oversight by experts such as TerraGraphics, though the work should be done mainly by Nigerians.

STATUS: Not Achieved – Requires URGENT Action at highest levels.

Hundreds of children are still awaiting critical medical attention. The situation is becoming more urgent and requires direct engagement. **If remediation does not start before the end of the year, it will be impossible to complete before the next rainy season** and poisoned children won't receive treatment for the foreseeable future.



Workers at the Bagega gold processing site, crushing stones.

3. Institutional response to the prevention of contamination and safe mining

As a matter of priority an expert group with an understanding of best practices must be funded to pilot a series of community-sensitive safer mining projects/approaches. This group should include external experts with relevant experience in safer mining, such as OK International, the Artisanal Gold Council, Mintek, or similar.

STATUS: Not Achieved – Requires Coordinated Action once Funds are released and Remediation starts

Remediation

Remediation is the process that environmentally cleans those areas affected by lead poisoning, and makes them habitable again. MSF has worked closely with environmental remediation experts TerraGraphics since the Zamfara crisis was first discovered. TerraGraphics is the company responsible for overseeing the remediation of the seven villages that have been cleaned, and where MSF treats children affected by lead poisoning.

The Federal and State ministries of the Environment have developed a plan in conjunction with TerraGraphics to ensure that local Nigerian expertise and employment will be used. TerraGraphics employs rigorous scientific standards in its remediation methods. These are adapted specifically to lead contamination and address the particular challenges that this type of pollution presents. The results are verified using X-ray photospectrometry and in accordance with the best scientific practices used in environmental remediation worldwide.

While other types of remediation such as bioremediation using microorganisms do exist, they are only effective for polycyclic aromatic hydrocarbons (for example, on petroleum spills), they have no effect on heavy metal contamination (heavy metals are elements, and cannot be broken down by biological processes).

4. Regulatory frameworks in place and functioning effectively

Relevant government agencies must ensure that all existing regulations, laws, and guidelines related to the artisanal mining industry reflect current realities, are relevant to community priorities, and reflect a respect for human rights including children's rights.

Recognising that criminalisation of artisanal mining is likely to create a clandestine industry, where practices would be even more unsafe, and parents would be reluctant to bring children for medical treatment for fear of being exposed as illegal miners, mining must be regulated and not criminalised. This requires creating and implementing a regulatory framework which ensures that environmental remediation takes place and safer mining and processing methods are in place.

People who engage in mining and ore processing must be given access to facilities and programmes to allow them to safely mine and process ore, without exposing themselves or others to toxic lead. Waste management practices should be in place and implemented.

STATUS: Not Achieved – Requires Coordinated Action to ensure Artisanal Mining is not criminalised as doing so would likely lead to severe negative consequences for the health and well being of communities in the Zamfara area.

5. Institutional response to health must be prioritised

The Ministry of Health (MoH) must demonstrate its commitment to addressing the health care needs of the population through providing the necessary human resources at the state and local level in hospitals and health care centres in the affected communities. The MoH should start by seconding staff to work in partnership with relevant partners with the view of taking full responsibility in the long term, demonstrated by increasing staffing over time, developing data collection techniques for treated cases, monitoring treatment and plan for future clinical care, and planning, costing, and budgeting for a sustainable supply of chelating agents for 2013.

If the Centre of Excellence in Gusau is to be considered credible, it should be staffed and made operational; an building, solar panels, and fancy equipment serves no purpose if there is no staff or operating budget. If made functional, the Centre of Excellence should contribute to improve medical training on lead and toxicology in medical and nursing schools.

STATUS: Not Achieved – Requires active participation and engagement by the State Ministry of Health to undertake a leading role in deploying resources (staff, budgets) to Zamfara State, particularly at the Centre for Excellence in Gusau for training purposes.

Inter-Ministerial Committee on Lead-Poisoning

The Interministerial Committee on Lead Poisoning was inaugurated by the President's Office in 2010 response to the Zamfara lead-poisoning crisis.

Unfortunately, the Committee's activities have yet to produce tangible results. A field visit was supposed to take place in July 2012, but was cancelled due to lack of funds. The Committee finally sent a Technical Sub Committee in mid-October to do an assessment, more than two years after the crisis was first discovered. The three day visit (15-17 October) included meetings with stakeholders as well as site visits to affected communities, including Bagega village. The visit was "too little, too late"

While increased participation of the Committee should be a positive indicator for increased Government interest in the Zamfara crisis, the unfortunate reality is that there is a significant gap between the Federal Government response, and the needs on the ground.

The Committee stated that the October visit "was a prelude to the intending visit earmarked by the Committee to the state on the lead poison incident scheduled to come later in the year"(Federal Ministry of Information, "Lead poisoning: Proper management system stepped up in Zamfara State". 16 October 2012. <http://fmi.gov.ng/lead-poisoning-proper-management-system-stepped-up-in-zamfara-state>). This implies a deadly delay while the remediation window for Bagega closes.

With hundreds of children awaiting urgent medical care, MSF is alarmed that the further administrative delay could result in deadly consequences on the ground in Bagega.

6. Community involvement and engagement streamlined throughout all activities

Community consultation and empowerment strategies must be used in all aspects of the three-pillar response to ensure that all interventions are appropriately responsive to community and patient needs, relevant to their lives to ensure the greatest likelihood of adherence to safer mining and health treatment and long term sustainability. All and any information collected from the community for research and programme purposes should be fed back to the community in a timely manner understood by the community.

STATUS: Partially Achieved – On-going through community outreach activities undertaken by all stakeholders

7. Coordination of the response must be interdisciplinary

The existing Rapid Response Team, chaired by the Ministry of Environment and comprised of the state ministries of health and water resources, miners' associations, traditional leadership through the Emirate Council, MSF and TerraGraphics and other key stakeholders should become fully operational, meet monthly with the first meeting to take place no later than June 2012. Monthly reports must highlight the progress of implementation and updates on funding allocations, and will be produced in a timely and transparent manner and submitted to Zamfara governor and the Federal level Inter-ministerial taskforce for their attention and action.

STATUS: Partially Achieved – Stakeholders' meetings have been taking place on a monthly basis, and while the Rapid Response Team has become operational, much more is needed.

Blood Lead Levels and Chelation Treatment

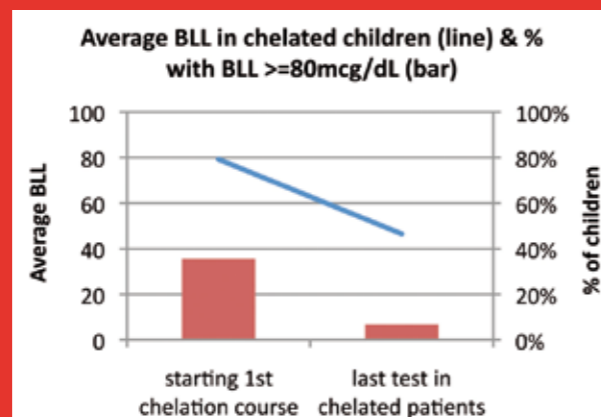
Acute lead-poisoning in children is a medical emergency associated with high rates of brain damage and death. It puts children at risk of loss of appetite, vomiting, abdominal pain and weight loss, as well as long-term mental retardation, behavioural problems and kidney failure. A child who lives with lead-poisoning may experience long-term consequences such as an overall reduction in quality of life and ability to participate fully as a member of society. The impacts of long-term lead exposure and elevated Blood Lead Levels (BLLs, most commonly measured in micrograms per decilitre of blood, mcg/dL) on older children and adults, also cannot be underestimated. The many associated health risks include kidney disease, high blood pressure and infertility.

There is no 'safe' level of lead to have in the human body. Even low BLLs (10 – 45 mcg/dL) cause harm, and higher levels (above 45mcg/dL, the starting level for the specialised chelation therapy by MSF) pose significant risks of acute and long-term medical problems, and even death. Prior to remediation and medical treatment, in the worst affected villages in Zamfara State, 30-40% of the children under 5 died within less than a year. Screening of children under 5 in the seven villages found extremely high BLLs. From over 2800 children ever screened, 94% had Blood Lead Levels higher than 10mcg/dL, with 75% with BLLs >45mcg/dL and needing chelation treatment.

Chelation treatment is a course of oral or in the most severe cases intravenous drugs that binds the lead in the blood so it can be excreted from the body. Multiple courses of treatment can be needed, and prevention of recontamination through the removal of the lead risk from the environment is crucial.

In Zamfara State, MSF has treated over 2000 lead-poisoned children. When the treatment programme started, BLLs were very high (average 127mcg/dL). Over time, the average lead level in children when first started on chelation has decreased to 79.2mcg/dL, although still 35% of children when initially tested had a BLL above 80mcg/dL. As a result of reduced exposure and treatment, the average BLL has decreased to 46.5mcg/dL at the most recent test for each child (after between 1 and 33 chelation courses).

Impact of MSF Project: Removal of exposure and chelation therapy



Project results have shown this approach works. Stopping the exposure – remediation by removal of contaminated soil and ongoing safe-mining practices to prevent recontamination – followed by comprehensive medical programming including health promotion and specialised chelation treatment, has prevented the Zamfara crisis from getting worse.

MSF is ready, willing, and able to treat the children of Bagega the moment remediation is done. Our medical stocks, staff, and budgets are all in place, we are awaiting only the urgently needed remediation before we can begin.



Blood samples in the MSF Lab at the Anka Hospital.

CONCLUSION

MSF welcomes increased interest and participation of the Federal Government of Nigeria, but is deeply concerned that current activities do not adequately address the situation on the ground. MSF calls on the Inter-ministerial Committee on Lead Poisoning and the Secretary of the Government of the Federation to refocus their attention on tangible actions. Most critically to release the funds and start to remediate Bagega, without further delay.

Bagega is reaching a make-or-break decision point. If remediation is not started before the end of 2012, those suffering lead-poisoning will not receive treatment for the foreseeable future; leading to potentially permanent and severe health consequences.

The time for talk is over: it's time to get the lead out of Bagega.

With the release of this report, MSF is calling, in collaboration with other stakeholders, for the urgent intervention of the President for the immediate release of the Bagega remediation funds.



©Olga Overbaek

After stones are dug up from the mines they are brought to the gold processing site: stones are initially crushed so that they can go through the grinder (Bagega, Nigeria).

