

# maternal & child health

communicating international development research

## Feeding hungry school children

**O**f the 300 million chronically hungry children in the world, a third – mostly girls – do not attend school. Hunger impedes a child's ability to learn and achieve. School feeding programmes offer nutritional food as well as a platform for addressing the poverty, war and disease that can affect a child's health and education.

A report from the World Food Programme (WFP) describes how it is working with national governments, local authorities, donors, non-governmental organisations, communities and the private sector to use food to attract children to school and keep them there. In 2004, the WFP provided either school meals or take-home rations to feed more than 16.5 million children in schools in 72 countries. In Afghanistan, Bangladesh, Kenya and North Korea alone, food was provided to over two million school children.

School feeding programmes are cost-effective – a child can be fed for a year for US\$ 34 – and the programmes can double enrolments within a year. Offering take-home rations to girls is an incentive for parents to allow girls to attend school. Attending school means they are more likely to marry later, space their pregnancies and lead healthier and more economically productive lives.

The WFP report produces evidence that:

- In post-conflict states, classes help young people return to daily routines: the combination of food and education can help child soldiers safely trade in their weapons for food, learning and counselling.
- Bangladeshi children who receive food stay up to 1.4 years longer in primary school and have higher projected lifetime

earnings (especially girls) compared to non-participants in school feeding.

- School feeding programmes can slow the spread of HIV: eating nutritious food on a regular basis keeps people healthy and active; pupils with enough to eat are less likely to engage in risky behaviour such as selling their blood or sexual favours.
- Combining schooling and food is a cheap and administratively convenient way to support AIDS orphans and can be implemented through existing institutions with assistance from communities in identifying the children who need help. Working closely with UNICEF, parents, and governments, WFP has developed an approach for improving the entire classroom environment. Important additions to traditional methods of food distribution are:
  - micronutrient supplementation with iron-enhanced high-energy biscuits and iodised salt
  - providing schools with clean water supplies, latrines for girls and de-worming treatments – two million children in school feeding programmes now have the opportunity to overcome the devastating effects of intestinal worms
  - distribution of fuel-saving stoves to reduce the need for fuel-wood and time required for cooking
  - hygiene, HIV/AIDS, sexual health and land-mine awareness education
  - school gardens to teach sustainable agricultural techniques
  - distribution of insecticide-treated nets and education about malaria symptoms and avoidance.

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*Global School Feeding Report*, World Food Programme, 2004

[www.wfp.org/aboutwfp/introduction/school\\_feeding.html](http://www.wfp.org/aboutwfp/introduction/school_feeding.html)

## Rectal artemether treats cerebral malaria in Ugandan children

**C**erebral malaria is the most severe and life-threatening complication of malarial infection. Delays in treatment increase the chance that the disease will be fatal. A study in Uganda compared the efficacy and safety of rectal artemether against the standard treatment, intravenous quinine. Findings suggest that rectal artemether could be used to treat cerebral malaria in children where intravenous facilities are not available.

Most deaths from cerebral malaria occur within the first 24 hours. Many primary health care units in developing countries lack the capacity to give quinine intravenously. The extra time taken to reach a higher level health facility may be life-threatening. So researchers from Makerere Medical School, Uganda, tested an alternative drug: rectal artemether. They studied 103 children with cerebral malaria aged six months to five years at Mulago Hospital, Uganda's national referral and teaching hospital in Kampala. Children received either intravenous quinine or rectal artemether

for seven days.

Key results showed that:

- There were no differences between the two groups in parasitological or clinical outcomes, including the times taken to clear blood parasites, reduce fever, regain consciousness and restart feeding.
  - The death rate was higher in the quinine group, but not significantly so.
  - Neither drug had serious immediate side effects.
- The researchers conclude that rectal artemether:
- is effective and well tolerated and could be used to treat cerebral malaria in children
  - might be most useful for treating severely ill children at peripheral health units, without facilities for intravenous treatment
  - might prevent potentially life-threatening delays in accessing effective anti-malarial treatment.

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'Rectal artemether versus intravenous quinine for the treatment of cerebral malaria in children in Uganda: randomised clinical trial', *British Medical Journal* 330: 334, by Jane Aceng, Justus Byarugaba and James Tumwine, 2005

## Reducing the number of newborn babies dying in Brazil

**In many middle income countries more than half of deaths in young children happen during the first four weeks after birth. These countries need to address the problem if they are to achieve the Millennium Development Goal to reduce child mortality by two-thirds.**

The World Health Organisation, together with the Federal University of Pelotas, Brazil, studied the number of deaths in newborns over a 20 year period. They compared deaths during the first four weeks after birth (neonatal mortality) in the city of Pelotas in southern Brazil for the years 1982, 1983 and for the first six months of 2004.

Women's health has improved since 1982. Birth rates have fallen, births are more spaced out and women have higher levels of schooling. Mothers have become taller, heavier and less smoke during pregnancy. However there are

slight increases in the numbers of teenage mothers, unmarried mothers and women with large families.

The study found that:

- Despite improvements in the health of pregnant women the number of premature babies almost tripled during the 20 years. The number of infants born at less than 37 weeks (preterm births) rose from 6 percent in 1982 to 16 percent in 2004.
- While pregnant women have on average eight antenatal visits, the level of care is inadequate: only 77 percent have an internal examination; 68 percent of women not previously vaccinated did not receive a tetanus injection.
- The number of caesarean births increased greatly from 28 percent in 1982 to 43 percent in 2004. In the private sector 82 percent of all deliveries are carried out by caesarean section.
- Newborn care has improved and numbers of stillbirths have remained stable since 1990, despite the increased numbers of premature babies.

An unregulated private sector has made pregnancy and childbirth require more medical involvement. A third of mothers have three or more scans during pregnancy. Inaccurate scans can overestimate the age of the foetus and lead to unnecessary

caesareans and induced labour. The resulting increase in preterm babies has offset the gains made in improved maternal health and newborn survival over the past 20 years. In spite of medical assessment 29 children were born with syphilis in the past four years.

The study recommends:

- Despite universal health insurance and increased access to health care, antenatal care in Brazil needs to be improved.
- Medical technology should be used with caution. Inducing labour early and performing unnecessary caesareans is at best a waste of resources and at worst a risk to the child's health.
- Greater control of the private health sector is needed. The excessive number of scans may be explained by private doctors who can then claim payment from the Government.
- Systems should set up to better monitor the delivery and care of newborn babies.

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'The challenge of reducing neonatal mortality in middle income countries: findings from three Brazilian birth cohorts in 1982, 1993 and 2004', *The Lancet* 365: 847-854, by Fernando Barros et al., 2005

## Simple guidelines target antibiotic treatment in Kenyan children

**Invasive bacterial infections are a significant cause of childhood illness and death worldwide. But clinical officers and doctors in African hospitals have few resources to diagnose and treat seriously ill children. Research in Kenya shows that simple rules based on current World Health Organisation guidelines effectively target antibiotic treatment.**

The guidelines form part of the integrated management of childhood illness (IMCI) approach. Health professionals diagnose and treat clinical syndromes – groups of signs and symptoms – rather than individual diseases. But seriously ill children often meet criteria for several clinical syndromes and different diseases may cause the same syndrome. The signs and symptoms of malaria can overlap with those of pneumonia, bacteraemia and meningitis. To test the usefulness of the guidelines, researchers from Kenya's Centre for Geographic Medicine Research used them to diagnose and treat 11,847 children admitted to the Kilifi District Hospital, then checked the diagnosis using more sophisticated techniques.

They found that:

- About half of the children had syndromes requiring antibiotics: sick young infants, meningitis/encephalopathy; severe malnutrition; pneumonia; and skin or

soft tissue infection. Of these, an invasive bacterial infection (bacteraemia or meningitis) was identified in 11 percent of children.

- The guidelines identified four fifths of all children with invasive bacterial infections and 93 percent of those who later died.
- Of 5,593 children without a syndrome requiring antibiotics, 171 (3.1 percent) had an invasive bacterial infection and 60 (1.1 percent) died.
- Among malaria-infected children meeting criteria for antibiotics, 4 to 8.8 percent had an invasive bacterial infection.
- A quarter of meningitis cases would not have received antibiotics if the treatment rules had been followed strictly. They were only identified following lumbar puncture.
- Only three quarters of bacterial samples from cases of meningitis/encephalopathy were sensitive to penicillin or chloramphenicol (the currently recommended treatment).

These results show that simple clinical syndromes effectively target children with invasive bacterial infection and those at risk

of death. However, there are problems with recognition and treatment of meningitis. The researchers recommend that antibiotic management of children admitted to hospital in settings with few diagnostic tools should use a comprehensive assessment of the sick child and not focus on single diseases. They also advise that:

- Separate decisions

should be made about antibiotic, anti-malarial and other treatments on the basis of defined clinical syndromes and the results of reliable laboratory tests.

- If a child has malaria parasites in the blood, this does not justify withholding antibiotics if they are indicated by a clinical syndrome, especially as malaria microscopy can be unreliable in practice.
- On the other hand, children admitted to hospital with suspected or confirmed malaria infection should be treated with anti-malarials regardless of any antibiotic treatment.
- Lumbar puncture is critical for catching all cases of meningitis.

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'Use of clinical syndromes to target antibiotic prescribing in seriously ill children in malaria endemic area: observational study', *British Medical Journal* 330(995), by James A. Berkley et al, 2005

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