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Hepatitis B vaccination in Colombia's Amazon Basin

Colombia began a hepatitis B vaccination programme in the Amazon Basin in 1992. How good is vaccine coverage in this challenging region? What health service factors help or hamper the programme?

The Amazon region of Colombia has one of the highest rates of hepatitis B infection in the world. More than 70 percent of rural residents carry the virus. Under the vaccination programme, newborns and children under five receive three doses of vaccine, one month apart. To investigate its success, the researchers looked at the vaccination cards of 3,573 children under 11 years old and questioned their carers. They also interviewed four nurses, five auxiliary nurses and 15 health promoters.

They found that:

- Overall vaccination coverage is high for polio and yellow fever (both 96 percent), measles (94 percent), BCG (91 percent), diphtheria pertussis tetanus (DPT - 90 percent) and hepatitis B (88 percent).
- Nearly four out of five children are fully vaccinated. But less than half of children complete the primary vaccination course in their first year.
- The median age to complete the hepatitis B scheme was four months in urban centres and eight months in rural areas.
- Children are more likely to be vaccinated if they are over one year old, live in Leticia rather than other communities, are affiliated to social security, or live in a house with a roof made of tiles rather than palm leaves.
- A population is less likely to have good coverage if their local health worker has a poor knowledge of when and when not to vaccinate.

Vaccine coverage is also linked to the number of years the health worker has been at the health centre and problems in the supply chain. Health workers identified barriers to higher vaccine coverage as:

- logistic – shortage of health personnel
- geographic – children living too far from health centres
- parent-related – fears of vaccine side effects.

The study showed surprisingly high coverage with the hepatitis B vaccine, given the difficulties of providing this service in the Amazon, especially in rural areas. However, vaccination does not follow Ministry of Health recommendations, with many children receiving the first dose long after birth and not completing the course within their first year.

People without a social security card tend to exclude themselves from vaccination, believing that health workers might reject them. The concept of social security is quite recent in Colombia, so poorer or less educated people may not be aware of their rights under this system. The researchers urge stronger efforts, including periodic staff training, to improve adherence to vaccine schemes.

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Tired out? Causes of chronic fatigue in women in Goa, India

In developed countries, chronic fatigue is linked to other unexplained physical symptoms or common mental disorders such as depression and anxiety. But in poor countries, it is often said to be due to malnutrition and anaemia. Research in Goa, India, questions this difference in approach.

Researchers from the London School of Hygiene and Tropical Medicine and Sangath, Goa, studied 2,494 women aged 18 to 50 years. More than 12 percent of them complained of chronic fatigue which was often associated with having to cut back on their daily activities. Common mental disorders and other medically unexplained physical symptoms were the strongest risk factors for chronic fatigue. Compared with married participants, single women had a lower risk, whereas divorced or widowed women had a higher risk. Other characteristics which increase the likelihood of chronic fatigue include:

- older age
- lower socioeconomic status (having less education, more than three children in the household, family debt or hunger in the past three months)
- unhappy marriage, including domestic violence and concerns about the husband's infidelity or substance use
- restrictions on personal freedom and decision making, or lack of support from families.

Women with high body mass index have a reduced risk, suggesting an influence of nutrition, and possibly gender differences, in access to food. But no link was found between chronic fatigue and haemoglobin levels or frank anaemia.

These rates of chronic fatigue are similar to or higher than those seen in communities in developed countries. However, most doctors in low income countries do not ask about psychological or social factors, instead prescribing drugs (such as vitamins and nutritional supplements) to treat the symptoms. The researchers recommend that decision makers in health systems in developing countries should:

- encourage practitioners to look at the psychological and social determinants of chronic fatigue before assuming that it is the result of anaemia or a nutritional deficiency
- use the growing evidence for effective treatments for common mental disorders and medically unexplained physical symptoms to develop guidelines for the management of chronic fatigue
- discourage the practice of symptomatic treatments using nutritional supplements, many of which are not evidence based, and are expensive.

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Fighting malaria in urban Africa

Africa already has 40 cities with more than one million inhabitants. By the year 2025 over 800 million Africans will live in urban areas. Meeting the health needs of these growing cities is becoming increasingly urgent. Malaria is a major emerging problem that must be tackled.

The UK's Liverpool School of Tropical Medicine held a conference in Pretoria, South Africa in December 2004 to discuss the problem of urban malaria. In West Africa the population is growing twice as fast in cities as in the region overall. In 20 years time, two out of three West Africans will be living in urban areas. Many middle-sized regional towns, as well as major cities, have significant levels of malaria. With increasing numbers of people moving to the cities, ways to tackle the growing problem of urban malaria need to be found.

Controlling malaria improves the health of poor people which in turn makes it easier for them to work and improve their standard of living. Until recently malaria has been considered a rural disease because of the lack of breeding sites for mosquitoes in densely populated areas. Nevertheless, city dwellers are still at risk of infection. The following issues linked with urban malaria were discussed at the Pretoria conference:

- Misdiagnosis. In areas with relatively low levels of malaria, over 75 percent of fevers can be misdiagnosed as malaria. This leads to a huge waste of resources, a lack of trust in the health service and increased resistance to anti-malarials.
- Poor treatment. In urban areas over 50 percent of episodes of malaria are self-diagnosed and self-treated. Visiting a clinic means loss of work and income and incurs the costs of travel and medicine. As a result people use leftover medicines they have at home or they buy cheaper herbal and other medicines from drug sellers.
- The advantages of an urban environment. Health programmes, such as the introduction of insecticide treated mosquito nets, can reach a greater proportion of the population in densely-populated urban areas.

Urban malaria in sub-Saharan Africa is a major health problem which will get worse if it is not addressed. Methods for the control of malaria in rural areas cannot simply be transferred to cities as they would lead to a considerable waste of resources. However, existing methods for the prevention, diagnosis and treatment of malaria can be adapted to suit the urban environment. Ways forward in tackling urban malaria should include:

- Involving the commercial sector. For example, effective public-private partnership programmes were set up in southern Africa to control malaria with indoor spraying.
- Involving the community in changing the local environment. In Sri Lanka the irrigation system was altered. It saved water and money as well as reducing the mosquitoes' breeding sites.
- Using the existing health service. Health clinics in towns are usually better staffed and funded than in rural areas.
- Making use of the private health sector to improve diagnosis, treatment and prevention of malaria.
- Destroying mosquito larva is another possible method of controlling malaria. However, this method needs further investigation to discover its effectiveness.

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Reducing diarrhoea What works best?

Diarrhoea is one of the leading causes of death and ill health, particularly among young children. Most studies show that improvements in drinking water, sanitation facilities and hygiene practices reduce the number of cases of diarrhoeal illness. This is the first systematic review and data analysis to look at the relative effectiveness of different interventions.

Funded by the World Bank, researchers developed a comprehensive search strategy to identify all peer-reviewed articles, in any language, that present data on water, sanitation and hygiene interventions. Out of 2,120 studies identified that included measurements of diarrhoea morbidity, the researchers examined 46 that contain relevant evidence, among which 38 were judged to be usable. These were from 24 different countries and included three non-English language articles.

The different interventions were assessed on their relative likelihood of reducing illness. The researchers compared their results with those from earlier studies of the effectiveness of such interventions in preventing illness.

The results reported include:

- All of the interventions were found to significantly reduce the risk of diarrhoea.
- Most of the interventions had a similar level of impact.
- Water quality interventions that focus on water treatment at the point of use were found to be more effective than had been previously thought.
- Multiple interventions that involve the joint introduction of hygiene, sanitation, water or health education measures were not found to be more effective than those with a single focus.
- For some of the interventions, there was evidence of publication bias in the results of the data analysis.
- Poorly conducted or poorly reported research made up 32 percent of the identified studies.

Despite a wide range of results being reported in individual studies, the overall results suggest that each intervention has an important role to play in preventing diarrhoeal disease. Lessons for policy include:

- Hygiene interventions are at least as effective as other strategies for preventing disease. People's motivation to adopt better hygiene practices may include considerations other than health: for example the desire to feel or smell clean, or to follow social norms.
- Improving water quality at the point of use is particularly effective, and should be considered for any water supply programme that does not include continuous household access to safe water.
- There is currently not enough evidence to back up the view that multiple interventions are advantageous. Future multiple intervention projects should consider how each component can be given adequate attention, perhaps through a phased implementation.
- It is possible that studies that report no health improvement from interventions are either not submitted or not accepted for publication. Such publication bias should be avoided and well executed studies made available, even when they show negative outcomes.
- When selecting strategies to combat diarrhoeal illness, policymakers should take account of unintended positive or negative outcomes, such as decreased risk of other illnesses or exposure to heavy metal contamination from deep wells, as has happened in Bangladesh.

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