CURRENT TOPIC

Reducing global inequalities in child health

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Since 1950, global poverty and child mortality rates have declined more rapidly than during any other period in history. Progress has been uneven, however, so that inequalities have widened; since the 1970s, an increasing number of countries have experienced periods of prolonged economic decline. Eighty countries now have per capita incomes lower than in 1990. Partly in consequence, indicators of maternal and child health and nutrition have remained static or deteriorated.[1]

Poverty and health trends

Poverty is multidimensional. While poverty has traditionally been seen as a lack of income, and poor health and education as correlates of low income, it is now recognised that illiteracy, child death, and lack of human rights indicate poverty in their own right. These different dimensions of poverty are correlated with one another, although imperfectly so. These correlations are not merely statistical; the various dimensions reinforce one another to create poverty traps. For example, a person or family on low income is more likely to suffer permanent disability or to be forced into destitution by illness.

Table 1 Income poverty in the developing world (population living on less than a dollar a day)

	As percentage of population			*Millions*		
	1987	*1993*	*1998*	*1987*	*1993*	*1998*
East Asia and the Pacific	26.6	25.2	15.3	415.1	431.9	278.3
Eastern Europe and Central Asia	0.2	4.0	5.1	1.1	18.3	24.0
Latin America and the Caribbean	15.3	15.3	15.6	63.7	70.8	78.2
Middle East and North Africa	11.5	8.4	7.3	25.0	21.5	20.9
South Asia	44.9	42.4	40.0	474.4	505.1	522.0
Sub-Saharan Africa	46.6	49.6	46.3	217.2	273.3	290.9
Total	28.7	28.5	24.3	1196.5	1320.9	1214.2

Source: World Bank website.

Table 2 Trends in infant and child mortality

	Infant mortality rate				*Child mortality*		*Ratio*	
	1970	*1980*	*1987*	*1997*	*1980*	*1997*	*1980*	*1997*
East Asia and the Pacific	79	56	44	37	28	10	0.50	0.23
Eastern Europe and Central Asia	—	41	29	23		7		0.24
Latin America and the Caribbean	84	60	49	32		9		0.18
Middle East and North Africa	134	95	67	49	46	14	0.48	0.21
South Asia	139	119	97	77	69	24	0.58	0.25
Sub-Saharan Africa	137	115	103	91	83	61	0.72	0.59

Source: World Bank, *World development indicators* and *Poverty reduction and the World Bank* (1996).
Infant mortality rate is the number of infants dying in the first 12 months per 1000 live births.
Child mortality is the number of children dying between one and four completed years of age, per 1000 live births.

INCOME POVERTY

Data on global trends in income poverty are published by the World Bank, using poverty lines of $1 and $2 a day. Data are adjusted for "purchasing power parity" (PPP), which reflects the fact that a dollar will buy more (when converted at the official exchange rate) in, say, Dar-es-Salaam than New York (see table 1). The proportion of the developing world population living in poverty has fallen slightly in the mid 1990s to reach just under one quarter. But there are large regional variations—a sustained fall in east Asia, and the largest relative rise in the former communist countries. In absolute terms, the numbers of the poor have risen in all regions other than east Asia and the Middle East/North Africa, the largest absolute rise being in sub-Saharan Africa, where nearly half the population live now on less than a dollar a day.

Data on longer run trends are patchy. East Asian countries, including China, have been most successful in reducing poverty over the past four decades. A sustained decline in Latin America was reversed in the early 1980s, after which the absolute number of poor began to rise (with some countries recovering in the 1990s, others not). Long run economic decline has seen income poverty rise in many countries of sub-Saharan Africa since at least the 1970s: in several countries, per capita income is now less than half its value at independence over 30 years ago.

CHILD AND INFANT MORTALITY

Despite poor economic performance, social indicators have continued to improve in most countries. Data on infant and child mortality in table 2 illustrate three facts: (1) mortality has fallen in all regions of the developing world; (2) the pace of improvement has been far slower in Africa, which has now fallen behind south Asia (this is also true of undernourishment but note the exception of West Africa, see table 3); and (3) as mortality declines, a greater proportion of deaths in the under 5s are those of infants.

Africa's relative position can be expected to deteriorate further as some countries, for example, Zambia and Zimbabwe, have seen a reversal of the downward mortality trend. In Zambia, infant mortality rose from around 80 in the late 1970s to 110 in the early 1990s. This setback is linked partly to the impact of HIV/AIDS, but also to long run economic decline, deterioration in health services, and

Table 3 Trends in the prevalence of undernourishment in developing countries

	1979/81 (% population)	*1990/92*	*1995/97*
Asia and Pacific	32	21	17
Oceania	31	27	24
South east Asia	27	17	13
South Asia	38	26	23
Latin America and Caribbean	13	13	11
Caribbean	19	25	31
Central America	20	17	17
South America	14	14	10
Near East and North Africa	9	8	9
Near East	10	10	12
North Africa	8	4	4
Sub-Saharan Africa	37	35	33
Central Africa	36	37	48
East Africa	35	45	42
Southern Africa	32	45	44
West Africa	40	21	16
All developing countries	29	20	18

Source: FAO, *The state of food insecurity in the world* (1999).
Undernourishment is based on estimates of the amount of food available and reflects chronic food insecurity, in which food intake is insufficient to meet basic energy requirements on a continuing basis.

Table 4 Current undernutrition among children under 5 in developing countries (based on survey data around 1995)

	Underweight (% population)	*Stunted*	*Wasted*
East and south Asia (including China)	22	35	7
South Asia (including India)	51	52	16
Latin America and Caribbean	10	18	3
Near East and North Africa	18	25	6
Sub-Saharan Africa	33	41	11

Source: FAO, *The state of food insecurity in the world* (1999).
Underweight is low weight for age, stunting is low height for age, and wasting is low weight for height. Currently, in all developing countries, 163 million children under 5 are underweight, 199 million are stunted, and 52 million are wasted.

reduced service utilisation, partly as a result of the introduction of user charges.[2–4] Elsewhere on the continent, conflict has taken its toll, destroying livelihoods and uprooting populations.

The link between income poverty and ill health is well established. Not only do poorer countries have higher mortality rates, but the same is true of poorer regions within those countries. These differences can be very great: in Zambia in 1996 infant mortality rates varied from 66 in one of the most prosperous of the country's nine provinces to a high of 158 in one of the more remote provinces. Reducing mortality is partly about improving economic wellbeing, but that is not sufficient. Deaths in infancy and childhood also require specific medical interventions which can be delivered effectively at low cost, given the right political will and management structure.

As infant mortality rates fall, the proportion of infant deaths occurring in the neonatal period rises. Neonatal deaths account for around 65% of infant deaths in south Asia, and approximately half of infant deaths in Africa where postneonatal causes such as malaria and HIV infection are more prevalent. National demographic and health surveys suggest that neonatal mortality rates in the developing world have fallen slightly over the past decade. For example, statistics from the Ministry of Health in India for 1995 reported an infant mortality rate of 74 per 1000 live births and an estimated neonatal mortality rate of 50 per 1000 live births, substantially lower rates than a decade earlier. However, over the past five years, the official infant mortality rate for India has hardly changed, suggesting that inroads into neonatal mortality are difficult to achieve, requiring much greater investment in safer motherhood and neonatal care programmes.

This review of trends suggests a dual pronged strategy for improving child health. Firstly, economic performance needs to be improved—to provide a revenue base for public services, and to allow higher private spending to achieve better nutrition and health status. But this alone will not be sufficient. As many of the causes of infant and child death need to be tackled by health interventions, an improved health sector strategy is required. At present many countries are failing in both these areas.

UNDERNOURISHMENT AND UNDERNUTRITION

Although severe malnutrition rates have declined sharply over the past three decades, table 3 shows that, more recently, chronic food insecurity has deteriorated in many countries, particularly in Africa. Table 4 shows the current state of undernutrition reflected in prevalence rates of underweight, stunting, and wasting. Chronic nutritional problems like stunting, micronutrient deficiencies, and intrauterine growth retardation leading to low birth weight, remain widely prevalent, with little evidence for downward trends in the poorest countries.[5]

IMMUNISATION COVERAGE

Data from UNICEF suggest that immunisation coverage in Africa has fallen in the 1990s.[6] Official immunisation coverage statistics reported by national governments greatly exceed estimates collected by more detailed immunisation surveys conducted by WHO. For example, in 1996 the Indian and Bolivian governments reported 89% and 80% coverage for DPT3 at one year from routine clinic reports, whereas WHO Expanded Programme of Immunisation surveys produced estimates of 47% and 29% respectively.[6]

ACCESS TO ESSENTIAL PRIMARY HEALTH SERVICES

More than one billion people have no access to essential health services, and many more use services of limited quality.[7] Facilities may be at a great distance, the cost of treatment prohibitive (including fees and bribes, with exemption schemes being poorly targeted), and cultural norms may restrict care seeking, especially by women.

Why have so many countries failed to deliver primary health care, as envisaged at the Alma Ata conference in 1978? The answers come from both the changing international climate and domestic failings.

The changing international climate

By the mid 1970s many African countries had started to experience economic decline, resulting in a reversal of the expansion of health services that had followed independence. The start of the 1980s saw a series of economic shocks—falling commodity prices, reduced demand for goods as developed countries entered depression, and the onset of the debt

crisis. The latter also hit Latin American countries particularly hard, where severe contractionary policies were put in place to curb inflation and to realise the trade surplus needed to service the debt. Structural adjustment and stabilisation policies by the International Monetary Fund and World Bank in Latin America certainly contributed to this contraction and reduction in health spending. The story has been somewhat different in Africa and Asia, as in the 1990s, adjustment conditionality often explicitly protected social spending's share of total government expenditure. But what happens to real health spending depends whether policy reform is successful in restoring economic growth—where it is not (for example, Zambia) then health spending falls; where it is (as in Ghana and Vietnam), then spending has risen. Finally, the 1990s have witnessed quite substantial falls in development aid.

Domestic failings

Domestically, at *central government level*, problems include inadequate political commitment, a weak and often politicised bureaucracy, low morale among civil servants, a nepotistic rather than meritocratic promotion system, over centralisation of decision making, little cross sectoral communication, poor audit of programmes, and delays in disbursement of funds. Historically, donors and outsiders have contributed to these problems through a variety of unintentional effects: promotion of economic policies which reduce government health expenditures; "donor robbery" whereby the best and brightest government staff are attracted into foreign aid organisations; a lack of coordination with too many outsiders running projects, without national ownership; a willingness to fund capital investment but not recurrent costs (for example, staff salaries); insufficient attention to institutional and financial sustainability; and a failure to challenge corruption and mismanagement by powerful elites. Some of these past failings might be rectified through the introduction of "sector wide approaches" to funding, discussed below, though the steps taken thus far are rather modest.

At *district health service level* there is much heterogeneity of performance of district health services which suggests that local management, rather than resource shortages, is a critical factor. Too often, there is clinical predominance over public health functions, lack of control over staff appointments and budget disbursement, rapid staff turnover, poor leadership, lack of Masters degree level public health skills, little training or supervision from the centre, no routine peer contact with other district health staff, poor health promotion, and lack of collaboration with local authorities. Prohibitive user charges (official or de facto), with no effective exemption schemes, make services inaccessible to the poorest groups. Donors and outsiders may contribute to these problems by setting up unsustainable, parallel NGO administrative structures, rather than working through district health offices.

Up to 80% of childhood deaths in Africa occur before the child reaches a health facility. Health status and care seeking behaviour at *community and household level* is influenced by delayed decision making within households, for example, by husbands or grandmothers, maternal illiteracy, women's "disempowerment", lack of information, and economic pressure on parental time for care giving. The introduction of market based policies may undermine household food security, or time for care giving by parents, and fail to address equitable access in health programmes through inadequate safety nets, for example, insurance for obstetric or other health emergencies, or exemption schemes.[8]

OVERSEAS DEVELOPMENT AID INVESTMENT IN HEALTH

Aid levels for health are falling. In 1998 UNICEF reported a steady decline in aid flows during the 1990s such that "at the present rate of decline, official development assistance would cease to exist by 2015".[6] Even immunisation funding from UNICEF decreased from about US$182 million (57% of health expenditures) in 1990 to $51.5 million (25% of health expenditures) in 1998.[9] Support for vaccine procurement was maintained while funding for national delivery systems had effectively collapsed.

Solutions and new priorities

How can child health inequalities be improved in the new millennium? There are no simple "magic bullet" solutions. Some relatively poor countries such as Sri Lanka, or states like Kerala in India, have achieved excellent health and education indicators—showing that health improvements can be achieved even with limited resources.

CHARACTERISTICS OF SUCCESSFUL INTERVENTIONS

Success depends heavily on *integration and coordination* of national economic and welfare policy, and of donor coordination with national planning. Sector wide approaches are a new development in the organisation of aid to developing countries where donors and lenders collectively contribute to funding the entire health sector.[10] For example, new sector wide approaches are being tried in Ghana, Zambia, and Bangladesh. It is hoped they will increase integration, accountability, and efficiency, but some have warned of the potential to make things worse: negotiations may fail; important health programmes may be excluded from the sector programmes; or spending on unproductive areas may increase.[11]

Success also depends on effective partnerships between government and non-government organisations, and between district health and political authorities, with an emphasis on health promotion at community level.

Successful specific health interventions, such as immunisation or micronutrient supplementation, require *impact, coverage, and sustainability (both financial and institutional)*. Character-

istically, non-government organisation programmes may achieve high impact, but often a low coverage and poor institutional sustainability. Conversely, governments linked with international agencies, may run programmes with higher coverage but lower impact. Institutional sustainability (and absorptive capacity) is a major problem in the poorest countries. Long term sustainability requires investment in *insiders*, for example, national government technical staff, local medical and nursing schools, and community based organisations rather than *outsiders*, for example, international agencies, which tend to be less cost efficient.

PERINATAL CARE

In many countries safer motherhood programmes are rudimentary, and most mothers give birth at home, usually without a trained birth attendant. The World Bank estimates that the burden of disease contributed by perinatal causes amounts to 9.1% of disability adjusted life years loss in India.[12] Significant reductions in perinatal mortality in poor communities can be achieved at low cost.[13] In a poor rural district of India, Bang and colleagues found that 48% of newborn infants had "high risk morbidities", over half of which were ascribed to sepsis.[14] Community neonatal care, using village women health workers to identify warning signs and treat infection with injectable antibiotics, produced a 62% fall in neonatal mortality, albeit in a non-randomised trial. Bang *et al* estimated the cost to be $182 per village, or $1.6 per life year saved, better value than almost any other primary care intervention.

INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS

The integrated management of childhood illness strategy (IMCI) arose through dissatisfaction with disease specific control programmes such as those targeted at diarrhoea and acute respiratory infections. Primary care workers usually deal with children whose symptoms have overlapping causes or for whom a single diagnosis may not be appropriate.[15] IMCI requires three broad aims: to improve the case management skills of health workers through the provision of locally adapted guidelines and training; to provide essential drugs for the management of childhood illness; and to optimise family and community practices in relation to child health, particularly care seeking behaviour. Experience from countries which have implemented the IMCI training programme for primary care workers suggests additional benefits such as more rational drug use, increased attendances, improved provider morale, improved perceptions of quality of care, and better health outcomes. There are technical issues for IMCI to address (for example, asthma, newborn care, malaria treatment) but the biggest problem is how to sustain IMCI financially on a large scale.[16–19]

MALARIA

Child mortality from malaria is high and rising in Africa as it re-emerges in areas from which it had been thought to be eliminated. District health staff need guidance on effective drugs for treatment, and how to implement chemoprophylaxis in pregnancy. Both have been undermined by chloroquine resistance. Drug efficacy studies indicate that sulphadoxine/pyrimethamine is now the best first choice, with quinine for complicated malaria, and mefloquine or artemisinin in areas with high resistance to sulphadoxine/pyrimethamine. Despite this evidence, only four countries in Africa have made a change from chloroquine as national policy for treatment and chemoprophylaxis.[20]

PREVENTION AND TREATMENT OF HIV INFECTION AND AIDS

HIV infection is devastating child health programmes in sub-Saharan Africa, and is rising inexorably in India. Each day 8500 children and young people are infected with HIV, and 2500 women die from AIDS. In 1998, 510 000 children died from AIDS.[21] Interventions to reduce mother to child transmission of HIV are available (antiretroviral drugs, caesarean section, feeding advice) but will raise complex ethical and cost effectiveness issues in poor countries in the next decade.[22]

IMMUNISATION

Immunisation coverage declines (see above) are worrying and reflect falling investment over the past decade. In 2000 the new Global Alliance Vaccine Initiative (GAVI), which received US$750 million from the Bill and Melinda Gates Foundation, promises to reverse the deterioration in immunisation programmes. Whether immunisation delivery systems in the poorest countries can be revived, and expanded to include newer vaccines like those for *Haemophilus influenzae* type b infection, hepatitis B, and meningococcal disease, remains to be seen.

CHILDREN IN DIFFICULT CIRCUMSTANCES

Millions of children live in circumstances which place their survival, protection, and development at significant risk. Approximately 540 million children (one in four) live in dangerous and unstable situations, and in the past decade, more than two million children have been killed and six million injured or disabled in armed conflicts.[1] Many thousands of children live on the streets or are subjected to sexual abuse and prostitution, 250 million children work, many in hazardous and exploitative labour, and 130 million children have no access to education. In sub-Saharan Africa, there are at least ten million AIDS orphans. The UN Convention on the Rights of the Child, now ratified by almost every country, sets guidelines for monitoring countries' efforts to protect children in difficult circumstances. A future priority is to audit and hold accountable each government's progress with implementation of the UN Convention. Development programmes need a "child focus", whereby

children participate in programmes to ensure the objectives are relevant to their lives, and that no false assumptions are made about their behaviour.

Conclusion

Poverty and health trends in the poorest countries are a major cause for concern. Many countries have seen serious reversals in progress over the past decade. New priorities for international agencies and national governments are to build *national ownership* for family health (by lobbying for expenditure increases, and by attracting good staff back into national institutions), and to *improve local accountability* of health services within local communities. *Finance for integrated technical strategies* (for example, IMCI, safer motherhood programmes, malaria control, immunisation) requires massive expansion, including incentives to keep good staff in remote areas. *User fees at primary care level* should be abolished, where possible, to improve access for the poor, and new initiatives for *insurance schemes* to cover obstetric and other emergencies need promotion.

A focus on *copying success* is important. Practical management strategies to achieve this include peer meetings for district staff, visits to "beacon" model projects, or the use of national consultants trained to manage change. Political leaders need incentives to bring about success in health programmes, perhaps by tying development aid specifically to achievable health targets.

Gabriela Mistral, the Chilean poet, wrote "we are guilty of many errors and many faults, but our worst crime is abandoning the children, neglecting the fountain of life. Many of the things we need can wait. The child cannot." Increasing global inequalities in poverty are a matter of clear and present danger for millions of children, and require immediate and sustained action by political leaders. Paediatricians and child health advocates have an important role in promoting effective solutions.

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