Letters

A way of measuring poverty that could further a change for the better

Crucial for the evaluation of the Millennium Development Goals is a method of measuring health. In a recent editorial in the *Bulletin*, Fosu convincingly argued that poverty reflects the health status of a country's citizens and is the underlying cause of "neglected diseases".[1] It is also clear that impaired health exacerbates poverty, whether directly or indirectly, via diminished national growth.[2] Poverty and health are linked bidirectionally.[1] This complex association can be illustrated by a cause-effect loop: malaria being a historical and HIV/AIDS a contemporary example.

Various methods have been used to measure poverty and human development on population level; criticisms against them are as many.[1] Credible health economic data can only be produced based on valid epidemiological data (see the 2007 series on health statistics in the *Lancet* available at: http://www.thelancet.com/collections/series/health_statistics). Many countries are far from fulfilling the need for valid information.

We still have to rely on complex statistical models and assumptions to fill the existing gaps in basic country-specific data. "Per capita income" fails to correlate sufficiently and precisely with measures of human development, such as life expectancy or child mortality.[1] Another indicator, the "headcount ratio", is the proportion of a population earning less than the standard required for basic needs (US$ 1 per day). Variations over time and place, and exchange rates, however, make it difficult to grasp the scope and functions of this index.

Indices are needed to single out countries requiring attention from an international aid perspective. They are, however, often not helpful for national health policy-makers, because in developing countries poverty may vary considerably from region to region, between urban and rural areas and also within urban settlements. Differences are surprising even within resource-poor neighbourhoods: whereas some households clearly belong to the poorest of the poor, others possess a range of sophisticated utensils (H Feldmeier and I Krantz, unpublished data). Existing summary statistics are inappropriate in describing subtle but important differences in available resources.

We suggest that poverty and human development can be captured by a simple method, whether at country, region, urban/rural or neighbourhood level, by determining the combined prevalence or incidence of four (or a maximum of five) epidermal parasitic diseases (EPSDs): scabies, hookworm-related cutaneous larva migrans (hrCLM), tungiasis, pediculosis capitis and possibly pediculosis corporis. These diseases occur ubiquitously (or, in the case of tungiasis, on two continents) and are encountered in rural as well as urban settings.[3] In low-income countries, epidermal parasitic skin diseases are widespread, but with a patchy distribution, with lower-income strata being disproportionately affected (H Feldmeier and J Heukelbach, unpublished data). In Brazil, tungiasis and hrCLM are much more prevalent in deprived and resource-poor populations, while the diseases occur only sporadically in more affluent strata.

Four factors useful as poverty indicators characterize each of the EPSD. First, prevalence, intensity of infestation and morbidity correlate on the population level. A reduction in prevalence will mean a future decrease in morbidity and an increase in quality of life and health. Second, disease occurrence overlaps and polyparasitism is frequent. Hence, knowledge of one EPSD could generate occurrence estimates of other endemic EPSDs in an area. Third, prevalence, intensity and morbidity are disproportionately high in particular population segments: girls and women (scabies, head lice), children (scabies, head lice, hrCLM, tungiasis), the elderly (scabies, tungiasis), or displaced persons and homeless people (scabies, tungiasis, pediculosis corporis). Lastly, the various EPSDs are easily diagnosed by affected individuals, caretakers or health staff.[3] An index could be elaborated that reflects the degree of morbidity caused by the four (or five) major EPSDs in defined populations, based on self-reporting of sentinel individuals from strategically chosen groups.

The health of populations is ultimately a political concern. We need political commitments to implement findings in order to improve population health. While waiting for high-quality epidemiological data and ensuing information on health economics, our suggestion is to use sentinel group descriptions of EPSDs in a participatory approach, i.e. information that is easy to understand for each and everyone, politicians and laymen, and with considerable potential for action and change for the better. ■

Hermann Feldmeier[a] **& Ingela Krantz**[b]

References

1. Fosu AK. Poverty and development. *Bull World Health Organ* 2007;85:734. PMID:18038047
2. Hamoudi A, Sacks J. *Consequences of health status: a review of the evidence* [CID Working Paper 030]. Cambridge, MA: Harvard University; 1999. Available from: http://www.cid.harvard.edu/cidwp/030.htm [accessed on 22 February 2008].
3. Heukelbach J, van Haeff E, Rump B, Saboia Moura RC, Feldmeier H. Parasitic skin diseases: health care-seeking in a slum in north-east Brazil. *Trop Med Int Health* 2003;8:368-73. PMID:12667157 doi:10.1046/j.1365-3156.2003.01038.x

[a] Institute for Microbiology and Hygiene, Campus Benjamin Franklin, Charité University, Hindeburgdamm 27, 12203 Berlin, Germany.
[b] Skaraborg Institute for Research and Development, Stationsgatan, Skövde, Sweden.
Correspondence to Hermann Feldmeier (e-mail: hermann.feldmeier@charite.de).

Contraception is the best kept secret for prevention of mother-to-child HIV transmission

We commend Stringer et al. for addressing the importance of developing and implementing a monitoring and evaluation model for measuring the effectiveness of prevention of mother-to-child HIV transmission (PMTCT) programmes.[1] We also recommend broadening our PMTCT lexicon and developing additional metrics for preventing both HIV acquisition by uninfected women and unintended pregnancies among HIV-infected women.

The terms "PMTCT" or "PMTCT programmes" are almost exclusively used to refer to programmes that provide antiretroviral prophylaxis for HIV-infected pregnant women. This is the case despite the 2002 WHO and United Nations' recommendation of the following comprehensive approach for PMTCT programmes:

- primary prevention of HIV infection;
- preventing unintended pregnancies among HIV-infected women;
- preventing HIV transmission from HIV-infected women to their children; and
- providing care for HIV-infected mothers and their infants.[2]

Most PMTCT guidelines and programmes focus almost solely on the third approach: identifying HIV-infected pregnant women and providing antiretroviral prophylaxis. Fortunately, programmes that provide care and treatment for HIV-positive mothers and their infants are rapidly expanding and have their own monitoring and evaluation indicators. Unfortunately, far less attention is given to preventing vertical HIV transmission by preventing HIV acquisition by uninfected women or preventing unintended pregnancies to HIV infected women, despite their demonstrated contribution to PMTCT.[3]

We propose that we broaden our PMTCT lexicon to include the comprehensive PMTCT approach. A truly comprehensive PMTCT programme includes:

- preventing HIV acquisition (in HIV-negative women);
- preventing pregnancies in HIV-infected women who do not wish to become pregnant;
- preventing HIV transmission (in the discordant maternal/child dyad); and
- providing care for HIV-infected mothers, their infants and their families.

To complement our expanding lexicon, we need to evaluate the comprehensive PMTCT approach. This requires the measurement of each component. The absence of indicators for the prevention of HIV acquisition, for the fertility intentions of HIV-infected women, and for unintended pregnancies among HIV-infected women is a critical gap.

If the goal, set at the United Nations General Assembly Special Session on HIV/AIDS, of reducing infections in infants by 50% by 2010 is to be met, all four elements of the WHO/UN PMTCT strategy need to be implemented, assessed and *measured* for impact. ■

Tricia Petruney,[a] Elizabeth Robinson,[a] Heidi Reynolds,[a] Rose Wilcher[a] & Willard Cates[a]

References

1. Stringer EM, Chi BH, Chintu N, Creek TL, Ekouevi DK, Coetzee D, et al. Monitoring effectiveness of programmes to prevent mother-to-child HIV transmission in lower-income countries. *Bull World Health Organ* 2008; 86:57-62. PMID:18235891 doi:10.2471/BLT.07.043117
2. Strategic approaches to the prevention of HIV infection in infants. *WHO meeting report, Morges, Switzerland, March 2002*. Geneva: WHO; 2003. Available from: http://www.who.int/hiv/pub/mtct/en/StrategicApproachesE.pdf [accessed on 29 April 2008].
3. Sweat MD, O'Reilly KR, Schmid GP, Denison J, de Zoysa I. Cost-effectiveness of nevirapine to prevent mother-to-child HIV transmission in eight African countries. AIDS 2004;18:1661-71. PMID:15280777 doi:10.1097/01.aids.0000131353.06784.8f

[a] Family Health International, 2224 E Hwy 54, Durham, NC 27713, United States of America.
Correspondence to Willard Cates (e-mail: wcates@fhi.org).

Access to medication: key to achieving treatment goals

To contribute to the observations of Mendis et al.[1] published in the April 2007 issue of the *Bulletin*, we wish to add information on how limited availability and affordability of medication may negatively determine the outcomes of chronic diseases. We note an absence of data in this paper regarding asthma treatment in various Brazilian states and a small sample used to represent the whole country. This could introduce a bias for results analysis.

Brazil, a country of continental dimension, is divided into five different regions. According to the Brazilian Department of Health,[2] there is a heterogeneous distribution of income among individuals. In the south, 19.94% of the population earns less than half the current minimum salary of 380 Brazilian *reais* (US$ 190). In other regions, people earning less than half the minimum salary represent 21.39% of the population in the south-east; 27.88% in the middle-west; 46.19% in the north and 56.53% in the north-east. Thus, Rio Grande do Sul, a southern state, cannot be used as a general example to represent other regions of Brazil.

The State of Parana, also in the south, makes asthma medications freely available including inhaled steroids, short- and long-acting beta-adrenoceptor agonists and rhinitis treatment. Beclomethasone dipropionate inhalers are available in primary care public outlets in several cities and certainly would change figures shown in Table 4.

A quick survey of different pharmacies revealed that a beclomethasone canister with 200 doses (250 µg each) has an average price of 37 *reais* (approximately US$ 20). A salbutamol (albuterol) canister of 200 doses (100 µg each) costs 17 *reais* (approximately US$ 9). For individuals using 2 puffs of inhaled steroids and 9 puffs of salbutamol, the costs would be US$ 19, representing 9% of the minimum salary or 2.4 work days (per working month of 24 days).

Certainly, availability and accessibility to medications are determinants for adequate treatment of chronic diseases. A study conducted in Latin American countries, the Asthma Insights and Reality in Latin America (AIRLA) survey, has shown that only 6% of asthmatics use inhaled steroids.[3] In our town of Curitiba, there was a radical change in these numbers after implementing a local asthma programme. Aggressive health policies, training medical teams and, in particular, promoting free access to anti-asthma medication increased the number of patients with persistent asthma receiving inhaled steroids from 28% (before the year 2000) to 82%.[4]

The goals of meeting guidelines for asthma and other chronic conditions can be achieved if sufficient resources are applied to low-income populations. Improving health policies begins with supplying adequate resources for a specific country's circumstances. We agree with Mendis et al.[1] that, although many drugs for chronic diseases are theoretically provided free or at low cost in public sectors, their availability is inadequate. Education of patients and health personnel, availability and access to medications can change the management of such diseases dramatically. ■

Hevertton LBS Santos[a] **& Nelson Rosario**[a]

References

1. Mendis S, Fukino K, Cameron A, Laing R, Filipe A Jr, Khatib O, et al. The availability and affordability of selected essential medicines for chronic diseases in six low- and middle-income countries. *Bull World Health Organ* 2007;85:279-88. PMID:17546309 doi:10.2471/BLT.06.033647
2. Datasus. Brazil, Ministério da Saúde, Departamento de informática. Available from: www.datasus.gov.br [accessed on 30 April 2008].
3. Neffen H, Fritscher C, Cuevas Schacht F, Levy G, Chiarella P, Soriano JB, et al. Asthma control in Latin America: the Asthma Insights and Reality in Latin America (AIRLA) survey. *Rev Panam Salud Publica* 2005;17:191-7. PMID:15826399 doi:10.1590/S1020-49892005000300007
4. Santos HLBS, Rosário NA, Riedi CA, Moller LG, Duarte-Filho NP, Morihissa R, Kovalhuk L. Changes in medical prescriptions after the implementation of a children's asthma programme. *Rev. Bras. Alerg. Imunopatol* 2008;31:31-4.

[a] Hospital de Clínicas, University of Parana, Curitiba, Brazil.
Correspondence to Hevertton LBS Santos (e-mail: hevertton@gmail.com).