

In Gaziano and co-workers' study, history of diabetes mellitus replaced a blood-sugar test. Treatment of raised blood sugar is an important component of cardiovascular risk reduction. Although statins might be given to patients at high risk without monitoring of cholesterol concentrations if laboratory facilities are not available, the same cannot be said of blood-glucose control. Portable glucose-meters are widely available even in primary health care in developing countries such as India. It would therefore be of interest to examine whether addition of blood glucose into the method would further improve the prediction and reduction of cardiovascular disease.

Finally, although tools that use non-laboratory-based variables can help to improve affordability of screening programmes for non-communicable diseases, they should not compromise the safety of patients. For equitable care in cardiovascular and other major non-communicable diseases, universal access to a set of essential interventions, including laboratory assays, might be required, even in settings with limited resources.

*Shanthi Mendis, V Mohan

WHO, CH-1211 Geneva, Switzerland (SM); and Madras Diabetes Research Foundation, Chennai, India (VM)
mendiss@who.int

We declare that we have no conflict of interest.

- 1 Gaziano TA, Young CR, Fitzmaurice G, Atwood S, Gaziano JM. Laboratory-based versus non-laboratory-based method for assessment of cardiovascular disease risk: the NHANES I Follow-up Study cohort. *Lancet* 2008; **371**: 923–31.
- 2 World Health Organization. Prevention of cardiovascular disease: guidelines for assessment and management of cardiovascular risk. Aug 24, 2007. http://www.who.int/cardiovascular_diseases/guidelines/Full%20text.pdf (accessed Feb 25, 2008).
- 3 Zhou BF. Effect of body mass index on all-cause mortality and incidence of cardiovascular diseases—report from meta-analysis of prospective studies open optimal cut-off points of body mass index in Chinese adults. *Biomed Environ Sci* 2002; **15**: 245–52.
- 4 Ko GT, Tang JS. Waist circumference and BMI cut-off based on 10-year cardiovascular risk: evidence for “central pre-obesity”. *Obesity (Silver Spring)* 2007; **15**: 2832–39.
- 5 Yusuf S, Hawken S, Öunpuu S, and on behalf of the INTERHEART Study Investigators. Obesity and the risk of myocardial infarction in 27 000 participants from 52 countries: a case-control study. *Lancet* 2005; **366**: 1640–49.
- 6 World Health Organization. Obesity: preventing and managing the global epidemic: a report of a WHO consultation. Geneva: WHO, 2000.
- 7 WHO Regional Office for the Western Pacific, International Association for the Study of Obesity Taskforce. Manila, Philippines: WHO/IASO/IOTF, 2002.
- 8 Chang CJ, Wu CH, Chang CS, et al. Low body mass index but high percent body fat in Taiwanese subjects: implications of obesity cutoffs. *Int J Obes Relat Metab Disord* 2003; **27**: 253–59.
- 9 Deurenberg P, Yap M, van Staveren WA. Body mass index and percent body fat: a meta analysis among different ethnic groups. *Int J Obes Relat Metab Disord* 1998; **22**: 1164–719.
- 10 Mohan V, Sandeep S, Deepa M, Gokulakrishnan K, Datta M, Deepa R. A diabetes risk score helps identify metabolic syndrome and cardiovascular risk in Indians—the Chennai Urban Rural Epidemiology Study (CURES-38). *Diabetes Obes Metab* 2007; **9**: 337–43.
- 11 Ezzati M, Hoorn SV, Rodgers A, Lopez AD, Mathers CD, Murray CJL. Estimates of global and regional potential health gains from reducing multiple major risk factors. *Lancet* 2003; **362**: 271–80.

Maternal deaths and vulnerable migrants

Media coverage of the recent UK Confidential Enquiry into Maternal and Child Health (CEMACH) report¹ focused on the risks associated with obesity, but largely ignored the findings about vulnerable migrants. Maternal mortality is six times higher for black African women and four times higher for black Caribbean women than for white women in the UK. Although some of the causes are understood, there are new factors that warrant further investigation.

Unsatisfactory arrangements for interpretation and lack of awareness of female genital cutting are documented in the report. Five women who were murdered by their partners had the abusive partner as their interpreter. For one woman, late identification of genital cutting led to an unnecessary caesarean section and may have directly contributed to her death. Migration from countries in which the practice

is common has led to increased prevalence of genital cutting among pregnant women in the UK.²

The CEMACH report showed that about 20% of deaths directly or indirectly related to pregnancy were in women with late booking or poor attendance for antenatal care or who had no antenatal care, all of which are associated with a high risk of maternal death. The causes of suboptimum antenatal care are poorly understood. Domestic violence, mental health, and drug and alcohol use were factors identified by CEMACH. The inquiry also highlighted the perennial problem of lack of follow-up when women miss appointments. The National Service Framework for Children, Young People and Maternity Services³ and the implementation strategy, Maternity Matters,⁴ emphasise meeting the individual needs of women, including those who are disadvantaged or from minority groups.

One cause of suboptimum antenatal care that is not addressed in the report is the effect of charging for maternity care. Since 2004, regulations have required hospital trusts to charge women who are not classified as ordinarily resident in the UK for their maternity care.⁵ This group includes refused asylum seekers, trafficked women, and undocumented migrants. Many of these women are not entitled to work or to access state benefits and may be in very difficult situations.^{6,7} Maternity care is classed as immediately necessary care and so cannot be refused for reasons of inability to pay. Although regulations and guidance require maternity care to be available to all women, this is not always the case.

The Joint Committee on Human Rights inquiry into the treatment of asylum seekers⁸ concluded that the arrangements for levying charges on pregnant women and nursing mothers led in many cases to the denial of care to vulnerable women. Trusts have to issue invoices to all women, irrespective of their circumstances. Many women are intimidated by the prospect of incurring a debt of several thousand pounds, which they know they cannot pay. There are reports of women who have been refused care because they are unable to pay in advance or have been deterred from seeking care by rude and aggressive treatment by trusts' Overseas Visitor Managers, including threats to bring in debt collectors before the birth.⁸ The outcomes of these practices include various forms of suboptimum antenatal care and documented cases of women giving birth alone and unattended.⁹

The extent of the problem is unclear because data collection is poor. My organisation, Medact, has identified only one maternity service that has collected data on attendance after women have been referred to an Overseas Visitor Manager to discuss charging, and these data have not been publicly released. The CEMACH reviewers seem uncertain about the immigration status of some of the women who died, suggesting that they may have been incorrectly classified.

One of the maternal deaths investigated by CEMACH was a result of illegal abortion. The woman, who had recently arrived in the UK, was referred for a surgical abortion but died from complications after an unsafe procedure. The reviewer speculated that the reasons for opting for an illegal abortion might have been cultural or coercion. An alternative explanation, which was not explored in the report, might have been that she was asked to pay and was unable to do so. Abortions are



Science Photo Library

not classed as immediately necessary care and can be refused if a woman is unable to pay.

The Home Office is currently considering proposals to extend the charging regimen to primary care, which will restrict access for vulnerable migrants.¹⁰ Because 83% of pregnant women first seek maternity care through their general practitioner,¹¹ these proposals are likely to result in delayed antenatal care or no such care for vulnerable migrants. The Department of Health has not done a health impact assessment on the 2004 regulations, and the possibility of extending the charging regimen to primary care causes concern, particularly because knowledge of the effect on vulnerable groups is poor.¹²

Rosalind Bragg

Reaching Out Project, Medact, London N1 6HT, UK
rosbragg@medact.org

I declare that I have no conflict of interest.

- 1 CEMACH. Saving mother's lives: reviewing maternal deaths to make motherhood safer 2003–2005. December, 2007. <http://www.cemach.org.uk/Programmes/Maternal-and-Perinatal/Maternal-1.aspx> (accessed Jan 14, 2008).
- 2 Dorkenoo E, Morison L, Macfarlane A. A statistical study to estimate the prevalence of female genital mutilation in England and Wales: summary report. 2007. <http://www.forwarduk.org.uk/key-issues/fgm/research> (accessed Jan 14, 2008).
- 3 Department of Health & Department for Education and Skills. Maternity standard, National Service Framework for Children, Young People and Maternity Services. 2004 http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4089101 (accessed Jan 14, 2008).

- 4 Department of Health. Maternity matters: choice, access and continuity of care in a safe service. April 3, 2007. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_073312 (accessed Jan 14, 2008).
- 5 Department of Health. Implementing the overseas visitors hospital charging regulations: guidance for NHS trust hospitals in England. April 21, 2004. http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4080313 (accessed Jan 14, 2008).
- 6 Oxfam and Refugee Council. Poverty and asylum in the UK. 2002 http://www.refugeecouncil.org.uk/NR/rdonlyres/7599496F-2448-4282-9065-540B7B659DDA/0/poverty_jul02.pdf (accessed Jan 14, 2008).
- 7 Southall Black Sisters and Women's Resource Centre. How can I support her? 2006. <http://www.southallblack sisters.org.uk/downloads/HowCanISupportHerResourcePack.pdf> (accessed Jan 14, 2008).
- 8 House of Lords, House of Commons, Joint Committee on Human Rights. The treatment of asylum seekers: tenth report of session 2006–07. Volume 1—report and formal minutes. March 22, 2007. <http://www.publications.parliament.uk/pa/jt200607/jtselect/jtrights/81/81i.pdf> (accessed Jan 14, 2008).
- 9 Kelley N, Stevenson J. First do no harm: denying healthcare to people whose asylum claims have failed. 2006. <http://www.refugeecouncil.org.uk/policy/position/2006/healthcare.htm> (accessed Jan 14, 2008).
- 10 Home Office. Enforcing the rules: a strategy to ensure and enforce compliance with our immigration laws. March, 2007. <http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1188491035757> (accessed Jan 14, 2008).
- 11 Redshaw M, Rowe R, Hockle C, Brocklehurst P. Recorded delivery: a national survey of women's experience of maternity care, 2006. March 2007. <http://www.npeu.ox.ac.uk/recorded-delivery> (accessed Jan 14, 2008).
- 12 Medact. Proposals to exclude overseas visitors from eligibility to free NHS Primary Medical Services: impact on vulnerable migrant groups. 2007. <http://www.medact.org/content/refugees/Briefing%20V1%20agreed.pdf> (accessed Jan 14, 2008).

Prioritisation of routine vaccines: a mistake for the USA

The US system of immunisation during childhood is a complex mix of private-sector and public-sector roles and responsibilities. This system has introduced new vaccines into a schedule that protects children and adolescents from 16 infectious diseases. Frequency of disease is at a record low¹ and vaccination coverage at record highs.² During the past 2 years, an unprecedented number of new, and more expensive, vaccines were recommended for universal use, including: meningococcal conjugate vaccine; tetanus, diphtheria, and acellular pertussis vaccine for adolescents; hepatitis A vaccine; rotavirus vaccine; and human papillomavirus vaccine.

A universal recommendation establishes a medical standard that should be available to all children, but emerging evidence suggests that some children are not receiving new vaccines because of increased costs.³ Mechanisms in the public and private sectors to finance vaccines have become strained to the point that ad-hoc prioritisation of vaccine implementation is occurring throughout the USA,³ particularly in those with private insurance. Prioritisation is noticeable: some advocate explicit prioritisation of vaccines by the type of health insurance held by a child.⁴

About half of US children are financially vulnerable and are covered by the Vaccines for Children entitlement programme that purchases recommended vaccines automatically, thus bypassing the annual federal appropriations process. Introduction of vaccines into the programme is controlled by the Centers for Disease Control and Prevention's Advisory Committee on Immunisation

Practices, which consists of experts in public-health vaccination and from outside government.

The other half of US children are commercially insured and depend on the voluntary inclusion of vaccines into their plan. Although the standard of the insurance industry is to cover all vaccines recommended by the Advisory Committee on Immunisation Practices, about a fifth of children have plans that do not cover the purchase of one or more vaccines. This situation leaves some children who are underinsured for some vaccines but whose parents, if capable, pay for vaccination; alternatively, the state can purchase vaccines through state and federal discretionary funding.

The automatic nature of the Vaccines for Children programme contrasts with discretionary commercial insurance, which creates an environment in which children's access to vaccines depends on insurance status. Discretionary supplemental funding by government can provide some, but not all, vaccines to underinsured children. These financial problems have led to calls for prioritisation of the vaccines that should be available to underinsured children.

However, vaccine prioritisation segregates children on the basis of insurance status and other issues unrelated to health. This situation is unacceptable. In practice most, but not all, children will be entitled to or able to receive all recommended vaccines. This inequality creates problems for children of low, and indirectly, high socioeconomic status. For example, designation of the tetanus, diphtheria, and acellular pertussis vaccine for adolescents as a second-tier vaccine (ie, given only