

## Some countries will not achieve millennium development goals for health by 2015, WHO says

Owen Dyer *London*

The UN's millennium development goals on maternal and child health will not be met unless dozens of countries swiftly create national maternal and child health services with universal access, according to the World Health Organization's 2005 *World Health Report*.

The report, which was published last week to coincide with world health day (7 April), estimates that each year 3.3 million babies are stillborn, more than four million die in their first month of life, and a further 6.6 million children die before the age of five years. The number of women dying each year as a result of pregnancy, abortion, or childbirth is more than half a million, including about 70 000 deaths caused by unsafe abortions.

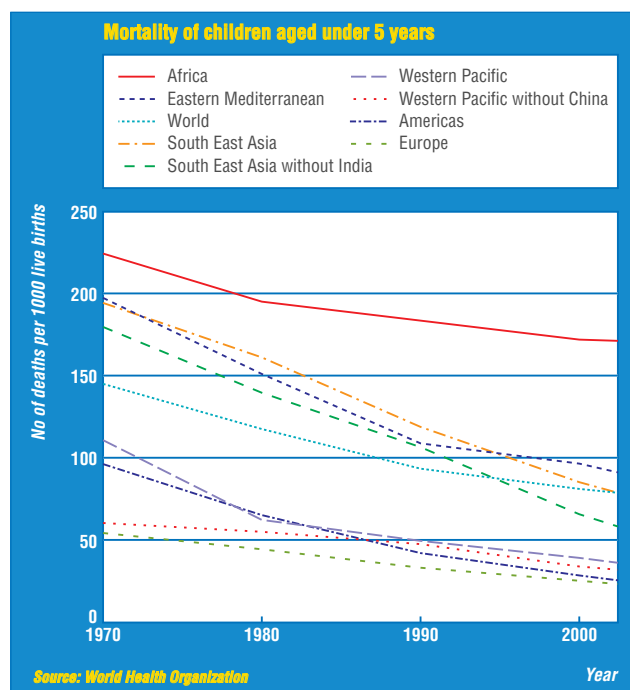
WHO argues that the same formula used by European nations in the early 20th century to reduce maternal mortality has brought dramatic results in Thailand, Sri Lanka, Egypt, and Malaysia. These countries at least halved their maternal mortality in less than 10 years by training and certifying large numbers of midwives and backing them with well equipped regional hospitals.

"It is crucial that the whole package be available and on offer to all, immediately, at every childbirth," conclude the report's authors. "Where universal access is not achieved, positive results are delayed. This explains why the USA lagged so far behind a number of northern European countries in the 1930s."

Dr Gudjón Magnússon, of WHO's programme for reducing disease burden, said: "The evidence shows that partial solutions cannot improve maternal and child health. Success is mainly due to the systematic strengthening of integrated health systems that provide care and support to every mother and child."

The report found, however, that some of the poorest countries would have to more than double their healthcare budgets between now and 2015 to meet the twin millennium development goals of reducing mortality in children aged under five by two thirds and maternal mortality by three quarters from the 1990 levels.

WHO concludes that "reaching all children with a package of essential child health interventions necessary to comply with and even go beyond the MDGs [millennium development goals]



is technically feasible within the next decade."

But it will require an investment of \$52.4bn (£28bn; €40bn) over current expenditure in the 75 countries with the highest child mortality. In the 21 countries with the poorest coverage, the report finds, "current public expenditure on health would have to grow by 27% as of 2006, rising to around 76% in 2015."

Achieving universal access to maternal and neonatal care is no longer feasible by 2015, the report concludes, and the millennium development goal for maternal health is out of

reach in some countries. But "realistic" scenarios could provide access to a full package of first level and back up care for 101 million mothers in 75 countries at a cost of about \$39bn.

To meet this less ambitious goal in the 20 countries with the fewest perinatal services, public spending on health would have to increase by 43% over the next decade. □

*The World Health Report 2005: Make Every Mother and Child Count* is available at [www.who.int/whr/2005/en/index.html](http://www.who.int/whr/2005/en/index.html)

## Scientists develop prototype of more sensitive test for cancer

Geoff Watts *London*

A new technology called "optical stretching" promises a simpler and more effective method of distinguishing cancer cells from their healthy counterparts.

Speaking this week at a meeting organised in Warwick by the Institute of Physics, Professor Josef Käs of the University of Leipzig described how he and his collaborator, Dr Jochen

Guck, have used the technology to develop an exceptionally sensitive test for cancer.

Biologists have long known that as healthy cells undergo transformation into tumour cells their filamentous internal scaffolding or cytoskeleton becomes softer and more yielding. For this reason cancer cells are more easily deformed. Optical stretching offers a way of measuring the deformation that cells undergo when placed within narrow but powerful light beams.

The technique is a variant of what's known as the "optical tweezers." This instrument comprises a focused beam of laser light in which it is possible to trap objects the size of cells and then manipulate them. The optical stretcher invented by

Professor Käs and his colleagues is a variant of this device.

Instead of a single focused laser beam they use two unfocused beams that are generated towards one another. Forces in the region where the beams overlap will not only trap any cell within it but also deform that cell.

Turning up the power will cause further deformation—or stretching—along the axis of the beams. The more deformable the cell, the more it stretches.

Professor Käs concedes that the very notion of optical stretching is counterintuitive. "In everyday life we are not used to getting pushed around by sunlight," he jokes.

The machine works by passing a stream of cells, one at a

time, through the laser beams. Each is trapped and held for just long enough—as little as one thousandth of a second—to allow the stretch to be measured. As few as 50 cells taken with a needle biopsy are sufficient to distinguish healthy from malignant tissue.

The equipment has already proved itself in preclinical testing. "We have a prototype that's simple enough for a technician to use," said Professor Käs. The current cost is around €30 000 (£20 600; \$39 000), but industrial manufacturing—if the inventors can find a major investor—should reduce this figure. Then they hope to do the full scale clinical trials needed to prove the value of the technology. □