Ready-to-use therapeutic foods for malnutrition

Médecins Sans Frontières has just released its ninth annual list, for 2006, of the top ten under-reported humanitarian stories. Eight of the ten arose from conflict situations, but two are of more direct clinical relevance: malnutrition and tuberculosis. The three-part Lancet series on child development in developing countries, which ends today, has much to say about malnutrition, and its sister evil, poverty.

The scale of the problem is huge. In a report last September in Food and Nutrition Bulletin, Steve Collins and colleagues estimated that, annually, 1·7 million children die because of severe acute malnutrition and 3·6 million die because of moderate acute malnutrition. The latest thinking to combat malnutrition is to move into community therapeutic feeding, which can cover larger populations than hospital-based programmes, does not tie up sometimes sparse hospital resources, and involves local communities directly.

The Collins report is an overview of more than 23 000 individuals with severe acute malnutrition treated in the community in Malawi, Ethiopia, and Sudan in 2000-05. This community-based therapeutic care provides outpatient visits for acute malnutrition, and admission to hospital first if the individual has serious complications. The feeding element involves use of ready-to-use therapeutic foods (RUTF), which are lipid-based pastes that are energy dense, resist bacterial contamination, and need no cooking. They usually contain milk powder, sugar, vegetable oil, peanut butter, vitamins, and minerals. In the three countries studied, coverage rates were 73% and almost 80% of individuals recovered. 73% of the severely malnourished children were treated solely in the community. The cost per year of life gained was US$12–132.

Community-based programmes with RUTF seem to be the way forward. But milk powder often has to be imported, and peanuts can be contaminated with aflatoxin. So alternative recipes that use locally available grains and legumes are being field tested. Local production will reduce the costs of RUTF, and provide an income for the local manufacturer and farmers.

Chimera research should be lightly regulated, not banned

There is nothing the UK tabloid newspapers like more than a good pun. So when the Human Fertilisation and Embryology Authority (HFEA) was asked to decide whether to allow researchers to create hybrid embryos, in which human DNA is inserted into a hollowed-out unfertilised animal egg, The Sun’s editors simply could not help themselves. “Mootants” ran the headline. “BOFFINS want to fuse human stem cells with COW eggs—to try to find a cure for Parkinson’s.” The Daily Star’s staff had just as much fun: “Frankenbunny: hide those carrots—British scientists are on the brink of creating a bunny monster.”

With such media onslaught, the HFEA did well not to succumb to pressure from the tabloids when, on Jan 11, it decided to defer its judgment until it has “built up a proper body of evidence”. This means that the applications from the two UK research groups to use human-animal hybrid embryos to create a plentiful supply of human embryonic stem cells will be reconsidered in the autumn. This delay is probably wise in the long run, especially since the UK government recently published a review of the Human Fertilisation and Embryology Act with a view to updating it in parliament in 2008.

However, while it is entirely justifiable to be cautious when regulating new biotechnology, the research community must continue to remind the UK government not to over-regulate scientists’ activities. The UK is leading the way in stem-cell research, largely because of strict regulation in the USA and the fraud scandal that set back South Korean scientists in 2005. That advantage could quickly be lost, however.

Most members of the UK public are likely to see the benefit of creating human-animal chimera embryos for purely research purposes once the arguments for the research are fully explained. However, there is a danger that the consultation process will be dominated by those who believe that embryonic research is morally wrong. It is essential that scientists educate the public themselves and insist that the consultation process uses scientifically valid sampling techniques. If they do not, they should not be surprised if the mootants and frankenbunnies make a dramatic reappearance.