

New report explains how genome research is transforming the world's prospects for health

WHO has just published a major report entitled *Genomics and world health*. It explains how genetic research can lead to major advances in the coming years in the fight against disease, and reviews the ethical questions this new branch of medicine brings with it. They range from the use of DNA to select the sex of children to the need to ensure that all countries benefit from the medical advances expected. An international team of 14 eminent doctors, researchers and ethicists spent the past year preparing the report. The lead writer is Sir David Weatherall, of the Institute of Molecular Medicine of Oxford University. "This is the first ever report to put genomic research in a global perspective," he said. "The Report anticipates how the global community could use genetics to attack the unfinished agenda of infectious diseases such as malaria, TB and HIV/AIDS that are killing so many in the developing world, and eventually the diseases that are crippling the health care systems of all countries, like heart disease, diabetes and cancer."

DNA research mentioned in the report includes work on engineering a mosquito that cannot carry the malaria parasite, antimalarials that are effective against multidrug-resistant parasites, two new types of vaccine against TB, a meningitis B vaccine being developed in Cuba, clinical trials in Nairobi and Oxford on a DNA-based AIDS vaccine candidate, and pharmacogenetics to identify those who will respond well to certain therapeutics such as anti-HIV drugs in West Africa.

The report advocates setting up a global health research fund to accelerate the work of turning these and a large number of other emerging possibilities into realities. Free downloading and information from www.who.int/genomics

To beat resistance to anti-malarials switch to combination medicines

An estimated 800 000 children die of malaria each year, and this number may be rising because of drug resistance. WHO is urging countries to switch to a new type of combination therapy based on artemisinin wherever there is strong evidence that conventional treatment is not working. The cheapest and most readily available antimalarials are becoming ineffective in many parts of Africa. The new artemisinin-based combination therapies (ACTs) kill the parasite quickly, enabling the patient to recover with very few side-effects. One of these combinations — of artemether and lumefantrine — has just been added to WHO's Essential Medicines List. Known as Coartem, it provides an artemisinin and a non-artemisinin compound in a single tablet. WHO also recommends other combinations of artemisinin compounds with medicines currently being used such as amodiaquine or sulfadoxine-pyrimethamine, where these are still effective.

For decades, chloroquine has been the best-known treatment for malaria and it has saved millions of lives. However, the malaria parasite has become increasingly resistant to it in recent years, especially in eastern, central and southern Africa. As a result, many countries have switched to sulfadoxine-pyrimethamine, known as SP or Fansidar, but resistance to SP is also spreading. WHO recommends that countries start changing over to ACTs when resistance levels exceed 15%. More information from Iain Simpson, Communicable Diseases, email: simpsoni@who.int.

Mental health: the needs dwarf the resources

Mental, neurological and behavioural disorders are now thought to account for 12.3% of the global disease burden but most countries give low priority to this problem, according to the latest information. Published by WHO in *Atlas: country profiles on mental health*

resources and at URL: <http://mh-atlas.ic.gc.ca/>, the data indicate that 40% of countries have no mental health policy, 25% have no legislation in the field of mental health, and about a third of them spend less than 1% of their health budget on activities related to mental health. In many parts of Africa and Asia there is less than one psychiatrist per million population.

Safety of bread and potatoes to be determined soon

WHO has set up a consultation for 25–27 June to determine the public health risk of acrylamide in food. This follows the announcement by the Swedish National Food Administration (NFA) on 24 April that acrylamide, which is known to be carcinogenic in animals and thought to be so in humans, had been found at high levels in starch foods cooked at high temperatures such as potatoes and bread. Previously it had been thought that human exposure to this substance was mainly through drinking-water and certain occupations.

The Swedish NFA, in announcing this finding by researchers at Stockholm University, said: "Present knowledge does not allow for a balanced analysis of risks and benefits of staple foods containing acrylamide. The Swedish NFA can currently only issue general advice regarding the risk management of acrylamide to the food industry and consumers ... More knowledge is needed before the dietary advice issued by the NFA can be changed." None of the results announced to date would cause WHO to change its basic dietary advice either. Topics under consideration for the consultation in June include: the comparative uptake levels of acrylamide in food and water; the risk of harmful effects in humans; epidemiological data; comparisons between countries; the possible effects of different food preparation methods; and guidance for reducing the risk of exposure.

Experts wishing to contribute information to the consultation or obtain further information about it can contact Jorgen Schlundt at Food Safety, WHO, Geneva, email schlundtj@who.int ■