The government is acutely aware of the importance of keeping the public on board. Without the trust and confidence of the public, introducing genetics into mainstream NHS activities could be a high risk enterprise. Ministerial fingers were burned by the fiasco surrounding the introduction of genetically modified foods and crops, and the Department of Health is determined that this must not happen with the introduction of genetic medicine.

Striking the balance between unrealistic expectations and unfounded fears will be vital. Genetics is not going to hit the NHS like a tidal wave. Rather it will be like rising damp that gradually permeates almost every aspect of health care. To sustain the public's confidence, the white paper proposes a strengthening of regulations. A new law will make it a criminal offence to test a person's DNA without their consent. The police and courts will have special privileges in this area. The government will think about the best way of preventing unfair genetic discrimination, especially in areas such as insurance and employment, but no specific legislation is proposed.

One controversial suggestion is that babies could be screened at birth to produce "a comprehensive map of their key genetic markers, or even their entire genome." Leaving aside the thorny issue of how a newborn can consent to genetic testing, one wonders why a DNA sample taken at birth is any more useful than one taken later in life. The Human Genetics Commission (whose work provided many of the ideas in the white paper)[8] and the National Screening Committee have been asked to consider this proposal and report by the end of 2004.

What will the white paper mean for ordinary members of the British public? For individuals and families affected by conditions caused by chromosomal abnormalities and mutations in single genes, there will be more genetic counsellors, more laboratory staff and equipment, and more and faster genetic tests. Within three years, NHS laboratories should be able to provide a 21st century service: prenatal tests will be available in days, and complex searches for mutations will take eight weeks (currently they sometimes take many months).

What about the 95% of people who do not have diseases caused by single genes? The white paper flirts with the prospect of tests that will predict susceptibility to common diseases, such as cancer and heart disease, but there are no promises of when, if ever, these will become a reality. Pharmacogenetics—the ability to use genetic characteristics to choose appropriate drugs for patients—is said to be coming soon. The white paper does not mention how general practitioners will fit a genetic test into a consultation lasting seven minutes. A few case histories of patients who might benefit from the new genetics are scattered through the white paper, but for those of us who do not metabolise warfarin unusually slowly and do not have maturity onset diabetes of the young, the practical benefits seem a long way down the road.

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Water, sanitation, and hygiene at Kyoto

Handwashing and sanitation need to be marketed as if they were consumer products

When John Snow removed the handle of the Broad Street pump in London's Soho in 1854, he took his place in history as the discoverer of the mode of transmission of cholera and the father of epidemiology. But were Snow alive today he would be horrified to hear that we still only apply the benefits of his insights to the richest half of humanity and that, as a result, over 2 million children still die each year from diarrhoeal diseases.[1] He would also be amazed to find that our understanding of diarrhoeal diseases and how to prevent them has advanced very little in the century and a half since he wrote his famous paper.[2] One of the greatest failures of the last century has undoubtedly been the failure to lay the foundation stones of public health in the developing world—hygiene, sanitation, and water supply. Did the Third World Water Forum, held in Kyoto in March 2003, offer any new hope for the billions still "waiting for the toilet?"

Kyoto was important because it marked a turning point in thinking about hygiene, sanitation, and water. Of the three, water has always had the lion's share of both the attention and the resources. However, politicians are finally coming to realise that hygiene and sanitation are at least as important. The table summarises the results of reviews of the impact of improved water, sanitation, and hygiene on diarrhoeal diseases. These results imply that improving the quality of water supplies cuts the risk of diarrhoea by only about 16% (although it has other benefits) and making water more available reduces the risk by 20%. Installing adequate facilities to dispose of bodily excretions and

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Effectiveness of specific interventions against risk of diarrhoeal disease

Intervention	Reduction in diarrhoea risk (%)
Improved water quality[3]	16
Improved water quantity[3]	20
Sanitation[3]	36
Hygiene education[4]	35
Handwashing with soap[5]	47

promoting hygiene, however, are twice as effective. A recent systematic review of the impact of washing hands with soap shows that this specific practice may be almost three times as effective as improving water quality, cutting the risk of diarrhoea by 47%.

At Kyoto ministers accepted that they should no longer concentrate on water alone but should also tackle hygiene and toilets. They declared that governments should develop strategies to halve the proportion of the world's population without sanitation by 2015 and to focus on basic hygiene, including hand washing. International aid to the tune of $5bn (£3bn; €4bn) a year is available to help, and at Kyoto, the World Water Supply and Sanitation Collaborative Council called for this sum to be doubled. Even with current levels of funding much can be achieved, provided governments do make sanitation and hygiene a priority.

However, because research into the diarrhoeal diseases has been neglected for so long, many basic pieces of knowledge about these issues are missing. We still do not know the relative importance of human and animal faeces in disease transmission, nor do we know whether fingers, food, flies, or fomites are the most important vectors of infection.[6] We do not know the best strategies for preventing viral diarrhoeas, and we do not even know what agents are causing diarrhoea in over half of cases.[7] Most worryingly of all, we still do not know which strategies are most effective in encouraging people to install toilets and to adopt new hygiene behaviours, although we have some ideas.

One promising strategy is to market sanitation and handwashing as if they were consumer products like cars or shampoo. Consumers see the building of a toilet as a home improvement not as a health intervention.[8] Equally they use soap to make hands look, feel, and smell good, not to prevent sickness.[9] Public money could be spent on marketing hygiene and toilets, thus generating demand that can then be met by the private sector. The private sector also knows how to generate behaviour change through marketing. If consumer demand for hygiene and toilets can be stimulated with the help of the private sector, public funds can be liberated to support public infrastructure and to help the very poorest who cannot afford to adopt new technologies. This approach is being tested in six countries, where public-private partnerships between soap companies, governments, and agencies such as the World Bank aim to increase rates of handwashing with soap massively (www.globalhandwashing.org).

Research is needed on all fronts in hygiene, sanitation, and prevention of diarrhoea, and needs to be done where the diarrhoea is. Politicians at Kyoto committed themselves to the local ownership of solutions but did not consider how public health and engineering departments in universities in developing countries can get the resources they need, and to find solutions directed at needs in their own countries.

Hygiene, sanitation, and water for all still remain among the grand challenges for public health in the 21st century. The Third World Water Forum was a necessary, but far from sufficient, step along the way towards completing John Snow's unfinished agenda.

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Managing agitation and aggression after head injury

Minimum use of drugs and early care in rehabilitation units are recommended

Too many patients recovering from a head injury on medical and surgical wards across the United Kingdom are being given too much haloperidol. This is a view voiced by members of the UK Brain Injury Psychiatrists group, who are aware that drugs to treat mental disorders are often given to patients after head injury,[1] though these patients are particularly vulnerable to their side effects. For example, haloperidol, is usually given to manage agitation, can hinder recovery, and its side effects include motor restlessness (akithisia) and increased confusion.[2] There is a danger of the treatment chasing its own tail.

Although haloperidol may be quite appropriate for the management of acute agitation or aggression if the problem persists for more than one or two days, then "as required" drugs should be stopped. A review of the patient, if possible with the help of a liaison psychiatrist,[3] will be needed before alternative treatment is started.

It is usual to distinguish agitation, defined as disturbed behaviour as a result of overactivity, from

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