

Journal Scan

How New Technologies Will Transform Medicine In The Future

The impact on healthcare of new and proposed medical devices, technologies and pharmaceuticals was thoroughly debated in a special “Global Theme Issue” on the topic in November 1999. Forty-two medical journals participated ranging from *Australian Family Physician*, *British Medical Journal* and *Canadian Medical Association Journal* through the *Hong Kong Practitioner*, the *Icelandic* and *Irish Medical Journals* to the *Scientific Medical Journal of Egypt*, *South African Medical Journal* and *Swiss Medical Weekly*.

HIGHLIGHTS INCLUDE:

TECHNOLOGIES OF THE FUTURE?

- Soon, diabetic patients will wear a monitoring device on their wrist which checks glucose levels and raises an alarm when levels are too high or low.
- Ultimately, diabetes sufferers will have a glucose monitoring sensor implanted under the skin and an internal insulin reservoir that automatically adjusts insulin doses.
- New forms of Magnetic Resonance Imaging (MRI) will detect dyslexia, attention deficit disorder, schizophrenia and manic depression.
- Toilets will analyse urine samples and automatically send a report to a user's doctor if necessary.
- Radiosurgery in the treatment of brain tumours, cerebral vascular malformations, Parkinson's disease and epilepsy will be developed.
- Minimally invasive hi-tech surgery will become the norm.
- Robots will be deployed in hospitals, running central supply services, filling requests and orders in the hospital pharmacy and carrying out a range of tasks.
- Xenotransplantation will be available on a large-scale by the end of the coming decade.
- A biochip photosensor will be implanted in the eye as an artificial retina for patients with macular degeneration.
- Electronic noses will detect and differentiate the odours of growing bacteria and instantly identify the bacteria causing ear, nose and throat infections.
- Auditory sensor implants that bypass non-functioning parts of the hearing mechanism will help the deaf to hear.
- New wheelchairs will enable users to go up and down stairs; reach for items on high shelves and talk to others who are standing at eye level.
- In-patients will be implanted with sensors when they are admitted, to do 40+ lab tests.

THE FUTURE OF GENETICS?

- Tensions between raw scientific optimism and a desire to avoid potential adverse social and ethical consequences will affect the pace of development in mapping the human genome.
- Genetic testing and gene manipulation could transform medicine - it will no longer be “diagnosis and treatment” but “prediction and prevention.”
- Future generations will have the heavy responsibility of knowing their genetic make-up.
- Eugenics isn't all bad. So long as no force or coercion is involved, why shouldn't parents choose the eye colour of their child or create a fetus that will have the propensity for mathematics?

THE IMPACT OF INFORMATICS?

- Making medical decisions has become too complex and time consuming for the unaided human mind to accomplish reliably. Software tools are needed to help doctors negotiate their way through the enormous body of medical knowledge.
- Consultations with clinicians based overseas will become the norm, either by video-conferencing or via email.
- Patients who have an ongoing illness and have a routine query about their condition or treatment will be able to email their doctor instead of going to see him/her.

BRINGING NEW TECHNOLOGIES INTO PRACTICE?

- New healthcare technologies are becoming more numerous - but how do we ascertain how effective they are, which patients will benefit the most and how healthcare systems will pay for them?
- Before we expend yet more resources in the pursuit of new technologies, medicine should adopt new methods to make better use of the resources that we already have. **KQ**

For a complete list of journals and links to websites see: <http://jama.ama-assn.org/info/links.html>.