

‘What will doctors be doing by 2050?’

By

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What will doctors be doing by 2050?

- **Changing demography of population and partnership of doctor with patient**
- **Doctors use of technology and research: stem cells and Human Genome**
- **Wider use of computers in surgery and computer-based diagnoses**
- **Distinction of roles within the NHS hierarchy**

- **Establishment of a Global Hospital coupled with an international community**

The ever-evolving field of Medicine provides much scope for new perspectives and a plethora of advances, both in medical technology and in diagnosis. The year 2050 poses almost a 50-year progression of time and it will be interesting to know what the outline of doctors will be in the next half-century as the nature of diseases seen has changed markedly in the last 50 years. Formerly, infectious diseases were common and due to the manner in which we have developed and vaccination measures to prevent the spread of infections through a community, the complexion of diseases has altered. The diseases seen by doctors at present are those associated with lifestyle, namely heart disease, diabetes, stress-related illness and trauma that tie in with metabolic processes in the body. Thus, it may suffice to say that the nature of most common diseases may change by 2050 and doctors may be focussing more closely on a different range of conditions at that time. The year 2050 is not extremely distant, however the possibilities and outcomes of what doctors will be doing is vast.

Further, the demography of the population is changing and will have a considerable effect on what doctors will be doing by 2050, as there is a greater life expectancy hence; people are living longer due to enhanced medical care and improvements to the health care system. Thus, a greater percentage of the population will be older, affecting the way in which doctors care for patients. The population change is significant in what doctors will be doing by 2050 as it shall differ from the current scheme, as doctors will be focussing on treating diseases widespread in elderly patients as a regular feature of public health care.

By 2050, doctors will be involved in schemes that allow patients to understand their conditions in more detail. In enlisting patients in educational medicine and treatment, they will be able to further enhance the care of the doctor by working synergistically in areas of their lifestyle, such as diet or exercise which will aid their condition. This will cause the patient to understand his or her condition better and know how to care for themselves through their lifestyle choices, greatly improving their health. The consultations that doctors conduct with the patient will be of a more interactive format by 2050. The doctor will take on a role that forms a partnership with the patient, which will serve to help the patient feel in control of their progress. Further, by 2050, there will be increased use of online health facilities such as NHS Direct in which the patient can recognise their symptoms at an early stage, preventing extensive illness, and obtaining treatment. This change in patient care will cause additional doctors to devote more time into providing information for online help schemes and will change what doctors will be doing by 2050.

The development of medicine will involve changes in what doctors will be doing in the future, due to the influence of technology. Presently, gene technology plays an important role in the synthesis of important pharmaceuticals using enzyme-controlled reactions. This application of medical technology has been successful in enabling doctors to

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manage diseases where a specific chemical is lacking, for example diabetes and the role of insulin.

Far more, stem cell research is a rapidly advancing field of science and is key to the way in which conditions are treated. In the future, doctors may be advancing in this sphere of modern science and generate results which are central to improving knowledge about its role in the care of patients. Embryonic stem cells are vital to this area of research as they have the ability to differentiate and develop into any type of tissue in the body when triggered by conditions in a culture medium. Stem cells provide a means of enabling treatment of diseases and injuries, which require regenerative medicine to come into action.

The application of stem cells is vast and for future medicine and may be used to reconstitute tissues and organs that have been damaged due to accidents or diseases. This will eliminate the issue posed by the shortage of organ donors and will provide opportunities for treatment and organ replacement. Doctors will be able to perform procedures involving organ transplants, owing to stem cells in the year 2050, allowing legislation and general agreement. The applications of results from stem cell research will provide doctors with an avenue of treatment that they can follow in order to aid patients in requirement of organ grafts, more swiftly in 50 years time. Furthermore, doctors are examining the valuable role of stem cells in the treatment of spinal injuries, for instance, the cells may be used to synthesise connective tissue in the spinal cord and allow people with recent paralysis to regain control and movement. In 2050, this idea may be manifested as an option for treatment by doctors and could be extended to those with long-term conditions.

Computers play a central role as a tool in the medical profession. At present, computerised laboratory links are increasingly used in hospitals for the attainment of blood test results in a short period of time. This allows immediate investigations to be carried out by doctors with feedback that enables them to act more quickly and diagnose patients promptly. This system may be extended throughout the hospital and by 2050; there will be paper-less hospitals and general practices seen more widely. In paper-less hospitals, patient test results, history and current medication will be stored on computers. This offers simple access for doctors to patient information and serves to be a format that is easily transferable between doctors, making the patient referral process more efficient. A doctor will be able to send details of a patient to another doctor and the latter will receive a full past medical history and treatment plan readily. In the future, doctors will be accessing patient information more easily from the computer system, avoiding the delay that paperwork can cause and enabling them to plan a course of action more effectively.

Moreover, by 2050 doctors will have more aids for diagnosis in the form of computer-based diagnoses. This would consist of a computer database holding medical data about a range of conditions. The patient results would be inputted into the database and the computer will generate a diagnosis for the patient. Computer-based diagnoses may be used in the future as a means of confirming the condition of a patient. This design may

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instigate the removal of doctors, as the diagnosis is carried out by a computer and can be run by a member of medical staff. However, the computer cannot fully replace the mind and essential thought process of a doctor and patients need a healing figure as seen in a doctor, hence this will serve as an aid to current medical practice.

Furthermore, doctors will be using enhanced computer programming and robots in surgery by 2050. Doctors will use robots in order to carry out precise procedures, where human error is significant to the outcome. For example, in the matter of eye surgery, a robotic device may be used in order to make a specific depth of incision in the eye. The use of these devices will enable the doctor to carry out complicated operations on the patient to a high standard with minimal margin for error. Henceforth, doctors may be drawn on this area of medicine coupled with technology in order to present a high level of care to the patient.

By 2050, the NHS hierarchy including the roles of the members of staff may vary from the current outline. Nurse practitioners being highly trained will take over a number of minor procedures from doctors, making it possible for them to draw upon other areas of patient care. Consultants will have a more educational position in conjunction with junior doctors, passing on their body of knowledge and encompassing a mentoring role. The current training for doctors entails an intercalated science degree with research, which will have an impact on future doctors as they shall have a broad outlook on the field of science as a whole and its applications to medical practice. Doctors may also diversify into additional specialised branches due to emphasis on varied aspects of medicine for example, specialities specifically related to using results from the Human Genome, coupled with gene therapy.

In the future, there will be a Global Hospital established by doctors resulting from greater international association and understanding of medical advances that affect the whole medical world. Doctors will communicate ever more with their international colleagues and shall work symbiotically with findings from other countries in order to move forward together. In this idea of an international framework, doctors will have conferences in order to discuss topics, whereby they can continually improve their own knowledge and provide insight into the work of other countries. This international union will enable the development of new techniques, helping to improve the care of the patient. By the year 2050, doctors will be actively involved in international programmes in training doctors and learning in order to come together and evolve mutually. The Global Hospital shall be fundamental to areas of research such as stem cells, as it shall draw together the results from other countries and formulate cogent conclusions in order to help attain an available treatment to patients worldwide, more rapidly. Moreover, this transnational hospital shall build an international community of doctors with government funding providing leadership, which is a positive step forward for future advances in medicine.

The Human Genome Project is a facet of science in which doctors may work in the future, with researchers in order to find new solutions to genetic disorders. Doctors may come together with those working on the Human Genome in order to provide medical knowledge of conditions and find a means alleviating the condition of a patient. In the

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case of cystic fibrosis, the defective gene can be examined and the correct gene synthesised, the patient can then inhale the new gene that will produce normal mucus. Treatments involving the study of the patient's genetic constitution may be available to a greater proportion of patients in the future with the involvement of doctors in gene therapy by 2050.

Far more, due to the increased development of medicine in the future, the ethical issues will need to be addressed by those in the medical profession. By 2050, doctors shall be involved in the forefront of ethical debate, as the treatments available and research namely, embryology will carry ethical concerns. Hence, doctors must be more aware of these issues due to their implications.

In all, what doctors will be doing in medicine will move forwards by 2050, with the advancement of technology in both research and surgery providing opportunities for people in the future, which may not be possible at the moment. The role of robots and programmed surgical devices employed by doctors for precise procedures will provide a high level of care and reduce the recovery time of the patient. Moreover, the educational role of senior doctors towards junior doctors will be a development in the future. The idea of a Global Hospital founded by doctors is promising in order to provide a central channel of ideas. Further, people will always require a healing figure, observed in the nature of the doctor, as this is strongly associated with medicine and its practice. The fundamental role of doctors is to care for the patient, which will remain the primary aim of a doctor, as this is an essential pillar of medicine. The promise of the future will enhance this aim by way of new techniques and practices delivered by doctors.

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References

- The Guardian Online: <http://www.guardian.co.uk>
- The Times Online: <http://www.timesonline.co.uk/>
- New Scientist: <http://www.newscientist.com/hottopics/cloning/cloning.jsp>
- The Human Genome Research Institute: www.nhgri.nih.gov