

SCTS REPORT FOR THE COMMISSION ON THE FUTURE OF SURGERY

SURGICAL INNOVATIONS

5 years

All forms of cardiothoracic surgery will become increasingly less invasive.

10 years

Operations will increasingly use robotics. It is likely that artificial intelligence will increasingly be used to 'drive' the robot. It will be possible for a surgeon to perform an operation across the world from their 'office'.

3D printing from scans will allow surgeons to practise specific operations.

15 to 20 years

It is likely that artificial intelligence will increasingly be used to 'drive' the robot. Ultimately machine reading of 'scans' will allow artificial intelligence powered robots to 'learn' a specific operation on a specific patient.

GENETICS AND GENOMICS

Developments are likely to have implications for cardiac and thoracic surgery, in the 15 to 20 year time frame may reduce the need for surgery for some conditions such as lung cancer.

TISSUE ENGINEERING / REGENERATIVE MEDICINE

Both could have a profound impact on the need for cardiopulmonary transplantation.

PATIENTS CHOICE

Patients will increasingly expect less invasive surgery.

TRAINING ISSUES

With operations increasingly carried out by less invasive techniques the ability to learn and / or maintain the skills for 'traditional' open surgery.

ETHICAL ISSUES

Operations being carried out by machine driven robots.

Remote operating.