

Surgical robots set to move into three new areas, says Sagentia

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Sagentia, the global product development company, says surgical robotics will increasingly have a role to play in three key areas: minimally-invasive surgery, specialist functional applications and finally in patient management, combined with artificial intelligence.

Continuum and snake robots will provide support for less invasive surgical techniques with their ability to navigate tortuous paths through the body and deliver visualisation and instrumentation. Needlescopic robots buck the trend of single access entry with multiple ports so small they inflict little pain and virtually no scarring.

Smaller less complex robotic systems which excel at specific functions will also take centre stage, creating a greater diversity of surgical robots. Examples are robots for ENT microsurgery, cochlear ear implantation, MRI guided biopsy and vitreoretinal eye surgery. However, Sagentia believes that to be commercially successful such systems will need to find economies of scale from new and innovative applications.

Paul Wilkins, Managing Director, Medical at Sagentia comments: “The use of specialist robots in eye surgery has opened up new opportunities. Retinal vein catheterisation for example, requires tremor free microneedle placement for a period of 10 minutes, which is made possible by the availability of a specialised robot”.

Finally Sagentia expects we will see robotics play a wider role in medical settings as the technologies are combined with other developments such as artificial intelligence (AI). AI is often cited as the enabler for fully autonomous robots which are able to make decisions and perform interventions without the control of a healthcare professional.

This may not be realistic, argues Wilkins: “It seems sensible that autonomous robots will first be introduced for medical activities which involve less risk to the patient than surgery or in cases where existing data is a good predictor of future outcomes. Early examples may be

'meet and greet' robots taking on basic patient management tasks and then more complex tasks, such as triage. We should therefore look to the consumer robotics industry, as well as the existing medical robotics community, for wider medical robotics innovations”.

Sagentia sponsored the 10th anniversary of the Hamlyn Symposium on Medical Robotics which took place last month.

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More information on Sagentia is available at: <https://www.sagentia.com/markets/#medical>

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About Sagentia

Sagentia is a global science, product and technology development company. Our mission is to help companies maximise the value of their investments in R&D. We partner with clients in the consumer, industrial, medical and oil & gas sectors to help them understand the technology and market landscape, decide their future strategy, solve the complex science and technology challenges and deliver commercially successful products.

Sagentia employs over 150 scientists, engineers and market experts and is a Science Group company. Science Group provides independent advisory and leading-edge product development services focused on science and technology initiatives. It has seven offices globally, two UK-based dedicated R&D innovation centres and more than 350 employees. Other Science Group companies include OTM Consulting, Oakland Innovation and Leatherhead Food Research.

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