"Cobots have immense potential to enhance Minimally Invasive Surgery"

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Hariharan Subramanian, Managing Director of Siemens Healthcare, says that there are a few key areas within the Indian healthcare landscape where the power of medical cobots holds significant potential. BioSpectrum India interacted with Subramanian to know more about cobots' role in advancing surgical procedures.

Siemens Healthineers already has advanced surgical robotics systems. How do you envision cobots integrating with existing technologies to enhance surgical precision and collaboration within Indian operating rooms?

In the Indian scenario, the increasing population needs more support from technology to be able to get timely access to quality health care. The medical professionals rely on advanced technologies to deliver better results for their patients.

For instance, Siemens Healthineers solutions for cardiovascular interventions with robotic assistance is an example of technological intervention in surgical operating rooms. The robotic cardiovascular interventions can aid significantly by contributing to cardiovascular medical conditions like heart diseases, where the ideal treatment includes complex procedures in the coronary arteries by specialized medical professionals. The smart procedural automation can enable performing complex interventional cases in a shorter time, with precision, and with better clinical outcomes.

Could you highlight some specific areas where Siemens Healthineers sees the greatest potential for medical cobot innovation within the Indian healthcare landscape?

Siemens Healthineers identifies a few key areas within the Indian healthcare landscape where the power of medical cobots holds significant potential such as better access, improved outcomes, and standardization.

Cobots have immense potential to enhance Minimally Invasive Surgery (MIS) procedures by improving precision and enabling surgeons to perform intricate tasks through smaller incisions. This can lead to reduced patient trauma, quicker recovery times, and enhanced surgical outcomes.

Given India's diverse geography and uneven healthcare distribution, cobots can facilitate remote healthcare access by allowing specialists to remotely guide and assist healthcare providers in underserved areas. This can enhance access to quality healthcare services across the country.

Cobots can revolutionize diagnostic imaging processes by optimizing workflow efficiency and ensuring accurate imaging results. They can assist radiologists in patient positioning, optimizing scan parameters, and enhancing image quality, ultimately leading to more accurate diagnoses and treatment planning.

In the realm of rehabilitation and therapy, cobots can assist physiotherapists in delivering personalized rehabilitation programs to patients with mobility impairments. They can provide support during exercises, track progress, and adjust therapy plans, thereby facilitating faster recovery and improved functional outcomes.

The cobots can make diagnosis effective and surgeries less invasive, support remote healthcare to bridge urban-rural disparities, and assist in personalized rehabilitation programs. Furthermore, guiding healthcare workers with patient tasks, offers valuable guidance and training, particularly in resource-constrained areas.

What are some infrastructure or workforce skill development challenges you foresee in the broad adoption of cobots within the Indian medical field? How is Siemens Healthineers positioned to address these challenges?

Siemens Healthineers acknowledges a multitude of challenges hindering the widespread adoption of cobots in Indian healthcare. These challenges encompass various facets, such as infrastructure limitations and deficiencies in workforce skill sets, which collectively present formidable obstacles.

We believe that pioneering some of the best medical technology solutions will help in bridging these challenges. Via our products and solutions, we aim to make minimally invasive treatment possible by using high-quality imaging before and during medical interventions, also complemented by protection, precision, and standardization through robotic-assisted interventions.

India boasts a strong technology sector. Does Siemens Healthineers foresee collaborations with Indian startups or research institutes to advance cobot development specifically tailored to the local market?

We believe that we need to co-create an ecosystem of innovation where patient centricity is the key. A few of our partnerships are a testimony to our focus on research via collaborations with startups and technology-driven associations.

In September 2022, Siemens Healthineers announced strategic partnerships with HealthCare Global Enterprises, Narayana Health, and IISc as part of its strategy to make India an innovation centre for its global operations.

The partnerships will focus on fighting the most threatening diseases, enabling efficient operations, and expanding access to patient care. It will also look to enhance research on diagnostic imaging technologies, artificial intelligence, and precision therapy based on intelligent and image-guided treatment. The partnership will range from three to five years which can be extended further on how these pan out in the future.

Recently, the Ministry of Electronics and IT signed a pact with Siemens Healthineers to develop new, improved, and innovative technologies for advancing healthcare and diagnostic access in India.

In Nov 2020, Siemens Healthineers and the National Association of Software and Service Companies (NASSCOM) announced a partnership for collaboratively nurturing and supporting innovation in healthcare. Siemens Healthineers and NASSCOM's Center of Excellence for IoT & AI (CoE-IoT & AI) mentioned that both will work with the Indian startup ecosystem to make healthcare more accessible and affordable.

Through this partnership, the Indian startup ecosystem will benefit from the global experience of the Siemens Healthineers Technology Accelerator in collaborating with startups that are working on cutting-edge technologies in the areas of imaging, diagnostics, and digital health leveraging AI, Internet of Medical Things (IoMT), and Robotics.

Siemens Healthineers will also be a Member of the Advisory Committee for NASSCOM CoE's Lifesciences and Healthcare Innovation Forum (LHIF), to provide guidance in driving the innovation agenda in the healthcare industry.

SHIFT- The Healthcare hackathon was held in November 2022 exclusively for students and budding startups to advance healthcare with innovation and technology. Over 300 teams participated in the hackathon, which focused on three themes - Access to Care, Digitally Enabled Services, and Smart Fluoroscopic Imaging.

In Jan 2023, Terumo India and Siemens Healthineers signed MoU, to introduce a first-of-its-kind programme for Cathlab Directors aimed at building standards of care and enhancing efficiency in Cathlabs across India, in collaboration with Executive Education at the Indian School of Business. The program includes topics on Operations Excellence, Digital Transformation, and Patient Centricity.

We shall continue emphasizing on collaboration and research addressing AI, robotics, sensing or Access to Care in India.

The regulatory environment for medical technologies is constantly evolving. How do you envision the role of Siemens Healthineers in shaping the regulatory framework around cobots in India?

Since this technology is still evolving from a regulatory perspective, the authorities would need to, firstly, have the systems in place to certify such solutions before they are deployed in real-life situations. They need to ensure that all the solutions out in the market pass through the right scientific rigors required, in the introduction of these solutions.

For instance, at Siemens Healthineers, we can vouch that all our solutions are designed from grounds-up to ensure data privacy by default, meeting all regulatory standards. These solutions comply not only with the GDPR and HIPAA norms for Data Privacy but are also certified by the prestigious EuroPriSe (European Privacy Seal) organization.

Data protection is one area that we believe that must be more awareness about, across industries. At Siemens Healthineers for instance, we conduct recurring internal trainings for all our employees on data privacy and guide them through the standard processes for ensuring data protection. As an organization, we understand that data privacy and protection in India to be implemented is far stricter than GDPR and we should respect these laws safeguarding data privacy.

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