

The rise of robots:
  
a surgical look

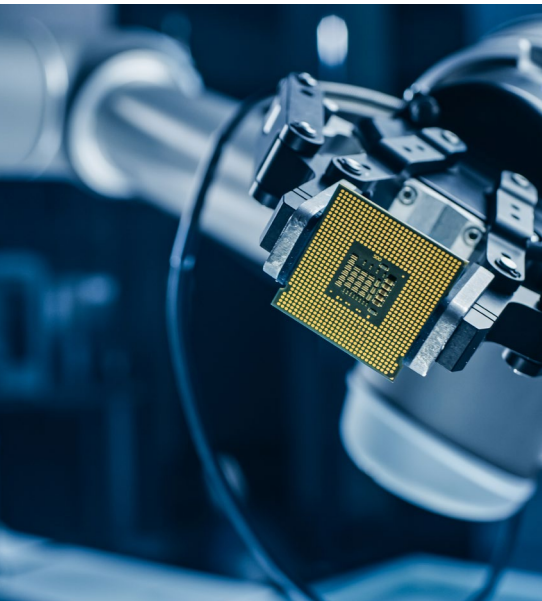
In recent years, robotic surgery has emerged as a groundbreaking innovation in the field of medical science, revolutionizing the way surgeries are performed. Evolving from a novel and experimental technique, surgeons can now achieve unprecedented levels of precision, flexibility, and control during complex procedures.<sup>1</sup> This technology can not only enhance surgical outcomes but also improve patient recovery times and reduce the risk of complications.

Robotic surgeries are technically “robot-assisted surgeries” (RAS); as the term implies, a robotic system assists a surgeon in executing complex and invasive surgical steps on a human body, with increased control and flexibility enabling high accuracy and precision when compared to traditional techniques.

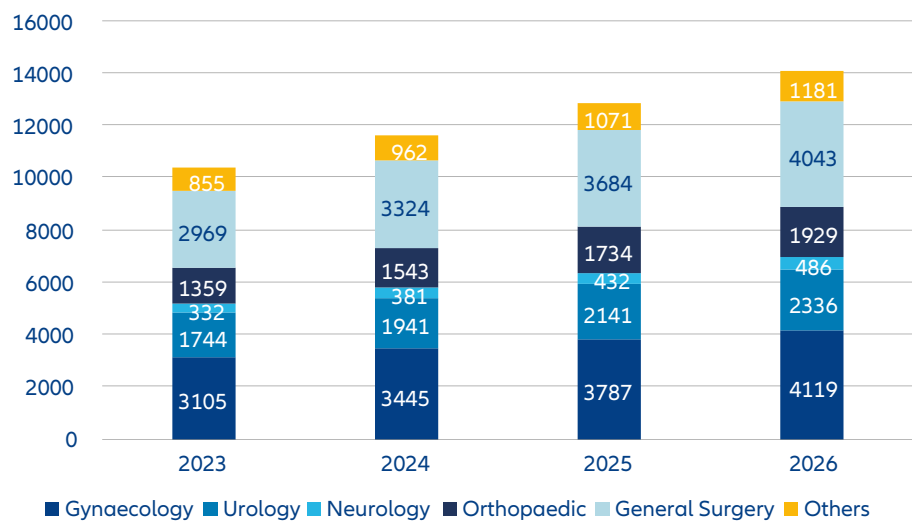
Oliver Wyman estimates that the market for robotic assisted surgeries will continue to grow at 11% CAGR to \$14bn by 2026. The incidence of robotic surgeries is still low, with

some estimates suggesting just 2% of surgeries in Europe and 15% of surgeries in US use robots.

The technology often includes a variety of processing elements and sensors, built on architectures capable of crunching massive amounts of data and providing real-time feedback to surgeons and their support teams. But these machines also are increasingly connected to the internet — either directly or through some other network.



Robotic surgery market (US\$ bn)



Source: AllianzGI, June 2024

There are some challenges – surgeons must complete additional, specialized training to undertake robot-assisted procedures. Some surgeons pursue formal training through minimally invasive and robotic surgery fellowships. Robot-assisted surgery is thus only available in centres with specially trained surgeons. One of the most significant barriers is the high cost associated with acquiring and maintaining surgical robots, which can exceed

USD 1.5 million per unit, excluding annual maintenance fees.<sup>3</sup> This financial burden makes it difficult for smaller hospitals and facilities, particularly in developing regions, to invest in this advanced technology. Additionally, the regulatory landscape for surgical robots is complex and varies significantly across different countries, creating hurdles for manufacturers to navigate and gain approval for their products.

As healthcare continues to evolve, the adoption of robot-assisted surgeries represents a significant leap towards safer, more efficient, and minimally invasive treatments, ultimately transforming patient care and setting new standards in surgical excellence. Investing in this innovative field not only aligns with the broader trends of technological integration in healthcare but also offers substantial growth opportunities for the thematic investor.

<sup>1</sup> Mayo Clinic 2024, "Robotic surgery"

<sup>2</sup> Oliver Wyman 2004, "Positioning the industry for growth in robotic surgery"

<sup>3</sup> GM Insights 2004, "Surgical Robots Market"

**Investing involves risk.** The value of an investment and the income from it will fluctuate and investors may not get back the principal invested. Past performance is not indicative of future performance. This is a marketing communication. It is for informational purposes only. This document does not constitute investment advice or a recommendation to buy, sell or hold any security and shall not be deemed an offer to sell or a solicitation of an offer to buy any security.

The statements contained herein may include statements of future expectations and other forward-looking statements that are based on management's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in such statements. We assume no obligation to update any forward-looking statement. The views and opinions expressed herein, which are subject to change without notice, are those of the issuer or its affiliated companies at the time of publication. Certain data used are derived from various sources believed to be reliable, but the accuracy or completeness of the data is not guaranteed and no liability is assumed for any direct or consequential losses arising from their use. The duplication, publication, extraction or transmission of the contents, irrespective of the form, is not permitted.

This material has not been reviewed by any regulatory authorities. In mainland China, it is for Qualified Domestic Institutional Investors scheme pursuant to applicable rules and regulations and is for information purpose only. This document does not constitute a public offer by virtue of Act Number 26.831 of the Argentine Republic and General Resolution No. 622/2013 of the NSC. This communication's sole purpose is to inform and does not under any circumstance constitute promotion or publicity of Allianz Global Investors products and/or services in Colombia or to Colombian residents pursuant to part 4 of Decree 2555 of 2010. This communication does not in any way aim to directly or indirectly initiate the purchase of a product or the provision of a service offered by Allianz Global Investors. Via reception of this document, each resident in Colombia acknowledges and accepts to have contacted Allianz Global Investors via their own initiative and that the communication under no circumstances does not arise from any promotional or marketing activities carried out by Allianz Global Investors. Colombian residents accept that accessing any type of social network page of Allianz Global Investors is done under their own responsibility and initiative and are aware that they may access specific information on the products and services of Allianz Global Investors. This communication is strictly private and confidential and may not be reproduced, except for the case of explicit permission by Allianz Global Investors. This communication does not constitute a public offer of securities in Colombia pursuant to the public offer regulation set forth in Decree 2555 of 2010. This communication and the information provided herein should not be considered a solicitation or an offer by Allianz Global Investors or its affiliates to provide any financial products in Brazil, Panama, Peru, and Uruguay. In Australia, this material is presented by Allianz Global Investors Asia Pacific Limited ("AllianzGI AP") and is intended for the use of investment consultants and other institutional /professional investors only, and is not directed to the public or individual retail investors. AllianzGI AP is not licensed to provide financial services to retail clients in Australia. AllianzGI AP is exempt from the requirement to hold an Australian Foreign Financial Service License under the Corporations Act 2001 (Cth) pursuant to ASIC Class Order (CO 03/1103) with respect to the provision of financial services to wholesale clients only. AllianzGI AP is licensed and regulated by Hong Kong Securities and Futures Commission under Hong Kong laws, which differ from Australian laws.

This document is being distributed by the following Allianz Global Investors companies: Allianz Global Investors GmbH, an investment company in Germany, authorized by the German Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin); Allianz Global Investors (Schweiz) AG; Allianz Global Investors UK Limited, authorized and regulated by the Financial Conduct Authority; in HK, by Allianz Global Investors Asia Pacific Ltd., licensed by the Hong Kong Securities and Futures Commission; in Singapore, by Allianz Global Investors Singapore Ltd., regulated by the Monetary Authority of Singapore [Company Registration No. 199907169Z]; in Japan, by Allianz Global Investors Japan Co., Ltd., registered in Japan as a Financial Instruments Business Operator [Registered No. The Director of Kanto Local Finance Bureau (Financial Instruments Business Operator), No. 424], Member of Japan Investment Advisers Association, the Investment Trust Association, Japan and Type II Financial Instruments Firms Association; in Taiwan, by Allianz Global Investors Taiwan Ltd., licensed by Financial Supervisory Commission in Taiwan; and in Indonesia, by PT. Allianz Global Investors Asset Management Indonesia licensed by Indonesia Financial Services Authority (OJK).

July 2024

LDS-240167