

Fluorescence-Guided Surgery Systems Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 130 pages | Mordor Intelligence

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Report description:

The global fluorescence-guided surgery market is currently valued at USD 67.75 million. It is expected to reach USD 167.45 million by the end of the forecast period, registering a CAGR of 16.56%.

COVID-19 significantly impacted the fluorescence-guided surgery systems market due to the reduction in fluorescence-guided therapies due to limited resources and the vulnerability of cancer patients to COVID-19. According to a study published in *Frontiers in Surgery* in July 2021, cancer patients are more sensitive and vulnerable to COVID-19 infection than the general population due to the immunosuppressive effects of the disease and oncological treatments, such as chemotherapy, radiation, and surgery. COVID-19 is more severe among patients with underlying malignancies, with a death rate of 20 - 40%. This resulted in the limited adoption of fluorescence-guided therapies among the patient population. Thus, the studied market was severely impacted during the pandemic. However, the market is expected to regain its growth in the coming years, as all restrictions have been lifted. There are growing opportunities for key market players in the fluorescence-guided systems industry.

Major factors driving the growth of the market include the increasing number of surgical procedures for target diseases, the surge in demand for fluorescence-guided surgery systems, and the growth in the number of strategic developments by prominent players in the market. For instance, per an article published in the *National Library of Medicine* in October 2021, doctors perform over 500,000 open heart surgeries worldwide every year. Thus, the increasing number of cardiac surgeries is expected to drive the market in the future. Additionally, a study published in *Methods and Application in Fluorescence* in August 2021 research interests in fluorescence-guided surgery continues to grow over various key aspects, such as fluorescent probe development and surgical system development, as well as its potential clinical applications, due to the advantages of fluorescence-guided surgeries, such as higher contrast and sensitivity, less subjective use, and ease of instrument operation compared to traditional clinical imaging techniques.

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Furthermore, research grants by companies for developing fluorescence-guided surgery systems are further expected to drive market growth. For instance, in April 2021, OnLume Surgical, a Wisconsin-based medical device company involved in creating innovative imaging technologies to be used during surgery, completed its Series A fundraising to support the commercial launch of its novel fluorescence image-guided surgery system.

Moreover, increasing mergers and acquisitions will drive the growth of the fluorescence-guided surgery systems market, resulting in the commercial availability of a wide range of devices and synergizing market strategies. For instance, in February 2021, Olympus Corporation acquired Quest Photonic Devices B.V. to strengthen its surgical endoscopy capabilities. Quest offers innovative technologies for multi-spectral imaging and imaging systems for medical applications, ranging from fluorescence imaging to photodynamic therapy. Thus, these aforementioned factors will collectively contribute to the growth of the market.

However, stringent regulatory approval may restrain market growth over the forecast period.

Fluorescence-guided Surgery Systems Market Trends

Cancer Surgeries Segment is Expected to Hold a Significant Share Over the Forecast Period

The growth of the cancer surgeries segment is driven by an increase in the prevalence of cancer cases and a surge in the geriatric population worldwide. The rise in demand for surgeries, specifically cancer, is likely to propel the segment's growth. As per the International Agency for Research on Cancer's 2022 updates, the number of cancer cases in 2020 was around 1.97 million, which is expected to reach 2.58 million by 2040. Such a high burden of cancer cases will increase the number of surgical procedures, thereby spurring the adoption of fluorescence-guided surgery systems. In January 2022, the journal, American Cancer Society, estimated that approximately 934,870 new cancer cases would be reported in the United States in 2022; thus, rising cancer cases are rapidly driving the market studied.

Additionally, as per updates in January 2021, published by researchers at the University of New South Wales (UNSW) Sydney, the number of cancer patients requiring surgery each year between 2018 and 2040 is anticipated to increase from 9.1 million to 13.8 million, an increase of 52%, or 4.7 million cases. According to their findings, the highest relative increase would occur in 34 low-income nations by 2040, with the number of cases requiring surgery expected to more than double (314,355 cases to 650,164). Such a huge rise in cancer surgeries will bolster the adoption of fluorescence-guided surgery systems across hospital settings, driving the segment's growth.

In addition, according to the study published in *Frontiers in Neurology* in June 2021, fluorescence-guided surgery (FGS) allows surgeons to see tumor tissue more clearly in the operating room, allowing for the most precise and safe removal of malignant brain tumors. Such studies will further lead to the growing adoption of these systems in tumor removal, driving the segment's growth. In April 2022, the Imperial College awarded Tate Group a grant to work on fluorescent probes for the visualization of tumors during cancer surgery. In October 2021, Delray Medical Center published a breakthrough study focusing on 5ALA (fluorescent-guided surgery) for glioblastomas with the team at Mount Sinai Hospital.

Thus, developments such as these are expected to boost segment growth in the near future.

North America Holds a Major Share and Expected to do Same during the Forecast Period

The major factors driving the growth in this region include a rise in the prevalence of cancer and cardiovascular diseases, a sophisticated healthcare system, the strong foothold of key market players, and higher investments in research and development activities.

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For instance, in January 2021, according to the Cancer Journal of Clinicians Cancer Statistics, the United States witnessed 1,898,160 new cancer cases and 608,570 cancer deaths. The growing burden of cancers in the United States will lead to an increase in surgical procedures to avoid fatalities. This is likely to augment the adoption of fluorescence-guided surgery systems across healthcare settings in this region, in turn driving the market growth in North America.

Moreover, rising grants for developing novel fluorescence-guided surgery systems will further augment the development of novel systems and increase the commercial availability of these systems within the region, thereby leading to increased acceptance of surgical procedures. For instance, in April 2021, the National Cancer Institute (NCI) of the National Institutes of Health (NIH) awarded a USD 2 million grant to OnLume Inc., an early-stage medical imaging company with unique technology for improving surgical precision, to advance the development of its proprietary device for fluorescence-guided surgery (FGS). OnLume has created a revolutionary FGS imaging technique that allows surgeons to illuminate crucial anatomy in real time during surgery to improve precision, which can lead to better patient outcomes, lower morbidity, and lower costs.

Therefore, owing to the above-mentioned factors, the market for fluorescence-guided surgery systems is expected to grow in North America.

Fluorescence-guided Surgery Systems Market Competitor Analysis

The market for fluorescence-guided surgery systems is moderately competitive. The market is expected to be driven by the rise in initiatives from the key market players, which include the launch of new products, a rise in fundraising to launch novel products, an increase in grants to develop novel systems and a rise in mergers and acquisitions. Some of the key market players in this market include Stryker Corporation, Hamamatsu Photonics K.K., Olympus Corporation (Quest Medical Imaging), Medtronic PLC, and OnLume Surgical, among others.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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