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Nvidia edge AI platform could secure robotic surgery, RPM devices from cyber threats

Article

The news: **Nvidia** launched **Nvidia IGX,** an edge AI computing platform of instruments and sensors that can protect robotic-assisted surgery and remote patient monitoring (RPM)

devices from getting hacked.

Here's how it works: IGX incorporates hardware and software to power medical devices.

- IGX's AI sensors could provide alerts on safety threats with medical devices before they occur. For example, the FDA reported a cybersecurity risk to Medtronic insulin pumps.
- It's based on the **Nvidia IGX Orin supercomputing platform**, which powers autonomous vehicles. It provides remote provisioning and management of edge medical devices.
- IGX supports **Nvidia Clara Holoscan**, an AI computing platform that lets health systems deploy AI-enabled medical devices in operating rooms.
- IGX also offers safety features for industrial machines in highly regulated factories and warehouses.

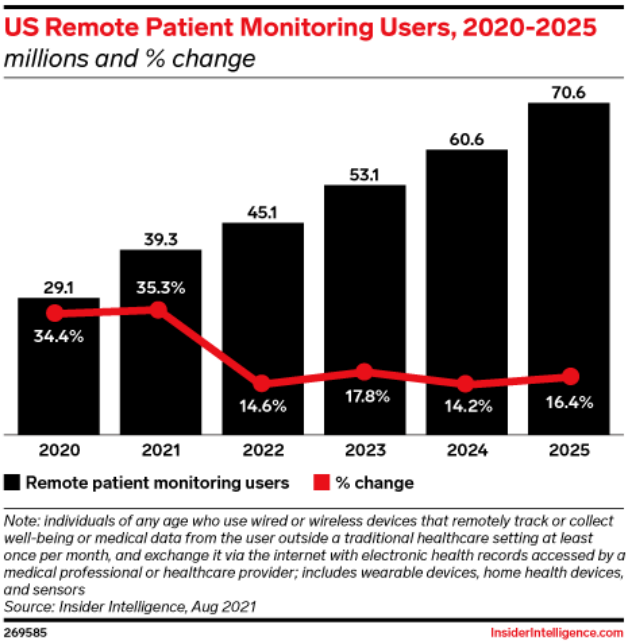
Digital surgery startups eye safety: Several platforms have already adopted IGX.

- Surgeons use the **Activ Surgical** robotic system incorporating IGX and Clara Holoscan to reduce complications from surgery. Data-driven insights powered by AI make this possible.
- Digital health startup **Proximie** is building a telepresence platform using IGX and Clara Holoscan.
- **Moon Surgical** is also building a surgical robot system that incorporates the Nvidia AI technology.

Here's why it matters: Using medical devices at the edge, like at the patient's bedside or in the operating room, brings access to data and analytics without latency.

RPM adds the responsibility of keeping medical devices safe and secure. Adoption of RPM devices in the US is expected to increase to **70.6 million** in 2025 compared with **45.1 million** in 2022, per an Insider Intelligence forecast. Surgical robots at the edge are at risk for cyberattacks that can cause catastrophic harm for patients.

- The average cost of a healthcare data breach increased **9.4%** from **$9.23 million** in 2021 to **$10.1 million** in 2022, according to IBM Security's Cost of a Data Breach Report.
- As more patients use devices such as smartwatches, biosensors and smart patches, keeping the devices safe and secure will be key.



Adoption of robotic surgery will also increase, bringing attention to safety concerns.

- **66%** of providers say they're very or somewhat likely to implement robotic technology in high-precision procedures and surgeries in the next two years, particularly as a 5G use case, according to Verizon's 2021 5G Business Report.

What's next? Nvidia will make its IGX Orin developer kits available in early 2023. They'll include an integrated GPU and CPU and a smart network interface card (NIC) to offer security and ultralow latency.

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