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Solving Staffing and Operational Challenges with Healthcare Technology for Smarter and Safer Surgeries with Caresyntax and Intel

The Caresyntax Data-Driven Surgical Intelligence Platform harnesses the power of Intel® technology to deliver a collaborative platform with the power of AI to pave a clearer path to better surgical outcomes

About Caresyntax

Caresyntax is a surgical intelligence platform that empowers healthcare providers, insurers, and surgeons with innovative, data-driven solutions to help patients and caregivers when it matters most. By solving emerging industry problems and enabling safer surgery practices, Caresyntax is on a mission to make surgery smarter and safer by converging AI-powered software, devices, and clinical services to help customers improve surgical outcomes.

Overcoming Staffing Challenges in Healthcare by Harnessing Cutting-Edge Technology

The past few years have not been easy on hospitals and operating room (OR) staff, with the entire industry traversing the challenges that come with a pandemic. After experiencing a noticeable dip in 2019, surgical case volumes are approaching pre-pandemic levels and are predicted to continue growing into the near future.[1] This only brings about further challenges for many healthcare professionals due to the omnipresent crisis of staffing shortages.

Currently, four out of five ORs report that the availability of clinical support staff such as technicians and nurses pose the biggest barrier to the rising surgical case volumes, and 94 percent of hospitals report registered nursing shortages .[1] Not only does this create a higher burden on the individual staff members who are faced with long hours and heavier workloads, but it can also hurt the financial viability of a healthcare organization -- ORs are hospitals' biggest revenue source, with over 50% of revenues coming out of the surgery wing.[2]

This means that even if the medical field was not encountering a worker shortage, the OR is still the most critical area for profitable hospitals to not only maintain, but also grow. With how fast data technology is developing, hospitals must stay on the cutting edge of medical technology to help streamline workflows, improve team communication, and ensure technical proficiency to deliver the best patient outcomes.

To ensure ORs are able to carry out potentially life-saving procedures and hit margins to keep hospitals profitable, more organizations are hiring additional staff such as traveling nurses to account for staffing shortages. This hard-working population of traveling nurses and technicians have become an incredible aid to hospitals who are short-staffed and enable ORs to continue helping patients through hard times.

However, the more hospitals hire new staff or utilize traveling nurses and technicians, the more logistical challenges they encounter. New staff bring about the need for efficient onboarding, especially in OR room environments where traveling nurses and new hires must be educated on both overall hospital procedures as well as surgery-specific protocols or preferences. Due to staffing demands, this onboarding often needs to be done as fast as possible in order to keep pace with OR timelines and meet surgery requirements. When it comes to critical surgeries in the operating room, the stakes for onboarding are high. If not done effectively, the hospital, the staff, and the patients all incur greater risk.

Using Intel's AI to Address Acute Staffing Shortages

Seeing a glaring need in the medical landscape, Caresyntax set out to see how they could utilize their expertise in medical technology to help organizations maximize throughput, reduce burnout, compensate for staffing shortages, and improve the overall efficiency of OR procedures to make surgeries safer and smarter. The result was their Data-Driven Surgical Intelligence Platform; a vendor-neutral, enterprise-scale surgical platform that brings transformative technology to the entire surgical continuum and overall perioperative experience.

When setting out to develop the Data-Driven Surgical Intelligence Platform, Caresyntax recognized the importance of using powerful technologies to ensure a platform with high-stakes use cases had reliable components driving the solution. Turning to Intel, Caresyntax's

development teams were able to get access to key industry established technical resources that helped shape the architecture of the platform and were able to develop creative ideas that helped address some of their biggest technical challenges while developing the solution.

As part of the collaboration, Caresyntax utilized Intel's expertise in AI applications o develop solutions that address acute surgery staffing shortages. The Caresyntax Personalized Surgical Playbook and turn-by-turn guidance functionality for OR staff, powered by Intel technologies, enables rapid onboarding of new clinicians and travel nurses. Turn-by-turn guidance in the OR is designed to help surgical staff support the surgeon during each turn or phase of the procedure.

Traditionally, OR procedures and surgery practices can differ based on the specific hospital, wing, and even individual surgery team. While the core medical practices might be similar, there are sure to be variations in equipment, tools, specific surgery steps, surgeon preferences, and more. Now factor in that many traveling nurses and technicians are coming into this process while adapting to a new city and work environment, and operating room onboarding can quickly become daunting.

Throughout every step of the surgery process from pre-, intra-, and even post-operation, the Caresyntax Data-Driven Surgical data Platform delivers transformative benefits.
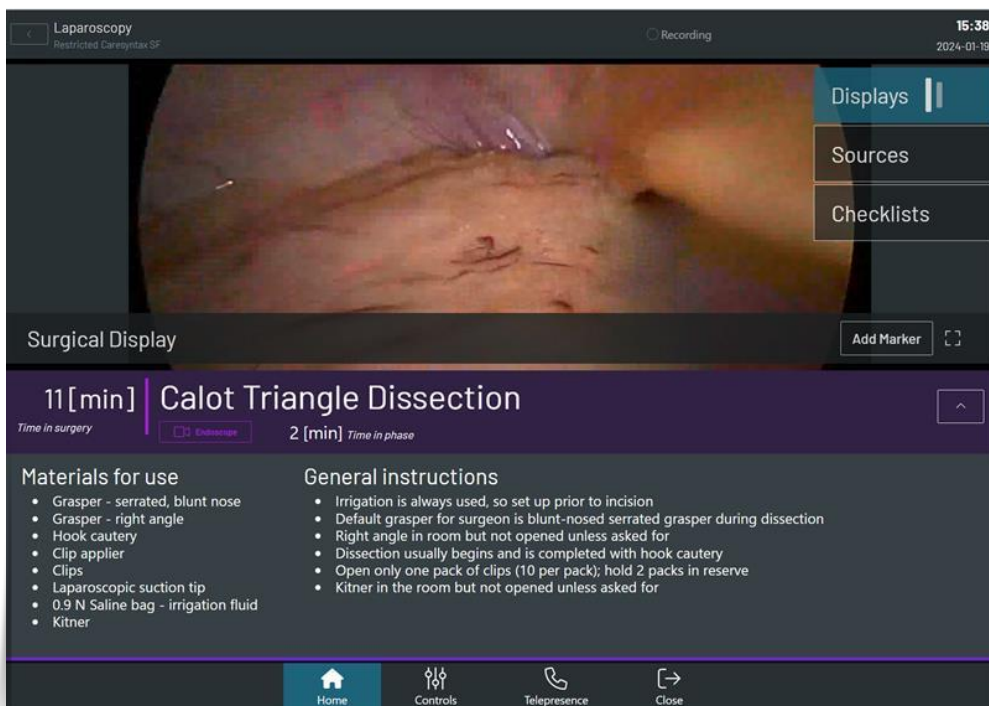
Benefits of the Caresyntax Data-Driven Surgical Intelligence Platform

Increase OR Efficiency Throughout the Entire Surgical Continuum

With Caresyntax's revolutionary Personalized Surgical Playbook and turn-by-turn guidance features, an OR team can improve pre-operative, intra-operative, and post-operative procedures. With the Personalized Surgical Playbook, surgeons can replace their outdated preference cards with a customizable digital version. Surgeons can codify their best practices and personal preferences with customizable checklists and annotations that can include videos and images to give visual references to help pre-operation prep and post-operation analysis. The Surgical Playbook is also more easily shared than traditional preference cards, making it easier to onboard a new team member or share expertise with others.

Enable Rapid Onboarding with Turn-by-turn Guidance

Hospitals can feel more confident when they need to onboard new clinicians and traveling nurses thanks to Caresyntax's turn-by-turn guidance feature of the Data-Driven Surgical Intelligence Platform. With turn-by-turn guidance, every individual turn or phase of a specific procedure can be broken down and shown to the supporting OR staff as it occurs in the operating room. For hospitals that are facing staffing shortages, this feature enables rapid onboarding for new team members and allows them to feel confident in supporting the surgeon throughout the procedure to deliver the best patient outcome.

Improve Patient Outcomes with Video, Data, Decision Support and Services

The Caresyntax vendor-neutral, enterprise-scale, Data-Driven Surgical Intelligence Platform smarter by reducing unnecessary variation and allowing the care teams to focus on patient and case specific variation. We enable our customers to realize transformational improvements in their clinical, operational, and financial outcomes.

The platform integrates surgical data into a High-Fidelity Surgical Record™ across the preoperative, intraoperative, and postoperative continuum including electronic health records, hospital information systems, supply/implant data, device data, imaging, and rich surgical video across all software and device vendors, with anonymization and privacy controls - to gain unparalleled insights into patient outcomes, operational efficiency, and profitability.

## Promote Surgical Quality and Educational Value

The platform also comes with InfluenceOR™, which is an innovative program where surgeons can publish and promote their assessed surgical videos to attract patients and increase referrals by demonstrating their surgical procedure quality. Surgeries and medical procedures can be intimidating for patients, and they often research healthcare providers online to learn more. The InfluenceOR™ program helps surgeons create compelling patient education material, highlighting their commitment to high-quality patient care. Educating patients on the procedure with videos that have been reviewed and assessed by Board-certified reviewers can demonstrate their commitment to ensuring quality patient experiences and outcomes.

Increase Profitability with Unparalleled insights

The operating room or surgical department of hospitals play the most important role in the overall profitability of organizations. By streamlining onboarding and operative procedures, hospitals can both reduce the total cost of care while increasing the number of patients they care for. Caresyntax enables care teams to continuously improve their practice to reduce the total cost of care, increase case volume, and negotiate higher reimbursement.

The Caresyntax Platform uses AI to analyze key medical data to gain unparalleled insights into patient outcomes, operational efficiency, and profitability. Generating unique metrics around surgical technique, decision-making, and team dynamics that have direct impact on improving clinical, operational, and financial efficiency directly impacts the overall performance and profitability of a hospital.

How the Caresyntax Data-Driven Surgical Data Platform Works
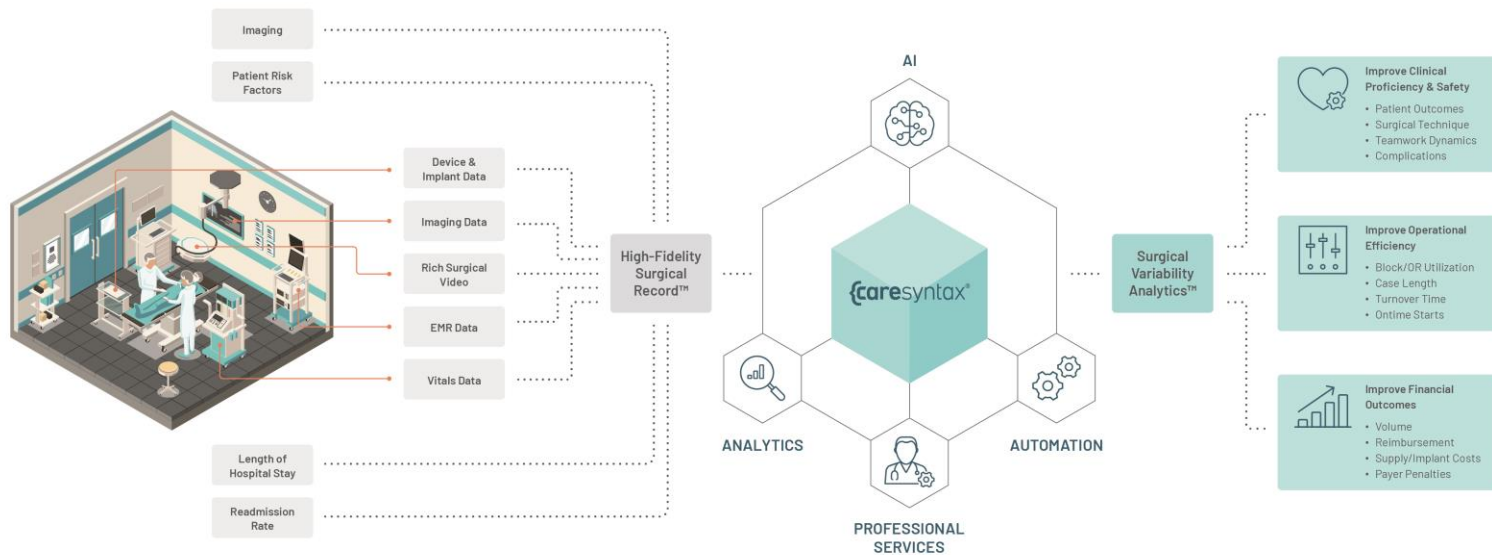
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Caresyntax and Intel: Bringing AI to the OR

Caresyntax equips its data-driven surgery platform with advanced AI capabilities powered by Intel technology including the Intel® Distribution of OpenVINO™ Toolkit and Intel® Core™ Processors. Caresyntax's technology enhancements will help perioperative leaders to rapidly onboard new clinicians and travel nurses and mitigate acute staffing shortages. Other "smart surgery" capabilities, also powered by Intel, will assist surgeons and interventionalists to make better decisions and thus help improve patient outcomes, operational efficiencies, and surgical profitability. Additionally, 12th Generation Intel® Core™ i7® processors are being used to provide the power and reliability needed to run demanding AI workloads alongside complex interoperative workflows.

How Caresyntax Establishes Trusted Deployments and Continued Support

Simple, Streamlined Deployment with Trusted Consultative Support:

Healthcare records and procedures deal with sensitive and personal data, so ensuring new solutions and technologies comply with the highest of privacy standards can often add to the complexity of these deployments. Caresyntax offers expertise from seasoned clinical and operational efficiency experts. The professional services team assists providers and surgeons in optimizing their surgery program using the Surgery Continuous Improvement Process™ to aid overworked staff in implementing lasting change in a safe learning environment. Caresyntax is a Patient Safety Organization (PSO) as designated by the US Federal Institution - AHRQ.

Identify and Reduce Unnecessary Surgical Variation:

Eliminate unnecessary variation in surgical care and support decision making with Surgical Variability Analytics™ across a full-range of clinical, operational, and financial metrics across all types of surgical and interventional procedures. Our solution allows detailed cohort level analysis and provides new insights into surgical technique, surgical decision making, and surgical team dynamics with video and big data.

Conclusion

The Caresyntax Data-Driven Surgical Intelligence Platform is designed with every facet of the OR room in mind. From collaborative post-operative preparation to turn-by-turn guidance in the throes of surgery to the easy sharing of feedback and data in post-operative analysis, the Caresyntax platform delivers value in every step of the operating room. OR staff and hospital officials can experience streamlined practices designed to improve efficiency and mitigate risk, all while driving better patient outcomes and safer surgeries.

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Learn More

To learn more about the Caresyntax Data-Driven Surgical Data Platform Solution visit:

- Caresyntax Website
- Caresyntax Data-Driven Surgical data Platform Webpage
- Caresyntax Collaborates with Intel to Help Address Acute Staffing Shortage in Healthcare Blog

To learn about Intel® technologies visit:

- Intel® Core™ Processors Product Page
- Intel® Distribution of OpenVINO™ Toolkit Product Page

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Sources

[1] Grappling with OR Staffing Shortages, Abiliti Health, 2022
[2] Staffing shortages temporarily close operating rooms, Boston Globe, 2022

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