Round table on operationalizing Value-Based Care in perioperative environment

Consensus Statement

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- In the US and EU alone, the surgery market accounts for 1.7 trillion USD. Yet an estimated 20 % of this is wasted.[1]
- Surgical variability leads to complications, and in some cases death. Postoperative deaths account for 7.7 % of all deaths globally.[2]
- Value-Based Care models shift the focus of healthcare on "value" instead of volume and would significantly reduce variability, decrease costs and improve patient outcomes.
- While Value-Based Care models exist, they typically do not account for more than 10 % of all surgical reimbursements. To increase the adoption of Value-Based Care models, a number of roadblocks and challenges must be overcome. This will require a concerted effort by regulators, technology leaders and payers.

Worldwide, increasing spending is pushing healthcare systems to their limit. Volume based reimbursement has led to increased volume of procedures with questionable benefits. Addressing these through utilization controls and bonuses for cost reductions can sometimes result in denial of essential care.

The increased adoption and innovation of Value-Based Care (VBC) would radically change the current logic of reimbursement and put quality of treatments and interventions over quantity. Within a VBC model, providers can concentrate on the best quality of care, without acting uneconomically. Significant savings, better outcomes, and a boom in innovations would follow.

The Operating Room (OR) is one of the most costly and important units of care and this is exactly where this change process can already be implemented today.

Can Value-Based Care address increasing costs and stagnation of quality in the OR?

Treatment and volume are the most relevant reimbursement drivers of the perioperative environment. The majority of surgeons, clinics, and ambulatory centers follow this rationale and conduct more surgeries and related treatments than necessary. This triggers high primary and secondary costs for patients, insurers, and society as a larger number of surgeries subsequently also increases the number of possible complications.

By introducing a reimbursement logic based on VBC, the product of surgery is not the operation itself but the long-term health of the patient. The measure becomes "value" and not volume.

Therefore, the key opportunities for VBC models in the perioperative environment are:

- Driving quality and outcome over frequency of surgery
- Reducing primary and secondary care costs
- Higher patient satisfaction regarding treatment and outcome
- Avoiding inefficiencies and unnecessary clinical and operational variability
- Improving working conditions for medical staff and perioperative workflows

[1] 2014 inpatient data from 2017 HCUP Statistical Brief

[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8889848/#:~:text=Although%20each%20year%2C%204.2%20million,these%20occur%20in%20LMICs9.

Implementing perioperative VBC will thus lead to more sustainable healthcare as well as healthier patients and medical staff.

What roadblocks must be overcome to make VBC a reality?

While the opportunities of VCB are massive, and most healthcare professionals are convinced by the overall concept, the implementation is far from easy. There are a number of roadblocks that must be overcome.

A model that rewards surgeons or healthcare providers for a specific action that results in a better outcome for their patients is complex. It must combine parameters of reimbursement, managing performance and incentivization of value-based behaviors. Therefore, it requires systemic and behavioral changes from all participants along the care cycle.

None of the participants will be able to implement VBC without others contributing their part:

- Surgical teams provide higher transparency on how they comply to best-in-class intra-operative workflows, they routinely measure post-operative outcomes and are compensated based on process and clinical best practice instead of volume in a "fee-for-quality" instead of a "fee-for-service" model.
- Liability insurance companies are partners of surgical teams and not only cover financial risks but also provide consulting and sophisticated decision-support tools to mitigate inherent risks at the point of care.
- MedTech companies enable agnostic cross-functional solutions to give surgical teams, hospital management, insurance companies and patients the opportunity to understand cross-functional patient pathways instead of purely optimizing their product silos.
- Healthcare insurance companies reimburse surgical teams based on clinical outcomes instead of just covering the operational costs.

Understanding the challenges and opportunities in value-based surgery across geographies

No country has completely implemented the VBC agenda. Although there is a motivation across lot of healthcare systems toward VBC, there is a huge variation in implementation status among the systems. While VBC in the US has been mostly tied to moving away from fee-for-service, the more public-run systems in Europe have been focusing on coordinating patient care among providers and creating outcome platforms to drive quality improvement and appropriateness of care.

In the UK e.g., NHS hospitals have started collecting PROMs (e.g., for total hip and knee arthroplasty). However, the use of data in the UK is limited due to the poor IT infrastructure, lack of benchmarks across hospitals, and a strict cost-containment policy within the NHS. Also, few other European countries have been collecting outcome data for comparison among public hospitals or quality improvement and certification purposes. The main challenge remains the availability of data for surgeons, and payers and MedTech.

To accelerate VBC implementation, continuous IT improvements and availability of outcome data across the full care cycle is needed. The current IT infrastructure in health care systems is not adequate to support VBC. Routine outcome measurement across clinical, operational, and financial outcomes is necessary. Further, the interoperability of IT in hospitals, clinics, or health systems, whether between each other or even within themselves, is quite poor.

How can we address the challenges and roadblocks from a policy, tech, and payment perspective?

In the US, Accountable Care Organizations (ACO) have brought together physicians, health insurance companies, and other healthcare providers together to provide coordinated care to improve population health and chronic care conditions. The time is now ripe for creating a similar structure for surgical procedures and interventions, a Surgical ACO. These Surgical ACOs provide a framework for surgeons, OR staff, hospitals, health insurers, liability insurers, and large employer groups to come together from a policy, technology, and payment perspective. A multi-sided technology platform for data-driven surgery can bring together all these previously siloed players. Data-driven surgery platforms provides new forms of data that provide leading indicators of risk like surgical technique, teamwork dynamics and unwarranted variation. This is contrasted with the current model where most of the data and metrics are based on claims which are administrative/billing data that are viewed in the rear-view mirror. The leading indicators of risk from a data-driven surgery platform can enable High-Performance Surgical Networks with high quality providers and next generations of the Bundled Payments that incentivizes appropriate care.

Why is data transparency an important enabler for the Value-Based Care?

The lack of availability, consistency and standards of OR data hinders hospitals and insurers to gain valuable knowledge on perioperative processes and outcome quality. Through linking outcome data to pre- and intra-op data and through standardization of clinical and operational data the transparency of procedures and their effects in the perioperative environment can be increased. This transparency drives quality improvement and cost reduction as well as enabling hospitals and insurers to implement Value Based Care models.

In addition, the real-time data from the OR can be useful as an additional and important source of information in order to sharpen existing prediction models in the area of risk management and to develop new models.

How can relevant data be collected?

Collecting consistent and sophisticated clinical, operational, quality and also financial data along pre, intra and postoperative phases of surgery requires a vendor-neutral integrated and interoperable infrastructure. This infrastructure enables hospitals to aggregate and exchange data among disparate vendors and IT systems (e.g. from EHR, PACS, patient generated data), etc.

The connected data flow infrastructure also needs to address country and hospital-specific legal and regulatory barriers and monitor patient satisfaction combined with the real-time measurement of processes, costs and treatments allowing hospitals and caregivers better decision-making and continuous improvement.

How can Caresyntax help to enable Value-Based Care in the perioperative environment?

Caresyntax is a data-driven surgery platform that integrates data with the 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.

Surgery decision support tools depend on a combination of data, images, and video to provide insights. Through the use of Intel-powered AI technologies, Caresyntax is able to harness more insights from data to help care teams improve patient outcomes in the operating room. Real-time processing of visual data requires AI inferencing models to operate at the network edge, reducing the time to insights that can potentially drive improvements in surgical processes.

The integrated data platform also helps caregivers to eliminate unnecessary variation in surgical care and supports decision making with Surgical Variability Analytics™ across a full range of clinical, operational, and financial metrics across all types of surgical and interventional procedures. Caresyntax analytics allows detailed cohort level analysis and provides new insights into surgical technique, surgical decision making, and surgical team dynamics with video and big data.

With this data-driven surgery platform, it is already possible today to create Surgical ACOs and implement Value Based Care reimbursement for surgical interventions or sharpen existing models between hospitals and insurance companies. The availability of the relevant aggregated data for physicians, hospitals and insurance companies would strongly orient operational and strategic decisions towards maximizing quality. The advantages for the patient and the healthcare system are obvious.

For more information on Surgical Accountable Care Organizations enabled with a Data-Driven Surgery platform, please contact Gargee Kashyap, gargee.kashyap@caresyntax.com.

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