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EDITORIAL – GLOBAL HEALTH SERVICES RESEARCH

Synoptic Operative Reports: Can Form Follow Function in Surgery?

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In their review 'Technical Standards for Cancer Surgery: Improving Patient Care through Synoptic Operative Reporting," Heiken et al.[1] describe the development of definitions for standard operative techniques for common cancer operations and the incorporation of these standards into the format of synoptic operative reports. Now spearheaded by the American College of Surgeons Cancer Surgical Standards Program (CSSP), this endeavor aims to improve the quality of cancer operations across the country. To do so, the CSSP adopted a three-step approach: (1) defining what a proper cancer operation entails for a given diagnosis; (2) enforcing performance of key steps of the operation through the use of a structured data entry format; and (3) mandating compliance by incorporating the use of synoptic operative reports into Commission on Cancer (CoC) accreditation standards.[2]

In 2015 and 2018, the American College of Surgeons published two volumes of *Operative Standards for Cancer Surgery*.[3,4] These manuals provide detailed descriptions of discrete steps considered most essential for common cancer operations. The rationale for selection of these techniques is justified by graded levels of evidence approved by consensus expert opinion. Pragmatic in its 'skin to skin' scope, the text is enhanced by illustrations and intraoperative photographs. A table of recommended oncologic elements to document in the operative report is provided for each disease site.

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Heiken et al. point out the distinctions among narrative, structured, and synoptic operative reporting. Rather than relying on the surgeon's memory and free text dictation to document key steps of an operation or a template with hard stops for required fields, the synoptic report requires entry of standardized reporting elements into discrete data fields. The CSSP has adapted the Operative Standards for Cancer Surgery's oncologic elements for operative reports into electronic synoptic formats for melanoma and breast and colon cancer operations, with planned expansion to future disease sites. The next logical step to actualize widespread synoptic operative report use is to incorporate their adoption into standards required for CoC accreditation. Starting 1 January 2023, compliance with Standards 5.3–5.6 will require phased-in use of synoptic operative reports for breast sentinel and axillary lymph node dissections, wide local excisions for melanoma, and colon resections.[1,5] The CSSP has created usable content for education and implementation of these CoC synoptic operative report standards.

This review provides ample evidence that the synoptic format improves completeness of reporting in surgery, just as this format previously did in pathology. When used repeatedly, the required data entry fields and their associated explanatory comments are habit forming and serve as an educational tool for quality operations. Furthermore, the nature of retrievable data elements from electronic records leverages the power of big data. Synoptically reported variables are well suited for incorporation into quality measures for large registries such as the National Cancer Database. The CoC Standards 5.3–5.6 are the most literal of Donabedian process measures; improved performance rates with these standards will translate into improved patient outcomes. In a Canadian effort to implement evidence-based surgical standards for breast cancer, the consistency and quality of collected data were found to be significant barriers.[6] In addition to reliability of collected data, institutional

or organizational policies and accountability for standards are needed. Synoptic reporting has the potential to provide solutions in both of these areas, among others, to facilitate implementation of evidence-based care, thus improving quality of cancer care across different practice settings.

However, surgery is a healing art. Unlike pathology reports that are amenable to categorical classifications, surgical procedures have qualitative characteristics that benefit from the surgeon's narrative. Nuanced descriptions of intrinsic anatomic and technical variability can provide a roadmap for the patient's future medical and surgical care or drive creativity that leads to innovation. While synoptic reports describe minimum basic standards, the surgeon's voice adds to the record of what actually happened or could happen. As the authors acknowledge, operative reports can include both synoptic and narrative sections, but redundant documentation remains anathema for surgeons.[7] 'Death By 1000 Clicks'[8] has become the rallying cry for unintended consequences of electronic medical records (EMR). Clicking through forms with expediency at the expense of deliberation may lead to misrepresentation of the procedure performed.

Exactly because strict adherence to explicitly defined data elements provides the advantages of standardization, synoptic fields must be modifiable to readily adopt rapid advances in technology and clinical trial evidence. At the time of its 2015 publication, the breast sentinel lymph node operative standard elements did not include choices of a superparamagnetic iron oxide tracer or removal of biopsy-proven positive clipped lymph nodes after neoadjuvant therapy.[3] As surgical practice evolves, editing EMR embedded synoptic operative reports to avoid obsolescence faces logistic, regulatory, and financial barriers. The slow adoption of clinical trial interventions into routine clinical practice despite robust causal evidence for improved patient outcomes[9] may be a harbinger for challenges facing widespread uptake of synoptic operative reports. Studies linking real-time perioperative use of synoptic operative reports with improved clinical outcomes are sparse. Harnessing technology and the principles of implementation science may help,[9,10] but business models rely on siloed intellectual property. Access to synoptic operative report applications developed by the CSSP is available only to CoC-accredited programs or by purchase. Service contracts with third-party vendors capable of integrating synoptic forms into the EMR with automatic data capture must demonstrate a return on investment to hospital administrators. Lack of universal accessibility is a barrier to adoption, implementation, and maintenance of interventions in a 'real-world' context.[10]

Irrespective of financial constraints, a salient barrier to use of synoptic operative reports is changing individual surgeon behavior. Although practicing surgeons find value in the synoptic format, change management efforts will be required to enforce submission to administrative dictum, particularly in community hospital systems where staff surgeons from various practices do not share a unifying EMR.[7,11] In contrast to the perceived importance of operative report documentation in surgical education, formal didactics for the creation of operative reports of any type is lacking in residency programs.[12] The inevitable path towards value-based care will ultimately incentivize the drive towards higher-quality surgery. The inverse relationship between quality and variability coupled with new CoC accreditation standards that mandate use of synoptic operative reports will encourage use of synoptic operative reports as the de facto method to document high quality, standardized technical performance. Exploiting the current educational gap in operative report documentation in surgical residency programs may be the easiest way to create a cohort of early adopters and future surgeon champions of the synoptic operative report.

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