Implementation Strategies for Synoptic Operative Reporting

March 23, 2021 @ 6-7pm CT
Moderator

Matthew H.G. Katz
Professor
Department of Surgical Oncology
MD Anderson Cancer Center

Chair, Cancer Surgery Standards Program
Speakers

Kristan Staudenmayer, MD, FACS
Stanford University Medical Center
Vice-Chair, CSSP Implementation & Integration Committee

James Harris, MD, FACS
Western Surgical Group
Chair, Commission on Cancer Accreditation Committee

Tina J. Hieken, MD, FACS
Mayo Clinic
Chair, CSSP Content Development Committee
Why do we need the?

Matthew H.G. Katz, MD, FACS
CSSP Chair
Why are operative standards important?
Adherence improves survival!

Standards:

- Resection margin status → R0 = meet standards

- Number of lymph nodes examined
  → ≥2 LNs for cT1 and cT2/3,
  → >10 LNs for pN2/3

- Adjuvant therapy (chemotherapy, hormonal, and radiation) → any = meet standards

<table>
<thead>
<tr>
<th>Minimal Standards</th>
<th>Number of cT1 Patients (%)</th>
<th># of cT2/3 Patients (%)</th>
<th># of pN2/3 Patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥2 LNs Examined</td>
<td>360316 (74.0%)</td>
<td>189208 (78.0%)</td>
<td>-</td>
</tr>
<tr>
<td>&gt;10 LNs Examined</td>
<td>-</td>
<td>-</td>
<td>91310 (78.3%)</td>
</tr>
</tbody>
</table>

Zhao et al JSO 2019: 120:148-159
Adherence to surgical and oncologic standards improves survival in breast cancer patients

Zhao et al JSO 2019: 120:148-159
Purpose of the Mission

To improve the quality of surgical care provided to people with cancer

Goals

• Collaborate with the ACS Cancer Research Program to develop evidence-based standards for the technical conduct of oncologic surgery

• Create and disseminate tools that support implementation and adherence to standards, including synoptic operative report templates for cancer surgery

• Educate surgeons on the technical conduct of oncologic surgery
What is the value of synoptic reporting? The Big Picture

Kristan Staudenmayer, MD, FACS
CSSP Implementation & Integration Vice-Chair
Documentation Considerations

We often focus on the task of documentation and having an immediate record to assist with postoperative care.
Documentation Considerations

But records have many important downstream roles, each dependent on the quality of the original documentation.
Why are synoptic operative reports important?

- Improve **accuracy** of documentation
- Improve **efficiency** of entry
- Improve **efficiency** of data abstraction/measurement of compliance
- Reinforce education: for example, can emphasize the “critical elements” of oncologic operations
- Reduce **variability** in care
- Improve **quality** of cancer care
What is the Evidence?

• TNM staging information can be missing in >50% of records.

• Within a single encounter, TNM staging may differ in different notes.

• Others, such as registrars, must sort through and interpret these narratives in order to glean the necessary information and then enter it manually to a registry leading to issues with quality and cost. The average cost for each of the National Program of Cancer Registries-funded registries is more than $1 million per year.
## Synoptic v. Narrative Reports

<table>
<thead>
<tr>
<th>Outcome or Subgroup</th>
<th># Studies</th>
<th>N</th>
<th>Statistical Method</th>
<th>Effect Estimate – Synoptic v. Narrative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Efficiency</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time to complete (min)</td>
<td>6</td>
<td>891</td>
<td>Mean Difference (95% CI)</td>
<td>−0.86 m [−1.17, −0.55]</td>
</tr>
<tr>
<td>Time to verified report in chart/EPR (hours)</td>
<td>1</td>
<td>336</td>
<td>Mean Difference</td>
<td>−373.53 h</td>
</tr>
<tr>
<td><strong>Quality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>1</td>
<td>208</td>
<td>Mean Difference (95% CI)</td>
<td>40.60% [38.54, 42.66]</td>
</tr>
<tr>
<td>Reduction Critical Error (% of op notes)</td>
<td>1</td>
<td>110</td>
<td>Mean Difference</td>
<td>32.13%</td>
</tr>
<tr>
<td>Reduction Error Rate (% of op notes)</td>
<td>1</td>
<td>110</td>
<td>Mean Difference</td>
<td>75.26%</td>
</tr>
<tr>
<td>Validity</td>
<td>1</td>
<td>208</td>
<td>Mean Difference (95% CI)</td>
<td>3.40% [2.02, 4.78]</td>
</tr>
<tr>
<td>Cost ($/note)</td>
<td>2</td>
<td>72</td>
<td>Mean Difference</td>
<td>$-8.27</td>
</tr>
</tbody>
</table>

Stogryn et al., 2019
Synoptic v. Narrative Reports

Currently we have a garbage-in/garbage-out problem that has direct impact on *quality, delivery of care, and costs*.

Standardizing operative reports are a mechanism by which we can address it.
The future state of documentation

• The first digital evolution in healthcare involved the adoption of EHR systems

• Utilizing data from these systems has been limited by poor quality of information trapped differently within silos

• The next phase will involve standardization to facilitate interoperability of information which can lead to:
  → Advanced analytics
  → Greater availability for research
  → Ability for real-time data analysis, application of learning health system models
  → Facilitated downstream usage
What are the synoptic reporting requirements for the CoC?

James Harris, MD, FACS
CoC Accreditation Committee Chair
Definition of synoptic reporting

- Standardized data elements organized as a structured checklist or template
- Each data element’s value is “filled in” using a pre-specified format to ensure interoperability of information:
  - The information being sought is standardized
  - The options for each variable are constrained to a pre-defined set of responses
- Synoptic reports allow information to be easily collected, stored, and retrieved
Synoptic operative reporting requirements for CoC accreditation

• **Operative reports** for patients undergoing the procedures covered by CoC Standards 5.3–5.6 must include *specific elements in synoptic format*, as outlined in the standards.

• Programs are welcome to use the ACS or their own synoptic operative reports as long as:
  - Data elements required to achieve compliance with the CoC standards are clearly identified
  - Response options are the same as in the CoC standard

• A uniform synoptic reporting format should be used by all surgeons at the facility.
# Commission on Cancer Operative Standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Disease Site</th>
<th>Procedure</th>
<th>Documentation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.3</td>
<td>Breast</td>
<td>SLN biopsy</td>
<td>Operative reports</td>
</tr>
<tr>
<td>5.4</td>
<td>Breast</td>
<td>ALND</td>
<td></td>
</tr>
<tr>
<td>5.5</td>
<td>Melanoma</td>
<td>WLE</td>
<td></td>
</tr>
<tr>
<td>5.6</td>
<td>Colon</td>
<td>Colectomy</td>
<td>Pathology reports (CAP)</td>
</tr>
<tr>
<td>5.7</td>
<td>Rectum</td>
<td>TME</td>
<td></td>
</tr>
<tr>
<td>5.8</td>
<td>Lung</td>
<td>Lung resection</td>
<td></td>
</tr>
</tbody>
</table>
### Standard 5.3:
**Sentinel Lymph Node Biopsy for Breast Cancer**

<table>
<thead>
<tr>
<th>Element</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation performed with curative intent.</td>
<td>Yes; No.</td>
</tr>
<tr>
<td>Tracer(s) used to identify sentinel nodes in the upfront surgery (non-neoadjuvant) setting (select all that apply).</td>
<td>Dye; Radioactive tracer; Superparamagnetic iron oxide; Other (with explanation); N/A.</td>
</tr>
<tr>
<td>Tracer(s) used to identify sentinel nodes in the neoadjuvant setting (select all that apply).</td>
<td>Dye; Radioactive tracer; Superparamagnetic iron oxide; Other (with explanation); N/A.</td>
</tr>
<tr>
<td>All nodes (colored or non-colored) present at the end of a dye-filled lymphatic channel were removed.</td>
<td>Yes; No (with explanation); N/A.</td>
</tr>
<tr>
<td>All significantly radioactive nodes were removed.</td>
<td>Yes; No (with explanation); N/A.</td>
</tr>
<tr>
<td>All palpably suspicious nodes were removed.</td>
<td>Yes; No (with explanation); N/A.</td>
</tr>
<tr>
<td>Biopsy-proven positive nodes marked with clips prior to chemotherapy were identified and removed.</td>
<td>Yes; No (with explanation); N/A.</td>
</tr>
</tbody>
</table>
Standard 5.4: Axillary Lymph Node Dissection for Breast Cancer

<table>
<thead>
<tr>
<th>Element</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation performed with curative intent.</td>
<td>Yes; No.</td>
</tr>
<tr>
<td>Resection was performed within the boundaries of the axillary vein, chest wall (serratus anterior), and latissimus dorsi.</td>
<td>Yes; No (with explanation).</td>
</tr>
<tr>
<td>Nerves identified and preserved during dissection (select all that apply).</td>
<td>Long thoracic nerve; Thoracodorsal nerve; Branches of the intercostobrachial nerves; Other (with explanation).</td>
</tr>
<tr>
<td>Level III nodes were removed.</td>
<td>Yes (with explanation); No.</td>
</tr>
</tbody>
</table>
### Standard 5.5:
Wide Local Excision for Primary Cutaneous Melanoma

<table>
<thead>
<tr>
<th>Element</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation performed with curative intent</td>
<td>Yes; No.</td>
</tr>
<tr>
<td>Original Breslow thickness of the lesion</td>
<td>Melanoma in situ (MIS); __ mm (to the tenth of a millimeter).</td>
</tr>
<tr>
<td>Clinical margin width</td>
<td>0.5 cm; 1 cm; 2 cm; Other: __ cm due to cosmetic/anatomic concerns; Other (with explanation).</td>
</tr>
<tr>
<td>(measured from the edge of the lesion or the prior excision scar)</td>
<td></td>
</tr>
<tr>
<td>Depth of excision</td>
<td>Full-thickness skin/ subcutaneous tissue down to fascia (melanoma); Only skin and superficial subcutaneous fat (melanoma in situ); Other (with explanation).</td>
</tr>
</tbody>
</table>
Standard 5.6: Colon Resection

<table>
<thead>
<tr>
<th>Element</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation performed with curative intent</td>
<td>Yes; No.</td>
</tr>
<tr>
<td>Tumor location</td>
<td>Cecum; Ascending colon; Hepatic flexure; Transverse colon; Splenic flexure; Descending colon; Sigmoid colon; Rectosigmoid junction; Rectum, NOS; Colon, NOS.</td>
</tr>
<tr>
<td>Extent of colon and vascular resection</td>
<td>Right hemicolecotomy – ileocolic, right colic (if present); Extended right hemicolecotomy – ileocolic, right colic (if present), middle colic; Transverse colectomy – middle colic; Splenic flexure resection – middle and ascending left colic; Left hemicolecotomy – inferior mesenteric; Sigmoid resection – inferior mesenteric; Total abdominal colectomy – ileocolic, right colic (if present), middle colic, inferior mesenteric; Total abdominal colectomy, with proctectomy – ileocolic, right colic (if present), middle colic, inferior mesenteric, superior and middle rectal; Other (with explanation).</td>
</tr>
</tbody>
</table>
Plan for implementation, educate/train surgeons & registrars

Introduction of operative standards

Document final plan for implementation

Site Visits review documentation of final plans for compliance

Site Visits review 2023 operative reports for 70% compliance

2020

2021

2022

2023

2024

2025

Compliance and Site Reviews

Standards 5.3, 5.4, 5.5, 5.6
How can my CoC-accredited program meet these synoptic reporting requirements?

Tina J. Hieken, MD, FACS
CSSP Content Development Committee Chair
Options for Synoptic Operative Reporting – CoC Standards 5.3 through 5.6

Options currently available to CoC-accredited programs

Create Your Own Basic Templates

Use Third-Party Vendor Tools

Options ahead

Build Complete Templates with ACS API

Request EMR-Integrated Templates
Create Your Own Basic Templates

- Must include the elements and response options from the CoC 2020 Standards to demonstrate compliance

- No fees associated with use of the content in the manual for CoC-accredited cancer program

CoC Standard 5.4 Axillary Dissection for Breast Cancer

<table>
<thead>
<tr>
<th>Element</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation performed with curative intent.</td>
<td>Yes; No.</td>
</tr>
<tr>
<td>Resection was performed within the boundaries of the axillary vein, chest wall (serratus anterior), and latissimus dorsi.</td>
<td>Yes; No (with explanation).</td>
</tr>
<tr>
<td>Nerves identified and preserved during dissection (select all that apply).</td>
<td>Long thoracic nerve; Thoracodorsal nerve; Branches of the intercostobrachial nerves; Other (with explanation).</td>
</tr>
<tr>
<td>Level III nodes were removed.</td>
<td>Yes (with explanation); No.</td>
</tr>
</tbody>
</table>

https://www.facs.org/quality-programs/cancer/coc/standards/2020
Use Third-Party Vendor Tools

• CoC programs may opt to work with third-party vendors who have licensed synoptic operative reporting content from ACS
  • These electronic synoptic operative reporting solutions include ACS content and should allow CoC programs to meet compliance with the CoC standards
  • May include supplemental educational material (“Knowledge Platform”)

• Vendors are working with large EMR vendors to integrate tools in app store programs
  • Integration within the EMR and data functionality vary by vendor

Not owned or affiliated with the ACS. Contact vendors directly for pricing.
Use Third-Party Vendor Tools

As of 3/23/2021, the vendors below have licensed synoptic operative reporting content from the ACS:

**Across Healthcare, LLC**

Application: eDocSS.app (electronic Documentation of Surgery Standards)

Email: info@edocss.app

**mTuitive, Inc**

Application: mTuitive OpNote™

Email: OpNote.acs@mtuitive.com
API = Application Programming Interface

- Provides content, formatting, & logic model of the ACS templates
- Allows local IT to build a synoptic reporting tool into their EMR software
- Choose how much content to incorporate

Comprehensive list of data fields including CoC-required elements

- Potentially replaces narrative reports
- Meets common surgical reporting requirements
- Includes supplemental educational material ("Knowledge Platform")

Access additional disease-site SORs as released by ACS
EMR-Integrated Templates

• ACS is having ongoing discussions with EMR vendors about integrating CSSP templates directly into the EMR

• CoC-accredited programs interested in this option should express their interest in having this functionality within the EMR to their EMR representative
Build Complete Templates with ACS API

Local IT uses the ACS Application Programming Interface (API) to build ACS templates into your EMR system

- Comprehensive list of data fields including elements required for CoC accreditation; can potentially replace narrative reports
- Provides content, formatting, & logic model from ACS templates
- Meets common surgical reporting requirements
- Has supplemental educational material (“Knowledge Platform”)
- Add new disease-sites as released by ACS
- Nominal fee for API access

Request EMR-Integrated Templates

EMR companies integrate ACS templates directly into their systems

- Integration into EMR systems should allow for seamless access by EMR users. This option is currently not available.
- Please contact your institution’s EMR representative to express your interest in having this functionality within your EMR.

CREATE YOUR OWN BASIC TEMPLATES

User-created template including only limited CoC-required data elements for Standards 5.3–5.6

- Must include elements and response options listed in CoC Standards 5.3–5.6 to demonstrate compliance
- No fees associated with using CoC content

Use Third-Party Vendor Tools

Fully functional tool available via EMR application marketplaces

- Comprehensive list of data fields, including elements required for CoC accreditation
- Vendor supports installation & provides tech support
- Automatically access additional disease-sites as released by ACS
- May include supplemental educational material (“Knowledge Platform”)

Contact ACS licensed vendors directly for pricing. Visit Commercial Options webpage for contact information.
Questions?