The Cost of Synoptic Reporting

To the Editor.—The creation of a “synoptic” report is required by the College of American Pathologists (CAP) Laboratory Accreditation Process for surgical pathology reports of resection specimens with malignancy (ANP no. 12385)\(^1\) in order to comply with requirements of the American College of Surgeons Commission on Cancer (2004) and the Joint Commission (2014). The creation of this synoptic report requires additional time and energy by the pathologist, but it is of value if it improves the completeness or the readability of the report for clinicians. However, we have noticed an increase in our clerical errors with the use of synoptic reporting (as measured by amendments to the synoptic report). In our laboratory, pathologists dictate the synoptic report from a modified checklist derived from those provided by the CAP, and secretaries type the synoptic report from that dictation. Although some secretaries have macros that they use, the use of macros was not standardized during this time period, and most of these reports were typed “free hand.” From 2004 to 2015 there were 6299 cases with synoptic reports in our laboratory, and 102 amendments related to clerical errors within the synoptic report (ie, not based on re-review of slides or additional clinical information, but rather spelling mistakes or information that did not match between different sections of the report, etc). These data are shown in the Table and the Figure. Clerical errors were strongly correlated \(R^2 = .78\) with increasing number of required data elements in the synoptic report, and cases with 10 or fewer required data elements had a significantly lower rate of clerical error than those with 20 or more required data elements \(P < .001, 2\text{-tailed Fisher exact test}\). Three of these errors involved the omission of the word “no” or “not.” Of the elements in the synoptic report, the most common element to have an error was tumor stage, followed by size. Of the organ systems, breast was the most common report to have an error (and was also the longest, because we have combined both the histologic and biomarker reports into 1 report). Although nonclerical errors are much more difficult to identify, it is not unreasonable to postulate that these may also be correlated with the number of required data elements.

What can we conclude from these data? First, there is a small but real cost in accuracy associated with each additional required data element. Pathologists are not machines, and including only the truly essential elements will likely reduce their error rate. What elements are “essential” is currently not defined. Some organizations, such as the International Collaboration on Cancer Reporting, have made efforts to reduce the number of required elements.\(^3\) Nevertheless, in the current CAP checklists there are required data elements for which it is difficult to find an impact on patient care (for example, the “additional epithelial lesions” in bladder resections). Although the construction of structured data sets for research purposes is an additional benefit of “synoptic” reporting,\(^4\) should this be done at the expense of patient care? Is there an alternative method to derive some of these data (such as fixation methods, results of controls, etc) from the report in a way that may not require the same risk of error as including it in a synoptic report? For example, could some of these elements be in a separate fixed note?

Reducing the number of required data elements is not the only approach to reducing these errors. Because these clerical errors are strongly correlated with the number of required data elements, it is not unreasonable to postulate that they may also be associated with the number of free text elements that need to be typed into each report. As a result, efforts to reduce the amount

<table>
<thead>
<tr>
<th>No. of Required Data Elements</th>
<th>Average No. of Required Data Elements</th>
<th>No. of Synoptic Reports</th>
<th>No. of Amendments for Clerical Error %</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10</td>
<td>7.1</td>
<td>664</td>
<td>3</td>
</tr>
<tr>
<td>11–15</td>
<td>13.5</td>
<td>2876</td>
<td>31</td>
</tr>
<tr>
<td>16–20</td>
<td>16.5</td>
<td>657</td>
<td>13</td>
</tr>
<tr>
<td>&gt;20</td>
<td>37.3</td>
<td>2102</td>
<td>55</td>
</tr>
</tbody>
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\(R^2 = 0.783\)  
Correlation of clerical errors with the number of required data elements in synoptic reports.

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of free text typing may also reduce these clerical errors. Having the CAP provide templates that can be “cut and pasted” into the report would be of benefit. In addition, there are many opportunities to reduce what is essentially a sentence to a much shorter (“synoptic,” if you will) entry. For example, for staging colon carcinomas, when describing the extent of tumor is there less information in “Tumor invades into peri-colonic fat” than “Tumor invades through the muscularis propria into the subserosal adipose tissue or the nonperitonealized pericolic or perirectal soft tissues but does not extend to the serosal surface”? Although some of this language comes directly from the American Joint Commis-sion on Cancer TNM staging manual, not all of it does. In either case, it is hard to understand why authorities would object to using language that was just as accurate but also more concise (and as a result, less error prone).

Finally, information technology may also be of aid in reducing these errors. Programs such as the CAP electronic Cancer Checklists, which are formatted data entry programs, can reduce these errors by automatically calculating elements, such as tumor stage, based on the data previously entered. They also may reduce typographic errors by allowing the user to check a box rather than free text an entry. One wonders whether these programs may be able to demonstrate improved accuracy compared with free text entry of synoptic reporting.

Fortunately, we all share the same goal—providing the best patient care possible—and there are multiple ways to mitigate the problems identified here. To this end, the CAP should use the data we present here and the evidence already available in the literature26 to make these synoptic reports more user friendly and less susceptible to pathologist error. It is important to recognize that synoptic reports as required by the CAP have not only a cost in terms of time and energy but in accuracy as well, and that providing the appropriate tools to overcome this cost will be a critical part of the success of these synoptic reports. Although we support research and the creation of structured data sets that might facilitate this research, we believe that this should not be at the expense of an increased risk of errors that could lead to patient harm.

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In Reply.—We read with interest the letter to the editor “The Cost of Synoptic Reporting.” The aim of syn-optic reporting based on the College of American Pathologists (CAP) Cancer Protocols—developed and maintained by the CAP Cancer Committee—is to improve patient care by providing a framework for reporting succinctly essential pathology data elements in cancer reports. While developing and revising protocols, the committee maintains an active emphasis on format, ease of use, and avoidance of unnecessary elements. As such, we share the concerns of the authors regarding the need to further strength-en the format of protocols to improve readability, reduce potential errors, and facilitate organizational audits for quality improvement and accreditation purposes.

We, thus, take issue with the authors’ contention that the required data elements outlined in the protocols contain elements that are not necessary for clinical care and are there to primarily facilitate “research.” The committee has devoted significant time and effort over the years to streamline the more than 67 protocols in order to optimize required elements. The Committee has also expanded its efforts to ensure transparency by incorporating public comments and input into protocol development and revision, in line with standards for Clinical Practice Guideline development. Furthermore, protocol authorship is overseen by expert panels composed of subject-matter expert pathologists representing academic and nonacademic practices as well as oncologists and/or surgeons. Expert panels are tasked with ensuring that protocols align with World Health Organization terminology and American Joint Committee on Cancer requirements for tumor staging, and with including only elements truly needed for clinical management that meet stringent levels of evidence.

The data presented by the authors are interesting, but additional details are needed to ascertain their full significance. For instance, it is not clear what processes are used in the authors’ practice to transcribe reports and whether that is typically done by professional transcription services, direct typing of reports by pathologists, or through the use by the latter of voice-recognition software. In addition, it is not clear what mechanism is used to incorporate synoptic elements into the authors’ reports, which may be done generally through modular components of a commercial anatomic pathology laboratory informatics system, or by simple cut-and-paste of templates. Arguably, root causes of errors in anatomic pathology are often complex and varied. As such, ascribing the root cause of the authors’ clerical errors—in turn inferred indirectly from the number of amendments to the synoptic report—solely to the number of data elements in synoptic reports is questionable and might have been confounded by other underlying variables; for instance, an increase in the number of cases per pathologist/transcriptionist, loss or replacement of local expertise, or change in practice patterns.

Our overarching goal as a pathology community is to improve health care and health care delivery through standardization of reporting, and the protocols help accomplish this...