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Raymond D. Aller, MD, and Hal Weiner

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Why lab report formatting remains a work in progress

As a guiding principle, "form follows function" may be as appropriate for pathology reports as it was for 20th century architecture and industrial design. So, if the primary function of a lab report is to communicate diagnostic information, it should be designed and formatted to make it easy for the reader to assimilate data that will impact patient care. But achieving this result may require due diligence, say two pathologists who have embraced the cause of better-looking, more effective reports.

Paul N. Valenstein, MD, a pathologist at Trinity Health, Ann Arbor, Mich., discussed design principles for pathology reports seven years ago in an article in the Archives of Pathology & Laboratory Medicine, as well as via presentations at CAP meetings. Citing Dr. Valenstein as a "muse," Eric F. Glassy, MD, medical director of Affiliated Pathologists Medical Group, Torrance, Calif., adopted those principles and melded them with his own views on lab report content and design in a CAP '14, presentation in September.

But knowing how a report should be designed and formatted and what it should contain is only half the battle. Knowing how to achieve these ends is the other half. This leads to the question: Do most laboratory information systems allow users to create well-designed reports? Yes, says Dr. Valenstein, adding the caveat, "if your formatting needs are pretty basic."

Dr. Valenstein drew on research in the publishing, commercial aviation, and cognitive psychology literature to elucidate principles for optimal report formatting. His formatting principles are the following.

- Use headlines to emphasize key findings. The headlines should be set apart from the text by white space. In some cases, though, the most important finding may be the absence of disease. For example, "no recurrent carcinoma" could be a diagnostic headline.
- Maintain layout continuity. Consistent positioning of key facts on the page or screen anchors the reader's expectations about content and reduces cognitive errors.
- Optimize information density for the intended audience. For example, readers familiar with pathology terms mentally process those terms as a

> chunk and can absorb more information in a single line than nonpathologist readers.
>
> - Reduce clutter. When formatting information, less is often more. Unnecessary information can keep the reader from noticing critical facts.

Pathologists can further enhance formatting by using uppercase letters for emphasis, extra space around blocks of text, and indented lines, says Dr. Valenstein. "With almost any LIS, you can get your report formatted reasonably well, as long as you don't desire columns, or underlining, or fancy stuff," he notes. "But if you want to use electronic templates—which help us remember to include specific elements in the report—then you may need to ask your LIS vendor what kind of formatting flexibility is supported. It's great to include all the CAP-required elements, but what will the report look like? Does this tool allow you to not only control the content, but where it's positioned?"

Dr. Glassy uses a variety of templates, including reports customized for urology, prostate biopsies, cervical biopsies, hematology cases, and Pap smears. This posed challenges for vendors he queried in his recent search for a new LIS. Rather than asking vendors a set of questions about formatting, he recommends doing a mock-up of a sample report. "We showed them our reports and asked, 'Can you do that?,'" he says. "A lot of them said they could, but when we asked for examples, they couldn't quite meet our needs." In the case of his seven-page prostate report, "trying to get that exactly the way we wanted it from the vendors was impossible," he notes. Once the new vendor was selected, "we ended up compromising, cutting out some things, so the reports are OK now, but they're not where we wanted them."

Customized report formats can be costly, Dr. Glassy adds. "The vendor we work with says, 'We can create this number of report types for the amount of money you're spending. If you need more than those templates, the cost is X.'" For that reason, he stresses, it's critical to negotiate report formats early in the process and to include in the request for proposal that formatting is a priority. "You don't pick a vendor and then sit down and say, 'These are the things we want.' You have to be very specific up front because programming changes can be quite expensive."

Integrating data that are not typically included in a report can also challenge LIS vendors, says Dr. Glassy. "If you've got molecular testing, or cytogenetics results, or images, integrating those can be really hard, and some vendors are better than others at doing that. You can always do an attachment, or you can cut and paste manually, but getting a system to do it automatically is quite a challenge. You may need to ask, 'How many steps would it take for a pathologist to add an image to a report?' Or, 'How do I integrate my cytology Pap smear results with the cervical biopsy?'"

It's also important to remember that electronic transmission of reports from the pathologist to a physician's office or hospital information system can wreak havoc on formatting. Knowing this, Dr. Glassy's pathology group asked each of its primary hospitals to submit an example of a faxed report, a screen shot from an EMR, and the paper report. "It was clear that sometimes the nice formatting in MS Word was getting stripped out, particularly in the synoptic reports," he says. "The word wraps and the tables were especially problematic."

This led the pathologists in Dr. Glassy's medical group to rework their report formats and to collaborate with hospitals' IT departments to find ways to keep the transmitted reports as close to matching the file copy as possible. "In the outreach arena, report fidelity can be even more difficult to maintain if PDFs are not transmitted to clients' EMRs," he adds. "We always check how the report appears in the EMR for each new client, but keeping up with all the different office-based EMRs is a challenge—interfaces can be tricky.

"Good report formatting goes a long way in helping clients clearly understand the final diagnosis, but it is not one of those things that pathologists typically think about," Dr. Glassy concludes. "Words matter, but how those words are presented is also key."

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Cerner offering free CommonWell services

Cerner will provide CommonWell services free of charge until Jan. 1, 2018, company CEO Neal Patterson announced last month.

The services are an outgrowth of the CommonWell Health Alliance, a nonprofit trade organization, led by representatives of health care information technology companies, working on developing a vendor-neutral platform that supports interoperability and data sharing. CommonWell services focus on patient identification and linking, records location and retrieval, and patient consent and data-access management.

"We believe that by providing the service free for three years, it will give your organization the chance to evaluate the service," Patterson wrote in a Nov. 5 blog post. The company will, however, charge a "nominal setup fee," he added.

CommonWell membership is open to all health care IT companies.

[Cerner](), 816-221-1024

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Apollo introduces app for smartphones and tablets

Apollo has launched a mobile app for its Apollo EPMM enterprise patient multimedia manager.
Health care professionals can use Apollo Mobile to securely capture pictures, video, and audio from their smartphone or tablet and then incorporate relevant clinical information transmitted via these means into the patient medical record through Apollo EPMM.

"Apollo Mobile is easy to use and enables the health care enterprise to have a strong, secure, and accepted BYOD [bring-your-own-device] policy while your staff continues to work effectively and efficiently," says Mark Newburger, CEO of Apollo.
Apollo Mobile supports bar-code scanning on the health care professional's mobile device. Users scan the patient bar code and take a picture, which is immediately uploaded to the patient's medical record and deleted from the mobile device for security purposes.

[Apollo](), 703-288-1474

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Report analyzes value of anatomic pathology systems

NovoPath, in conjunction with The Dark Report, has released the white paper "Augmenting an Enterprise-Wide HIT System with a Best-of-Breed Anatomic Pathology LIS."

The free white paper presents four case studies of anatomic pathology labs that have successfully used an AP-specific lab system.

Among the other topics covered in the report are the following.

- Differences between enterprise-wide EHR systems and general lab information systems and AP-specific systems.
- Challenges to selecting an enterprise-wide health information system or purpose-specific laboratory information system.
- Hidden traps in enterprise-wide health information systems and limited

function lab information systems.

- Pros and cons of using a cloud-based AP system versus a locally installed AP system.
- Essential elements of a best-of-breed AP system.

Those interested in the white paper can access it by signing up on NovoPath's website, www.novopath.com.

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Atlas Medical issues new release of LabWorks

Atlas Medical has introduced LabWorks release 18 for general distribution. This latest release of the order-entry and results-reporting system includes more than 40 new enhancements.

LabWorks release 18 offers cumulative diagnostic history, instead of just the ordering practice's history; result-distribution options that allow labs to automatically provide copies of results to physicians associated with the patient but who are not the ordering physician; and improvements to the methods of processing and forwarding ancillary orders and results for such areas as radiology, cardiology, and physical therapy.

With release 18, users of Atlas' physician portal and patient service center portal can upload images or PDFs into LabWorks. The images can be associated with a patient's driver's license, insurance provider, or a particular order and can be viewed from various pages within the product.

Atlas Medical*, 800-333-0070*

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Viewics expands presence at academic medical center

Viewics has announced that University Hospitals Case Medical Center, Cleveland, is expanding its use of the Viewics Health Insighter by adding the solution to its SoftMic microbiology information system and SoftA/R billing and accounts receivable system. SoftMic and SoftA/R are products of SCC Soft Computer.

UH Case Medical Center went live with Viewics Health Insighter in its clinical and anatomic pathology labs late last year. The product is an end-to-end visualization and analytics solution that transforms raw data into actionable information.

Viewics*, 415-439-0084*

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Dr. Aller is director of informatics and clinical professor in the Department of Pathology, University of Southern California, Los Angeles. He can be reached at raller@usc.edu. Hal Weiner is president of Weiner Consulting Services, LLC, Florence, Ore. He can be reached at hal@weinerconsulting.com.