From the President's Desk: Soup's ready, ketchup plopped, 5/17

May 2017—When we were growing up, my sisters would often ask, "Is it soup yet?" mimicking a popular TV commercial. The catch phrase caught on with the kids as a way to express eagerness for anything, lunch related or not.

Dr. Friedberg

Another commercial popular back then showed an inverted ketchup bottle slowly yielding its contents to the force of gravity while Carly Simon belted out "Anticipation." Part of me always wanted to tell my friends that because ketchup was thixotropic, a good shake would help the ketchup flow faster. I never did, probably because that wasn't how the cool kids talked and partly because it seemed necessary to wait for the ketchup to plop.

For more than a decade, many of us have worked toward and eagerly awaited the arrival of whole slide imaging as one component of a larger digital pathology picture. Just a few weeks ago, we found out that the soup was ready and the ketchup had plopped. WSI is really here. Not just for education or second opinions, but here with real FDA clearance for a specific product, signaling the end of one road and the start of another. To continue the commercial analogy, it was a "plop plop, fizz fizz" moment. At the same time, we know that hype and hope cannot sustain value without real-world utility. To measure up to the emotional intensity already invested, we know that shiny new tools must create meaningful opportunities to change the future in a fundamental way.

Many of us believe that permission to use WSI instrumentation for primary diagnosis signals a paradigm shift for our specialty, not only in how we approach a two-dimensional microscopic image but also in how we can display, interrogate, and perhaps integrate images into three-dimensional views. For example, adding the capability to digitally overlay analytical images onto anatomic images could open the floodgates to possibility, perhaps even changing the way we think and interact with colleagues.

Whole slide imaging will foster creative speculation about optimal diagnostic methods and treatment options. In due time, WSI will dramatically boost the ways that diagnostic pathology affects the day-to-day practice of medicine. But in the short term, many of us will be challenged to persuade budget czars that, one, WSI will soon be a competitive necessity and, two, procrastination would be shortsighted at best.

In those conversations, a few examples may help illustrate why it is reasonable to expect that WSI will pay for itself in flexibility, accelerated workflow, and benefits yet unknown. We can show, for example, that integrating these images in the electronic health record will eliminate some of the mystery attached to our work. That a three-dimensional image that can be manipulated and shared will amplify the usefulness of what we contribute by making it more accessible and perhaps more relatable. That a visual guide will make it easier for us to communicate with one another about our findings.

Digital imaging can build on the value of informatics as a structural support for the bridges we need to link science and medicine. For those who must see to believe, whole slide imaging will make it easier to cross those bridges. We know pathology is foundational to science and medicine; WSI will make that more concrete. And in the research context, digital pathology will multiply the value of our data sets exponentially, making them more readily searched, compared, interrogated, and shared. The benefits to medical education can only grow.

Then there is the potential for patient education. I mentioned in my column last month that my institution offers a biannual "mini medical school" for our community; my turn to present came up last month. After the lecture, about 100 students toured the laboratory. As always, they were mesmerized by the technology. Next time, I might show how digital pathology improves our ability to care for their loved ones. Perhaps I'll be able to demonstrate how we identify a tumor (signal) amidst a sea of normal background tissue (noise) in the image and examine its interior in realistic 3-D.

Nonpathologists who look at our slides often cannot relate the image on the slide to the whole individual. My back yard doesn't look much like its satellite image either, but when Google Earth allows me to digitally drive down from that satellite to our house, I can see the geographical and functional relationships between our home and our neighborhood. Soon we may be able to do the same for a patient or provider, translating the relationships between a kidney biopsy, a kidney, and the whole patient.

When WSI comes online, we'll have a transition to manage. We will be able to work more quickly when previous images are instantly available for comparison without physically moving slides and trays. As we become adept with the refined workflow, we will no doubt consider alternative models, such as satellite facilities linked to a central node. And while there has been no indication that coding and billing for digital anatomic pathology images should differ from traditional practices, we should be prepared to talk about how newfound flexibility could affect staffing and reimbursement.

All of this supports an intuition we've talked about before—that we are in the early moments of a golden era of diagnostics when treatment will be dictated by diagnostic outcome, continually updated, and refined. WSI for primary diagnosis will surely nudge that along. It may accelerate evolution in our specialty and thereby stir up butterflies in our stomachs; if that happens, we'll want to remember they are friendly butterflies. And at a time when there is much concern about how technology will influence workforce demand, it is good to know that our value continues to rest in the ability to synthesize information and think things through, which are fine ways to liberate signal from noise.

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Please see a related story for more on the clearance of whole slide imaging for primary diagnosis. For practical guidance on implementing WSI, the CAP Pathology and Laboratory Quality Center guideline "Validating whole slide imaging for diagnostic purposes in pathology" is now a must-read, and the CAP Digital Pathology Resource Guide is an outstanding reference text.

Dr. Friedberg welcomes communication from CAP members. Write to him at president@cap.org.