Success Story: RCPA Quality Assurance Programs Using Digital Pathology

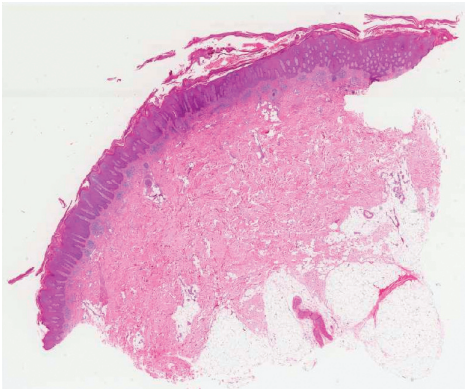
Challenges: Glass slides posed significant limits to what a QA program could achieve.

Solution: Use Aperio ScanScope® systems to create digital slide libraries for QA surveys and continuing education.

RCPA Quality Assurance Programs Pty Limited
Anatomical Pathology

RCPA Quality Assurance Programs Pty Ltd (RCPA QAP) was established by the Royal College of Pathologists of Australasia to provide survey materials in all areas of pathology for accreditation purposes. Its challenge is to provide consistent, timely, and relevant QA testing to a geographically dispersed group of members with nearly 300 labs and 200 individuals.

RCPA QAP knew it needed to change and improve the QA program. At issue was the fact that glass slides were extremely limiting to the testing process. Not only were they prone to breakage and loss, but the mechanics of preparing and distributing surveys to several hundred participants five times per year was a logistical headache.



Possibly the biggest issue confronting the organization stemmed from the revelation that came from a critical audit conducted by Professor David Davies at South Western Area Hospital System, Liverpool, in New South Wales, Australia. These studies showed that the types of cases pathologists were most likely to see were often those for which there was extremely limited tissue, such as endoscopic biopsies of the stomach, or curettings from the cervix. In fact, Dr. Davies found that at best, only 30% of the most common types of cases could be tested with glass slides.

The organization was also concerned about potential issues associated with the distribution of patient tissue.

Solution

To address these issues, RCPA QAP turned to Aperio and digital pathology. Digital slides would enable the organization to send all participants the exact same sample, creating an even testing field. They would be particularly useful in instances where cutting 250 slides had not been practical, enabling the organization to test on certain key areas it hadn't been able to survey before. And, the use of digital slides enabled the RCPA QAP to refrain from sending actual patient tissue out.

After the RCPA investigated the company's systems and determined Aperio's ScanScopes met their exacting quality standards, the Australia Commonwealth Government supported purchase of a high-throughput ScanScope system. The organization created a library of digital slides for QA assessment, and survey sets were sent out via DVD to pathologists, who would then access the slides using Aperio's ImageScope viewing software.

After initial trial runs and side-by-side comparison of glass to digital slides to assess concordance, RCPA QAP began to systematically roll out its new program. From an initial test of just 91 participants in a small handful of modules, the organization quickly ramped up and by the end of 2006 had achieved 80% participation of 452 respondents in 274 labs. Surveys included dermatology, urology, gynecology, pediatric, general, and breast. Some, like urology and gynecology, will be issued solely on digital slides and represent a mode of testing that wouldn't have been possible due to tissue restrictions. The organization also established a HER2 CISH certification program using digital slides and questionnaires on the Internet.

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Benefits/Value

Using Aperio ScanScopes to scan entire glass slides at high (20x and 40x) resolutions, RCPA QAP created essentially artifact-free digital slides that could be readily distributed to its survey takers. With every pathologist and lab able to look at the same digital slide and report on the same material, concerns over homogeneity or being at a disadvantage because another participant had a more representative sample were eliminated.

Most importantly, the organization was able to distribute digital slides that encompassed a broad array of tissue types and conditions, enabling it to better test pathologists on a full spectrum of cases. "For the first time," explained Margaret Dimech, program coordinator at RCPA QAP, "we are including specimens that represent the small biopsy material routinely reviewed in pathology labs."

RCPA QAP found that while some pathologists initially expressed reluctance about the switch to digital slides, the program has been well received. Pathologists appreciated the potential of digital pathology and the addition of new modules was requested, including renal, hematology, and cytopathology.

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> Margaret Dimech, Coordinator, Anatomical Pathology
> RCPA Quality Assurance Programs Pty Ltd

RCPA QAP also discovered ready demand for use of digital pathology at conferences and medical teaching programs. The organization has met many requests to provide digital slides for these activities, and is proud of its leadership role in driving change in pathology. It actively provides scanning services for pathologists who want to create unique digital case collections, build digital teaching sets, or work with slides interactively through conferencing and annotations.

The RCPA QAP project has made digital pathology readily accessible to its participants and the majority of pathologists have already availed themselves of opportunities to become familiar with the new technology. The organization has seen a very smooth transition so far, and looks forward to continued adoption.

Next Steps

RCPA QAP has a number of initiatives underway to expand its digital pathology reach. It is adding modules to its digital slide QA program as quickly as it can build them. It is also looking at oil scanning for longer-term projects to roll out hematology and cytopathology modules, which require scanning resolutions of 80x or higher.

The organization is planning a large teaching set from an extensive veterinary pathology slide collection, intended to be offered as an online educational resource for anatomical pathologists.

About Aperio

Aperio is digitizing pathology. We provide systems and services for digital pathology, which is a digital environment for the management and interpretation of pathology information that originates with a digital slide. Aperio's award-winning ScanScope® slide scanning systems and Spectrum™ digital pathology information management software improve the efficiency and quality of pathology services for pathologists and other professionals. Applications include education, remote viewing, archival and retrieval, basic research, and image analysis.