



Proceedings

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THE EFFECTS OF DIGITAL WORKFLOW SUPPORT AND WORKFLOW CONTROL FOR THE PERFORMANCE OF ROUTINE PATHOLOGY

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Introduction/ Background

Although the scanning technology for microscopic slides has been known for more than 15 years, its practical use in daily routine is still on the very beginning. Fast and reliable scanners enabled their increasing use in teaching, but not yet in consultation and primary diagnostics. So far the scanning is not handled as a process in the pathology laboratory by most of the pathology systems, leading to an interrupted workflow with delays and additional expenses. The requirement profiles for slide scanners can only be formulated with respect to their workflow integration.

Aims

The effects of different degrees of workflow digitalization have been studied as to analyze the sources of possible benefits of digital pathology as well as to identify the bottlenecks and inconsistencies in the workflow control in a routine pathology laboratory. The adherence to existing IHE Technical Frameworks has been evaluated, too.

Methods

Performance statistics of routine pathology were evaluated in different phases of digital workflow control over more than 10 years in a medium-sized institute of pathology.

Three phases were defined:

1. Uncontrolled, but digitally supported workflow with digital dictation, digital macrophotography, digital microphotography at few pathology Workstations, and a “classic” pathology software system;
2. Digital workflow control including digital dictation and digital photography;
3. In a pilot study at the end of the evaluation period the additional benefits of slide scanning were estimated.

Results

In the period between 2006 and 2015 a decrease of turnaround-time of roughly 40% was seen. Alone the effects of a (sub)total digital workflow control contributed about half of that effect. The implementation of slide-scanning did not add further acceleration so far, but enabled some additional functionality for improving quantitative reporting. This was achieved without an explicit commitment of the pathology software to standards in workflow control and with still leaving a few laboratory processes out of the control. Milestones and key elements of workflow management are reported in detail.

Conclusion:

All processes both in the laboratory and in the diagnostics have to be checked (and changed, if necessary) for being fit in a streamlined pathology workflow. The implementation of scanners into the routine diagnostics will enforce those essential developments leading to increased productivity and quality.