

## More effective use of space leads to future flexibility and huge cost savings for this Anatomical Pathology Lab.

Lab management realized they needed a second opinion before finalizing the design: "It looked like the same old problems on a bigger footprint."

### Overview

Anatomical pathology labs are concerned with diagnosis of disease based on gross, microscopic and molecular analysis of organs, tissues and cells. This particular lab had started out as a very small lab but then experienced growth to the point of needing a new facility. Typical of most organizations experiencing growth, the lab had added new equipment and processes wherever they could find room. The result was a lab laid out solely based on the space available at the time.

The primary work areas were designed based on equipment type and work performed, such as: grossing stations, tissue processors, embedding, sectioning, and staining. The secondary processes such as special staining, cytology, and immunology-histology-chemistry (IHC), were shoe-horned in where space was available within the lab's 1,500 sq. ft.

As lab management began designing the new lab of approximately 2,800 square feet, old habits and current ways of working prevailed. The new lab design showed little change but was now in a larger, more spread out area. This resulted in similar process flows but with longer distances between steps.

The lab was also planning to have custom designed traditional fixed workstations because they still didn't feel they had sufficient space. Additionally, a \$125,000 automated storage system was in the plan for storing specimen slides and blocks.

### Data Collection

During analysis, it was determined that the proposed layout would actually be less productive in many areas.

With the support of OpEx, a small, part time team analyzed the current process flows within the lab. A Process Quantity (PQ) analysis of the procedures and required steps conducted in the lab determined that of 555 different procedures, only 31 accounted for 80% of the lab's volume. The next step was to determine the sequence and processes required for these top 31 procedures and then design the lab based on this information.

Using the Catena® Improvement System for video analysis and comparing current, planned and ideal lab designs, it was determined that operators working on secondary processes would actually be less productive in the planned lab design compared to current. An ideal layout could potentially improve operator walk distances by 50%. Isolated islands of work became obvious by mapping primary and secondary process flows and operator walk patterns on the planned design. The plan to have built-in workstations was also challenged by future business growth, new technologies and cost.

### Transformation

Lab management accepted a modified version of the ideal design which created enough space for storing specimen slides and blocks in the lab area, thus eliminating the need for an expensive automated solution. The lab would also be outfitted with modular and flexible workstations at a comparably less cost than built-in workstations.

By selecting the flexible workstations, the lab design can be updated and modified easily as requirements change over time. Process and operator travel for secondary processes such as special stains, IHC and cytology, were reduced by 55%, 71%, and 63% respectively. They also saved \$125,000 for an unneeded automated storage solution and offered an expansion area for future needs!

Because of the success the lab achieved, the improvement team is continuing in other areas of improvement while preparing for the upcoming move into the new lab. Having form follow function can save you hundreds of thousands in facility construction and equipment costs.



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one process at a time"*

