

Background

Data analysis is a valuable skill in Pathology. The formulas, pivot tables and visualizations that are supported in Microsoft Excel are beneficial to all data-driven fields, and some uses are particularly useful in Pathology data, such as Lookups to match a biopsy to the same patient's resection and text functions to separate items in a synoptic summary into structured columns. Excel training courses are usually designed for business, and training for pathology applications is limited. Herein, we present an approach that was successfully employed in our institution.

Methods

Three workshops focused on project-based-learning were held on Microsoft Teams. Two residents designed the course and functioned as instructors. Participants received datasets and goals prior to each session and were encouraged to perform each technique as they watched. Each workshop was structured around a capstone project that analyzed real data for a research or QA purpose, and relevant techniques were introduced individually prior to the capstone by an instructor and then replicated by a participant who volunteered to share-screen to the audience. The first capstone project involved workflow analysis and division of workload in a pathology department, and the WEEKDAY function was used to compare workload across days of the week. The second capstone involved separating item in free-text synoptic summaries into separate columns using MID and SEARCH functions. The last capstone used the LOOKUP function to compare biopsy diagnosis to resections. After capstone datasets were prepared, their underlying trends were studied using pivot tables and graphs.

Results

Three workshops were enough to cover the basics of formulas, pivot tables and graphs as applied to Pathology. Participants appreciated the sessions, volunteered to demonstrate exercises, and were able to handle them without much difficulty. Some trainees were involved in independent research projects in which they applied newly learned techniques and were encouraged to share their implementation with the group.

Conclusions

Data analysis in Pathology involves a unique set of techniques, and the basics can be learned in few sessions. Project-based-learning is an effective model, and a remote-meeting platform that allows each participant to access their computer during the meeting is ideal.