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901.HEALTH SERVICES AND QUALITY IMPROVEMENT - NON-MALIGNANT CONDITIONS

A Comprehensive Microscopy and Peripheral Blood Smear Curriculum for Hematology Fellows

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Background: Peripheral blood smear (PBS) analysis is an essential skill for the practicing hematologist and allows for the timely diagnosis of a variety of hematologic disorders. In most cases, PBS analysis can be performed faster than advanced laboratory tests, allowing for the prompt treatment of life-threatening diseases, such as acute promyelocytic leukemia and thrombotic microangiopathies. For these reasons, the Accreditation Council for Graduate Medical Education requires that hematology fellows achieve competency in PBS interpretation in order to graduate. However, most hematology training programs lack a structured PBS curriculum and formalized method of skills assessment. Consensus recommendations were recently developed by a multi-institutional focus group as to the ideal structure and components of PBS curricula within hematology training programs (Chase et al., *Blood Advances*, 2023). Herein, we report our initial experience implementing a longitudinal PBS curriculum for hematology fellows based on these consensus guidelines and demonstrate the effectiveness of this curriculum using a novel assessment tool.
Methods: We developed a longitudinal PBS curriculum for hematology fellows at the University of Wisconsin-Madison. The curriculum included an introductory course for first-year fellows on the use of a microscope, slide handling, and PBS review using a hands-on and collaborative approach (Figure 1A). The introductory course included five two-hour sessions spanning the first two months of fellowship. The first three sessions were led by a faculty member and senior fellow and included training on how to use the microscope as well as identification of normal blood cell morphology and blood cell morphologies and hematologic diagnoses deemed high-priority by consensus recommendations using a slide library. For the final two sessions, the fellows were provided with a set of unknowns and asked to work as a group to identify the pathologic findings and underlying diagnosis. The introductory course was supplemented with ongoing experience and education on PBS interpretation through hematology consult, ward, and clinic rotations throughout fellowship under the direction of hematology faculty skilled in PBS analysis. A novel assessment tool was distributed to participants before and after the introductory course in order to assess the effectiveness of the curriculum. The assessment tool was a ten-question image-based questionnaire in which fellows were prompted to identify high-priority morphologies or hematologic diagnoses after being provided with a clinical vignette and associated PBS for review.
Results: To date, four hematology fellows have participated in the PBS curriculum. Prior to the introductory course, no participants expressed feeling very or extremely confident in analyzing and interpreting PBS. After the introductory course, 25% of participants expressed feeling very confident in analyzing and interpreting PBS, whereas the remaining 75% felt somewhat confident. 75% of participants strongly agreed that the course improved their ability to use a microscope, and 100% of participants strongly agreed that the course improved their ability to analyze and interpret PBS. Participation in the course led to improved ability of participants to identify high-priority blood cell morphologies and diagnoses as determined by the assessment tool (Figure 1B, 8.25/10 pre-course compared to 9/10 post-course).
Conclusions: Our longitudinal PBS curriculum was perceived positively by hematology fellows and led to improved confidence and independence in using a microscope and PBS interpretation. Additionally, participation in the introductory course improved identification of high-priority PBS morphologic abnormalities and hematologic diagnoses. Our curriculum and assessment tool serve as proof of concept that can now be improved upon and potentially adopted on a larger scale to promote competency in PBS interpretation among hematology trainees.

Disclosures No relevant conflicts of interest to declare.

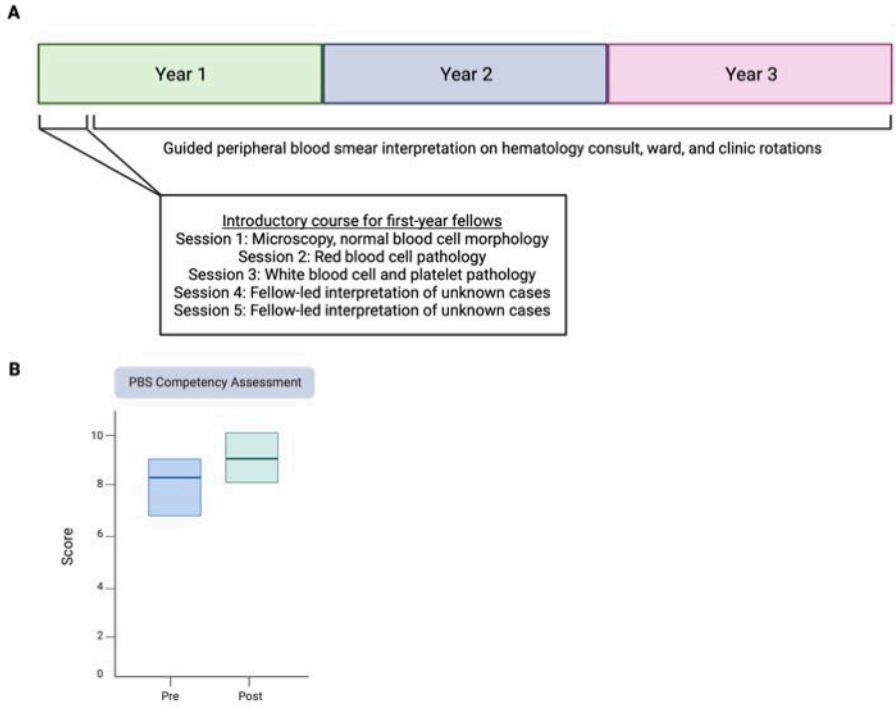

Figure 1: A) Overview of the peripheral blood smear (PBS) curriculum. The curriculum includes an introductory course during year one of fellowship on the use of a microscope, slide handling, and PBS interpretation. The introductory course spans two months and includes five sessions covering normal blood cell morphology and high-priority pathologic blood cell morphologies using an interactive and collaborative approach. The curriculum also includes includes hands-on experience and education on PBS interpretation throughout fellowship during hematology ward, consult, and clinic rotations under the direction of hematology faculty skilled in PBS analysis. B) A novel ten-question assessment tool was created to evaluate the ability of fellows to identify high-priority blood cell morphologies and diagnoses before (blue box) and after (green box) participation in the introductory course. A total of ten points was possible. Lines refer to mean scores with the top and bottom of the boxes representing highest and lowest score of the cohort respectively. Participation in the course led to improvement in identification of high-priority blood cell morphologies and hematologic diagnoses using PBS analysis as determined by the novel assessment tool.

Figure 1

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