Title: Using computer-based, self-directed modules and collaboration with a certified laboratory technician to teach first-year residents how to interpret peripheral blood smears and how to evaluate patients with common hematological conditions

Specific Aims:
1. Improve the consistency of teaching of common hematological conditions to first-year residents through computer-based, self-directed learning modules and hands-on laboratory experiences
2. Teach first-year residents how to prepare and interpret a peripheral blood smear with normal blood cell morphology and to recognize peripheral smear findings of common hematological conditions
3. Broaden our teaching resources through collaboration with laboratory personnel

Methods Used: We created a computer-based module consisting of a self-directed tutorial that reviews normal blood cell morphology and function, as well as a structured approach to the evaluation of anemia. The tutorial also includes interactive clinical cases with questions and immediate feedback highlighting key learning points. The tutorial is complemented by a second activity during which the residents attend a hands-on session led by an American Society for Clinical Pathology (ASCP) credentialed medical technologist with a specialty in hematology. Residents are shown the technique for preparing and interpreting a peripheral blood smear, and using a teaching microscope, residents review peripheral smears representing common hematological conditions with the technologist. At the end of the module, participants complete a survey and provide feedback about the experience. First-year residents are scheduled to participate in the module during a non-call rotation.

Results: Residents began participating in the curriculum in October, 2006, and to date 12 of 20 (60%) first-year residents (categorical plus preliminary) in the primary care internal medicine residency program have completed the module. All twenty residents (100%) have been scheduled to complete the module before the end of the academic year. Feedback from participants has been uniformly positive. Residents were able to identify specific learning points from both the tutorial and laboratory sessions. Residents also reported that they felt more comfortable interacting with the hematology laboratory staff after completing the module and that they were more likely to review peripheral smears on their patients. Residents also indicated that they would use the computer-based tutorial as a reference when evaluating patients with anemia or an abnormal complete blood count.

Conclusions: A combination of self-directed and hands-on activities is an effective approach for teaching first-year medicine residents about common hematological diseases and may be applicable to other content areas. Trained laboratory personnel have unique expertise and represent an important educational resource for residency training programs.