



ORIGINAL ARTICLE

Mock gynecologic cytology proficiency testing as a milestone assessment tool for anatomic pathology residents

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KEYWORDS

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Introduction One of the major aims of the Next Accreditation System is to move toward an outcomes-based evaluation system where each accredited medical residency program must demonstrate that its residents are competent in performing the essential tasks necessary for clinical practice. Because all pathologists who sign-out or screen Papanicolaou (Pap) tests are required to pass an annual 10-slide gynecologic cytology proficiency test (PT), we developed mock PT modules as a tool for assessing competency.

Materials and methods In 2007, we introduced mock proficiency testing with 3 distinct modules, each consisting of 3 10-slide test sets (10 ThinPrep, 10 SurePath, and 10 conventional Pap slides). Each module was administered at 3 different time points. We evaluated the following parameters: (1) performance differences between Pap preparations; (2) performance over time; (3) performance before and after initiation of one-on-one teaching sessions with cytotechnologists in 2009; and (4) quality of test slides.

Results Residents showed improvement over time, and overall scores did not differ significantly among ThinPrep, SurePath, and conventional slide sets. The average score for the first test set was significantly higher for residents who received formal training by a cytotechnologist than for those who did not. Overall, 16 of 90 slides were misclassified by 40% or more of residents, half of which exhibited glandular abnormalities.

Conclusions The objective assessment provided by mock PT is a useful tool for both faculty and residents. © 2015 American Society of Cytopathology. Published by Elsevier Inc. All rights reserved.

Introduction

In 2012, the Accreditation Council for Graduate Medical Education announced a multiphase plan to restructure its accreditation system, which has been designated the Next

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Table 1 Standard scoring grid for pathologists.

Correct response	Participant response			
	A—unsatisfactory	B—negative	C—LSIL	D—HSIL
A—unsatisfactory	10	0	0	0
B—negative	5	10	0	0
C—LSIL	5	0	10	5
D—HSIL/cancer	0	−5	5	10

Abbreviations: HSIL, high-grade squamous intraepithelial lesion; LSIL, low-grade squamous intraepithelial lesion.

Accreditation System (NAS).¹ One of the major aims of the NAS is to move toward an outcomes-based evaluation system where each accredited medical residency program must demonstrate that its residents are competent in performing the essential tasks necessary for clinical practice.² Each specialty will have a framework for the assessment of resident development known as milestones. The Accreditation Council for Graduate Medical Education and American Board of Pathology recently provided such milestones for use in pathology residency programs, and some of the suggested evaluation methods include pretests and post-tests, rotation exams, maintenance of certification/self-assessment modules, and resident in-service examinations.^{2,3}

Because all pathologists and cytotechnologists who sign-out or screen Papanicolaou (Pap) tests are required by the Clinical Laboratory Improvement Amendments of 1988 to pass an annual 10-slide gynecologic cytology proficiency test (PT), we propose mock proficiency testing as a useful tool for assessing competency in patient care (PC3: interpretation and diagnosis) and in professionalism (PROF1: licensing, certification, examinations, credentialing).²

Materials and methods

Study period

The study period encompasses 5 academic years from 2007 to 2012. All anatomic pathology (AP) residents (48 total) during this time period were required to complete the mock proficiency tests. Three residents had completed a post-sophomore fellowship prior to residency, and none had prior experience as a cytotechnologist. Forty residents completed all 3 test modules, and 8 residents completed only 2 test modules.

Mock PT slide sets

Test slides were selected from the cytopathology archives at Stanford Hospital and Clinics by an attending cytopathologist (C.S.K.) based on both the quality of the diagnostic features (ie, the slide represents classic features of a given entity) and the quality of the slide itself (ie, the slide is not cracked or faded). Four slides from a ThinPrep (Hologic, Inc) customer set were included in the module created in 2010. Slides with high-grade squamous intraepithelial lesion (HSIL) or cancer (category D) were confirmed by a concordant diagnosis on tissue biopsy, except for 1 case of endocervical adenocarcinoma from the ThinPrep customer set where follow-up was not available.

Three distinct mock PT modules (90 slides total) were created with each test set consisting of 3 parts — 10 ThinPrep slides in 1 plastic slide box, 10 SurePath (Becton, Dickinson, and Company) slides in a second box, and 10 conventional Pap slides in a third box. A new module 2 was created in the spring of 2010 when the original set of slides went missing. Following the specifications of the Centers for Medicare and Medicaid Services (CMS), each 10-slide test set includes ≥ 1 slide from each of 4 diagnostic categories (A to D) as defined by the CMS: (A) unsatisfactory for evaluation, (B) normal or benign changes, (C) low-grade squamous intraepithelial lesion (LSIL), and (D) HSIL or cancer.^{4,5}

Mock PT format

Starting in 2007, all AP residents at Stanford Hospital and Clinics have been required to participate in mock proficiency testing as part of the cytology curriculum. Because AP training at Stanford consists of a 2-year block, the mock

Table 2 Average resident scores across test modules with percentage of residents achieving a passing score in parentheses.

Test module	ThinPrep	SurePath	Conventional	Average
1 (n = 48)	79 (49)	74 (35)	80 (47)	77 (24)
2 (n = 48)	78 (21)	77 (31)	76 (22)	77 (25)
3 (n = 40)	91 (76)	92 (82)	84 (53)	89 (71)
Overall	81 (36)	81 (42)	80 (34)	

Values are n (%).

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