

CLIAC Public Comment

November 2, 2016

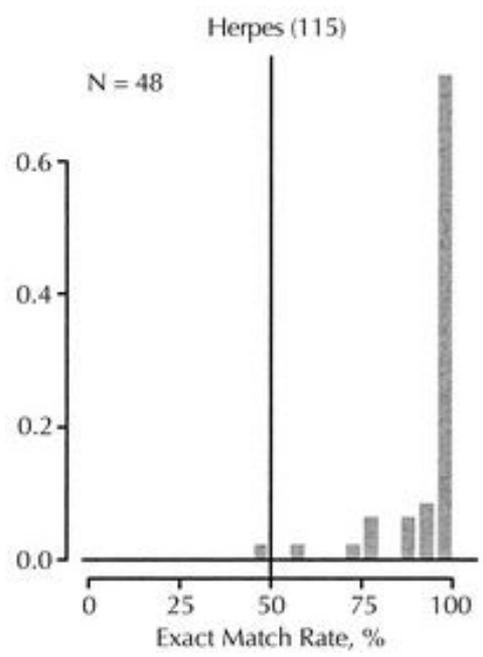
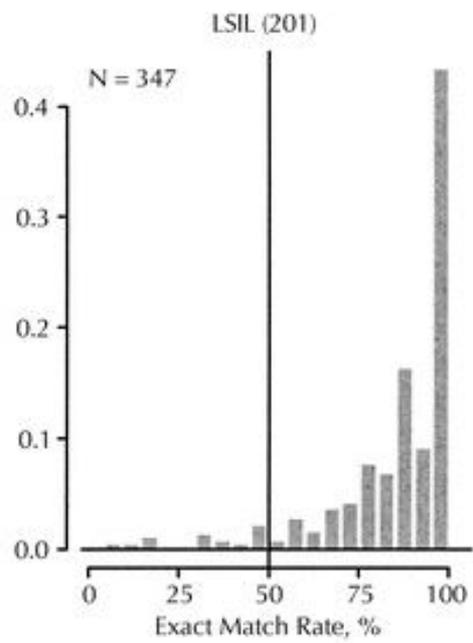
Submitted by: **George Birdsong, MD**

**Cytology Workload**

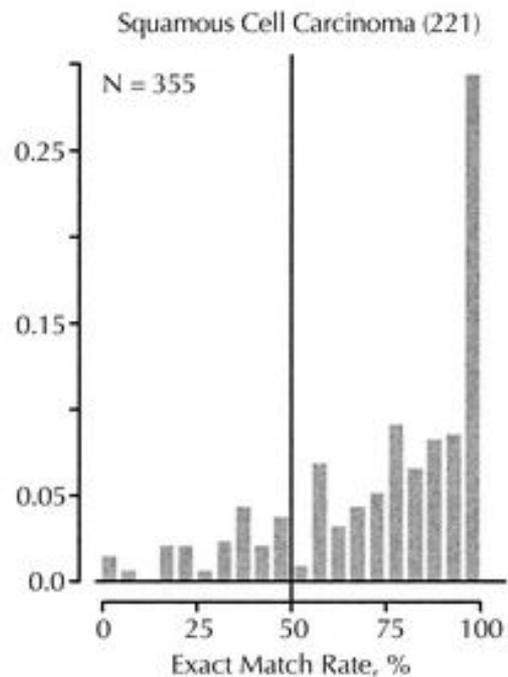
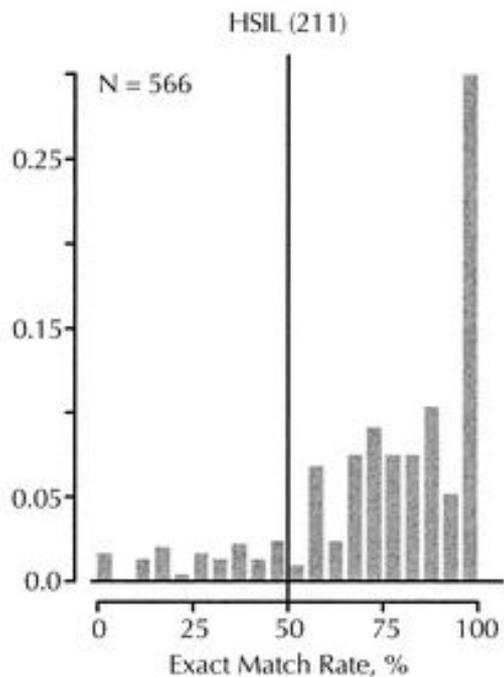
# Precision in Gynecologic Cytology

The following histograms were taken from a paper on precision in gynecologic cytology (reference and abstract provided). The data come from the College of American Pathologists Interlaboratory Comparison Program in Gynecologic Cytology and cover approximately 25,000 reviews of cases with reference interpretations. The X-axis is the percent agreement across all reviews of a particular slide; the Y-axis is the proportion of cases. As can be seen, the percent of cases with an exact match across all reviews (the rightmost bar in the histogram) for high grade squamous intraepithelial lesion and squamous cell carcinoma are only about 30%. The exact match rate was higher for low grade squamous intraepithelial lesion and herpes, which have more distinctive morphologic appearances.

# Precision in GYN Cytology



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## REFERENCE/ABSTRACT

Renshaw, A. A., Davey, D. D., Birdsong, G. G., Walsh, M., Styer, P. E., Mody, D. R., Colgan, T. J. and College of American Pathologists Comparison Program in Cervicovaginal, C. (2003). "Precision in gynecologic cytologic interpretation: a study from the College of American Pathologists Interlaboratory Comparison Program in Cervicovaginal Cytology." Arch Pathol Lab Med **127(11): 1413-1420.**

CONTEXT: Numerous studies address the accuracy or positive predictive value of cytologic interpretations for defined histopathologic entities. The reproducibility (precision) of cytologic interpretation is less well defined. OBJECTIVE: To establish and compare the reproducibility (precision) of cytologic interpretation in gynecologic cytopathology, as reflected in the educational program of the College of American Pathologists Interlaboratory Comparison Program in Cervicovaginal Cytology (PAP). METHODS: The pathologists' interpretations for both validated (25 745 responses) and educational conventional (14 353 responses) slides in the PAP program for 2001 were analyzed. The frequency of exact matches between the reference and pathologists' interpretation for each of the cytologic interpretative categories was identified, and the cumulative distributions of exact match rates were derived. chi<sup>2</sup> Tests by reference interpretations were used for cytodiagnostic categories, least and most reproducible groupings, and high-grade (HSIL) versus low-grade (LSIL) squamous intraepithelial lesions. RESULTS: Pathologists' interpretations of negative, Candida, Trichomonas, herpes, and LSIL were characterized by a high degree of exact matching, while interpretations of repair, HSIL, adenocarcinoma, and squamous cell carcinomas were characterized by a lesser degree of exact matching (reproducibility). Pathologists' cytologic interpretations of HSIL were significantly less reproducible than those of LSIL. CONCLUSION: The cytologic interpretations of the most significant categories (HSIL, squamous cell carcinoma, and adenocarcinoma) are less precise than those of specific infection (Candida, Trichomonas, and yeast), negative, and LSIL categories. Cytologic interpretations of LSIL are made with greater precision than those of HSIL and may represent a more appropriate endpoint to measure the precision performance of gynecologic cytology laboratories.