The Influence of ASCCP Guideline Changes on Family Medicine Residency Colposcopy Training

Jennifer Keehbauch, MD; Lizina Green, MD; Nadia Lugo, MD, MPH; Julie Pepe, PhD

BACKGROUND AND OBJECTIVES: The study objective was to determine the influence of the 2001 and 2006 American Society for Colposcopy and Cervical Pathology (ASCCP) guidelines changes on colposcopy training at one family medicine residency.

METHODS: We conducted a retrospective chart review from January 1, 2000 to October 31, 2009. The 2001 ASCCP guidelines were fully implemented into our practice in June 2002 and the 2006 guidelines in June 2008. Data were extracted from our electronic medical records and delineated into three groups: 2000-2002 (pre-2001 guideline changes), 2003-2007 (post-2001 and pre-2006 update), and 2008-2009 (post 2006 changes) for total female patient visits aged 18-75 years, pap smears, and colposcopies. An ANOVA post-hoc comparison test was performed on the three data groups to test significance.

RESULTS: After the 2001 guidelines, there was a 28.6% significant decrease in colposcopies (CI=0.20-0.37). An additional, 16.5% significant decrease occurred after the 2006 revisions (CI=0.06-0.28). Consequently, residents performed 45.1% fewer colposcopies. The total number of pap smears remained relatively unchanged.

CONCLUSIONS: Implementation of the 2001 and 2006 ASCCP guidelines significantly reduced the number colposcopies performed, resulting in greater difficulty training competent family medicine residents in colposcopy.

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One third of all family physicians perform colposcopy in their office. A 2001 survey of family medicine and obstetric-gynecology residency program directors concluded that family medicine residency programs have less colposcopy opportunities compared with obstetric and gynecology residents. In addition, it was suggested that the majority of family medicine residency programs have inadequate numbers of colposcopy procedures to produce family physicians who are competent to perform colposcopy.

Review of the current literature revealed no current research on the impact of the American Society for Colposcopy and Cervical Pathology (ASCCP) guidelines on the volume of abnormal pap smears and colposcopies in an academic setting.

There have been two important changes in the ASCCP guidelines. Prior to 2001, colposcopy was the recommended diagnostic procedure for atypical squamous cell of undetermined significance (ASCUS) cytology results. However, the 2001 ASCCP guidelines added a positive human papillomavirus (HPV) DNA result in addition to ASCUS cytology as criteria for colposcopy.

The ASCCP published its updated 2006 guidelines on the management of abnormal pap smears. Several changes were made effecting predominantly two age groups, adolescent (ages up to 21 years) and women over the age of 30 years. The initiation for screening for cervical cancer was delayed until age 21 years or 3 years after beginning sexual relations. In addition, adolescents with ASCUS and low-grade squamous intraepithelial lesion (LSIL) cytology results could be observed for 2 years prior to performing a diagnostic colposcopy. In women over the age of 30 years, HPV testing became a preferred adjunct to a pap smear. Women with ASCUS and a positive HPV proceeded to colposcopy, while those with ASCUS cytology and unknown or negative HPV status could be observed at 6- or 12-month intervals. Women with negative cytology and negative HPV can extend a repeat pap smear screening interval to 3 years.

The primary objective of this study was to determine if the recent ASCCP guideline recommendations would result in a significant
reduction in colposcopy procedures at one family medicine residency training program.

**Methods**

We conducted a retrospective chart review from January 1, 2000, to October 31, 2009, after receiving Florida Hospital Institutional Review Board approval. Data were obtained from electronic medical records (EMR) at the Center for Family Medicine at Florida Hospital, Orlando, FL. Our practice includes family residents and faculty. Practice payer mix includes private, Medicaid, Medicare, and self pay at 57%, 22%, 16%, and 5%, respectively.

The EMR provided the total number of visits for women ages 18–75 years, pap smears, and colposcopies performed from 2000 to 2009 (see Table 1). For each year of the study, a total number of pap smears and percent abnormal were calculated (See Table 1). Pap smear cytology was classified as normal with negative cytology and HPV. Abnormal pap smear included ASCUS, high-grade atypical squamous cells (ASC-H), LSIL, high-grade squamous intraepithelial lesion (HSIL), and atypical glandular cells of undetermined significance (AGUS).

The 2001 ASCCP guidelines were fully implemented into our residency program in June 2002 and the 2006 guidelines in June 2008. Therefore, the data were sorted into three groups: 2000–2002 (pre-2001 guideline changes), 2003–2007 (post-2001 and pre-2006 update), and 2008–2009 (post-2006 changes).

**Statistical Analysis**

To evaluate for significance in proportions of abnormal to normal pap smears, a one way analysis of variance (ANOVA) using ONEWAY procedure was performed with SPSS version 19 statistical software. ANOVA post-hoc comparison tests were performed on the three main data groups (2000–2002 versus 2003–2007 versus 2008–2009) to determine significance in the number of colposcopies as a percentage of abnormal pap smears between the groups.

**Results**

Table 1 demonstrates that from 2000 to 2002 the average proportion of abnormal to normal pap smears was 13%, from 2003 to 2007 it was 15%, and 19% from 2008 to 2009. As shown in Figure 1, the proportion of normal and abnormal pap smears had not changed from 2000 to 2009 (P=.13).

However, the proportion of colposcopies performed in each time period decreased significantly (<.01) with each ASCCP guideline revision, as seen in Figure 2. After the 2001 guideline revision, the number of colposcopies performed declined by 28.6% (P<.01). An additional 16.5% significant reduction (P<.01) was observed after the implementation of the 2006 guidelines. A cumulative 45.1% decline was seen in the number of colposcopies performed during the study period.

**Discussion**

Currently, there is no national standard on the number of colposcopies required to become competent. The American Academy of Family Physicians (AAFP) and American Congress of Obstetricians and Gynecologists (ACOG) have not published a formal position statement; however, both groups have developed colposcopy curricula with recommendations on the number of required colposcopies.\(^8,9\) Family medicine literature has suggested 25–50 colposcopies under supervision with didactic materials and examination to achieve competency. An additional 50 colposcopies are required to become proficient, with 10 colposcopies per month to maintain this

<table>
<thead>
<tr>
<th>Year</th>
<th>Total # of Pap Smears</th>
<th>Normal Pap Smears</th>
<th>Abnormal Pap Smear</th>
<th>Percentage of Abnormal Pap Smears</th>
<th># of Colposcopies</th>
<th>Average Number of Colposcopies Per Resident</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>1,121</td>
<td>957</td>
<td>164</td>
<td>15</td>
<td>134</td>
<td>11</td>
</tr>
<tr>
<td>2001</td>
<td>1,629</td>
<td>1,397</td>
<td>232</td>
<td>14</td>
<td>194</td>
<td>16</td>
</tr>
<tr>
<td>2002</td>
<td>1,857</td>
<td>1,654</td>
<td>203</td>
<td>11</td>
<td>189</td>
<td>16</td>
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<tr>
<td>2003</td>
<td>1,761</td>
<td>1,472</td>
<td>289</td>
<td>16</td>
<td>170</td>
<td>14</td>
</tr>
<tr>
<td>2004</td>
<td>1,574</td>
<td>1,394</td>
<td>180</td>
<td>11</td>
<td>115</td>
<td>10</td>
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<tr>
<td>2005</td>
<td>1,609</td>
<td>1,388</td>
<td>221</td>
<td>14</td>
<td>124</td>
<td>10</td>
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<tr>
<td>2006</td>
<td>1,483</td>
<td>1,219</td>
<td>264</td>
<td>18</td>
<td>143</td>
<td>12</td>
</tr>
<tr>
<td>2007</td>
<td>1,589</td>
<td>1,311</td>
<td>277</td>
<td>17</td>
<td>152</td>
<td>13</td>
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<td>2008</td>
<td>1,392</td>
<td>1,160</td>
<td>230</td>
<td>17</td>
<td>108</td>
<td>8</td>
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<tr>
<td>2009</td>
<td>1,558</td>
<td>1,227</td>
<td>330</td>
<td>21</td>
<td>116</td>
<td>10</td>
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</table>
proficiency. ACOG suggests 30 to 50 colposcopies be performed under supervision and an additional 80–100 colposcopies performed without supervision to achieve proficiency. The ASCCP recommends a minimum of 35 colposcopies to achieve competency.

Our program experienced a 45% decline in colposcopy opportunities due to the ASCCP guideline updates, resulting in a significant decline in residency colposcopy training experiences. In Table 1, the number of colposcopies per resident did not meet the AAFP minimum of 25 colposcopies per resident in any of the groups.

In our program, residents that desired to gain competency have opted for an elective month with gynecology physicians, continued to an obstetrics or a women’s health fellowship, as well as participated in an annual mission trip to Mexico dedicated to the screening and treatment of cervical cancer. Family medicine directors may have to also consider colposcopy simulation, increased partnerships with local health departments or community health centers, and participation in women’s health fairs to increase patient volumes of at-risk populations.

A limitation in this study included the unequal delineation of study groups, which may have allowed for one group to be more statistically significant. Also, our clinic patient population may represent a different risk profile compared to the general population. Lastly, this research was conducted in an academic setting only, thus studies in other office populations or multi-center studies may need to be performed to validate these results.

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CORRESPONDING AUTHOR: Address correspondence to Dr Green, Andrews Medical Center, 701 S. Morgan Avenue, Andrews, SC 29585. lizinasblessed@gmail.com.

References


