www.icmje.org). The author has stated that no such relationships exist.

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In reply:

We thank Dr. Akhter for interest in and comments on our article.

In Table 1, we describe the clinical information for patients with and without sexually transmitted infections. There were no significant differences between the 2 groups in regard to who had positive findings on point-of-care urinalysis for nitrites and leukocyte esterase. We did not have available point-of-care microscopy assessment for pyuria in our emergency department, nor did we follow each test with a urine culture.

There are studies that evaluate the presence of pyuria and specifically sterile pyuria in women who are known to have sexually transmitted diseases such as chlamydia, gonorrhea, or trichomonas. In a large retrospective study that included 1,052 women with sexually transmitted infection, Shipman et al[1] found 62% had no pyuria, 28% had sterile pyuria, and 10% had nonsterile pyuria. A smaller study by Shapiro et al[2] examined factors associated with sexually transmitted infection in women and found that leukocyte esterase, pyuria, or nitrites revealed by urinalysis did not predict results of sexually transmitted infection tests.

The evidence shows there is a high prevalence of urinalysis findings in women with sexually transmitted infections, but it is not something we can use to predict such infections because the majority of women with sexually transmitted disease have normal urinalysis results. The initial analysis from our study found no significant additional information from the point-of-care urinalysis, but the pelvic examination in combination with point-of-care urinalysis findings might help direct physicians toward a more accurate diagnosis. A strategy to improve medical care includes the development of a clinical decisionmaking rule for cervicitis and pelvic inflammatory disease. A potential rule could involve elements from the history of presentation, the physical examination (including a pelvic examination), ultrasonographic findings, and point-of-care testing (for urinalysis and sexually transmitted infection).[3]

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Additive Value of Pelvic Examinations to History

To the Editor:

In the study of sexually transmitted infections by Farrukh et al,[1] the presented evidence is insufficient to justify the authors' call to abandon the current Centers for Disease Control and Prevention (CDC) pelvic examination criteria for pelvic inflammatory disease diagnosis.

First, the study is biased by combining 2 clinically diverse outcomes (cervicitis and pelvic inflammatory disease) into a single composite outcome merely because

Table. Likelihood Ratios for Important Pelvic Inflammatory Disease Clinical Findings.

	Positive LR (95% CI)	Negative LR (95% CI)
Abdominal pain	1.12 (0.90–1.40)	0.85 (0.63–1.17)
Pelvic pain	0.91 (0.71–1.16)	1.12 (0.85–1.47)
Abdominal tenderness	0.78 (0.55–1.09)	1.18 (0.96–1.44)
Cervical motion tenderness	0.91 (0.51–1.61)	1.02 (0.91–1.15)
Uterine tenderness	1.13 (0.45–2.85)	0.99 (0.92–1.07)
Adnexal tenderness	1.04 (0.54–1.99)	0.99 (0.90–1.10)

LR, Likelihood ratio; *CI*, confidence interval.

both involve laboratory tests for sexually transmitted infections. The resulting likelihood ratios for important pelvic inflammatory disease clinical findings in regard to the composite outcomes are shown in the Table below.

From the perspective of the composite outcome, neither a history of abdominal or pelvic pain nor examination findings of pelvic tenderness appear to have any relation to pelvic inflammatory disease. Yet these findings are the hallmarks of pelvic inflammatory disease, and according to the CDC guideline, pelvic inflammatory disease cannot be diagnosed without tenderness on pelvic examination.[2] Concluding that pelvic pain and tenderness have no relation to pelvic inflammatory disease is akin to concluding that runny nose and sore throat have no relation to upper respiratory illness. These bizarre results are merely an artifact of combining clinically heterogeneous conditions into a single composite outcome. Similarly, if streptococcal pharyngitis and dental abscess were combined into a composite "oropharyngeal infection," then tooth tenderness might have no relation to the composite; but this would not indicate that it has no relation to dental abscess.

Second, the authors define their composite outcome as a positive laboratory test result for sexually transmitted infection, and then, because they conclude that no examination criteria are predictive of the composite outcome, they argue that the current CDC pelvic examination criteria for pelvic inflammatory disease should be abandoned. This conclusion is unjustified. As the CDC guideline explains, pelvic inflammatory disease is a polymicrobial infection, and thus not all cases have positive sexually transmitted infection test results nor necessarily involve gonorrhea, chlamydia, or trichomonas. Therefore, abandoning the current examination criteria will miss cases of pelvic inflammatory disease. Arguing that the miss rate is acceptable requires some evidence of the number of missed pelvic inflammatory disease cases that will progress to tubo-ovarian abscess, chronic pelvic pain, infertility, or ectopic pregnancy. Considering that two thirds of the women with a positive pelvic examination result in this study had negative sexually transmitted infection test results (82 of 122), the potential harm of abandoning the pelvic examination criteria for pelvic inflammatory disease is vast, and the authors fail to address this issue. Without quantification of the harm, the potential benefits of the authors' recommendation do not justify the risks of missed pelvic inflammatory disease.

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In reply:

We appreciate Dr. Swartz's careful review of our article,[1] but are unpersuaded by his argument.

For our study, we used a composite score for cervicitis and pelvic inflammatory disease because we think the distinction between the former and early pelvic inflammatory disease is subtle. There were no patients in the study who received parenteral treatment, and in general hospitalization does not occur frequently for adolescents with pelvic inflammatory disease at our site. Our study suggests that the pelvic examination components of cervical motion tenderness, uterine tenderness, and adnexal tenderness are subjective, and although they might be present in pelvic inflammatory disease, they also might be present in cervicitis and in any patient who is anxious during the examination or has a lower pain threshold or intolerance for the examination. Conversely, some women