ues <35 kAU/L, n = 26), we used the modified t-test (5) because the theoretical $F$-value differs significantly from the calculated one. We obtained $t_{\text{cal}} = -0.027$ and $t = 2.019$ (for chosen level of significance = 95%); thus, the slopes of the two regression lines do not differ significantly.

We conclude that the reference interval determined by the earlier and the newer assays will differ by a factor of $\sim 1.8$. We feel that certain necessary information was not provided for the reference interval for either CA 125 assay. Although good laboratory practice dictates that each laboratory confirm baseline values for patients who are being serially monitored (6), in our opinion, it is also good manufacturing practice that each manufacturer provide detailed and appropriate information about the calibrator used in the assay, calibration curves and dilution linearity, precision, recovery, interferences, specimen correlations, and the expected reference interval. When a modified assay is introduced, we want to know the exact changes in the assay, the reason for the changes, and the consequences of the improvement.

References

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Investigators from Abbott reply:

To the Editor:

The Abbott IMx CA 125 (cat. no. 2204) was introduced outside the US in 1991. An improved product was introduced in 1993 (cat. no. 7A89). The package inserts for both of these products make reference to an arbitrary value of 35 kAU/L as suggested by Bast et al. (1). We recognize, however, that different populations will have different distributions of CA 125 values. As a result, our package inserts also state: "It is recommended that each laboratory establish its own expected reference range for the population of interest..."

Because of differences between the results obtained with these two assays, we took steps to provide appropriate information to our customers regarding the change in results that they might expect to see. Upon the introduction of cat. no. 7A89, we began including in shipments of cat. no. 2204 a letter that announced the availability of the improved product and that stated: "As a result of this restandardization, the IMx CA 125 assay values may be expected to increase." That letter also encouraged customers to contact their local Customer Service Department if technical assistance was required.

We agree that a manufacturer should provide appropriate information about assay changes. We believe that the package insert distribution table and other statements describing expected values accurately reflect the differences between the two assays. In addition, the package insert warning statements and sources of information beyond the package insert gave customers additional guidance regarding the conversion to this new product.

We have received a very favorable response to the new IMx CA 125 assay from our customers. Studies support that the restandardized IMx CA 125 assay provides good agreement with other manufacturers' CA 125 assays (2). We regret any confusion that might have occurred regarding a reference value.

References

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Artifacts in Measurements of Creatinine, Sodium, and Phosphate from Contamination with Hydrocortisone Sodium Succinate

To the Editor:

Recently, a 72-year-old white woman presented to our emergency medicine department with exacerbation of her chronic obstructive airways disease. A blood sample was collected into lithium heparin anticoagulant and sent to the laboratory for full biochemical analysis. Suspiciously high phosphate and creatinine results were observed (Table 1), which could not be explained by the patient's clinical state. A second blood sample was collected 1.5 h later to check the validity of the first set of results.

All analyses were performed on the Hitachi 747-100 analyser (Hitachi, Tokyo, Japan), with reagents and methods exactly as recommended and provided by the manufacturer (Boeh-

<table>
<thead>
<tr>
<th>Phosphate</th>
<th>Creatinine</th>
</tr>
</thead>
<tbody>
<tr>
<td>mmol/L</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Na</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Effect of hydrocortisone on analytical results.

<table>
<thead>
<tr>
<th>In patient's blood</th>
<th>Phosphate</th>
<th>Creatinine</th>
</tr>
</thead>
<tbody>
<tr>
<td>First sample</td>
<td>144</td>
<td>11.30</td>
</tr>
<tr>
<td>After 1.5 h</td>
<td>131</td>
<td>2.08</td>
</tr>
<tr>
<td>Hydrocortisone soln.</td>
<td>178</td>
<td>31.52</td>
</tr>
<tr>
<td>In volunteer's plasma*</td>
<td>146</td>
<td>5.45</td>
</tr>
</tbody>
</table>

| + Distilled water    | 123       | 0.90       | 0.10     |
| + Hydrocortisone soln.| 146       | 5.45       | 1.01     |

* From 5 mL of blood; plus 0.5 mL of additive indicated.