
*eTable 1.* Methodology Employed by the APACHE Algorithm to Report Day 1 Blood Glucose

*eTable 2.* Time Trends in Tight Glycemic Control Comparing Day 1 and Day 2 Glucose Data

*eFigure 1.* Bland-Altman Plots Assessing Agreement Between Physiologically Most Extreme Day 1 Glucose (GLUC$_{24}$) and Mean Glucose During the First Week of ICU Admission (GLUC$_{TOT}$)

*eFigure 2.* Time Trends In Tight Glycemic Control When Glycemic Control Is Defined Using Day 2 Glucose (n = 167,797 Admissions, 72 ICUs)

*eFigure 3.* Time Trends in Measures Of Glucose Control in Patients Admitted to Subgroup of ICUs That Contributed Data Every Year During the Study (n = 46,718 Admissions, 10 ICUs)

*eFigure 4.* Time Trends in Tight Glycemic Control for Patients Admitted to Individual ICUs That Contributed Data Every Year During the Study (n = 46,718 Admissions, 10 ICUs)

This supplementary material has been provided by the authors to give readers additional information about their work.
### eTable 1. Methodology Employed by the APACHE Algorithm to Report Day 1 Blood Glucose

<table>
<thead>
<tr>
<th>Blood Glucose Range</th>
<th>APACHE Points</th>
<th>Prioritization for Recording in APACHE Database&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>mg/dL</td>
<td>mmol/L</td>
<td></td>
</tr>
<tr>
<td>≤ 39</td>
<td>≤ 2.16</td>
<td>8</td>
</tr>
<tr>
<td>40 – 59</td>
<td>2.22 – 3.27</td>
<td>9</td>
</tr>
<tr>
<td>60 – 199</td>
<td>3.33 – 11.04</td>
<td>0</td>
</tr>
<tr>
<td>200 – 349</td>
<td>11.10 – 19.37</td>
<td>3</td>
</tr>
<tr>
<td>≥ 350</td>
<td>≥ 19.42</td>
<td>5</td>
</tr>
</tbody>
</table>

<sup>a</sup> The APACHE database contains actual blood glucose values. Priority for recording glucose data on a given day of ICU admission is such that preference is given to values that provide the most APACHE points.

**eTable 2. Time Trends in Tight Glycemic Control Comparing Day 1 and Day 2 Glucose Data**

<table>
<thead>
<tr>
<th>Tight Glycemic Control Marker&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Start of Study&lt;sup&gt;b&lt;/sup&gt; (%)</th>
<th>Immediate Change&lt;sup&gt;d&lt;/sup&gt; (%)</th>
<th>Change in Trend&lt;sup&gt;e&lt;/sup&gt; (% per quarter)</th>
<th>Immediate Change&lt;sup&gt;d&lt;/sup&gt; (%)</th>
<th>Change in Trend&lt;sup&gt;e&lt;/sup&gt; (% per quarter)</th>
<th>End of Study&lt;sup&gt;b&lt;/sup&gt; (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glucose ICU day one&lt;sup&gt;f&lt;/sup&gt;</td>
<td>17 (16 to 18)</td>
<td>-4.2 (-11 to 3.1)</td>
<td>1.7 (1.2 to 2.3)&lt;sup&gt;g&lt;/sup&gt;</td>
<td>20 (19 – 22)</td>
<td>-3.3 (-8.1 to 1.8)</td>
<td>0.28 (-0.26 to 0.83)</td>
</tr>
<tr>
<td>Glucose ICU day two&lt;sup&gt;f&lt;/sup&gt;</td>
<td>19 (17 to 20)</td>
<td>3.7 (-4.8 to 13)</td>
<td>1.8 (1.3 to 2.3)&lt;sup&gt;g&lt;/sup&gt;</td>
<td>26 (24 – 27)</td>
<td>-4.1 (-11 to 3.3)</td>
<td>0.27 (-0.63 to 1.2)</td>
</tr>
</tbody>
</table>

<sup>a</sup> Tight glycemic control, physiologically most extreme glucose between 80 and 110 mg/dL (4.4 – 6.1 mmol/L)

<sup>b</sup> Data are provided as (unadjusted) proportion (95% CI) of ICU admissions with the given glycemic control measure.

<sup>c</sup> Adjusted (APACHE III/IV score, proportion with septic admission diagnosis, and proportion with diabetes mellitus) change in relative proportion of admissions with given measure of glycemic control as obtained from multi-level segmented linear regression analyses.

<sup>d</sup> Immediate change in relative proportion of ICU admissions with glycemic control measure in the quarter that followed publication.

<sup>e</sup> Quarterly change in relative proportion of ICU admissions with glycemic control measure.

<sup>f</sup> ICU Day one glucose: 377,861 admissions to 113 ICUs; ICU Day two glucose: 167,797 admissions to 72 ICUs

<sup>g</sup> p < 0.01
eFigure 1. Bland-Altman Plots Assessing Agreement Between Physiologically Most Extreme Day 1 Glucose (GLUC\textsubscript{24}) and Mean Glucose During the First Week of ICU Admission (GLUC\textsubscript{TOT})

(a) Patient-level data

(b) Aggregate ICU-level data

(a) GLUC\textsubscript{24} and GLUC\textsubscript{TOT} for each individual ICU admission (n = 26,766). Note: 96% of the study population had GLUC\textsubscript{24}<360 mg/dL (20 mmol/L); (b) GLUC\textsubscript{24} and GLUC\textsubscript{TOT} for aggregate ICU-level data. GLUC\textsubscript{TOT} is the mean blood glucose during the first eight days of ICU admission. For each plot, the middle dashed line is the overall mean difference between GLUC\textsubscript{24} and GLUC\textsubscript{TOT}, and the outer dashed lines represent the mean difference +/- two standard deviations (limits of agreement) respectively.

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Figure 2. Time Trends In Tight Glycemic Control When Glycemic Control Is Defined Using Day 2 Glucose (n = 167,797 Admissions, 72 ICUs)

Tight glycemic control defined as physiologically most extreme day two glucose between 80 and 110 mg/dL (4.4 – 6.1 mmol/L). Bars are the unadjusted overall mean, and the solid line represents the multivariable adjusted overall mean (dotted lines are 95% CI). The two vertical lines denote the quarter of publication of Leuven I and NICE-SUGAR.
eFigure 3. Time Trends in Measures Of Glucose Control in Patients Admitted to Subgroup of ICUs That Contributed Data Every Year During the Study (n = 46,718 Admissions, 10 ICUs)

(a) Tight glycemic control, day one glucose 80 – 110 mg/dL (4.4 – 6.1 mmol/L)

(b) Hypoglycemia, day one glucose < 70 mg/dL (4.0 mmol/L)
Bars are the unadjusted overall mean, and the solid line represents the multivariable adjusted overall mean (dotted lines are 95% CI). The two vertical lines denote the quarter of publication of Leuven I and NICE-SUGAR.
**Figure 4.** Time Trends in Tight Glycemic Control for Patients Admitted to Individual ICUs That Contributed Data Every Year During the Study (n = 46,718 Admissions, 10 ICUs)

Tight glycemic control defined as day one glucose 80 – 110 mg/dL (4.4 – 6.1 mmol/L). Each solid line represents the multivariable adjusted overall mean for an individual ICU. The two vertical lines denote the quarter of publication of Leuven I and NICE-SUGAR.

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