Patient Percentile Monitoring Global Report #02

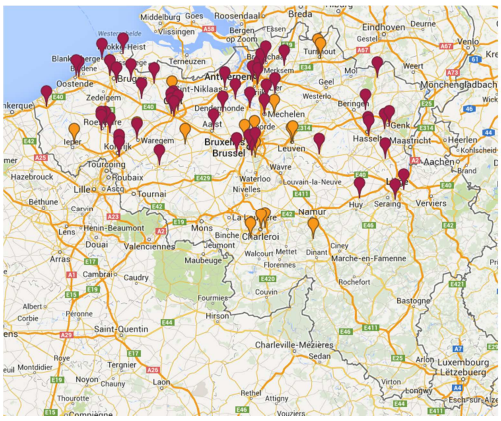
CONTENT

Project status (February 26 2014)

Participants (76 in red, 45 confirmed in ochre)

The 76 laboratories participate with a total of 136 instruments:

Advia	7	Konelab	1
Architect	10	Modular	11
AU	7	Synchron	7
Cobas	65	Vista	3
Integra	5	Vitros	20



IT status

- LIS solutions: MIPS (GLIMS); Cegeka (Corlab, Cortex); Systelab IZASA (modulab); Vision4Health (Molis, Test phase); Datamed (prior GNT, Jade; new version); Stapro (FONS Openlims); Data Innovations (driver in development).
- **User interface: https://thepercentiler.be; Demo Login: user = demolab, password = demo1234**

Documents

Documents can be accessed at www.stt-consulting.com, “Empower” Tab

- Flyers
- The Percentiler instructions for use (NL, EN, FR)
- Global reports
- Project background

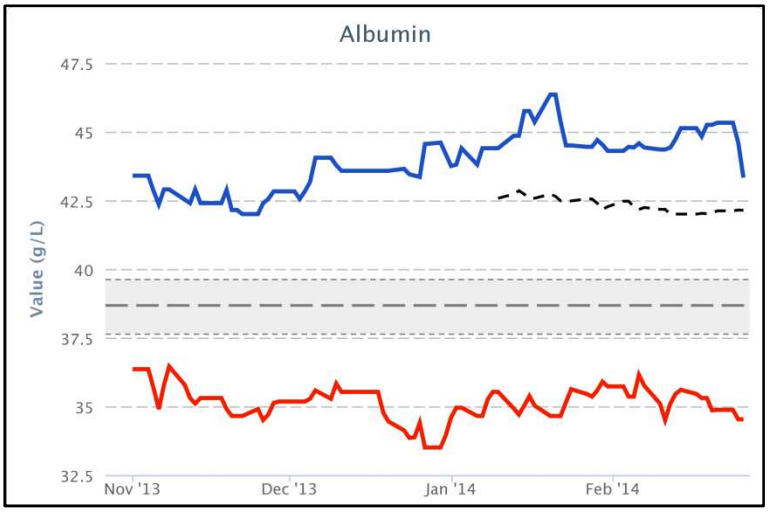
Empower Meeting 2014

Please mark the date: 10 December 2014, Holiday Inn (Gent); discussion of the percentile project and the master comparison 2014 survey; a formal invitation will follow.

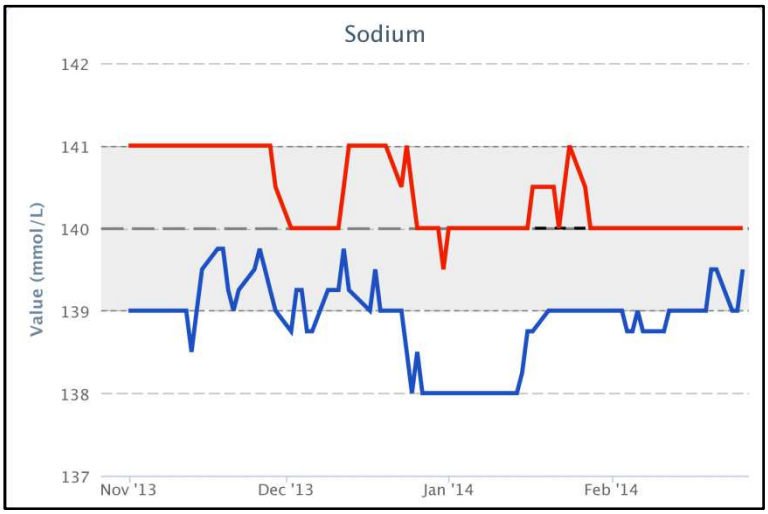
Data analysis: instrument bias or population bias

Significant, long-term differences between systems

Possible reasons: instrument bias or population bias.



- Cross check your IQC data (note: take care that the concentration levels match). Cross-check with your Peer Group IQC results when you participate in such a system (for example, Bio-Rad or Randox).
- Cross-check whether both systems measure the same population (random sample assignment) or whether one system preferentially measures inpatients. If the red system would predominantly measure inpatients, a low albumin median can be expected (see also Global Report #01).
- Cross-check other analytes, for example sodium (note: one would expect lower sodium values for the red system when predominantly inpatients are measured).

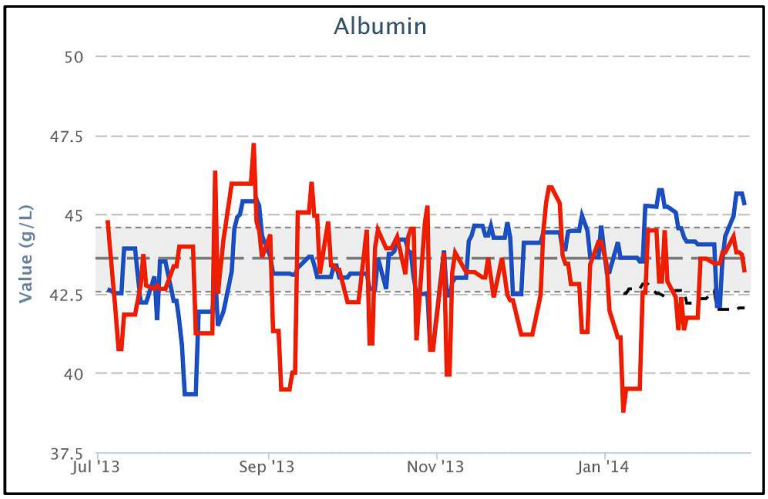


Conclusion: There might be an instrument bias for albumin (sodium in the red system is higher). Final proof can be made by measuring 20 left-over samples on both systems.

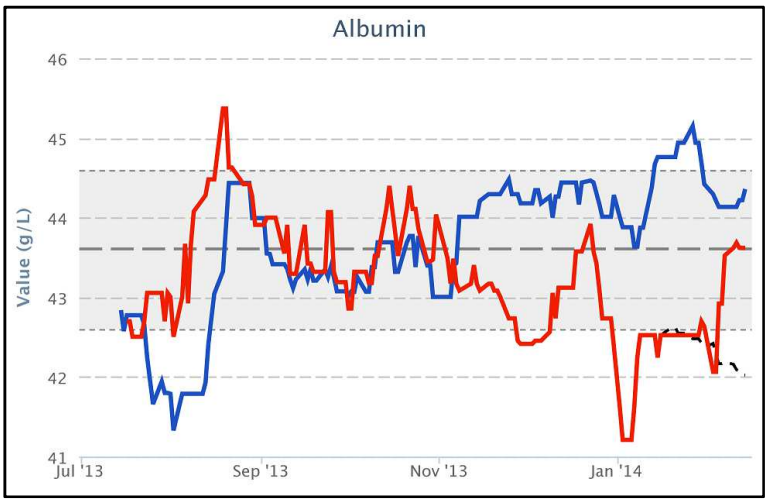
Choosing the moving median ("seeing the forest for the trees")

Smaller laboratories regularly encounter relatively high population variation, in particular, for such analytes as CRP, GGT, albumin, and uric acid. In that case, choose moving median 16. This, still, allows the assessment of longer-term biases and identification of significant shifts/drifts.

Albumin, moving median 5



Albumin, moving median 16

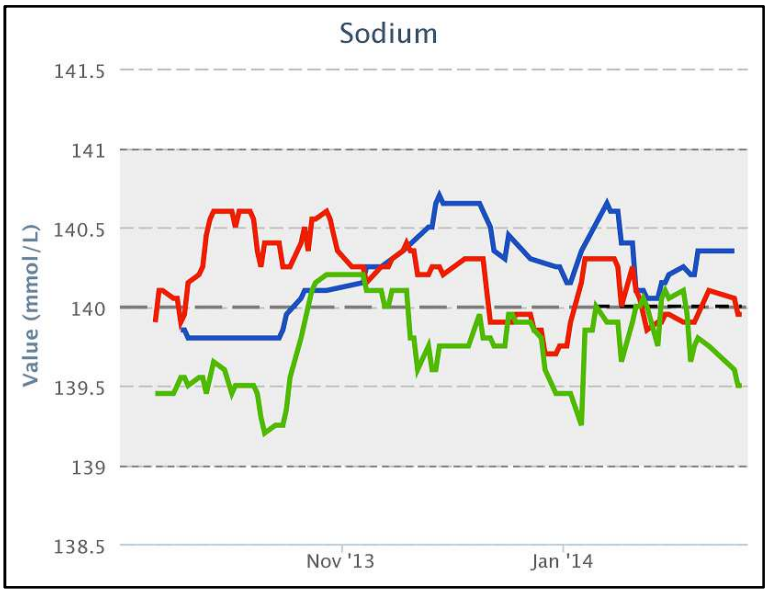


The moving median 16 identifies a negative bias of the blue system in the beginning, then a shift and then a drift to the upper limit. The population variability of the red system is still high (most probably due to low n constituting the daily medians), however, a trend towards lower values is visible.

"Best in class" examples

Sodium

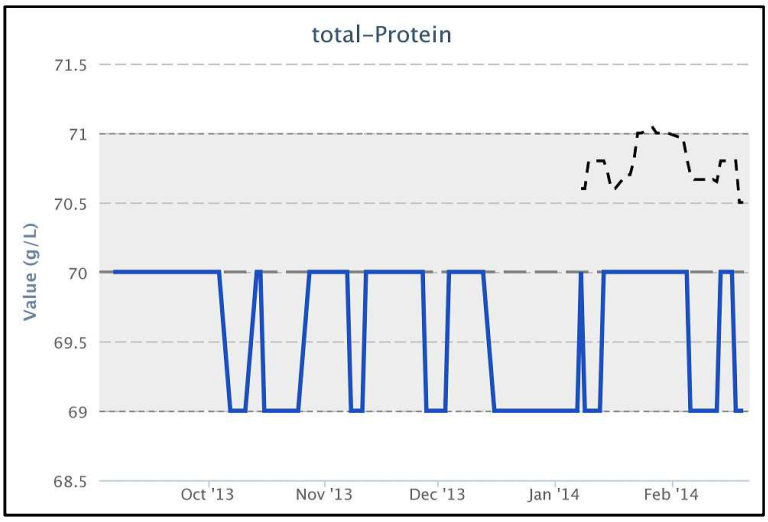
We propose a 1 mmol/L stability-limit for sodium. "Best in class" laboratories reach such stability over long periods of time (moving median 8 or 16, limit violation <1 week).



This laboratory, even, reaches the stability (and comparability!) for 3 different instruments.

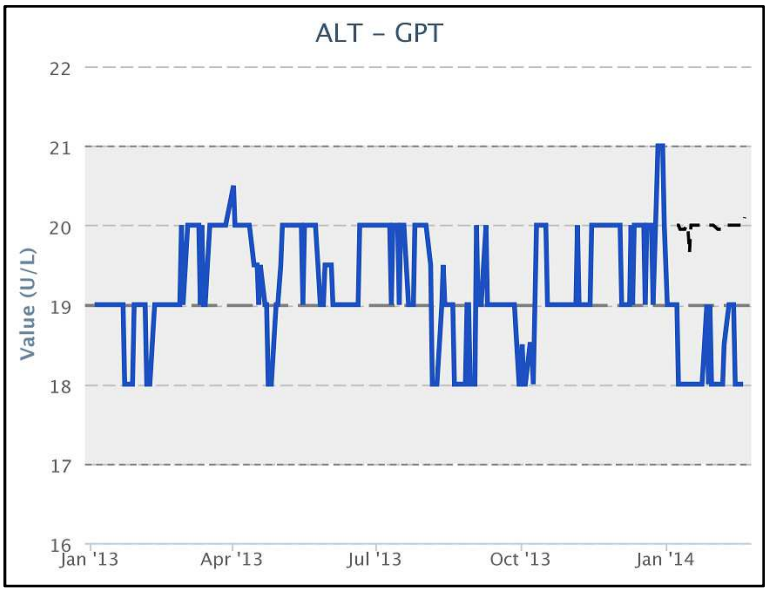
Total-Protein

We chose a stability limit of 1 g/L for total-protein because of its small biological variation. General experience seems to indicate that the total-protein assay is somewhat difficult to control within this limit. Nevertheless, the laboratory below succeeded in that task (note: moving median = 5!).



ALT – GPT

Typically, ALT is a stable assay with little population variation. The laboratory below champions due to assay stability over more than 1 year (moving median = 5)!



Potassium

Typically, also potassium is a stable assay with little population variation. The laboratory below champions due to assay stability over more than 1 year (moving median = 5)!