The variation of multiple-department POCT blood gas analyzers

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Background
Point of care testing (POCT) is detecting technique which is used for getting rapid results near patients. It is could be reduced the turn-around-time (TAT) of some results, so doctors would make decisions quickly and correctly. Many studies have clarified POCT use was associated with reduced patient mortality and high cost. According rapid technological development, POCT use is widespread in clinical settings and it is increasingly important in patient management. Internal and external quality assurance is expressly stated，but it's not economic to execute external quality for every blood gas analyzer in the same setting and all department. So we aim to using comparison schemes to replace the external quality in the similar settings.

Method
According to EP9-A2, all the quantitative results were presents as mean±SD, bias was calculated from equation. We collected all the three levels of quality control results, which were carried out automatic in 30 days. All automatic quality control pack, electrode pack and detecting pack were from Roche diagnostic, and the automatic quality control pack lot was the same. No2 blood gas analyzer of the laboratory setting participated two times of PT of CAP, and scores were good. All other analyzers are consistent with No2 analyzer, TEa are form CLIA'88.

Results
All the means of 22 blood gas analyzers were approximately normally distributed. Except the 19th point, all were distributed in 2SD, which conform to routine quality control rules. According to No2 analyzer, the all deviations were less than TEa.

Conclusion
The method of using quality control results to evaluate the variation of the multiple-department blood gas analyzers is simple, feasible and economical.