## Introduction

Treatment and follow-up of the patients are based on laboratory results; therefore, the reliability and accuracy of the results are critical. In a clinical laboratory, they make sure to carry out processes that guarantee the quality of the result, such as internal and external quality controls.

Point-of-care testing (POCT) refers to laboratory tests performed outside of central laboratory and near the patients site.

The POCT remarkable advantages like as faster turnaround time (TAT) and a tiny amount of sample permits to medical staff take care of patient and make clinical decisions immediatly. On the other hand POCT is a big challenge because its performed by personnel who are not trained as laboratory staff.

POCT test also may be affect by interferences caused by pathological conditions or drug metabolites which may cause a false result and delay of correct diagnosis and treatment.

# **Critical values POCT harmonization**

Bukovetzky E, PhD MHA and Mrs Mona Nassar Ziv Medical Center, Sefat, Israel

Responsibility of the POCT coordinator to ensure that the POCT results performed at hospitalization sites are accurate, reliable and reflect the condition of patients.

For this purpose, in addition to medical staff training and performance of quality controls, POCT coordinator have to compare a POCT results laboratory analyzers results (harmonization), especially if it is critical values.

# **Methods and Objective**

The aim of our study is to show a harmonisation essential role in comparison of critical POCT results of glucose in ICU departments and total billirubin in NICU standard method department versus (biochemistry analyser AU 680).

Technologies we have are Nova POCT Statstrip glucose meter (Glucose), 3D Bilimeter (PFAFF) for neonatal capillary billirubin measurement by photometry and GEM Premier 5000 for total billirubin measurement in whole blood.

**Results** 



Our results show a significant correlation between the NOVA and AU analyser ( $R^2 = 0.94$ ) in critical glucose results. Total Bilirubin three methos comparison show us a very strong correlation between capillary method (R<sup>2</sup> =0.99) and AU analyser results and a correlation between results were accepted by whole blood analysis (GEM 5000) and AU analyser was significant (R<sup>2</sup> =0.96). Uncertainty of total bilirubin methods measurement was less then 2 (Ubilli=0.2).



We estimated an uncertainty value for total billirubin which measured by three different less than 1 methods it and was (Umean=0.2). These results highlight us a validity of results although effects of different technologies and operators.

In addition we show a full compatibility to Proficiency Tests (PT) results: 100% in total bilirubin and 98% in glucose PT versus peer group. A per cent of accuracy in bilirubin independent QC (BioRad Liquichek Pediatric Control) in 3 D Bilimeter is 99 %.

# Conclusion

Oversight by a POC coordinator is essential to ensure quality and accurate performance of laboratory tests in POCT sites. It is very important to harmonize different parameters that are tested with POCT technologies ensure proper treatment.

## Contact:

Elena.b@ziv.gov.il