Point-of-care testing compared to gold-standard laboratory methods in the measurement of serum lipids and HbA1c in a mobile medical clinic

Daniel Schafer-Dews, Rubi Solano, Cristina Macedo & Tatiana Ramirez, Mari Proksel, Elizabeth Ramirez, Suzanne Phelan

Introduction

- The use of POC devices is rapidly expanding in clinical settings, offering a potentially efficient and cheap method for medical testing.
- While studies have found POC devices are accurate in laboratory settings, their accuracy with diverse clinical populations and settings is still understudied.
- This study aimed to determine the accuracy of POC devices compared to gold standard laboratory testing on the Cal Poly Women's Mobile Health Clinic serving immigrant and farmworking populations.

VS

Dignity Health Laboratories

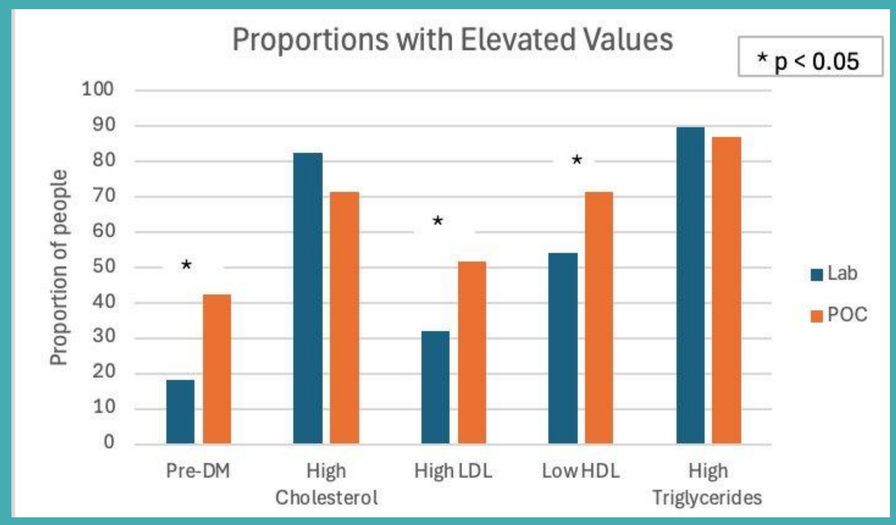
Quest Diagnostics

Methods

- Blood samples measured via lab and POC machines were collected simultaneously.
- Lab measured samples were sent in ethylenediaminetetraacetic acid (EDTA) tubes to a CLIA-certified laboratories.
- POC measures were collected onsite.
- Statistical analysis included descriptive statistics, Pearson's product moment correlations, and paired-t tests.

Results

- A total of 33 participants completed both the POC and lab-based tests for diabetes (hemoglobin A1c; HbA1c), and 87 completed POC and lab-based tests for lipids between August 2021 and December 2024.



Discussion

- POC devices may have practical value for screening, but positive test results should be confirmed with laboratory testing to avoid misdiagnosis.
- Further studies investigating POC accuracy against gold standard labs using larger sample sizes are necessary to inform the use of POC devices in mobile health clinics.

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