




2016

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### Recommended Citation

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# Point-of-care testing in primary care may reduce overall cost and improve both patient satisfaction and efficiency.

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## Abstract

- **Objective:** Increased demands for primary care are forcing clinical offices to deliver cost and time efficient care while providing exceptional patient experiences. Traditional lab testing methods require multiple steps for the patient and provider. Test results are not available until a later time which may delay decision making, patient discussion and medical planning. Point-of-care testing (POCT) provides an alternative that allows the patient to have testing, discuss the results and establish a treatment plan during a single office appointment.
- **Design:** A review of literature examined studies that compare cost-effectiveness, patient satisfaction and efficiency of POCT with traditional laboratory methods in primary care settings. The top 10 laboratory (phlebotomy) tests ordered in a local family medicine clinic were also identified.
- **Results:** POCT methods have a higher per unit cost compared to traditional lab methods. However, POCT was found to reduce the overall cost of care when associated expenses are included such as: transportation, patient time away from work and clinician follow-up on test results. Patient satisfaction was overwhelmingly positive regarding convenience, improved medical compliance and stronger patient-provider relationships. Primary care offices found improved efficiency in both time and cost reviewing lab results.
- **Conclusion:** The literature concluded that primary care offices who implemented the use of POCT found improved costs as well as increased patient satisfaction and office efficiencies.

## Introduction

Chronic diseases are commonly managed in primary care clinics. Tests influence approximately two-thirds of health care costs (Lee-Lewandrowski & Lewandrowski, 2013). Traditional lab testing seems costly and inefficient. POCT may provide an alternative solution to reduce cost, improve patient satisfaction and increase efficiency.

## Statement of the Problem

Obtaining, interpreting and following-up on laboratory tests takes time and effort from all parties involved (providers, clinic staff, lab techs and patients). Changing the process of lab testing may reduce cost, increase patient satisfaction and improve both provider and clinic efficiency.

## Research Question

In primary care patients who require routine lab tests, does point-of-care testing at the time of patient encounter compared to traditional laboratory methods reduce cost and improve both patient satisfaction and clinical office efficiency?

## Literature Review

### Cost-Effectiveness

- Crocker et al. (2014) found implementing POCT resulted in 21% fewer tests ordered (P<0.0001) and overall savings of \$24.64 per patient from efficiencies.
- POCT for dyspnea (BNP) demonstrated reduced length of stay (8 v 11 days) and reduced cost of care (-\$1,854) (Lee-Lewandrowski & Lewandrowski, 2009).
- Lab tests are either High Unit Value or Low Unit Value. HUV is more costly however more efficient overall (Lee-Lewandrowski & Lewandrowski, 2009).

### Patient Satisfaction

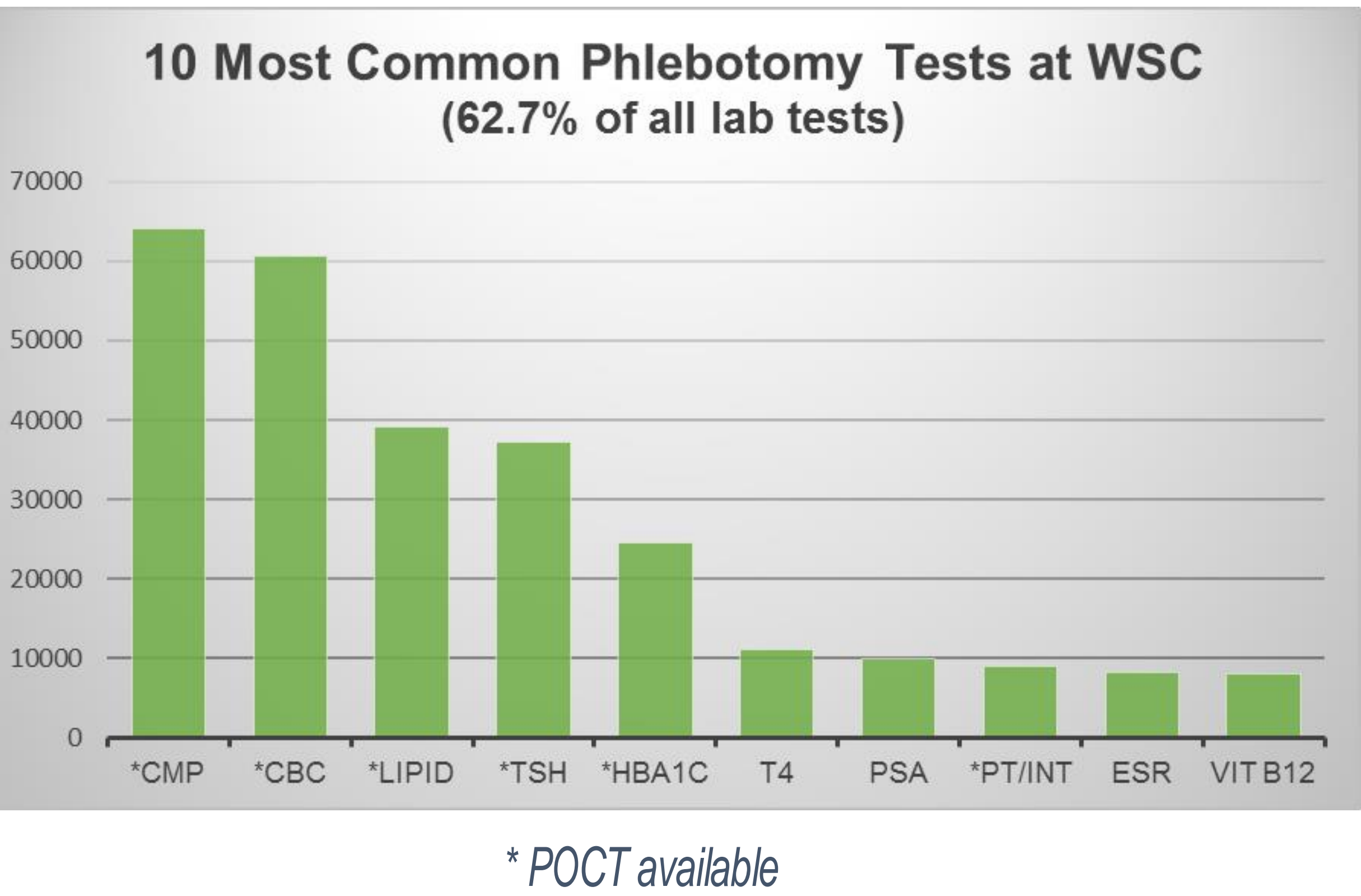
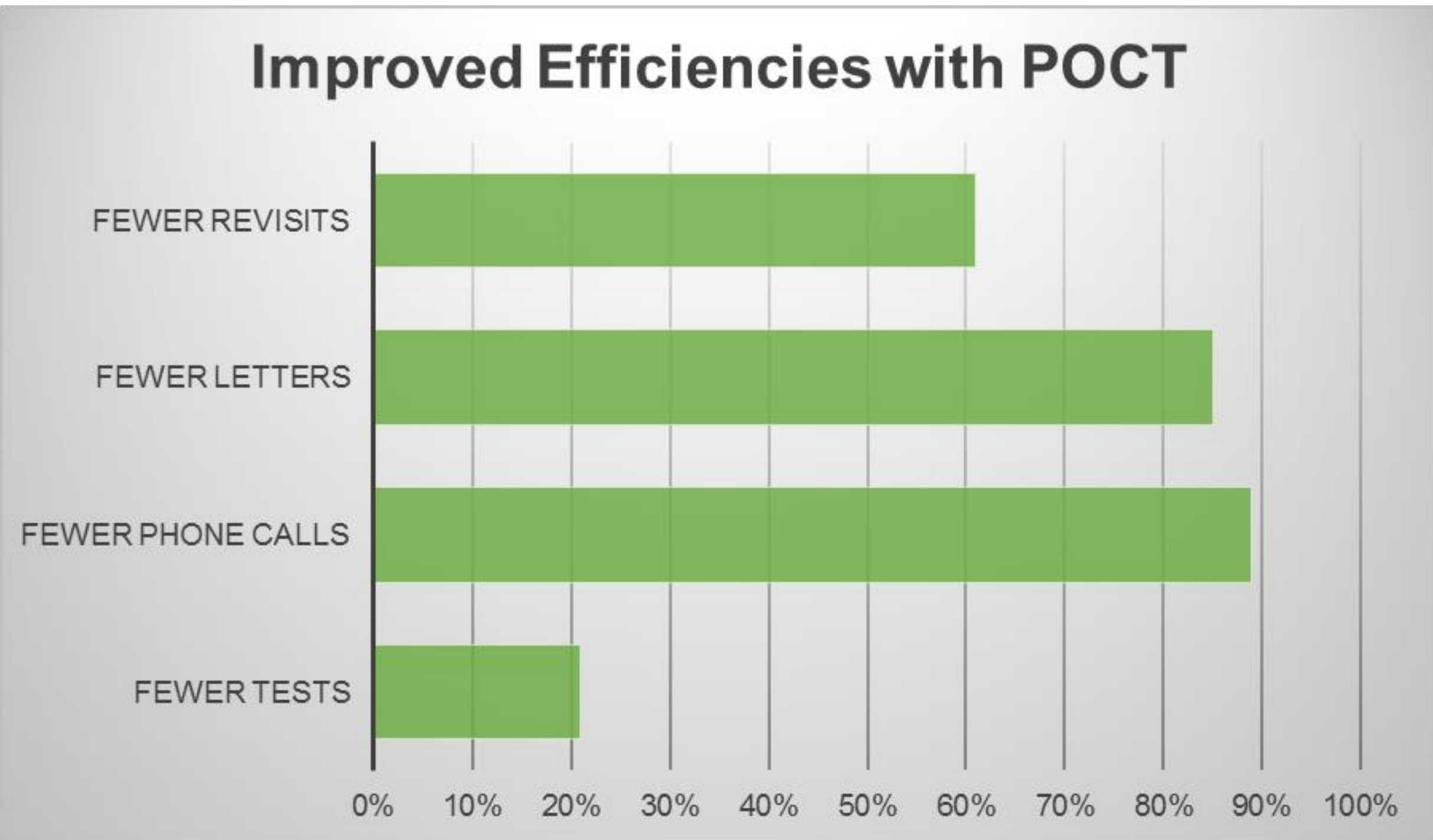
- Satisfaction surveys measured a mean score of 3.96/4 with POCT (Crocker et al., 2013).
- Laurence et al. (2010) reported high levels of satisfaction, improved motivation toward self-care (P<0.001) and strengthened GP relationships (P=0.010).
- Improved medication adherence with POCT (39.9%) vs. traditional testing (37%) [90% CI] (Gialamas et al., 2009).

### Operational Efficiencies with POCT

- Crocker et al. (2014) report:
  - 89% fewer follow-up phone calls (P<0.0001)
  - 85% fewer letters (P<0.0001) to patients
  - 61% decrease in revisits (P=0.0002)
- More frequent intensification of diabetic therapy (P=0.0003) and reduced A1c levels (P=0.04) (Miller et al., 2003).
- Poon et al. (2004) report providers spend an avg. 74mins/day managing lab results with 83% reporting a delay in results “they wish they had known earlier.”

## Discussion

Point-of-care per unit testing cost is higher than traditional laboratory testing. However, overall cost-effectiveness of POCT indicates reduced total cost of care with improved outcomes. Patients appreciate the simplicity that POCT offers, feel personal motivation towards self-care and stronger patient-provider relationships. POCT improved clinical efficiencies by reducing time spent reviewing lab results, fewer return appointments and improving health metrics.



## Applicability to Clinical Practice

Westside Connect (WSC) is a busy family medicine clinic that ordered over 438,000 lab tests in one year's time (T. Doss, personal communication, September, 2015). The clinic's top 10 phlebotomy tests compose nearly 63% of all tests ordered. POCT devices are available for 6 of the 10 most ordered tests. Providers have raised concern about the amount of time they spend after-hours reviewing and following-up lab results. The literature found drastic reductions in the number of tests ordered as well as time spent reviewing lab results when POCT was used (Crocker et. al, 2014). Providers may find improved patient compliance and more stringent control of chronic disease by being able to review and modify medical management during a single patient encounter.

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## Acknowledgements

This project couldn't have been completed without the love and support of my family: Mindy, Drew and Liam.

Thanks for the great memories at Westside Connect.

I appreciate the guidance and mentorship from:  
Haris Ali, MD, PhD; Alexander Dela Llana, MD;  
Hubert Reyes, MD and Terrie Wold, PA-C.