

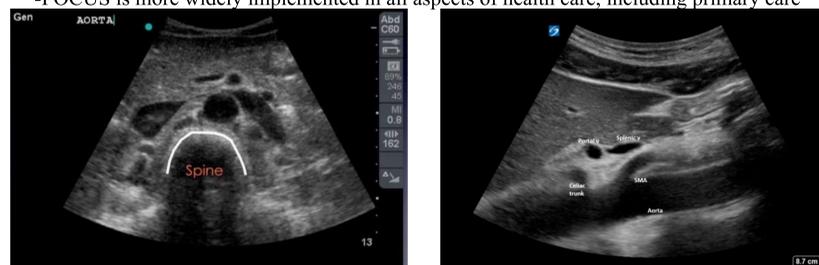
Abdominal aortic aneurysm (AAA) screening using point of care ultrasound (POCUS) in primary care clinic

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Background

- AAA defined as enlargement with diameter ≥ 3.0 cm (1)
- Prevalence is decreasing, risk of death is established and repair techniques are advancing (4)
- 2019 USPSTF concluded one time screen of 65-75 year-old men who have ever smoked is of moderate net benefit (B Recommendation) (1)
- Low uptake in screening impacted by multiple factors including timing/location of screening as well as lack of awareness and understanding of the impact of screening (2)
- POCUS is more widely implemented in all aspects of health care, including primary care



Aim

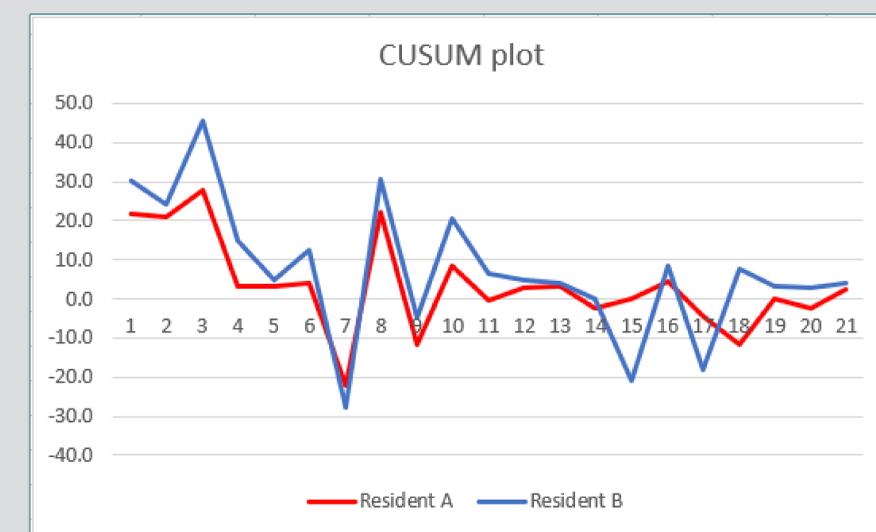
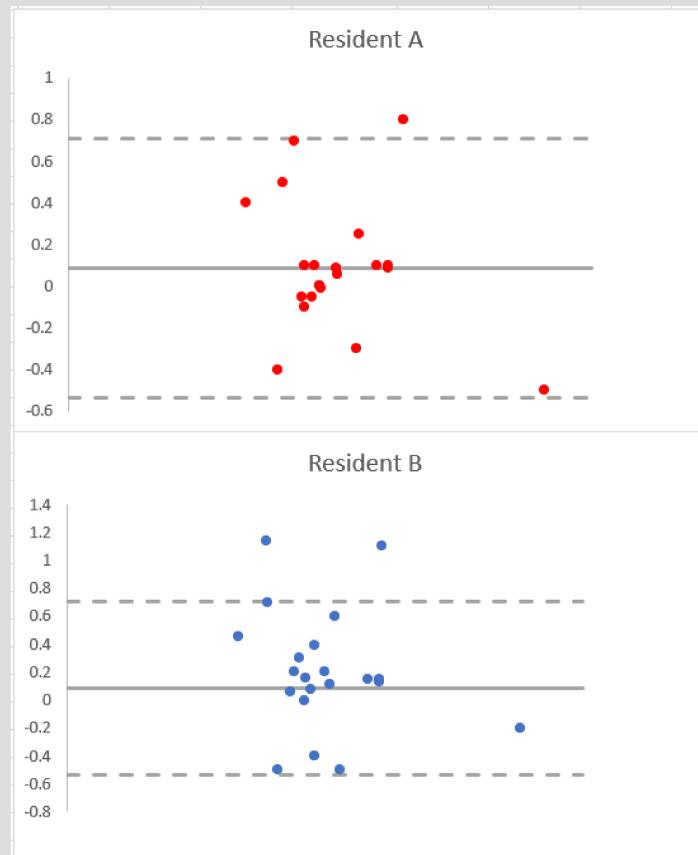
Can utilization of clinic-based AAA screening using POCUS be a reasonable and timely alternative to formal ultrasound?

Methods

- Training to perform screening included attending 2-3 formal screens performed by a sonographer followed by self-guided learning overseen by online certified faculty
- Each resident used a Butterfly IQ handheld unit with either an iPhone or iPad as the screen
- Volunteers meeting USPSTF screening criteria were scanned by each resident and then results compared to official radiologist report after formal screening
- Three measurements (proximal, mid, and distal) were obtained on each volunteer
- Total time to complete the screen was recorded
- Using Bland-Altman plots and CUSUM analysis, accuracy and efficiency were compared
- Subjective factors including body habitus and amount of bowel gas were recorded

Results

- 80-90% of maximal diameter measurements were within 0.5 cm of official results
- Assuming a referral policy for difficult scans, 90-100% were within range without missing any clinically significant (>3.0 cm) aneurysms
- Resident A was within 0.1 cm of official read on 62% of screens, Resident B 43%
- Both accuracy and efficiency improved over time
- Average time to complete the exam was 5:38 and 5:40 for each resident



Conclusion

- With little training, accurate and efficient results are attainable with relatively few required tests
- With more tests, accuracy improved
- Time could be reduced even further with different goals
- Using the larger screen was subjectively easier, although not specifically monitored in the results

References

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