Implementation of a *Quarterback* Team Can Reduce Electronic In-Basket Volume for Primary Care Physicians

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STUDY OBJECTIVES

- To develop a novel physician-led team to effectively reduce IB workload for primary care physicians (PCP) at a large group practice.
- To measure the impact of this intervention on patient message volumes, staff response times, access and physician well-being

BACKGROUND

- Physicians are devoting increased time spent working on the Electronic Health Record (EHR), much of it due to expanding patient IB message volumes[1,2,4,6]
- Increasing workloads & EHR management have propagated stress and burnout in primary care[3,4]
- Prior strategies at KP, including physician EHR efficiency training or dedicated nurse staffing to work IB messages have not significantly reduced IB burden
- Hence, a collaborative message management team was created, comprised of a ***Quarterback*** (QB) physician overseeing a nursing team; its purpose: to improve care quality, practice efficiency, patient satisfaction and physician work-life balance.

INTERVENTION

- Physician-led QB teams with 3-4 RN/LVN staff were tasked to address patient messages for *all* adult PCPs at a large primary care group practice. Teams operated during regular clinic hours and followed a best practice ***playbook***.
- IB patient *telephone* messages were managed by nursing staff team while IB patient *web* messages were managed primarily by the QB physician. Staff were advised not to re-direct any patient messages back to individual PCPs but rather use standardized workflows & direct communication with the QB physician for guidance with questions and concerns
- Total patient message volumes, staff phone messages (from patients), message turn-around time (TAT) were measured at each of the primary care sites comparing pre-pilot and post-pilot data.

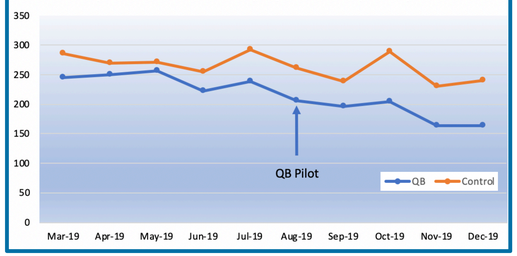
STUDY DESIGN

- Retrospective Observational Study
- **Inclusion Criteria:** all adult PCPs continuously paneled during study period (March 1, 2019 to Dec 31, 2019).
- **Exclusion Criteria:** per diem physicians; PCPs not continuously paneled at clinic sites during study period
- Intervention Group: Medical Office Building housing Family Medicine Residency Program started QB pilot on Aug 1, 2019 with a group co-led by study authors. Total of 33 physicians; 2 excluded. (N=31) were included in the analysis.
- Control Group: Medical Office Building in vicinity with similar demographic and high message volume, but no QB pilot. Total of 9 physicians; 1 excluded. (N=8)
- **Primary Endpoint** = Change in Total IB Volume per Physician
- **Secondary Endpoints** = Change in Staff Message TAT; Self-Reported Physician Satisfaction and Wellness (measured by SurveyMonkey at the end of pilot)

RESULTS

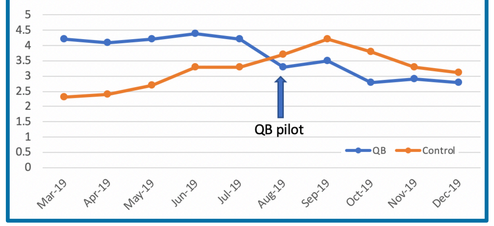
The QB system reduces physician EHR workload and enhances BOTH the patient experience and physician wellness, while maintaining Neutrality in BOTH Staffing Budget and Patient Access

Figure 1: Average Monthly Inbasket Messages per Clinic Physician at Intervention (QB) vs Control (No QB) Sites



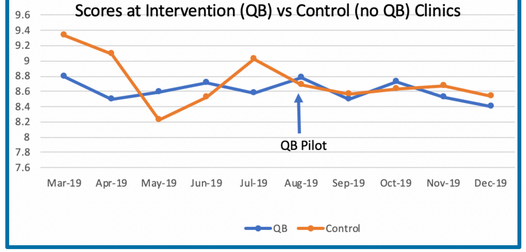
There was a significant decline in the Primary Endpoint, the average monthly volume of patient messages for each physician. Linear regression analysis shows a 31% decrease (p=0.001) at QB site compared to 18% at matched control [Fig 1]

Figure 3: Average Turnaround Times [in Hours] for Patient-Driven Messages sent to Nursing Staff at Intervention (QB) vs Control (no QB) Clinic Sites



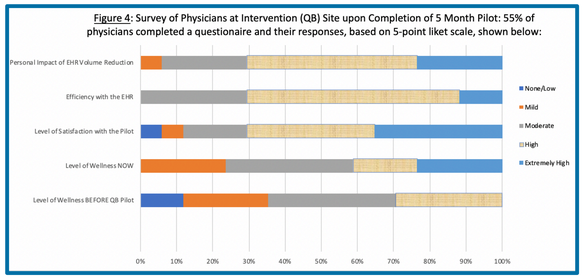
In the Intervention (QB) group, there was a significant reduction of 33% in the Average Message Turnaround Time during the pilot period [Fig 3]. The Control group had no significant change in TAT.

Figure 2: Appointment Satisfaction Questionaire (ASQ) Scores at Intervention (QB) vs Control (no QB) Clinics



There was no significant impact on patient access scores, our balancing measure, suggesting that removing physicians/nurses from clinic to perform message management duties in the QB system results in an 'access neutral' state [Fig 2]

Figure 4: Survey of Physicians at Intervention (QB) Site upon Completion of 5 Month Pilot: 55% of physicians completed a questionaire and their responses, based on 5-point liket scale, shown below:



Physician satisfaction with the QB pilot was high and associated with improvements in self-rated Wellness scores [Fig 4]. A total of 17 out of 31 physicians (55% response rate) completed the questionnaire and most noticed a significant impact in their daily EHR burden.

DISCUSSION

- PCPs in the Intervention (QB) group saw a significant reduction in their IB volumes, compared to a control site. The control site also saw improvement likely due to other organization-wide initiatives to reduce IB volume.
- Access was not affected even though there were fewer physicians/nurses to see patients at the QB site. This is almost certainly attributable to a reduction in unnecessary appointments.
- No extra staff were hired for the QB pilot, no budget was not impacted by this.
- Reductions seen in QB group were lower than expected. This may be explained by the fact that *non-patient* driven messages (from lab, pharmacy, or radiology) were not screened by the QB team but entered directly into the PCP's in-basket folders. However, site physicians generally *perceived* (anecdotally) much higher reductions in their IB workload than measured.
- Wellness scores improved qualitatively following the implementation of QB teams at the pilot sites. We hope these will be longstanding changes that will translate into lower burnout rates among PCPs in our large integrated health system.

LIMITATIONS

- Possible response bias with survey
- Control Site was not ideal but only practical options due to asynchronous roll-out of QB pilot across our large health system across San Diego

FUTURE DIRECTIONS

Based on these findings, the QB pilot has been widely adopted as a best practice across the Southern California Permanente Medical Group.

This model is well adapted to suit both large and small primary care groups with sufficient staffing to develop QB teams.

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