Sustainability of Depression Screening Rates over Time Using Context Aware Workflow

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Introduction

Traditional clinical decision support (CDS) using some form of alert or reminder has been shown in outpatient community settings to have inconsistent results\(^2\). Additionally a great deal of work seems to go into getting traditional decision support to be successful\(^3\). In previous research we demonstrated that departments that used context aware CDS (CA-CDS) could produce significant improvements in depression screening rates in a community outpatient setting compared to departments that used traditional interruptive “pop-up” reminder alerts\(^1\). In this study our thesis is that this same CA-CDS workflow will produce sustained screening rates over time without additional training cost.

Design

Using the same technique as our previous study\(^1\), for the CA-CDS departments we used a rule that evaluated current patient data combined with a trigger in the EHR navigator section display controls. This caused the activity that displayed the depression screening tool (PHQ2/9) to appear in-line in the workflow if the patient was 18 and older, had not had depression screening in the past 365 days, and did not have a diagnosis of depression already (these were excluded). For the control department we had a traditional pop-up alert that triggered with the same criteria. The alert directed the staff to the activity that had the depression screening tool for them to complete. We collected screening data from all patients seen in each quarter, for 90 providers at 14 of our clinic sites. We used clinical quality measure CMS-2 to determine parameters for our numerator and denominator and to drive decision support. The data collected was the entire population of patients seen in the time period. From the 2\(^{nd}\) quarter 2017 to the present we did not perform any additional specific depression screening training, but have continued to present clinic level screening rates at each of our staff meetings, along with other quality measures that we are monitoring. Cohen’s \(d\) was used to evaluate the significance of the effect size.

Results

• An average of 14,484 eligible patients were seen per quarter in 2017 and 2018 to date.
• First graph: Effective Screening rates (for patients who had a visit during the measured time period) showed minimal significant change in effect size (\(d\)) from the mean screening rate over time – demonstrating stable and sustained screening rates in all quarters during the study period.
• Second graph: Comparison with departments without CA-CDS demonstrated persistent large effect size (\(d\)) which is evidence of a lack of confounding or sustaining factors in the organization that would influence results.

Conclusion

Context Aware clinical decision support with inline workflow showed sustainable screening rates into the second year of use with minimal investment in additional training of staff.

Future Work

We plan to implement additional new screens with minimal education, show sustained performance in third years of screens; compare methods with a cognitive workload scale. We also plan to design physician workflow context aware decision support.

References


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