Simple Interventions to Improve Blood Pressure Screening

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BACKGROUND

Hypertension is one of the most common diseases seen in primary care. Left untreated, it can lead to a variety of ailments including MI, kidney disease and stroke (1). About one in 3 adults have high blood pressure. (2) Hypertension has been estimated to cost 46 billion dollars per year in the United States, due to increased health care costs and diminished work productivity (3). Due to the fact that hypertension is usually asymptomatic, it is incumbent on those in the health care field to be vigilant and be mindful that anyone can have elevated blood pressure, regardless of how great they may look.

Stage 1 hypertension, which per the JNC 8 guidelines requires medication and/or lifestyle modification, is defined as either a systolic blood pressure greater than 139 and a diastolic pressure greater than 89. In order to be diagnosed with high blood pressure, a patient needs to have 3 elevated blood pressure readings, with the readings spread out at least one week apart. (1)

There are a variety of predisposing risk factors to development of hypertension including excessive alcohol use, being overweight, a diet high in sodium, a history of anxiety or depression and smoking (4,5). In an outpatient office setting there are a number of causes for an elevated blood pressure reading including pain or anxiety surrounding a current complaint of the use of certain over the counter medications

METHODS

A retrospective chart audit was performed on patients visiting the Student Health Care Center (SHCC) at the University of Florida over the months of April, July, August, September, October in 2015 and April in 2016. The SHCC used an EMR called Pyramed until the end of April 2016 and in order to perform our analysis, a sorting function in the Pyramed program was used to select all patient encounters with either a systolic blood pressure greater than or equal to 140 and/or a diastolic blood pressure greater than or equal to 90, during the aforementioned time periods. These cutoffs were selected as they correspond to the blood pressure thresholds to diagnose type 1 hypertension.

The following exclusion criteria were implemented in the chart review: 1) The patient could not have a known history of hypertension or voice concern about blood pressure in history. 2) The patient could not also have a pulse greater than 120. 3.) The patient could not have been sent to the Emergency Department during the visit.

For the purpose of this project, addressing the elevated blood pressure required at least one of these actions be documented: 1) Repeating blood pressure that day, 2) Having the patient follow up for a repeat visit for a blood pressure recheck, 3) Documentation of reason for elevated blood pressure, 4) Initiation of medication, 5) Counselling regarding lifestyle modification.

RESULTS

On 8/2/15, the first implementation was changing the Pyramed interface to display any blood pressure with systolic greater than 129 or diastolic pressure greater than 89 in color red. Readings below these numbers were displayed as green. On 9/2/15, the second intervention was the display of a screen saver on all computer stations at the SHCC, which served to remind people to address patients with blood pressure readings elevated above either a systolic of 139 or diastolic above 89.

Figure 1: This shows the percentage of patients where an elevated blood pressure reading was not acknowledged in chart. Only the EMR change was implemented at the beginning of August 2015. At the beginning of September 2015, the Screen Saver was additionally implemented.

Figure 2: This shows the percentage of patients where an elevated blood pressure reading was not acknowledged in chart. It includes analysis of the month of April in 2015 and in April 2016.

DISCUSSION

This project illustrates that simple visual cues can change the documentation patterns of providers. An interesting finding is that for the month of April 2016, the percentage of providers that do not address elevated blood pressure reading increases from 48.9%, when the visits in the months of September and October 2015 are combined, to 62.9%. This likely represents the effect of providers becoming acclimated to the prior interventions. Thankfully, this percentage is still much lower than the 83% rate noted in April 2015. It is possible that the month of April 2015 was an outlier, as the percentage of those not addressing hypertension was so high. Answering that particular question could be one of the aims of another project.

The most encouraging finding is as each intervention was added an increase in the percentage of providers documenting that they addressed elevated hypertension was noted.

CONCLUSIONS

Although, the initial effect of our interventions were not completely sustained, results were still encouraging. In the future, other interventions could examine the additive effects of successive visual reminders or cues to healthcare providers. Hypertension is known as a silent killer and often does not cause patients to have symptoms until it is too late. It behoves us as healthcare professionals to continue coming up with innovative ways to improve the screening process for diagnosis hypertension.

REFERENCES