EHR Visual Overlay Promises to Improve Hypertension Guideline Implementation

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EMR Visual Overlay Promises to Improve Hypertension Guideline Implementation

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Disclosures and Conflicts of Interest

• None
Background

• 2017 ACC/AHA guidelines for hypertension management updates
  • Increasing hypertension awareness
  • Encouraging lifestyle modification
  • Antihypertensive medication initiation and intensification on US adults with high ASCVD risk

• More integrated healthcare management means more time spent with patients, with more guideline-driven targets to achieve

• Average work day of 8 hours, with average of 17.5 minutes spent per patient

• Hypertension is the most common condition managed by primary care physicians in developed countries

Our Study

• Quality improvement study

• Aim: assess the utility of a visual decision support (VDS) overlay tool in managing a patient with essential hypertension on Epic EMR.

• Hypothesis: utilization of VDS can reduce physician time burden in management of essential hypertension, while improving adherence to guidelines
Design

• Primary care physicians were tasked with two simulated patient encounters for essential hypertension
  • First simulation – use of standard Epic EMR
  • Second simulation – use of standard Epic EMR + VDS overlay

• Endpoints:
  • Total time spent per encounter
  • Adherence to guidelines

• 70 case simulations in total

• Multiple choice questionnaire used to track management decisions
1. Fred's repeat BP is 138/84. What would you advise Fred about his BP today?
   - Do nothing.
   - Reassess in 1 month.
   - Start new medication.

2. Did you determine Fred's ASCVD score?
   - Yes
   - No

3. Based on the 2017 ACC/AHA guidelines, what should Fred's goal BP target be?
   - Less than 120/80 mmHg
   - 120-129/80-84 mmHg
   - 130-139/85-89 mmHg
   - 140-159/90-99 mmHg

4. How easy do you find EPIC to get key information you need to advise Fred?
   - Extremely difficult
   - Somewhat difficult
   - Neutral
   - Somewhat easy
   - Extremely easy

5. How easy do you find EPIC to determine a patient's ASCVD score?
   - Extremely difficult
   - Somewhat difficult
   - Neutral
   - Somewhat easy
   - Extremely easy

6. How effective is EPIC at helping you follow HTN guidelines?
   - Extremely difficult
   - Somewhat difficult
   - Neutral
   - Somewhat easy
   - Extremely easy

Social Determinants

You have prescribed diet and exercise in the last 6 months
Results

• Use of VDS compared to usual EHR was associated with:
  • Higher proportion of correct guideline prescribing (94% vs. 60%, p<0.01)
  • More ASCVD risk determination (100% vs. 23%, p<0.01)
  • More correct BP target identification (97% vs. 60%, p<0.01)
  • Decreased length of visit by 2 minutes on average (p<0.01)

• On a 10-point scale, clinicians rated the VDS 9.2 for ease of gathering necessary information to treat HTN as compared to 5.9 for standard EMR (p<0.01)
Results

Correct Guideline Prescribing

ASCVD Risk Calculation

Accurate BP Target

With VDS

Without VDS

VDS

Standard EMR

Satisfaction (10-point scale)
Discussion

• Opportunity to improve guideline adherence while shortening length of time in management of essential HTN

• Increasing provider satisfaction

• Proof of concept for visual decision support in management of chronic disease (diabetes, heart failure, coronary artery disease)
References


