Decreasing redundant serum folate orders and associated cost by utilizing appropriate computerised provider order entry (CPOE) messaging

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Introduction

•Serum folate levels are routinely tested on patients with anemia and altered mental status.

•Following mandatory folic acid fortification in 1998 in the United States, the prevalence of folate deficiency is the general population decreased to 0.5% from 2.3%.

•Given the decreased prevalence and now fortification of folic acid in the diet, testing for serum folate does not change management in the inpatient setting.

•Testing for serum folate in patients without risk factors incurs increased cost, unnecessary blood draws, and no change in clinical management.

•Over a 1-year time period it can cost a hospital between $32,000 upwards to $316,000 for serum folate testing.

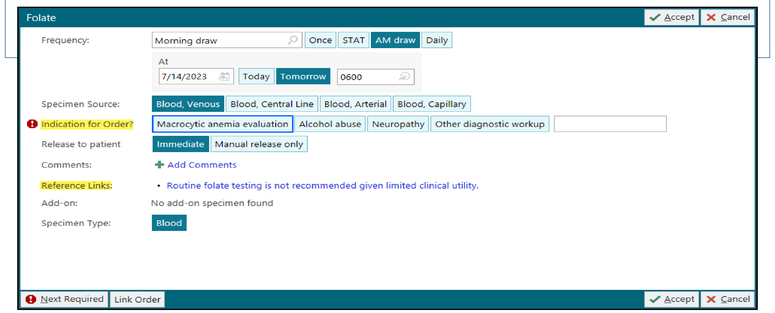
•Regardless of folate level, patients who are at an increased risk for developing folate deficiency should be started on folic acid supplementation this includes, pregnant individuals, alcohol abusers or individuals with hemolytic anemia.

Objective

•We aim to reduce folate testing by 30% in three months by implementing CPOE message that outlines indications for testing folate serum levels. As a result, the primary goal would be to reduce cost and unnecessary blood draws.

Methods

Analysis of de-identified patients was performed for inpatients admitted under internal medicine in whom a serum folate level was ordered at Lankenau Medical Center from May 1, 2023- August 1, 2023. EPIC was utilized to track: serum folate level, Hgb level, MCV level. Serum folates ordered after three months after implementation of CPOE message were evaluated. We will retrospectively review in-patients in whom a serum folate was ordered. All studies were performed at Lankenau Medical Center (LMC).



Results

- Data collected prior to CPOE message (May 1, 2023- August 1, 2023):

Over a three-month period, there were 2973 patients admitted under internal medicine service at LMC. Out of those, 560 had serum folate levels ordered (18.8%). Only 6.9% of folates ordered were abnormal. Out of 560 serum folates ordered, 95% of patients had an abnormal hemoglobin and of those 55% had abnormal MCVs

- After CPOE message (June 25, 2024 - Sept 25, 2024):

Over a three-month period, there were 4167patients admitted under internal medicine service at LMC. Out of those, 560 had serum folate levels ordered (6.6%). Only 12 (4.3%) serum folates ordered were abnormal. Out of 279 serum folates ordered, 64.5% of patients had an abnormal hemoglobin and of those 53.3% had abnormal MCVs

Conclusions

- Prevalence of folate deficiency was only 0.2% in patients admitted to LMC under internal medicine service.
- When serum folate was checked, it was abnormal in 6.9% of patients prior to CPOE message vs 4.3% after CPOE message.
- Hgb was abnormal in 95% of patients and MCV was abnormal in only 50% of patients.
- With the fortification of folate, patients are rarely folate deficient despite abnormal hemoglobin.
- Following implementation of CPOE message, folate ordering decreased by 50%
- Overall the testing of serum folate does not provide as much clinical implication as previously thought.
- Prior studies have advocated for the use of reduced folate testing and this study provides a simple method to allow for distribution of recommendations to providers and appropriate advising within the electronic health record (EHR)

Clinical implications:

- With the implementation of a CPOE message more providers were aware of the guidelines and lack of clinical implication of serum folate testing . As a result, hospital costs and unnecessary patient lab draws were reduced through a reduction in folate testing.

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