

Less Screening, More Sunscreen: Improving Appropriateness of Vitamin D Screening and Re-testing in Inpatient and Outpatient Settings at an 11 Hospital Safety Net System

NYC
HEALTH+
HOSPITALS

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AIM

To reduce inappropriate 25-hydroxyvitamin D testing in a large safety net system across both inpatient and outpatient settings.

PROBLEM

Testing for 25-hydroxyvitamin D deficiency has spiked in recent years despite the U.S. Preventive Services Task Force stating there is insufficient evidence to assess the benefits or harms of screening in asymptomatic adults. A Choosing Wisely retrospective analysis of claims data reported only a marginal reduction in low value vitamin D testing on a national level, through the use of recommendations alone. Electronic Health Records (EHR) interventions with clinical decision support, including hard stops, have been shown to be the most effective in achieving a sustained reduction for unnecessary vitamin D testing.

SETTING

This quality improvement initiative was developed under the High Value Care Council at NYC Health + Hospitals, the largest public health system in the US, with 11 hospitals and over 70 ambulatory centers.

The intervention was led and designed by the System High Value Care Council at NYC Health + Hospitals with input from select members from internal medicine, endocrinology, and laboratory.

INTERVENTION

- Two different clinical decision support tools were implemented across inpatient and outpatient settings, with different recommendations.
- A best practice advisory (BPA) was used to address unnecessary repeat testing within three months, populated with the most recent test results and a recommendation that retesting is unlikely to change clinical management (Figure 1).

RESULTS

BPA Action Rate

Defined as actioning to remove the 25-hydroxyvitamin D order directly from the BPA alert

- Inpatient: action rate 17.6% (469 of 2,669 total BPA triggers)
- Outpatient: action rate 19.7% (2,687 of 13,666 of total BPA triggers)

Overall Test Utilization Pattern

Ordering of 25-hydroxyvitamin D decreased in inpatient and outpatient settings (Figures 2, 3)

- Inpatient decreased from 6.38 orders per 1000 patient days to 3.62 (-43%, $p < 0.05$)
- Outpatient decreased from 33.72 orders per 1000 patient encounters to 18.08 (-46%, $p < 0.05$)

Figure 1a

Vitamin D 25 Hydroxy: H+H High Value Care Council does NOT recommend inpatient testing for 25-hydroxy vitamin D deficiency. [Accept] [Cancel]

Process Instructions: This test is processed in house at Bellevue, Elmhurst, Jacobi, Kings County. For all other locations this is a send-out test which will not be processed at your local facility.

H+H High Value Care Council does NOT recommend routine testing for 25-hydroxy vitamin D deficiency.

Reference Links: Evidence based recommendation link

Frequency: [AM Draw] [STAT] [Once] [Add-On] [Now (Routine)]

Indication: Bone disease Calcium disorder Malabsorption (e.g. GI pathology, anticonvulsants, etc) Chronic kidney disease Other

[Next Required] [Link Order] [Accept] [Cancel]

Figure 1b

Best Practice Advisory

Care Guidance (1)

Studies show RE-testing for 25 Hydroxyvitamin D levels less than 3 months after supplementation may provide INACCURATE assessment of true levels. Consider waiting 3-6 months before retesting.

No results found for: VITD

Remove the following orders?

[Remove] [Keep] Vitamin D 25 Hydroxy: H+H High Value Care Council does NOT recommend inpatient testing for 25-hydroxy vitamin D deficiency. Starting today at 1352

[Evidence Based Link] [Accept] [Dismiss]

Figure 2

Inpatient Orders Per 1000 Patient Days

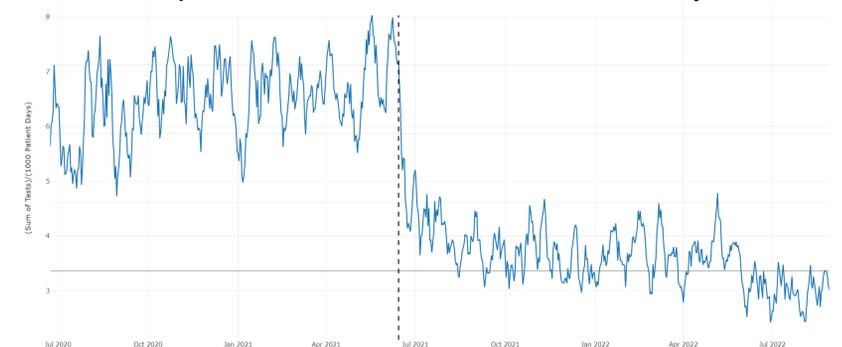
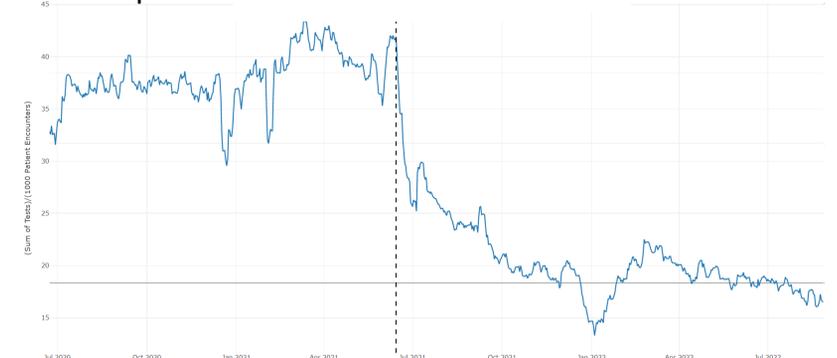


Figure 3

Inpatient Orders Per 1000 Patient Encounters



CONCLUSION

Clinical decision support tools combined with targeted best practice advisories were successful in decreasing inappropriate 25-hydroxyvitamin D testing in a large urban safety net system