

recommend patients taking metformin undergo regular monitoring of Vitamin B12 levels. To better understand acceptance and application of these guidelines, we undertook an assessment of such monitoring within a single hospital center serving the low-income population in Atlanta, GA to assist in guiding optimal monitoring and patient management.

**Methods:** Data was collected from a single hospital center using electronic medical records (EMR) and the SlicerDicer tool to identify all outpatients for whom metformin was prescribed either as a single agent or in combination therapy during January 1 – December 31, 2021 and then measure Vitamin B12 prescribing among two cohorts during the same time period: primary care patients and patients followed by the diabetes center.

**Results:** During the period studied, of the total 2,336,914 patients documented in the EMR, 30,803 (0.01%) were outpatients whom metformin had been prescribed either as a single agent or in combination therapy. Of these, 816 patients (2.6%) had Vitamin B12 levels ordered and measured. The prevalence of Vitamin B12 levels ordered and measured was greater among primary care patients (673 of 8,971 [7.5%]) when compared with patients followed by the diabetes center (25 of 1,081 [2.3%]) (chi-square  $p < 0.001$ ). A second analysis determined that Vitamin B12 levels were abnormally low among 172 (23.7%) primary care patients and 25 (28%) patients followed by the diabetes center (chi-square  $p = 0.78$ ).

**Conclusion:** Our study determined that among two outpatient cohorts who were prescribed metformin there was suboptimal adherence to the ADA's recommendation for regular monitoring of Vitamin B12 levels. The findings of this study will be used to develop approaches for increasing and optimizing ordering and monitoring Vitamin B12 levels for patient care management. Increased awareness of the relationship between metformin and Vitamin B12 deficiency and standardized approaches to monitoring are needed.

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## Diabetes & Glucose Metabolism

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### *Prevalence of Vitamin B12 Monitoring Among Patients Receiving Metformin in a Public Hospital*

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**Background:** Metformin reduces intestinal absorption of Vitamin B12 in up to 30% of patients and lowers serum Vitamin B12 concentrations in 5-10%. The dose and duration of metformin use correlates with the risk of Vitamin B12 deficiency. Low serum levels may be detected as early as 3-4 months after starting metformin; however, symptomatic deficiency is more likely to present after 5-10 years of metformin therapy. In 2017, the American Diabetes Association (ADA) updated its treatment guidelines to