

Improving Vitamin B-12 Screening Rates in Adults with Type 2 Diabetes Mellitus in a Rural Primary Care Setting

**Abstract**

Diabetes is a global epidemic affecting approximately 463 million adults aged 20-79 years. The prevalence of diabetes in the United States (US) has risen to more than 34 million with 90-95% of these individuals having type 2 diabetes mellitus (T2DM). Metformin is a common intervention regimen for patients with T2DM. However, several research studies have associated its long-term use with vitamin B-12 deficiency yet monitoring for the deficiency remains low. The purpose of this quality improvement project was to attempt to determine if the use of a vitamin B-12 deficiency screening protocol, following the National Health Service guidelines, will help minimize the number of patients with the deficiency.

The theoretical framework of this project was based on Lewin's Framework for Change Management Theory in order to create and implement the screening protocol as well as an educational intervention for providers. Pre- and post-implementation tests will identify if the providers have learned new and vital information to help better diagnose and treat vitamin B-12 deficiency patients on long-term metformin therapy. Consequently, the post-test scores increased after the educational session with the providers indicating an increase in knowledge on vitamin B-12. In addition, after implementation of the protocol by the providers at the practice site, the compliance and the number of patients screened increased. The outcome suggests that implementation of the intervention was successful in achieving short-term improvements and optimism for sustainable long-term change for screening vitamin B-12 deficiency in T2DM patients at the project site and other community-based primary care facilities.

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