

Screening for Metabolic Dysfunction-Associated Steatotic Liver Disease in Patients with Type 2 Diabetes Mellitus

Addys Bode Hernandez, MD; Christian Brown, BS; Taylor C. Sanders, MD; Suneeta S. Ganji, MD

Departments of Diabetes, Endocrinology, and Metabolism; LSU Health Sciences Center

Introduction

- Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) is the most common cause of chronic liver disease in the world.
- It is associated with type 2 diabetes, dyslipidemia, obesity, increased risk of cardiovascular disease, colon cancer, cirrhosis, and hepatocellular carcinoma.
- In the United States, the prevalence of MASLD reached 38% in 2020 and is expected to increase with the rise of obesity and the availability of imaging and screening tools.
- One of the most validated screening tools for liver fibrosis is the Fibrosis 4 (FIB-4) index, which is calculated using the patient's age, aspartate aminotransferase level, alanine aminotransferase level, and platelet count.
- This Quality Improvement Project aimed to increase screening for MASLD using the FIB-4 index by 30% in the LSU Endocrinology clinic at University Medical Center (UMC).

Methods

- Slicer Dicer in the Epic Electronic Health Record (EHR) was used to select a cohort of patients with type 2 diabetes seen in LSU Endocrinology clinic at UMC between January 1, 2023 and January 31st, 2024.
- The baseline screening rate for MASLD was obtained by manual chart review to assess whether the FIB-4 index was documented in the physician progress note.
- Patients with MASLD metabolic dysfunction-associated steatohepatitis (MASH) or cirrhosis were excluded.
- With Epic support team, the FIB-4 index was integrated into Epic as a SmartPhrase.
- An algorithm for MASLD screening as well as instructions on how to calculate the FIB-4 index in Epic was made into a pocket card and distributed to the LSU endocrinology fellows and attendings.
- Post-intervention data was collected between February 1st, 2024 and December 31st, 2024 using SlicerDicer and manual chart review

MASLD Screening

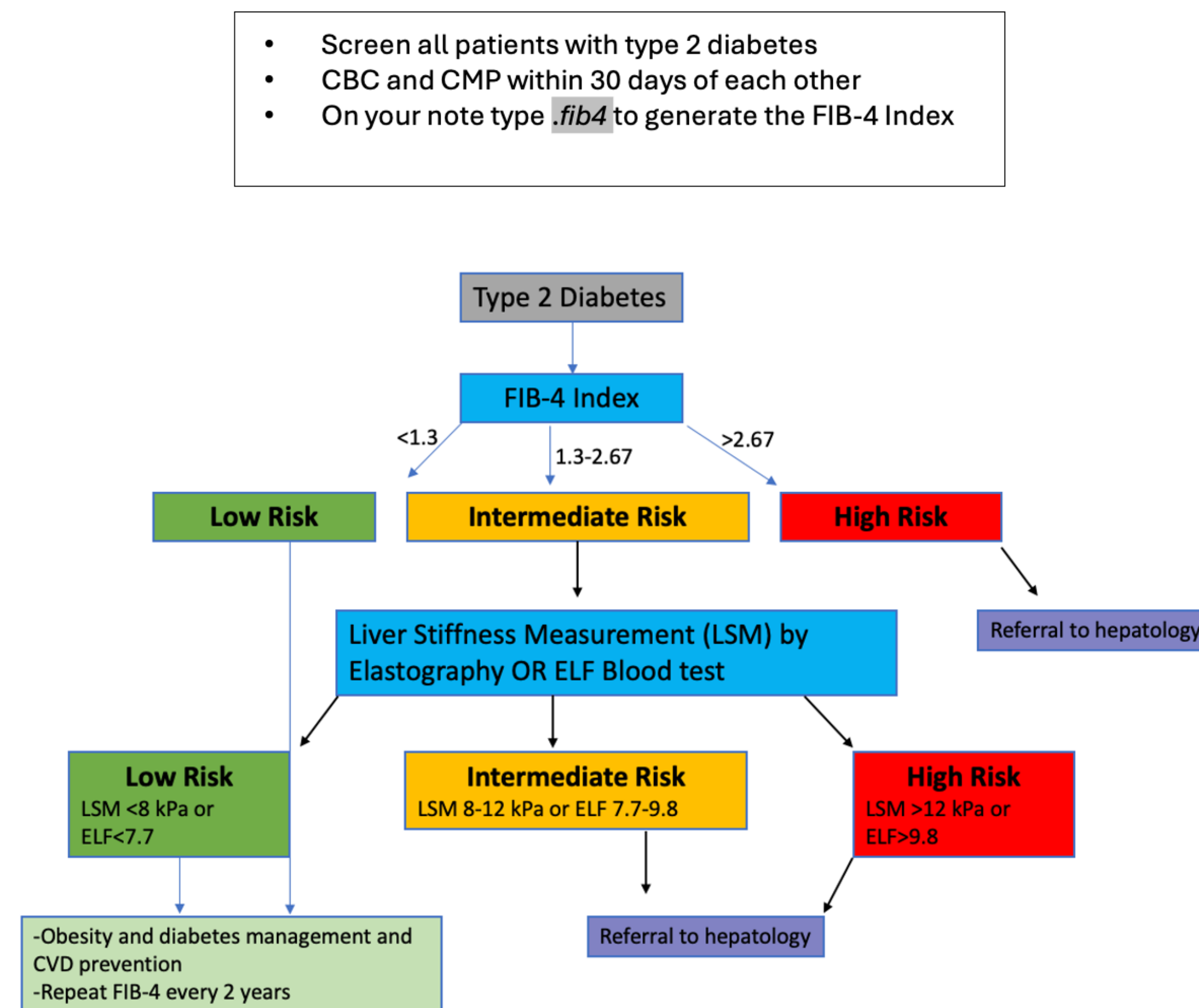


Figure 1: Pocket card with MASLD screening algorithm.

Results

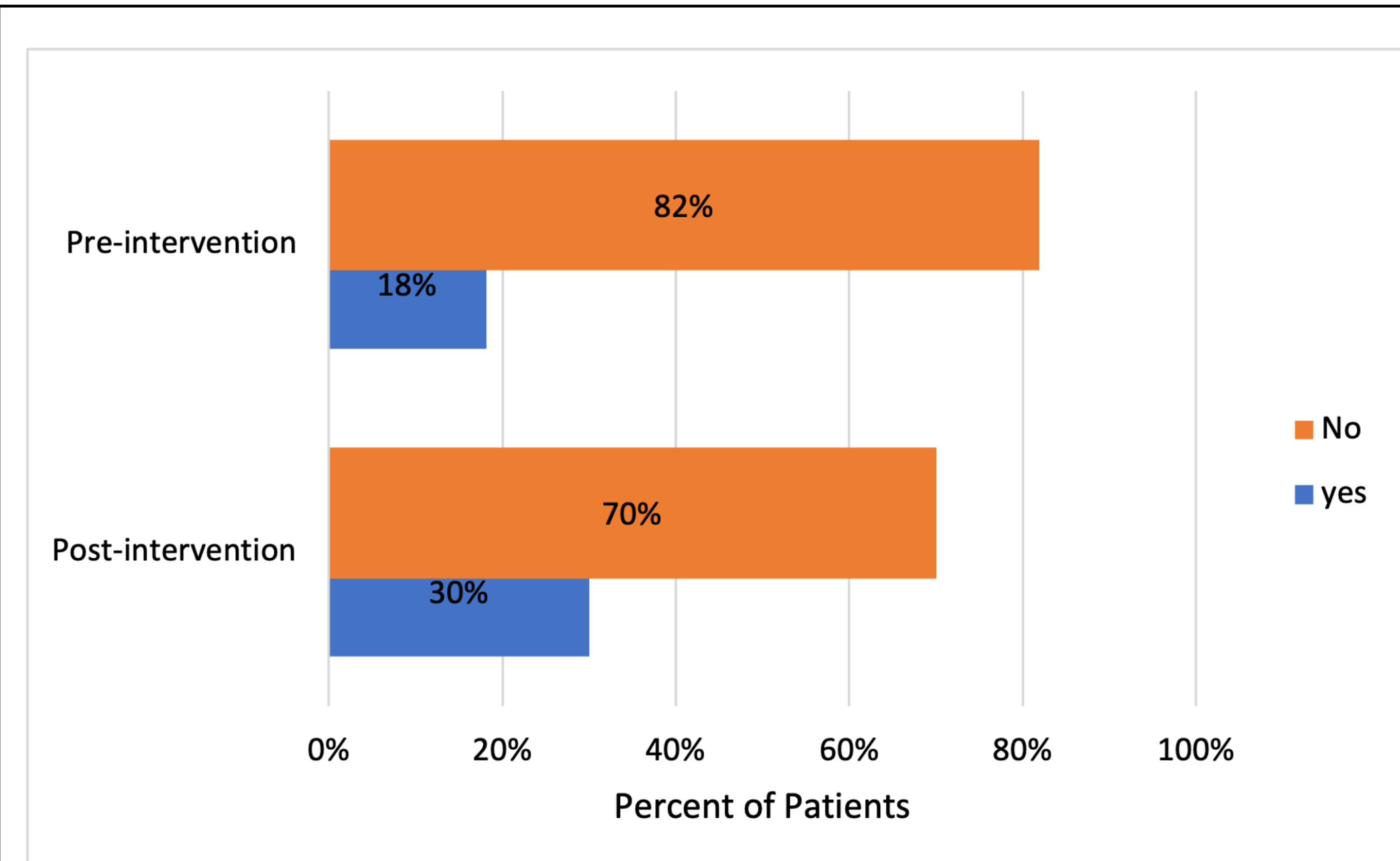


Figure 2: Percent of patients screening for MASLD using the FIB-4 index.

Discussion

Pre-intervention, the percentage of patients with type 2 diabetes mellitus screened for MASLD with the FIB-4 index was 18%. Post-intervention, the percentage of patients screening for MASLD with FIB4-index was 30%. Overall, the screening rate for MASLD increased by 67% by January 2025 after our intervention.

Educating frontline providers such as endocrinologists and primary care physicians can make a difference in detecting patients at early stages of MASLD. Identifying these patients early in the disease course can prevent significant morbidity and mortality by allowing time to improve risk factors and to refer to liver specialist for further assessment and treatment. The FIB-4 index is an easy non-invasive tool to aid in screening for MASLD in high-risk patients such as those with type 2 diabetes mellitus.

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