Increasing Utilization of the FIB-4 Score to Improve Appropriate NAFLD Consultation to the Orlando VA Hepatology Service

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Background

- Non-alcoholic fatty liver disease (NAFLD) affects up to 33% of the population and approximately 75% of people with diabetes.
- NAFLD often presents asymptomatically. Therefore, optimal timing of treatment depends on the accurate staging of fibrosis.
- The American Gastroenterology Association (AGA) developed a clinical care pathway using FIB-4 (Figure 1).
- Multiple studies have shown that a FIB-4 <1.3 can reliably exclude advanced fibrosis in patients with NAFLD, with a negative predictive value of more than 90%.
- At the Orlando VA Healthcare System, it was found that a large number of Hepatology consults for NAFLD are placed without appropriate workup based on the AGA's recommendations.

Objective

- Increase utilization of FIB-4 score for NAFLD consults from 0% to 30% by 3/10/2023
- Increase appropriate* consults for NAFLD to Orlando VA Hepatology services from 37% to 60% by 3/10/2023

*Age 36-64, Fib4 >1.3 and age above 65, Fib 4 >2.0

Methods

- **Retrospective chart review.**
- **We screened all hepatology consults placed between 1/1/2021 -1/16/2022 and from 8/1/2022 – 3/6/2023 for:**
  - Indication for consult
  - FIB-4 score calculated by the consulting provider at time of consultation
  - Appropriateness of consult for NAFLD based on AGA pathway (Figure 1)
- All non-NAFLD consults were excluded.
- We conducted root-cause analysis to determine areas to intervene (Figure 2).
- We conducted resident and attending physician surveys about knowledge of FIB-4 score and AGA pathway, as well as satisfaction with the current NAFLD consult ordering menu in the electronic medical record system.

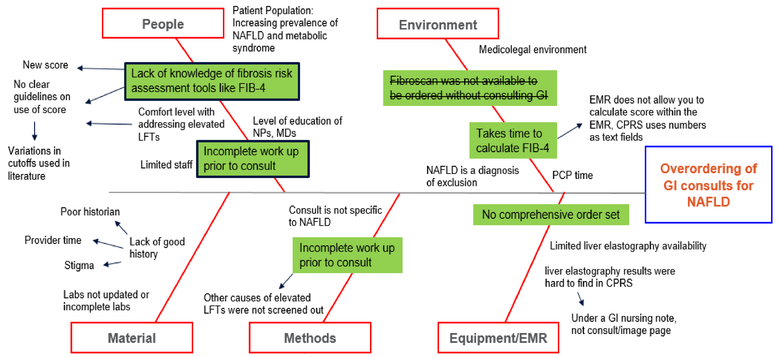

Figure 2: Fishbone diagram for root cause analysis

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Methods (Continued)

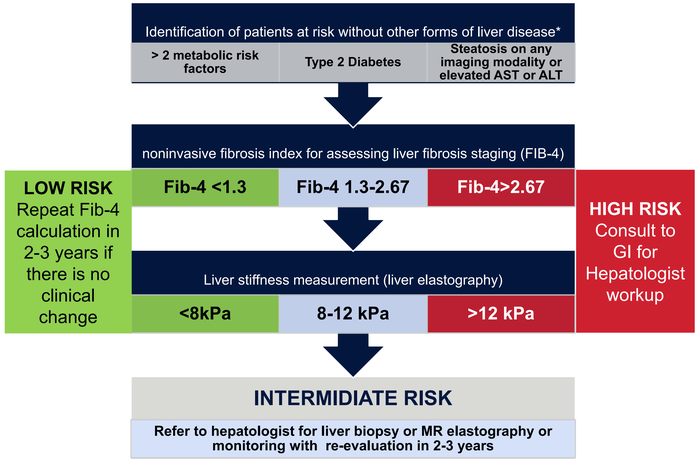
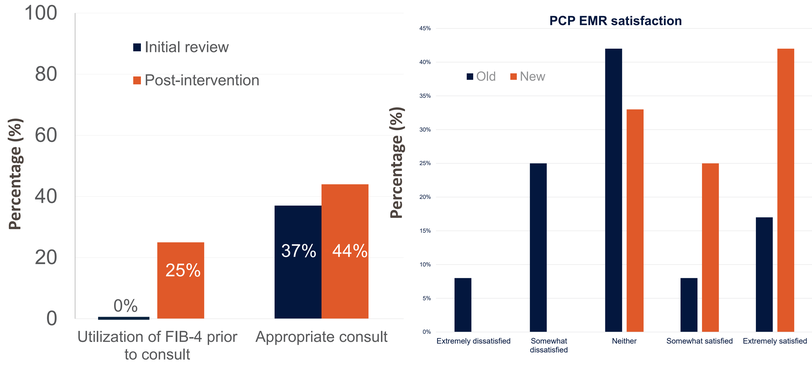


Figure 1: Clinical care pathway for workup for suspected NAFLD adopted from Kanwal et al.

Interventions

- Hepatology consult guidelines added to order menu in EMR- January 2023
- Introduction of auto-FIB-4 calculators (Supra-Vista) to residents- January 2023
- Liver elastography report changed from note to consult tab to more easily find it- June 2022
- PCP and resident lectures and flyers- August 2022, December 2021, January and February 2023
- Grand Rounds- April 2023

Results



Graph 1: Changes in the rate of FIB-4 usage and the rate of appropriate consult before (blue) and after (orange) intervention

Graph 2: Physician satisfaction with GI NAFLD consult menu (blue = before; orange = after); Surveyed at Grand Rounds Presentation April 2023. n= 12

Results Cont.

- In the initial survey of 48 Internal Medicine residents (12/2021), none of residents answered correctly to a clinical question to determine next step for a suspected NAFLD patient. Prior to the clinical question, the responses to a survey regarding FIB-4 were gathered: 68% were not familiar, 23% were familiar but had never used it, and 9% were familiar and used it in practice. In 8/2022, 2 out of 36 residents answered correctly (6%).
- In the initial review (from 1/1/2021 to 1/16/2022), 204/1644 (12%) total Hepatology consults were for NAFLD. 76/204 (37%) total NAFLD consults were considered appropriate based on the AGA pathway. Fib-4 was calculated in 0/204 cases prior to consultation. 201/204 consults (98%) were placed by a PCP.
- In the post-intervention review (from 8/1/2022 to 3/6/2023), 61/140 (44%) consults were considered appropriate, and in 35/140 (25%), the FIB-4 was calculated prior to consultation.
- Our project successfully increased utilization of FIB-4 score for NAFLD consults from 0% to 25% and increased appropriate consults for NAFLD to Orlando VA Hepatology services from 37% to 44% (Graph 1).
- We increased the satisfaction with the GI NAFLD consult menu from the previous design by eliminating the dissatisfied results (33% vs 0%) and increasing the amount of somewhat satisfied (8% vs 25%) and extremely satisfied (17% to 42%) (Graph 2). The survey also demonstrated that our intervention increased physician awareness of NAFLD and FIB-4 from 9% to 33%.

Discussion

- Both the initial and follow-up surveys (12/2021, 8/2022 respectively) of residents demonstrated a general lack of knowledge of the AGA recommendation for the management of NAFLD, despite multiple interventions including mini-lectures and flyers.
- Successfully reducing the number of inappropriate consults may have not met the prespecified end point, however a decrease in an estimated 131 consults may reflect a large decrease in healthcare cost if sustained on a yearly basis.
- Limitations include a retrospective design, short time for interventions, low impact interventions and limitations with changes in the EMR, and limited data from the post intervention period.

Conclusion

- This project did not meet the targeted objective of increasing appropriate NAFLD consults up to 60% from 37%. However, an increase in appropriate NAFLD consults was observed in the post-intervention period (from 37% to 44%, a relative change of 18.9%). FIB-4 utilization increased dramatically from 0% to 25%.
- PCP survey done after GI Grand Rounds (4/2023) showed that 33% were aware of the FIB-4 and were actively using it, and 16% are unfamiliar with the concept. This finding suggests that more robust education and exposure are needed.
- Our results indicate that these methods can be sustained based on PCPs' satisfaction with the new consult pathway embedded into the system. We believe such results will contribute to decreasing costs and avoiding delays in treatment. The successful implementation of this project can serve as a model for other VA facilities.

References

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