

# The Impact of a Safety Program Initiative for Monitoring Infusion Disease Modifying Therapies for Multiple Sclerosis

Shuvro Roy, Janel Haughton, Scott D. Newsome  
Johns Hopkins School of Medicine  
Baltimore, MD, USA

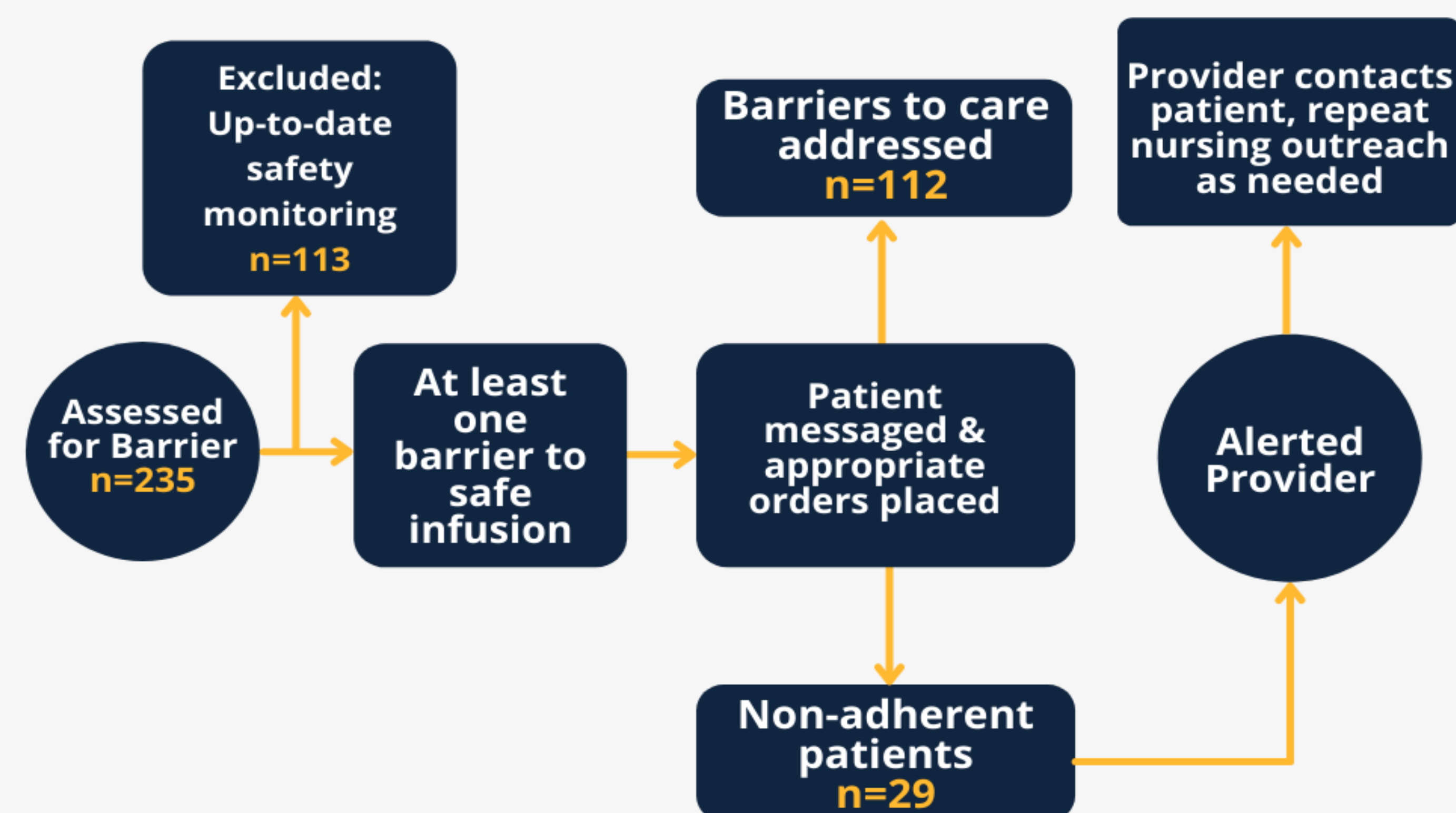
## Needs and Objectives

- Infusion-based high-efficacy disease modifying therapies (DMTs) represent a major advance in the treatment of multiple sclerosis (MS).
- Safe administration of these medications requires close monitoring of laboratory studies, imaging, and clinical examinations, all of which have been impacted due to the COVID-19 pandemic.
- Non-adherence to recommended safety monitoring can lead to inappropriate administration of these medications which may result in DMT-related complications.

## Description of Program

- A safety nurse navigator within the Johns Hopkins MS Center regularly reviewed safety data for patients receiving infusion DMTs from November 2020 to May 2021 via chart review.
- Data assessed included:
  - Out of date surveillance MRIs
  - Out of date laboratory results
  - Out of date appointments with the prescribing neurologist
- If the patient had any of the above, the nurse navigator contacted them via Patient Message and provided instructions and orders if necessary for how to complete the barrier to care.

## Nurse Navigator Workflow

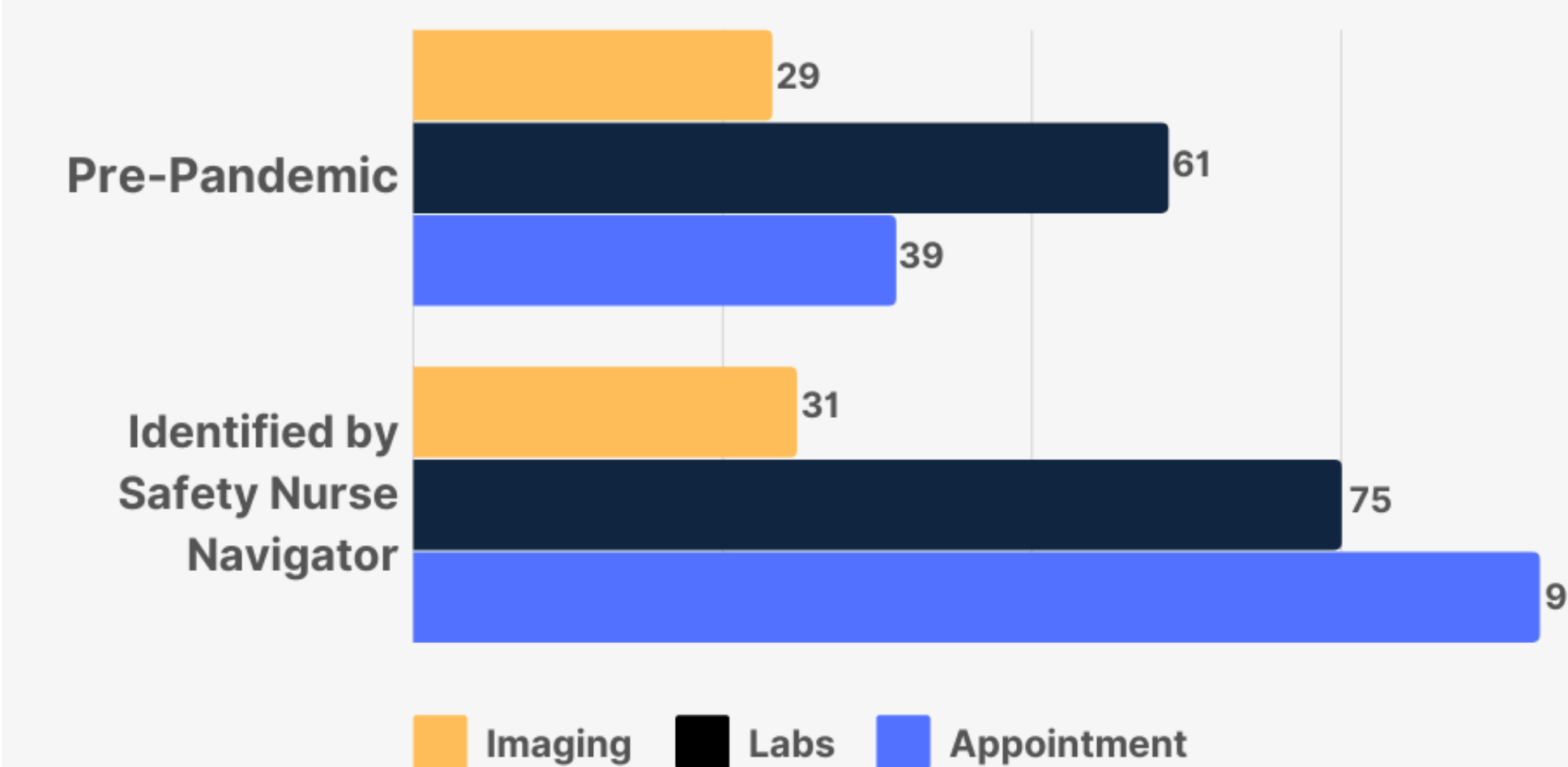


## Findings

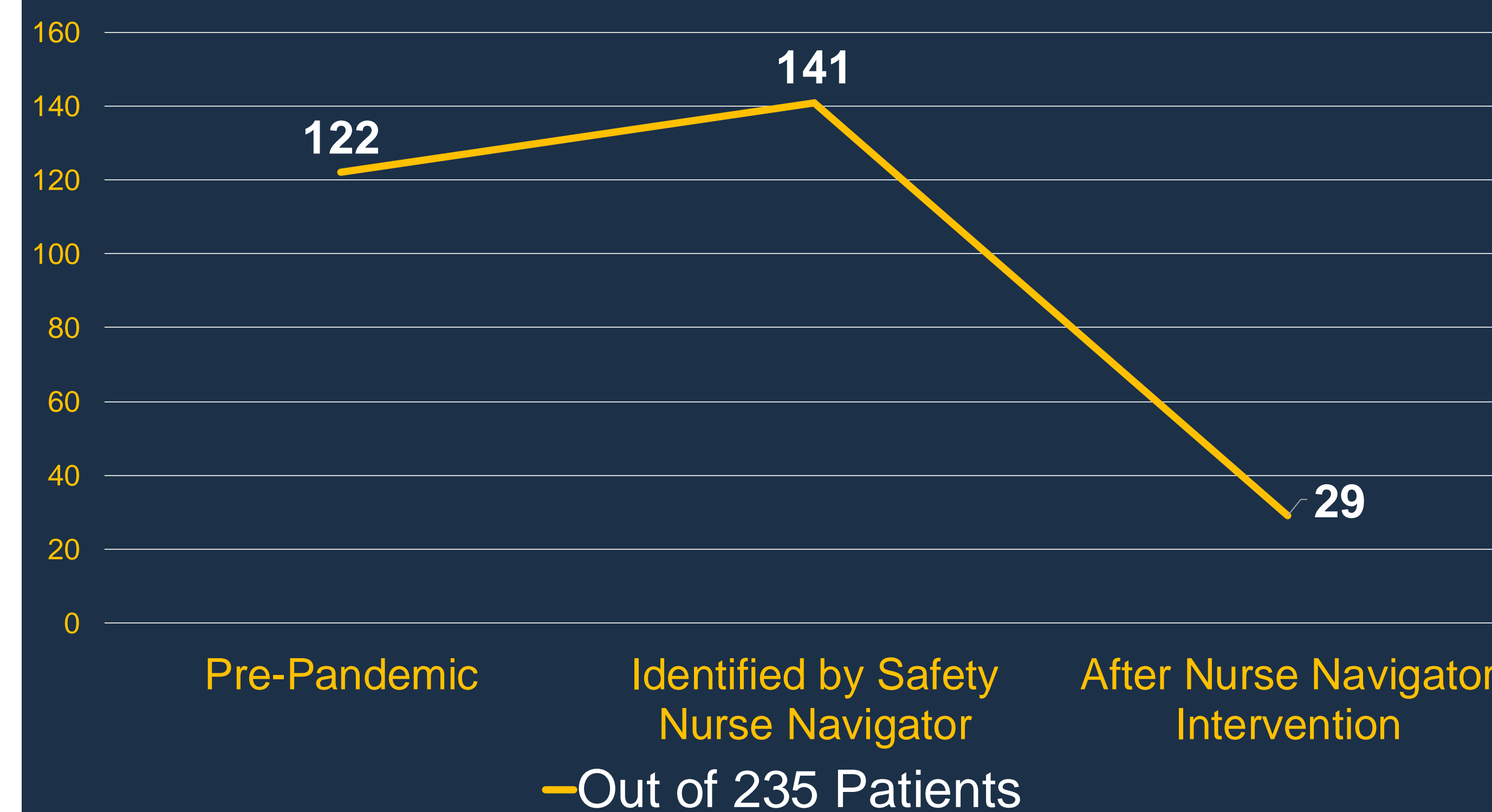
Patient Characteristics	
Total Patients	235 (100%)
Age	44.2 (±10.3)
Female	102 (71.8%)
Mean EDSS	2.19 (±1.66)
<b>Patients with barriers to care</b>	<b>141 (60%)</b>
Patient DMTs	
B-cell Depletion (Ocrelizumab, Rituximab)	117 (83.1%)
Natalizumab	24 (16.9%)
Barriers to Safety	
Out of date provider	91 (64.5%)
Out of date imaging	31(22.7%)
Out of date labs	75 (53.2%)

**Fig 1.** Out of 235 eligible patients, we evaluated the number of patients with barriers to safe infusion by category, as identified retrospectively before the institution of the Safety nurse navigator, and in the first six months after instituting the initiative (November 2020-May 2021). During the pandemic, there was an overall increase in patients with incomplete safety monitoring, and an increased proportion of patients with out-of-date appointments.

## Barriers to Safe Infusion



## Total Patients with Unsafe Infusions



**Fig 2.** A total of 235 patients identified as having a barrier to safe infusion. Pre-pandemic, 122 of 235 (52%) patients received an infusion despite a barrier to safe infusion. In the first 6 months of the initiative, the Nurse Navigator identified 141 of 235 (60%) of patients who would had a barrier to safe infusion. After intervention, 112 patients completed their safety monitoring.

## Discussion

- This pilot safety program initiative identified gaps in practice settings for managing infusion-based high-efficacy MS DMTs
- Even before the pandemic, **52% of patients** were infused despite incomplete safety monitoring
- The stressors of the pandemic worsened barriers to safe infusion with **60% of patients having identified incomplete safety monitoring.**
- During the pandemic, the most common barrier to care was out of date appointments, while before the pandemic, the most common barrier was incomplete safety monitoring labs.
- 37% of patients with a barrier to care had multiple barriers to care.
- Our safety nurse navigator played an instrumental role in identifying patients who were non-adherent to safety monitoring and intervened to avoid drug-related complications.
- **In the first 6 months of the intervention, the Safety nurse navigator initiative reduced the number of patients with incomplete safety monitoring from 60% to 12%.**
- **Nurse navigator intervention prevented the vast majority (79.4%) of unsafe infusions that would have occurred without the existence of the initiative.**

## References

Johns Hopkins logo: [Johns Hopkins Neurology: Half a Century of Innovation | Johns Hopkins Neurology and Neurosurgery \(hopkinsmedicine.org\)](https://www.hopkinsmedicine.org/)

## Acknowledgments

We would like to acknowledge the Neurosciences Consultation and Infusion Center staff for their contributions in the design and implementation of this safety initiative.