

Evaluating the Effect of SmartPhrase Integration of Constipation Screening and Intervention in Patients with Down Syndrome

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Introduction

Constipation in Adults with Down Syndrome (DS)

- **Prevalence:** Chronic constipation affects **30–50%** of adults with DS, far exceeding rates in the general population (Rubin et al., 2018; Rasmussen et al., 2020).
- **Contributing Factors:**
 - Hypotonia and reduced gastrointestinal motility
 - Hypothyroidism
 - Low physical activity and sedentary lifestyle
 - Neurocognitive impairment (Bull, 2022)
- **Consequences:** If untreated, constipation can lead to fecal impaction, incontinence, urinary dysfunction, behavioral changes, and diminished quality of life.
- **Barriers to Recognition:**
 - Limited expressive language and interoceptive awareness in many adults with DS make it difficult to report discomfort or incomplete bowel movements (Haveman et al., 2009).
 - Behavioral changes (e.g., irritability, withdrawal) may be misinterpreted as psychiatric or baseline cognitive issues rather than gastrointestinal distress.
- **Clinical Implications:**
 - Emphasizes the need for structured, provider-initiated screening during routine visits.
 - Implementing a SmartPhrase in the EHR can ensure constipation assessment becomes a consistent, standardized component of Down syndrome health maintenance.

Aim

Increase documentation of constipation screening in adults with Down syndrome receiving care from a single provider at Geisinger’s Justin Drive clinic by ≥20% within four months of SmartPhrase implementation in Epic.

Methodology

- This quality improvement project was conducted within Geisinger Health System and focused on adults with Down syndrome receiving care from a single provider.
- To improve screening for constipation, a SmartPhrase was developed in the electronic medical record to remind the provider to ask about constipation at each comprehensive care visit.
- The SmartPhrase was implemented on March 13, 2025.
- A retrospective chart review was conducted of all comprehensive care visits during the four months before implementation and the four months after implementation.
- For each visit, documentation was reviewed to determine whether constipation was addressed, whether a diagnosis of constipation was made, and whether any intervention was initiated.
- Pre- and post-intervention data were compared to assess changes in screening, diagnosis, and treatment rates.

Results

Figure 1. Chart review results prior to implementation of SmartPhrase

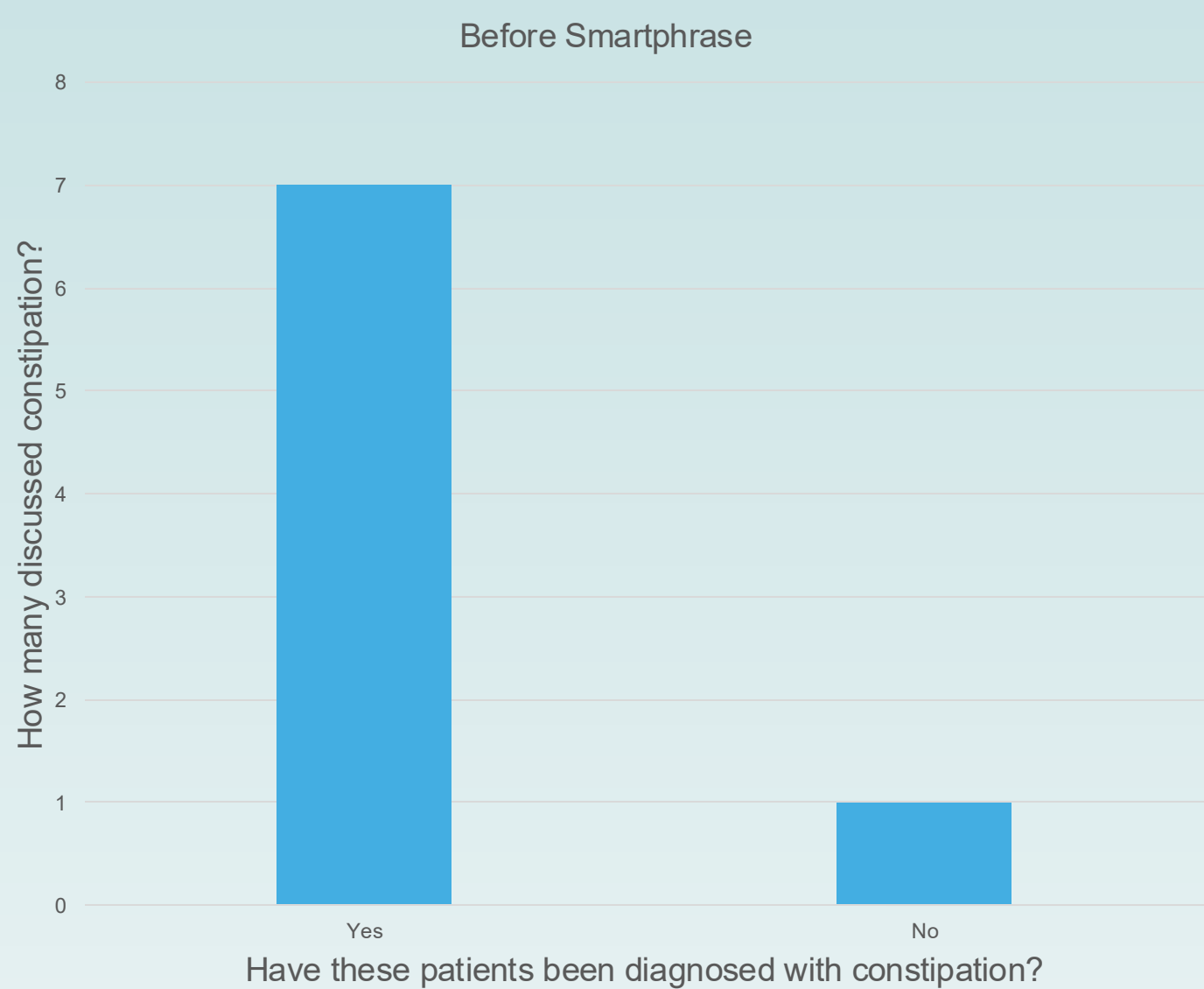


Fig. 1. Data collected using the EPIC EHR from mid-November 2024 to March 13th, 2025.

- Sample size between the two groups varied slightly. With 20 patients prior to the implementation of the SmartPhrase and 26 patients after the SmartPhrase was put into use.
- Similar sex distribution seen between males vs female
- Wide age range among the patients in this study
- Prior to SmartPhrase: 11 patients had diagnosis of constipation.
- Of those 11, 7 (63.6%) patients had documented discussion of constipation
- Of the 9 patients who did not have a constipation diagnosis, only 1 (11%) had a documented discussion on the topic of constipation.
- After the SmartPhrase was put in place, only 10 of the patients in this group had an established constipation diagnosis.
- 100% of the "Yes" group had documented discussion on constipation.
- For the group who did not have a diagnosis of constipation, there were a total of 16 patients, with 14 (87.5%) of those patients having a documented discussion on constipation during their comprehensive care visits.

Figure 2. Chart review results after the implementation of the SmartPhrase

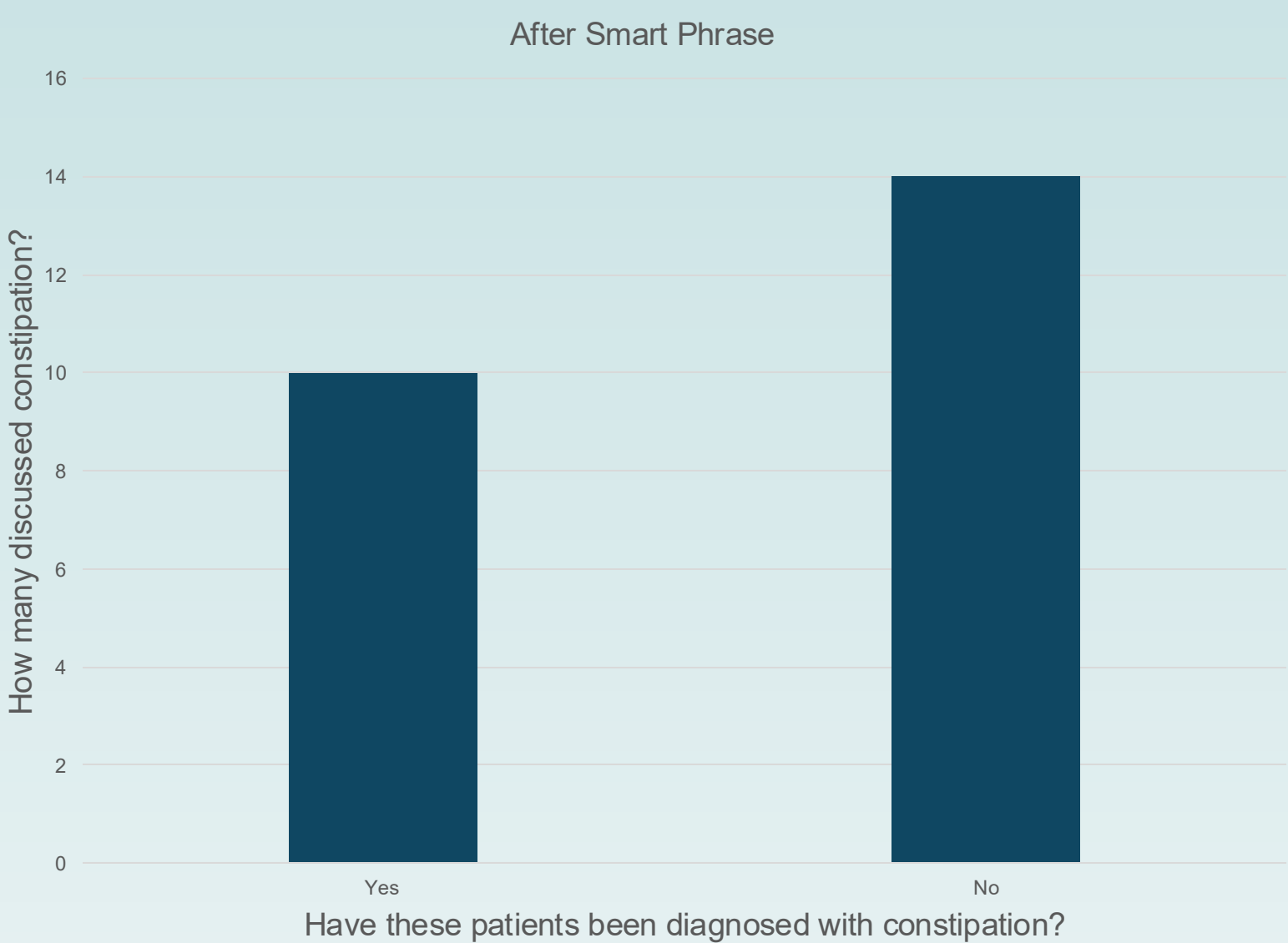


Fig. 2. Data collected using the EPIC EHR from March 13th, 2025 to July 13, 2025.

Table 1. Patient demographics from our retrospective chart review

Sex (F/M)	Number of Patients
Male	26
Female	20
Sample Size	Number of Patients
Prior to SmartPhrase	20
After implementing SmartPhrase	26
Age Demographics	Age
Age Range	18-66
Median Age	37

Table 1. Demographic information of our patients demonstrates broad age range and similar sex distribution.

Discussion

Prior to SmartPhrase implementation:

- Discussions about constipation among patients with Down Syndrome were infrequent.
- Only 11% of patients *without diagnosed constipation* discussed it during their visit.
- Only 63.6% of patients *with diagnosed constipation* discussed it during their visit.
- Indicates a deficit in constipation discussions, which can lead to medical complications

After SmartPhrase implementation:

- 100% of patients *with diagnosed constipation* discussed it with their provider.
- 87.5% of those patients received additional counseling regarding constipation.

Implications:

- SmartPhrase use improved provider–patient communication on constipation and may prevent further associated complications

Conclusion

A SMART phrase in EPIC effectively increased discussion regarding constipation. Our study provides a short segment into the benefit of screening adults with Down Syndrome for constipation. By having something as simple as a Smart phrase on Epic during in-office visit will lead to more discussion between patient and their physician. Future goals include expanding the use Smart-Phrase and implementing this strategy to better target population with higher risk of development constipation and improve screening and outcome for patients.

Next Step:

- Expand/Implement SMART-Phrase on Epic to all patient with Down Syndrome
- Develop tailored SMART Phrases for adults with **cerebral palsy, spina bifida**, or other neurodevelopmental conditions associated with high constipation risk.
- Evaluate whether increased discussion leads to earlier interventions and improved quality of life for patients.

References

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