

Problem & PURPOSE

Problem: Extended wait times for patients receiving neurotoxin for muscle spasticity

- Can cause limb deformities, pain, and overall impaired quality of life
- Neurotoxin requires prior authorization (PA) for all insurance plans except Medicare
- Studies have shown critical importance of early intervention in improving mobility/ability to perform activities of daily living, decreasing pain, and reducing risk of permanent muscle contracture (Bavikatte et al., 2021; Van Tilborg et al., 2024).

Purpose: To use an evidence-based strategy to decrease the wait time from PA to scheduling neurotoxin injection appointments for patients with spasticity.

The desired outcome was no more than 3 weeks between the date the prescription was written and the neurotoxin injection appointment.

Available Knowledge & Rationale

- Neurotoxin is the mainstay and gold standard of interventional focal spasticity management (Howard & Patel, 2023; Raciti et al., 2024)
- Timeliness is of utmost importance to improve ability to complete activities of daily living, increase function, decrease pain, and enhance quality of life
- Use in first 3 months post-stroke helps to increase independence and avoid long-term complications (Bavikatte et al., 2021; Van Tilborg et al., 2024)
- Waterfall model: requirement, design, development, testing, deployment, maintenance (Emorphis, 2025)

Methods

CONTEXT:

- Outpatient physical medicine and rehabilitation (PM&R) clinic – mainly spinal cord injuries (SCIs), traumatic brain injuries (TBIs), strokes, and limb amputations (American Academy of Physical Medicine & Rehabilitation [AAPM&R], 2025)
- Collaborate with PT/OT/SLP to optimize function

INTERVENTION:

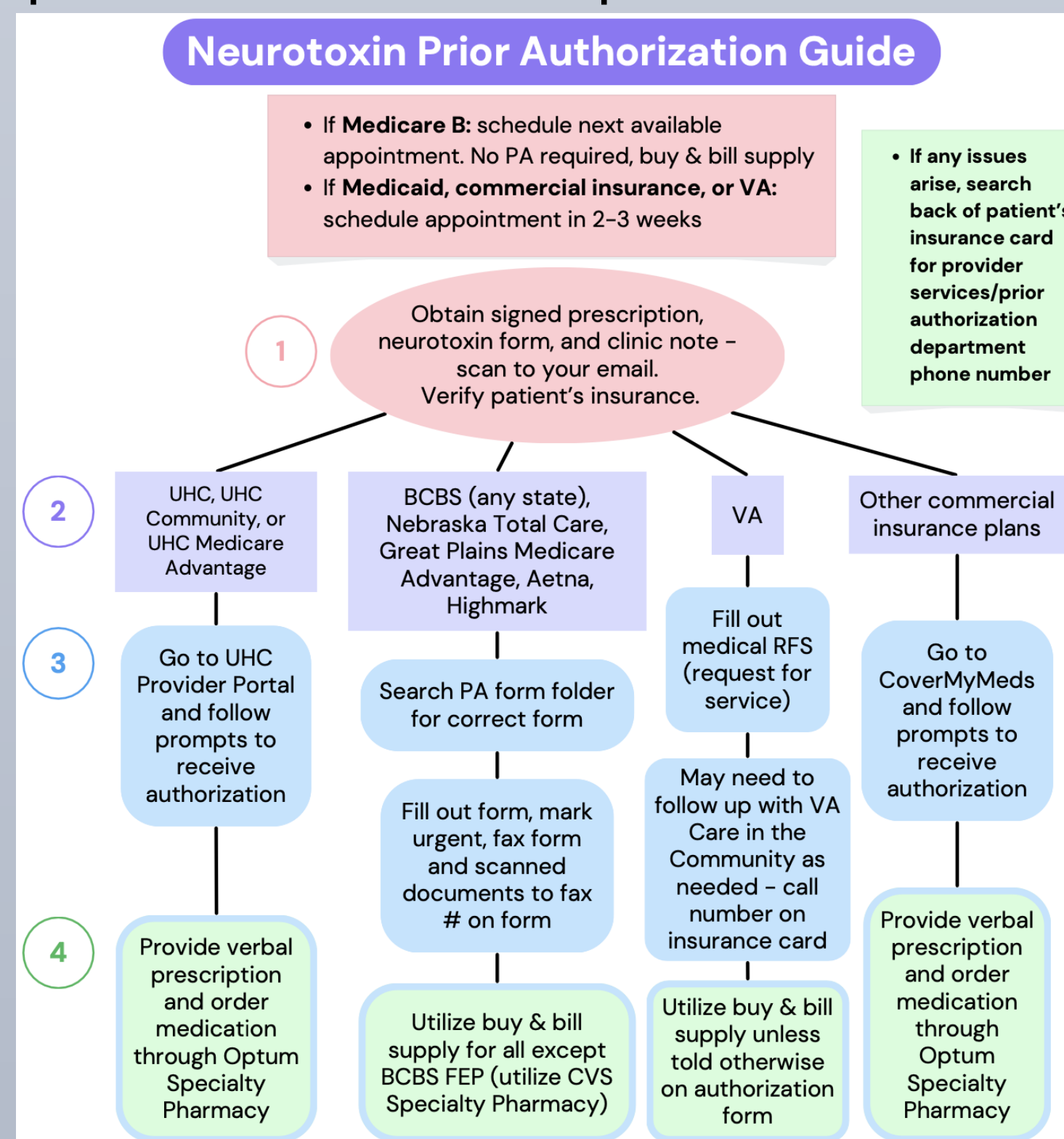
- PA decision-making tree created to increase efficiency
- Tool to help staff schedule injection appointments within a 3-week timeframe
- Goal = initiate PA as soon as possible, marked as urgent since a visit needed to be scheduled within 3 weeks, and submitted once the visit note was complete
- CoverMyMeds platform used to streamline requests and make the process reproducible

STUDY OF INTERVENTION:

- Scheduling system Wellsky was used to track length of time between initial prescription and injection appointment

MEASURE:

- Outcome = time between prescription date and neurotoxin injection
- 8 weeks of data using PA tool completed and compared to 8 weeks of data in 2025
- Goal = 3 weeks or less between prescription and neurotoxin injection

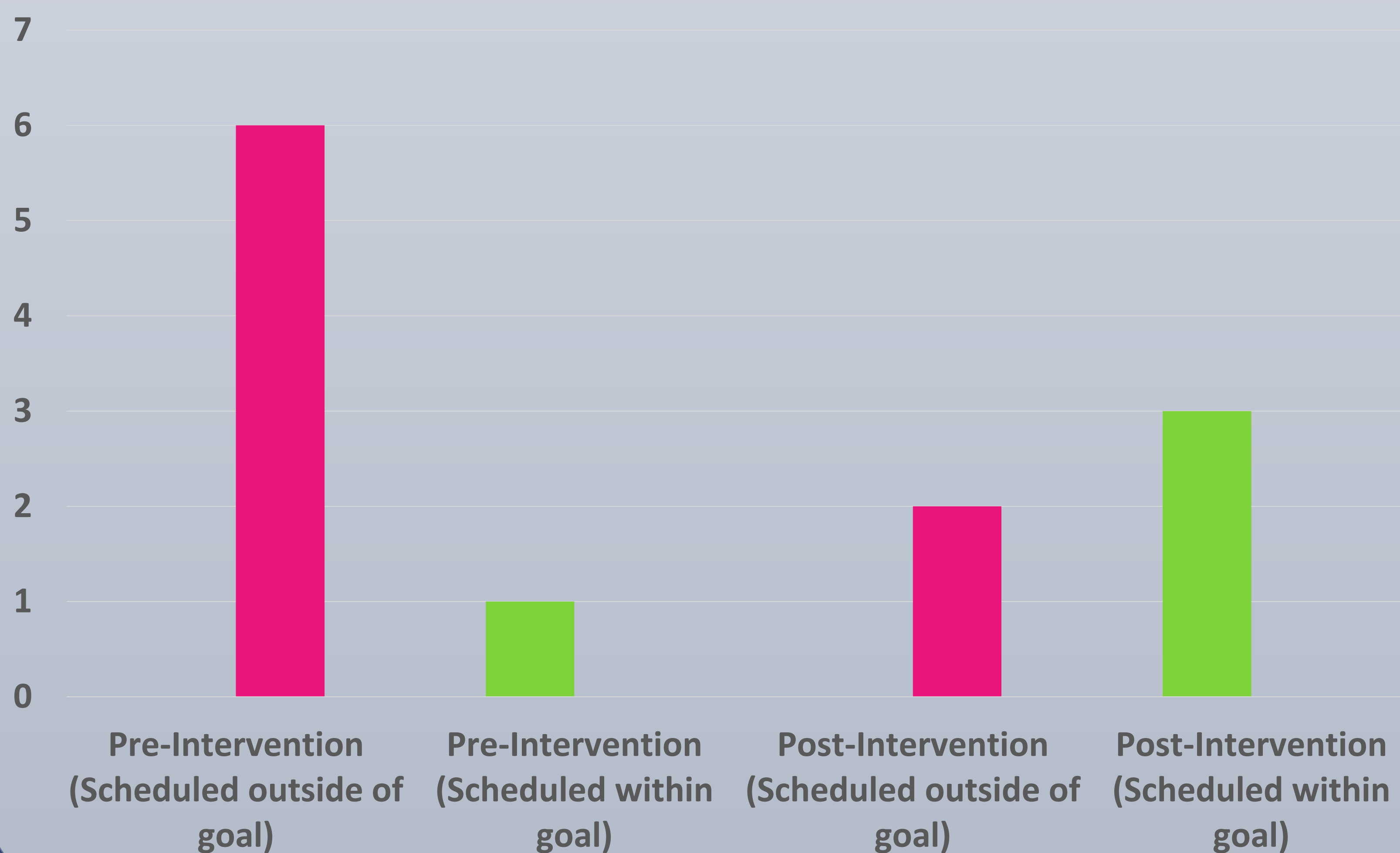


Data Analysis

- Excel was used to analyze data
- Decision-making tree intervention = nominal independent variable
- Outcome was a proportion consisting of the number of patients who had the appointment within three weeks divided by the total number of patients who were written a prescription
- Conducted z-test for proportions
 - Shows whether the 2 proportions differed significantly from one another
- 4 pieces of information used
 - # of patients written a neurotoxin prescription (pre-intervention/post-intervention)
 - # of patients who completed an injection appointment within 3 weeks (pre-intervention/post-intervention)
- Accuracy of data ensured by manually double-checking the dataset

Results

- 5 patients written a new prescription for neurotoxin injection over the post-intervention period from 01/12/2026 – 03/08/2026
- 8 weeks of post-intervention data was compared to 8 weeks of historical pre-intervention data from 10/27/2025 – 12/21/2025
- 7 patients written a prescription pre-intervention
 - 1 patient scheduled within 3-week timeframe
- 5 patients written a prescription post-intervention
 - 3 patients scheduled within 3-week timeframe
- Results: $z = 1.07$, $df = 1$, $p = .3006$
- Results indicate difference between pre-intervention sample and post-intervention sample was a non-statistically significant result with $p > .05$



Discussion

- Results = statistically non-significant, suggesting intervention did not have an effect
- Main limitation was small sample size
- Patients in pre-intervention stage were being scheduled within an average timeframe of about 5.5 weeks
 - **Post-intervention, the average timeframe = 2.5 weeks**
- 14.29% of patients received an injection within 3 weeks in the pre-intervention stage compared to **60% in the post-intervention stage**
- Project produced key findings that ultimately led to a process improvement
- PA process now more reproducible for other staff members, creating a more cohesive model for the clinic
- Pre-intervention, some patients waited months to receive their injection
- Many patients with spasticity require long-lasting care with limited outpatient treatment in the geographic area, so this process change was vital
- Confounding variable = insurance company denial
- Contributing factors to the small sample size included:
 - Appointment cancellations due to illness
 - Poor weather conditions
 - Transportation issues
 - Deductibles resetting in the new year

Conclusions

- The revised standards for quality improvement report excellence (SQUIRE 2.0) were used as a framework for reporting this project
- While data analysis did not provide concrete evidence of significance of the intervention, this process is embedded in the clinic workflow and patients are now being scheduled within the goal of a 3-week timeframe for neurotoxin
- Further study with an increased sample size of participants would be needed to demonstrate statistical significance
- This process will continue to be followed and could impact how PAs are completed for other specialty medications
- Next steps should include educating new staff on scheduling process

References

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