The Impact of a Checklist on Quality Patient Care and the Reduction of Clinic Visit Times in Pediatric Patients with Neurofibromatosis Type I

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Background

Neurofibromatosis 1 (NF1) is a chronic medical condition with clinical variability in presentation and medical management.

The physical examination is vital in making the clinical diagnosis, further diagnostic studies, and referrals needed to investigate the extent of the disease burden (Jett & Friedman, 2010).

Due to the complexities of the disease process, clinic appointment times may require 60-90 minutes for annual physical examinations. New patient appointments frequently take longer than the allotted 60 minutes.

Purpose

This project was implemented in a pediatric Neurofibromatosis (NF) Clinic with a large patient population due to the associated cancer risks and the recent use of MEK inhibitors in patients with NF1.

A crucial need was identified to optimize the patients' experience by evaluating the complete organ systems of those affected with NF1 and potentially decreasing clinic wait times. The literature indicated that a new patient checklist could be beneficial to achieve these goals.

Aim Statement

The aim of this scholarly project was to design a disease-specific checklist (CL) for pediatric patients that are being evaluated for a new diagnosis of NF1.

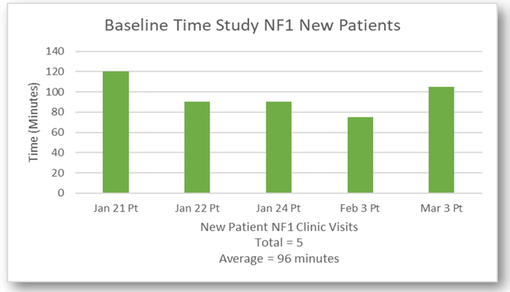
The goals was to standardize the NF clinic practices by establishing clinical guidelines among providers and increasing productivity of new patient appointment times utilizing an evidence-based CL. Improvement in wait times could have a positive impact on patient satisfaction scores.

Intervention

The plan was to use the CL for 95% of all new patient appointment visits within six months of implementation to standardize the clinical process providing evidence-based care.

This CL is evidence-based with typical clinical symptoms of patients with NF1 with limited options available in the literature. We anticipated that the pilot would decrease appointment visit times by 30 minutes over three months to improve clinic workflow.

NIH diagnostic criteria:	Common symptoms *Individualized Disease Burden*	Diagnostic studies	Consultations
☐ 1st degree relative with NF1	☐ Adrenal gland tumors	☐ Baseline MRI brain at 18-24 months	☐ OT/PT
	☐ Anxiety	☐ EEG	☐ Speech therapy
☐ >6 café au lait spots	☐ Delayed/early puberty	☐ Metanephrines	☐ Ophthalmology
☐ Axillary/inguinal freckling	☐ Flat feet	☐ PET	☐ Nephrology
☐ Optic pathway glioma	☐ Focal sensory/motor symptoms	☐ Neurocognitive testing	☐ Oncology
☐ Lisch nodules	☐ Headaches	☐ MRI spine	☐ Endocrine
☐ Osseous (bone) lesion/dysplasia	☐ High blood pressure	☐ MRI pelvis	☐ Genetics
☐ >2 neurofibromas of any type or one or more plexiform neurofibroma	☐ Hyperactivity	☐ ECHO/EKG	☐ Plastics
☐ * Positive genetic testing	☐ Itchy skin	☐ CBC	☐ Orthopedics
	☐ Knock knees/bow legs	☐ Abdominal ultrasound	☐ Neurosurgery
	☐ Learning deficits	☐ Leg xrays	☐ Psychology
	☐ Leg length discrepancy	☐ Spinal xrays	☐ Psychiatry
	☐ Macrocephaly		☐ School liaison
	☐ Pectus anomalies		☐ Dermatology
	☐ Plexiform Neurofibroma, pain		☐ Cardiology
	☐ Poor motor skills, clumsiness		
	☐ Scoliosis		
	☐ Seizures	PATIENT LABEL	
	☐ Short stature		
	☐ Social awkwardness		
	☐ Speech disorders		
	☐ Stomach pain/ Constipation		
	☐ Stroke like symptoms		
	☐ Tumors in the brain		
	☐ Vision changes		
	☐ Vitamin D deficit		
NF QI PILOT	TIME IN	TIME OUT	HELPFUL YES/NO



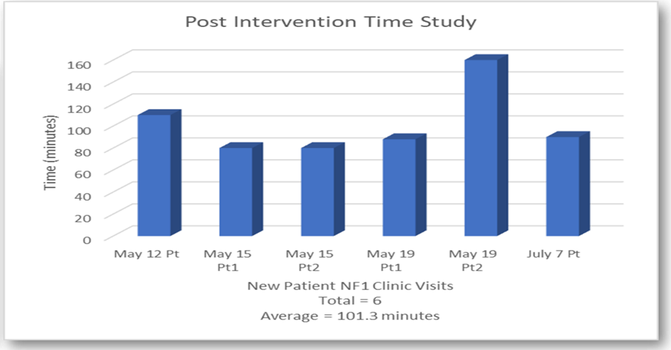
Results

Baseline data was collected from January 2020 through March 2020, revealing five new NF1 patient clinic visits that took an average of 96 minutes to complete the visit (Table 1). The time began once the patient was in the exam room to start vital signs until the health care provider concluded the visit and the patient was walking out of the exam room.

During the project period, a total of 6 new patients were evaluated for NF1. There was 100% compliance in the utilization of the CL for new NF1 patients at four months post implementation.

A total of 6 CLs were completed by the Advanced Practice Provider (APP) from May 2020 through August 2020. The average clinic visit time for these six patients was 101.3 minutes. This indicated no improvement in clinic visit times (Table 2).

There were multiple variables related to the COVID-19 pandemic, changes in staffing, and data highlighting clinical variability as a time critical issue when examining new patients with NF1.



Implications for Practice

CLs allowed for providers to document individualized patient information to readily identify each patients':

- specific disease burden
- diagnostic workup needed for further evaluation
- ongoing needed management.

It will also serve as a personalized, educational tool for families and patients with NF1.

References

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Acknowledgements

John Slopis, MD, NF Program Director

ONS Congress 2022

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