Analysis of the Efficacy of the Modified Finnegan Scoring System

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Introduction

Neonatal Abstinence Syndrome (NAS) is a constellation of opiate withdrawal symptoms including irritability, inadequate feeding and growth, and seizures. This condition occurs shortly after birth if the fetus had significant exposure to opiates in-utero. Since 2014, each neonate that was diagnosed with NAS at Beaumont Royal Oak and Troy Hospitals has had their treatment dictated by their score on the Modified Finnegan Scoring System (MFSS). This scoring system was created to minimize the unnecessary of opiate-based treatments for the neonates with NAS. The main objective of this study is to analyze the efficacy of the MFSS and observe the change in patient outcome statistics since the implementation in 2014.

Objectives

Factors in the Analysis of the Modified Finnegan Scoring System:

- Neonatal ICU Length of Stay (LOS)
- Hospital Total Length of Stay
- Duration of Opiate-Specific Treatment
- Rate of Pharmacological Treatment

Methods

Study Type: Retrospective chart review

Inclusion Criteria: All neonates born at Beaumont Royal Oak and Troy Hospitals with a diagnosis of NAS from 2009-2019.

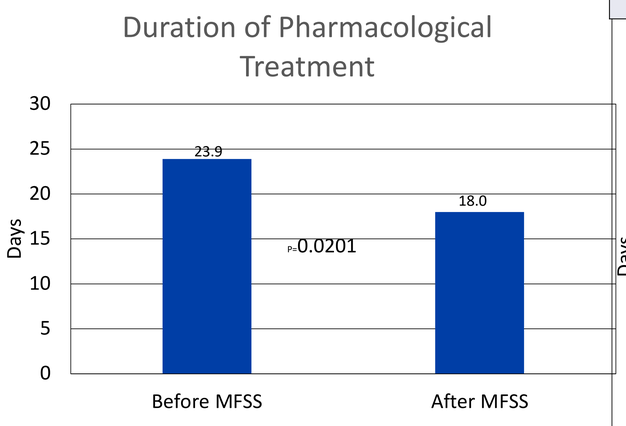
Exclusion Criteria: None

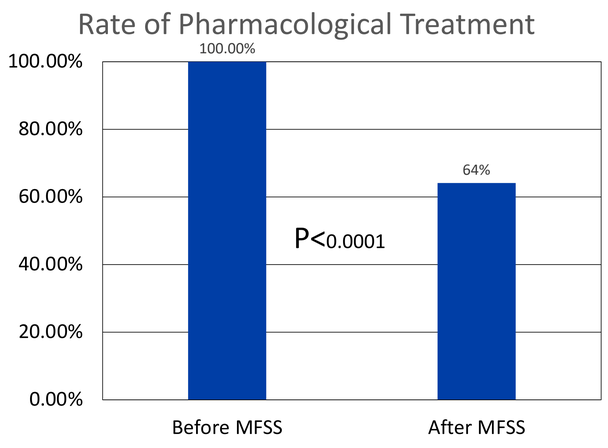
Exposure Variable: Modified Finnegan Scoring System: Pre vs. Post Implementation

Outcome Variables: Neonatal ICU Length of Stay, Hospital Length of Stay, Duration of Opiate-Specific Treatment, Rate of Pharmacological Treatment

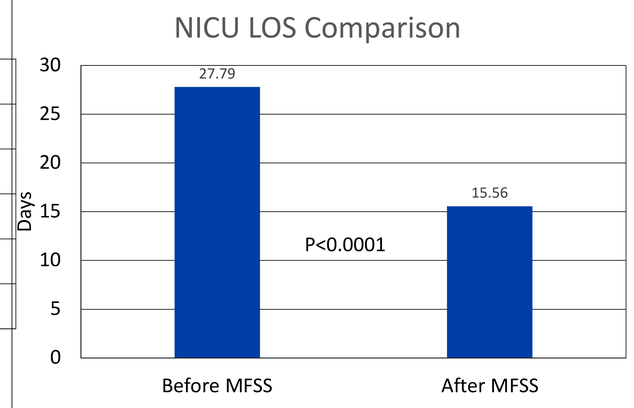
Statistical Analysis: t-test and chi-square

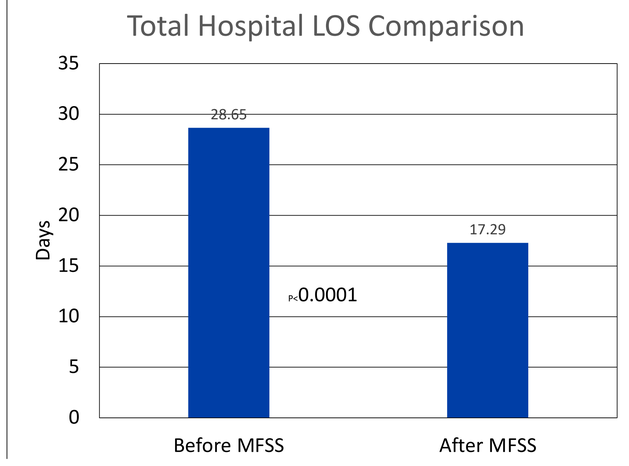
Results





	Yes (n = 170)	No (n = 34)	P-Value
NICU LOS (Days)	15.56 (11.53)	27.79 (13.64)	< 0.0001
Hospital LOS (Days)	17.29 (11.22)	28.65 (13.51)	< 0.0001
Duration of Treatment (Days)	(n = 109)	(n = 34)	
	17.99 (10.06)	23.88 (13.11)	0.0201
Any NICU Admission Days	162 (95.29%)	34 (100.00%)	0.357
	8 (4.71%)	0 (0.00%)	
Treated with Pharm Agent	109 (64.12%)	34 (100.00%)	< 0.0001
	61 (35.88%)	0 (0.00%)	





Conclusions

The results support the use of the Modified Finnegan Scoring System within the NICU for neonates diagnosed with NAS. While it should be noted that this was not an isolated change that was made over this timepoint to improve the care for these neonates, but the improvements in treating NAS have shown a strong statistical correlation with the implementation of the Modified Finnegan Scoring System at the Beaumont Royal Oak and Troy Neonatal Intensive Care Units. It correlates with a decrease in length of stay in both the NICU and hospital, as well as decreases the rate and duration of opiate-specific pharmacological treatment.

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