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Demographic Factors Contributing to NAS Treatment

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Infants that were formula fed, had unpartnered parents, birthing parents who used illicit substances, and multiple medication exposures were more likely to be treated for NAS



Demographic Factors Contributing to NAS Treatment

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Background

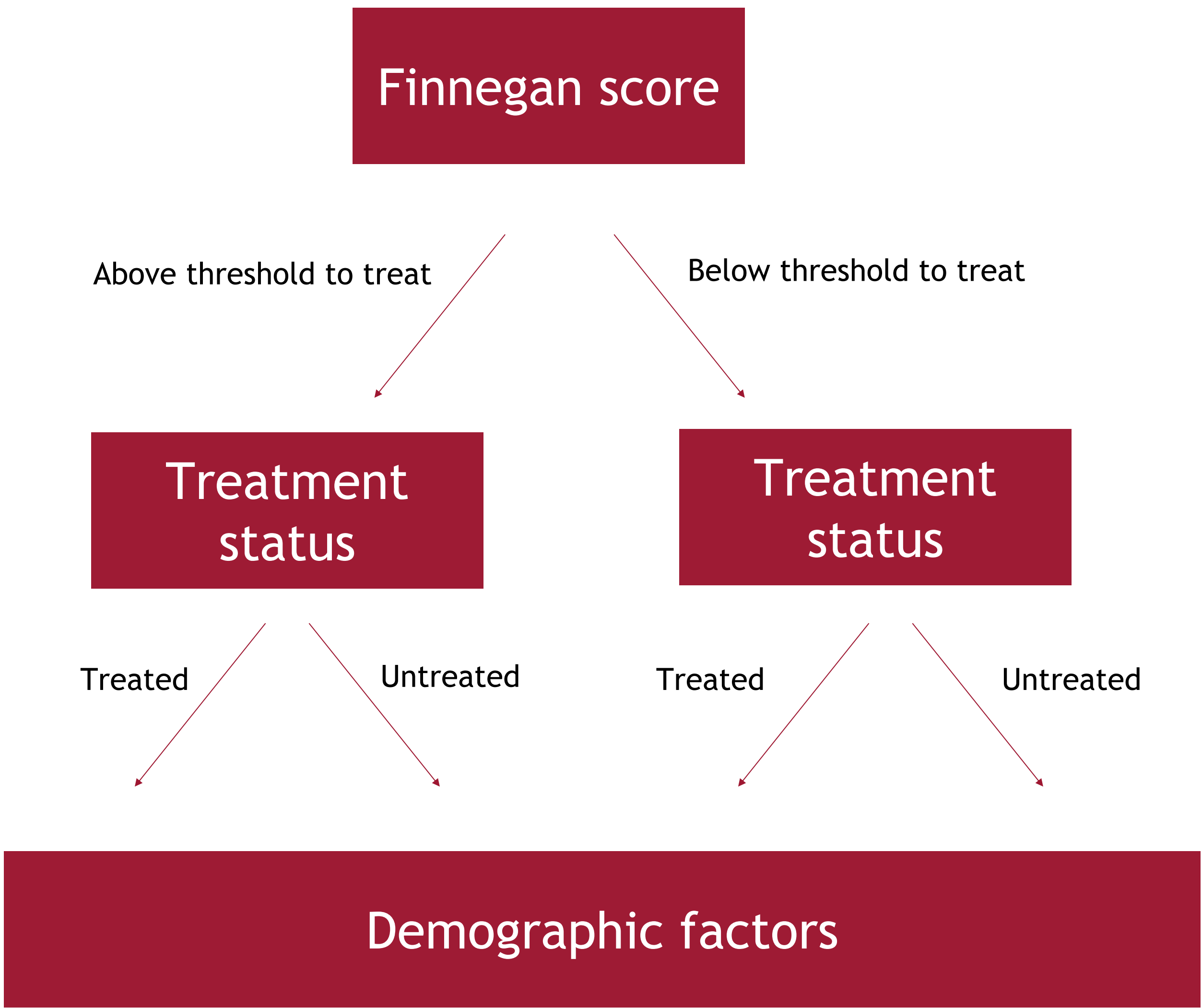
- **Neonatal abstinence syndrome (NAS)** is characterized by symptoms of withdrawal that occur due to the cessation of exposure to a substance used by the birthing parent during pregnancy.
- **The Finnegan score** is a commonly used assessment tool used to quantify NAS and set a threshold above which infants should be considered for NAS treatment.
- The NAS rate in Maine in 2018 was **28.3 per 1,000** hospital births, compared to a national incidence rate of 7 per 1,000 in 2016 (NIH, 2020).
- In 2017, the cost of hospital stay for a neonate with NAS was **eight** times for the cost of an average newborn hospital stay (CDC, 2021).
- Understanding what factors are shared amongst infants treated for NAS can facilitate future treatment decisions.

Infants by Finnegan score

Status	Treated, n = 202	Untreated, n = 273
Above threshold, n = 292	191	101
Below threshold, n = 183	11	172

Methods

- Data analysis was performed of 480 total neonates born at MMC between 2013 and 2016
- Neonates were compared that were treated for NAS who fell above and below the threshold to treat based on their Finnegan score
- Demographics were compared amongst neonates in the four groups
 - Variables: marital status, substance used by birthing parent, feeding method, gestational age, and birthweight



Results

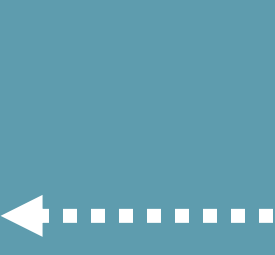
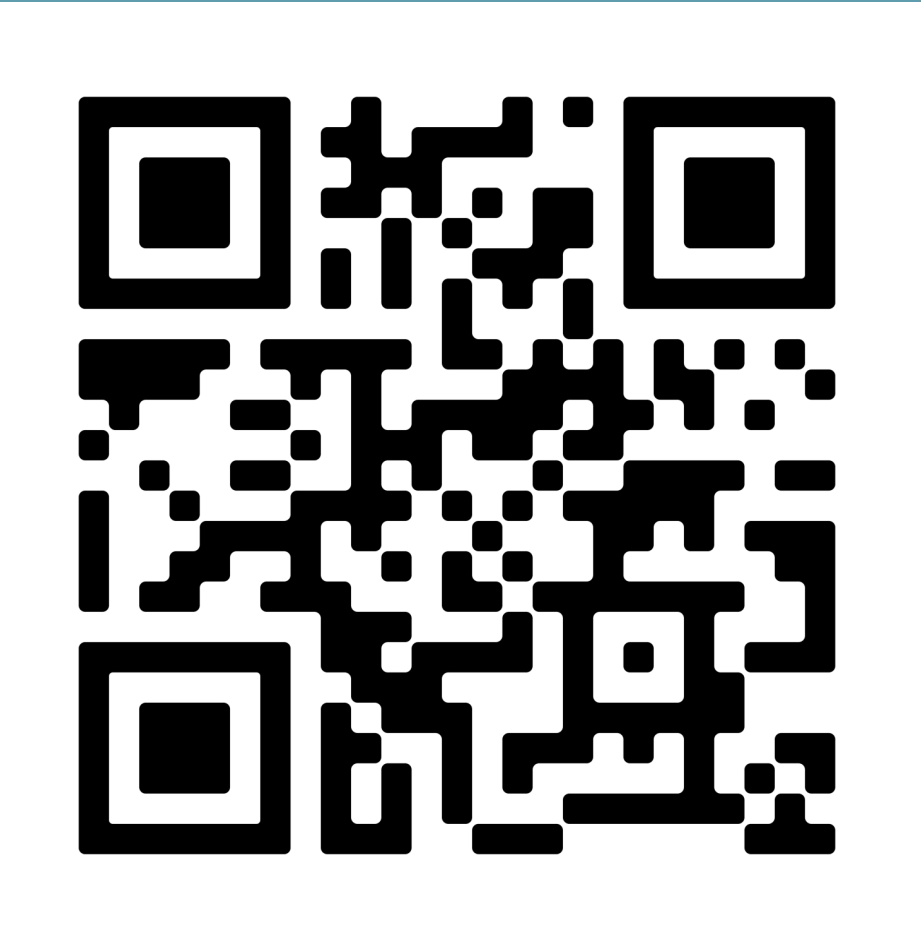
Factors that are significantly different amongst neonates treated versus untreated for NAS ($p < 0.05$)

Demographic factor	Total	Treated	Untreated
Marital Status**			
Single	209	102	107
Partnered	269	100	169
Substance			
Illicit vs Prescription*			
Illicit	108	56	52
Prescription	423	174	249
Multiple medications**			
Opioids alone	33	7	26
Opioids with other substances	375	183	192
Feeding Status**			
Breastmilk	50	3	47
Formula	169	89	80
Breastmilk & Formula	257	109	148
Gestational Age			
< 37 weeks	56	30	26
≥ 37 weeks	423	174	250
Average age	38w 5d	38w 4d	38w 5d
Birthweight			
< 2500 g	82	41	41
2500 - 4000 g	376	154	222
> 4000 g	20	7	13
Average weight (g)	3083.4	3045.6	3111.0

*Significant amongst all infants
**Significant amongst infants above the threshold to treat

Discussion

- For all infants, those that were formula fed, had unpartnered parents, birthing parents who used illicit substances, and multiple medication exposures were more likely to be treated for NAS regardless of Finnegan score.
- For infants above the treatment threshold, those that were formula fed, had unpartnered parents, and multiple medication exposures were more likely to be treated for NAS regardless of Finnegan score.
- The identification of these demographic factors will help us to identify infants that may be more or less likely to necessitate NAS treatment.



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