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Utilization of Care by Infants with Neonatal Abstinence Syndrome in Delaware

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Introduction: Neonatal Abstinence Syndrome

Purpose and Objectives

- Opioid use is rising with one infant in this country born *dependent* on opioids every 25 minutes.
- Numerous studies have looked at the initial hospital care of these infants with good evidence for standardized treatments.
- There is a dearth of information regarding post discharge care.

- The purpose of this Practice Inquiry Project is to utilize existing Delaware Medicaid data to retrospectively explore the utilization of services and gaps in care for the infant with neonatal abstinence syndrome (NAS) in the first year of life.

Conceptual Model: Donabedian

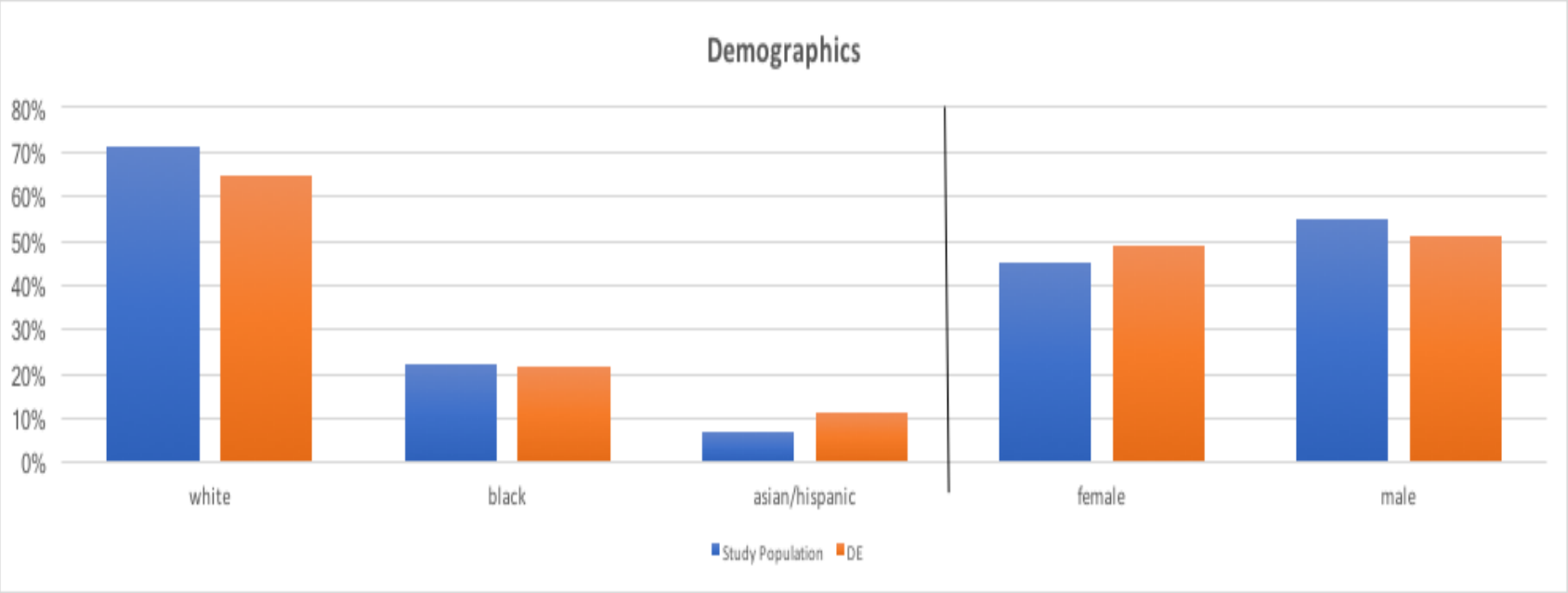
Methods

- De-identified Medicaid data set from January 1, 2012-December 31, 2014
- All infants with ICD-9 code of NAS identified
- All associated claims for 365 days after birth analyzed
- Subset analysis included gestational age, sex, race, place of service, type of service, and type of provider

- Data were analyzed using the SPSS version 24 (2016) statistical program and expertise from the Value Institute at Christiana Care Health System

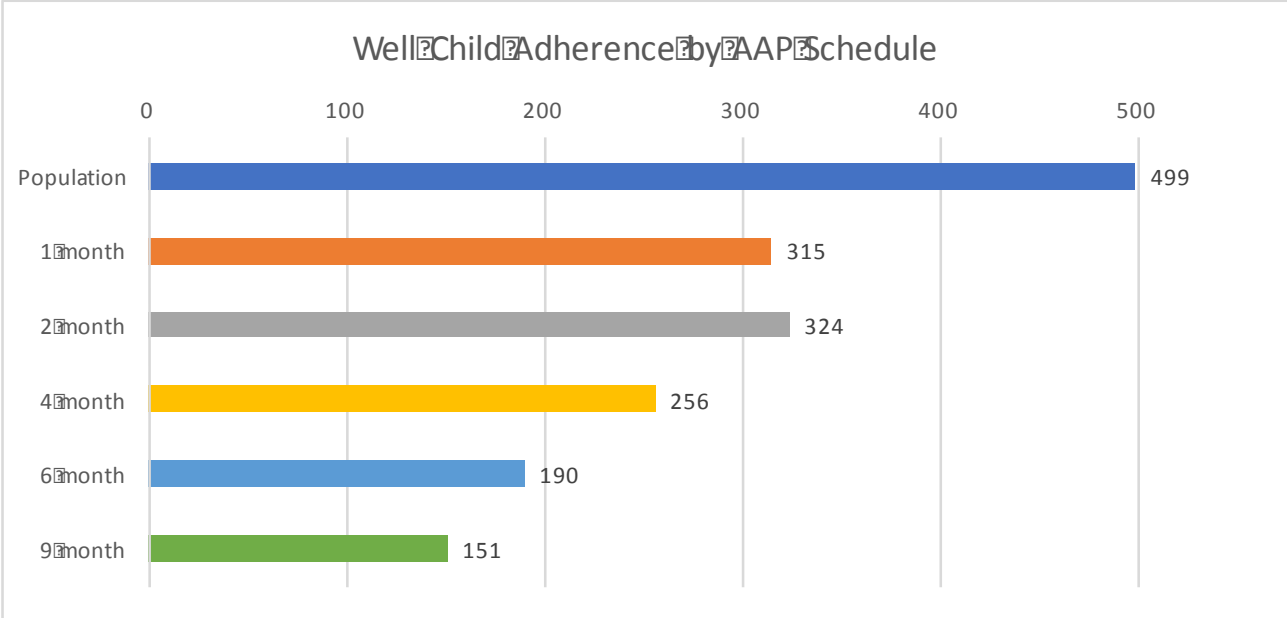
Results

- 522 babies
  - 15% (n=78) preterm



  - Final n=499 for post discharge analysis

Results


Well Child Adherence by AAP Schedule
0
100
200
300
400
500
Population
499
1 month
315
2 month
324
4 month
256
6 month
190
9 month
151

Results

Outpatient Utilization of Care During the first Year of Life for Infants with NAS

Site	n	Mean No. Visits	SD
ED visits	261	2.1	1.5
Urgent Care	33	1.5	1.1
PCP visit (not well-visit)	486	8.8	8.4
Well Child visit	489	4.8	2.5

Results

Primary Reasons for Utilization of Care at Differing Sites

Rank	Inpatient 15% (n=74)	Emergency Department 52% (n=261)	Urgent Care 7% (n=33)
1	Any respiratory infection, non-RSV	Fever and upper respiratory complaints	Otitis media
2	Any non- respiratory infection	Otitis media	Respiratory infections and colds
3	RSV	Vomiting	Conjunctivitis
4	Failure to thrive	Head injuries	Contusions
5	Unexpected injury or trauma	Other unspecified morbidity and mortality	Rashes

Implications

- 38% (n=191) of infants had a six month well visit; this decreased to 30% (N=151) at 9 months.
- 8% (n=40) of NAS infants studied never received any vaccinations, despite most having been seen by PCP.
- Urgent care centers have increased 50% since 2012.
- ED diagnoses included head trauma and other morbidity and mortality.
- 15% (n=75) of the cohort required re-admission with 22% (n=15) of those infants requiring more than one re-admission.

Limitations

- Dataset was retrospective and de-identified
- Medicaid infants only
- Challenges with coding:
  - some questions such as weight and gestational age of preterm infants were not able to be determined
  - some concern regarding accuracy of the data including primary and secondary diagnoses being interchanging
- 23 infants were unable to be analyzed
- Nine percent of DE substance exposed infants in DFS care
  - Care requirements may skew data in the positive direction

Recommendations

- Practitioners must work to improve the structure around well visits and immunizations, to allow for streamlined patient centered processes which create better outcomes.

- Full engagement in primary care may also decrease the need for urgent and emergency room care.

- Advanced practice nurses are poised to make a difference in the lives of mothers and infants with substance use disorders through education and engagement from the time pregnant mothers enter the health care system.

- Future research should include real-time and prospective analysis of healthcare utilization with a case management focus, research to examine changes in utilization of urgent care, work to inform plans of safe care, and research into how to best support the substance exposed mother-infant dyad and their families.

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