Social Determinants of Health, Adverse Childhood Events and Their Effects on NICU Graduates

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Objectives

1. Understand the impact of disease on discharge planning for successful transition for the NICU graduate.
2. Discuss the impact of health disparities with the NICU graduate population.
3. Analyze the impact of adverse childhood events in the NICU graduate population.
Michigan Statistics on Preterm Births

• Preterm birth rate 11.6 % slightly higher than U.S. rate of 11.4% (CDC, 2013)

• Low birthweight (LBW) rate 8.2 % again slightly higher than U.S. rate of 8.0 % (CDC, 2013)

• Cost U.S. > $26 billion/year (Vohr et al., 2016)

Courtesy of W. Nucci
What are the Long Term Health Issues?

- Bronchopulmonary dysplasia
- Feeding aversion and gastroesophageal reflux
- Necrotizing enterocolitis

(Fraser, 2015)
Long Term Health Issues Continued

• *Neurodevelopment issues

• What are some protective factors for these vulnerable infants

• (Fraser, 2015)
Role of Technology

- Medicaid funding provides for in-home care for children

- Complex hospital course leads to need for technology

- Multiple factors to consider: infant medically stable, state funding, home care, family teaching, and home readiness

(Sobotka, Agrawal, & Msall, 2017)
Role of Technology Continued

• Prolonged hospitalizations can lead to a health disparity

• Hospitalizations disrupt parent-child attachment, peer interactions, and sleep

(Sobotka, Agrawal, & Msall, 2017)
Transitions in Care

• Use of transitional facilities like Almost Home Kids (IL), which also provides respite care (Sobotka, Agrawal, & Msall, 2017)

• Hospital-based interprofessional discharge program (Vohr et al., 2016)

• Post-discharge telemedicine visits (Willard et al., 2018)
Transitions in Care Continued

• Program of parent support  (Prudy, Craig, & Zeanah, 2015)

• Care system redesigns  (Kuo et al., 2017)
Determinants of Health in the NICU Population

• Preterm
  – There is increased incidence of birth < 37 weeks in 16% in African American, 11% in Hispanic, compared to 10% in white women
  – Rates are 2x higher in African American women for birth < 32 weeks

(Carter & Msall, 2017)
Determinants of Health in the NICU Population

• Access to care, economic stability, education, community, and overall health can lead to disparities (Glassgow & VanVoorhees, 2017)
  – Early childhood development (Moore et al., 2015)
  – Behavioral health disparities (D’Agata et al., 2017; Glassgow & VanVoorhees, 2017)
Adverse Childhood Events (ACE)

- NICU as an ACE (D’Agata et al., 2017)
- Abuse (physical, sexual, psychological, and neglect) (Moore et al., 2015; Owora et al., 2016; Reichman et al., 2017)
- Household dysfunction (father absence, mental illness, violence against a caregiver, substance abuse, and incarceration) (Reichman et al., 2017)
- Leads to early alcohol use, tobacco, illicit drugs, suicide, adverse pregnancy outcomes (SAMHSA, 2017)
How We Can Help: Resiliency

- McCubbin and McCubbin Resiliency Theory in the context of ethnicity (McCubbin et al., 1998)

- Resiliency in families of children with developmental delay (McConnell, Savage, & Breitkreu, 2014)

- Family Coping (Janis et al., 2016)
Case Study- AB

• AB is a 6-month-old Hispanic infant born at 25 weeks and birth weight was 1428 gm. His medical diagnoses include BPD requiring tracheostomy and home ventilator, IVH with shunt placed, NEC with bowel resection now gastrostomy tube for feeding. He has spent 180 days in the NICU.

• He lives with his 20-year-old mother who speaks limited English, maternal grandparents, and 2 year-old sister. They live in a one bedroom apartment in Detroit.

• The team is looking to discharge him to home.
Case Study questions-AB

• What are the infant factors that are concerning?
• What are the maternal factors that are concerning?
• What discharge planning is needed at this time?
• What resources can help this family?
Case study continues-AB

• You now see AB in the hospital for tracheitis at 1-year-old. This is his 3rd admission in 2 months. Mother is absent during most of his hospital admission.

• Mother when confronted states she has to be home for her daughter, her parents asked her to leave due to finding marijuana in the house.

• What are your concerns at this time and how will you help this family?
Case Study-VF

- VF is a 34 week 1676 g white male with who had surgery DOL #1 for tracheoesophageal fistula with esophageal atresia repair but went back to OR for a GT secondary to strictures. He was intubated for 1 day and CPAP for 4 days. His only other discharge diagnosis was apnea of prematurity treated with caffeine and home monitor for 6 months. He is in a tertiary NICU and family lives in another state. Length of stay is 42 days
- Family is nuclear with one older brother, mother is 35-year-old with MBA. Live in single family home in a suburban setting. Home is 80 miles from the hospital
Case study questions-VF

• What are the infant factors that are concerning?
• What are the maternal factors that are concerning?
• What discharge planning is needed at this time?
• What resources can help this family?
Case Study evolves VF

• VF presents with mother, interim diagnosis of oral aversion made after dilation surgery required 1 week NICU stay at 6 mo. He has received home OT, PT, feeding therapy, and developmental therapy after mother persisted in setting up services.

• VF only says “ma” but it is inconsistent at 2-years-old. OT is concerned for apraxia of speech.

• How do you help the mother at this time and what long term considerations do you have for the child?
References


References continued


