The Surprising Implications of Premature Birth for Life Course Health Development: LCRN Webinar #7 04.24.14

Long-term survival for infants born very premature (VP, 28-31 weeks gestation) and very low birth weight (VLBW<1500 grams) increased dramatically with the regionalization of neonatal intensive care and resulted in decreased rates of major neurodevelopmental disabilities in survivors in the 1980s and 1990s. For those born with extreme prematurity (EP, < 28 weeks gestation) and extremely low birth weight status (<1000 grams), survival has increased dramatically, but there remains high rates of cognitive impairment and intellectual disability through the 1990s and during the past decade. In addition there is increased recognition that both moderate and late preterm births (32-36 weeks gestation) which account for over 10% of life births or approximately 400,000 children yearly have increased risk for long term health, developmental and behavioral challenges. However, despite these biomedical advances, there are major gaps in accessing comprehensive family supports and quality health, early childhood, educational, and community experiences for recent cohorts of children at the highest biomedical and social risks. This presentation will highlight some of the information learned from model outcome studies of social and environmental factors in aggravating or moderating neonatal risks for suboptimal developmental and behavioral outcomes after VP and EP. Available evidence from both longitudinal studies and community interventions for children at psychosocial disadvantage and what lessons their application may have for all risk groups of preterm children will be discussed. Finally, I will highlight important opportunities for systematically optimizing on a community level population based prevention strategies for individuals with the double jeopardy of prematurity and social adversity and some consideration of the economic costs of failing to optimize these outcomes.

1. Overall, 7% of surviving infants < 1500 grams have Cerebral Palsy (CP). Children < 1000 grams are at higher risk. There is increased recognition that cognitive and communicative disabilities are high.

2. Children with diplegic and hemiplegic CP have an excellent motor prognosis.

3. Substantial intellectual disability (IQ < 50-55) occurs in less than 5% of very low birth weight (VLBW; <1500g) and is most often associated with quadriplegic cerebral palsy.

4. Severe sensory impairment is rare but needs systematic surveillance for threshold ROP and early detection of sensorineural hearing loss. Almost 1 in 12 children under 27 weeks gestation have an autistic spectrum disorder. Most do not have severe classical Kanner autism.

5. Learning disabilities, slow learning, Attention Deficit Disorder, mild intellectual disability, and executive function disorder are common.

6. Parenchymal brain injury (IVH4, CPVL, ventriculomegaly) is an important marker for CP and severe multiple disabilities.

7. Poor growth and chronic lung disease increases risks for developmental, language, attention, and educational disorders.

8. Socioeconomic status, male gender, and not receiving quality early childhood developmental experiences are the key risk factors for mild intellectual disability and educational underachievement.

9. The biological, social, and developmental risks of extremely low birth weight survivors are increasing.

10. Key network strategies include developmental medicine leadership, implementation of pediatric medical homes, comprehensive preschool, educational, and community services, and child advocacy.

11. Long term strategies to enhance communicative skills, literacy, academic competencies, and social successes are required for all preterm children, especially children experiencing developmental delays, prenatal exposures, health setbacks in the first year of life, and living in adversity.

12. Major predictors of school success are quality early child experiences, maternal literacy, family supports, and close attention to preschool social-emotional and learning experiences.

13. Major prediction of adult health and well-being are self-efficacy, executive function, and participation in higher education and community activities.

References:


