

**Neuropsychological Interventions  
Implications for service development  
- a paediatrician's perspective**

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# Outline

- A summary of the current clinical context for children with neuropsychological
- Brain injury, ADHD, preterm infants
- The role of paediatricians, particularly in the community
- How the RD&E links with other Trusts across the region to provide services

# Acquired Brain Injury (ABI)

- Premature birth
- Neonatal meningitis
- Foetal exposure to toxins
- Inflicted infant brain injuries 'shaken babies'
- Infant & childhood stroke
- Brain tumours and the subsequent treatments; particularly radiotherapy and surgery
- Brain abnormalities (such as arteriovenous malformations) and their surgical treatments
- Progressive neurological syndromes (tuberous sclerosis / neurofibromatosis / epilepsy)

# More inclusive criteria might include

- Neurodevelopmental disorders (ADHD / Autism) with the overlap of neuropsychiatric conditions (anxiety / OCD)
  - genetically predisposed with environmental triggers?
- Extreme neglect, emotional abuse and disordered parenting style
  - as seen in attachment disorders / children freed for adoption
- A definition based on aetiology may, in time, be found to be incorrect
- Advancement in genetics medicine may give more predictability to presumed 'chance' events: infections, premature births
  - (even genetic vulnerability to the harms of neglect?)

# The timing of effects

- May be early and obvious:  
Such as cerebral palsy with epilepsy after a premature birth or infant brain injury
- Or may be subtle and emerge through childhood:  
Such as the difficulties with executive functioning, impulse control, concentration – that only become apparent as school years progress

# Whatever the level of disability, the effect may be

- Challenged communication
  - receptive / expressive / speech / social reciprocal
- Frustration & subsequent ‘undesirable’ methods of communication
  - challenging behaviours / vomiting / biting / soiling / throwing / tantrums / conduct disorders
- Anxiety: both as a primary and secondary effect
- Poor self esteem / social withdrawal / educational failure / self harm / secondary emotional & mental health disorders

# Medical / Paediatrician role

- Sometimes sole responsibility
  - Neonatal intensive care / infant meningitis / identification of genetic syndromes
- More often shared responsibility
  - Subsequent neurodevelopmental difficulties – diagnosis and management
- Less medical area of responsibility
  - Emotional / behavioural / communication / learning / executive functioning

# On what outcomes should we be focusing?

- Outcomes are most meaningful when determined and measured by children & families
- Health outcomes that families identify as key (once the 4 basics of Communication, Mobility, Pain & self-care are covered) are:
  - temperament
  - interpersonal relationships and interactions
  - community and social life
  - emotional well-being
  - gaining independence & future aspirations



# Legal structure

- Over the last 30 years Children's Acts, Education Acts, Disabilities Acts, NHS Acts have sought to coordinate this support.
- Children & Families Act 2014
  - Progresses the UN Rights of a Child (in UK law since 1989)
- Concept of a ***Local Offer*** for children with ***Special Educational Needs or Disability (SEND)*** through the structure of an ***Education Health and Care (EHC) Plan***.
- Details duties (principally Local Authority & partners) to: Identify & make joint commissioning arrangements

# Does it work?

- Entry point for ICS services is a:
  - **Devon Assessment Framework (DAF)**
- Does this ensure equitable access
  - independent of condition, family, school, community?
- Are there consistent Thresholds?
- Whose responsibility?
  - Health / acute Trust / CCH services / ICS /CAMHS?
  - Education?
  - Social care?

# Children's health care services in Devon

- Informal networks
- General Practice Family Doctors
- Integrated Children's Services (VirginCare)
  - Public Health nurses (health visitors & school nurses)
  - CAMHS, Psychology & emotional health services
- Education support services (Babcock LDP)
- Acute hospital trusts & children's outpatients, including community child health services

# Community Child Health

- Focus on long term conditions, usually under the neurodisability umbrella
- Medical conditions which have a significant impact on development, mobility and education
  - Cerebral Palsy, Epilepsy, Neuromuscular disorders
  - Liaison with therapists, neurologists & surgeons
  - Vranck House School / RD&E / Bristol Children's Hospital
- Neurodevelopmental Disorders
  - ADHD & Autism – Liaison with Education & ICS: CAMHS / ASD

# Commissioning questions

- Are screening tools sensitive enough to detect difficulties?
- Are effective interventions being offered to all who are eligible?
- Are children with ABI offered an equitable service irrespective of location, and as the distance from Bristol increases?
- Is there a focus on identifiable and patient reported outcomes?