EMERGENCE OF DEVELOPMENTAL DISABILITIES AND DISORDERS IN CHILDREN
Neurodevelopmental Disorders

• Group of conditions with onset in the developmental period
• Manifest early in development, typically before primary level schooling.
• Developmental deficits result in impairment in personal, social, academic or occupational functioning
• Frequently co-exist (co-morbidity)
## Overall Prevalence
for Noninstitutionalized US Children 3-17 Years

<table>
<thead>
<tr>
<th>Disability</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any developmental disability</td>
<td>13.9</td>
</tr>
<tr>
<td>ADHD</td>
<td>6.7</td>
</tr>
<tr>
<td>Autism</td>
<td>0.5</td>
</tr>
<tr>
<td>Blind, unable to see</td>
<td>0.1</td>
</tr>
<tr>
<td>Cerebral palsy</td>
<td>0.4</td>
</tr>
<tr>
<td>Intellectual disability</td>
<td>0.7</td>
</tr>
<tr>
<td>Learning disability</td>
<td>7.0</td>
</tr>
<tr>
<td>Moderate to profound hearing loss</td>
<td>0.5</td>
</tr>
<tr>
<td>Seizures</td>
<td>0.7</td>
</tr>
<tr>
<td>Stammering/stuttering</td>
<td>1.6</td>
</tr>
<tr>
<td>Other developmental delay</td>
<td>3.7</td>
</tr>
</tbody>
</table>
Trends in Prevalence of Any Developmental Disability
Trends in Prevalence of Specific Developmental Disabilities

- ADHD
- Learning disability
- Other delay
- Stutter/stammer
- Autism
- Seizures
- Intellectual disability
- Hearing loss
- Blind

Identifying Developmental Disabilities

• Obvious Developmental Problems:
  • Easily identifiable condition
    (Down Syndrome, seizures, severe delays)

• Less Obvious Identified through:
  • Developmental surveillance
  • Developmental screening, using specific screening tools
    (most tools now use parent report)

• Diagnosed by:
  • Developmental Assessment
• Obtain culturally relevant information on Jamaican children’s development
  • Milestones used to evaluate our children are usually those from other countries, typically HIC
  • Well recognised cultural differences in milestones e.g. Motor skills

• As an outcome measure to evaluate impact of risk factors

• Obtain information on prevalence etc. of developmental disabilities over time
9 mth. and 18 mth. contact

- Included questions from General Screening Tools in all domains:
  - The Ten (Eleven) Question Screen
  - Ages and Stages Questionnaire
  - Other questions

18 mth. contact

- Included questions from specific screening tool
  - M-CHAT for Autism Spectrum Disorder

18 mth. and 4 year old contact

- Developmental Assessments
JAKIDS Assessment of Development II

• **General Questions**
  - Parental Perception
  - Teacher Perception
  - Health Worker Perception
  - Enquiry of specific conditions (e.g. Seizures)
  - Specialist referrals
  - Hospital admissions

• **Review of administrative data**
  - Clinic Records
  - Hospital Admission Records
General Questions

- Seizures 1.0% (9 mths)  1.9% (18 mths.)

4 years
- Has a health care worker ever told you your child was developing slowly? 1.8%
- Has a health care worker ever told you your child was having behaviour problems? 1.1%
Child Performance Concerns (Teacher)

- Slow learning
- Behaviour Problems
- Other
Child Performance Concerns (Mother)

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letters/Reading</td>
<td>42.3</td>
</tr>
<tr>
<td>Writing/Colouring</td>
<td>33.1</td>
</tr>
<tr>
<td>Numbers/Math</td>
<td>31.9</td>
</tr>
<tr>
<td>Social Skills</td>
<td>12.6</td>
</tr>
</tbody>
</table>
Ten Screen Questions: 9 Month

- Problems with arms and legs: 1.1% Yes, 98.9% No
- Problems with hands/fingers: 0.3% Yes, 99.7% No
- Problems seeing: 0.3% Yes, 99.7% No
- Problems hearing: 0.4% Yes, 99.6% No
- Problems responding: 15.3% Yes, 83.7% No
- Problems with speech sounds: 1.4% Yes, 98.6% No
- Problems with behaviour: 3.3% Yes, 96.7% No
- Problems with interactions: 2.1% Yes, 97.9% No
- Other Problems: 4.7% Yes, 95.3% No
Comparison of TQS 9 & 18 mths.

<table>
<thead>
<tr>
<th>Category</th>
<th>TQS 9</th>
<th>TQS 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arms and legs (G Motor)</td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>Hands and Fingers (F Motor)</td>
<td>0.3%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Vision</td>
<td>0.3%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Hearing</td>
<td>0.4%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Responding</td>
<td>16.3%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Speech</td>
<td>1.4%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Behaviour</td>
<td>3.3%</td>
<td>9.0%</td>
</tr>
<tr>
<td>Interactions</td>
<td>2.1%</td>
<td>7.6%</td>
</tr>
</tbody>
</table>
21 JAKIDS diagnosed with ASD so far = 0.2%

Administrative data from specialist main public & private clinics for ASD at UHWI

USA rate for 8 year old children = 1.7% (1 in 59)

Others diagnosed that we are not aware of

Others undiagnosed
## Age of Diagnosis

<table>
<thead>
<tr>
<th></th>
<th>Under one year</th>
<th>2 years</th>
<th>3 years</th>
<th>4 years</th>
<th>5 years</th>
<th>6 years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parental Concern</strong></td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>Specialist Consult</strong></td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>8</td>
<td>1</td>
</tr>
</tbody>
</table>
## Developmental Scores

<table>
<thead>
<tr>
<th></th>
<th>Personal-Social</th>
<th>Hearing &amp; Speech</th>
<th>Co-ordination</th>
<th>Non-Verbal Reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>57.3</td>
<td>44.9</td>
<td>57.3</td>
<td>57.8</td>
</tr>
<tr>
<td>SD</td>
<td>24.3</td>
<td>24.1</td>
<td>24.0</td>
<td>24.9</td>
</tr>
<tr>
<td>Proportion below Normal (80)</td>
<td>78.6%</td>
<td>92.9%</td>
<td>85.7%</td>
<td>85.7%</td>
</tr>
</tbody>
</table>
Conclusions

• The JAKIDS study has the potential to:
  – Track the emergence of developmental disabilities
  – Determine the true prevalence of developmental disabilities
  – Identify risk factors from data collected from before birth and in the earlier years