

DEVELOPMENTAL ASSESSMENT

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Child Development

- Transactional model: child and environment
- Influenced by multiple factors
- Complex: multiple parameters to measure
- Non-linear process
- Large individual variation
- Best thought of in broad categories
 - Gross motor, fine motor, language, personal/social
 - Self-care skills(ADLs), problem solving,cognition, school readiness

Developmental Delay

- = Delay or disorder in acquisition of developmental task or milestone
- 10-16% of children may have some form of DD or Disability
- Most will be mild with only 20-30% detected by school entrance
- DD are “moving targets”
- Most have no identifiable cause such as a syndrome or physical abnormality

Speech and Language Delays

- Common

- 20% of two year olds delayed speech
- 19% of five year olds speech and language disorder

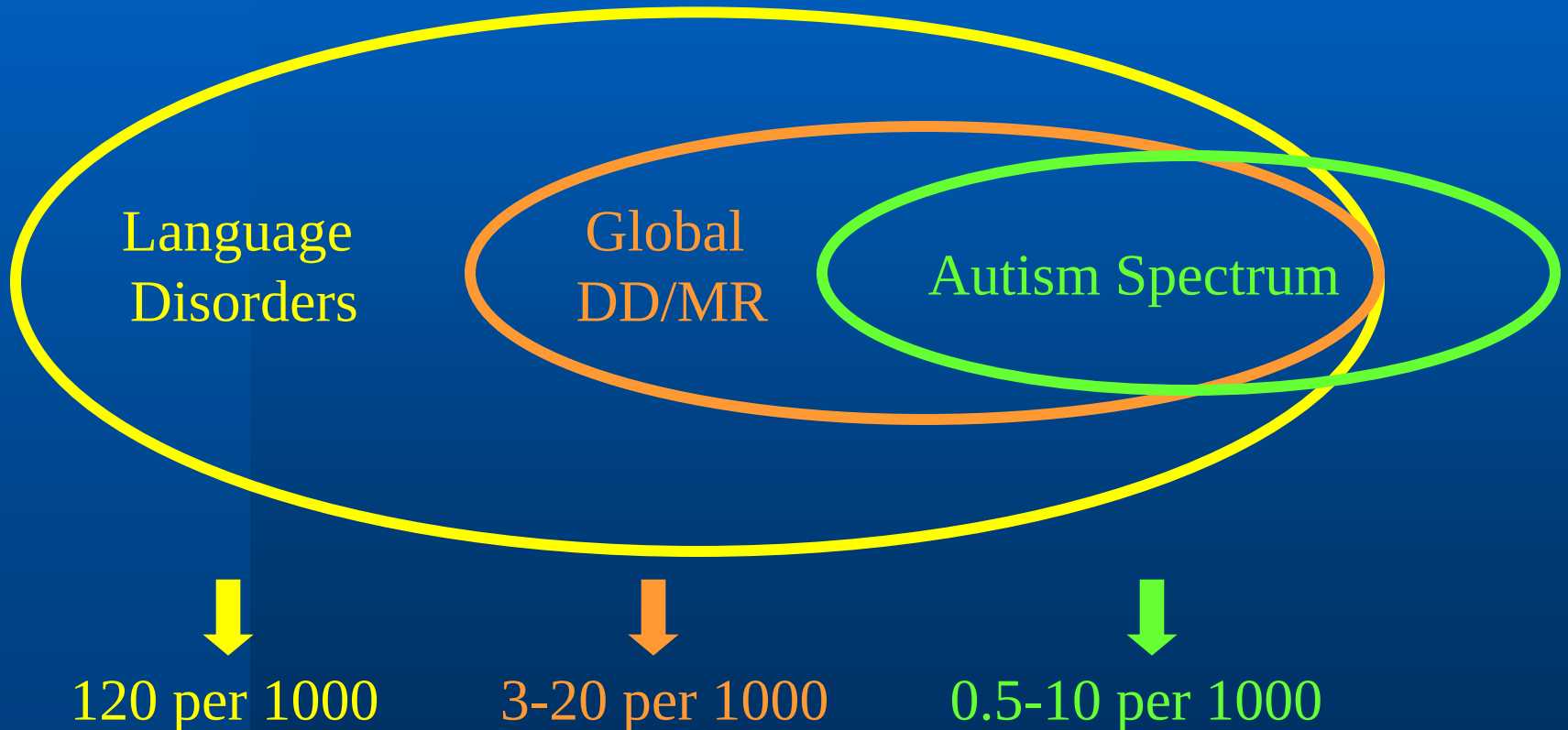
- Complex...

- Primary/Secondary
- Expressive,Receptive,Mixed
- Word sounds, modification, grammar, vocab, meanings, pragmatics

- Treatment

- appears to result in more favourable outcome, esp if dx before age 5
- indirect Rx can be just as effective as direct Rx
- referred children may experience lowered parent/teacher expectation and increased family anxiety

Abnormal Developmental Patterns



Extra Bits?

- Quality of play/social interactions, unusual habits, routines, rituals, obsessions
- Sensory alterations (aversions, predilections)
 - sound, touch, sight, taste, smell, vestibular, pain
- Self stimulation/Self injury
 - rocking, spinning, flapping, toe walking
- Strengths
 - Visual memory, directions, letters/#'s

Role of Paediatrician

- “New Morbidity” 1975 RJ Haggerty

- Oberklaid, 1988, Aust Paed J

Documented increased referral rates for dev/beh problems

- Holt and McDowell, 1998, J Paed CH

284 paed surveyed

- 33% new referral for dev/beh prob
- 71% placed themselves at cental role
- Many felt poorly equipped and had difficulty accessing services

- Training in general paediatrics, 2004

- 256 surveys on training, practice, suggestions

Definitions and who does what?

- Monitoring: imprecise term of general process of closely watching without specific technique
- Surveillance: all activities relating to the skillful observing to detect DD. Flexible, continuous process with multiple input
- Screening: testing pop at set ages to detect deviations or risk by the use of rapidly adm test/procedures
- Assessment: more detailed investigation of suspected delay-can be multidisc and diagnostic

Challenges and Pitfalls

- Time consuming and poorly reimbursed
- Limited compliance of child
- Clinical judgement detects <30%DD and <50% emotional/behav
- Tools: Accuracy, cost, time, and informal use
- Results “temporised”
- Assumption of under-availability of services

Use of dev screening and assessment tools by paediatricians in Australia

- **1986 survey in J Paed Child Health**
 - **115(82%) did screening**
 - Denver 74%, Stycar 15%, Griffith 4%
 - 41% often used clinical judgement
 - **58(41%) did assessment**
 - 64% Griffith others: mixture
 - **Confusion over screening/assessment**
 - **>50% found training inadequate**
 - **97% wanted training in appropriate instr**
- **2004 survey by Sean Beggs of 500 Paed**
 - **Themes unchanged!!!**

Clinical Approach

- Elicit parental concerns
- Targeted history and physical helps predict “risk” of delay
- | <u>High risk</u> | <u>Moderate risk</u> |
|------------------|---------------------------------|
| dev regression | VLBW |
| dysmorphisms | severe pre or perinatal insult |
| Chrom abn | FHx of dev disability |
| hearing, visual | low SES, poor support |
| abn neuro exam | family adversity, mental health |
| | authoritative style |

Four Year Old Eval

Brigance 11 Items

- **Personal data(3)**
 - First, last, middle, age
- **Body parts(9)**
- **Gross Motor skills(3)**
 - Stand on one foot, tip toes, heel to toe
- **Tells use of objects(3)-Why or how**
 - Stove, coat, car

Four Year Old Eval

- Repeats sentences with picture(3)
 - Four, six, and eight syllables
- Visual motor (3)
 - Copy _____ | +
- Number Concepts(3)
 - Give 2, 3, 5 items
- Builds tower of 6-10 blocks(5)

Four Year Old Eval

- **Identifies Colours(5)**
 - Point to...
- **Picture Vocabulary(6)**
 - What is....
- **Prepositions and Irregular nouns(2)**
 - Up or down, in or out
 - Feet, mice

Screening/Assessment Tools

At least 70-80% sensitive and specific, reliable, valid, rapid, cheap?

- Parent elicited screens
 - PEDS, Ages and Stages, CDI
- Direct elicitation of skills
 - Brigance, Bayley, Batelle, Griffiths
- Behavioural screening tools
 - CBCL(Achenbach)
 - Eyberg CBI
 - Paed symptom checklist
 - Strength and Diff Questionnaire

Medical Evaluation

- Try to catch DD early and coordinate access to benefits/services and further referrals
- Aetiological yield proportional to severity of delay and selection of population(45-80%)
- Work-up done in rational and stepwise manner, ? Guided by your clinical acumen and no perfect algorithm
- Specific dx may help in explanation, management, prognosis, recurrence
- Advances in genetic testing and neuroimaging

Some Specifics

- Neuroimaging(MRI superior to CT) (30-50%)
 - Yield increases with focal motor abn, microcephaly, sz, regression, N/C stigmata
- Routine Karyotype +/- FISH/subtelomeric(2-15%)
 - Fragile X and Retts
- Others:
 - EEG+/-sleep(?clinical sz, language loss=acquired aphasia)
 - Metabolic(?newborn screens, consanguinity, FTT, Coarse facial features, HSM, regression, episodic decompensation, neuro/ophth signs
 - Anaemia, lead, thyroid, CPK
- Good reviews
 - A rational approach, G Roberts, Contemp Peds, 2004,vol 21, #3
 - Investigating ID, NK Poplawski, J Paed CH, 2003, 39, 492-506
 - Practice Parameters, M Shevell, Neurology, 2003, 60, 367-380

Final Messages

- Knowledge of normal development is crucial to the understanding and practice of paediatrics
- Many clinicians use “clinical judgement” around issues of child dev which is based on assimilation of info gathered in an informal manner. Experience may help!
- The identification of DD is more reliable and sens/specific when a formal process is followed
- Mild to mod delays are more difficult to identify with major delays usually being obvious and requiring prompt intervention and referral