Training Programme
for Public Health Nurses and Doctors
in Child Health Screening, Surveillance and Health Promotion

Unit 5
Developmental Assessment
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Acknowledgements

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Introduction

There is a wide range of disorders that fall within the context of ‘Developmental Assessment and Behavioural Paediatrics’. It is recognised that early diagnosis and intervention is desirable in these delays and disorders of behaviour and development. This is based on the views that parents value early diagnosis; outcome is improved in some disorders and there is the likelihood to improve quality of life for children and families. There is also some evidence to suggest that early intervention is beneficial.

‘Low incidence high severity disorders’ such as cerebral palsy, spina bifida, severe language disorder and classic autism will usually be evident and will self present. Problems of a lesser severity include impaired language development, milder autistic spectrum disorders, developmental co-ordination disorder (“clumsiness”), general learning disability, specific learning difficulty, attention deficit hyperactivity disorder (ADHD), and behaviour problems. These latter disorders often described as the ‘high incidence low severity disorders’ are common and important as they affect the lives of many children, their families and school progress. The estimation of the prevalence of all these types of disorders has been put as high as 18%. The so-called ‘low incidence high severity disorders’ have a prevalence of 3% the so called ‘high incidence low severity disorders’ make up the rest.

Once off developmental assessments appear not to be beneficial in terms of population ‘screening’ for these disorders. There are also concerns that such programmes may lead to anxiety, unnecessary referrals, and missed cases. This is often complicated by unclear referral pathways and inadequately resourced secondary services. There are no specific recommendations from published reports with respect to population based surveillance programmes to aid the early identification of developmental and behavioural disorders in children. Recommendations with respect to the benefit of population based developmental screening are varied.

Definitions of Surveillance

“A flexible continuous process that is broader in scope than screening whereby knowledgeable professional perform skilled observations on children throughout all encounters during child health care” (Dworkin)
“The oversight of the physical, social, and emotional health of all children; measurement and recording of physical growth; monitoring of developmental progress; offering and arranging intervention when necessary; prevention of disease by immunisation and other means; and health education” (Hall, 1999)

Rationale

Universal periodic screening for developmental delay is endorsed by the American Academy of Paediatrics as necessary to detect emerging disabilities as the child grows (2001). Best Health for Children (1999) states that all children should be offered an appointment for a developmental examination in the first year of life, ideally at age 7-9 months. This assessment procedure is designed to identify children who should receive more intensive assessment towards diagnosis. There is substantial evidence confirming the effectiveness of parents in detecting problems with their children (Best Health for Children, 1999), and where there are such concerns, additional assessments should be made available at other ages. The benefits of parent reporting instruments have been identified, and their use in the Irish context deserves further exploration.

National Screening Committee (UK, 1999) and NHMRC (2002) do not endorse periodic screening for developmental delays and behavioural problems as it does not meet screening criteria. As development is a continuous process with a broad range of variations, defined cut-off points between normal and abnormal development are difficult to define. There is limited published research in this area, and evidence for and against effective treatments (except with ADHD) and improved outcomes for those screened is largely absent.

NSC emphasised that while there is a lack of evidence for screening other approaches had to be used to prevent and mitigate these problems and their effects. Health promotion and education programmes are needed to apply what is known about prevention and to inform parents about what is normal and abnormal in child development. There is evidence that the identification of developmental delay/disability (or significant risk factors) and subsequent intervention can improve developmental and other social outcomes (NHMRC, 2002). Until there is evidence that alternatives to developmental screening programs function better, existing
programs should be reviewed to ensure that adequate tools and processes are used (NHMRC, 2002).

**Parental involvement**

In keeping with recommendations from the American Paediatric Association (USA), National Screening Committee (NSC) UK: Child Health Sub-Group Report 1999, and Best Health for Children (Ireland) consideration should be given to the use of parental reports as a part of the assessment process. Valid instruments identified include *Parental Evaluation of Developmental Status, Ages and Stages Questionnaire*, and *Child Development Inventories*. These have the benefit of good psychometric properties (70% - 80% specificities and sensitivities) and require much less time than direct developmental assessment.

**Instruments**

Invalidated individualised checklists of milestones should not be used as developmental screening tests, and the need to use validated instruments for developmental assessment has been emphasised (NHMRC, 2002).

A pilot project is needed to determine the use of validated instruments in the Irish context. These include parental questionnaires e.g. *Parental Evaluation of Developmental Status* and tools to be used by health professional staff e.g. *Schedule for Growing Skills*.

**Referral pathways**

Clear referral pathways need to be in place with any programme recommended.

**Resources**

In order for any programme to be effective with regards to aims and outcomes adequate resources are essential. This includes staff, facilities and equipment.

**Audit**

Audit and critical review of any programme is essential, both to assess its clinical appropriateness and to identify unmet need and resource requirements.
National Core Child Health Standard

Developmental Assessment

Working Group Membership
Dr Emma Curtis, Community Paediatrician, SWAHB
Dr Mary Fitzgerald, Senior Area Medical Officer, WHB
Dr Pat Henn (chair), Area Medical Officer, SHB
Ms Lily McPeake, Public Health Nurse, ECAHB

Rationale

• There is insufficient evidence for or against universal periodic screening for developmental delay in the form of tests.
• Parental concern needs to be taken seriously always and can be sufficient reason for referral, further assessment and investigation.
• Service providers need to possess the knowledge and skills to recognise developmental delay and disorders in children.
• Parents value early diagnosis.
• There is some evidence that early intervention improves outcome and quality of life for children and their families.

Recommendations

• Staff training in the recognition of childhood developmental delay and disorders needs to be provided to facilitate early referral and intervention.

• Instruments by whose use one can elicit parental concern in relation to any area of child development need to be evaluated in the Irish context and introduced if found valid.

• The role of specific tools to guide practitioners in the assessment of childhood development needs to be explored in the Irish context, as the use of individualised checklists is no longer in line with available evidence.

• In light of this, developmental assessment tool kits containing items like rattle, crayons and paper, picture story book, doll, hair brush, spoon, cup, bricks and 3 to 4 piece form boards can be used to support the assessment process, but are not employed for formal testing.
## Developmental Assessment

<table>
<thead>
<tr>
<th>Timing</th>
<th>History</th>
<th>Examination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth</td>
<td>Family, pregnancy and birth history. Parental and professional concerns.</td>
<td>Posture, movements, tone, reflexes</td>
</tr>
<tr>
<td>Postnatal visit</td>
<td>As above</td>
<td>Posture, movements, tone, reflexes</td>
</tr>
<tr>
<td>6 to 8 weeks</td>
<td>As above</td>
<td>Posture, movements, tone, reflexes, early eye contact and smiling</td>
</tr>
<tr>
<td>3 months</td>
<td>As above</td>
<td>Lifts head when prone, using forearms for support, little or no head lag when pulled to sit</td>
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<td></td>
<td></td>
<td>Hands loosely open, beginning to clasp and unclasp objects, engaging in finger play and watching hands</td>
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<tr>
<td></td>
<td></td>
<td>Reacts to familiar situations and people by smiles, coos or excited movements, laughs and gurgles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vocalising when spoken to/ quietens or smiles to familiar voice, even if speaker not visible</td>
</tr>
<tr>
<td>7 to 9 months</td>
<td>As above</td>
<td>Sits unsupported, attempts to crawl</td>
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<tr>
<td></td>
<td></td>
<td>Beginning to poke at objects with index finger, reaches out for and manipulates toys with both hands</td>
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<tr>
<td></td>
<td></td>
<td>Loud tuneful babble, imitates playful vocal sounds</td>
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<tr>
<td></td>
<td></td>
<td>Plays peek a boo, imitates clap hands</td>
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<td></td>
<td></td>
<td>Begins to point with index finger at distant objects</td>
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<tr>
<td></td>
<td></td>
<td>Eats finger foods and begins to drink from cup</td>
</tr>
<tr>
<td>18 to 24 months</td>
<td>As above</td>
<td>Walks unaided, feeds self with spoon, drinks from cup</td>
</tr>
<tr>
<td></td>
<td>Consider any evidence that may indicate specific disorders</td>
<td>Follows simple requests, points to named objectives and pictures</td>
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<tr>
<td></td>
<td></td>
<td>Develops imitative behaviour and play</td>
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<tr>
<td></td>
<td></td>
<td>Uses words by 18 months and simple phrases by 24 months</td>
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<tr>
<td></td>
<td></td>
<td>Enjoys messy play and noisy toys, plays contentedly near familiar adult</td>
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<tr>
<td>3.25 to 3.5 years</td>
<td>As above</td>
<td>Jumps, walks around corners and on tiptoe</td>
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<tr>
<td></td>
<td></td>
<td>Holds pencil, copies circle</td>
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<td></td>
<td></td>
<td>Talks in sentences, understood by strangers</td>
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<tr>
<td></td>
<td></td>
<td>Pulls up pants, dry during day</td>
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<tr>
<td></td>
<td></td>
<td>Takes turns in games, separates from parents</td>
</tr>
</tbody>
</table>

NB The above represents a brief selective overview of normal developmental milestones, but does not constitute a validated instrument for assessment and should not be used as a checklist. For a more comprehensive summary of developmental milestones and indicators of possible developmental problems, please see pages 11 – 24, as well as the PHR and CHISP documents, referenced at the end of this manual.
Good practice for developmental assessment

A careful history is necessary to identify **parental concerns**. These should always be listened to and taken into consideration, as parental observation has been shown to be as effective as assessment by health professionals in detecting problems in many areas of child health and development.

The assessment starts the moment the health professional meets the child and parents. A good overview of developmental skills can be obtained by watching the child play. A few simple toys, such as some bricks, a car, a doll, ball, pencil and paper are all that are required, as they can be adapted for any age. It is important to talk and listen to the child and the parents, as well as observing eye contact and other social interactions during play.

**Obtaining the child’s cooperation**

- Make friends with the child.
- Be confident but gentle.
- Avoid towering over the child.
- When touching a young child, do so first on an area he feels is non-threatening, such as a hand or knee.
- A smiling, talking examiner appears less threatening.

**Adapting to the child’s age**

- Babies in the first few months are best assessed with a parent next to them.
- Pre-school children may initially be examined whilst they are playing.
- Parents are generally reassuring for the child and helpful in facilitating the examination if guided as to what to do.
- Be aware of cultural sensitivities in families, which differ from your own

**Partnership with Parents**

It is very important to set the context of developmental surveillance for parents. It is good practice to ensure

- they feel part of the process i.e. that they know their observations about their baby are valued
- that they understand what is being done in the session and why i.e. parents need to be informed about the content, purpose and outcome of developmental assessments of their child.
- that they know they will have time to raise any questions and concerns they may have.
These steps may be helpful in this process

1. Give an explanation for carrying out the surveillance

2. Outline the Process or what am I doing at this visit: e.g.
   - today I am going to be checking on your child's development with you to see if you, or I, have any concerns about your child’s development.
   - I will be checking on (list areas of surveillance).
   - If there are any areas of concern, these may require further evaluation and I will make a referral for further evaluation.

3. Give parent/s time to clarify/ask questions

4. Do surveillance check

5. Confirm results with parent/s
   - Result all ok /
   - or I am concerned that his / her e.g. language development is not at the level expected for his / her age. I can't be sure there is a problem but I would like to refer him / her for a further evaluation of his / her language development.

6. This is where the referral will go. You can expect to hear about an appointment (local waiting time)

7. Is there any thing else you would like to know?

8. Make referral

Discussing Concerns with Parents

There is no "pass" or "fail" in child health surveillance. A child health surveillance should not generate significant parental anxiety. Child development encompasses a wide range of normal development. Some children whose development is slower than one might expect reach the desired milestone in time and thereafter do not cause concern.

Therefore, when speaking with parents of a child where there is concern about an aspect of development, or indeed global developmental delay, it is essential to emphasise the positive features of the child's development. One might then discuss the area of concern and the fact that the child would benefit from further assessment and input. The aim of all involvement is to optimise the child's development.

If there is a serious concern, there ought to be a mechanism for rapid referral so that the issue can be explored and dealt with without incurring a lengthy period of parental anxiety when parents feel powerless and fear the worst possible outcome.
Developmental milestones


Important Milestones: By the End of Three Months

Social and Emotional

- Begins to develop a social smile
- Enjoys playing with other people and may cry when playing stops
- Becomes more expressive and communicates more with face and body
- Imitates some movements and facial expressions

Movement

- Raises head and chest when lying on stomach
- Supports upper body with arms when lying on stomach
- Stretches legs out and kicks when lying on stomach or back
- Opens and shuts hands
- Pushes down on legs when feet are placed on a firm surface
- Brings hand to mouth
- Takes swipes at dangling objects with hands
- Grasps and shakes hand toys

Vision

- Watches faces intently
- Follows moving objects
- Recognizes familiar objects and people at a distance
- Starts using hands and eyes in coordination

Hearing and Speech

- Smiles at the sound of your voice
- Begins to babble
- Begins to imitate some sounds
- Turns head toward direction of sound

Developmental Health Watch
• Does not seem to respond to loud noises
• Does not notice hands by 2 months
• Does not follow moving objects with eyes by 2 to 3 months
• Does not grasp and hold objects by 3 months
• Does not smile at people by 3 months
• Cannot support head well by 3 months
• Does not reach for and grasp toys by 3 to 4 months
• Does not babble by 3 to 4 months
• Does not bring objects to mouth by 4 months
• Begins babbling, but does not try to imitate any of your sounds by 4 months
• Does not push down with legs when feet are placed on a firm surface by 4 months
• Has trouble moving one or both eyes in all directions
• Crosses eyes most of the time (occasional crossing of the eyes is normal in these first months)
• Does not pay attention to new faces, or seems very frightened by new faces or surroundings
Important Milestones: By the End of 7 Months

Social and Emotional

- Enjoys social play
- Interested in mirror images
- Responds to other people's expressions of emotion and appears joyful often

Cognitive

- Finds partially hidden object
- Explores with hands and mouth
- Struggles to get objects that are out of reach

Language

- Responds to own name
- Begins to respond to "no"
- Can tell emotions by tone of voice
- Responds to sound by making sounds
- Uses voice to express joy and displeasure
- Babbles chains of sounds

Movement

- Rolls both ways (front to back, back to front)
- Sits with, and then without, support on hands
- Supports whole weight on legs
- Reaches with one hand
- Transfers object from hand to hand
- Uses hand to rake objects

Vision

- Develops full colour vision
- Distance vision matures
- Ability to track moving objects improves
Developmental Health Watch

- Seems very floppy, like a rag doll
- Seems very stiff, with tight muscles
- Head still flops back when body is pulled to a sitting position
- Reaches with one hand only
- Refuses to cuddle
- Shows no affection for the person who cares for him or her
- Doesn't seem to enjoy being around people
- One or both eyes consistently turn in or out
- Persistent tearing, eye drainage, or sensitivity to light
- Does not respond to sounds around him or her
- Has difficulty getting objects to mouth
- Does not turn head to locate sounds by 4 months
- Does not roll over in either direction (front to back or back to front) by 5 months
- Seems impossible to comfort at night after 5 months
- Does not smile on his or her own by 5 months
- Cannot sit with help by 6 months
- Does not laugh or make squealing sounds by 6 months
- Does not actively reach for objects by 6 to 7 months
- Does not follow objects with both eyes at near (1 foot) and far (6 feet) ranges by 7 months
- Does not bear weight on legs by 7 months
- Does not try to attract attention through actions by 7 months
- Does not babble by 8 months
- Shows no interest in games of peek-a-boo by 8 months
Important Milestones: By The End Of 1 Year (12 Months)

Social and Emotional

- Shy or anxious with strangers
- Cries when mother or father leaves
- Enjoys imitating people in his play
- Shows specific preferences for certain people and toys
- Tests parental responses to his actions during feedings
- Tests parental responses to his behaviour
- May be fearful in some situations
- Prefers mother and/or regular caregiver over all others
- Repeats sounds or gestures for attention
- Finger-feeds himself
- Extends arm or leg to help when being dressed

Cognitive

- Explores objects in many different ways (shaking, banging, throwing, dropping)
- Finds hidden objects easily
- Looks at correct picture when the image is named
- Imitates gestures
- Begins to use objects correctly (drinking from cup, brushing hair, dialling phone, listening to receiver)

Language

- Pays increasing attention to speech
- Responds to simple verbal requests
- Responds to "no"
- Uses simple gestures, such as shaking head for "no"
- Babbles with inflection (changes in tone)
- Says "dada" and "mama"
- Uses exclamations, such as "Oh-oh!"
- Tries to imitate words
Movement

- Reaches sitting position without assistance
- Crawls forward on belly
- Assumes hands-and-knees position
- Creeps on hands and knees
- Gets from sitting to crawling or prone (lying on stomach) position
- Pulls self up to stand
- Walks holding on to furniture
- Stands momentarily without support
- May walk two or three steps without support

Hand and Finger Skills

- Uses pincer grasp
- Bangs two objects together
- Puts objects into container
- Takes objects out of container
- Lets objects go voluntarily
- Pokes with index finger
- Tries to imitate scribbling

Developmental Health Watch

- Does not crawl
- Drags one side of body while crawling (for over one month)
- Cannot stand when supported
- Does not search for objects that are hidden while he or she watches
- Says no single words ("mama" or "dada")
- Does not learn to use gestures, such as waving or shaking head
- Does not point to objects or pictures
Important Milestones: By The End Of 2 Years (24 Months)

Social
- Imitates behaviour of others, especially adults and older children
- More aware of herself as separate from others
- More excited about company of other children

Emotional
- Demonstrates increasing independence
- Begins to show defiant behaviour
- Separation anxiety increases toward midyear then fades

Cognitive
- Finds objects even when hidden under two or three covers
- Begins to sort by shapes and colours
- Begins make-believe play

Language
- Points to object or picture when it's named for him
- Recognizes names of familiar people, objects, and body parts
- Says several single words (by 15 to 18 months)
- Uses simple phrases (by 18 to 24 months)
- Uses 2- to 4-word sentences
- Follows simple instructions
- Repeats words overheard in conversation

Movement
- Walks alone
- Pulls toys behind her while walking
- Carries large toy or several toys while walking
- Begins to run
- Stands on tiptoe
- Kicks a ball
- Climbs onto and down from furniture unassisted
- Walks up and down stairs holding on to support
**Hand and Finger Skills**
- Scribbles on his or her own
- Turns over container to pour out contents
- Builds tower of four blocks or more
- Might use one hand more often than the other

**Developmental Health Watch**
Alert your child's doctor or nurse if your child displays any of the following signs of possible developmental delay for this age range.

- Cannot walk by 18 months
- Fails to develop a mature heel-toe walking pattern after several months of walking, or walks only on his toes
- Does not speak at least 15 words
- Does not use two-word sentences by age 2
- By 15 months, does not seem to know the function of common household objects (brush, telephone, bell, fork, spoon)
- Does not imitate actions or words by the end of this period
- Does not follow simple instructions by age 2
- Cannot push a wheeled toy by age 2
Important Milestones: By The End Of 3 Years (36 Months)

Social

- Imitates adults and playmates
- Spontaneously shows affection for familiar playmates
- Can take turns in games
- Understands concept of "mine" and "his/hers"

Emotional

- Expresses affection openly
- Expresses a wide range of emotions
- By 3, separates easily from parents
- Objects to major changes in routine

Cognitive

- Makes mechanical toys work
- Matches an object in her hand or room to a picture in a book
- Plays make-believe with dolls, animals, and people
- Sorts objects by shape and colour
- Completes puzzles with three or four pieces
- Understands concept of "two"

Language

- Follows a two- or three-part command
- Recognizes and identifies almost all common objects and pictures
- Understands most sentences
- Understands placement in space ("on," "in," "under")
- Uses 4- to 5-word sentences
- Can say name, age, and sex
- Uses pronouns (I, you, me, we, they) and some plurals (cars, dogs, cats)
- Strangers can understand most of her words

Movement

- Climbs well
- Walks up and down stairs, alternating feet (one foot per stair step)
• Kicks ball
• Runs easily
• Pedals tricycle
• Bends over easily without falling

Hand and Finger Skills

• Makes up-and-down, side-to-side, and circular lines with pencil or crayon
• Turns book pages one at a time
• Builds a tower of more than six blocks
• Holds a pencil in writing position
• Screws and unscrews jar lids, nuts, and bolts
• Turns rotating handles

Developmental Health Watch

• Frequent falling and difficulty with stairs
• Persistent drooling or very unclear speech
• Cannot build a tower of more than four blocks
• Difficulty manipulating small objects
• Cannot copy a circle by age 3
• Cannot communicate in short phrases
• No involvement in "pretend" play
• Does not understand simple instructions
• Little interest in other children
• Extreme difficulty separating from mother or primary caregiver
• Poor eye contact
• Limited interest in toys
Important Milestones: By The End Of 4 Years (48 Months)

Social

- Interested in new experiences
- Cooperates with other children
- Plays "Mom" or "Dad"
- Increasingly inventive in fantasy play
- Dresses and undresses
- Negotiates solutions to conflicts
- More independent

Emotional

- Imagines that many unfamiliar images may be "monsters"
- Views self as a whole person involving body, mind, and feelings
- Often cannot tell the difference between fantasy and reality

Cognitive

- Correctly names some colours
- Understands the concept of counting and may know a few numbers
- Tries to solve problems from a single point of view
- Begins to have a clearer sense of time
- Follows three-part commands
- Recalls parts of a story
- Understands the concepts of "same" and "different"
- Engages in fantasy play

Language

- Has mastered some basic rules of grammar
- Speaks in sentences of five to six words
- Speaks clearly enough for strangers to understand
- Tells stories
Movement

- Hops and stands on one foot up to five seconds
- Goes upstairs and downstairs without support
- Kicks ball forward
- Throws ball overhand
- Catches bounced ball most of the time
- Moves forward and backward with agility

Hand and Finger Skills

- Copies square shapes
- Draws a person with two to four body parts
- Uses scissors
- Draws circles and squares
- Begins to copy some capital letters

Developmental Health Watch

- Cannot throw a ball overhand
- Cannot jump in place
- Cannot ride a tricycle
- Cannot grasp a crayon between thumb and fingers
- Has difficulty scribbling
- Cannot stack four blocks
- Still clings or cries whenever parents leave
- Shows no interest in interactive games
- Ignores other children
- Doesn't respond to people outside the family
- Doesn't engage in fantasy play
- Resists dressing, sleeping, using the toilet
- Lashes out without any self-control when angry or upset
- Cannot copy a circle
- Doesn't use sentences of more than three words
- Doesn't use "me" and "you" correctly
Important Milestones: By The End Of 5 Years (60 Months)

Social

- Wants to please friends
- Wants to be like her friends
- More likely to agree to rules
- Likes to sing, dance, and act
- Shows more independence and may even visit a next-door neighbour by herself

Emotional Milestones

- Aware of gender
- Able to distinguish fantasy from reality
- Sometimes demanding, sometimes eagerly cooperative

Cognitive Milestones

- Can count 10 or more objects
- Correctly names at least four colours
- Better understands the concept of time
- Knows about things used every day in the home (money, food, appliances)

Language

- Recalls part of a story
- Speaks sentences of more than five words
- Uses future tense
- Tells longer stories
- Says name and address

Movement

- Stands on one foot for 10 seconds or longer
- Hops, somersaults
- Swings, climbs
- May be able to skip

Hand and Finger Skills
• Copies triangle and other shapes
• Draws person with body
• Prints some letters
• Dresses and undresses without help
• Uses fork, spoon, and (sometimes) a table knife
• Usually cares for own toilet needs

Developmental Health Watch

• Acts extremely fearful or timid
• Acts extremely aggressively
• Is unable to separate from parents without major protest
• Is easily distracted and unable to concentrate on any single activity for more than five minutes
• Shows little interest in playing with other children
• Refuses to respond to people in general, or responds only superficially
• Rarely uses fantasy or imitation in play
• Seems unhappy or sad much of the time
• Doesn't engage in a variety of activities
• Avoids or seems aloof with other children and adults
• Doesn't express a wide range of emotions
• Has trouble eating, sleeping, or using the toilet
• Can't tell the difference between fantasy and reality
• Seems unusually passive
• Cannot understand two-part commands using prepositions ("Put the doll on the bed, and get the ball under the couch.")
• Can't correctly give her first and last name
• Doesn't use plurals or past tense properly when speaking
• Doesn't talk about her daily activities and experiences
• Cannot build a tower of six to eight blocks
• Seems uncomfortable holding a crayon
• Has trouble taking off clothing
• Cannot brush her teeth efficiently
• Cannot wash and dry her hands
Referral criteria and pathways

The decision to refer a child should be based upon a combination of:

- Assessment of the developmental status of the child. A discrepancy between chronological age and developmental age should be interpreted as a warning that there may be a problem.

- Clinical judgement considers such factors as prematurity, genetic predisposition, family history, environmental factors and co existing conditions.

- Knowledge of local socio economic conditions and service provision.

Referral pathways and more detailed referral criteria depend on local service provision and agreement.
Speech & Language Manual and Guidelines

Speech and Language: Development and difficulties

Definition

Speech and/or language difficulties * are one of the most common neuro-developmental disorders in childhood. Speech and language difficulties may be classified as primary or secondary. With primary difficulties, speech and/or language are specifically delayed relative to other developmental skills. With secondary difficulties, speech and/or language is delayed within the context of, or may be indicative of, co-morbid conditions such as global learning disability, hearing loss, structural/neurological deficits, emotional/behavioural or psychiatric conditions (Law et al, 1998). Speech and/or language difficulties are expressive, receptive or both and will impact on one or more linguistic domain (phonology, articulation, syntax, morphology, semantics, pragmatics, fluency or voice).

Speech and Language Therapy is the health care profession specifically concerned with the assessment, diagnosis and management of those who have speech and/or language impairments.

Prevalence

Estimates on the exact prevalence of speech and/or language difficulties vary between studies, partly due to differences in definitions, cut-off points, populations studied and methodologies (NHMRC, 2002). Some 10% of children will have some difficulty, ranging from a mild delay in development to a more severe difficulty. The causes of language difficulties are still far from certain (Hall & Elliman, 2004) and there is little data available on bilingually or culturally diverse groups, and the association with socio-economic status is also unclear (NHS, 1998).

Screening v Identification

No randomised controlled trials of speech and language screening programmes were identified by the NHS in their 1998 review of preschool speech, language, hearing
and vision screening processes. Screening test performance varies with sensitivity ranging from 17-100% and specificity in the range of 43-100%.

Given the variability in the natural history of speech and language difficulties, and the high level of subsequent spontaneous improvement, the use of a single measure at an early stage in children’s development (9months - 2years) is unlikely to be valuable (NHS, 1998). In addition, it may be difficult to implement screening programs in the community to a sufficiently high standard in order to make it effective. At present, there is insufficient evidence to make a recommendation either for or against screening, due to differing definitions of speech and/or language difficulties* and the natural history of same.

Current evidence indicates that speech and/or language difficulties in young children should be identified by less formal methods than screening, for example, guidelines. In the UK, the development of children’s language in ‘Sure Start’ areas is monitored at ages 2 and 4 years using the MCDI (McArthur Communicative Development Inventory) and the PEDS (Parent’s Evaluation of Developmental Status) instruments. These instruments are based on parental report and parental concern, rather than formal screening by testing. They are linked to a range of community initiatives designed to enhance language development. The ‘First Words’ Program in the US runs a similar type of programme for identification and intervention in speech and Language delay.

**The Role of Parents in Identification of Speech & Language Difficulties**

There is substantial evidence confirming the effectiveness of parents in detecting problems with their children (Best Health for Children, 1999) and many cases of speech and/or language impairment are first recognized by parents or other family members. For example, speech and language screens that used parents as informants were as accurate as those that utilized formal testing procedures (NHS, 1998). The use of speech and language screening instruments that employ parental report needs to be explored further within the Irish context.

- The parents should always be asked whether they have noticed any problems.
- Primary care workers should be involved in eliciting parental concerns and in making appropriate observations of children’s communication behaviours (Law et al., 1998; ECAHB, 2004).
- Appropriate information needs to be made available to parents to allow them to play an active role in judging need (Law et al., 1998).
- Parents should also be educated about hearing behaviour and the need to assess hearing in any child with speech and/or language difficulties (Hall & Elliman, 2004).

**Early Identification & Referral**

Timely assessment and intervention is crucial in reducing the long-term implications of speech and language difficulties because children identified at age 5 or later have a poorer prognosis with remediation than children identified earlier (Law 1998, cited in NHMRC, 2002). These long-term problems may affect literacy, socialisation, behaviour and educational attainment (Law et al., 2003). In older children, the educational and behavioural problems associated with speech and/or language difficulties may be more apparent than the language problem itself (NHMRC, 2002).

It is important that speech and language difficulties are identified as early as possible because they:
- cause concern for parents
- are associated with behavioural and other difficulties in the pre-school period
- constitute a risk factor for subsequent poor school performance
- lead to further delays causing a wide range of personal and social difficulties for the individuals concerned


Early Referral results in:
- Early assessment and accurate identification of speech and language difficulties
- Early intervention and provision of appropriate supports to parents/carers
- A reduction in parents’/carers’ anxiety
- Provision of advice and guidance to families, parents, schools and other agencies

## Referral Criteria

### Speech & Language Guidelines

The following table is taken from the UK Government Sure Start Programme (www.surestart.gov.uk). The left hand side of the table provides general guidelines regarding expected normal performance in speech sounds, expressive language and comprehension. The right hand side provides information on features that may cause concern. Areas of concern indicate the need for Speech & Language Therapy Referral. In addition, further information is included on speech and language areas not fully addressed in the table; fluency/stuttering, neuro-muscular feeding difficulties, hearing, voice disorders and bi-lingualism. These are general guidelines and local Speech & language Therapy Departments should be contacted for in-depth guidelines on speech and language development, parental advice, information on specific services available locally and queries regarding referrals.

### When to refer/who to refer

Refer a child to Speech & Language Therapy if:

- He/she has not achieved the speech and/or language targets appropriate to his/her age
- The parents/carers continue to be anxious
- In the case of bilingual children; if difficulties are present in both languages.
An outline of what to expect of normal communication development and some potential areas of concern.

<table>
<thead>
<tr>
<th>Normal development</th>
<th>Potential areas of concern</th>
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<tbody>
<tr>
<td><strong>Speech sounds</strong></td>
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<tr>
<td><strong>0-1 years</strong></td>
<td><strong>Potential areas of concern</strong></td>
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<tr>
<td>Cooing after six weeks, babbling from six months, increasing feeling of child experimenting with sounds</td>
<td>No sounds.</td>
</tr>
<tr>
<td>Gradually begins to use specific sounds in specific contexts eg. “Wool” for all animals</td>
<td>Little or no attempt to communicate.</td>
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<tr>
<td>By 9 months understands “no” “bye”. By 1 year recognises names of some objects and responds to simple requests eg. “Clap your hands” with an action.</td>
<td>Little or no awareness of others.</td>
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<tr>
<td><strong>1-2 years</strong></td>
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<tr>
<td>Initially uses strings of intonation (“jargon”), which clearly included speech sounds. These gradually become assimilated into recognisable words.</td>
<td>Little variation in sounds used.</td>
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<td>Words appear slowly at first but child often has a substantial vocabulary by two years. May be beginning to combine words by this stage.</td>
<td>No words by 18 months.</td>
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<td>Almost always in advance of expressive language. Will hand over familiar objects on request. Begins to understand verbs and simple attributes.</td>
<td>No recognition of the words for simple household objects.</td>
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<tr>
<td><strong>2-3 years</strong></td>
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<tr>
<td>A good range of sounds, though there may be difficulties with fricatives /θ/ /ʃ/ /s/ etc.</td>
<td>Single sounds only eg. /d/. Poor control of facial muscles. Others do not understand much of what is said.</td>
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<tr>
<td>2 &amp; 3 word utterances. Language used for a variety of purposes - possession/assertion/refusal/attribute etc.</td>
<td>No word combinations reported by 2 ½ years. Very restricted vocabulary.</td>
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<td>Able to find two or three objects on request.</td>
<td>Unable to find two items on request by 2 ½ years.</td>
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<tr>
<td><strong>3-4 years</strong></td>
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<tr>
<td>Most speech sounds correct. May have difficulties with /θ/ /ð/ /ʃ/ /ʃ/ /s/. Intelligibility may decline when excited.</td>
<td>Very limited repertoire of sounds -- much of what is said is intelligible. Normal non-fluency, common in younger children, may persist.</td>
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<tr>
<td>Talks increasingly fluently. Able to refer to past and future events. Mark tense with –ed etc. but there may be some confusion eg. “I go to the park”.</td>
<td>Little feeling of interaction either because the child says very little or because the child continues to echo what is said. Restricted use of verbs/attributes.</td>
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<td>Able to understand concepts such as colour/ size etc. Will understand most of what a parent is saying.</td>
<td>Comprehension outside everyday context very limited. May still not be aware of the function of objects.</td>
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<tr>
<td><strong>4-5 years</strong></td>
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<tr>
<td>Completely intelligible except for occasional errors.</td>
<td>Much of what is said is still unintelligible. Pattern of stammering may be emerging- especially if beginning to “block” on certain words/sounds. Increasing awareness and frustration.</td>
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<td>Grammatical errors may persist but rarely affect the meaning. 4-6 word sentences used consistently. Questions forms eg. “Why?” now common. Able to construct own stories.</td>
<td>Child avoiding verbal demands eg. in nursery. Continues to respond in single words of using very simple grammatical structures. Little idea of tense. Cannot retell a story.</td>
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<td>Can now understand abstract words eg. “always”. Understands and can reconstruct a story sequence from a book.</td>
<td>May be able to understand enough to cope with familiar routines but cannot cope if structure changes. Child often isolated because cannot deal with verbal level of peers.</td>
</tr>
</tbody>
</table>

General points to look out for - Family history of speech or language difficulties. Any history of hearing difficulties. Concerns about Parent-child interaction. Associated difficulties with behaviour / attention.

IF IN DOUBT ASK A SPEECH AND LANGUAGE THERAPIST.


Further Information

**Fluency/Stuttering/Stammering**
If a parent is concerned about a child ‘stuttering’, the child should always be referred to Speech & Language Therapy.

**Neuro-muscular Feeding Difficulties**
From infancy, some children may show evidence of neuromuscular feeding difficulties. This can be described as difficulties with eating, drinking and swallowing (sometimes referred as EDS disorders). The symptoms that may initially be evident include a weak suck, difficulty with coordination of suck-swallow-breath sequence and frequent episodes of choking/possible aspiration (entry of food/liquid in the airway). There may be poor development of oral motor skills which impact on the development of chewing skills and the management of food of increasing texture/consistency as expected for the child’s age. If there are any concerns regarding Eating, Drinking and Swallowing development/skills, children should be referred to a Speech and Language Therapist who specialises in this area.

**Hearing**
All children who have speech and/or language difficulties should have their hearing screened, and onward referral, where indicated, should be instigated prior to speech and language therapy referral.

**Voice Disorders**
Children with ENT difficulties, gastro-oesophageal reflux (GOR), premature children and children with vocally demanding lifestyles such as dramatics, singing, sports, are at particular risk of developing voice disorders. If children present with any of the following they should be referred to SLT:
- Loss of voice towards the end of the day.
- Persistent hoarseness over a period of 2 weeks.
- Intermittent hoarseness, which re-occurs.
- Hoarseness which occurs following a specific event eg party.
- Parents are anxious with regard to voice quality.
- Frequent URTIs or throat infections, which result in hoarseness, loss of voice.

All children with voice disorders require ENT assessment prior to the commencement of intervention.
**Bilingualism**

Typically developing bilingual children may demonstrate a mild ‘delay’ in language development with respect to their monolingual peers; this naturally resolves as the child grows older. However, bilingual children with speech and/or language difficulties show difficulties in both/all languages. These are the children who should be referred to SLT. When referring a child, ask specifically what language(s) the child is exposed to. Best practice indicates that interpreters should be used at SLT assessment sessions as the standardised speech and language assessment instruments are not reliable in this context and therefore parental case history and report is crucial. Be sensitive that occasionally parents may be reluctant to acknowledge that a language other than English is spoken at home; use of particular languages are stigmatised in certain countries or parents may be concerned that they may not be eligible for services if they admit to speaking a language other than English.

Children’s home languages should be encouraged for the following reasons:

- Natural interaction between child and parent in home language(s)
- Link between home culture and home languages
- No evidence that learning more than one language puts English ability ‘behind’. In fact, there is some evidence to the contrary
- Established communication skills in a home language form a linguistic foundation for learning English readily on pre-school and school entry.
**Speech & Language Therapy Process**

SLTs provide assessment, diagnosis and intervention and overall management of difficulties with expressive language, receptive language (comprehension) and speech sounds in all linguistic domains. The use of language in social settings (appropriateness) and to meet functional communication needs is also addressed. Therapy may be direct or indirect, on a group or individual basis and be within a clinic or another location.

![Speech & Language Therapy Process Diagram](image)

IASLT (1993)

Please contact your local Speech and Language Therapy Department who will provide more in-depth guidelines on speech and/or language, checklists, information on what parents/carers can do to help. It is always advisable to contact the local SLT Department, if you are querying the appropriacy of a referral or if you wish to discuss the pathway of therapy for an individual child.
Notes on Text:

* It is notable that there is different terminology and definitions used in the speech and language literature, for example ‘speech and/or language delay’ (used by some clinicians to indicate that a child could ‘catch up’), ‘speech and/or language disorder’ (used by clinicians to indicate that the speech and language profile is atypical) or ‘speech and/or language impairment’. In addition, the term ‘Specific Language Impairment’ is a term currently used to describe children with a range of different profiles, all of which include marked difficulties in the context of normal cognitive difficulties, where no identifiable cause is present (Bishop: 1997, Leonard: 1998). The UK Department of Health Programme ‘Sure Start’ utilises the umbrella term ‘speech and language difficulties’ and to avoid confusion the Sure Start model has been adhered to in this paper.

**Sure Start aims to work with parents-to-be, parents and children to promote the physical, intellectual and social development of babies and young children—particularly those who are disadvantaged—so that they can flourish at home and when they get to school, and thereby break the cycle of disadvantage for the current generation on young children”. Speech and language development is specifically targeted in the home and community environment, in childcare settings and with specialists. This model could be adapted extremely successfully to an Irish context. These guidelines include areas of concern where children require referral to Speech & Language Therapy.
References


CHISP, SEHB, Caring for your baby. Birth - 6 months old. Ireland, 2004


First Words Project [http://firstwords.fsu.edu](http://firstwords.fsu.edu)


National Health and Medical Research Council (Australia) March 2002

National Screening Committee (NSC) UK: Child Health Sub-Group Report 1999
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PHR, MWHB & DOHC, Personal Health Record, Ireland 2000

Shelov, Steven, Hannermann, Robert E., Caring for Your Baby and Young Child: Birth to Age 5: the American Academy of Paediatrics, Bantam Books, a division of Random House, 2004

Sheridan, Mary D. From Birth to 5 years; Children’s Developmental Progress. Revised and updated by Marian Frost and Dr Ajay Sharma. (Rutledge 2003)


