Guidelines:
Early Communication Intervention
Guidelines for Speech-Language Therapists and Audiologists working in Early Communication Intervention

Introduction

Early Communication Intervention is a trans-disciplinary field where audiologists and speech-language therapists not only share roles, but each discipline also contributes uniquely to services directed at families with infants and preschool children with feeding difficulties, hearing loss and disorders, established and emerging communication disorders, or those who are at risk of developing difficulties in these areas.

- Transdisciplinary collaboration between audiologists and speech-language therapists

The critical importance of early auditory system stimulation and mother-infant communication interaction for speech and language development is best understood by audiologists and speech-language therapists. Both professions may be involved in screening of infants for hearing loss and risk conditions for communication disorders, identifying feeding difficulties and dysphagia, educating and supporting parents, but diagnostic assessments are discipline specific. Audiolists take responsibility for the diagnosis and ongoing monitoring of hearing loss and auditory system disorders, while speech-language therapists assess and diagnose emerging communication and feeding disorders. Treatment of dysphagia and early communication disorders without a hearing disorder are the main responsibility of speech-language therapists, but ongoing treatment of young children with hearing disorders may be a shared role between the two professions.

Audiologists and speech-language therapists working in the field of early communication intervention should create opportunities for knowledge and skills sharing between the two professions. Such collaboration may lead to enriched understanding of the clinician’s own role, expansion of the clinician’s own role to understand more about the other profession, sharing of knowledge, and finally, release and support of different professional roles and functions which should be fulfilled in Early Communication Intervention.
The shared professional roles may include creating awareness of the effects of ototoxic and other teratogens on prenatal life, the promotion of safe and stimulating environments for early childhood development, other activities to prevent hearing and communication disorders, direct intervention with families and their infants requiring early intervention services, community-based early intervention programmes and advocacy efforts to raise public awareness of the desirability to start intervention when feeding difficulties and risks of hearing and communication disorders are present in newborns and infants.

- **An appeal to advance Early Communication Intervention in South Africa**

Based on the trans-disciplinary nature of Early Communication Intervention in South Africa, the new guidelines are an update of the *Guidelines for speech-language therapists and audiologists: Early Communication Intervention* (SASLHA, 1997). A nation-wide movement toward early intervention in South Africa was advocated in the previous guidelines and much progress has been made during the past 13 years.

All undergraduate Audiology and Speech-Language Pathology training programmes in South Africa now offer Early Communication Intervention modules, thereby increasing the two professions’ capacity to provide services in public hospitals, primary health care facilities, private practice (which may extend to nursery schools, day care centres and early intervention centra), preschool programmes of special schools, and university clinics. Similar to other fields of audiology and speech-language therapy practice, the shortage of clinicians to provide Early Communication Intervention services to all who require services, remains critical.

The long-term benefits of Early Communication Intervention for a child’s development, future education, employment and quality of life (Rossetti, 2001) should be recognised by all service providers. Early Communication Intervention should be an essential component of every audiology and speech-language programme that provides services to children.

New research using advanced neuro imaging techniques on young school-age children demonstrates neurobiological evidence of the importance of early expressive language
proficiency for later language and literacy functioning (Preston et al., 2010). The significance of the latest findings is that the long-term residual effects of being a late talker is now supported by evidence of differences in corresponding neural circuits underlying speech and print processing of the same child into the school-age years. The neurobiological evidence confirms data from longitudinal studies by Rescorla (2009) which provided behavioural evidence that early delays in expressive language development can show residual effects even in adolescence. Neurolinguistic differences in school-age children who showed their emerging language learning disability already in the early toddler period, may currently provide the strongest evidence for the importance of Early Communication Intervention. If intervention can start when the first signs of a communication disorder become evident, neural plasticity allows the possibility to ameliorate the long-term impact on a child’s language and literacy development.

The challenge ahead is to provide unequivocal evidence in South Africa that Early Communication Intervention is effective to render sustained developmental, academic and economic benefits to infants, families and communities. Audiologists and speech-language therapists are called upon to engage in local research to expand the field so that national policy guidelines can be developed to formalise Early Communication Intervention services and to establish programmes for primary health care, child day care and preschool education, in all urban and rural communities.

Currently, Early Communication Intervention services are available in urban centres, but semi-urban areas, rural towns and small communities lack early communication intervention clinicians who are employed in a permanent capacity to develop and sustain these services. It has been suggested by numerous authors that the infrastructure and health programmes for women and children provided by primary health care facilities offer ideal opportunities to establish Early Communication Intervention programmes (Fair & Louw, 1999; Moodley, Louw & Hugo, 2000; van der Linde, Kritzinger & Redelinghuys, 2009).

The current guidelines are intended to stimulate ideas for the expansion of Early Communication Intervention services to all communities in South Africa and to provide direction for best practice. Early Communication intervention is a powerful strategy to make a difference in the lives of families and their infants and young children. Undergraduate and postgraduate student training, continuous professional development
activities and research in Early Communication Intervention should be intensified and sustained.

**Key concepts and definitions**

The following concepts and definitions are important to understand the nature of Early Communication Intervention services in South Africa:

- **Early Communication Intervention**

  Early Communication Intervention is distinguished from early childhood intervention and early intervention in that the first refers to services with a specific focus on communication intervention, as advocated by ASHA (2008) and Rossetti (2001). Adequate feeding, hearing and communication abilities are basic to the quality and enjoyment of a young child’s health, development, social participation and education. All health, educational and therapeutic programmes directed at young children should therefore include a focus on communication skill development, as language is widely recognised as the strongest predictor of future cognition and academic success in a child.

  Audiologists and speech-language therapists may lead Early Communication Intervention programmes, but transdisciplinary teamwork for certain intervention areas should extend further to include different professions. If available and not overburdened, professionals from different disciplines may enrich their own roles with knowledge of Early Communication Intervention functions and exchange certain agreed upon roles. Audiologists and speech-language therapists may therefore release certain roles, but should provide support and feedback to ensure that Early Communication Intervention goals for specific families, and the overall intervention programme goals are met.

*Early Communication Intervention* is a term coined at the Department of Communication Pathology, University of Pretoria, following the surge of interest in early intervention created by the visits in 1996 and 1998, and publications of the renowned American early intervention specialist, Lou Rossetti, to the country. Rossetti’s publications emphasise central role of communication skills in early and later child development and its unique contribution to early intervention. The term *Early Intervention* has always been used by ASHA to refer to services rendered by speech-language pathologists to the birth to three
year old population of infants and toddlers and their families (ASHA, 2008a). Both *Early Intervention* and *Early Childhood Intervention* are terms used to refer to services rendered by different therapists, special needs educators and sometimes by medical professionals, to preschool children with special needs.

- **Neonatal communication intervention**

As a result of the availability of mothers and infants in the few days after birth, before they are discharged and disperse to communities where Early Communication Intervention services are not accessible, the neonatal period should be used by audiologists and speech-language therapists for intervention. Information about typical hearing and communication development and a mother’s role in early communication development should be given to mothers of low risk infants across the spectrum of families, from limited to sufficient resources.

Another stimulus for the need for neonatal communication intervention in South Africa is the high prevalence of infants with low birth weight and preterm birth, often exposed to HIV/AIDS and born to families living in poverty (Sanders, Bradshaw & Ngongo, 2010). Kangaroo mother care offers unique access to infants and their mothers in the neonatal period. The availability of mothers, who have an increased interest in their infants as they have been primed by kangaroo mother care, provides a valuable opportunity to start a communication intervention programme. Kangaroo mother care is a form of developmental care in the neonatal period for both high risk and low risk neonates. Kangaroo mother care is an important evidence-based nursing science intervention which audiologists and speech-language therapists should be supporting. The evolutionary reclaimed care pattern by which a neonate is securely carried in an upright position, positioned skin-to-skin between the mother’s breasts, offers many benefits to the infant, the mother and family, and South Africa’s health system.

Kangaroo mother care is extensively practiced in South Africa as an effective care technique for low birth weight and preterm neonates. Research over the past twenty years consistently showed increased survival of preterm and low birth weight neonates where KMC is practiced – in numerous developing and developed countries (Ruiz-Peláez, Charpak & Cuevero, 2004) and also in South Africa (Pattinson, Bergh, Malan & Prinsloo, 2006). A neonatal communication intervention programme ideally expands upon the benefits of an existing kangaroo mother care programme, but adds unique components
such as hearing protection, carefully graded sensory stimulation and a communication interaction focus.

- The critical period for effective intervention

The period from birth to six years is critical to the development of basic listening and communication skills so that more advanced cognitive academic language proficiency may follow. Neural plasticity is at its peak during infancy and the early preschool period, implying that early intervention can positively shape brain development. Intervention should therefore ideally start when congenital risks (as a result of genetic conditions, infections or teratogenic agents during pregnancy), or perinatal risks (as a result of low birth weight and preterm birth, and/or perinatal conditions), are identified in a child. Due to the unavailability, inaccessibility or unfamiliarity of early intervention services in South Africa, families may not seek help or may not be referred. Although intervention should start as early as possible, ideally before the child is three years old, families in South Africa should still be afforded the benefits of parent training and support if intervention starts during the later preschool years.

- Families as protectors and facilitators of early hearing and communication development

Families are the only constant in a child’s life and family members form the closest attachments with the child. Families guard and enhance hearing and communication development, but require information, training and support to do so when a child experiences developmental difficulties. When families are headed by single parents or caregivers, very young parents, chronically ill parents, poorly educated or living in poverty, more support is required from different team members. Early Communication Intervention services are therefore directed at parents in order to strengthen families to participate actively in intervention processes and make informed decisions. Although a parent-centered approach is followed, extended family members, grandparents and daytime caregivers may also be trained to achieve intervention goals.
- Young children growing up in poverty

The close relationship between poverty and disability is well documented (Alant & Lloyd, 2005) and implies that children living in poverty have an increased risk of developing disabilities. Families living in poverty reside in communities with limited resources and rely on overburdened health, social and educational services. The children of these families consequently have a greater susceptibility to conditions such as low birth weight, and exposure to environmental toxins and disease. These conditions have all been identified as predictors of disability status. Once disability is present, poverty has been found to increase the risk of psychosocial and behaviour challenges for children (Msall, Bobis & Field, 2006). The majority of children in South Africa (60%) live in poverty and children in rural areas are more likely to be poor than those living in urban communities (Swanepoel, 2004). Despite adverse circumstances, efforts should be directed at promoting protective factors, such as maternal education and competence, a close bond between the primary caregiver and the child, who need not be the biological parent, supportive grandparents, and small family size, that foster resilience in young children (Werner, 2000). A special appeal is now made to develop equity in Early Communication Intervention services across South Africa, so that communities where children live in poverty, may also be served.

Relevant legislation

In government publications, early intervention is mentioned as an effective intervention strategy in the White Paper on an Integrated National Disability Strategy (1997), and maternal, child and women’s health are priority issues in the National Health Act (Department of Health, 2003). Although young children and their mothers are identified as vulnerable groups which require special attention, there are no national policy guidelines on early intervention. There is a need to develop policy on early intervention so that formal structures may be developed and resources may be allocated to establish accessible early intervention services in the health sector and preschool education system.
Principles of Early Communication Intervention services

The four key principles as stated by ASHA (2008b:2-17) reflect the current consensus by leading experts as best practice in early intervention. These guiding principles are recognised as universal, comprehensive and endorsed by SASLHA. In summary, Early Communication Intervention services therefore are:

- Family centred, culturally and linguistically responsive
- Developmentally supportive and promote children’s participation in their natural environments
- Comprehensive, coordinated and team-based
- Based on the highest quality evidence that is available

As a result of context-specific characteristics in South Africa, the four principles are expanded so that Early Communication Intervention services:

- Focus on the assets of a particular child, family and community to enhance the success of the intervention efforts. An asset-based approach recognises that all children, families and communities do not only have needs, but also have strengths that may be mobilised to enhance and sustain early intervention efforts.
- Promote attachment between mothers and their newborn infants as South Africa has a high prevalence of child neglect and abuse, more so when the child presents with developmental difficulties. Mother-infant attachment creates the basis of early communication development.

Populations to be served in Early Communication Intervention endeavours

Many of the populations of infants and young children who require Early Communication Intervention occur in increased prevalence in South Africa. Different populations who need some form Early Communication Intervention services include:

- Adolescents require preventative information to adopt health-promoting lifestyles to prevent transmission of adverse conditions such as HIV/AIDS and other
sexually transmitted diseases, foetal alcohol spectrum disorders, low birth weight as a result of smoking, and foetal drug exposure, that can cause hearing loss and communication disorders in their future children.

- Prospective parents who require information and supportive counselling, especially if they know their unborn infant may be affected by a congenital condition.

- The entire a-symptomatic population of infants in South Africa require screening for hearing loss and other high prevalence conditions such as autism spectrum disorder.

- Preschool children of families and communities at risk of high prevalence conditions and disorders such as foetal alcohol spectrum disorder, developmental delay, child neglect and abuse require preventative transdisciplinary Early Communication Intervention services.

- Infants and young children with risk conditions such as low birth weight and preterm birth, that contribute to communication and hearing disorders, even though the full expression of their hearing and developmental difficulties may not yet be apparent.

- Infants and young children with established conditions that cause hearing and communication disorders, such as Down syndrome and other genetic syndromes, cerebral palsy, acquired conditions and traumatic brain injury, chronic illness, such as HIV/AIDS, multiple disability, seizure disorder, auditory neuropathy spectrum disorder, mental disability, hearing loss, attention deficit (hyperactivity) disorder, autism spectrum disorder and cranio-facial disorders.

- Infants and young children with hearing loss and hearing disorders.

- Infants and young children with emerging communication disorders, such as fluency disorder, apraxia of speech, specific language disorder, auditory processing disorder, articulation and phonological disorders and voice disorders. All late talking toddlers, i.e. those who are delayed in combining words to form early sentences, fall in this relatively large category of children requiring Early Communication Intervention. Recent epidemiological estimates found the prevalence of late talkers as 19.1% of the overall toddler population (Zubrick, Taylor, Rice & Slegers, 2007).

- Neonates, infants and young children with feeding and swallowing problems.
Contexts of Early Communication Intervention practice

The contexts for delivering Early Communication Intervention services depend to a great extent on the specific time period in a child’s life. Services may therefore be offered in the neonatal period, infancy, toddlerhood and the later preschool years, all at different locations. Contexts where early communication intervention services are rendered may range from urban to rural, from resource poor, to resource rich communities. By means of transdisciplinary collaboration, existing health, child care and preschool education services may be used to add value to programmes already offered. The development of dedicated Early Communication Intervention programmes and facilities is encouraged.

- Neonatal care units and postnatal wards

The neonatal period offers the earliest opportunity for direct intervention to the high risk infant and mother. While the infant is in a neonatal care unit or a high care unit, there may be a brief period of access to the mother before discharge and before she goes home to an area where follow-up Early Communication Intervention services may not be accessible. A Kangaroo Mother Care unit offers even more access to a clinician as the mothers are lodging in the ward. The mothers’ enhanced attachment and interest in their infants as a result of kangaroo care, increase their readiness for information and training to promote the hearing and communication development of the infants. Mothers need information to understand preterm infant progress through developmental stages, the infant’s stress signs, readiness for stimulation and subtle cues to communicate. A highly sensitive pattern of maternal reciprocal communication interaction must be established with the infant so that the auditory system is appropriately stimulated, and not over stimulated, to facilitate language development. It is during the last 10 to 12 weeks of fetal life that the hair cells of the cochlea, the axons of the auditory nerve and the neurons of the auditory cortex are tuned to receive specific frequencies and intensities (Graven & Browne, 2008). The appropriate hearing testing protocol for high risk infants (Joint Committee on Infant Hearing, 2007) should be followed before discharge from a neonatal facility.

Postnatal wards for full-term newborns and their mothers offer opportunities to establish early hearing detection and intervention programmes (Swanepoel, 2007) and information sharing with mothers to get to know their infants, attachment and
understand the importance of early reciprocal communication interaction (Kritzinger & Louw, 2003). Information about the importance of first language proficiency for school readiness and where to access Early Communication Intervention services, should she be concerned about her child’s hearing and communication development, may be given to the mother.

- **Primary health care clinics and centers**

After discharge from hospital, individual high-risk infants should be followed up by means of developmental surveillance and information to caregivers. Primary health care clinics are accessible sites for Early Communication Intervention surveillance clinics, as these facilities are situated in communities. Early hearing detection and intervention programmes may be established if newborns were missed with the hospital hearing screening programme.

- **Nursery schools and day care facilities**

Although young children who require early communication assessment and intervention are readily available at these facilities, their parents are not. It may not be possible to follow a parent-centered approach to intervention and important opportunities for information sharing, parent training and support may be missed.

**Roles and responsibilities in Early Communication Intervention**

<table>
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<tr>
<th>Context</th>
<th>Role, responsibility and tasks</th>
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</table>
| **1. Community forums, schools, religious gatherings** | - Use opportunities to promote safe and stimulating natural environments for early learning and provide preventative information  
- These activities should typically be in collaborative in order to make the most impact |
| **2. Antenatal care facilities** | - Provide expectant parents with information on typical hearing and language development, and where to access services if required |
| **3. Postnatal wards** | - Promote mother-infant attachment and an interest in newborn hearing and communication capabilities  
- Provide information on the importance of early hearing and language skills, first language proficiency and accessible early |
communication intervention services to mothers in their communities, should they have future needs
- Establish early hearing detection and intervention programmes
- Establish neonatal communication intervention programmes
- Audiologists conduct a diagnostic hearing assessment before infant is discharged
- Establish a noise reduction programme in the unit
- Speech-language therapists diagnose and treat feeding disorders, consult the medical team on infant’s readiness to transition to different feeding methods. Instrumental and clinical feeding assessments are conducted
- Information, training and support to parents
- Support and collaborate with an existing developmental care programme or establish a neonatal communication programme based on kangaroo mother care
- Advocate the importance of Early Communication Intervention for infants with biological risks
- Assist with discharge planning
- Collaborate with the medical and nursing team to establish sustained neonatal hearing, communication and feeding services in the unit
- Participate in follow-up paediatric clinics or establish such clinics
- Provide developmental surveillance services for infants at risk of hearing and communication disorders
- Provide early communication assessment and intervention services to individual mothers and their children, and groups of mothers (See Balton, 2004 for guidelines on caregiver training groups)
- When available, provide transdisciplinary services with occupational therapists
- Provide in-service training to primary health care personnel for improved early identification of infants with risk conditions
- Advocate the importance of Early Communication Intervention
- Provide early hearing detection and intervention services, with a focus on middle ear disease and late identification of hearing disorders
- If parents are available, assessment and intervention services may be offered. It is not ethical to provide services if caregivers are not trained, as the effectiveness of learning is compromised
- A programme that includes the full range of advocacy, promotive, preventative, early identification, assessment, intervention services within a family perspective should ideally be offered, either with an audiology or a speech-language therapy focus
- Transdisciplinary collaboration is encouraged so that individual family service plans may be developed and managed
- Materials, such as pamphlets, posters, presentations and digitally recorded material in different South African languages should be developed
8. Universities

- Continuous professional activities should be aimed at capacity building and encouraging best practice
- Universities should provide leadership in research activities and prioritise research with clinical applicability in the range of South African contexts where Early Communication Intervention services are required
- Undergraduate training in Early Communication Intervention should be expanded and sustained

Key tasks and procedures: Assessment and intervention

- Early Communication Assessment

Since extensive attention has been given to all Early Communication Intervention tasks, the focus is now on assessment and intervention as core functions of practice. The golden standard for the challenging task of infant-toddler assessment within a family-centered framework, is a transdisciplinary play-based arena assessment as advocated by Rossetti (2001, chapter 3). Collaboration between audiologists, speech-language therapists, occupational therapists and paediatric neurologists, even if not involved at the same time, is required during the early communication assessment of an infant or young child and the family. The discipline specific perspectives of these professionals can result in a comprehensive and holistic assessment which produces extensive assessment data so that the most likely cause of the feeding, hearing or communication difficulty can be determined, the different biological and environmental contributing factors can be understood, the developmental areas involved can be identified and described, meaningful recommendations for intervention can be discussed with the family, and knowledgeable referrals can be made, if indicated.

A comprehensive early communication assessment protocol should include all developmental areas, a selection of mainly criterion-referenced assessment instruments, specific toys and materials to elicit communication behaviours, carefully selected age appropriate toys and a variety of elicitation techniques which will interest and challenge, but not pressurise the child. The clinician playing with the child should use the child’s first language, or the mother may be requested to assist and interpret the expressive and receptive language skills which the child demonstrated during the interactions with the adults. For more information on assessment procedures consult the excellent ASHA Guidelines for early communication assessment (ASHA, 2008b:19-50).
Recommended assessment areas (See Table 2 for descriptions):

1. Background information and risk assessment
2. Genetic screening
3. Hearing evaluation
4. Evaluation of all other senses and sensory integration
5. Oral-facial structural assessment
6. Oral-motor functioning
7. Feeding assessment
8. Comprehensive assessment of all speech-language areas and communication interaction, including emergent literacy development
9. General developmental functioning
10. Identify strengths and difficulties

Different informal assessment instruments such as scales and checklists may be used to guide and structure the clinician’s observations while playing with the child (See Table 2). Age appropriate toys should be used to elicit examples of communication behaviours and the child’s ability to imitate. Sufficient assessment data may be obtained during spontaneous parent-child interaction, interactive play between the child and the clinician, and play with 1) construction toys, 2) symbolic toys, 3) material to elicit problem solving, 4) equipment to observe oral motor skills, 5) noise makers to observe listening skills and 6) books. Developmental levels of children with limited experience with toys should be adjusted. Assessment data should yield results that provide direct intervention guidelines.

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<tr>
<th>Assessment areas</th>
<th>Descriptions, procedures and resources</th>
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<tr>
<td>1. Background information</td>
<td>Biographical information, parental description of the problem, prenatal, perinatal, developmental, and medical history, sleeping and feeding patterns, languages the child is exposed to and contexts, family structure and interaction patterns, day care, family needs, stressors, strengths and resources</td>
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<tr>
<td>2. Risk assessment</td>
<td>Compile a profile of prenatal and perinatal risks that may still impact on the child’s development</td>
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<tr>
<td>3. Genetic screening</td>
<td>Observe the child’s physical features and refer to a geneticist if three minor and one major feature is identified</td>
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<tr>
<td>4. Hearing testing</td>
<td>Otoscopic examination, behavioural assessment, otoacoustic emission testing and auditory brainstem response testing or other procedures if indicated</td>
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<tr>
<td>4. Sensory integration</td>
<td>Observe the child’s behaviour in order to categorise sensory responses (auditory, vestibular, kinaesthetic, tactile, proprioceptive, visual, smell and taste) as low registration,</td>
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normal, sensation seeking, sensation avoiding, or sensitive
behaviours
Describe observable features in terms of shape, size, and
symmetry
Describe suck-swallow-breathing patterns, endurance, risk
for aspiration, lip closure, tongue movements, blowing, biting
and chewing skills, straw drinking
Describe drinking and eating patterns, quantities and texture
of food, and independent feeding skill development
Listening skills for sounds and speech; phonological
awareness; language comprehension; communication
functions: behaviour regulation, social interaction and shared
attention; means of communication; phonetic repertoire and
articulation skills; babbling patterns and structure;
phonological development and processes; vocabulary size
and word class analysis; syntactical analysis; emergent
literacy skills; parent-child communication interaction.

- Early Communication Intervention

Intervention planning should include parents so that an individual family service plan can
be drafted for the year. Goals should include all assessment areas where the child
demonstrated difficulties. Long-term goals span over the year, short-term goals span
over a term and session goals should be achievable in one intervention session. Careful
tracking of child progress should be recorded so that accountable services are rendered.
In every intervention session, parents should participate and be informed, trained and
supported. Consult ASHA (2008b, 50-71) for guidelines regarding responsive interaction
approaches, directive interaction approaches, blended approaches, which include focused
stimulation, vertical structuring, milieu teaching, prelinguistic milieu teaching, responsive
prelinguistic milieu training, responsive prelinguistic milieu training, and enhanced milieu
teaching.

The responsive interactional approach of Pepper and Weitzman (2004) has produced
evidence of effectiveness and is highly recommended. Many different early intervention

programmes are published and may be adapted to suit the context and family. Parents should be taught to use routine activities for enhanced language interaction. See Balton (2009) for examples of typical activities that South African parents and children engage in.

**Minimum requirements to perform the tasks**

Audiologists and speech-language therapists should have completed undergraduate Early Communication Intervention training to practice in the field. They may also practice when a period of self study or mentorship has been completed, and when relevant continuous professional development activities are regularly attended. Minimum requirements for intervention in paediatric dysphagia are dependent on undergraduate theoretical and clinical training, and remain the exclusive area of speech-language therapy.

**End note**

The big idea in Early Communication Intervention:

*Those who talk well before school, are likely to learn well at school*

**Resources**


**Key references used in the Guidelines**


With acknowledgement to Prof Alta Kritzinger, CHRIB, Department of Communication Pathology, University of Pretoria, 2010