

ED 021 388

EC 002 723

## THE VERY YOUNG HEARING-IMPAIRED CHILD.

Alexander Graham Bell Association for the Deaf, Inc., Washington, D.C.; World Federation of the Deaf, Rome (Italy).

Pub Date 67

Note- 46p.; Selected papers from the Congress of the World Federation of the Deaf (5th, Warsaw, August 13-17, 1967).

EDRS Price MF-\$0.25 HC-\$1.92

Descriptors- AUDIOLOGISTS, \*AURALLY HANDICAPPED, DEAF, \*EXCEPTIONAL CHILD EDUCATION, HOME INSTRUCTION, INDIVIDUAL CHARACTERISTICS, INFANTS, \*LANGUAGE, LANGUAGE DEVELOPMENT, PARENT PARTICIPATION, \*PRESCHOOL CHILDREN, REHABILITATION, RESEARCH PROJECTS, SPEECH, \*TEACHING METHODS

Identifiers- World Federation of the Deaf

Five conference papers are presented on deaf preschool children and infants. "The Very Young Hearing-Impaired Child" by G.M. Harris of Canada; "The Organisation and Methods of Educational Work for Deaf Children at the Preschool Age" by K. Lundstrom of Sweden; "Speech Formation in the Young Deaf Child" by B. Wierzchowska and R. Szymanska of Poland; "Receptive Language Development in the Deaf Infant, Language Behavior of the 10-24 Month Old Deaf Infant" by A.M. Mulholland of Columbia University in New York; and "Possibilities of Early Rehabilitation of the Small Deaf Child in Its Home Environment and with the Guidance of the Audiologic-Rehabilitation Centre" by R. Szymanska and Z. Pawlowski of Poland. (JD)

**The Very Young  
Hearing-Impaired Child**

**Selected Papers from the  
Fifth Congress of the World Federation of the Deaf  
Warsaw 1967**

**compiled by  
Alexander Graham Bell Association  
for the Deaf  
1537 35th Street, N. W.  
Washington, D. C. 20007**

**U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE  
OFFICE OF EDUCATION**

**THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE  
PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS  
STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION  
POSITION OR POLICY.**

EC002 723

ED021388

## Preface

The Very Young Hearing-Impaired Child is a collection of 5 papers selected from those presented at the Fifth Congress of the World Federation of the Deaf, Warsaw, 1967. These papers were collected and compiled by the Alexander Graham Bell Association for the Deaf, Washington, D. C. Other Collections of papers from the Congress have been compiled and are available from the ERIC Document Reproduction Service. Other collections announced in this issue of Research in Education may be found by consulting the Institution Index under World Federation of the Deaf or the Subject Index under aurally handicapped. Titles of these other collections are:

Communication Methods for the Hearing Impaired  
Cultural Activities for the Deaf  
Diagnosis of Hearing Loss  
Education for the Hearing Impaired (Auditorily Impaired)  
Psychology of Deafness  
Rehabilitation of Hearing  
Sociological Aspects of Deafness  
Training and Qualifications (Teachers and Workers for the Deaf)

## Table of Contents

- The Very Young Hearing-Impaired Child. Grace Margaret Harris.
- The Organisation and Methods of Educational Work for Deaf Children at the Preschool Age. Kariñ Lundstrom.
- Speech Formation in the Young Deaf Child. Bożena Wierzchowska, Romana Szymańska.
- Receptive Language Development in the Deaf Infant. Language Behavior of the 10-24 Month Old Deaf Infant. Ann M. Mulholland.
- Possibilities of Early Rehabilitation of the Small Deaf Child in Its Home Environment and with the Guidance of the Audiologic-Rehabilitation Centre. Romana Szymańska, Zygmunt Pawłowski.



Grace Margaret HARRIS, B.A.M.A.

Supervisor of Preschool Services for the Deaf  
Society for Crippled Children and Adults  
825 Sherbrook Street  
Winnipeg 2, Manitoba  
CANADA

Ped.-24

### THE VERY YOUNG HEARING - IMPAIRED CHILD

/The paper/

So far, in the history of our civilization, man thinks better with words than with any other medium, including mental images. Ability to think in a language and to speak it gives man human identification. The child who cannot learn the language of the community through hearing should be given every opportunity to enjoy his language heritage. The child born with a severe hearing loss or who develops such a loss in early childhood will never acquire the necessary language skills unless he is trained and educated to do so. He must be trained to understand spoken language and to speak it intelligently and intelligibly.

Even the most profoundly deaf child, of so-called "normal" intelligence, can be taught to "say" almost any word, but this is not enough. He must learn to speak the language at a thinking level. It is a simple enough matter to show a little child a ball or a picture of a ball, to train him to lip-read the word and eventually to say it. It is quite another matter to train him to understand and use correctly the more abstract language forms which young hearing children understand and use with ease. We cannot "show" him "is", and "will". Much he must learn in context. Many of the essentials and much of the essence of language can be brought to him while he is still in the earliest formative years.

To-day the guidance of hearing-impaired children begins, on a much broader scale than ever before, in infancy and the early preschool years. For children with sensory-neural or "nerve" deafness, the only avenue to integration into the hearing world so far is through skilled guidance in the home and in the more structured environments of the preschool clinic and nursery school.

### Needs of Hearing-Handicapped Children

Important areas to be considered in working towards adequate guidance of these children include: early discovery and accurate diagnosis; proper referrals; the fitting, wearing and continuous good use of hearing aids; guidance of parents through consultation, observation and discussion groups, required and held regularly; preparatory work with infant and parent; entrance of the child when ready, possibly at age two, into a nursery school designed to meet the needs of the hearing handicapped; and teachers, highly trained and qualified to manage the tasks involved.

### Discovery of impairment

Logically enough, the alert parent tends to be the first one to suspect deafness in the infant or young child. The line of referral then usually proceeds from family doctor to otologist to an audiological services centre and perhaps a hearing aid dealer and finally to a preschool clinic for the deaf and hard of hearing. In most cases, recommendation of a suitable, wearable hearing aid is almost routine. If an audiological centre exists in the community, referral there relieves the parent of the rather bewildering task of deciding on "which" hearing aid to buy. Most preschools are not equipped for hearing aid selection, and on general principle do not consider themselves in a position to recommend one hearing aid over another.

Testing of the hearing of very young children can be problematical, even for the expert. On the whole, workers who are thoroughly acquainted with children as children, as well as with deafness, tend to be most successful in diagnosis,

in referrals, in program planning, and in training. In the case of the infant and very young child, accurate diagnosis is not necessarily synonymous with accurate measurement of the hearing loss. Indeed, anyone demanding an "accurate" measurement of the hearing at such early ages before referring the child known to have a hearing loss in some degree for the necessary training, may arrive at a decision too late for the best possible advantage to be taken of the early learning years. Initially, the important finding is not that the child has a 70 decibel loss at a certain frequency or a loss of 80 decibels at another frequency, but that he has a hearing loss. Any hearing loss is a serious matter, particularly in young children, and it should be dealt with expertly immediately it is discovered, and in all probability long before all the details of the loss are known.

#### Use of Hearing Aids

A properly fitted and suitable hearing aid can be of great benefit to the young deaf or hard of hearing child. It may do much to alleviate, even eliminate, some of the problems created by the handicap. It cannot, however, be a panacea for all problems. It cannot turn the child into one with normal hearing; it cannot do his learning for him; it cannot replace education and guidance; and it cannot take over the responsibilities of parents and teachers. It is merely an aid. Nevertheless, used intelligently under direction, its value can be inestimable.

#### Parent Help and Counselling

A strong preschool program includes guidance of the parents of the hearing-handicapped children. Provision should be made for parents to observe all the children under various conditions, group play as well as individual instruction. Parents may even participate at a "teaching" level. This, however, should be done to strengthen the role of the parent, not to use her as volunteer help nor to replace the role of the professionally trained teacher.

Group discussions, held regularly, possibly once a week, give parents an opportunity to share their problems and successes with one another, and to become more knowledgeable about deafness and children. As a result, more parents become realistic about plans and expectations. There tends to be less rejection of identification with deafness. They begin to realize that burying the hearing aid under clothing, whereby it becomes quite useless, doesn't bury the deafness. They recognize the folly of expecting a young child with impaired hearing to acquire basic, oral communication skills by the mere act of placing him in a hearing environment, and equipping him with a hearing aid. Most leaders in preschool guidance of the deaf and hard of hearing agree that the cooperation of the parents, under good direction, is the strongest factor in favour of success.

In Ontario, alone, children as young as five months have been fitted out with wearable hearing aids after discovery of the deafness, and started on a training program. Possibly, at this moment, younger ones are being given the same advantage. Many individuals ask, "Whatever can one do with a deaf baby?" Probably the most important thing, to be done is to encourage the parents to do with this child what they would have done had he had normal hearing. Parents talk to their hearing babies for many months before the first word is approximated. Parents must talk to their hearing impaired children, show them what is being talked about, and give them opportunity to respond, even if the response is no more than reaching out for a toy or uttering the most unintelligible sound. This is the beginning of understanding and communication. This very early exposure to oral communication is highly instrumental in helping the child to move away from the vocalizations, characteristic of the infant, to verbalizations which are composed of actual speech sounds. The development of all the senses, including whatever hearing may exist, through exposure to spoken language, sense training experiences and good relationships, helps the young deaf or hard of hearing

child to operate closer to peak potential in interpreting life about him. He is given what is required to develop physically, emotionally, socially and intellectually as a whole being.

### Nursery School Aids Child's Development

By the time he is old enough to profit by attendance in a nursery school, at two or three years of age, usually he has begun to use a few words correctly, and his understanding of spoken language is sufficient to make him feel more capable, and more in communication with his fellow beings. Once in the nursery school he learns to live and play with his peers, to understand and use the language of play, and to receive attentively more specific training in oral language under the trained teacher. Teachers working with these children, whether as nursery school teachers or teachers of the deaf, should be able to do so comfortably at a high verbal level, at the same time they know how to create situations whereby each child has an opportunity to reply, to comment and to question.

As the little child with the hearing loss becomes more competent verbally, and learns to think through his problems with language, he becomes better able to control his environment and his own actions. The three-year-old deaf or hard of hearing child whose training was begun in infancy or before his second birthday tends to be more like a three-year-old in all respects than is the five-year-old with the hearing loss, whose training was started at age four, like a five-year-old. Oral language skills promote maturity.

As long as there are hearing-impaired children, there will be those who are dull, average and brilliant, and those from good homes or otherwise. Results of education and home guidance will vary also. Children with secondary handicaps and those multiply handicapped, particularly where these additional handicaps are severe, will need attention which most preschools for deaf and hard of hearing

children are not equipped to give. Nevertheless, deafness still exists as one of the handicaps, and where the child cannot be entered in a nursery school with deaf children, he may be able to attend a preschool clinic for the deaf and hard of hearing with his mother or father periodically, and one or both parents should attend the centre to observe the other children and participate in the parents' classes.

As professionally trained workers and parents review their goals, their discouragements and their hopes, they are constantly reminded that just as the hearing aid cannot take over all facets of required preschool training, neither can preschool guidance, even of the highest calibre, eliminate the need for good training and education all the way to adulthood. Even with the latter, we cannot expect that all deaf and hard of hearing children will eventually become university graduates, any more than we can expect this in a hearing population. Nevertheless, as more children with hearing handicaps are embarked on programs, designed to meet all needs, in infancy and very early childhood, and as education at more advanced levels can be stepped up as a result, we can be hopeful that more hearing-impaired individuals will achieve at more highly skilled levels, academically and vocationally, and thus be better prepared for living in a hearing world.

Suggested Readings

Books

Groht, M., Natural Language for Deaf Children.  
Washington: The Volta Bureau, 1958. \$ 6.00.

Harris, G., Early Guidance of Hearing Impaired  
Children. Hamilton: Hamilton District Association  
for Deaf and Hard of Hearing, 1964. Mimeographed. \$7.00.

Harris, G., Language for the Preschool Deaf Child.  
New York: Grune and Stratton, Inc., 2nd edition, 1963.  
\$6.75.

Pamphlets

Fellendorf, G., "Factors Affecting Parents' Decisions",  
The Volta Bureau, Washington, 1960. .25 cents.

Harris, G., "To Parents of Very Young Deaf Children",  
The Volta Review, January-February, 1964. .60 cents.

The Volta Review, "Research", November, 1963. \$1.00  
"Language Acquisition", January, 1966, \$1.00.



Karin LUNDSTROM

Councillor of Education  
National Board of Education

Stockholm - SWEDEN

Ped. - 26

THE ORGANISATION AND METHODS OF EDUCATIONAL WORK FOR DEAF  
CHILDREN AT THE PRESCHOOL AGE

/The paper/

It is utmost important and of the most considerable value that a hearing handicapped child is diagnosed in early childhood.

Out of 25 counties in Sweden 6 have established hearing clinics with departments for child audiology. Hearing handicapped children can be referred to these clinics from the whole country. Any treatment is free.

The fundamental base for securing full development of these children is the audiological work being performed by a team consisting of medical, technical and educational specialists.

The team at the child department of the audiological clinic at Karolinska sjukhuset in Stockholm consists of a professor of child audiology, a social worker and specially trained preschool teachers. One of them is specialized on child audiometry. The staff contains also child psychologists and an engineer. At other clinics the doctor might be an audiologist, not specialized in child audiology, and more of the responsibility is taken by a pedagogic consultant who is a trained teacher of the deaf.

As soon as the preliminary diagnosis has been undertaken the guidance and first outlines for educational treatment are given. Thereafter the diagnosis is regarded as

a follow-up work with regular checking on a great many aspects. Careful notes, diaries and records from the bases for discussions in staff meetings.

The technical aid is adapted both to every single child and for group work. Before any particular hearing aid is chosen it's in Sweden regarded as most important to develop a child's listening attitude by speech "ad concham". Therefore in most cases an intensive auditory training is started in early childhood.

An individual hearing aid is given free to every single child and it's very carefully chosen with regard to the child's hearing loss. Binaural as well as monaural aid can be given. Recently it's been found by regular control of the technical quality of the individual aids of all pupils at a school for the deaf, that the teacher's daily checking must be extended to regular assistance by technical experts.

If a small child for one reason or other does not like an individual hearing aid, a portable amplifier with big headphones /type Transett 700/ sometimes is used by parents and/or home-visiting teacher. After a period of regular training most of the hearing-handicapped children get a listening attitude and become accustomed to use their individual aids.

Group amplifiers and loup systems are used in the pre-schools. Nowadays a number of Swedish preschools for hearing handicapped children are being integrated with ordinary preschools for children, aged five to seven years. Such a preschool takes a reduced number of children at a time, usually 16 instead of 20. Four to six children might be hearing impaired. The school is provided like an ordinary preschool, but the acoustic milieu is carefully arranged and a loup is adapted. The ordinary staff is enlarged by a specially trained preschool teacher, who handles equipments as group amplifier, tape recorder, instruments for rhythmic training etc.

For children not reaching the listening attitude some pilot studies have been carried out with the Swedish transposer. The use of visual aids, as the so-called Swedish Lucia, seem to be too artificial an approach for preschool children.

The social work is concentrated on giving information to parents and family about the hearing loss and about financial support. As soon as a hearing-loss is detected - it might be as early as at birth - the work for the child is started by parent information. The doctor and the social worker try to solve the initial problems and build a base for the parent's work with their child. The preschool teacher concentrates on observations to find out about the child's needs, whether the child is multiply handicapped, has a progressive hearing loss etc.

Courses for parents are available to both father and mother and supported by free travels and accommodation as well as compensation of other kinds of outlays. As a rule a course lasts for a week and is marked by a strict and objective information about hearing handicap. Different lectures are given by specialists. Counseling and guidance are given with regard to the situation of the family, parents and child. It's regarded as most important that parents meet with other parents. Today there are a number of parents associations cooperating in a fruitful way with the authorities.

The theory at a parents course is accompanied by demonstrations and practical preparations of material for language teaching and speech-training.

The Swedish social welfare system gives a series of privileges to families with handicapped children. Not only the hearing aid is free but also the maintenance of it. A hearing handicapped child might be placed earlier than a hearing child in a preschool for the matter of social adjustment. Except the parent's course the authorities might pay lectures at meetings arranged by parents associations. Special technical aids in connection with telephone,

door-bell or television are free. . . Recently it was decided that a family with a hearing handicapped child aged one year or more should get a state support of 3 300 swedish crowns a year. The social worker is responsible for giving information about all kinds of social support to the family.

During the last ten years a great number of hearing handicapped children have managed to attend ordinary schools as a result of the early training. The heavy burden of the parents is obvious, but a successful work by a home-visiting preschool teacher can be a wonderful relief. If the teacher can share her knowledge with the mother in a warm and friendly atmosphere half the battle is won. The teacher can gradually start sense training, language training, lip-reading and whatever else the child's need might be. The home-visiting teacher suggests new activities with regard to the child's development. Towards the background of success with many children the failures with a special group of children are more evident than before. This group of children does not communicate as expected. Some of them are multiply handicapped children, mentally retarded, emotionally disturbed or otherwise difficult. For those children no special methods are advised, but it is declared that the aim is communication and any method that can help the child is acceptable. Otherwise the method recommended for the work with preschool hearing handicapped children is an oral method using systematic auditory training and lipreading as bases for language development and spontaneous speech.

Compulsory school starts at the age of seven when most hearing handicapped children have attended the voluntary preschool at least during two years. The establishment of a great number of integrated preschool has made it possible for most children to live in their homes. A small number of children are placed in foster-homes during the weekdays or live in boarding schools.

Language development, speech-training and rhythmic training are important in the preschool but it is also said that the adjustment to a life as hearing-handicapped in a hearing world must start in the preschool.

The follow-up diagnostic work during the preschool age ends with performance testing and audiometry. If it's suggested that a child should be sent to a special school for the deaf /a boarding-school/ contact is taken with parents and teachers to facilitate the changes.

Preschool teachers for hearing handicapped children are all trained preschool teachers with additional one year course. In the future this teacher training program will be lengthened with half a year mainly to give the future teacher opportunities to study diagnostics and methods for home-visiting work.



Bożena WIERZCHOWSKA, Romana SZYMAŃSKA  
Institute of Mother and Child  
Clinic of Pediatric Otolaryngology,  
University of Marie Curie-Skłodowska  
Chair of Polish Language  
Warsaw, Lublin - Poland

Comm.Meth.-13

SPEECH FORMATION IN THE YOUNG DEAF CHILD  
/The paper/x/

The essential purpose in rehabilitation for the young deaf child has been to accustom it to comprehend lingual signals and then use them. The articulation method of speech formation is ill fitted for the development of speech perception in a small deaf child, for this does not afford a satisfactory number of interesting information about the immediate surroundings of the child, and does not provide for its mental development. Speech development in the small deaf child should have a similar course as the speech development in a healthy and

x/ Elaborated partly under the co-operation between the Scientific Council to the Minister of Health and Welfare, and the Children's Bureau MHEW - Project WA-CB-3 - Institute of Mother and Child.

normally hearing child, in whom always occurs first the period of just comprehending speech /1/ and only then appears the spontaneous verbal expression.

The method of speech formation in the young deaf child has to be based on transmission of verbal information about the world it lives in, to rouse the child's interest in it, this method must tend to develop the child's communicativeness, provide for general mental and psychological development. Since the deaf child in contacts with lingual signals encounters specific difficulties, ensued from the limited possibilities of perception, the illustrated here method of speech forming in deaf children puts the main emphasis on the indispensability of multiple, more frequent repetition of the same phrases and words with which the child must get acquainted.

At the Otolaryngologic Clinic of the Institute of Mother and Child in Warsaw, have been elaborated sets of texts consisting of phrases and expressions intended for communication with the young deaf child brought-up in its family. The phrases and expressions appearing in these texts concern food, plays, hygienic habits, dressing up, taking walks, etc. In texts designed for later periods of rehabilitation, there are also introduced expressions relating to the closer and farther environment of the child - the flat, the park, the courtyard, the street, the shop, the field, the forest, the road, etc., expressions relating to phenomena of nature and social life. All these expressions and phrases have the form of simple messages, questions, or reports, for inst.:

Daj rękę!  
Give your hand!

Zjedz bułkę!  
Eat the roll!

Gdzie mama?  
Where is mamma?  
Gdzie masz oko?  
Where is your eye?

To tatuś.  
This is daddy.  
Lala śpi.  
The doll sleeps.

Here are used the verbal forms generally occurring in the speech of children at the age from 1 to 4 years. These forms have been selected with the aid of existing elaborations on child's speech /2/, and with consideration to the deaf child's limited possibilities in the scope of perceiving lingual signals. Therefore in texts intended for use in rooms for rehabilitation prevail short verbal forms, mono- or two-syllable ones, distinctly differentiated with regards to the visual set of the speakers mouth, for inst.:

mama - tatuś	je - pije	daj - weź
mamma - daddy,	eats - drinks,	give - take,

Longer verbal forms more difficult to lipread, are gradually introduced in later texts. Similarly are introduced longer and more complicated phrases and expressions. For instance in texts intended for use in the initial period of work with the child, consist of expressions such as:

To lala	Gdzie lala?	Pokaż lalę!
This is a doll	Where is the doll?	Show the doll!
	Lala śpi	
	The doll sleeps	

Later are brought in more complicated phrases, f. inst.:

Pokaż gdzie lala śpi!	Pośadź lalę w wózku!
Show where the doll sleeps!	Seat the doll into the perambulator!

These texts consist of three parts. The first part is intended basically for children from 1 to 2 years of age. It comprises about 100 verbal forms used within the compass of simple phrases constructing a full closed in meaning utterance. These phrases always require response from the child, since they are mostly questions, such as:

Gdzie mama?	Gdzie lala?	Gdzie kotek?
Where is mamma?	Where is the doll?	Where is the kitty?

Pokaż mamę!  
Show mamma!

Pokaż lalę!  
Show the doll!

Pokaż kotka!  
Show the kitty!

Of course at first the response of the child occurs with a considerable help from the person working with it. For example while asking: Where is the doll? the mother or the person who conducts the training should touch the doll with the child's hand and repeat several times: here, here is the doll. This is a doll. And only after a longer application of these kind of exercises, the child will be able to respond to the message: Show the doll! pointing at the doll by itself.

The second part of texts is intended for use with the child in its 3rd year of life /24-36 months/. It is a more comprehensive part introducing about 200 new verbal forms used in longer and more extended expressions than phrases appearing in the first one.

Frequently are there applied prepositional phrases /3/, such as: - The doll sits in the pram. - The dog lies under the table. - Strew the sand into the bucket! The themes of the texts are also extended. Along with phrases relating to games, food, habitual hygienic functions, there is introduced a number of expressions relating to the closer and farther environment of the child, such as the flat, park, garden, field, courtyard, forest, etc. Names of animals and some plants /cow, fish, bird, tree, flower/, and expressions relating to various objects /names of some colours, descriptions of dimensions etc./.

In the third part prepared for children at the age of 4 /36-48 months/, there are introduced about 400 more verbal forms concerning in the first place the farther environment of the child - such as: the street, town, shop, phenomena of nature, elements of landscape, etc. appearing in still more comprehensive expressions. Here are also introduced more names for parts of the human body /initiated in the first part of texts/, names of parts of clothing, parts of plants, etc.

There have purposely not been introduced into the text the so called childlike words or expressions /hypocoristic or the like/, in a limited scope are used diminutives so freely used by adults in contacts with children. Thus in the texts appear expressions:

Daj rękę...                      Włóż buty!                      Gdzie lala?  
Give the hand!                      Put on the shoes!                      Where is the doll?

Gdzie pies?

Where is the dog? - but not such as - Where is the doggy?  
/The Polish language has an ample amount of diminutives used frequently/.

The total number of verbal forms /ab. 700/ appearing in the texts, is less than the number of verbal forms acquired by the normally hearing child within the period from 1 to 4 years /ab. 1500/, but this however suffices to communicate with the child in basic situations, and on essential subjects of its interest, and to develop in the child the habit of communication with the environment by means of speech. A great emphasis is put on possibly frequent and constant repetition of the same expressions and phrases - but of course in relation to the same situations and in connection with the same fragments of reality which they concern, and also in appropriately arranged games.

It is necessary to apply some expressions and phrases in connection with toys and pictures illustrating fragments of reality to which these expressions refer - thus forming in the child more general notions, f. inst. when using the phrase - This car - it must refer as well to the car in the street, as to the car in the picture, and to the toy-car.

In the course of rehabilitation a great emphasis must be on sensitizing the child to visual stimuli; specially essential is directing its attention to the motions of the lips and jaw of the speaker. It is necessary to train the child's efficiency in concentrating

its attention, perceptibility, capability to differentiate objects and phenomena, promote its motor efficiency, sense of rhythm, etc. Very significant is also drawing the child's attention to auditory impressions and affording them to it /f.inst. sounds of instruments such as a drum, a triangle, etc./ even, if the hearing loss is very significant.

In practice the aforesaid methods are not always applied for rehabilitation of the young children at the age from 1 to 4 years. For conclusive is the developmental age of the child and the degree of its speech mastering. If the child does not speak being 3 or older, the rehabilitation starts from texts intended for the youngest children, adequately adapted to the interest and mental capacity of the child. In these cases conducting the rehabilitation with the application of texts provides favourable results.

Mariusz /the only son of the 28-year old motion picture operator with a primary education, and the 23-year old mother with a secondary education, not working professionally; the family is living in a district town situated in the distance of 100 km from Warsaw/ had been referred to the Dispensary at the Institute of Mother and Child, in November 1965. Bilateral deafness /responded to loud sounds of a drum/ was then diagnosed. He was 2 years old, but psychological tests showed significant general retardation, and so the developmental age corresponded to the development of a 15-month child. He did not speak, he was not capable to concentrate his attention on his mother's lips. The work started with training intellectual efficiency in the child, and with explaining to the mother the role of rehabilitation. To the mother had been introduced the texts for teaching speech to children with auditory impairment /primarily the first part/ and she was advised, that in all contacts with the child - appropriately to situation -

to use the phrases and expressions listed in these texts. The mother - what ought to be especially emphasized - with the utmost scrupulosity fulfilled the recommendations. In result after 5 months of primary training and constant contact with speech, Marius started to pay attention to the lips of people speaking to him /March 1966/. Then his specially intensive training started, exercising some phrases and expressions - where is mamma? Where is daddy? Show mamma! Show daddy! After a month of training /April 1966/ the boy when asked: Where is mamma? Show mamma! Where is daddy! - managed correctly to point at mother and father /also in photographs/. In one month more, to verbal messages he managed correctly to respond by pointing at parts of his face and as well parts of other people's faces and the doll's too. In June 1966, he had understood verbal messages referring to toys /give the car, give the doll, give the teddy bear, give the ball, etc./. Within this very period, sporadically, also started the application and exercising easier fragments of texts intended for children at the age of 2 to 3 years - and so phrases and expressions consisting of numbers from 1 to 4, names of pieces of furniture, some names of animals. In October 1966, Mariusz understood messages referring to some pieces of furniture /give the chair, show the table, show the lamp, show the wardrobe/; when asked he could differentiate in pictures domestic animals and some of their functions /f. inst. he managed correctly to point at a picture showing a horse and cow, could point at where the horse is standing, where the cow is eating/, he pointed at and differentiated vehicles /a car, perambulator, airplane, bicycle, tramway, train/. In November 1966, to verbal messages: Draw a doll! Draw a house! Draw a train!, - the boy drew these objects, and also added to these sketches - for the dolls - eyes, ears, hair and hands, and to the houses and trains - windows, doors and chimneys with smoke over them. He understands longer messages. For instance

when asked: Show where the boy eats dinner! he correctly points at the picture.

Also in this very period, after 12 months of exercising verbal perception, and after 7 months from the moment when he started to concentrate on the speaker's mouth, it had been ascertained, that Mariusz was beginning to speak. Spontaneously was developing in him the verbal expression and the use of words: mamma, daddy, doll, car, bird, and he also started drawing up his lips to pronounce words: tramway, train, chimney, wheels.

The next psychological and logopedic tests in January 1967, /a year after his first examination/ when Mariusz was 3 years old, proved that his mental development exceeds his actual age and correspond to standards of more or less 4 years of age. Thus the retardation diagnosed a year ago compensated fully. Mariusz enters eagerly lingual contacts with his mother and other people, cheerfully trains speech. He himself demands to be spoken to, asks names of objects. Spontaneously uses single words, does not construct sentences yet, but understands many longer phrases - even those which have not been exercised with him, but just frequently repeated /f.inst. phrases and expressions referring to clothes/.

The case of Mariusz and other not cited here children, show the purposefulness for rehabilitation work with the elaborated, in the Otolaryngologic Clinic of the Institute of Mother and Child, method of developing speech in the young child with auditory impairment.

The texts for teaching speech indicate what and also how to speak to the child. They provide for using language in a manner which enables the child to acquire words, phrases and expressions. If the child is constantly in contact with some expressions, then gradually it starts to recognize them, relate to situations and fragments of reality to which they refer, finally the child starts by itself to produce lingual signals. At first

these signals are simplified and distorted /similarly as with normally hearing children when they begin to assimilate speech/, but understood by the family. In order to advance speaking skills, apart from speaking to the child about everything that surrounds it, indispensable is also intensive work on particular phrases and expressions, and arranging exercises on a definite theme /f.inst. dressing up, eating, etc./.

The criteria of the child's progress are tests conducted with the use of control texts consisting of a basis number of phrases and expressions which had been exercised with the child. Worth pointing out is that in this period of rehabilitation there are not applied exercises for correcting the pronunciation, but the aim, first of all, is to provide the child for contacts with the environment by means of speech.

References:

1. Kaczmarek L.: Our child learns to speak. Lublin - 1966.
2. Some significant works on speech of the young child:
  - Baudouin de Courtenay J.: Pathology and embryology of language. Filol. I/1885/.
  - Brenstien - Pfanhäuser S.: Speech development in the child. Filol. XV<sup>1</sup> - /1930/.
  - Kaczmarek L.: Speech formation in the child. Poznań 1933.
  - Rzętkowska J.: Contribution towards investigations on speech development in the child. Nowy Targ 3 /1908/.
  - Education at Home and at School. 2 /1909/.
  - Skorupka S.: Observations on the child's language. Spraw. TNW 1949.
  - Smoczyński P.: Assimilation by the child the essential lingual system. Łódź 1955.
  - Szuman S.: Development of the child's language content. Studia Pedagogiczne 2 /1955/.
  - Wójtowicz J.: Some remarks on the function of analogy in the child's speech. Por. Jęz. 9 /1959/.
  - Zarębina M.: Formation of the child's lingual system. Wrocław, Warszawa, Kraków 1965.
3. To the necessity of laying emphasis on prepositional expressions in the speech of the deaf child draws attention:
  - Geppertowa L.: Investigations on the mental conception of spatial relationship by deaf and dumb children and youth. Kraków 1964.



ANN M. MULHOLLAND

Comm- meth.-2

Coordinator Teacher

Preparation Program Hearing Impaired

Columbia University- Teachers College, Dept. of Special Education--Box 44  
New York, N.Y. - USA

10027

RECEPTIVE LANGUAGE DEVELOPMENT IN THE DEAF INFANT  
/Language Behavior of the 10-24 Month Old Deaf Infant/  
/The paper/

The problem encountered by the educator in developing language in the deaf child constitutes a great challenge. The impact of deafness on all aspects of behavior has long been recognized and studied by those in the field. Probably no one aspect has been more "unstudied" yet more in need of study than that of language behavior. While there are norms available on the language development of the normally hearing, particularly oral expressive, there have been few investigations of the language growth of deaf children, receptively or expressively.

Recently linguists have made intensive study of the acquisition and development of language in the normally hearing. Tape recordings of the utterances of very young children analyzed quantitatively and structurally /Menyuh, Weir, Brown and Ervin/ are providing new insights into the process through which the child acquires his native language. The child's innate capacity for language /McNeil/ is hypothesized to be not restricted to the hearing alone. Pivot and open class words leading to the formulation of kernels /sentences/ and to transformations may have significance in early language training when used as initial input for the hearing impaired infant. Linguistic competence may appear at younger ages if a degree of structure is employed.

With earlier diagnosis of hearing impairment at the neonate age, it is crucial that teachers have valid evidence rather than subjective judgment upon which to base their early

language instruction. Vexing questions have been posed for some time. At what age does the infant begin to speechread? What are the factors involved in speechreading readiness? Of what should the input be? Should the initial input be structured to facilitate the acquisition of early language?

In an attempt to determine the answers to some of these questions, developing speechreading was studied.

### Procedures

A timed sampling of behavior was selected as an appropriate technique. Time units of 10 minutes duration were arbitrarily selected and the spacing regulated to alternate 10 minute intervals during the usual therapy session. The target phenomena were selected to provide data on specific aspects of behavior and were semi-coded to ensure objective judgments. Further, the specific procedures for quantifying the information were determined. A group of five graduate students was instructed in the techniques and procedures to be employed.

While this type of timed sampling permits observers to attend to "the behavior stream" and provides a systematic control of the selected target phenomena, it does have several inadequacies as a method. For example, when the observers sat behind a one way vision mirror some of the child's behavior was on occasion blocked from view particularly in the type of activity which fostered mobility. With a recorder in the same room a visual distraction was introduced. With the exception of five time samplings, the recorders sat in the observation room behind a one-way vision mirror. Stop watches were used for timing.

### The Subject

Pamela was initially diagnosed as hearing impaired when she was 9 months and 16 days old. Using the Catell Infant Scale, her mental capacity was determined to be well within normal limits, her Social Quotient as measured by the Vineland Social Maturity Scale was 104. Auditory testing indicated profound deafness. Using calibrated noisemakers 1" from the ear, responses were noted at 80 to 90 db. Free field testing with pure tones resulted in observable responses at 500 cps at an intensity level of 80 db ASA. No responses were

made to frequencies of 1000 cps or above.

Genetic development was normal. Sitting was established at 6 months, but walking had not been initiated. Although there was no previous history of deafness, Pamela's next older sibling, a two and one half year old boy, was deaf. There were two other siblings in the family, seven and a half and four and a half year old girls. The pregnancy had been normal and there were no indications of involvement other than peripheral deafness.

Target Phenomena: The behavior studied included: /1/ the frequency and duration of eye contacts; /2/ the stages of readiness for speechreading; /3/ the rate of utterance of the therapist; /4/ the quantity and extent of speechreading with and without situational clues, receptive language; /5/ the quantity of verbal output of the therapist in a time sampling of 5 minute periods recorded on a Wollinsak; /6/ evidence of inner language development; /7/ receptive and expressive use of gesture language--nonverbal communication; and /8/ recording of the oral expressive output of the child.

It was postulated that by correlating the rate of utterance of the speaker with the average duration of the child's eye contact, the input could be controlled. The vocabulary was to be based on the heard or receptive language of the normally hearing child according to Gesell's norms.<sup>1</sup>

#### Parental Counseling

During the first three sessions /July 19, August 3, August 16/ techniques for talking to Pam were demonstrated to the mother; particular emphasis was placed on the use of a balloon to develop vibratory tactile awareness of voice with the balloon held in such a manner that the mother's lips could be observed, as well. Because of the child's appropriate garb a small drum was used for tactile-vibratory stimulation placed in contact with the child's bare feet. On two separate occasions during the training session the infant initiated the therapists' 2-beat pattern on the drum when she was ten months of age.

1/ Gesell, A. and Amatrudo, C. Developmental Diagnosis. New York: Harper and Bros., 1947, 427-447.

A table model Ambco unit was used both in therapy and at home to provide as much auditory experience as possible, prior to the fitting of an individual hearing aid. The Language used pertained to the development of body concept, Pam's own name /which is actually easier to speechread than this pseudonym/, mama, daddy, and appropriate commands.

Therapy was resumed during the first week of October after an interval of six weeks.

### Findings

1. At the 10 to 11 month stage eye contact was negligible; body contact with the mother was quite frequent; visual contact was directed towards the whole face; vocalizations were frequent when the balloon or the Ambco unit were used, feedback being established.

Table I  
Receptive Language Development  
Frequency of Eye Contact

14 Months

<u>Time Unit</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
With Therapist	25	31	26	33	27
With Mother	13	14	7	5	8
With Recorder				4	11
Total	38	45	33	42	46

Mean number of eye contacts 41

2. Table I indicates the frequency of eye contact during five time units of ten minutes duration during the month of October. At that point no attempt was made to measure the duration of contact only the frequency. There are two factors to be noted here: first, the decreasing need to seek the mother's approval and the developing relationship with the therapist; second, the effect of having a third adult, a recorder in the same room was a visual distraction and doubtless reduced the number of eye contacts with the therapist. To consider the contacts with the therapist increased by the contacts with the third adult a more accurate assessment of the readiness for input is obtained.

Table II

Expressive Language Development  
Incidence of Gesture and Vocalization

14 Months					
<u>Time Unit</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Pushing					
Pulling					
Pointing	10	3	1	4	8
Spontaneous Vocalization	--	--	--	16	18

Table II illustrates the dependence upon a single gesture and the emergence of spontaneous vocalization. No other gestures were used at this time. An important and astute observation was made by Pam's mother when she said, "Pam, first looks at your eyes to see if you're there, and then she looks at your mouth to see what you're saying."

In early October Pam was attending to the eyes primarily but by October 24 her attention was more frequently directed to the lips. Inner language was good. She associated the light switch with the light, the hearing aid with vocalization, the mirror with the imitation of tongue movements and facial expressions. Discrimination of the colors red and yellow was emerging in the manipulation of objects.

She could follow directions with gesture:

Pick up the blocks.	Give it to me. /12N/
Hand me the stick	Pick it up
Come over here. /12N/x	Bye-bye.
Sit down. /12N/	Waving bye-bye /10N/
No.	

Expressively several of these same gestures were used including "No" and "Yes" in the home situation and in therapy but did not always occur during the time period of observation.

At this point the use of the five observers was initiated in a more structured observational recording situation. The therapist's rate of utterance was determined to be three syllables per second and a language list /p.13/ was used

<sup>x</sup> Gesell, A. Developmental Diagnosis

based on the samples of three syllables per second so that the utterance would be complete when the child glanced at the therapist's mouth.

At 15 months the normally hearing child communicates by gesture and jargon. He is more finished in his behavioral organization. Gesell's normative data reveal that the child with hearing offers and shows his toys, turns the pages of a book, begins to recognize pictures, a dog, a shoe, etc., indicates his wants and vocalizes. With Pamela 15 months marked significant growth in language behavior. Inner language continued to develop. Receptive language was marked by deliberate attention to the lips and focusing of attention on the lips until the therapist ceased speaking. However, there was noticeable increase in visual scanning and exploratory behavior. Understanding of eyes, nose, mouth, shoe, baby doll, etc. was apparent. Language input was aided by the use of the Ameco auditory training unit almost constantly during the hour long session. Eye contact was best when she was seated at the table which she voluntarily did. At this time she was aware of sound and pointed to her earphones when a loud was introduced. Thus, she had achieved auditorily the primitive level of hearing.

Expressively during the first three weeks of November there was both increase in vocalization and the development of new gestures:

Waving bye-bye /goodnight/ to the doll.	A questioning gesture.
Throwing a kiss	Going to sleep
Where is it? It's all gone.	I want.

Vocalizations to indicate pleasure, happiness, etc. were readily used. In addition there was an attempt made to say "shoe" and "light". These speech approximations thus indicate that she was at least imitating these movements on the lips and was gaining from auditory clues. The level of comprehension at this stage could be determined only by appropriately relating her speech approximation to the immediate situation. By the time she was 15 months 2 weeks old a plateau in expressive language appeared. This was correlated with increased exploratory behavior which would even in the normally hearing child affect language learning. At this time, 15 months, 3 weeks,

a vocalization developed which remained constant throughout the study, one made on inhalation. Until this time there had been no evidence of any mis-use of the speech mechanisms. It was a pleasurable experience for her tactilely and kinesthetically. In spite of her increased activity Pam continued to turn to the therapist even as she played throughout the room.

Table III represents the number of eye contacts recorded by each of the five observers. As can be seen, four of the five observers were in good agreement. By inspection alone then we might conclude that these observations show good reliability.

Table III  
Mean Number of Eye Contacts  
Per Observer For Total Timed Units

Observer	1	2	3	4	5
	29.87	53	24.1	26	25

Median 26

Of significance is the finding that 85% of the time during which the child related to a single therapist there was sufficient opportunity for input of 2 seconds or longer. At any given period 55% of the time she was mobilized to perceive what was on the lips.

At 16-1/2 months, however, occurred a startling demonstration of the establishment of referential meaning. At this session while reviewing the parts of the face with a large puzzle Pam pointed to the mouth on the puzzle figure and then looked at the therapist. The word was repeated again and Pam put her foot on the table requesting the name for it. The therapist repeated "shoe" several times, and Pam looked each time from her shoe to the therapist's mouth. Then she went to a jar of bubble soap and again pointed to the therapist's mouth. She went around the room in similar fashion, first touching an object and then pointing to and looking at the therapist's mouth. When she was satisfied, she returned to her chair and continued her lesson. It was obvious that while for some weeks she had been responding appropriately to commands, to words representative of objects, referential meaning had not been established. Speechreading developed rapidly subsequently.

From 12-18 months Pamela was continuing to demonstrate language behavior that was somewhat comparable to that of the normally hearing. She could recognize through speechreading and make speech approximations parts of the face, could understand commands with gesture /as does the normal 18 month old/, and had her own "words" for foods, clothing, and commands.

Expressively the vocalization on inhalation continued strongly and was accompanied by a facial expression denoting delight or surprise.

Of particular enjoyment was story-telling when Pam enjoyed being "read to" with her face close to the therapist's. This period was marked by increased duration of meaningful eye contact, improved speechreading, and a lessening of dependence upon tactile input. Tactile stimulation had been pleasurable from the first session in July until February. She could imitate simple rhythms of 3 beats but never beyond 3. During this same period of growth she attempted to recount a story, using gesture and vocalization concerning a situation not present. While she used some of the objects in the room such as cookies, a doll, etc. to explain her story, she was obviously attempting to relate an experience or an anticipated experience, beyond the limits of the room.

To recapitulate, receptive language included at this stage:

Sit down.	Light
Stand up.	Peek-a-boo
Kick the ball.	Hide your eyes.
Mouth	Name
Eye	

Expressive language included speech approximations for:

Eye	Mom
Ear	Daddy
Mouth	Moo /cow/
Schoe	Foods
Light	

Gesture language was decreasing but included seemingly more complex forms:

Where is it?  
Look! /Intake of breath/  
Clapping hands /Good/

Table IV indicates the duration of eye contacts at 15 months and at 18 months. It is obvious that the increase in mobility and the addition of children in the therapy situation decreased the opportunity to speechread.

Table V  
Emergent Gesture Language

	15 Months	18 Months
Pointing	70%	46%
Reaching	27%	18%
Questioning		6%
Bye-bye		13%
No		
Yes		
Blowing a kiss		
Peek-a-boo		
Pushing		
Shrugging		
Fall down		
Taking away the earphones		
Pulling		

At 26 months of age results of four time samplings indicate the effects of exploratory behavior and mobility.

Table VI

Time in Seconds	Percent
1"	53%
2"	22%
3"	7.7%
4"	4.6%
5"	4.6%
6"	2.0%
9"	1.0%

Opportunity for input via the visual modality was considerably reduced with 53% of the eye contacts of one second or less duration. At the same time gesture continued to be represented by pointing and questioning with gestures for up, surprise, and offering emergent.

Developmental schedules /Gesell/ for the normally hearing child at 24 months of age include: 3 word sentences, naming 3 pictures, identifying 5 pictures, and verbalizing about immediate experience, referring to self by name, parallel play and domestic mimicry. Pamela met these standards, however using as noted above gesture and speech approximations to relate experiences out of the immediate environment.

Successful speechreading in phrases or short sentences included 32 words.

thumb	no
mouth	yes
nose	dog
eye	teddy bear
sock	pants
milk	shirt
fall down	jump
bye bye	up
car	down
sleep	fisk
come	light
bed	cookie
egg	hot
cow	spoon
baby	eandy
hair?	own name

Ten speech approximations consistently used included: /m/oo for cow, shoe, bye, mama, eye, mouth, light, ear, mi for mine, me, and baby.

Using both a table unit and an individual aid awareness of sound and gross discrimination were established within the first month of training. Transfer to a group unit was made without interference.

### Conclusion

Study of the reception of oral language by a deaf infant from the age of ten months to 26 months suggests the need for controlled investigations of the language acquisition of the deaf infant, the optimum period for visual input, the number of repetitions necessary, and linguistic analysis of types of input to establish early "sentence sense" and the expected oral approximation.

The development of speechreading in the deaf infant follows sequentially in these phases:

- I. Identification.
- II. Awareness of person beyond the satisfaction of physiological needs.
- III. Attending to the eyes.
- IV. Attending to the mouth.
- V. Awareness of the association between object and lip movements.
- VI. Imitation of movement.
- VII. Symbolic level /referential/ with situational clues.
- VIII. Symbolic level without situational clues.

It is possible that the child may advance to the symbolic level earlier if the input is matched to the duration of the child's visual contact and if the utterance consists of pivot and open class words initially.

Further investigations to provide normative data and the establishment of the linguistic age of the deaf infant and the optimum means for developing linguistic competency using initially both visual and auditory structured input are underway.

### Language List 15 Months

It fell down.	Rock the baby /4/
Baby doll.	Give it to me /4/
Bye-Bye	May I have it? /4/
I love you.	Let's give the baby a bath /7/
Rock the baby /4/	Turn on the light
Sit down	Here's a blue bead /4/
Come here	Put it in the box /5/
Give it to me /4/	Cover the baby /5/
Screw it on	Kiss the baby /4/
Pick it up	Put it in the box /5/
That's fine	Cover the baby /5/
Go to sleep	Kiss the baby /4/
Some more?	Do you want a cookie? /6/
No	Would you like some more? /5/
Close your eyes	Don't put it in your mouth?
Cookie	_____ s a big girl. /5/
Look here	Where are your eyes? /4/
/_____, look./	Baby's going to bed. /6/
Pretty baby	Do you want that? /4/
That's a good girl	What do you want? /4/
	Pull off the pants /4/



Romana SZYMAŃSKA  
Zygmunt PAWŁOWSKI

Institute of Mother and Child  
Central Dispensary of Audiologic-  
Rehabilitation for Children with  
hearing impairment

Warsaw - POLAND

Ped. = 29

POSSIBILITIES OF EARLY REHABILITATION OF THE SMALL DEAF  
CHILD IN ITS HOME ENVIRONMENT AND WITH THE GUIDANCE OF  
THE AUDIOLOGIC-REHABILITATION CENTRE

/The paper/

This paper is to present principles, purpose and methods of work of the Audiologic-Rehabilitation Dispensary for children with hearing impairment, the small deaf child and its family.

Here will be discussed the work with children with severe auditory impairment, at the age of infancy up to 4. It is a group of children previously not comprised with the care of kindergartens or any other organized diagnostic-rehabilitation guidance. However, it is admitted that the period up to 4 years of age is most favourable for rehabilitation of the deaf child, and for creating by other analyzers a compensation system of the injured auditory analyzer. The work of the Dispensary is based on the co-operation with the parents. As a principle - the work with the child is carried on by its mother, and the Dispensary instructs the mother and trains the child, adapting the programme to individual capacities of the child and family, gives training materials in the form of homework, and checks on means of their realization.

The aim of the Dispensary is to maximally employ the potentials of the child and its environment. For the families the Central Dispensary prepares appropriate methodical materials and instructions adapted for particular age groups of children, so that the largest possible group of socially deaf children could attain the skill of communication with their natural environment, and if the child is not afflicted with any other handicap besides deafness, it could attend school with children of normal hearing.

In contacts between the family of the deaf child and the Dispensary can be singled out two stages:  
1/ the period of anamnesis and diagnostic examination, and  
2/ the period of co-operation with the family and guiding the rehabilitation of the child.

The first stage has the purpose to obtain a possibly full record of environmental conditions, hitherto general development and the actual health of the child, its mental level and speaking skills development. The record is compiled according to a set scheme of a health record, and provides documentation in its social, medical, psychological and logopedic parts. Next the child is taken under observation, and through examinations and tests of the otolaryngologist, audiologist, psychologist, phoniatrist, logopedist, and other specialists, if necessary. With every child from the age of infancy or at the time of onset of hearing impairment, is used a temporary hearing aid, since the detailed audiological tests determining the auditory field and reserves of the cochlear organ prove not successful with children not 4 yet.

The second stage has the task to prepare the parents for their work with the child and conducting the respective rehabilitation. To the parents are handed pamphlets on general child development and consequences of auditory impairment. Periodically are forwarded to them booklets elaborated as "Letters on bringing up the deaf child",

which are an adaption to the Polish language of the "Correspondence from John Tracy Clinic". In specially difficult cases, apart from the individual instructions at the Dispensary - home visitations follow. All examinations and counselling are free of charge. Applied are principles of active counselling parents are called to the Dispensary for the appointed visits, without waiting for their own initiative.

The staff of the Central Audiologic-Rehabilitation Dispensary comprising: an otolaryngologist, audiologist, phoniatrist, phonetician, psychologist and logopedist, have elaborated a set of training exercises, which form a basis for co-operation between the mother and the Dispensary. Thus, has been elaborated the programme of development for the child 0-4 years of age, and for this age the texts comprising a fund of notions and suggestions for games and training situations. And also the auditory rehabilitation programme has been prepared.

At the Dispensary, the mother, during her successive visits receives respective sets of exercises for home training concerning: development of psycho-perceptive functions, memory, concentration, thought, motoric efficiency and auditory training - exercises on the differentiation of rhythm, pitch, intensity, and timbre of sounds. Speech training is based on principles of physiological development of speaking skills in hearing children. In the first stage, often up to 2 and 3 years of age, it means combining visual designation or some particular situation with verbal messages lipread by the child from the speaker's mouth. After a short or longer period of development of the so called passive speech, spontaneously or with the aid of the logopedist emerges the so called active speech, that is oral expressiveness. A phonetic analysis of oral expressions and articulation training are not accessible for a 2-3 years old child. Speech correction is conducted with children not before they are 4 or older.

Oral training educates in understanding speech, employing the auditory and visual perception. Mothers are recommended to conduct effications exercises of speech, respiratory and vocal organs.

The rehabilitation of the voice is based on principles of maximal exploitation of the vocal mechanism i.e. appropriate respiration, phonation, the aeral cavities and the thorax. In 2-3 years old children with a significant loss of hearing, the training is started with exercises of the appoggio and phonation of some sonants. With these exercises is worked out the placing of the child's voice, and a basis formed for training the accent in speech i.e. the rhythm, intensity and pitch. The training of articulation is conducted later, when the voice is appropriately set. At the same time work on amplifying the range of voice has to be conducted.

Receptive to the child's developmental age, to the mother are given appropriate rehabilitation recommendations, which she ought to carry out at all natural situations ensued from daily functions. Apart from that the mother gets a list of rehabilitation plays and games.

Besides methodical and consultive work with children of the P.A.D. Centres in the whole country, the Central Audiologic-Rehabilitation Dispensary serves as a District Dispensary for the city of Warsaw and its province, and also for the three other districts of Kielce, where infants and children up to 14 years of age are admitted.

Withing the period from 1964 till the end of January 1967, to the Dispensary from the subordinate region, had been referred 76 children suspected of hearing impairment. After diagnostic procedures, auditory impairment had been found in 69 children. This group after a thorough analysis had provided to evaluate possibilities of early rehabilitation of the infant in its home environment and with the guidance and methods of the Dispensary.

The number of respective age groups, as follows:

Table 1  
Age groups

Children born in 1962	28
Children born in 1963	17
Children born in 1964	9
Children born in 1965	4
Children born in 1966	2
Total	60

This comparison shows, that within the initiating years of the Dispensary's work only in single cases, had been referred children less than 3 years of age. These children had been tested according to schemata elaborated by the staff of the Dispensary. The audiological tests indicated: hearing impairment of 60 db in 3 children, hearing loss of 60-80 db in 20 children, residual hearing below 80 db or lack of response to sounds in the remaining group of 37 children. In respective age groups the results of auditory tests show:

Table 2  
Hearing loss in db.

Hearing loss in db	Children born in:					Total
	1962	1963	1964	1965	1966	
at 60 db	0	1	1	1	0	3
60 - 80 db	10	7	2	1	0	20
above 80 db	18	9	6	2	2	37

As result, in the aforesaid group of children, the psychological tests show about 50 percent of children developed within the standard limit, about 40 percent with mental retardation, and around 10 percent with mental handicaps.

After a year's work under the guidance of the Dispensary, about 13 percent of children from the group of mentally retarded passed to the group of normally developed. In the scope of developing speaking skills, it had been defined, that in the investigated group, none of the children could build sentences. Five of them at the age of 3-4 had been at the stage of a single word-sentence, 18 at the stage of vocalization, 37 could not emit a sound.

Table 3  
Degree of speech mastering

	Children born in:					Total
	1962	1963	1964	1965	1966	
Spontaneous speech						
ungrammatical speech						
single words	3	2				5
vocalization	13	4	1			18
lack of skill to emit articulated sounds, when commended	12	11	8	4	2	37

The above table shows that besides the 2 infants, the rest of the children are afflicted with severe speech retardation, though for 50 percent their general development proves no other injury.

Investigated had also been the environmental conditions, and it proved that 15 of them live in Warsaw, 14 on Warsaw suburbs with fine commutation to the Dispensary, but 31 children live in further areas of the province. In order to come to the Dispensary the parents of these children must travel a long way by bus or railway. Such a trip takes many hours. Quite often it has to be started on the day preceding the visit at the Dispensary.

Table 4  
Place of inhabitation.

Place of inhabitation	Children born in:					Total
	1962	1963	1964	1965	1966	
Warsaw	6	4	4		1	15
Warsaw suburbs convenient commuting to the Dispensary	4	4	4	1	1	14
Warsaw province /very difficult commuting/	18	9	1	3		31

In the process of rehabilitation of the deaf child, the immensely important factors are the environment's possibilities to take care of the child. Professional work of the mother away from home, and also house keeping, especially in a large family with many children, decreases the chance of success of the rehabilitation. In the afore-said group, 40 out of 60 mothers work professionally, or in farming.

Table 5  
Working mothers

Mother's occupation	Children born in:					Total
	1962	1963	1964	1965	1966	
Professional work or in farming	19	12	4	3	2	40
Do not work professionally	9	5	5	1		20

Of no little importance is also the education and the kind of work of the parents. Within the group of referred children - 45 come of workers' families with an elementary a not completed elementary or secondary education.

Tabel 6

The kind of the parents' occupation

	Children born in:					Total
	1962	1963	1964	1965	1966	
Physical workers	24	10	7	3	1	45
Intellectual workers	4	7	2	1	1	15

The direct impact on the rate and effects of the rehabilitation has the frequency of visits at the Dispensary. The number of visits within one month shows the resultant abilities to conduct unaided rehabilitation of the child in its natural environment, the degree of advancement in work of the child itself, the rate of acquiring the training materials, capacity of learning, etc. The frequency of visits at the dispensary depends also on the commuting distance, and home circumstances. In practice, the major parts play the two last factors, and they decide for the frequency of visits at the Dispensary.

Table 7.

Frequency of visits at the Dispensary

	Children born in:					Total
	1962	1963	1964	1965	1966	
1 visit in 2 months	15	8	5	2	2	32
1 visit monthly	14	6	4	1		25
2 visits monthly	1	1				2
4 visits monthly		1				1
8 visits monthly						

As result of the three-year period of co-operation of the Dispensary with the parents, it can be ascertained that in the group of 4-year children, seven parents have adapted themselves to the new tasks, very well. These families scrupulously proceed with the instructed exercises, and on appointed dates come to the Dispensary. Good and intermittently satisfactory work is conducted by 15 parents.

The most frequent faults of this group derive from unsystematically conducted training, caused by objective reasons /sickness, intermittent financial pressure etc./. But 14 families refused all suggestions of training their own children. However, parents of 25 children declared their readiness for work, but they do not yet, know how to conduct it. The work with their children, so far, has been accidental, "from time to time", visits to the Dispensary unsystematic.

Table 8

Co-operation between parents and the Dispensary

Co-operation of parents	Children born in:					Total
	1962	1963	1964	1965	1966	
Very good	3	2	2			7
Good	3	1		2		6
Intermittently good	3	5	1			9
Insufficient	10	8	2	2	2	24
Unsatisfactory	9	1	4			14

Results in the progress of rehabilitation of this group, has not been the subject of this paper. Of importance are some conclusions concerning possibilities of rehabilitation of the deaf child, with the use of the selected by us method. Most important seems the analysis of difficulties, providing for rectification of faults in the period of developing counselling services to the deaf. About difficulties decide:

- a/ the parents' lack of time for engaging in work with the child, and this due to professional work of the mother, large family, or work at the farm,
- b/ lack of pedagogical skill in the parent of the child,
- c/ additional handicaps in the child, retarding or making rehabilitation impossible,
- d/ lack of a sufficient logopedic and pedagogical staff to conduct individual training with the child at its home.

The advantages of rehabilitation carried on by the parents themselves are very numerous, significant and beneficial for the children, that is:

- a/ involving the parents in the action of counselling and training in themselves the skill of getting along with a handicapped child - a hearing invalid - within the frame of the family,
- b/ leaving the child in the family and eschew strained situations,
- c/ owing to lipreading and training speaking skills, the socially deal children gain possibilities of communication with the world about them,
- d/ through an early start of the rehabilitation process there exist possibilities of preparing the child to live in the world of hearing people, and attend school for hearing children /accessible only to those children, whose mental development and speaking skills secure success at school for hearing children/,
- e/ provides a better preparation of children with even general mental handicaps, to special schools.

Possibilities of the early rehabilitation of the small deaf child in its family environment with the guidance of the Dispensary, exist and increase thanks to methods of many-specialized care, education for parents, free guidance and counselling. Never-the-less results depend on many factors of endogenous origin and the child's social circumstances.