

A close-up photograph of a woman with blonde hair tied back, wearing a light pink t-shirt, holding a baby in her arms. The baby is wearing a blue and white striped long-sleeved shirt and is looking towards the left. The woman is looking directly at the camera with a gentle expression. The background is softly blurred, showing what appears to be an indoor setting with warm lighting.

**Electronic data transfer system between well baby clinic and school health system to improve hearing screening protocols**

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Kind & Gezin

# Screening for congenital hearing loss

1. Importance of early detection of hearing loss
2. Existing Guidelines
3. Situation in Flanders
4. Electronic data transfer

# 1. Importance of early detecting hearing loss

*"The **goal** of early hearing detection and intervention (EHDI) is to **maximize linguistic and communicative competence and literacy development** for children who are deaf or hard of hearing.*

*Without appropriate opportunities to learn language, these children will fall behind their hearing peers in language, cognition, and social-emotional development.*

*Such delays may result in lower educational and employment levels in adulthood".*

*From: Executive Summary of the Joint Committee on Infant Hearing (JCIH), Principles and Guidelines for Early Hearing Detection and Intervention Programs (2007)*

## 2. Existing guidelines

### *JCIH Guidelines:*

1. **All** infants should have access to hearing screening using a physiologic measure before 1 month of age.
2. All infants who **do not pass** the initial hearing screen ..... should have appropriate audiologic and medical evaluations to confirm the presence of hearing loss before 3 months of age.
3. All infants with confirmed permanent hearing loss should receive intervention services before 6 months of age.

**= Neonatal Hearing Screening Programme**

## 2. Existing guidelines

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3. All infants with confirmed permanent hearing loss should receive intervention services before 6 months of age.
4. Infants who **pass** the neonatal screening but have a **risk factor** should have at least 1 diagnostic audiology assessment by 24 to 30 months of age.

## 2. Existing guidelines

- European Consensus Statement on hearing screening for pre-school and school-age children, 2012
- Besides neonatal screening, a general hearing screening between the age of 4-7 y is recommended to detect progressive permanent hearing impairment.

### 3. Situation in Flanders

#### 1. Neonatal Hearing Screening

Started in 1998

Automated Auditory Brainstem Response-test (AABR)

Established protocols for screening, referral,  
diagnostic evaluation and revalidation

Performed by Kind en Gezin (Child and Family)

Flemish Governmental Agency

Department Welfare, Public Health and Family

Responsible for preventive healthcare 0-3 years

### 3. Situation in Flanders

#### 1. Neonatal Hearing Screening

- Consistently high coverage >95%

But for 5% of children no neonatal hearing test

- Registration in electronic Child Health Records (Mirage)

Result of test

Possible risk factors for NS hearing loss

Child development data (Van Wiechen Onderzoek)



### 3. Situation in Flanders

#### 2. Hearing screening at school age (36m)

- Switch from **universal** screening at 3y to **targeted** screening at 3y of age of these children who
  - Did not have neonatal hearing test
  - Did have a neonatal hearing test but are at risk of progressive neurosensorial hearing loss
  - Children with familial early onset hearing loss
- Test performed by CLB (Centra voor Leerlingenbegeleiding – Pupil Guidance Centres)

Department for Education

Responsible for preventive health children 3-18y

### 3. Situation in Flanders

#### 2. Hearing screening at school age

- Audiometry test
- Selection of the children based on the information from parent questionnaires
  - Neonatal hearing test
  - Prematurity
  - Congenital CMV infection
  - Head trauma
  - Bacterial meningitis
  - Familial early onset hearing loss

### 3. Situation in Flanders

Neonatal screening

Kind en Gezin

School screening

CLB

### 3. Situation in Flanders

Neonatal screening

Kind en Gezin

Electronic Health Records  
(Mirage)

School screening

CLB

Electronic Health Records  
(LARS)

### 3. Situation in Flanders

Neonatal screening

Kind en Gezin

Electronic Health Records  
(Mirage)

Test Y/N

Risk factors

Prematurity  
CMV  
Head trauma  
Bacterial meningitis  
Familial hearing loss

School screening

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Electronic Health Records  
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### 3. Situation in Flanders

Neonatal screening

Kind en Gezin

Electronic Health Records  
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Test Y/N

Risk factors

Prematurity  
CMV  
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Bacterial meningitis  
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School screening

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Electronic Health Records  
(LARS)



## 4. Electronic data transfer

Electronic data transfer between 2 systems

technical aspects

point-to point exchange?

eHealth platform?

data format?

linking individual files?

legal aspects

privacy

data security

patient consent

## 4. Electronic data transfer

Electronic data transfer between K&G/Lars

First meeting: March 2015

ICT Department Kind en Gezin

IT Department LARS/CLB

Full implementation expected Autumn 2017



## 4. Electronic data transfer

Result:

- Use of existing eHealth Platform - Vitalink
- Direct transfer of dataset of 6 risk factors into LARS
- Creation of 'Vitalink Kindrapport' – 'Vitalink Child Report'
  - PDF extract from Mirage Health records
    - Growth charts
    - Van Wiechen data - development data
  - Attached to LARS health record
  - Available for online consultation by other health professionals and parents via secure eHealth platform (Vitalink)