

Building a government financed Auditory Verbal Therapy programme in Denmark

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Background

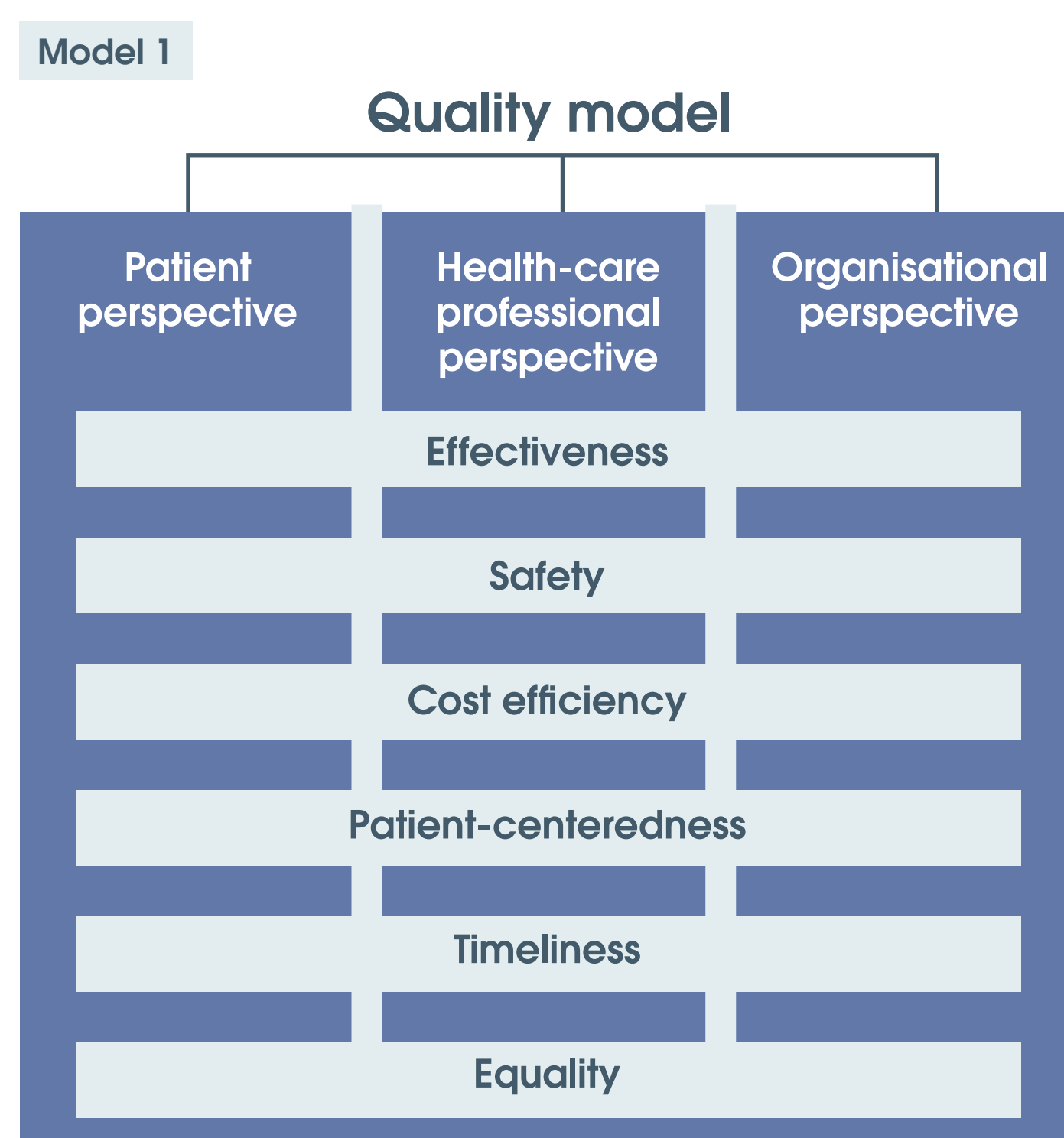
In 2013, Decibel – the Danish Patient Organisation for Children and Adolescents with Hearing Loss, launched a research project investigating the outcomes for 55 Danish children with hearing loss (HL) participating in a three-year Auditory Verbal Therapy (AVT) programme. The results indicated that 80% of the children achieved age-equivalent language after three years. In comparison, 30% of children who received standard rehabilitation achieved age equivalent language (1). Based on these results, the Danish government decided to implement a three-year AVT programme at three Danish hospitals starting September 2017. The programme is, to date, the largest European nationwide monitoring of children with HI.

Objectives

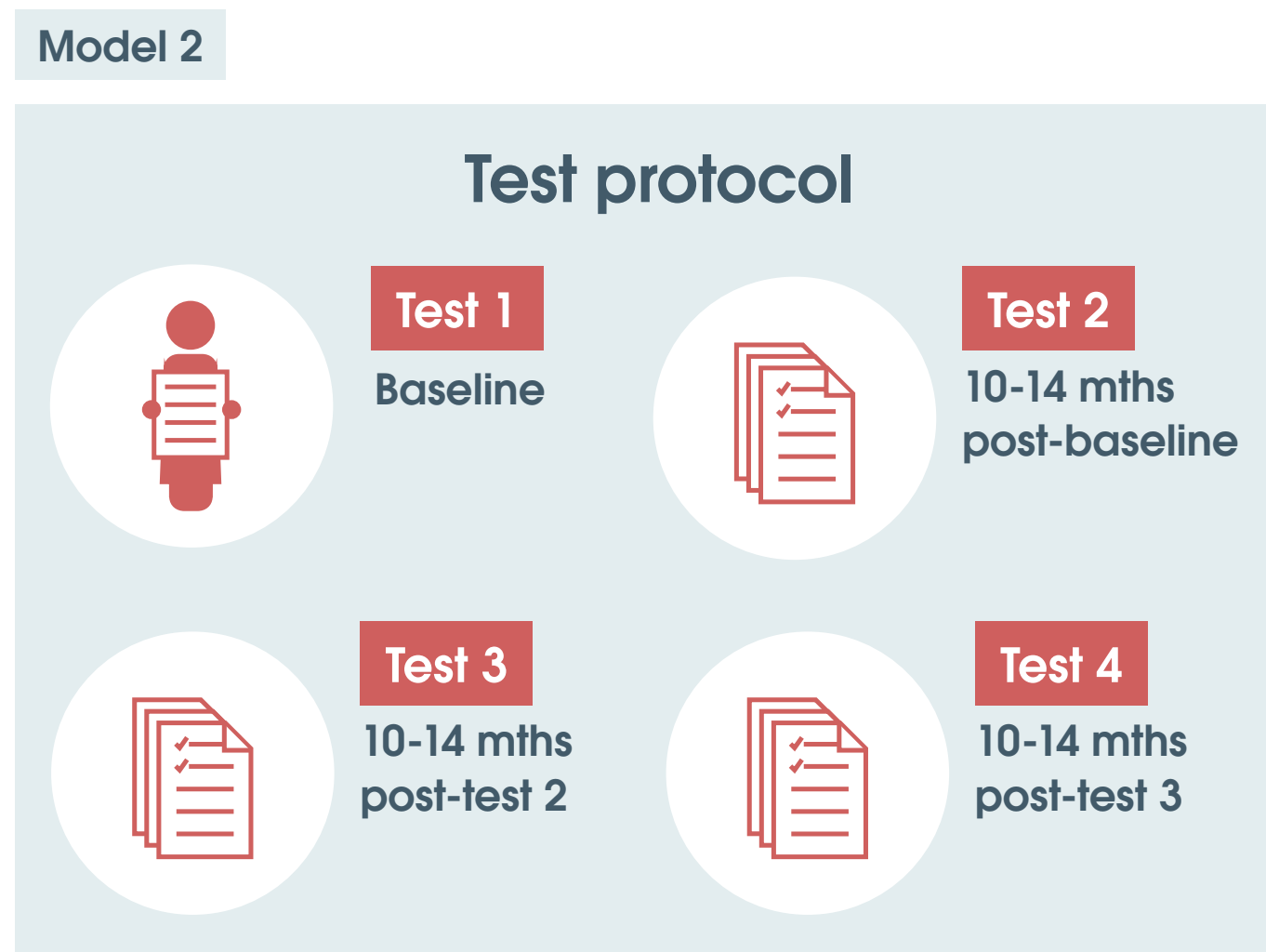
To describe the implementation of a three-year Auditory Verbal Therapy (AVT) programme at three hospital units in Denmark and present preliminary results of outcomes and characteristics of children included in the programme.

Methods

A partnership between the patient organisation Decibel, three highly specialized audiological hospital units, and the Danish Ministry of Health was established to investigate a holistic approach to the implementation of the three-year AVT programme in a Danish hospital setting. A Documentation and Quality Assurance Unit was initiated at Decibel to monitor and assess the implementation of the programme, including parent satisfaction. A quality assessment framework (model 1) guided the implementation and multiple data collection methods were applied to evaluate the programme and parent satisfaction at 12-18 months and at 36 months post-baseline (2-4). A national database was set up to collect data on the children's characteristics and outcomes. Data were collected and managed using REDCap electronic data capture tools (5,6).



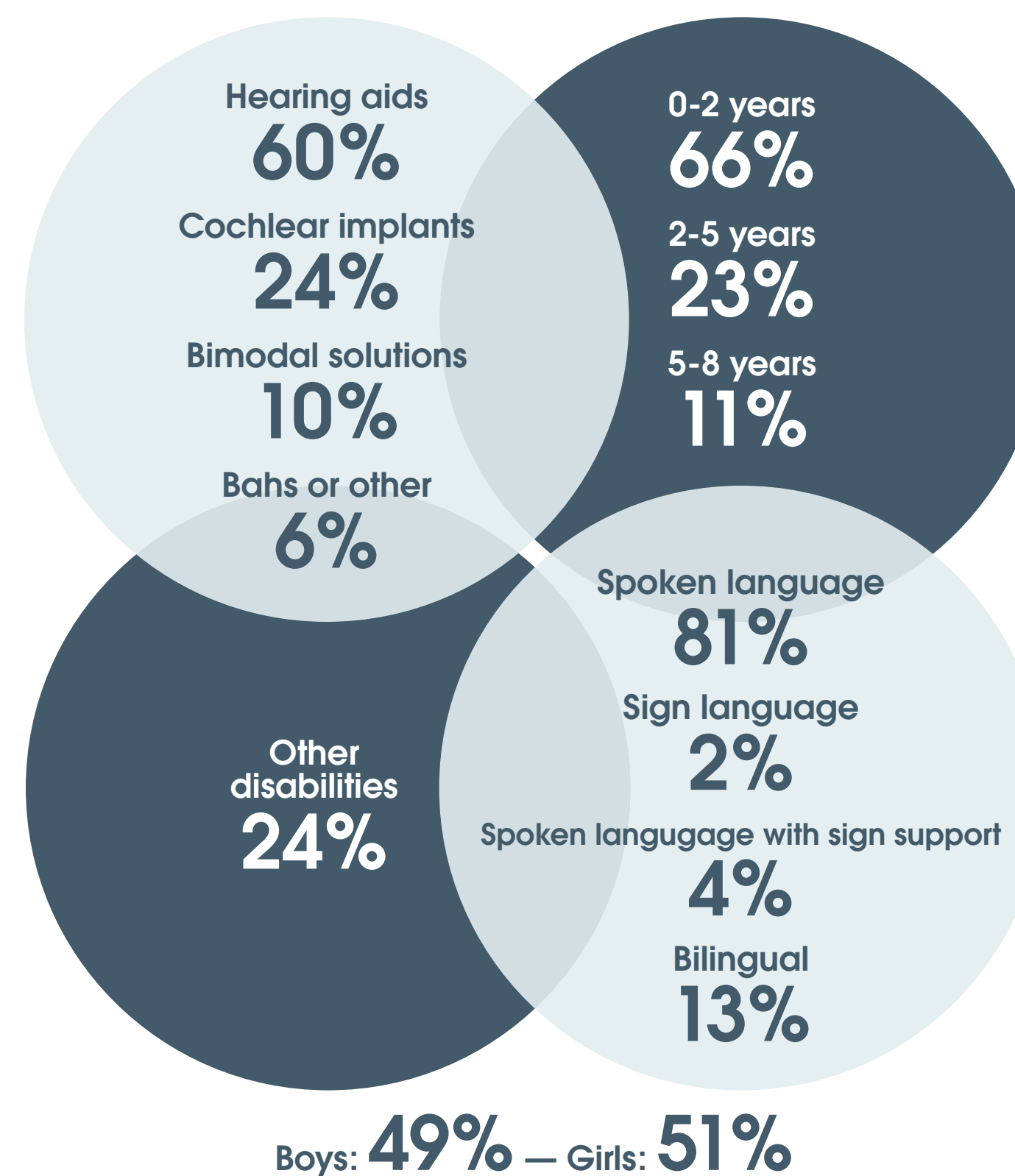
The programme was offered to all children 0-5 years of age with a bilateral HL >40dB (PTA-4). AVT sessions were scheduled at least every second week and was provided by AVT practitioners who were enrolled in, or had completed, an LSLS AVT certification education programme (7). By implementing the programme at the hospitals, where e.g., the child's hearing technology is adjusted, the programme intended to be patient centred, coherent, and holistic. The children were tested annually with either the Peabody Picture Vocabulary Test-4 or the parent reported LittlEARS questionnaire (model 2) (8,9).



Results

By December 2021, a total of 346 children aged 0-5 years were registered in the database. Hereof, 60% had hearing aids (HA), 24% had cochlear implants (CI), 10% had bimodal solutions, and 6% of the children had Baha's or other hearing technology. Most children (81%) used spoken language at home, 6% used sign language or spoken language with sign support and 13% of the children were bilingual. Other disabilities were present among 24% of the children.

Figure 1: Characteristics of the children



Results indicated that 40% of the children were age equivalent in auditory development at baseline. After two years of AVT, this proportion increased to 71%. The proportion of children who had age equivalent receptive vocabulary scores, increased from 56% at year one to 84% after three years of AVT. The parental survey results indicated that 93% of the parents (n=89) were satisfied or more than satisfied with the programme.

References

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Acknowledgements

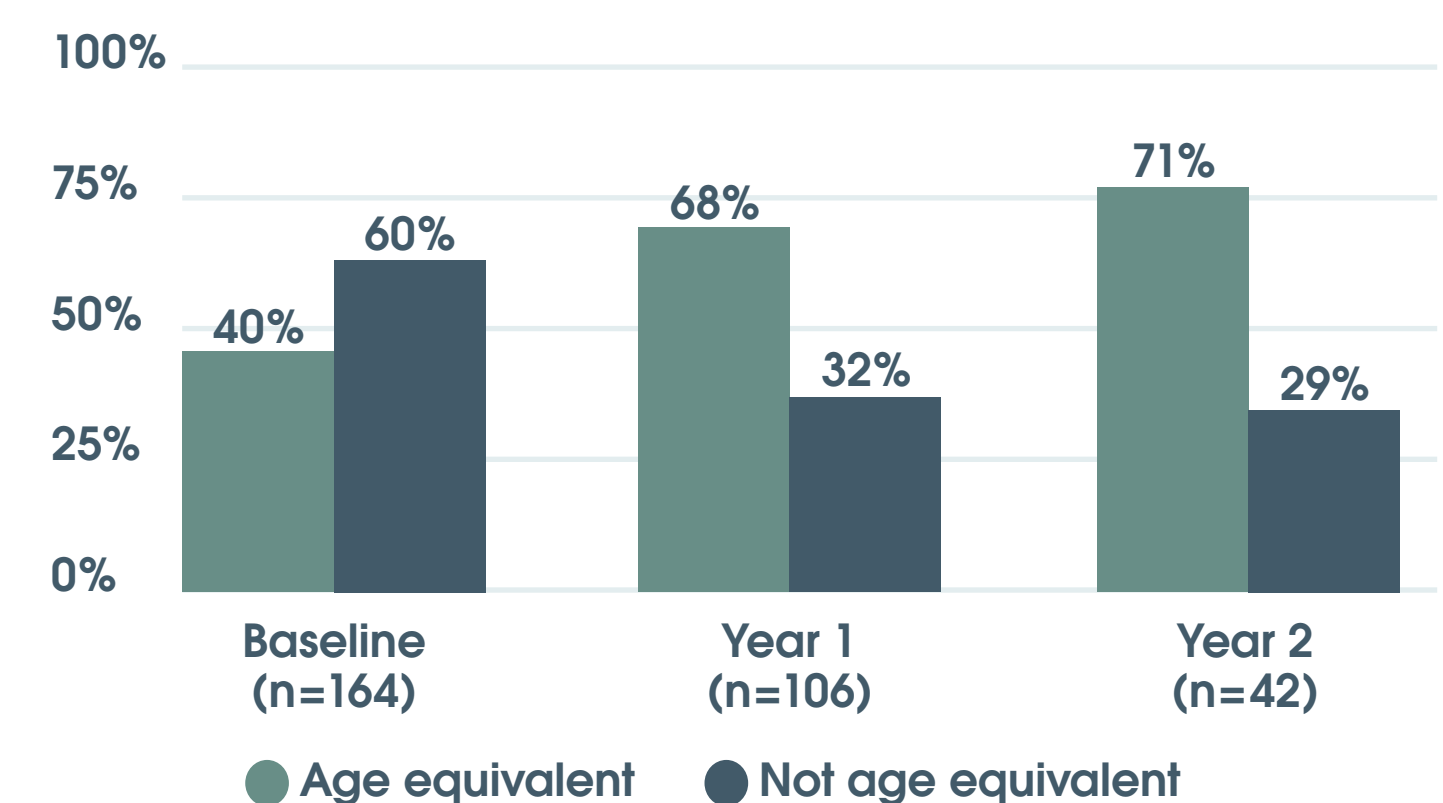
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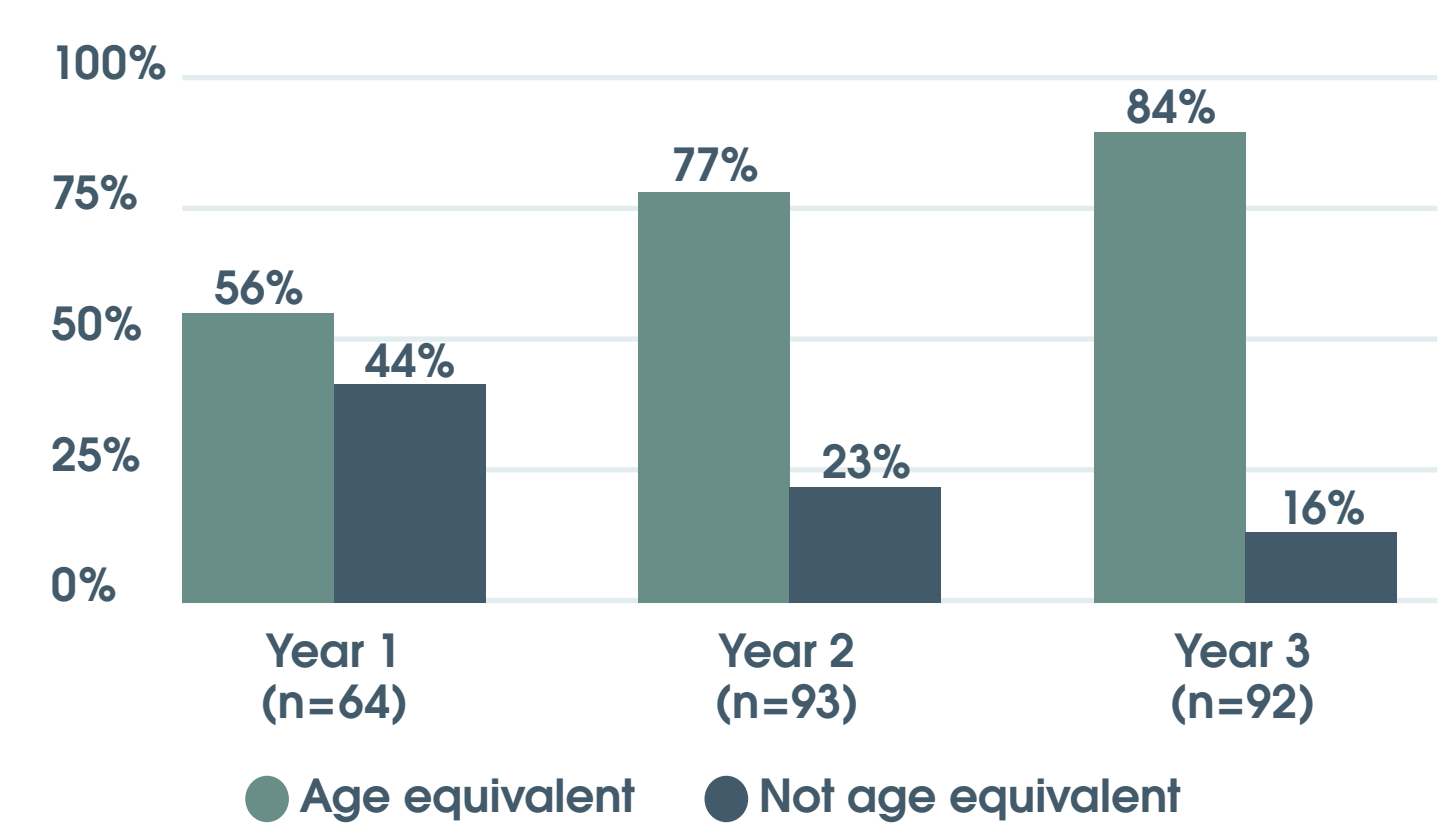
LittlEARS

Figure 2: Auditory development of the children



Peabody Picture Vocabulary Test 4

Figure 3: Receptive vocabulary development of the children



93% of the parents were satisfied or more than satisfied with the programme

Conclusion

- Children aged 0-5 years, with a bilateral hearing loss PTA>40 dB, are now systematically registered and monitored. This provides a unique opportunity to assess the characteristics and longitudinal outcomes for children with HL in Denmark
- After respectively two and three years of AVT, results indicate progress in auditory development and receptive vocabulary for the children with HL, and high parent satisfaction with the programme
- The holistic approach to implementing a large hospital-based programme has proven to be beneficial and successful by making the comprehensive intervention as coherent and manageable for families as possible.

8 out of 10 children achieved age equivalent language after three years