



Unilateral hearing aid use in children with otitis media with effusion (OME)

This project aims to look at hearing aid usage in unilateral fittings at the Children's Hearing Centre (CHC) over a 6-month period (between September 2023 - February 2024).

Introduction

OME is the most common cause of hearing impairment in childhood (NICE, 2023). Around 1 in 8 primary school children (5-6 years) have fluid in one or both ears (Rosenfeld, 2016). The National Institute for Health and Care Excellence (NICE) guidance for under 12s was updated in 2023; it now recommends that a hearing aid can be considered for persistent (over a 3-month period) unilateral hearing loss and where hearing is impacting daily living or communication.

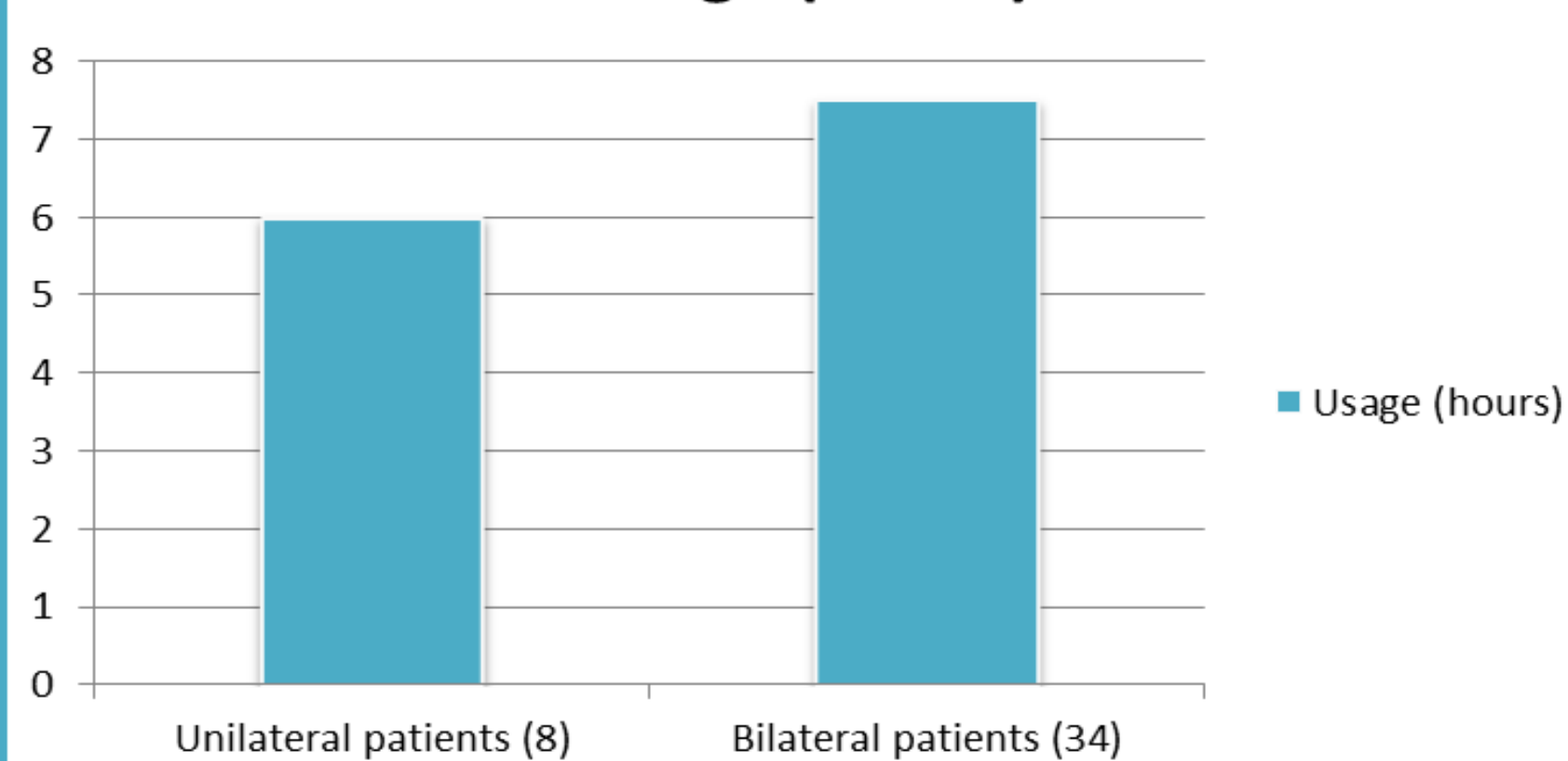
Methodology

We conducted a service evaluation of children with OME and hearing loss, who were fitted with a hearing aid(s) over a 6-month period; 23 unilateral fittings and 60 bilateral fittings. We collected data from Auditbase to examine the following:

- Data logging of unilateral versus bilateral fittings at first hearing aid review.
- Differences in usage and changes in hearing between unilateral fittings reviewed in winter versus spring.

Results

Usage (hours)

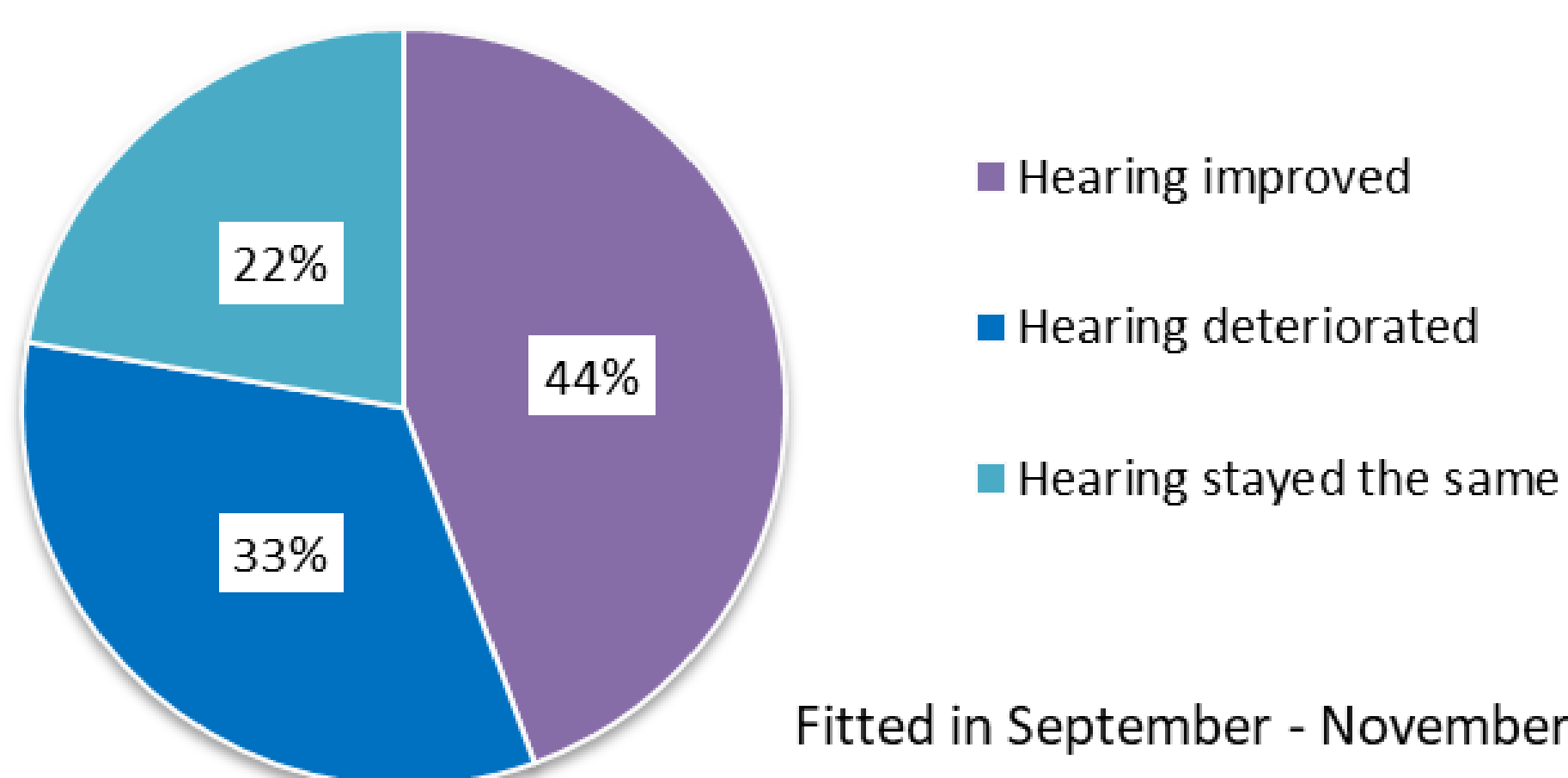


23 unilateral fittings were identified; however, only 8 patients had datalogging recorded. This was mainly due to clinicians not recording datalogging if the hearing aid was returned due to improved hearing thresholds.

On average bilateral patients were wearing hearing aids for 1.5 hours longer than unilaterally aided patients. However, the data is slightly skewed as:

- Many of the bilateral patients were wearing the hearing aids all waking hours however some patients did not wear the aids much or at all therefore reduced the average wear time.
- Sample size was not equal (unilateral group is a 1/4 of the bilateral group).

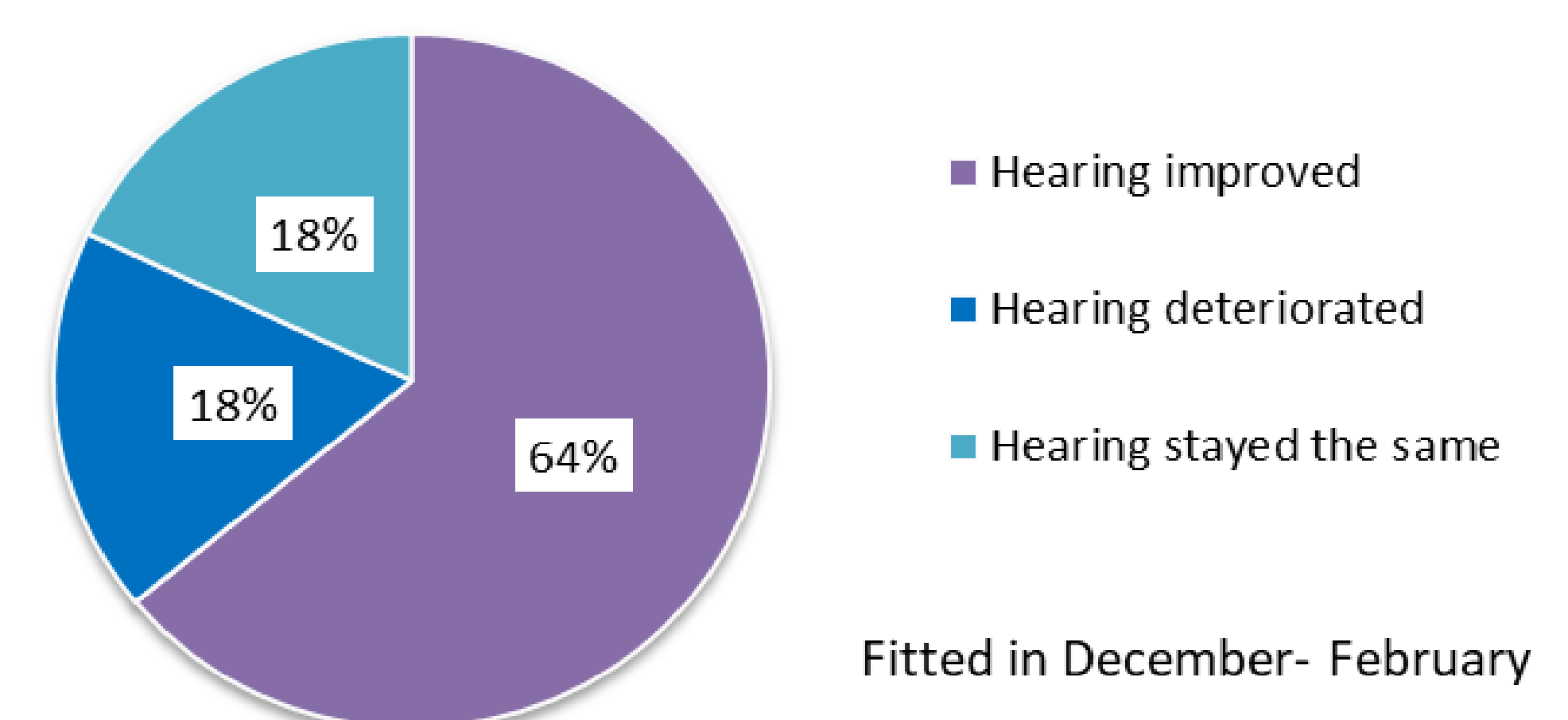
Hearing changes at 1st review (December - February)



20 out of the 23 unilateral fittings attended their review after the initial appointment. This data was split into two groups;

1. 9 patients fitted in September - November and followed up in Winter.
2. 11 patients fitted in December-February and followed up in Spring.

Hearing changes at 1st review (April - June)



Group 1 had a higher percentage of hearing deteriorating likely due to fitting being at the end of Summer and the review being in Winter. Group 2 had a higher percentage of hearing improving again likely due to the time of year; fitting in Winter and the review in Spring.

Hearing aid	Group 1	Group 2
Suspended	33% (3/9)	55% (6/11)
Bilateral needed	22% (2/9)	18% (2/11)

In group 2 over half of the patients had their hearing aid use suspended due to an improvement in hearing thresholds. Both groups had 2 patients whose hearing deteriorated to the point of needing a second hearing aid fitted.

Discussion

- Data logging is slightly lower in the unilateral population compared to the bilateral population. This could be due to the fact, that as hearing is satisfactory in one ear they feel they do not need to wear their hearing aid as often.
- Hearing changes at the review appointment are dependent on the season. According to the above data a child fitted in Summer/Autumn has a 55% chance of their hearing staying the same or deteriorating at their review, however, a child fitted in winter has a reduced percentage of 36%. On the other hand, children fitted in winter have a high chance of their hearing improving at the review (64%) compared to the children fitted in Summer/Autumn (44%).
- The number of patients whose hearing aid use was suspended doubled in Group 2; mostly due to improved hearing (one child had their grommet surgery).
- In both groups around 20% of the children progressed to bilateral fitting which may show the population who are likely to have long-standing OME.

Considerations for service provision

- Ensure data logging is recorded although hearing aid usage may be suspended as could be useful information for the future.
- Consider the above data regarding time of the year when discussing options for parents are uncertain on whether to proceed with a hearing aid or just want more information on potential usage.

Considerations for future research

- Conducting a longitudinal study looking into long term unilateral OME hearing aid users (over a two-year period) and observing whether seasonal/age factors alter usage.
- Investigating outcome measures such as speech test results pre and post a unilateral hearing aid fitting to observe the differences.

References

National Institute for Health and Care Excellence (2023) 'Otitis media with effusion in under 12s'.
Rosenfeld, R.M., Shin, J.J. and Schwartz, S.R. (2016) 'Clinical practice guideline: otitis media with effusion (update)'. Otolaryngology - Head and Neck Surgery 154(1), S1-S41.