

Optimised hearing aids entering the Midlands Hearing Implant Programme (MIHP) : a closer look.

Authors: Lorna Whitehouse, Gemma Mason, Jennifer Parker-George
University Hospitals Birmingham NHS Foundation Trust

Introduction

Optimally fitted hearing aids (HAs) provide maximum speech audibility for adults with severe–profound hearing loss and are fundamental in assessing eligibility for cochlear implantation (CI).

Historically, it was assumed that referred devices were well maintained and appropriately programmed. However, increasing evidence suggests that many patients are referred for CI assessment with sub-optimally fitted hearing aids, affecting outcomes and referral accuracy.

What Does “Optimally Aided” Mean and Why Is It Important?

For experienced adults with severe–profound hearing loss, optimal aided includes:

- Verification against validated targets for key speech frequencies.
- Compression ratios $\leq 3:1$ where possible.
- Binaural fitting wherever possible, with good earmould acoustics.
- Review features: directionality, volume control, connectivity, frequency lowering, feedback management.
- Aim to maximise audibility and minimise distortion.
- Review outcomes and optimise settings around user goals.

(Adapted from BAA/BCIG guidelines (2025), see document for full checklist)

- Aid optimisation is essential for CI assessment.
- Sub-optimal settings mean outcome measures don’t reflect functional ability.
- Proceeding to CI with poorly fitted devices risks inaccurate candidacy decisions and potential loss of residual hearing.

Aims

1. Examine the hearing devices used by patients referred for CI assessment.
2. Benchmark device settings and fittings against current guidance.
3. Identify opportunities for further optimisation and its impact on assessment outcomes.

Methods

Patients were assessed in the CI clinic by a senior NHS audiologist between Dec 2024 – Jan 2025, prior publication of the optimisation guidance.

23 patients were reviewed, examining:

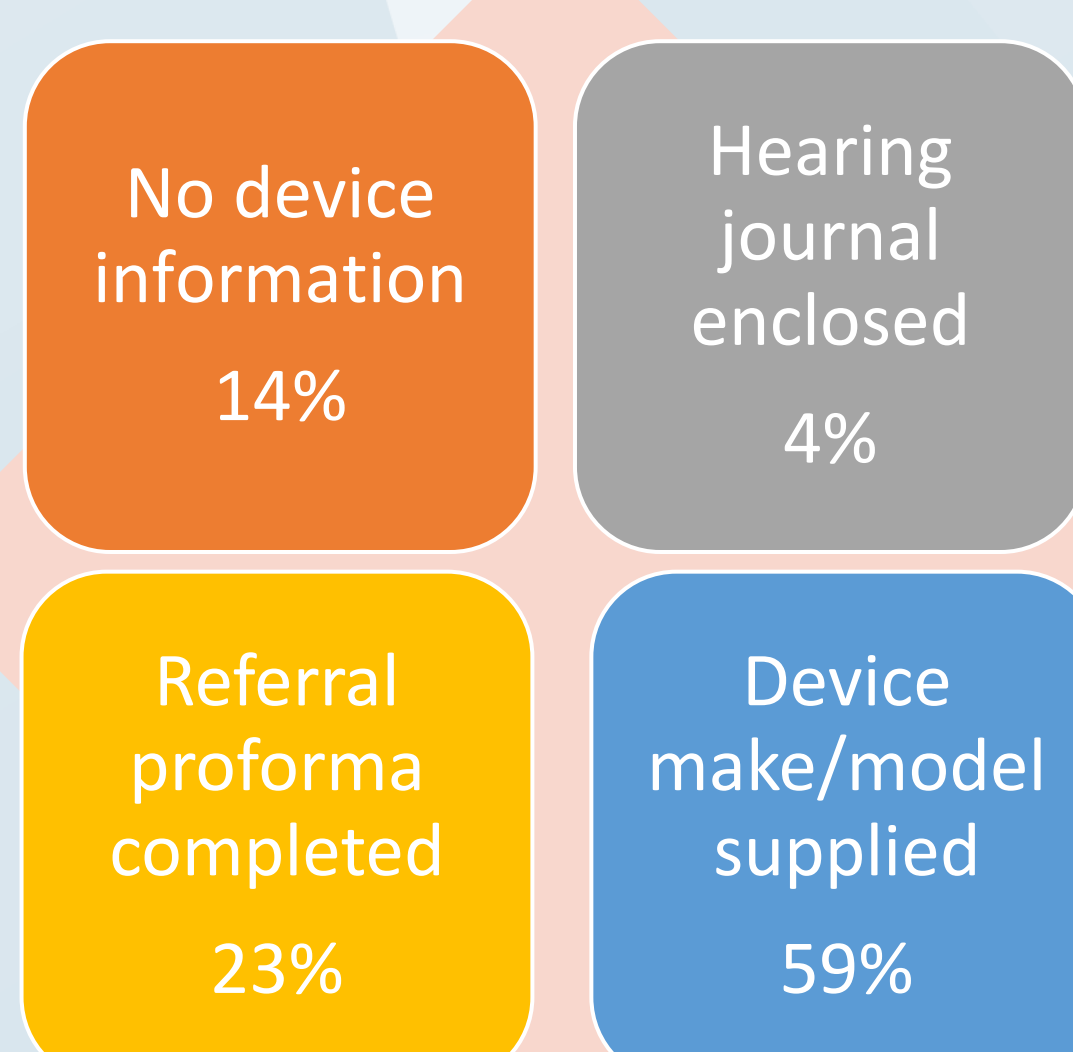
- Device type and power
- Feedback manager status
- Prescription formula and match to target
- Compression ratio
- Use of frequency lowering
- Earmould type and condition

Results

1. Referral Information

Without adequate referral information, we cannot be confident that devices are optimised, requiring extra contact with referrers, new earmolds or HA reprogramming.

- ➔ Limited referral data delays assessment.



Results

2. Device Accessibility

- 43% of devices could not be read (80% due to software issues; 10% device not brought; 10% no device issued).
- Test-box analysis was possible in only 13%.

- ➔ Inaccessible device information hinders optimisation checks.

3. Formulas, Targets, and Verification

- Prescriptions used: NAL-NL1, NAL-NL2, DSL v5, and proprietary settings (most common: NAL-NL2).
- Real-ear measures (REMs) documented in only 21% of cases; 75% of these had justified deviations noted in referral information.

- ➔ Limited REM data reduces confidence in optimisation.

Findings: Benchmarking Against Guidance

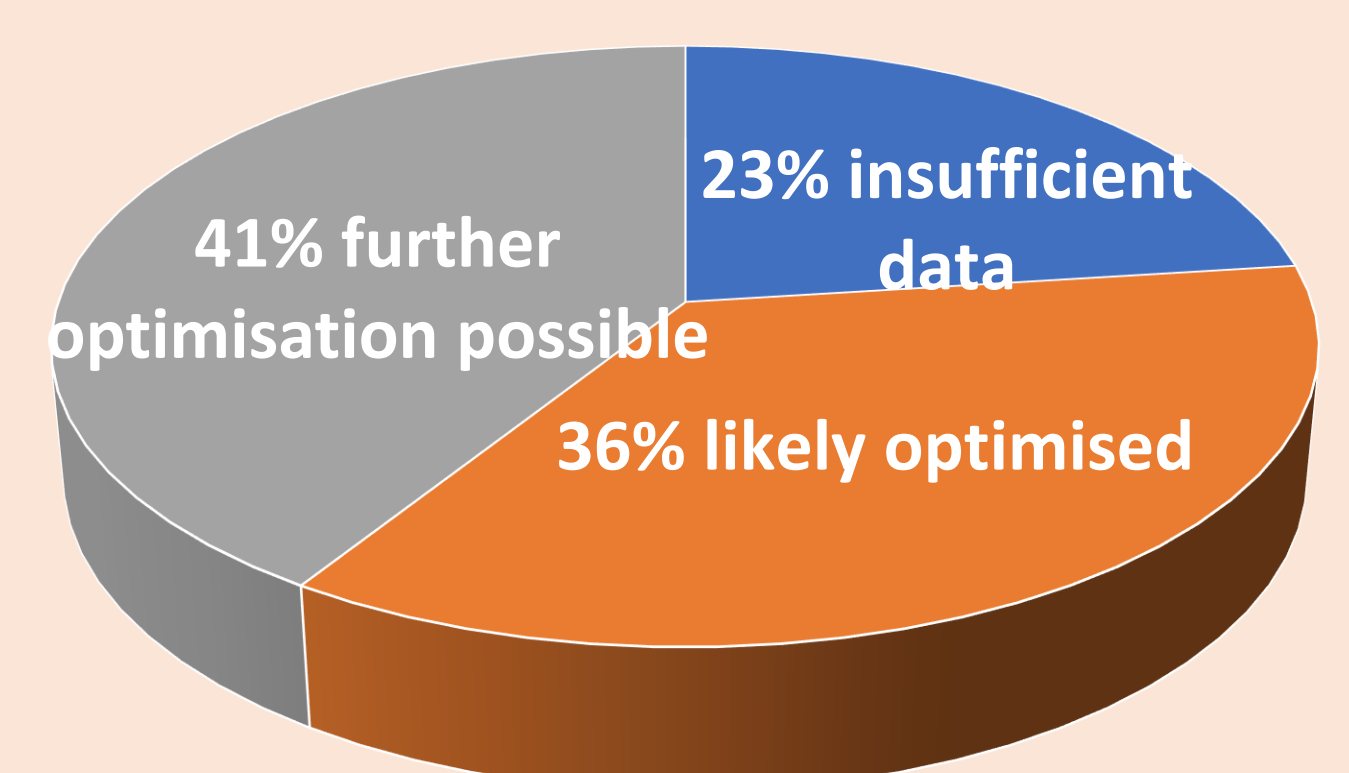
Guidance	Our Finding
Earmould comfortable, deep, and well-fitted	32% had subjectively old/inappropriate moulds
Compression ratio < 3:1	77% compliant; 23% > 3:1
Frequency-lowering must be verified and validated	Active in 39%; half of which had it activated strongly, with no evidence as to whether this has been verified or validated
Feedback manager should not limit gain	40% showed gain limitation due to feedback control

Take-Home: Optimised or Could Do Better?

41% of reviewed patients could benefit from further HA optimisation (e.g., new moulds, adjusted gain, or verified settings) which could provide them with better results.

There was a lack of referral information to justify whether these optimisation steps had already been taken.

Are Hearing Aids optimised?



Conclusion

Optimised HAs are essential in establishing CI candidacy - yet **41% of patients referred used suboptimal devices** with inadequate settings, poor earmould fittings, or insufficient referral information.

Improving optimisation before referral will;

- enhance hearing outcomes
- streamline CI assessments
- avoid unnecessary delays in care

Collaboration between audiology teams, CI champions, and referrers is crucial to ensure all patients enter the CI pathway with documented, verified, and truly optimised hearing aids.

References: British Academy of Audiology (BAA) & British Cochlear Implant Group (BCIG) 2025, *Guidelines for the definition and management of ‘optimally aided’ for experienced adult hearing aid users with severe and profound deafness*