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New Models of Cochlear Implant Care: Today and in the Future

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Learner Outcomes



After this course, participants will:

- ✓ List the limitations of the current adult cochlear implant care model
- ✓ Describe how the current adult cochlear implant care model can be modernized to lead to more patient-centered care
- ✓ Explain the research that supports an evolving adult cochlear implant care model

Patient-Centered Hearing Care



Traditional Health Care

- Professional is the expert and tells the patient what to do and when
- Patient is expected to understand and follow the professional recommendations

Patient-Centered Health Care

- Patient identifies their own needs and preferences
- Professional is there to actively listen to the patient and guide them through care
- The patient is in charge of their condition and utilizes self-management when appropriate

“...those with long-term conditions who play a role in their day-to-day management, and who are appropriately motivated and actively participate in their care, are more likely to adopt better health behaviors that lead to better patient outcomes.”¹

Information taken from the Ida Institute’s PCC Knowledge Bank: <https://knowledgebank.idainstitute.com/>

1) Ferguson M, Maidment D, Henshaw H, Heffernan E. (2019) Evidence-based interventions for adult aural rehabilitation: That was then, this is now. *Seminars in Hearing*, 40:68-84.

Converging Trends



Increasing Awareness

Guidance, such as the 60/60 referral criteria¹, makes it easier for professionals to know who might be a candidate

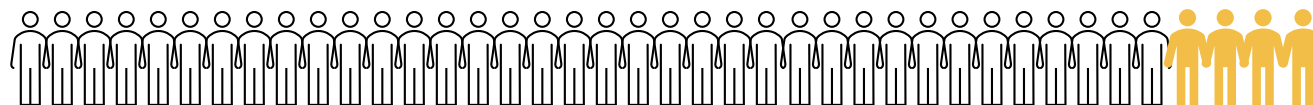
Aging Population

By 2030, 61 million people will be aged 66-84 and 9 million will be 85+²

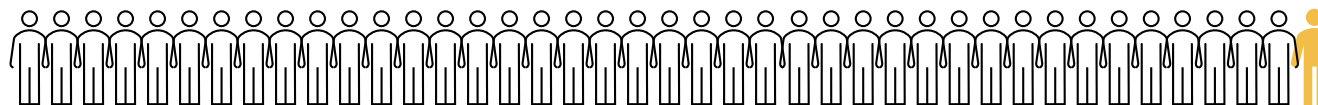
Expanding Indications

New indications for Single-Sided Deafness and expansion of criteria for Medicare means that more patients are potential candidates for cochlear implants

In 2015, CI utilization in the US was at 12.7% of patients who met audiological criteria³



Now, with expansion of indications and an aging population, that rate is 2.1%³



1) Zwolan TA, Schwartz-Leyzac KC, Pleasant T. (2020) Development of a 60/60 guideline for referring adults for a traditional cochlear implant candidacy evaluation. Otol Neurotol. 41(7):895-900.

2) Knickman JR, Snell EK. (2002) The 2030 Problem: Caring for Aging Baby Boomers. Health Serv Res. 37(4):849-884.

3) Nassiri AM, Sorkin DL, Carlson ML. (2022) Current estimates of cochlear implant utilization in the United States. Otol Neurotol, 43(5):e558-e562.

When to consider a cochlear implant evaluation (adults)



77%

Of recipients say if they could do it over again,
they would have gotten their cochlear implant sooner¹



96%

Of patients meeting the 60/60
criteria below are **cochlear
implant candidates²**

**≥ 60 dB
Audibility**

Pure tone average greater than or
equal to 60 dB (500, 1000, 2000 Hz)²

**≤ 60 % Speech
Understanding**

Unaided word recognition score less
than or equal to 60% in the better ear²

Or if your patient experiences ANY of the following:

- Struggles to hear on the phone
- Has difficulty understanding others
- Withdraws from social events
- Often needs others to repeat themselves

1) Cochlear internal estimate, recipients data.

2) Zwolan TA, Schwartz-Leyzac KC, Pleasant T. Development of a 60/60 guideline for referring adults for a traditional cochlear implant candidacy evaluation. Otol Neurotol. 41:895-900.

Hearing Satisfaction¹: Pre-op vs 6 Months (N=95)



Bilateral Hearing Aids (Appropriately fit HAs)

Smart Bimodal (Nucleus 7 SP + ReSound HA)

HEARING PERFORMANCE *Satisfied or Very Satisfied*

9%

95%



Ability to understand
what is said on TV

13%

76%



Ability to understand
Conversations in a small group

8%

79%



Hearing performance in
background noise

2%

58%



Ability to listen to
and appreciate music

13%

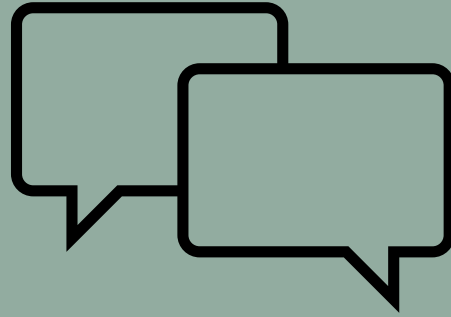
68%



Ability to understand
people on the phone

6%

71%



What evidence do we have about the model we use
to care for adult cochlear implant patients today?
How well does it work for patients?

Current clinical model: Opportunities for change

There is no standardized approach to the delivery of post-operative cochlear implant care¹

Traditional care pathway for patients has not changed in 30+ years and requires frequent clinic visits¹

Adherence to the traditional pathway is poor – one study demonstrated only 35% of patients attended the 24 month visit²

Audiologists in cochlear implant programs spend a significant portion of their time on non-billable services and billing practices are inconsistent³

The burden associated with follow-up care can be significant for patients⁴

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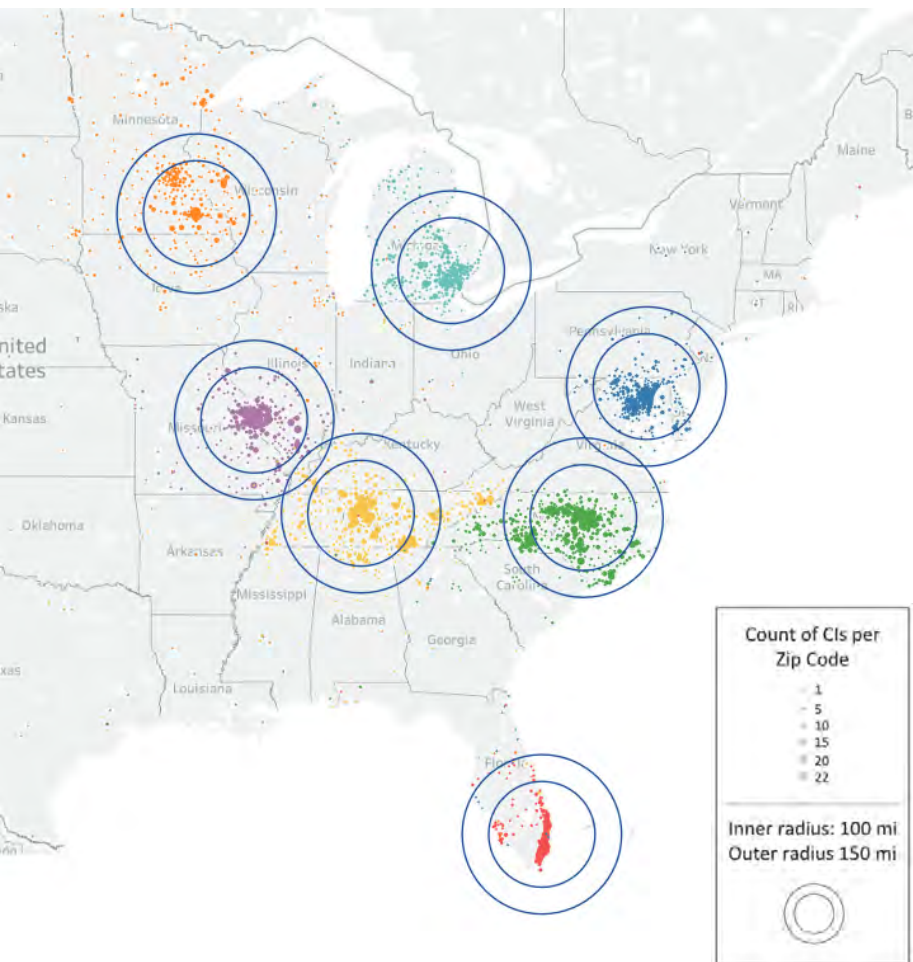


What it takes to get a cochlear implant



Nassiri AM, Marinelli JP, Sorkin DL, Carlson ML. (2021) Barriers to adult cochlear implant care in the United States: An analysis of health care delivery. Semin Hear. 42(4):311-320.

Patients Live Near Cochlear Implant Centers



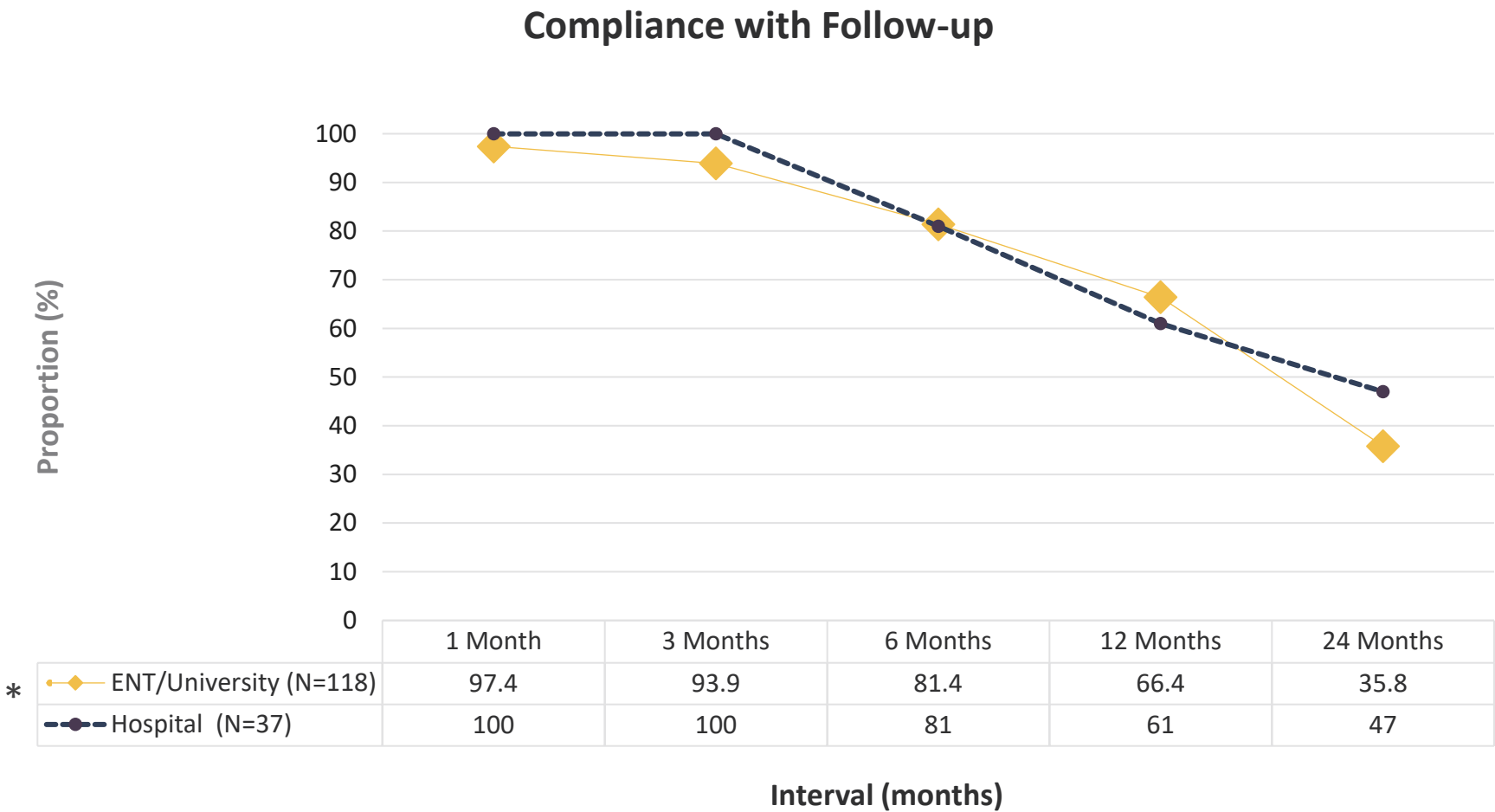
- The relative scarcity of cochlear implant centers in certain areas of the US has implications on access to care
- 71% of patients receiving care at seven large centers were within 100 miles of the clinic¹
- In a recent survey by Cochlear, patients reported travelling a mean of 104 miles to get to a clinic²
- As centers grow, consideration should be given to geographical barriers faced by patients

1) Nassiri AM et al (2022) Catchment profile of large cochlear implant centers in the United States. Otolaryngology, 167(3):545-551.

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2) Internal survey of CI Clinicians and Patients, January 2023, Data on File

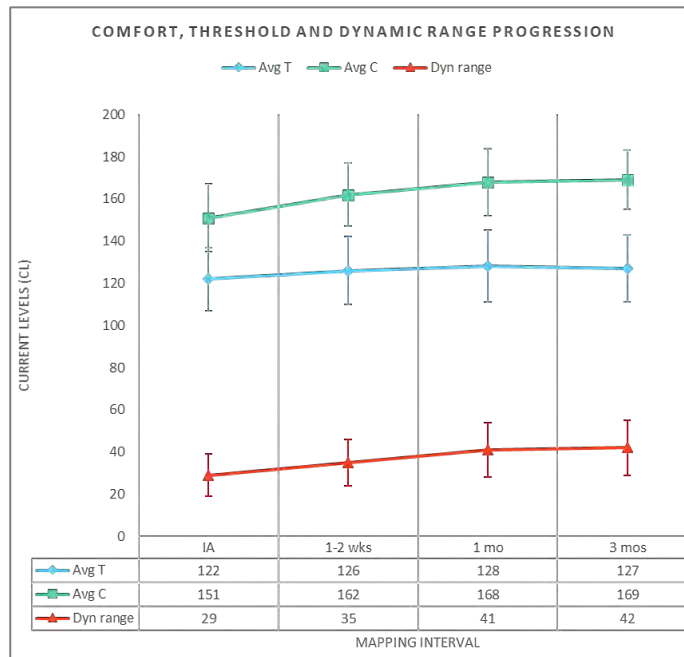
Patient Adherence to Follow-up Care



Shapiro SB, Lipschitz N, Kemper N, Abdelrehim L, Hammer T, Wenstrup L, Breen JT, Grisel JJ, Samy RN. Real-World Compliance With Follow-up in 2,554 Cochlear Implant Recipients: An Analysis of the HERMES Database. Otol Neurotol. 2021 Jan;42(1):47-50. doi: 10.1097/MAO.0000000000002844. PMID: 33165156.
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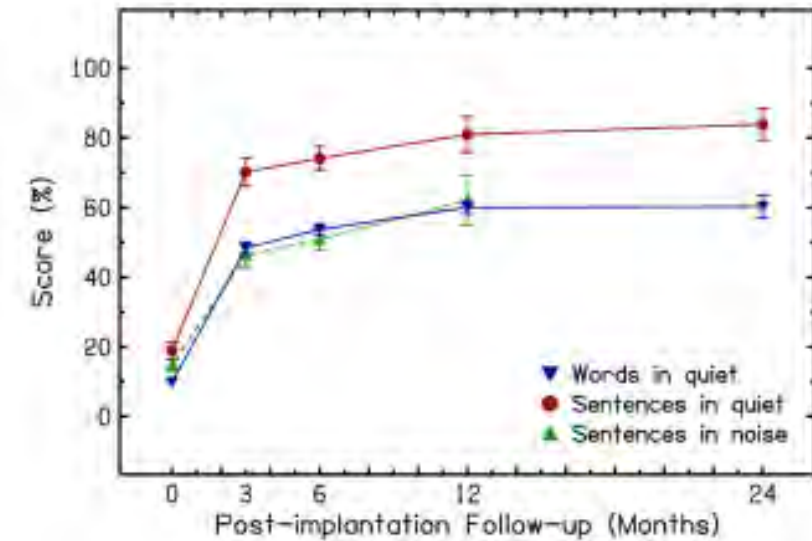
Outcomes Stabilize shortly after Implantation

Data from the Nucleus CI532 study shows that MAP levels stabilize within the first three months of implant use.¹



Nucleus® CI 532 data 2019 N=60

In a systematic review of literature, significant improvement in speech perception scores were seen only in the immediate postoperative period up to 3 months.²



1) Kelsall D, Lupo J, Biever A. (2021) Longitudinal outcomes of cochlear implantation and bimodal hearing in a large group of adults: A multicenter clinical study. Am J Otolaryngol, 42(1):102773
 2) Ma, C., Fried, J., Nguyen, S. A., Schwartz-Leyzac, K. C., Camposo, E. L., Meyer, T. A., Dubno, J. R., & McRackan, T. R. (2022). Longitudinal Speech Recognition Changes After Cochlear Implant: Systematic Review and Meta-analysis. Laryngoscope. <https://doi.org/10.1002/lary.30354>

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New Cochlear Implant Delivery Models

Improving Care for Cochlear Implant Patients



GOALS: Patient Centered Care, Standardization & Scalability

Use patient hearing goals, satisfaction and outcomes to influence clinical decisions while supporting clinic efficiency.



Designed for
general clinical
practice



Focused on
adult clinical
care after
cochlear
implantation



Grounded in
clinical evidence
and research

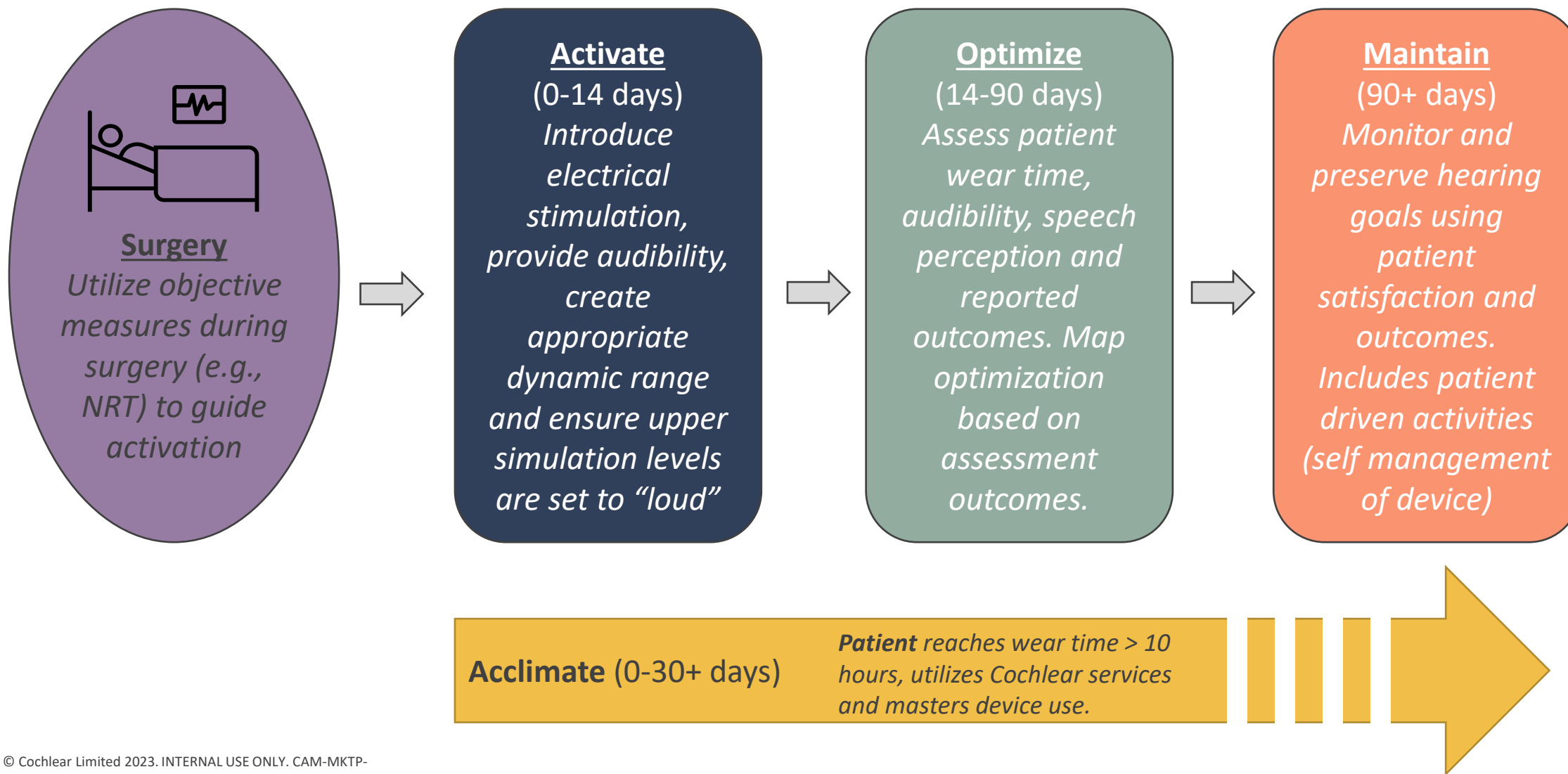


Utilizes a
combination of
delivery
methods



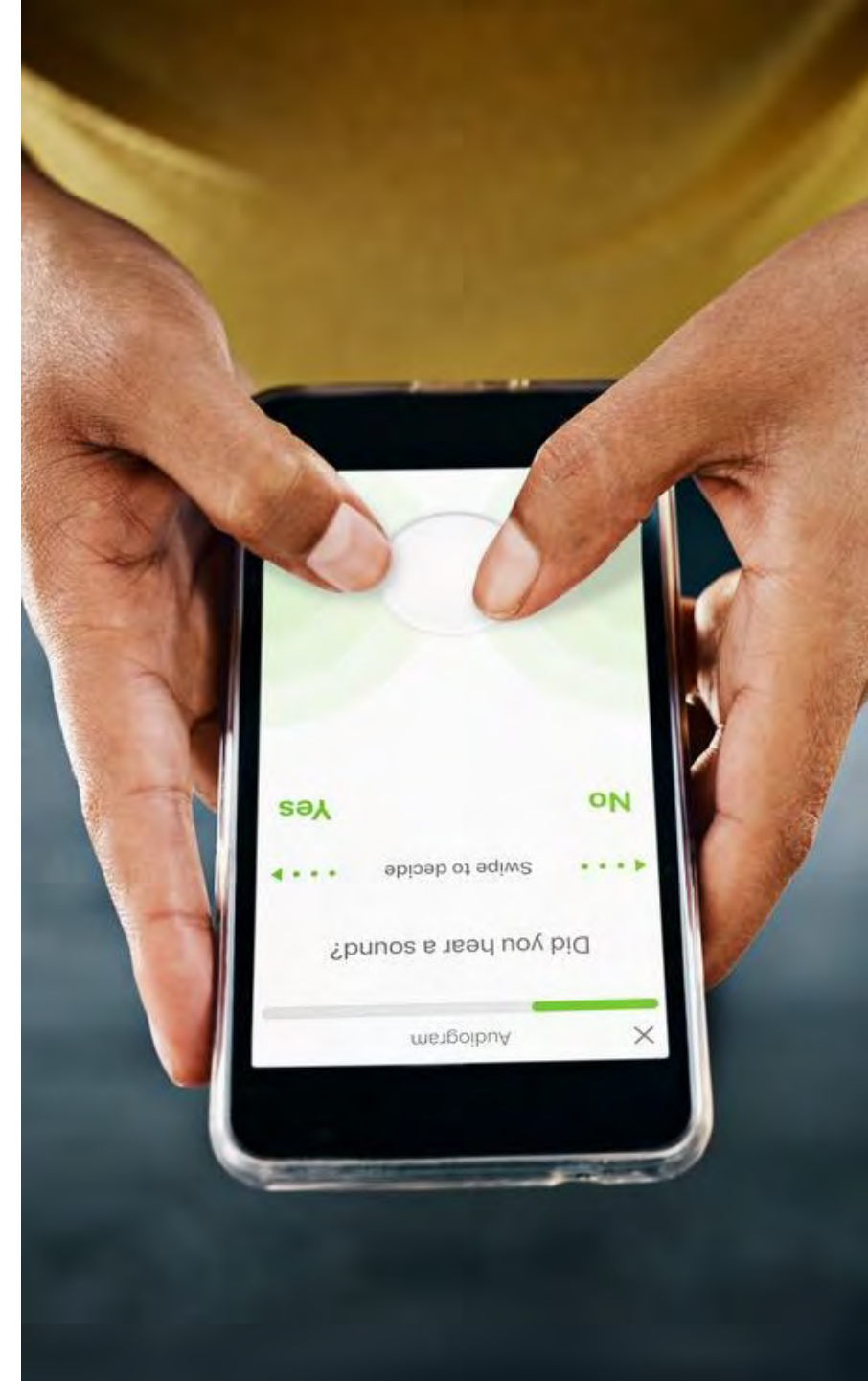
Focused on the
majority of
recipients
(e.g., the 80%)

Cochlear Care Model



Technology to Support the Clinical Model

- Advancements in Cochlear technology allow for more self-managed care by patients
 - Cochlear Smart Apps*
 - Recipient Solutions Managers
 - Cochlear CoPilot**
 - Cochlear Family and myCochlear
- Clinical tools can support patients even when they are outside the clinic
 - Cochlear Remote Care
 - Cochlear Link and Hear Always



*The Cochlear Nucleus Smart App is available on App Store and Google Play. For compatibility information visit www.cochlear.com/compatibility.

**For complete smartphone compatibility information, please visit www.cochlear.com/compatibility

Remote Check and Remote Assist for Nucleus sound processors are intended for ages 6 and older. Remote Check and Remote Assist features are only visible and accessible if they are enabled by a clinician. Clinicians should consider the suitability of the feature before enabling Remote Check and Remote Assist. Remote Check does not replace clinical care and does not involve remote programming of the sound processor. Only available at clinics that have enrolled in Remote Care.

Check in, then follow up with patients



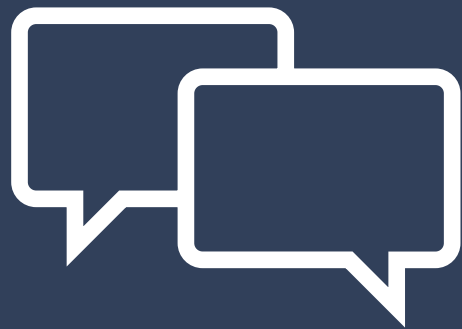
Remote Check*

Remote Check allows patients to complete convenient hearing review tasks assigned by their clinician without visiting the clinic. You can analyse the Remote Check results when it's convenient for you and determine if follow up is needed.



Remote Assist*

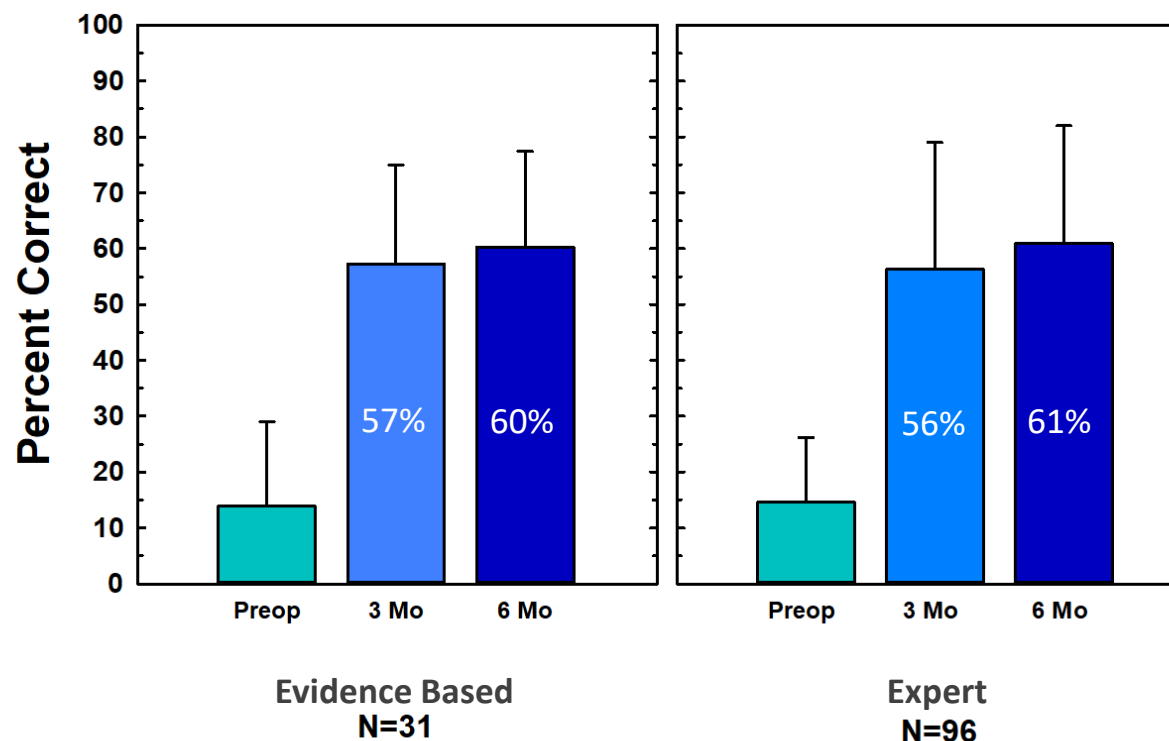
Remote Assist allows you to hold video consultations with patients and connect remotely to their sound processor to make adjustments or to enable processor features.



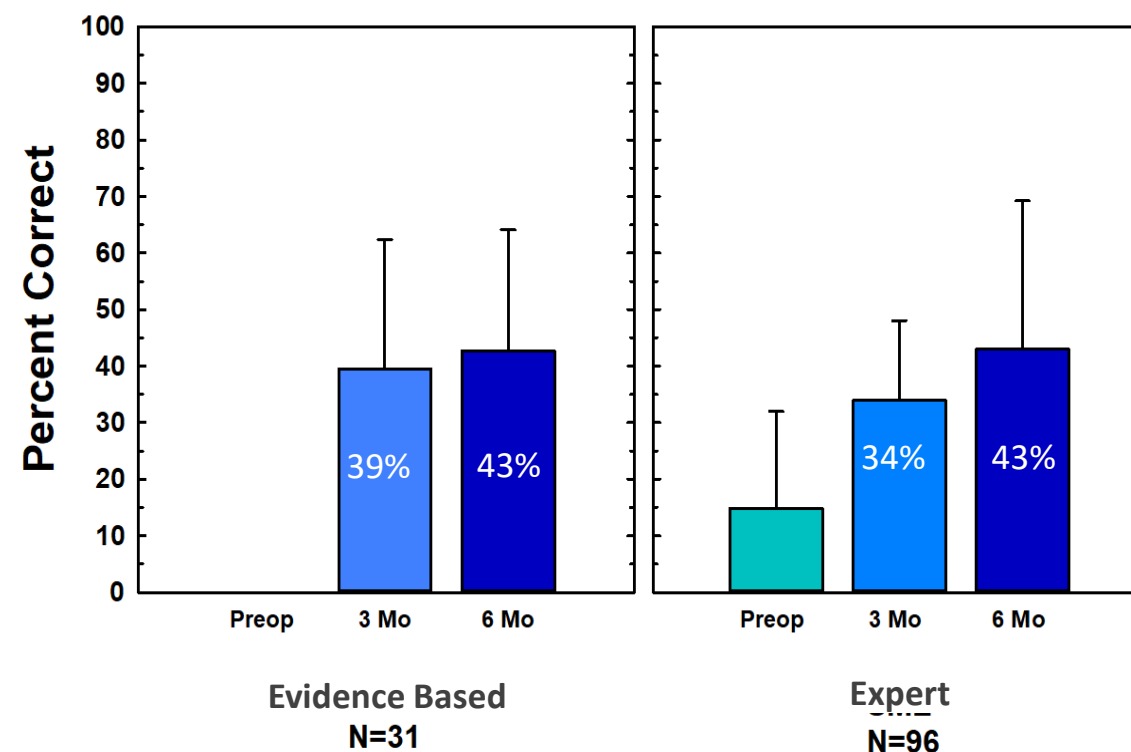
Have any clinics tried using this new model?
If so, what have the results been?

Comparing computer-aided fitting to expert fitting¹

CNC Words in Quiet at 60dBA



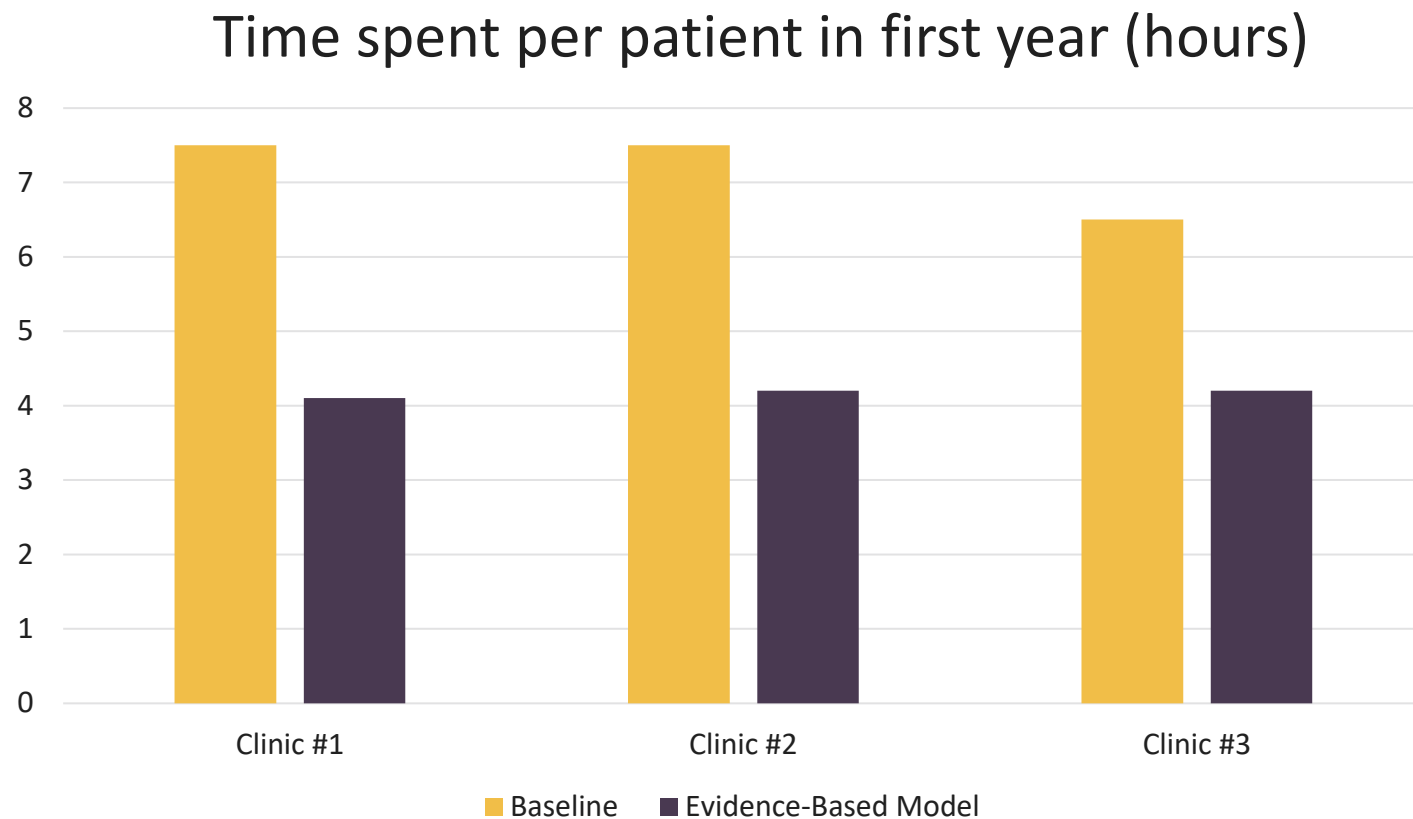
AzBio Sentences 60 dBA +10 dB SNR



- Consistent process and approach to fitting for ~85% of patients in the newly implanted study
- Reduction in visits from 6 to 4 with same outcomes on CNC and AzBio +10 as the 532 Benchmark study
- Use of progressive MAPs for first month and including other features like global adjustments or MySmartSound

Implementing a New Clinical Model

In a recent study, three clinics followed a new adult CI clinical care delivery model and this resulted in significant time savings across the three clinics.

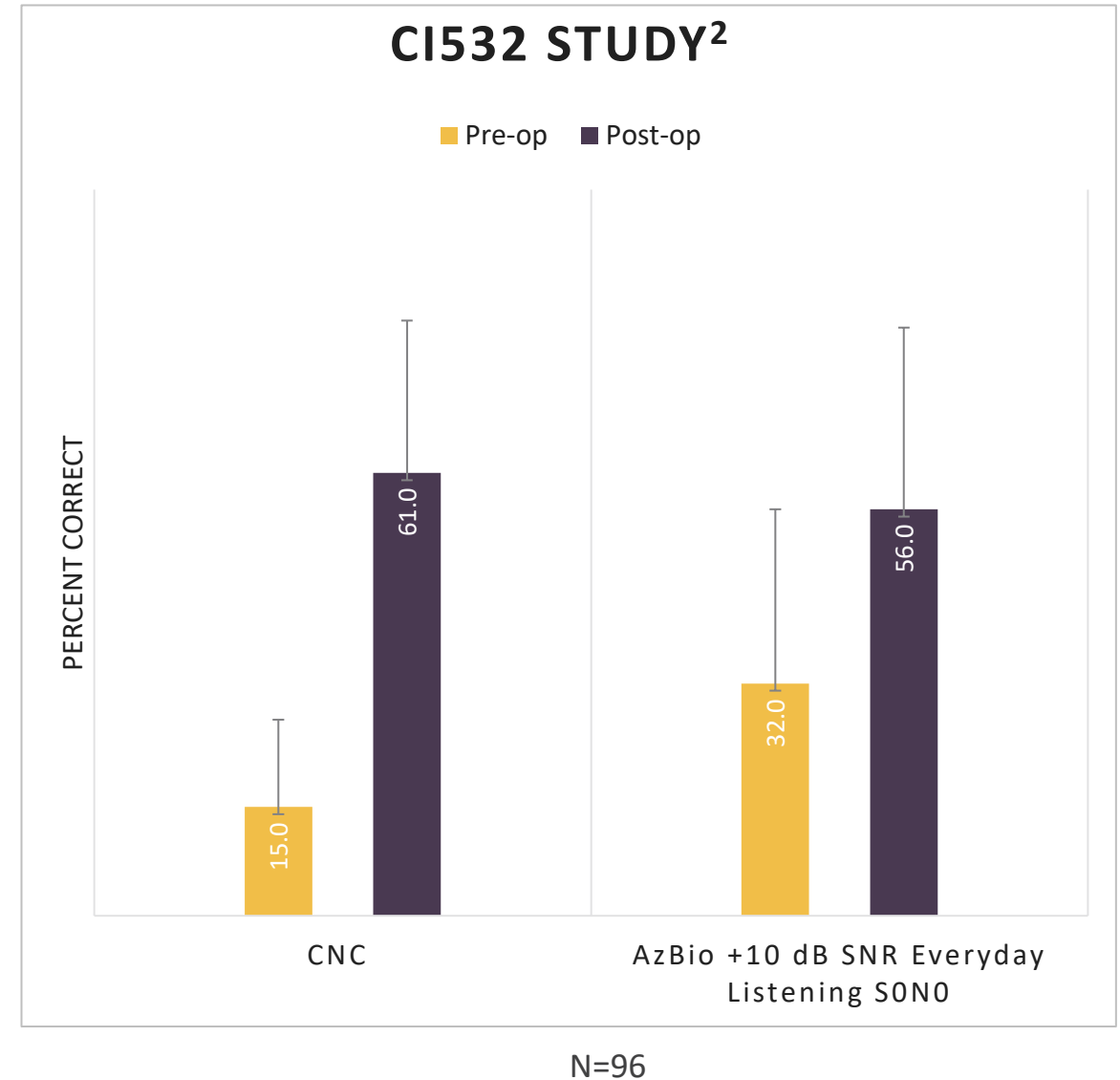
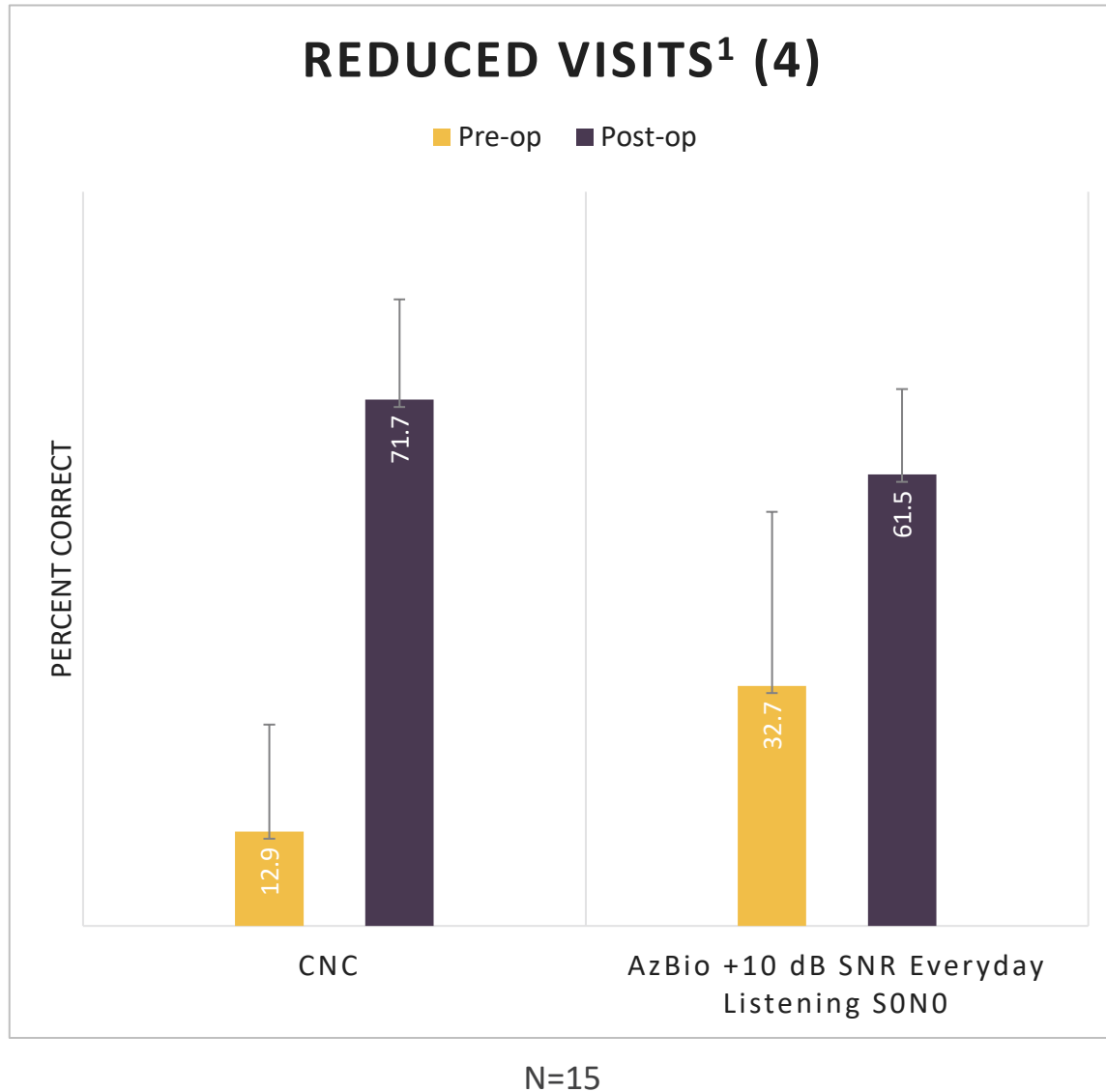


At baseline clinics spent an average of
7.17 hours
per patient in their first year.

Using the adult CI clinical care delivery model clinics spent an average of
4.2 hours
per patient in their first year.

Average time savings
3 hours

Performance testing at 6 months



ACCESSIBILITY AND TIMELY ACCESS TO CARE

~8 out of 10

patients surveyed felt Remote Assist offers them access to care when unable to get to the clinic

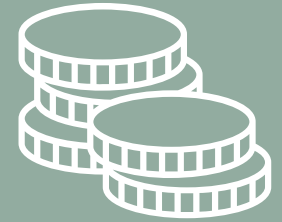


Based on recipient experience surveys (n=57)

TIME AND COST SAVING

~2 out of 3

patients surveyed felt Remote Assist saves them time or money



Based on recipient experience surveys (n=57)

PATIENT-REPORTED BENEFITS¹

CONVENIENCE

~1 in 3

Patients would prefer their future appointments *mainly* through Remote Assist



Based on recipient experience surveys (n=57)

CONNECTEDNESS WITH CLINICIAN

93%

patients surveyed would prefer to use Remote Assist as at least a part of future care.



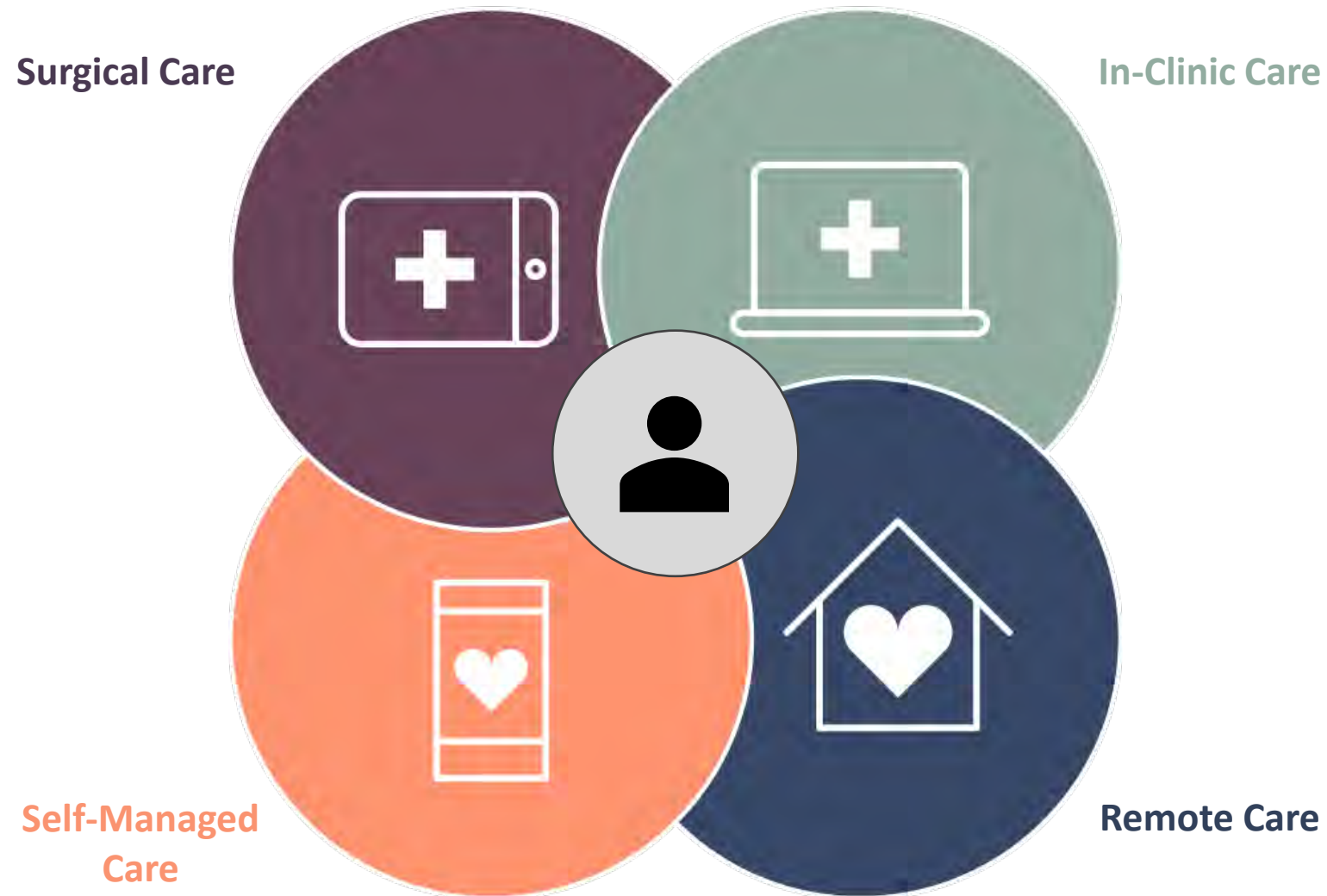
Based on recipient experience surveys (n=57)

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The Future of Cochlear Implant Care

Creating a Patient-Centered Standard of Care



Case Study

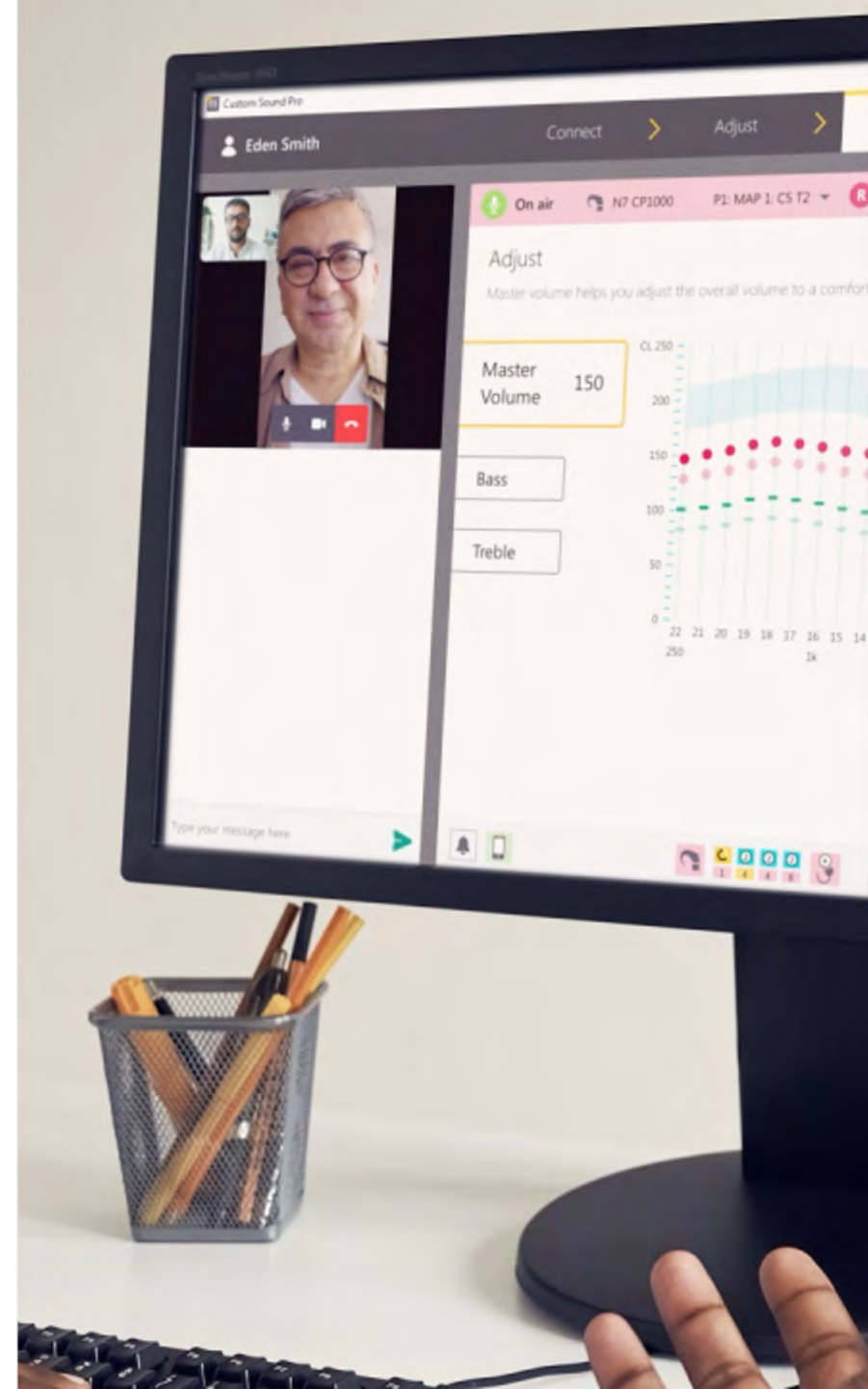
Jim, 72

Severe to Profound SNHL; has been a CI candidate for many years

Lives 150 miles from the nearest CI center in a rural western state

Patient-Centered Care, specifically Remote Care, allowed Jim to say yes to an implant

Performing beyond expectations and successfully receiving his aftercare



- ✓ With a goal of improving access to the right hearing care at the right time, use the 60/60 guide for referring patients for CI care
- ✓ Most patients are happy with their CI and wish they had moved forward sooner – we can all work together to make sure patients receive care as soon as possible
- ✓ Advances in technology are designed to allow patients to achieve their optimum hearing performance with fewer appointments





www.cochlear.com

This material is intended for health professionals. If you are a consumer, please seek advice from your health professional about treatments for hearing loss. Outcomes may vary, and your health professional will advise you about the factors which could affect your outcome. Always follow the instructions for use. Not all products are available in all countries. Please contact your local Cochlear representative for product information.

Views expressed are those of the individual. Consult your health professional to determine if you are a candidate for Cochlear technology.

Remote Check and Remote Assist for Nucleus sound processors are intended for ages 6 and older. Remote Check and Remote Assist features are only visible and accessible if they are enabled by a clinician. Clinicians should consider the suitability of the feature before enabling Remote Check and Remote Assist. Remote Check does not replace clinical care and does not involve remote programming of the sound processor. Only available at clinics that have enrolled in Remote Care.

The Cochlear Nucleus 8, Nucleus 7, Kanso 2 and Baha 6 Max sound processors are compatible with Apple and Android devices. The Cochlear Nucleus Smart App and Baha Smart App are available on App Store and Google Play. For compatibility information, visit www.cochlear.com/compatibility.

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