CHALLENGE 3: Improving Outcomes for People with Hearing Loss

Background

Ear Science Institute Australia is a not for profit committed to improving outcomes for people with ear and hearing disorders through research, education and treatment. Hearing loss is one of the most common disabilities with 466 million people globally having moderate or greater hearing loss.

Hearing loss is often progressive i.e., it starts as a mild loss (usually around age 45 to 50 years) and over time can become severe. Other people have a significant event e.g., disease, tumours, infections, where the hearing takes a dramatic turn for the worst. Moderate hearing loss can usually be managed with hearing aids. However, over time (slowly or quickly) the hearing can become severe or profound (in one or both ears). At that point, hearing aids are not so useful, and hearing implants (cochlear implants or other implants) are used to successfully restore hearing to a degree that the person can function quite effectively.

Currently only 10% of those who could benefit from cochlear implants are receiving them. Increasing the number of people who progress through assessment and implantation has the potential to have far reaching outcomes across the sector and help change the lives of many people.

Challenge

Can we increase the number of people who could benefit from a hearing implant progressing through to cochlear implantation?

Possible Approaches

The approaches outlined below have been included for information and inspiration only and are by no means prescriptive. Approach the challenge in whatever way you feel will address the problem statement understood by your team.

- Are there any predictors to indicate why people don't progress through to implantation?

- Do the patients referred from different sources have different rates of implant uptake and are there any indicators as to why?

- Can we use insights from previous clients to predict the behaviour of individual clients (proceeding or stalling on the pathway to implantation) based on known inputs from parts of the journey they have already taken?

- Can we predict the likelihood someone would proceed to cochlear implantation?

- Can we simulate potential hearing and daily functioning loss or gain if treatment were/were not taken? Would a VR approach be useful to illustrate how interactions would be different with different levels of hearing?

- Explaining how hearing might be improved is difficult if a patient has never experienced normal hearing. Can we simulate synesthesia and show how hearing might be improved if sound was represented by colour or imagery?

Data Available

De-identified data from the Ear Science Institute including variables detailing hearing level, quality of life, lifestyle, motivation to seek help, length of hearing aid usage, cause of hearing loss amongst others.

Additional Resources

World Health Organisation's World Report on Hearing: https://www.who.int/publications/i/item/world-report-on-hearing

Domain Expertise

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Challenge Owner

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