

# Right at Home: Remote Care in Real Life

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The Widex Remote Care system allows access to all necessary fitting tools, fitting of all Widex hearing aids, and provides a smooth, instant connection to the hearing aids. It is designed to offer the necessary flexibility to accommodate the daily needs of both the HCP and the hearing aid user.

Hearing healthcare has traditionally been clinic based. Home visits are rarely used due to the time required for travel to and from the client's home. There is no doubt that many hearing care professionals (HCPs) spend a lot of clinic time trying to understand the auditory reality of each individual client in order to ensure the best hearing aid and fine-tuning solution for them. Understanding the real-life use of the hearing aid in the individual client's life matters, but such an understanding is not always easy to achieve when sitting in a clinic, removed from the client's daily life.

In contrast, remote fitting and fine-tuning allow the HCP to be present in the client's daily life—to be where the client needs input and where it is possible to hear and understand which aspects of the soundscape bother the client, and to adjust the hearing aids accordingly. Another aspect that can be addressed by such a system is the needs of those who have difficulty coming to the clinic due to distance, lack of time, or mobility problems. Access to traditional audiological services may be limited for those who live in rural areas or are housebound.<sup>1</sup> People leading busy lives may also find it difficult to come to the clinic. Remote hearing aid sessions offer a possible solution to these diverse problems.

Many names are used to describe systems that enable the delivery of audiology services and information via telecommunications technologies: eAudiology, telehealth, teleaudiology, or remote care. A consensus group recommends the term eAudiology to encompass technologies and services that enable remote provision of audiological care at each stage of the patient journey.<sup>2</sup>

eAudiology is becoming more accessible, as clients are becoming more experienced with digital technologies and as the use of smartphones increases.<sup>3</sup> A 2018 survey from Pew Research Center shows that, in the United States, 46% in the 65+ age group owned a smartphone. This number rises to 73% for the 50-64 age group.<sup>4</sup> People who are accustomed to using smartphone technology may be good candidates for using the services provided under eAudiology.

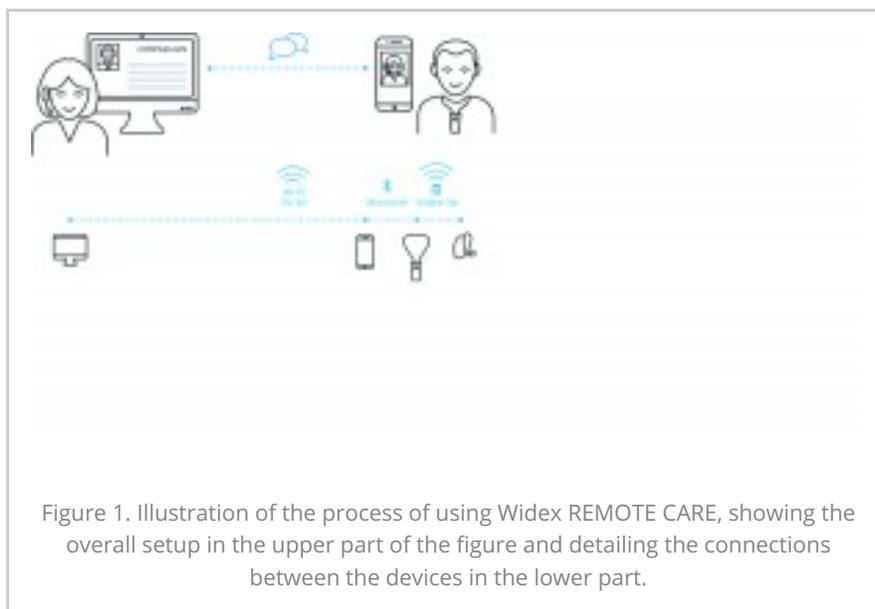
The user benefits of eAudiology depend on how well the system used for providing the remote services fits the needs of the HCP and the hearing aid user. For the best overall experience, the system must be easy to use for both, and the system must allow for complete communication, access to all necessary fitting tools, fitting of all hearing aids, and provide a smooth, instant connection flow to the hearing aids. Essentially, the system should enable the HCP to work as closely as possible to how they would work if the end user were sitting with them in the clinic.

Widex has taken on the challenge of creating a system that allows the HCP to have access to all fitting tools for all wireless hearing aids: WIDEX REMOTE CARE. This article describes the system and reports on results of a survey that investigated its real-life use.

## Using Widex Remote Care

The Remote Care system consists of the Remote Care App (available in the App Store and Google Play) and a Widex Remote Link device for the hearing aid user. At the clinic, the HCP will use COMPASS GPS in the same way as usual, but with Remote Care enabled.

To start a remote care session, the HCP connects via the Remote Care tab in Compass GPS, and the hearing aid user connects via the app installed on their smartphone or tablet (**Figure 1**). They can see each other via a pop-up screen. The hearing aid user will be asked by the HCP to turn on their Remote Link, and their hearing aids will then connect to the Remote Link and (via the app) to the HCP's Compass GPS. Once connected, the HCP can perform the necessary fine-tuning of the hearing aids.



The Remote Care system connects to all wireless hearing aids on the Compass GPS platform, and there are no restrictions regarding which features are accessible in Compass GPS via the Remote Care session. The HCP can, for example, alter program settings or perform a fine-tuning, exactly as they would in the clinic

For the first visit and the initial programming of the hearing aids, we recommend meeting face-to-face at the clinic. Establishing a relationship and determining how to work together is made easier for many by physical presence, if at all possible. However, both performing the initial fitting and following up on the fitting can be done in remote sessions.

Widex has a tradition of precision in fitting through the various fitting tools in GPS. This is in part due to heritage fitting features, such as the Sensogram, assessment of in-situ acoustics, and the Feedback Test, as well as verification and counselling tools such as the SoundTracker and SpeechTracker. Remote Care allows the HCP to make use of all these features as convenient and trustworthy fitting and counseling tools. The Sensogram ensures precision in fitting and the SoundTracker helps the HCP to advise, show, and describe the benefits of using hearing aids in various environments with a focus on speech.<sup>5,6</sup> During a remote session, use of the Sensogram can make it possible for the HCP to estimate if thresholds have shifted over time and whether further appointments are needed. Using the SoundTracker for counseling purposes during a Remote Care session can allow the HCP to include significant others that may otherwise not attend an appointment and show them the benefits of amplification. Another option is to use the ServiceTracker in GPS, where the hearing aid user places the hearing aids on a table and the HCP initializes the ServiceTracker. In this way, the HCP can quickly determine if the aids are functioning as they should, or if a service visit is needed.

One main benefit of using a remote care solution is the empowerment of the HCP to solve and address issues of fine-tuning in the user's actual environment—as opposed to estimates in the clinic. With this closer access to actual user experience, much of the guesswork is removed and real-life hearing solutions are made easier.

## Real-world Use of Remote Care System

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In order to understand how Remote Care works for real users and HCPs, we carried out a survey where both users and HCPs tried out the system and its broad range of functions in real life. Particularly, we were interested in understanding how users and HCPs perceived ease of use, flexibility, and outcomes with the remote care system.

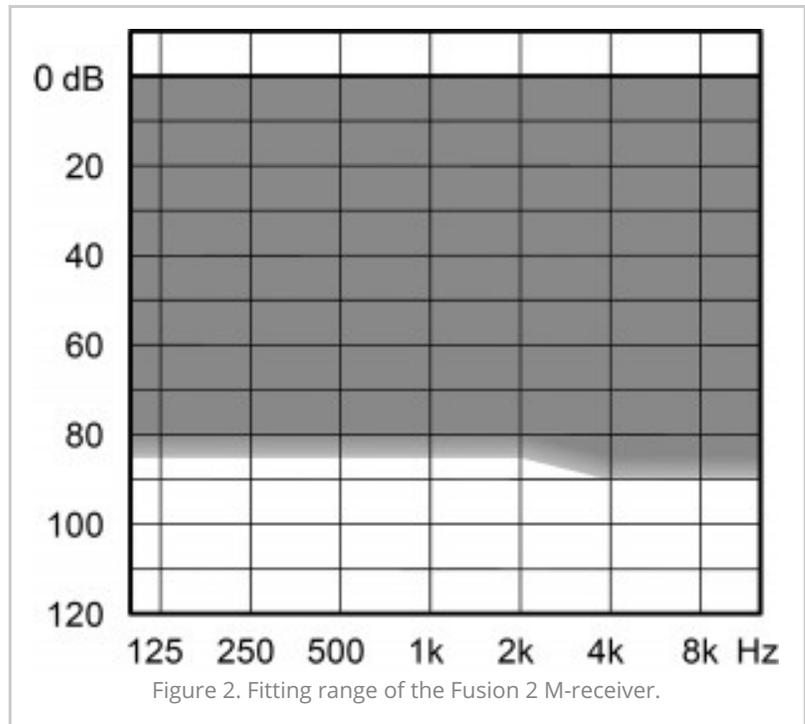
**Participants.** Four HCPs and 16 hearing aid users from four clinics in Canada took part in the survey. The HCPs enrolled the 16 participants based on the following inclusion criteria:

- All configurations of hearing loss within the Fusion 2 M-receiver fitting range with sufficient headroom (**Figure 2**).
- All types of hearing loss: conductive, sensorineural, mixed, etc.
- Hearing loss as main complaint—not tinnitus, etc.
- Experienced hearing aid users.
- Ability to read and fill in the questionnaires provided.
- Ability to use a smartphone. An Android smartphone was provided for the duration of the survey.

- Sufficient Internet connection and familiarity with Skype/FaceTime applications.
- Users for whom a remote fine-tuning service may be attractive, including people living far away, wanting to avoid transportation, experiencing trouble getting around, and working people wanting to avoid taking time off work.

Of the 16 hearing aid users who participated, 63% were female and 37% male; 69% were work-active, 6% were not work-active, and 25% were retired. They had an average age of 61 years, and 12 years of hearing aid experience.

**Equipment.** Each HCP was provided with a laptop with NOAH and a version of COMPASS GPS enabled for remote fine-tuning. Each hearing aid user was provided with a set of Widex EVOKE Fusion 2 hearing aids fitted for their individual hearing loss, a smartphone with a 4G SIM card, a Remote Link device, and the questionnaire for this study.



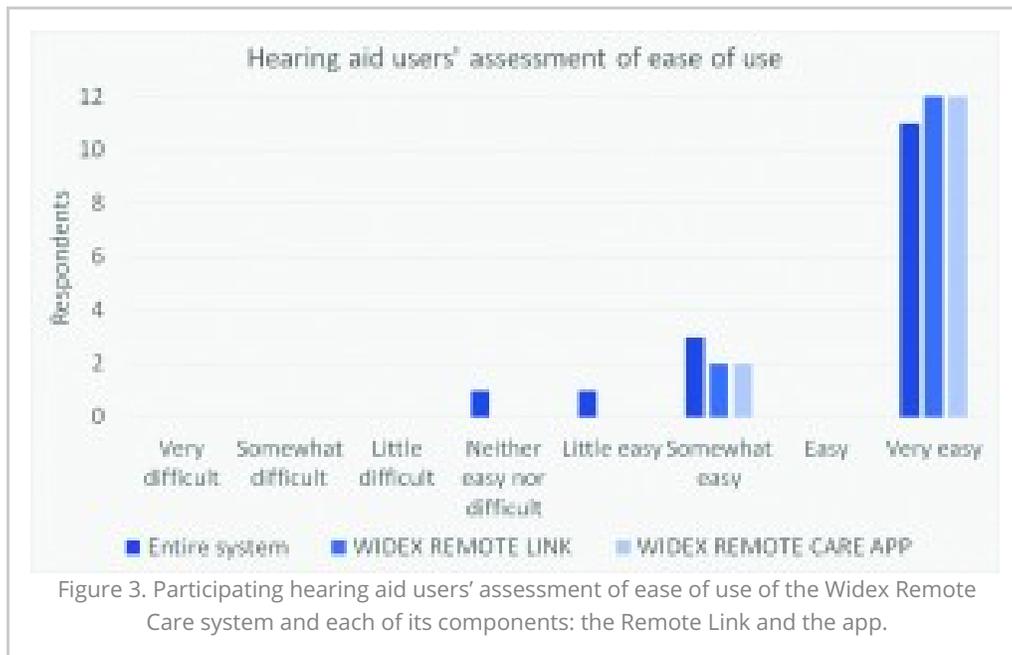
**Procedure.** At the beginning of the survey period, before using the remote care system, each participating HCP was asked to fill in a questionnaire to assess their expectations of the system. They also received training in the use of the system. During the survey, they filled in short questionnaires in connection with each remote fine-tuning session and a final, more detailed questionnaire after the survey period, summarizing their experiences with the system.

Based on the inclusion criteria, the HCPs selected relevant hearing aid users to participate. The hearing aid users were audiologicaly assessed and fitted with the EVOKE Fusion 2 hearing aids. At the initial fitting, the Remote Care app was installed on the smartphone provided, and the hearing aid user was instructed in its use. A follow-up session was scheduled a couple of days after the initial fitting, to ensure all participants knew how to use the Remote Care system and to perform any necessary fine-tuning. After 10-12 days, another remote session was scheduled, and 10-12 days after that there was a follow-up visit at the clinic, where equipment and questionnaires were returned. Each end user filled in a questionnaire about the remote care experience after having had two remote fine-tuning sessions.

Following completion of the survey, interviews were carried out with all four HCPs to gain deeper insight into actual use situations, supplementing the information that could be obtained from the questionnaires.

## Results

**Ease of use.** Overall, the hearing aid users judged the individual equipment components and the system in its entirety to be easy to use (**Figure 3**), with the majority of users finding it “Very easy to use.” The few problems that did crop up were caused by less-than-optimal Wi-Fi connections that resulted in fallouts before or during Remote Care sessions. Six out of 16 hearing aid users experienced one or two such minor stability issues. Ten experienced none.

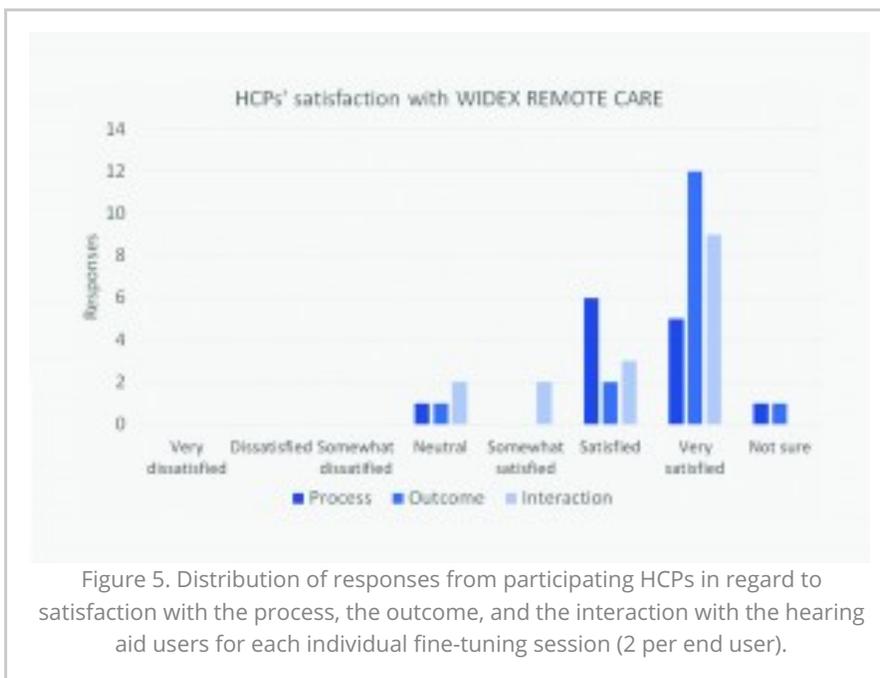


The HCPs were asked about how they expected the ease of use to be prior to the survey period and actual ease of use after the survey period. One expected the system to be “A little difficult” and one “Somewhat easy,” whereas two expected the system to be “Very easy.” After use, they all assessed the system to be “Very easy” to use. Judging from their comments, they quickly learned to troubleshoot possible connection issues and therefore rated the ease of use higher after some experience with the system. In other words, the Widex Remote Care system was seen as very easy to use by all participating HCPs, even with the relatively limited experience they had during the survey period.

**Efficiency.** Efficiency can be assessed in many ways; one central aspect is the extent to which the overall goals of the session are accomplished. In the current survey, both the HCPs and the hearing aid users were predominantly very satisfied with the overall remote process, the outcome of the remote session, and the interaction they had with their remote session counterpart.

**Figure 4** shows most hearing aid users were “Very satisfied” with the process, outcome, and interaction around Widex Remote Care. One hearing aid user was not happy with the remote session, as the social aspect was very important for him. However, the same person also stated that for his relative with severe dementia, it would be a very good alternative to having to leave

the house, which causes distress. Overall, these results indicate that the efficiency is perceived as satisfactory for the hearing aid users, and the same pattern can be seen for the HCPs (Figure 5).



When asked in the questionnaire, two of the HCPs replied that they had spent more time on a Remote Care session than they believed they would have in a face-to-face fine-tuning session. However, when asked in the follow-up interview, they replied that when becoming more accustomed to using the system and selecting the relevant hearing aid users, they did believe that access to a remote care system would allow them to help their clients more efficiently,

saving time for both the end users and themselves as clinicians. All participating HCPs expected that remote care sessions would, to some degree, replace clinic based, fine-tuning sessions for relevant clients in the future, as the outcomes were perceived as being the same as in the clinic.

**Remote care within the service model or as an option.** The types of fine-tuning performed were mostly gain and program alterations. HCPs also predicted that access to systems such as Remote Care may result in more fine-tuning requests, as they would have the ability to help those that may otherwise not have come to the clinic due to such things as time constraints or travel. This may influence how services are bundled and offered to the hearing aid user in order to ensure a good balance between availability and price. During the interviews, the HCPs estimated that easier access to fine-tuning would result in less time spent per session and in more satisfied hearing aid users.

Even though telehealth products in general and various eAudiology options have been available for some time, there is room for expanding the usage within hearing healthcare.<sup>7</sup> In order to gain insight into what some of the positives and barriers may be from a hearing aid user’s perspective, users were asked whether they consider Remote Care to be an extra service compared to a traditional fine-tuning performed in the clinic. Of the 16 hearing aid users, 10 considered having access to Remote Care an extra service, three were unsure, and three did not consider it an extra service. When asked how convenient they found the possibility of having their hearing aids fine-tuned remotely, 13 found it “Very convenient,” two found it “Convenient,” and only one “Very inconvenient.”

A related question was included that asked the hearing aid users how important it is for them to have access to remote care fine-tuning solutions. Here the replies implied that, after having tried a remote care solution, one was “Neutral,” five thought it “Somewhat important,” nine “Very important,” and two stated that it was decisive for their choice of hearing care clinic (**Figure 6**). Overall, having access to remote fine-tuning is both convenient and important, at least for a patient group like the present one.

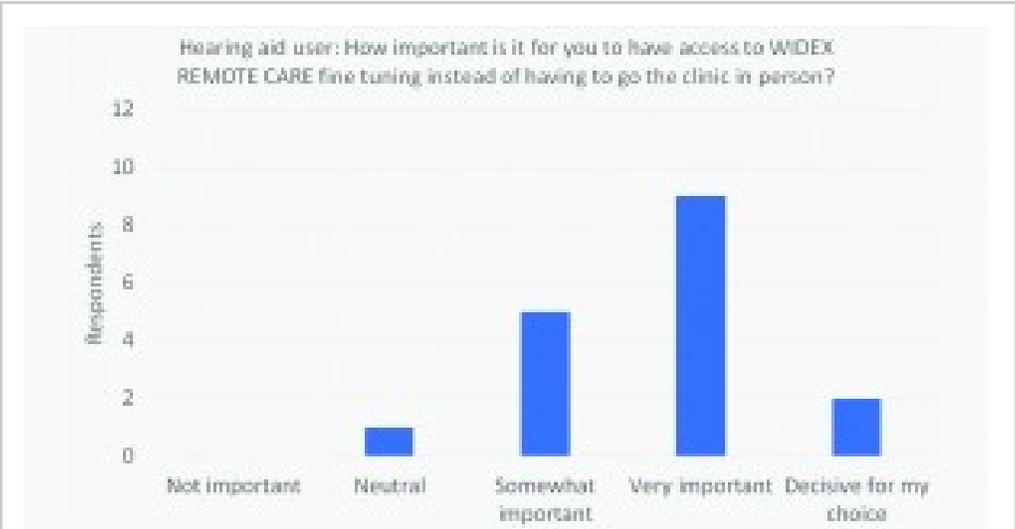


Figure 6. Distribution of replies in regard to perceived importance of access to Widex Remote Care.

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**Integration with traditional scheduled patient visits.** The HCPs stated that, for the relevant clients, they see it as faster to set up a remote session than to organize a time slot for traditional in-clinic fine-tuning, and that the interaction with the hearing aid users felt similar to seeing them in the clinic, except that the remote format of service delivery saved the hearing aid users' time and the hassle of transport. All HCPs communicated that they were able to quickly achieve their goals for the session without feeling as though they were compromising on patient care. One stated that the use of Remote Care helped enhance the interactions with a specific hearing aid user, as it was someone who rarely came in for appointments because of a busy schedule. However, several HCPs also indicated that it required some time to become accustomed to the system and comfortable with interacting with their clients in a different way. Before the survey, they were concerned that the interaction with the hearing aid user may be influenced by the distance, but after trying out the system, this turned out not to be the case.

**Who might benefit most from remote care?** Another question, which is particularly relevant for HCPs who consider using a remote care system, is which hearing aid users may benefit most from using such a system. In this survey, the HCPs were asked, after having completed the survey, which hearing aid users they thought would benefit most from having access to remote care. There was no single group that stood out; instead, many different types of hearing users were mentioned, including:

- 1) People who have a difficult time visiting the office;
- 2) Young users;
- 3) People who live far away;
- 4) Working professionals;
- 5) Inexperienced users who need additional support;
- 6) Experienced users who have encountered a problem, and
- 7) Users due for annual service or Sensogram performance rechecks.

In other words, it appears a wide range of users are candidates for remote hearing care, particularly with a system like Widex Remote Care which allows all the same fitting software functionality as traditional in-clinic use.

## **Discussion**

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The hearing aid users in this survey had an average age of 61, and 69% of them were active in the workforce. The fact that many were in the younger segment of hearing aid users has most likely influenced their expectations, as well as their replies. For instance, using a lunch hour for a remote session instead of taking time off work to go to the clinic is very relevant for a group like

this. For the HCPs, this aspect meant that they could maintain a professional relationship with hearing aid users who might not otherwise have had time for an appointment. However, there were also several examples of how the remote care solution could be used in a range of other situations, where the hearing aid user was unable to come to the clinic due to being out of town, traveling, or ill. The Remote Care system thus seems to be relevant to a wide range of hearing aid users.

The hearing aid users who participated in the survey were generally pleased with the process, outcome, and interaction involved in using a fitting system based on remote sessions. Initially, the HCPs needed some time to adjust to having a different type of interaction with their clients; however, all of them stated that the possibility of using Remote Care was a good alternative to clinic appointments for relevant hearing aid users. The definition of what constitutes “relevant users” is not set in stone, but is very much dependent on the individual people involved. Yet, the survey results indicated a broad group of relevant users. For some hearing aid users and HCPs, the benefits, whether professional or social, of a face-to-face in-clinic session are very important, and will remain so, but the flexibility of having a remote fitting option available is likely to be attractive for many.

Additionally, for many HCPs, Remote Care opens up new business options for them to provide more versatile service delivery. Crucially, the HCPs in the survey thought the system beneficial for a broad array of their clients and suitable for different types of service, including annual service and Sensogram performance rechecks, in addition to the hearing aid fine-tuning investigated in this survey.

The value of such a system in everyday life relies upon different factors, among which ease of use is central. The Remote Care App and Remote Link were rated in this survey as “Very easy” to use by 14 of the 16 participants, and “Somewhat easy” by the remaining two. Similarly, 13 out of 16 users found the system to be very convenient to use, and nine hearing aid users also deemed it “Very important” to have access to remote care in future. The premise of the usefulness of the system is however dependent upon the availability of good connectivity. If the connectivity is good, it is possible to perform a fine-tuning anywhere, even in the shopping mall if that is a problem area identified by the patient.

For HCPs, new ways of interacting with hearing aid users via Widex Remote Care were stated. An important component of the usefulness of a system is how broadly it can be used across client types, hearing aid models, fine-tuning options, and service delivery models. Widex Remote Care allows the HCP to connect to all Widex wireless hearing aids, as well as all fine-tuning options. This means that Sensograms, feedback tests, gain adjustments, and program options are at hand whenever needed. The immediate benefit to end users is that they can access this service without necessarily having to use the very latest hearing aids with smartphone connectivity.

## **Conclusion**

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The eAudiology system used in the survey, Widex Remote Care, offered the necessary flexibility regarding fitting software, the Remote Care app, and the Remote Link device to accommodate the daily needs of both the HCP and the hearing aid user. The system is fully portable and therefore supports the service delivery model that best suits the individual HCP.

The use of such a system does require a change in mindset, as in-clinic sessions have been the traditional mode of service. Nonetheless, the HCPs who took part were very quick to see this system as a new and viable option for providing service to their clients. More importantly, the hearing aid users who participated were satisfied with the process, outcome, and experience. Therefore, the availability of Widex Remote Care is yet another important step towards supporting real-life hearing,<sup>8</sup> as the collaboration between the hearing aid user and the HCP has the possibility of being tailored to the precise needs of both in a smooth and flexible manner.



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