Deloitte Access Economics

Evaluation framework for adult hearing services in England

Action on Hearing Loss

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Glossary

AQP	Any Qualified Provider
COSI	Client Oriented Scale of Improvement
GHABP	Glasgow Hearing Aid Benefit Profile
GP	General Practitioner
IMP	Individual Management Plan
IOI-HA	International Outcome Inventory for Hearing Aids
IQIPS	Improving Quality In Physiological Diagnostic Service
NHS	National Health Service
REM	Real Ear Measurement

Executive Summary

Action on Hearing Loss commissioned Deloitte Access Economics to develop an evaluation framework including a set of performance indicators to assess adult hearing services in England. Specifically, the framework is focused on hearing services that meet the Any Qualified Provider (AQP) criteria: general practitioner (GP) referred services for age-related hearing loss.

The primary objective was to develop a framework that could be used to evaluate and compare service providers and monitor their performance over time, using outcomes relevant to service users. In this manner, the framework may be used as a lever for change, by enabling services to identify areas for improvement, and to assess the extent to which AQP has delivered its objectives.

The secondary objective, which is aspirational and dependent on available resources, was to assist the public in making informed choices between service providers, by making publicly available the results of these evaluations.

Programme logic

The first steps were a literature review and the development of programme logic. The programme logic represents the conceptual basis for the hearing services pathway, identifying and describing inputs, activities, outputs and outcomes. The logic is overlaid by eight performance domains — broad service attributes which are deemed in policy terms to be desirable across health care programmes and services including audiology. These include accessibility/responsiveness of the service, integration with other services, public health outcomes, cost, user focus, quality, safety and innovation.

With expert input, the logic was developed for the four key stages of the hearing service pathway: assessment; hearing aid fitting (where required); follow up; aftercare. The programme logic is detailed in Figure 3.1 (p.8) to Figure 3.4 (p.10).

Performance indicators and service descriptors

Performance indicators were created together with service descriptors with input from stakeholders. The descriptors record the location, accessibility, opening times, flexibility and services offered by each provider of adult hearing services in England. They are listed in Table 4.1 (p.11).

The performance indicator framework is also divided into the four stages of the hearing services pathway, and is detailed in Table 4.2 (p.15) to Table 4.5 (p.18). In total, 29 performance indicators are suggested, including 17 core performance indicators.

In a survey of 156 members of the Action on Hearing Loss research panel, at least 88% of respondents stated that the information provided by each of the core indicators would be of use, with the majority identifying the indicators to be very useful or essential.

Three data sources have been proposed to populate the performance indicators:

- Quality Requirements data provided to Commissioners by Any Qualified Provider (AQP) registered services;
- an audit of service providers (direct contact); and
- information collected directly from service users via a questionnaire at two stages of the hearing service pathway. These questionnaires are in Table B.1 (p.29).

It is anticipated that many of the service descriptors could be populated using publicly available information (e.g. service provider websites).

Applications of the framework

Several uses of the framework have been suggested. These include using indicators to evaluate the impact of the AQP initiative and to ascertain the ability of different population subgroups to access hearing services. It is hoped that the results of individual provider evaluations could eventually be made available to potential service users. Further, it is envisaged that this framework could be adapted to UK regions outside England.

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1 Aim and background

Aim

Deloitte Access Economics was appointed by Action on Hearing Loss to develop an evaluation framework for direct access adult hearing services in England. Specifically, these services include those meeting the Any Qualified Provider (AQP) criteria, which are general practitioner (GP) referred services for age-related hearing loss.

The aim of the framework is to facilitate ongoing measurement of the services against specific goals and objectives, from the service user perspective, which will in turn encourage continuous improvements in service delivery.

The primary objective of the framework is to provide a set of service attributes and performance indicators of relevance to service users, which can be used to: (1) monitor the performance of service providers over time; and (2) compare service providers. In this manner, the framework may be used as a lever for change, by enabling services to identify areas for improvement, and to assess the extent to which AQP has delivered its objectives.

The secondary objective of the framework, which is aspirational, is to facilitate collection and reporting of information to assist service users in making informed choices between providers. This objective is highly dependent on having adequate resources available to evaluate all hearing services in England using the framework. If this were possible, then service users would have readily available information that would otherwise not be available to them through other evaluation and accreditation processes such as Improving Quality in Physiological Diagnostic Service (IQIPS) and Any Qualified Provider (AQP) Quality Requirements. IQIPS and AQP focus on individual providers and do not explicitly focus on providing information directly to service users.

Background

Action on Hearing Loss is a not-for-profit organisation with around 20,000 members and 1,000 staff which seeks to support the UK community with hearing loss though the provision of day-to-day care, advice and communication services. Action on Hearing Loss also campaigns to change public policy around hearing loss issues and supports research.

A broad range of hearing services are offered in England, including National Health Service (NHS) funded and private services. Some services put forward a complete offering, from assessment to hearing aid fitting (where required) to aftercare, whereas other services are smaller and more specialised.

Action on Hearing Loss's review of hearing services is occurring at a time of great change within the NHS. The NHS is becoming more focused on value based pricing and initiatives to improve service users' choices. One initiative helping meet this challenge is the AQP model. Adult hearing services in the community – for people aged 55 years and older and referred by a general practitioner (GP) – is one of eight priority areas for the AQP model. AQP was rolled out in April 2012, allowing service users to choose, where appropriate, from

a range of qualified providers who are licensed to provide safe care and treatment, and select the one that best meets their needs. The AQP initiative aims to increase service user choice, thereby improving the service quality through stronger competition. Hence, greater information on different hearing service providers is becoming increasingly important.

Action on Hearing Loss commissioned Deloitte Access Economics to develop a framework that can be used to assess the relative performance of hearing services that fall within the AQP criteria. The framework presented in this report can be used to assess both AQP registered and other (including private) service providers. The framework enables the collection and reporting of information on key service characteristics and performance that will be informative to potential service users and other stakeholders.

As described herein, the framework can be used to assess the relative performance of different providers at a specific point in time, or the performance of individual providers over time. This flexibility will enable the impact of the AQP initiative to be assessed, by tracking the performance of service providers since registration, or by comparing the relative performance of registered and non-registered providers.

Report structure

The report is structured as follows:

- *Section 2* details the project methodology and approach to developing the evaluation framework;
- *Section 3* describes the programme logic, which identifies the service outputs and outcomes to be evaluated;
- *Section 4* presents the evaluation framework, including the service descriptors and performance indicators; and
- *Section 5* discusses the various applications of the evaluation framework and its potential extensions.

2 Methodology

The approach taken to develop the evaluation framework indicators comprised four steps:

1. Literature review.
2. Development of programme logic.
3. Identification of the performance domains.
4. Creation of the performance indicators and service descriptors.

Steps 2-4 were undertaken with input from key stakeholders as described below.

Literature review

In the first instance, a literature review was performed to ascertain if any evaluation frameworks exist for hearing services in the UK or other developed countries. Searches of relevant medical journal articles were conducted through the PubMed/MEDLINE database in February 2012. No relevant articles were identified through this search.

A general internet search was also undertaken at this time, including a check of the NHS and NHS Health Scotland websites. Action on Hearing Loss also provided unpublished information from their internal research. Key documents that were identified from this search and reviewed to inform the development of the framework were:

- Action on Hearing Loss's review of audiology service provision in the UK – stage 1 of the Transforming Hearing Services initiative.
- Adult Hearing AQP Implementation Pack (NHS Tees 2011).
- Quality Standards for Adult Hearing Rehabilitation Services (NHS Scotland 2008).
- Action on Hearing Loss's overview of the *Hear to Help* service.
- Pilot social return on investment analysis of Action on Hearing Loss's *Hear to Help* scheme in Redbridge.
- IQIPS Standards and Criteria (Royal College of Physicians 2012).

The information sources above were used to identify the hearing services pathway for hearing impaired adults in England and appropriate performance indicators and domains for those services. The AQP Implementation Pack was particularly useful in setting out the pathway for adult hearing services in England, and outlined the Quality Requirements expected of those services, including information to be provided by services to NHS Commissioners.

Programme logic

A fundamental platform for the development of an evaluation framework is programme logic. This identifies the outputs and desired short and long term outcomes associated with the service or intervention, and the inputs and process required to achieve them. Programme logic is typically developed in collaboration with key programme stakeholders.

This critical step has recently been described by NHS Health Scotland[1]. The programme logic:

- facilitates a common understanding of the rationale for the evaluation of hearing services and makes explicit desired outcomes; and

- contributes to the development of performance indicators which are aligned to the evaluation's objectives and thus facilitate monitoring and appraisal.

The taxonomy used to construct the programme logic is presented in Table 2.1. Inputs and activities reflect the 'process' side of providing the hearing service; outputs and outcomes reflect the spectrum of desired impacts on service users and providers.

Table 2.1: Taxonomy for programme logic

Terms	Definitions
Inputs	The resources invested to undertake the service activities
Activities	Steps taken during the consultation between the service user and hearing service
Outputs	The immediate deliverables of the service
Outcomes	The impact of the service within 6 months (short term) and beyond 6 months (long term)

Some hearing service providers may only provide one component of the overall hearing service pathway e.g. specialised aftercare services. Therefore, it was deemed important to evaluate each major component of the service pathway, as identified in the AQP Implementation Pack:

1. Hearing assessment;

2. Hearing aid fitting (if required);

3. Follow up (for service users fitted with a hearing aid); and

4. Aftercare (for service users fitted with a hearing aid).

The draft programme logic design was based on the AQP Implementation Pack, which described the intended activities and outcomes for each stage of the hearing pathway. The draft was reviewed at a stakeholder meeting in London on 11 April 2012. Stakeholders included Action on Hearing Loss, NHS West Midlands, MRC Hearing and Communications Group, and the Department of Health. The draft was revised for stakeholder comments.

The outputs and outcomes in the final programme logic were the basis for the development of the performance indicators. The final programme logic is detailed in Section 3 of this report.

Performance domains

'Performance domains' represent a set of service attributes, or overarching aims, which are deemed to be desirable. To ensure the evaluation framework results are relevant primarily to service users, key performance domains were identified prior to developing the performance indicators and other service descriptors.

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[1] http://www.healthscotland.com/understanding/planning/logic-models.aspx

Performance domains for the hearing service were established using Department of Health (2006) NHS Core Principles[2], and discussions with stakeholders.

The eight performance domains were:

1.   Accessibility and responsiveness – e.g. accessible, located near service users, flexible appointment times, acceptable waiting/response times at each stage of the pathway.

2.   Integration with other services – e.g. smooth service user transition between services, efficient and effective processes.

3.   Public health outcomes – e.g. improves service user hearing and quality of life.

4.   Cost – to the service user, effectively free for NHS services.

5.   Service user focus – e.g. service user satisfaction, Individual Management Plan (IMP) created, helpful and sufficient information provided to service users.

6.   Quality – e.g. service provider follows guidelines and professional standards, staff are qualified and follow processes.

7.   Safety – e.g. have any service related adverse events been reported by the provider?

8.   Innovation – evidence that service strives to improve based on user feedback.

Performance indicators and service descriptors

The evaluation framework comprises two key components:

- Service descriptors – information on the key features of each service provider which are of importance to service users; and

- Performance indicators – used to measure the extent to which the outcomes and outputs of the service (identified in the programme logic) are achieved.

Several 'rules' were followed when developing the service descriptors and performance indicators.

First, for each stage in the hearing pathway, each of the eight performance domains described above was to be covered by at least one descriptor and/or indicator. It was permissible that some domains could be covered by either a service descriptor or performance indicator.

Second, when developing the performance indicators the following criteria were deemed important:

- Indicators are closely aligned with Action on Hearing Loss's desired outcomes of the project.

- Indicators are easy to interpret by those who need to use them, and consistent (i.e. mean the same thing to each user).

- Indicators can be measured using existing data sets.

- Indicators are able to be tracked over time.

- Estimation methods for metrics are transparent and can be replicated.

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[2] http://www.nhs.uk/NHSEngland/thenhs/about/Pages/nhscoreprinciples.aspx

These criteria correspond to the SMART criteria below, which are commonly used to select performance indicators.

Table 2.2: SMART criteria for performance indicators

Criteria	Example measures
Simple	Can the people involved in the service understand and use the indicator? Are terms used in the indicator statement interpreted the same by all users?
Measureable	Is the data available to verify the indicator? Does the indicator use a standard? Is it measurable and able to show trends?
Achievable	Can this be done within the resources and time available?
Realistic	Are the indicators appropriate to the locality/or community? Do the people involved with the service value the indicator?
Timely	Is the indicator appropriate to the timeframe? Can the indicator signal an early warning of potential problems? Does the indicator fit with budget and or planning cycles?

Source: adapted from *Performance indicators in community health: development of a process, March 2000-October 2001: final project report. http://som.flinders.edu.au/FUSA/SACHRU/Publications/PDF/pireport.pdf*

Third – and related to the criteria above – the development of the performance indicators was mindful of the data that would be required to populate them. Because of the uncertainties with regard to data availability from service providers and Commissioners, service user questionnaires were created to address potential data gaps.

The draft service descriptors, performance indicators, and data collection tools were reviewed by a broader group of stakeholders including:

- ANHADCo (private hearing aid dispensers' organisation);
- British Academy of Audiology;
- British Society of Hearing Aid Audiologists;
- British Society of Audiology;
- Department of Health; and
- Hearing Link.

Following feedback from stakeholders, some performance indicators and service user questions were deleted or modified. Other indicators were added, including indicators to assess improvements in service user's quality of life through their use of the hearing service. Based on stakeholder feedback, Action on Hearing Loss decided upon 'core' performance indicators, which they would consider a priority with regard to collecting information and evaluating hearing services.

To assess the relevance of the core indicators to service users, Action on Hearing Loss also undertook a survey of 370 members of their research panel to determine how useful they found each indicator on five category scale[3]. Respondents were also asked to indicate any additional performance indicators that they felt should be included.

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[3] Ratings were: not at all useful, not very useful, quite useful, very useful, essential.

The final set of performance indicators and service descriptors is detailed in Section 4 of this report.

3 Programme logic

The development of the programme logic was described in Section 2. For this project, the programme logic is composed of four phases; inputs, activities, outputs and outcomes:

- Inputs – the resources invested to undertake the service activities.
- Activities – the steps taken during the consultation between the hearing service and user.
- Outputs – the immediate deliverables of the service.
- Outcomes – the impact of the service within 6 months (short term) and beyond 6 months (long term).

The final programme logics for each of the four major stages of the hearing service pathway are presented in Figure 3.1 to Figure 3.4.

Figure 3.1: Programme logic for the hearing assessment

Inputs	Activities	Outputs	Outcomes
• Qualified staff (at a minimum: audiologist or hearing aid dispenser) • Appropriate facility (hospital, clinic) • Resources to perform domiciliary service • Diagnostic tools required to perform activities • Fee (AQP Tariff for PCT or private fee)	• Clinical interview • Otoscopy • Pure tone audiogram • Self reported activity restrictions questionnaire • Loudness discomfort assessment • Pre-fitting counselling including Individual Management Plan (if required • Signposting to support services	• Quick, efficient and effective assessment • Feedback to patient including confirmation of hearing acuity • Patient referral for hearing aid fitting (if required) • Individual Management Plan (IMP) created • Patient aware of treatment choices and support services (e.g. hearing therapist) • Impression of ear for hearing aid fitting (if required)	Short term • Patient informed about their current hearing, treatment choices, and next steps • Informed choice for patients, which may include hearing aid fitting or other treatment options

Figure 3.2: Programme logic for the hearing aid fitting

Inputs	Activities	Outputs	Outcomes
• Qualified staff (at a minimum: audiologist or hearing aid dispenser) • Appropriate facility (hospital, clinic) • Resources to perform domiciliary service • Diagnostic tools required to perform activities • Access to a range of hearing aids • Fee (AQP Tariff for PCT or private fee)	• Otoscopy (if required) • Review patient details • Select and program hearing aid(s) • Educate patient on hearing aid benefits, use and maintenance • Objective measurements to verify fitting • Modify ear moulds (if required) • Signposting to support services • Arrange follow up appointment	• Patient fitted with hearing aid(s) • Patient aware of support services • Follow up scheduled	Short term • Improvement in hearing acuity • Patient able to use and maintain hearing aid independently • Patient engaged with support services • Carer/communication partner informed where appropriate Long term • Improvement in patient hearing maintained

Figure 3.3: Programme logic for the follow up visit

Inputs	Activities	Outputs	Outcomes
• Qualified staff (at a minimum: audiologist or hearing aid dispenser) • Appropriate facility (hospital, clinic) • Resources to perform domiciliary service • Telephone service for patients • Postal service for batteries and tubes • Diagnostic tools required to perform activities • Fee (AQP Tariff for PCT or private fee)	• Check progress against IMP • Confirm patient satisfaction with and ability to use hearing aid • Objective and subjective assessments of hearing • Signposting to support services	• Updated IMP and patient records • Any patient uncertainties resolved	Short term • Improvement in patient hearing acuity • Patient able to use hearing aid independently • Patient engaged with support services Long term • Patient able to use hearing aid independently in conjunction with any required support services

Figure 3.4: Programme logic for aftercare services

Inputs	Activities	Outputs	Outcomes
• Qualified staff (at a minimum: audiologist or hearing aid dispenser) • Appropriate facility (hospital, clinic) • Resources to perform domiciliary service • Telephone service for patients • Postal service for batteries and tubes • Diagnostic tools required to perform activities • Access to hearing aid and component supplies • Fee	• Maintenance of hearing aids • Signposting to support services • Postal repair service • Batter replacement service • Review at three years, or earlier for patients failing to manage with their hearing aids or having significant changes in hearing • Advocacy and advice services	• Feedback to GP • Patient discharged from service • Advocacy and advice services	Long term • Ongoing support for patient • Patient reviewed, as contracted • Patient's hearing supports them to live independently • Hearing not a barrier to activities patient expects to undertake • Patient motivated to use hearing aid when needed • GP advised to refer patient for another assessment and fitting, if current hearing aid becomes inadequate

4 Performance indicators and service descriptors

Together, the performance indicators create a framework to evaluate adult hearing services in England against the specific goals of Action on Hearing Loss and other key stakeholders. The indicators facilitate ongoing measurement of hearing services to enable service users to make choices between service providers and for third parties to evaluate service providers' performance.

Service descriptors were created in tandem with the indicators to record the location, accessibility, opening times, flexibility and services offered by each provider of adult hearing services in England. The service descriptors essentially define the characteristics of the service provider and are detailed first.

The framework is positioned primarily towards conducting evaluations of hearing services and, ideally, providing this information to potential or current service users. Stakeholders considering using this framework should determine which indicators and descriptors are most useful to them (their own 'core indicators').

Service descriptors

It is anticipated that the service descriptors will provide information to assist the public in finding hearing services that meet their needs in terms of location, offerings, cost and accessibility. Further, the descriptors are linked to the performance domains identified in Section 2 of this report, and therefore – along with the performance indicators - indicate the quality of each service.

Table 4.1: Descriptors for hearing services in England

Service descriptors	Information required	Domain
Service name	Service provider name	-
AQP status	Registered / not registered, commissioning NHS Trust	-
City/town	Postcode area name	D1
Street address(es)	Building number, street name, postcode	D1
Parking spaces on site	Number of standard spaces Number of disabled spaces On-street parking (free / metered / none)	D1
Service located on a bus or tram route	Yes / no	D1
Service located within 500 metres of a train station[4]	Yes / no	D1

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[4] Based on accessibility thresholds for older people suggested by Help the Aged (Burnett 2005)

Drop off facility provided for hearing aid repairs	Yes / no	D1, D5
Disabled access to hearing service facilities	Yes / no	D1, D7
Postal service for batteries provided	Yes / no	D1, D5
Standard opening times, excluding public holidays	Days of the week, times (24 hour format)	D1
Domiciliary (home) service times, if provided	Days of the week, times (24 hour format), or 'not provided'	D1, D5
Advocacy services provided	Yes / no	D2, D5
Employment advice services provided	Yes / no	D2, D5
IQIPS self-assessment and improvement process completed in last 12 months	Yes / no	D3, D5, D6, D7, D8
IQIPS accredited	Yes / no	D3, D5, D6, D7
One-stop assessment and fitting service offered	Yes / no	D1
Signed up to National Contract for Hearing Aids and Accessories	Yes / no	D3, D5, D6, D8
Mechanism for users to be involved in service planning/evaluation	Yes / no, brief description	D5, D8
System in place for referrals to other medical services, where required (e.g. tinnitus, ENT, hearing therapy)	Yes / no	D5, D8
Service staff are 'deaf aware'	Yes / no	D1, D5, D6
Fee for service	NHS tariffs, and/or fee to private service users for: assessment hearing aid and fitting aftercare visit	D4

It is anticipated that the service descriptors will be populated by data collected directly from the service providers, either using publicly available information (e.g. internet sites) or through direct contact with the services.

Performance indicators

The performance indicator framework below (Table 4.2 to Table 4.5) is divided into the four stages of the hearing services pathway. In total, 29 indicators have been suggested. There are 17 core performance indicators highlighted in bold text and then listed in Table 4.6.

The core indicators were nominated by Action on Hearing Loss and a survey of research panel members conducted to assess their usefulness to service users. The survey was sent to approximately 370 panel members of whom 156 people completed the survey (a 42% response rate). Demographic and other information on respondents is provided in Appendix A.

For each core indicator, at least 88% of respondents identified that the information would be of use (range across core indicators: 88-97%), with the majority rating each indicator as 'very useful' or 'essential'. This supports the selection of core indicators for the evaluation framework.

The top three core indicators rated as essential by the proportion of respondents were:

- HF3: Proportion of service users receiving information on hearing aid support at their fitting (53%);
- FU1: Proportion of service users followed up (53%); and
- HF2: Proportion of hearing aid fittings verified by Real Ear Measurement (REM) of hearing aid performance (52%).

Respondents were also asked to indicate any additional performance indicators that they felt should be included in the framework. The majority of comments (41 responses) expanded on existing indicators, rather than suggesting new indicator areas. For instance, some respondents re-iterated the importance of the service user getting appropriate support with their hearing aid to ensure optimum use (e.g. knowing how to operate different programmes and settings). A small number of comments suggested measuring whether the service offered opportunities for further follow up after a more prolonged period.

The most common themes for new indicators suggested by respondents were:

- Measures of communication and deaf awareness of service staff;
- Availability of multiple contact methods; and
- Service users being offered a choice of hearing aids.

Deaf awareness of service staff was considered to be best represented as a service descriptor, since it is relevant to the overall hearing service, and was added to the list of service descriptors. The importance of this descriptor should be considered on par with that of the core performance indicators.

The availability of multiple contact methods is embodied in indicator FU2.

The importance of having a choice of hearing aids was also raised by other stakeholders and was the basis for the service descriptor for whether the service was signed up to the National Contract. Following the research panel survey, a new indicator was added to the hearing assessment stage for the proportion of patients offered a choice of hearing aid. This was made a core indicator to reflect its importance to respondents.

Proposed data sources

Three data sources are proposed to populate the performance indicators:

- Quality Requirements data provided to Commissioners by AQP registered services;
- an audit of service providers (direct contact); and
- information collected directly from service users via questionnaires at two stages of the hearing service pathway.

The mandated reports from AQP registered hearing services to NHS Commissioners are anticipated to provide valuable information on service delivery. However, given the AQP model is new, the reporting requirements are still being defined and may vary across the country. It is also unclear whether these data would be made available to the evaluator – they may be deemed confidential or made available only through the Freedom of Information Act. Given these practicalities – and that not all service providers will be AQP registered – it may be necessary to instead populate these indicators using data collected through direct contact with service providers.

It is envisaged that this framework could be used to evaluate non-AQP registered services as well as AQP registered providers. For this reason, an audit of service providers – where data are obtained via direct contact with those services – may be required. It is anticipated that data collection from non-AQP registered providers may be more difficult since (a) there would be no requirement for them to collect these data for regular performance reports to Commissioners, and (b) there could be less incentive to provide this information to others.

Currently Action on Hearing Loss conducts an online survey, *Locate and Rate,* where service users can respond to six questions about their experience with a hearing service provider in terms of accessibility, information provided by the service and whether individual needs were met. Whilst these survey results are useful they are not of sufficient breadth and style to populate the performance indicators detailed here. Therefore, a new set of service user questions has been proposed (Table B.1).

Survey data collected directly from service users is particularly important with regards to assessing quality of life improvements and the level of information/support provided by a service to its users.

Regarding quality of life, several clinical research tools have been developed to determine the effectiveness of hearing aids including the Client Oriented Scale of Improvement (COSI), International Outcome Inventory for Hearing Aids (IOI-HA) and Glasgow Hearing Aid Benefit Profile (GHABP) questionnaires. In fact, the AQP Quality Requirements suggest that improved quality of life and reduced social isolation should be assessed as an 'improvement in GHABP/COSI/IOI-HA outcome measures after a hearing aid fitting'. Whilst these tools are used routinely in practice, difficulties are anticipated for a third party trying to obtain this information. It is therefore proposed that (in general) improvements in quality of life and hearing be elicited directly from service users through the questionnaires.

Indicators FU4, AC3 and AC4 do, however, correlate with specific metrics in the GHABP. The current framework therefore proposes that if these data become routinely available in the future then these scores can be used. Otherwise, the results from Questionnaire II should be used instead.

Regarding the provision of information by a service provider to its users, it was considered that service users themselves would be the best judges of whether the information provided was sufficient for their needs.

The practicalities for collecting data using these methods, including the limitations of each, are addressed in Section 5.1.

Table 4.2: Performance indicators for hearing assessment

Code	Performance indicator	Data source	Domains
HA1	Time from receipt of GP referral to assessment	Quality Requirements data provided to Commissioners (3-month moving median and standard deviation working days)[5] OR Audit of service providers (3-month moving median and standard deviation working days)	D1
HA2	Proportion of service users with an Individual Management Plan (IMP)[6] created at their assessment	Quality Requirements data provided to Commissioners (3-month moving proportion) OR Audit of service providers (3-month moving proportion)	D5
HA3	Proportion of service users receiving information on treatment choices other than hearing aids at their assessment	Service user questionnaire I Q1a (cumulative moving proportion)	D3, D5
HA4	Choice of hearing aids offered to service users requiring hearing aids	Service user questionnaire I Q1b (cumulative moving proportion)	D5
HA5	Service user satisfaction with hearing assessment	Service user questionnaire I Q2 (cumulative moving mean score)	D5
HA6	Age range of service users assessed	Quality Requirements data provided to Commissioners via the service user tracker activity form (3-month moving mean and standard deviation age in years) OR Audit of service providers (3-month moving mean and standard deviation age in years)	D1, D3, D5

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[5] Waiting times for hearing assessments are not normally distributed, so their median and standard deviation should be reported rather than their mean. This information is currently collected by the NHS on form DM01 (see: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/@ps/@sta/@perf/documents/digitalasset/dh_133634.xls)

[6] An IMP is defined as a tailored plan that identifies and takes into account service users' individual biopsychosocial requirements

HA7	Gender distribution of service users assessed	Quality Requirements data provided to Commissioners via the service user tracker activity form (3-month moving proportions for males and females) OR Audit of service providers (3-month moving proportions for males and females)	D1, D3, D5
HA8	Ethnic distribution of service users assessed	Quality Requirements data provided to Commissioners via the service user tracker activity form (3-month moving proportions for White, Black, Chinese, Other Asian, Mixed Race, Other) OR Audit of service providers (3-month moving proportions for White, Black, Chinese, Other Asian, Mixed Race, Other)	D1, D3, D5

Table 4.3: Performance indicators for hearing aid fitting

Code	Performance indicator	Data source	Domains
HF1	Time to hearing aid fitting following assessment	Quality Requirements data provided to Commissioners (3-month moving median and standard deviation working days) OR Audit of service providers (3-month moving median and standard deviation working days)	D1
HF2	**Proportion of hearing aid fittings verified by Real Ear Measurement (REM) of hearing aid performance**	**Quality Requirements data provided to Commissioners (3-month moving proportion)** **OR** **Audit of service providers (3-month moving proportion)**	**D3, D6**
HF3	**Proportion of service users receiving information on hearing aid support at their fitting[7]**	**Service user questionnaire I Q3a-Q3b (cumulative moving mean score [Q3a] and proportion [Q3b])**	**D2**

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[7] Hearing aid support covers help with hearing aid maintenance, cleaning and batteries

| HF4 | **Proportion of service users receiving information on other support services at their fitting[8]** | **Service user questionnaire I Q4 (cumulative moving proportion)** | **D2** |
| HF5 | **Service user satisfaction with fitting appointment** | **Service user questionnaire I Q5 (cumulative moving mean score)** | **D5** |

Table 4.4: Performance indicators for follow up

Code	Performance indicator	Data source	Domains
FU1	**Proportion of service users followed up**	**Quality Requirements data provided to Commissioners (3-month moving proportion)** **OR** **Audit of service providers (3-month moving proportion)**	**D5**
FU2	Types of follow up (face-to-face, telephone, postal/email)	Audit of service providers (3-month moving proportions – three types)	D5
FU3	**Service user confidence with independent hearing aid use**	**Service user questionnaire I Q6a-Q6d (cumulative moving mean scores)**	**D5**
FU4	**Proportion of service users with improved hearing**	**Quality Requirements data provided to Commissioners (cumulative moving proportion of service users with an improvement in overall GHABP score)** **OR** **Service user questionnaire I Q7 (cumulative moving mean score)**	**D3**
FU5	**Quality of life metric 1: Service user reported improvement in communication**	**Service user questionnaire I Q7 (cumulative moving mean score)**	**D3, D5**
FU6	Quality of life metric 2: Service user reported increase in confidence	Service user questionnaire I Q8 (cumulative moving mean score)	D3, D5
FU7	Quality of life metric 3: Service user reported reduction in feelings of isolation	Service user questionnaire I Q9 (cumulative moving mean score)	D3, D5

[8] Other support services include providers of equipment, counselling etc

FU8	Quality of life metric 4: Service user reported improvement in relationships	Service user questionnaire I Q10 (cumulative moving mean score)	D3, D5
FU9	**Quality of life metric 5: Service user reported support in managing their hearing loss[9]**	**Service user questionnaire I Q11 (cumulative moving mean score)**	**D3, D5**
FU10	Service user satisfaction with follow up visit	Service user questionnaire I Q12 (cumulative moving mean score)	D5

Table 4.5: Performance indicators for aftercare

Code	Performance indicator	Data source	Domains
AC1	Time to repair hearing aid	Quality Requirements data provided to Commissioners (3-month moving median and standard deviation working days) OR Audit of service providers (3-month moving median and standard deviation working days)	D1, D2
AC2	**Proportion of service users for whom aftercare is available within 2 working days of request**	**Quality Requirements data provided to Commissioners (3-month moving proportion) OR Audit of service providers (3-month moving proportion)**	**D1, D6**
AC3	**Improved ability to engage in activities (difficulty service users have with their hearing)**	**Quality Requirements data provided to Commissioners (3-month moving mean score for GHABP Q4 across nominated situations) OR Service user questionnaire II Q1 (cumulative moving proportion)**	**D3**
AC4	**Service user motivation to use hearing aid(s)**	**Quality Requirements data provided to Commissioners (3-month moving mean score for GHABP Q3 across nominated situations) OR Service user questionnaire II Q2 (cumulative moving mean score)**	**D3**

[9] The NHS Outcomes Framework 2012/13 (DoH 2011) domain of 'enhancing the quality of life for people with long term conditions' includes the improvement area of 'ensuring people feel supported to manage their condition'

| AC5 | Interval between service user reviews after discharge | Audit of service providers (3-month moving median months, or contracted interval in weeks) | D1, D5 |
| AC6 | Time to supply hearing aid batteries via postal service: time after receiving request or interval for automatic services | Audit of service providers (3-month moving median days, or contracted interval in days) | D2, D5 |

Table 4.6: Core performance indicators

Code	Performance indicator
HA1	Time from receipt of GP referral to assessment
HA2	Proportion of service users with an Individual Management Plan (IMP) created at their assessment
HA3	Proportion of service users receiving information on treatment choices other than hearing aids at their assessment
HA4	Proportion of service users offered a choice of hearing aid (of those requiring hearing aids)
HA5	Service user satisfaction with hearing assessment
HF2	Proportion of hearing aid fittings verified by REM of hearing aid performance
HF3	Proportion of service users receiving information on hearing aid support at their fitting
HF4	Proportion of service users receiving information on other support services at their fitting
HF5	Service user satisfaction with fitting appointment
FU1	Proportion of service users followed up
FU3	Service user confidence with independent hearing aid use
FU4	Proportion of service users with improved hearing
FU5	Quality of life metric 1: Service user reported improvement in communication
FU9	Quality of life metric 5: Service user reported support in managing their hearing loss
AC2	Proportion of service users for whom aftercare is available within 2 working days of request
AC3	Improved ability to engage in activities (difficulty service users have with their hearing)
AC4	Service user motivation to use hearing aid(s)

Note: in addition to these core performance indicators the service descriptor for staff being deaf aware is also considered to be a critically important evaluation metric.

5 Applications of the framework

The evaluation framework enables relevant data to be collected on hearing services, and in turn, reported to service users and other key stakeholders. Further analysis of the data is also possible for other uses to be determined by Action on Hearing Loss. This is discussed below.

5.1   Data collection

As discussed in Section 4 the service descriptors and performance indicators should be populated using four key data sources:

1.   Service user questionnaires;

2.   Audit of hearing services;

3.   Data provided by hearing services to Commissioners; and

4.   Publicly available information, for service descriptors.

The suggested data collection methods follow, and apply whether evaluating all or a subset of service providers.

The approach to fielding the **service user questionnaires** should carefully consider (a) the target population of older adults with impaired hearing, and (b) the optimal timing of the survey. Internet use by this group may be lower than amongst the general population and so a high response rate may not be garnered through advertising the survey on the Action on Hearing Loss website, for example, or by service providers referring service users to an on-line survey.

It is suggested that a system wide approach be used to distribute the questionnaires. For example, service providers could ask users to complete a questionnaire immediately following their hearing assessment, hearing aid fitting, or follow up visit (i.e. on the premises).   There would however be an issue in providing an incentive for service providers to administer the questionnaire if this increased the appointment time. One incentive would be the potential to 'advertise' their service, if the survey results were to be published and if providers perceived themselves to be performing well.

Service users could be asked to submit their questionnaire at reception or via mail. However, there is a possible bias as service users having either a very good or bad experience may be more likely to submit.

Two service user questionnaires underpin the current framework. Questionnaire 1 should be administered at the follow up visit following a hearing aid fitting. Service users who do not require a hearing aid or who do not attend a follow up visit should instead receive the questionnaire via mail/email.   Questionnaire 2 should be sent to service users by their aftercare provider every three months until discharged.

Action on Hearing Loss thought that a separate questionnaire after each stage of the hearing services pathway would be administratively cumbersome. Questions relating to

the first three stages are therefore combined into a single questionnaire. One limitation of this approach is that a service user's perception of their assessment and fitting may differ later on (recall bias) or be based on their most recent contact (e.g. the follow up visit). However, Action on Hearing Loss felt that this limitation would be outweighed by the administrative benefits of having only two questionnaires.

An **audit of hearing service providers** would require input from each provider. Services could be invited to participate as a way for people to find them. However, service providers who are not AQP registered may be less likely to voluntarily conform to such rigorous reporting requirements, and/or may not have the required data readily available.

Commissioner data includes information provided by AQP registered providers to Commissioners. It is unclear at this stage to what extent providers will conform to these reporting requirements. At a minimum, the AQP Implementation Pack suggests core indicators linked to financial penalties, for which data are expected to be submitted to Commissioners. It is also unclear whether Commissioners would be willing to share these data, particularly if they perceived their contracted services to be under-performing.

Publicly available data on individual hearing services is likely to be limited to service characteristics reported on-line and in directories. This information could be used to populate some of the service descriptors. At this stage it is not anticipated that data to populate any of the performance indicators would be publicly available – or at least not reported by individual service provider.

It is recommended that, ideally, data be collected and reported quarterly, and at least annually. Performance indicators requiring data from Commissioners or a direct audit of service providers specify three-month moving averages to reflect current performance. Indicators requiring data from service user questionnaires are based on cumulative (all historical) averages, because response rates are not yet known and may initially be lower.

The summary statistic(s) for each performance indicator are detailed in the Data Source column in Table 4.2 to Table 4.5. It is envisaged that service providers or Commissioners could provide these summary statistics to the evaluator. One exception is for indicators populated using the service user questionnaires, for which summary statistics should be calculated by the evaluator. Questions relating to quality of life improvements from using the service – for example, improvements in communications, relationships, confidence, and the ability to engage in activities – include a 'not applicable' response option. 'Not applicable' responses should be excluded from the summary statistic calculations, so that the results are relevant to people who have problems in these areas.

It is envisaged that the collected data would be entered into a spreadsheet based on the evaluation framework for further analysis.

5.2   Uses of the framework

The primary objective was to develop a framework that could be used to compare service providers and monitor performance over time using outcomes of relevance to service users. In this manner, the framework may be used as a lever for change, by enabling services to identify areas for improvement.

Action on Hearing Loss hope that eventually the results of these evaluations will be made available online to service users to help them make better decisions when selecting their hearing services. It is envisaged that service users would then be able to review the information for different indicators and providers. The database would be updated annually and could be advertised on relevant organisations' homepages and via mail outs to their members. Further advertising could be displayed in *Hear to Help* services and communicated to GPs. The NHS may also be able to assist with community awareness of the database in line with the AQP initiative.

As presented in Section 4, each indicator is associated with one or more performance domains. It would be possible to highlight the results for particular domains by presenting only the results for indicators associated with those domains. It would not be possible, however, to report an average score for each domain because the indicators within each domain generally use different measurement units that cannot be combined e.g. satisfaction scores, time intervals, proportions of service users.

A number of other uses of the framework are outlined below.

5.2.1 Evaluating the impact of AQP

It is envisaged that the information collected using the framework could be used to evaluate the impact of the AQP initiative in two ways.

First, the framework could be used to evaluate AQP registered and non-registered (including private) service providers. There may be additional difficulties in collecting data from non-AQP registered and private service providers, who may have less data readily available and less incentive to comply with data requests. However, if both AQP registered and non-AQP registered services are evaluated using the framework, then performance indicator outcomes could be compared between registered and non-registered services in the same geographic area.

Second, one reason for annually updating the performance indicator outcomes is to enable service providers' performance to be tracked over time. This would enable the evaluator to review changes in a service provider's performance since becoming AQP registered.

Unlike the AQP Quality Requirements, the performance indicators in this framework are open ended rather than being defined by whether a specific level of performance is achieved. For example, indicator HA1 is the median time from GP referral to assessment. This compares with the current AQP Quality Requirement for NHS Tees (for example) that assessments should be completed within 16 working days following receipt of referral, unless a service user requests otherwise. The information collected with this framework could, however, be used to set new performance benchmarks; for example, by evaluating the distribution of results for specific indicators across providers and the performance of the top percentiles.

5.2.2 Evaluating service user access to hearing services

The evaluation framework could help to assess the degree of equality in access to hearing services for different groups. This could be particularly important when evaluating

outcomes over time, to determine whether inequalities have decreased at an individual provider or geography level since the AQP initiative was introduced.

Performance indicators HA6, HA7 and HA8 could be used to measure access to hearing services as the total numbers of service users. These indicators could also be used to assess the extent to which services tackle inequality, by comparing the age, gender and ethnic distributions for service users with the wider population.

For example, the age, gender and ethnic distributions for a particular city in England (or for the whole of England) could be compared with service users in the same geography. It should be considered that the distributions may differ between the general population and people with age-related hearing loss who will be older, and may be more likely to be of a particular ethnic group or gender. Epidemiological research should inform the appropriate comparator distributions.

5.2.3   Evaluating service value

The framework has been developed primarily from a service user perspective. For private service users, the service and hearing aid fees are likely to be relevant when choosing between providers. However, for NHS entitled service users, the service fees (tariff to the Commissioner) may be less relevant.

If the information collected using this framework is provided to potential service users, they would likely determine which service(s) offered the best 'value' based on a combination of relevant service and hearing aid fees, service descriptors and service provider performance.

Other stakeholders, such as Commissioners, may wish to use the information to undertake more formal 'cost benefit' assessments, for example:

- calculating the additional cost per additional unit of benefit for more expensive but better performing services (where costs include provider fees net of any financial penalties for failing AQP indicators, and benefits include results for one or more performance indicators);
- identifying 'inferior' services that are more expensive but perform less well than others.

From a service user perspective, a service that is more expensive but performs less well than others may still be their optimal service if it provides convenient access, for example.

5.2.4   Higher level comparison of services

One aspirational objective of the framework is to enable potential service users to compare the performance and other characteristics of all service providers from which they can choose. This comparison is likely to be made between providers located within the same city/town – with that geographic level being a service descriptor in the framework – or at least within the bounds of the same NHS Trust.

Evaluators may also wish to compare the performance of service providers (overall) in different geographic areas. This could be done in several ways, for example:

- comparing the performance (indicators) for providers with similar service descriptors; and

- aggregating performance indicator results at the city/town or commissioning NHS Trust level (using averages), and comparing these aggregated results.

5.3 Potential extensions of the framework to other settings

In the future, it is envisaged that the framework could be extended to UK regions outside England. Such an extension should at least consider the differences in data that could be used to populate the framework. For example, many performance indicators in the current framework could be populated using data from Commissioners, but these data may not be available in regions that do not have the AQP initiative in place.

The approach described in this report could also be used as a foundation to design an evaluation framework for other hearing services e.g. tinnitus support services. However, the actual framework described in this report must only be used to evaluate adult hearing services for age related hearing loss in England.

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Appendix A: Research panel survey respondents

A survey to assess the usefulness of core indicators to service users was sent to approximately 370 members of the Action on Hearing Loss research panel. In total, 156 people completed the survey, representing a response rate of 42%. The characteristics of respondents are detailed in the tables below.

Table A.1: Applicable statements by research panel survey respondents

Response	Respondents	Percentage
I wear hearing aids	130	84
I am hard of hearing	108	70
I have tinnitus	77	50
I am deaf	24	16
I am deafened	19	12
I have cochlear implant(s)	2	1
I wear a bone-anchored hearing aid (BAHA)	1	1
I use British Sign Language	2	1
I use Sign Supported English (SSE)	3	2
I do not have hearing loss	4	3
Other	14	9
Total number of respondents	155	100

Source: Action on Hearing Loss research panel survey

Table A.2: Age when research panel survey respondents started to lose their hearing

Response	Respondents	Percentage
From birth	16	10
0-2 years	4	3
3-5 years	8	5
6-15 years	14	9
16-35 years	31	20
36-49 years	39	25
50-64 years	33	21
65-74 years	9	6
75 or over	0	0
Total number of respondents	154	100

Source: Action on Hearing Loss research panel survey

Table A.3: Gender of research panel survey respondents

Response	Respondents	Percentage
Male	51	33
Female	103	67
Total number of respondents	154	100

Source: Action on Hearing Loss research panel survey

Table A.4: Age of research panel survey respondents

Response	Respondents	Percentage
16-24	1	1
25-44	20	13
45-54	26	17
55-64	57	37
65-74	37	24
75-84	13	8
85 and over	1	1
Total number of respondents	155	100

Source: Action on Hearing Loss research panel survey

Table A.5: Region of residence of research panel survey respondents

Response	Respondents	Percentage
East Anglia	10	7
Greater London	16	10
Midlands	29	19
North-east England	8	5
North-west England	15	10
Northern Ireland	1	1
Scotland	9	6
South-east England	23	15
South-west England	23	15
Wales	2	1
Yorkshire and the Humber	17	11
Other	2	1
Total number of respondents	155	100

Source: Action on Hearing Loss research panel survey

Appendix B: Service user questionnaires

Table B.1: Service user questionnaires

Questionnaire I

HEARING ASSESSMENT

Q1a At your assessment did you receive information about different treatment options, not only hearing aids? (yes / no)

Q1b At your assessment, if you were considered to require a hearing aid, were you offered a choice of hearing aid? (yes / no / not applicable)

Q2 How satisfied were you overall with your hearing assessment? (1 = not satisfied at all, 2 = somewhat dissatisfied, 3 = neither dissatisfied or satisfied, 4 = moderately satisfied, 5 = completely satisfied)

HEARING AID FITTING

Q3a How satisfied were you with the information given to you at your fitting on how to use your hearing aid(s)? (1 = not satisfied at all, 2 = somewhat dissatisfied, 3 = neither dissatisfied or satisfied, 4 = moderately satisfied, 5 = completely satisfied)

Q3b At the fitting, were you given information on who to contact if you have problems using your hearing aid(s)? (yes / no)

Q4 At the fitting, did you receive information on support services other than those to help you maintain and use your hearing aid(s)? e.g. lip-reading classes, assistive technologies, employment support, local support groups, communication support services (yes / no)

Q5 How satisfied were you overall with your hearing aid fitting? (1 = not satisfied at all, 2 = somewhat dissatisfied, 3 = neither dissatisfied or satisfied, 4 = moderately satisfied, 5 = completely satisfied)

FOLLOW UP

Q6a Prior to your follow up visit, how confident were you in inserting your hearing aid(s)? Please rate this on a scale of 1 to 5 where 1 = not confident at all, 5 = completely confident

Q6b Prior to your follow up visit, how confident were you in adjusting your hearing aid(s)? Please rate this on a scale of 1 to 5 where 1 = not confident at all, 5 = completely confident

Q6c Prior to your follow up visit, how confident were you in looking after and cleaning your hearing aid(s)? Please rate this on a scale of 1 to 5 where 1 = not confident at all, 5 = completely confident

Q6d Prior to your follow up visit, how confident were you in fitting new batteries into your hearing aid(s)? Please rate this on a scale of 1 to 5 where 1 = not confident at all, 5 = completely confident

Q7 To what extent has your interaction with the hearing service led to an improvement in your communication? (0 = not applicable e.g. you had no communication problems previously, 1 = no improvement, 2 = some improvement, 3 = moderate improvement, 4 = great improvement, 5 = communication is now perfect)

Q8 Has your interaction with the hearing service provider improved your confidence? (yes / no / not applicable)

Q9 Has your interaction with the hearing service provider reduced any feelings of isolation? (yes / no / not applicable)

Q10 Has your interaction with the hearing service provider improved relationships with people around you? (yes / no / not applicable)

Q11   To what extent has the hearing service supported you to manage your hearing loss? (0 = not applicable e.g. you felt fully supported previously, 1 = no support, 2 = some support, 3 = moderate support, 4 = great support, 5 = all the support you require)

Q12   How satisfied were you overall with your follow up visit? (1 = not satisfied at all, 2 = somewhat dissatisfied, 3 = neither dissatisfied or satisfied, 4 = moderately satisfied, 5 = completely satisfied)

Questionnaire II

Q1   Has your hearing aid(s) enabled you to engage in activities that you were unable to do before they were fitted? (yes / no / not applicable)

Q2   Which of the following describes most closely how often you use your hearing aid(s)? (1= never, 2 = around 1/4 of the time, 3 = around half of the time, 4 = around 3/4 of the time, 5 = always)

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