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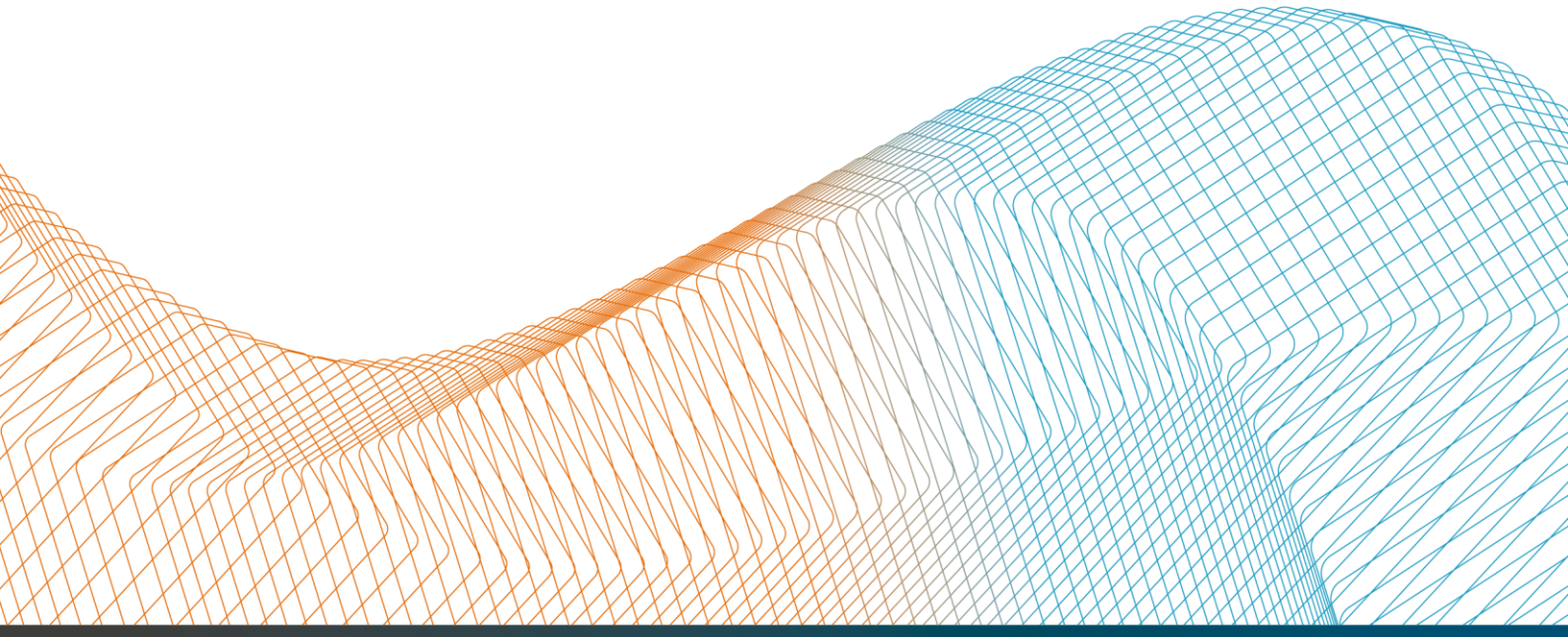
# Review of Telecare Call Handling

## Part 2 Report

December 2019



# Contents

# 1. Executive Summary

FarrPoint has been commissioned by COSLA and the Scottish Government Technology Enabled Care programme to complete a review of telecare call handling across Scotland. The review is completed in two parts. The first part of the study sought to understand existing telecare call handling arrangements with findings presented in the Part 1 Report[1]. This Report presents the output of the second part of the study which has identified potential improvements to call handling arrangements, and the benefits they could deliver. The call handling improvements have been identified using views gathered from interviews completed with stakeholders that are either directly involved in the delivery of telecare, work for an organisation that interfaces with telecare services, or use telecare services.

The call handling changes identified fall into five categories, and within each of these several potential improvements are detailed:

**Standardisation:**

Call handling improvements focussed on increasing the level of standardisation used in telecare delivery.

They seek to address the high level of variance in service scope and call handling found in the first part of the study.

The improvements introduce a degree of standardisation in telecare definitions, operational procedures, quality measures and reporting, with the ability to tailor services and service delivery to local needs and capabilities remaining, this is particularly important in rural and island communities.

The call handling changes identified have the potential to deliver a range of benefits, including:

- Improving service quality;
- Simplifying the link between telecare and partner organisations;
- Increasing the efficiency of service delivery;
- Risk reduction;
- Simplifying the implementation of future call handling improvements.

**Automation:**

These improvements recommend an increased use of automation to answer telecare calls and in the handling of these calls.

These changes would only be used for maintenance and system administration calls with call takers remaining responsible for client facing calls.

These call handling changes could improve the efficiency of service delivery and result in faster resolution of clients' service issues.

Figures from Spain suggest that there is potential for around 40% of incoming calls to be answered automatically. In Scotland, current use of automation varies, with some Partnerships using it in a limited fashion, and with many not using it at all.

Automation offers potential to free up call taker resource, which could then be used to deliver some of the other call handling changes outlined in this report.

[1] Review of Telecare Call Handling Services – Part 1 Report. FarrPoint. November 2019.

**Proactive Services:**

Telecare services in Scotland are currently reactive, responding to alarm calls and device activations as they arrive at the ARC.

Proactive services would involve telecare providers making outgoing calls to clients to provide advice aiming to improve health and wellbeing.

This advice could either be generic in nature, addressing broad themes such as healthy eating and active aging, or tailored to the needs of individual clients, providing advice focussed on health conditions and based on individual care plans.

This proactive service model (based on providing advice based on themes, not individualised) has been implemented by Tunstall Televida in Spain. The benefits seen there are similar to those that can be expected in Scotland. These include:

- Promoting a healthy lifestyle;
- Preventing falls;
- Tackling loneliness;
- Providing support to carers.

These client service improvements also result in benefits to the public sector in terms of preventing admissions and delaying the progression of clients to higher dependence care, both of which result in cost savings.

Providing client tailored proactive advice means that the telecare service will be providing health and care advice. This shift in service has an impact on call handling skills and procedures and the requirement for close links with other care providers, all of which will need to be planned as part of the implementation of this change.

Providing proactive services also impacts staff resources. Call takers would be required to make regular outgoing calls to clients. Although most ARCs already make calls to clients, the reason for these calls are generally administrative in nature. Providing health and wellbeing advice is likely to increase both the number and duration of these calls, with an associated impact on call taker resource requirements.

**Shared Services:**

Currently 72% of Partnerships in Scotland deliver telecare services using an Alarm Receiving Centre (ARCs) that they own and operate themselves.

Call handling could be changed to make increased use of sharing of service delivery between Partnerships.

Three headline potential models for shared call handling are examined in this report. These are based on different implementations of shared technology solutions and shared call taker resource.

Implementing shared services has the potential to offer Partnerships technology cost savings compared to existing arrangements.

In addition, implementing shared call handling could allow more efficient use of call hander resource, which is estimated to account for 87% of Partnerships' current ARC related annual costs.

Implementing shared services would also help Partnerships source the specialist skills and processes required if telecare and telehealth services merge.

Shared services will simplify the process of aligning telecare services with other related change projects, such as the Digital Office's common platforms project and the Digital Transformation Services' Digital Platform project.

The choice of shared service model is heavily influenced by the scope of the telecare service being delivered and must take account of the wider role of telecare staff in delivering other (non-telecare) out of hours services.

**Telecare Devices:** Improvements based on the use of clients' own consumer devices for the delivery of telecare services and to widen and improve the level of telecare monitoring.

Telecare services could be offered to clients using their own phones, either as a phone-only 'entry level' telecare service for low risk clients, or as an additional contact route for existing telecare clients who also have dedicated telecare devices.

These changes would extend the reach of telecare service outside the home promoting health, wellbeing and helping reduce social isolation.

The phone-only telecare approach could also offer a lower cost service offering, helping to increase the uptake of telecare.

Other options for using clients' own devices include potential use of smart home equipment such as Amazon Echo (Alexa), however, these may be difficult to implement using existing telecare ARC solutions.

Telecare monitoring could also use consumer technology, for example using smart fridges to provide activity monitoring. Telecare monitoring could also integrate with consumer health tracking devices and telehealth devices to provide a single view of client health and wellbeing.

As above, these changes would be difficult to achieve using existing ARC solutions, and so should be seen as a longer-term call handling change.

At this stage, a high-level analysis of the benefits and practicalities of each of the improvements identified has been completed; **input is now required from stakeholders to identify the call handling changes that are worthy of further analysis**. These shortlisted changes will then be examined in more detail to fully understand their benefits and how they would be implemented.

The choice of the call handling improvements to progress will be heavily influenced by the future scope of telecare services. **The scope of telecare services must be determined at either a local or national level before call handling arrangements to deliver these services can be developed. This is particularly true of the improvements relating to shared services and the use of proactive services.** Current telecare services largely act as an alarm response service, with limited integration to other health and social care services. Moving forward, telecare services could continue to operate in this way, or the scope of the service could widen significantly, with telecare becoming part of an integrated health and social care service.

**If telecare remains largely as an alarm response service, this means that the types of call handled, and their complexity, is relatively limited. Call handling improvements will focus on increasing the efficiency with which these limited call types are dealt with.** This means that changes will tend towards standardised services, delivered at scale, using centralised shared call handling facilities.

**If telecare is delivered as part of an integrated health and social care service, then it is likely that call handling changes will not be focussed purely on efficiency (although this will still be an objective) and will instead need to focus on implementing joined-up working between the various health and social care practitioners that are involved in the delivery of service to clients.** Using this approach, telecare could be involved in the delivery of health services, which has a significant impact on call handling procedures and skills. Using this model of telecare scope, the use of centralised call

handling facilities is a less obvious outcome given the need for telecare to integrate with health and care services, which will continue to be delivered at a local level.

The call handling improvements identified in this report can be implemented independently of each other, however, regardless of the improvements selected to progress, the outline implementation approach to implement them is likely to be as presented in Figure 1. This plan assumes that it is decided that all the improvements identified in this report are progressed, which may not be the case. We recommend that an updated version of this plan is developed once a shortlist of the improvements to be progressed is agreed by stakeholders.

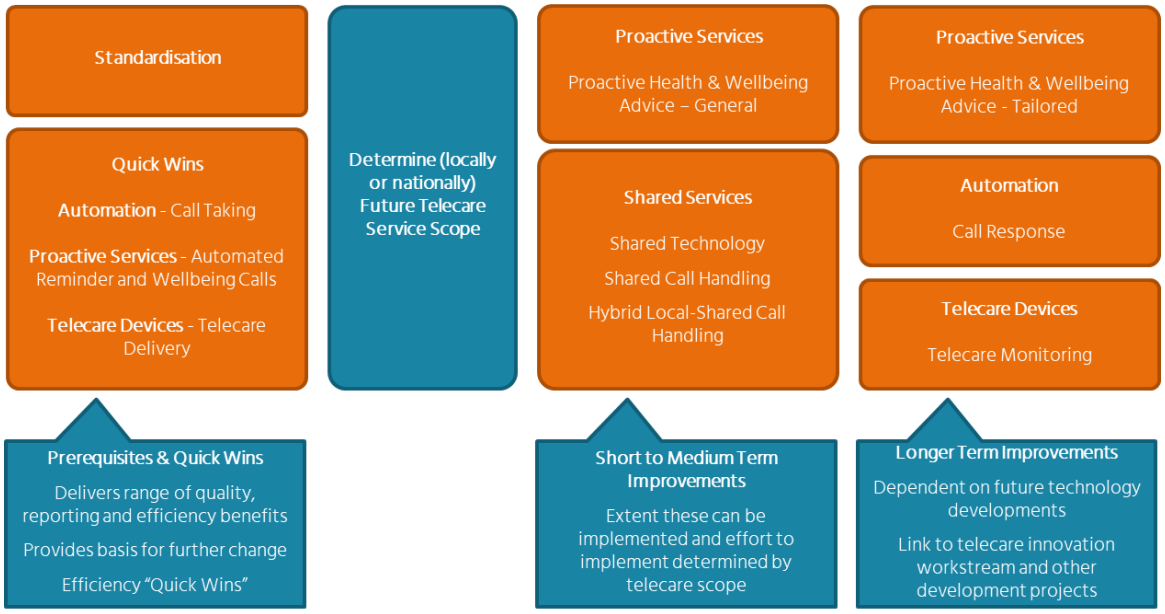



*Figure 1 – Potential Implementation Plan for Call Handling Improvements. Source: FarrPoint.*

The plan implements pre-requisites and "quick wins" initially. This means introducing standardisation to provide a basis for implementing other improvements and changes aimed at improving services and efficiency that do not require large scale technical or operational changes to implement.

Following implementation of these initial improvements, the next steps in the plan are dependent on the future scope of telecare services. Decisions, either at a local level or nationally, on the scope of telecare, and its relationship with other health and care services are required in order to ensure that subsequent call handling improvements align with this scope.

Once the scope of telecare services is known, the role of proactive services in call handling and the optimum shared services approach can be determined and implemented.

Finally, there are a number of longer-term changes that can be planned. These are reliant on developments of health and care technology or standards before they can be implemented. These changes should be aligned with the telecare innovation workstream and other change projects in health and care.

# 2. Introduction

## 2.1. Background and Scope

FarrPoint has been commissioned by COSLA and the Scottish Government Technology Enabled Care programme to complete a review of telecare call handling across Scotland. Given the importance local authorities attach to telecare services, the review was commissioned to map and understand local variations in call handling, to explore the suitability of potential new models, and to inform future investment in telecare as a cohesive element of a transformed health and social care provision across Scotland.

The review is completed in two parts as shown:

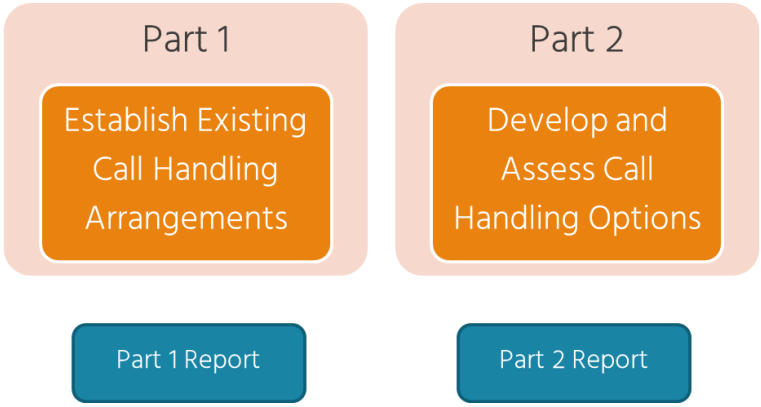



*Figure 2 – Study Stages, Source: FarrPoint.*

The first part of the study established the existing telecare call handling arrangements used in Scotland. This understanding was obtained through a combination of information gained from on-line questionnaires issued to Partnerships delivering telecare services, and interviews completed with stakeholders. The findings of this part of the study were detailed in a Part 1 Report.

This document details the results of the second part of the study. This stage has identified potential improvements to call handling arrangements, and the benefits they could deliver. The potential improvements have been identified through a series of consultation meetings with stakeholders.

The output of this study will enable COSLA and the Scottish Government to understand potential improvements to telecare call handling arrangements, as well as their associated benefits, and some of the practicalities associated with implementing the change.

At this stage, a high-level analysis of the benefits and practicalities has been completed; the call handling changes that are deemed worthy of further analysis will then be examined in more detail to fully understand their benefits and how they would be implemented across Scotland.

## 2.2. Consultations

FarrPoint has completed consultations with a range of stakeholders in order to complete this study. These stakeholders included users, organisations directly involved in the delivery of telecare, organisations that interface with telecare services, and non-telecare organisations with call-handling experience. We are grateful to the organisations and individuals participating for sharing their views with us.

Consultations were completed with:

- Alzheimers Scotland;
- Appello;
- Association of Local Authority Chief Housing Officers;
- Blackwood;
- Care Inspectorate;
- COSLA;
- DHI;
- Digital Office;
- Edinburgh Health & Care Partnership;
- Falkirk Health & Care Partnership;
- Kristiansand Kommune (Norway);
- Moray Health and Social Care Partnership;
- NHS24;
- Perth & Kinross Health & Care Partnership;
- SBCares;
- Scottish Ambulance Service;
- Scottish Centre for Telecare and Telehealth;
- Scottish Community Safety Network;
- Scottish Fire & Rescue Service;
- Scottish Government – TEC;
- Social Work Scotland;
- SOLACE;
- South Ayrshire Health and Social Care Partnership;
- Telecare Users: Via Alzheimer Scotland Blether & a Bite Cafe;
- TSA;
- Tunstall Televida;
- Tunstall.

In addition to these consultations, potential call handling improvements were also discussed during the interviews completed with telecare Partnerships during the first part of this study.

# 3. The Need for Change

There are several factors driving the need for change in current telecare call handling arrangements.

Telecare is a key element of Scotland's strategy for health and social care services. The Scottish Government's 2020 Vision for Health and Social Care[2] is that "***everyone is able to live longer healthier lives at home, or in a homely setting***". Key elements of delivering this vision are that **health and care services should be integrated and focus on prevention**. As highlighted in our Part 1 Report, telecare **services are currently largely standalone and reactive**, meaning that service change is required in order to deliver the 2020 vision.

**Demographic change will increase demand for health and care services** as people live longer. The number of people aged 75 and over in Scotland is projected to increase by around 27% by 2026, and by 79% over a 25-year period[3]. Associated with this is an increase in frailty and people living with long-term conditions. The Scottish Government commissioned Deloitte to complete a feasibility study for the provision of universal telecare for the over 75s[4]. The study recommended that **telecare take-up should be increased from the current level of around 20% of the over 75 cohort to at least a third, and higher in deprived areas**. Using current telecare call handling **arrangements, this increase in client numbers would require Partnerships to increase staffing levels** to cope with the corresponding increase in installations, maintenance, and call volumes.

In common with all public services, **telecare is increasingly under financial pressure and having to deliver 'more with less'**. The Deloitte report highlights the cost of telecare as being a barrier to increased uptake, and this is backed up by the anecdotal feedback this study has obtained from Partnerships which report that **significant numbers of clients have withdrawn from telecare when charges have been introduced or increased**. To respond to these challenges, telecare must make use of technology to allow current services to be delivered more efficiently and to scale and broaden the service without significant increases in staffing.

**Telecare is currently being migrated to digital technology**. This move is largely being driven by telecommunication providers' rollout of digital telephone lines and the need to **ensure that telecare remains reliable** once clients' homes are moved to these new services. The move to digital also offers the possibility of using the flexibility and capabilities the technology brings to **broaden the scope of telecare services** offered to clients, to **integrate them with other health and care services**, and to **deliver existing services more efficiently**.

As well as impacting the scope of the telecare service offered to clients, the introduction of digital technology also requires **significant changes to the operational processes Partnerships use to deliver these services**. Telecare has often been operated as a 'standalone' service that has been managed and maintained by telecare staff and an ARC supplier. The shift to digital technology means that telecare becomes an IT application which requires close integration with Partnerships' existing IT infrastructure and support arrangements. These **existing support arrangements may not be set up**

[2] https://www2.gov.scot/Topics/Health/Policy/2020-Vision

[3] National Record of Scotland: Projected Population of Scotland (2016-based). https://www.nrscotland.gov.uk/files//statistics/population-projections/2016-based-scot/pop-proj-2016-scot-nat-pop-pro-pub.pdf

[4] Telecare Feasibility Study – Feasibility study for the provision of universal telecare services for the over 75s. Deloitte. August 2017. https://www.ehealth.scot/wp-content/uploads/2017/11/2017-11-20-Telecare-Feasibility-Study-Report-FINAL-1.pdf

**to operate a 24x7 life critical service,** requiring around the clock access to the skills and resource required to interpret and respond to system performance issues.

**Digital technology will also increase the pace of change in telecare**, which has traditionally been slow, with devices typically being used for 5-10 years. Partnerships will be required to implement changes to telecare solutions on a frequent basis to ensure that services remain secure and reliable, and to take advantage of new features. **Implementing this change will be complicated by the fragmented and diverse nature of existing telecare delivery arrangements**. There are currently estimated to be 22 ARCs in Scotland[5] delivering telecare services in, or on behalf of, Scottish Partnerships. These Partnerships use a range of systems and operational procedures to deliver telecare meaning that **change must be planned and implemented by each Partnership individually, increasing the time, effort and risk associated with this change**.

**This fragmentation also complicates the integration of telecare with other health and care services and interfaces to other organisations that provide support to telecare clients.** For example, discharge arrangements from hospital are complicated when health boards (those whose footprint encompasses multiple Partnership areas) have access to different telecare offerings and procedures dependent on a client's location. Similarly, organisations such as the emergency services, and third sector partners, may have to use a range of different services and procedures dependent on which telecare Partnership they are interfacing with. This fragmentation also means that **the service offered to clients, and associated service standards, can vary dependent on client location**.

[5] Source: Feasibility Study: Telecare in Scotland Analogue to Digital Transition. August 2015. https://www.digitaloffice.scot/media/Feasibility%20Study%20-%20Telecare%20in%20Scotland%20A2DT%20Transition%20-%20Product%201%20Report.pdf

# 4. Potential Call Handling Improvements

The call handling improvements identified during this study have been grouped into five categories:

| | |
|---|---|
| **Standardisation:** | Call handling improvements focussed on increasing the level of standardisation used in telecare delivery. |
| **Automation:** | Increased use of automation to answer telecare calls and in the handling of these calls. |
| **Proactive Services:** | Use of outgoing calls to provide proactive services providing clients with advice aiming to improve health and wellbeing. |
| **Shared Services:** | Increased use of sharing, either technology or call handling resource, in the delivery of telecare. |
| **Telecare Devices:** | Use of clients' own consumer devices for the delivery of telecare services and to widen and improve the level of telecare monitoring. |

Each of these categories is examined over the following sections of this report. For each category the call handling improvements identified are outlined, as well as an overview of the benefits they will deliver, and the practicalities associated with implementing them.

At this stage a high-level analysis has been completed of the benefits and practicalities associated with each of the improvements. Further examination will be completed following feedback from stakeholders on those improvements that warrant further work.

# 5. Standardisation

## 5.1. Standardisation Overview

One of the headline findings of Stage 1 of this study was the level of variation found in current telecare delivery in Scotland. This variation included:

- The scope of the telecare service offered to clients;
- The availability of response services;
- Eligibility and charging approach;
- Operational processes;
- Call definitions;
- Service monitoring, quality measures and reporting arrangements.

The degree of variation meant that Stage 1 found it difficult to obtain a Scotland-wide view of call handling and to directly compare the call handling between Partnerships. Specific examples include:

- Differences in the definition of a service user: this could be a person or a household, potentially with more than one person in it;
- Differences in the scope of the telecare service: Some services are purely alarm monitoring, others also use telecare for making personal care calls, etc, resulting in very different call volumes and reasons;
- Differences in the response to alarm calls: For example, the processes used for determining when emergency services should be called, and how calls are handled once emergency services have been mobilised (stay on the line to the caller or hang up);
- Differences in how calls and call reasons are defined: For example, how emergency/response calls and non-emergency/response calls are defined;
- Differences in the call statistics that are collected and reported on.

This variation has also impacted the findings of other reports into Social Care and Telecare. Examples include:

- Insights into Social Care in Scotland: ISD Scotland[6]. Published June 2019.
  - The report notes that data gaps and granularity has affected and limited the analysis that could be completed.
- Annual Telecare Data Report for Scotland, January – December 2017[7]. ISD Scotland. Published November 2018.
  - Data gaps prevented a complete picture for Scotland being presented. Only 17 Partnerships met the minimum criteria for complete analysis of their data;

[6] https://www.isdscotland.org/Health-Topics/Health-and-Social-Community-Care/Publications/2019-06-11/2019-06-11-Social-Care-Report.pdf?53840273619

[7] https://sctt.org.uk/wp-content/uploads/2019/01/Telecare-Annual-Report-2017.2018-V1.1.pdf

- It was highlighted that it was difficult for Partnerships to collate the data requested given the different systems in use and the need for reports to be run manually;
- The main reason for alarm activations, representing 68% of calls, was classified as "other", which provides no information about the reason for the majority of telecare calls.

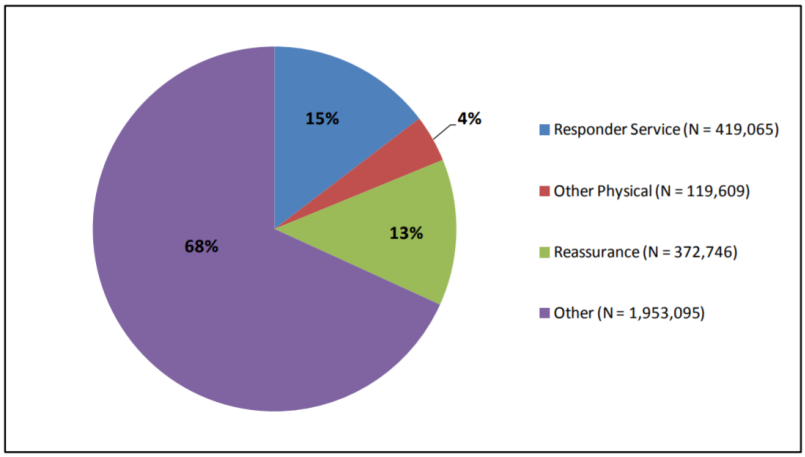
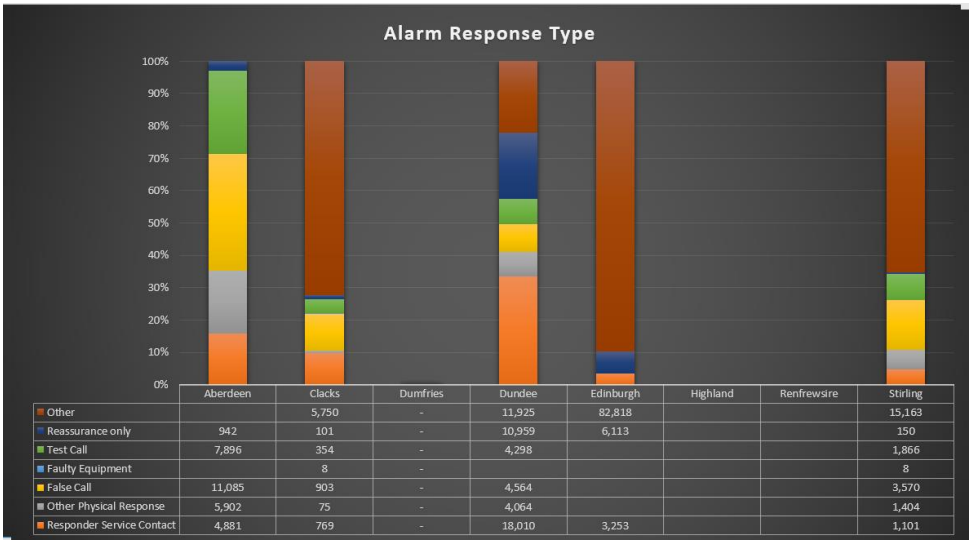



*Figure 3 – Aggregate Analysis – Activations by Alarm Response Type. Source: Taken from "Annual Telecare Data Report for Scotland, January – December 2017". ISD Scotland. Published Nov. 2018.*

- Telecare Data Workshop, Outputs from Q3 2018/19. Scotland's Housing Network. February 2019.
  - Data was only available from a limited number of Partnerships. In addition, some data provided was not complete;
  - Differences in classifying data, for example alarm response types, meant that very different results were seen between Partnerships;
  - Again, a significant proportion of calls were classified as "other", providing no information on the nature of the call or response.




| | Aberdeen | Clacks | Dumfries | Dundee | Edinburgh | Highland | Renfrewsire | Stirling |
|---|---|---|---|---|---|---|---|---|
| Other | | 5,750 | - | 11,925 | 82,818 | | | 15,163 |
| Reassurance only | 942 | 101 | - | 10,959 | 6,113 | | | 150 |
| Test Call | 7,896 | 354 | - | 4,298 | | | | 1,866 |
| Faulty Equipment | | 8 | - | | | | | 8 |
| False Call | 11,085 | 903 | - | 4,564 | | | | 3,570 |
| Other Physical Response | 5,902 | 75 | - | 4,064 | | | | 1,404 |
| Responder Service Contact | 4,881 | 769 | - | 18,010 | 3,253 | | | 1,101 |

*Figure 4 –Alarm Response Type by Partnership. Source: Taken from "Telecare Data Workshop, Outputs from Q3 2018/19". Scotland's Housing Network. February 2019.*

The Telecare Feasibility study completed by Deloitte[8] in August 2017 also recommended that "*Local Authorities should focus on working collaboratively to achieve greater harmonisation and standardisation of polices and processes to drive equity of service across the country*". The report highlighted that standardisation could reduce the people-related operating costs of telecare, estimated at 80% of the total.

A 'one size fits all' approach to telecare delivery in Scotland, with a standard scope and delivery approach, is unlikely to be practical or desirable given the need for services to be tailored to suit individual user needs, local needs and resources, this is particularly important in rural and island communities.. However, some degree of standardisation of telecare could be introduced whilst retaining the ability to tailor services to local needs, which would deliver a range of benefits to clients, Partnerships, and other health & care organisations. Standardisation, using existing best practice from across Scotland, could be introduced in:

- Definitions;
- Operational procedures / Call handling;
- Quality measures;
- Reporting.

**Definitions:** Standardisation of the definitions used in telecare delivery. This could include a standard definition of:

- A 'telecare client';
- The information captured on clients (demographics and health/care conditions/needs);
- Call reasons;
- Response types;
- Types of failed calls and other service affecting issues;
- Referral reasons and source;
- Installation and withdrawal timescales.

**Operational procedures / Call handling:** Standardisation of the processes used in telecare delivery, including call handling. This could include standard practices for:

- Telecare assessment;
- Telecare re-assessment;
- Handling of client calls (by reason);
- Referral of client calls to emergency services – when and how;
- Referral of client calls to other health and care providers;
- Approach to telecare service maintenance and administration.

**Quality measures:** Standardisation of the measures used to monitor the quality of telecare services. This could include standard measures and success thresholds for:

- Call answering;

[8] Telecare Feasibility Study – Feasibility study for the provision of universal telecare services for the over 75s. Deloitte. August 2017.

- Call quality;
- Call outcome;
- System performance (technical);
- Client satisfaction;
- System installation and withdrawal.

**Reporting:** Standardisation of the approach to reporting telecare performance, including the measures reported on, and the frequency of reporting. The reporting measures are likely to align with the quality measures outlined above.

It is noted that 9 Scottish Partnerships currently have TSA[9] accreditation, and 1 has CECOPS[10] accreditation. The remaining Partnerships are not accredited. The 10 partnerships that have accreditation have met standards published by the accreditation body. However, these standards are interpreted and implemented at a local level, which does not help address the issue of national variation highlighted in this report.

## 5.2. Benefits

Implementing standardisation in telecare delivery has potential to deliver benefits in several areas.


*Figure 5 –Summary of Standardisation Benefits. Source: FarrPoint.*

[9] https://www.tsa-voice.org.uk/

[10] http://www.cecops.org.uk/

### 5.2.1. Service Quality

Implementing standardisation would allow best practice for telecare delivery to be developed and delivered across Scotland, providing consistent, and potentially improved, service quality to telecare clients.

Standardisation would also allow Partnerships to complete benchmarking of their service, to compare the quality of services being delivered against other Partnerships, and nationally.

Telecare is not currently regulated by the Care Inspectorate; however, the service could come into the inspection remit in the future if it is decided that telecare falls within the definition of a regulated care service. Similarly, if the scope of telecare is broadened to include telehealth services (as detailed in other sections of this report) then services could require inspection by Healthcare Improvement Scotland. If telecare became regulated then inspections are likely to be completed to check the quality of the service and the staffing, training and equipment used to deliver the service. This inspection process is likely to be simplified if Partnerships use a common approach to defining and delivering telecare.

### 5.2.2. Risk Management

A standardised approach to service delivery, measurement and reporting will ensure that telecare services are delivered in a safe manner, and that audit trails exist to demonstrate this.

Risk management is likely to become an increasingly important issue if the scope of telecare services widens (see other sections of this report for detail) blurring the distinction between health and care services. There are existing examples of telecare services offering health devices to clients, such as epilepsy monitors. There is a risk to Partnerships associated with how data from these devices is interpreted and the advice provided to clients.

### 5.2.3. Call Handling Between Organisations

Implementing standardisation would allow best practice to be implemented in how telecare interfaces with other organisations that provide support to clients. These providers include the emergency services, NHS24, and other health/care organisations.

Currently each Partnership has its own procedures for how calls to the emergency services are identified and handled. Although some Partnerships have developed these procedures in conjunction with the emergency services, there is still a large degree of variation across Scotland.

Currently around 50% of the total number of calls to the Ambulance Service relate to falls. Of these calls, around 50% of patients just need lifting, i.e. there is no medical need. Not all these calls come via a telecare ARC, but a significant proportion do. Where the calls are routed from an ARC the Ambulance Service sees variation in how calls are handled, and the information made available. The Ambulance Service will attend calls of this nature, but require information from the patient (directly) to allow the call to be assigned a graded response. The use of a standard approach within ARCs to identify calls that should be passed to the Ambulance Service, and the handling and information associated with these calls (including any requirement for follow up calls), would assist the Ambulance Service handle a significant proportion of its workload more efficiently, and improve the service provided to clients.

Similar standardised processes would benefit calls passed to the Fire Service, and to a lesser extent Police Scotland (given that there are fewer calls passed to the Police service).

The Ambulance Service also highlighted that there is variation in the services available to respond to falls across Scotland. In some areas (such as Edinburgh) there is a falls service, which can be used in place of an ambulance to respond to some calls. However, the availability of this service is patchy resulting in different responses having to be used in different areas.

NHS24 does not currently receive a significant number of calls directed via a patient's telecare service so there are limited short-term benefits associated with implementing standardised processes for interfacing with telecare. However, NHS24 could provide a role in supporting telecare moving forward, which could potentially include:

- Having processes within telecare which, where appropriate, signposts clients to the health guides and information contained on the NHS Inform website;
- NHS24 is implementing a digital strategy that is introducing more contact channels, including videoconferencing and webchat. There is potential for linking these contact channels to telecare, if the scope of the telecare service is broadened to include video-technology;
- NHS24 working with telecare Partnerships and other health/care stakeholders to develop new services where NHS24 can add value / benefits to telecare users .

### 5.2.4. Integration with Other Organisations

In addition to the call handling benefits detailed above, standardisation could improve how telecare Partnerships work with other organisations, more generally. There are a range of organisations that have contact with telecare users; while there are examples of joint working with some of these organisations currently, there is scope for this to be widened and applied nationally. This has potential to improve services to the client, providing a more integrated approach to health and care and improving efficiency of delivery.

There are currently instances (for example East Renfrewshire) of the Fire Service identifying a potential need for telecare services during fire safety visits to homes. During these visits the Fire Service can also help identify trip hazards and, where the resident is a telecare user, install smoke detectors that connect to the telecare service, rather than standalone devices. A standardised approach to assessment and installation would allow this kind of best practice for integration of telecare and fire safety visits to be developed and applied across Scotland.

Alzheimer Scotland has developed an assessment tool as part of a Test of Change project, and now being further developed as a CivTech Challenge. The tool assesses client needs and recommends support, products and services that would assist in improving daily living and wellbeing. These recommendations can include consumer products, and signposting to trusted resources, but can also identify a need for telecare. Standardisation of the telecare assessment process could allow this to be integrated into the assessments being completed by Partner organisations, such as Alzheimer Scotland, potentially avoiding the current need for a second assessment process to be completed for telecare, which ask the client a lot of the same questions.

### 5.2.5. Service Monitoring and Reporting

Implementing standardisation in service monitoring and reporting would allow organisations to directly compare the quality and performance of their service against other Partnerships and national benchmarks.

Standard monitoring and reporting would also allow national figures on telecare use, quality and performance to be collated with a greater degree of completeness and consistency than is currently possible.

A standard approach with standard templates would also reduce the effort associated with telecare reporting, to meet both local and national needs, and replace the current approach of bespoke reports.

### 5.2.6. Service Development

The current variation in telecare delivery means that service developments must be interpreted and implemented differently by each Partnership.

The introduction of digital technology to telecare means that the extent and pace of change in the service is going to increase significantly from historical levels. New digital devices will be released on a continual basis and have a refresh cycle significantly shorter than the 5 – 10 years typically seen for existing analogue telecare equipment. This technology change will impact on the nature of the telecare service, and the processes used to deliver it.

Telecare Partnerships will need to assign increasing amounts of resource to implement the required level of change while maintaining a safe and effective service if the current localised design and delivery model is maintained.

With more standardised processes, service developments can be more easily implemented. Guidance on how to implement the developments and any associated operational process changes can be developed once and then used, with minor changes for localisation, by all Partnerships. This guidance will be based on best practice, ensuring a 'once for Scotland' approach that aligns with Digital First standards.

Use of standardised processes will better support the use of shared services in telecare delivery. To implement shared services at present, Partnerships must change elements of their service to ensure they align. If standardisation was implemented, Partnerships' services would already be closely aligned, making the process of implementing sharing simpler.

This alignment of the telecare processes would also support the Digital Office's Common Platforms project, better supporting the use of common components in the delivery of telecare and associated services.

### 5.2.7. Efficiencies

Standardisation would deliver efficiencies to Partnerships through the use of national operational procedures based on best practice, which would remove the need for Partnerships to develop and maintain local procedures and associated resource.

Standardised telecare delivery would allow Partnerships to procure equipment and services more easily. Currently procurement documentation for ARC equipment/services must be developed by each Partnership to meet local needs. Use of standardised delivery would mean that Partnerships could use template procurement documentation, with a minimal requirement for localisation. There is potential for the current Scotland Excel telecare framework to be extended to include ARC systems if standardisation moved these procurements to a more commodity-based approach, possibly also introducing cost savings through aggregation.

Similarly, standardised processes will assist in the implementation of new systems and services given the reduced requirement for tailoring, with potential for reduction in costs and associated resource.

## 5.3. Implementing Standardisation

Implementing standardisation is predominantly an operational change, rather than requiring any change to technology and so could be achieved using the existing telecare systems.

Whilst there may be resource implications associated with standardisation, this is more likely to be focussed around the implementation of the standards, rather than their ongoing operation. Partnerships that have contracted another organisation to deliver telecare services on their behalf may find that there are contractual and potentially commercial implications associated with applying the new standards to service delivery, which should be considered.

Implementing standardisation would require best practice to be developed using a combination of existing delivery approaches and new processes developed in conjunction with other organisations, such as the ambulance service, where appropriate.

The approach to implementing standardisation would need to be examined; firstly addressing the question of how, and by whom, standards will be developed. The process for maintaining and updating standards would also need to be addressed.

To ensure that Partnerships can continue to tailor their services to local requirements, standardisation would need to be developed only to areas where it delivers benefit, to avoid a 'one size fits all' approach.

At present Partnerships have freedom to design and deliver telecare services as they see fit. Centrally developed standards could be offered as best practice, leaving Partnerships to determine the extent to which they implement them. This voluntary adoption could fail to deliver a consistent national approach to telecare delivery, however it not clear that an alternative adoption of standards based on their use being mandated would be practical.

Any standards developed would need to adopt a neutral approach to telecare service delivery approach (on-premise, cloud, shared, outsourced, etc) and technology supplier. This can be achieved by using an 'output based' approach focussed on the service delivered, rather than the detail of the technology and other resources used to deliver it.

In addition, standards would need to be compatible with Partnerships' existing standards accreditation (TSA and CECOPS). These existing standards mandate that Partnerships must have procedures in place for the different elements of telecare delivery, but do not mandate what those procedures should say. As examples, the TSA standards mandate that Partnerships must have a defined procedure for call categorisation, and for receiving a signal from a smoke detector, they outline what these procedures should contain, but leave Partnerships to define the detail. Both these examples are areas that could be built on by the standardisation proposed in this document – with standard Scottish approaches to call categorisation and for handling of calls referred to the Fire Service being provided to Partnerships.

One element of standardisation that cannot currently be implemented is the definition and application of data standards. For example, to allow data from telecare systems to be processed and stored by other systems, such as the Digital Platform, and data analytics systems. Telecare systems currently use manufacturers' proprietary data protocols making it difficult to share data with other systems. This is an issue that needs to be addressed with the telecare industry in the longer term.

## 5.4. Standardisation Summary

**What Is It?**

Introduce more standardisation in telecare delivery, including:

Definitions

Operational Procedures / Call Handling

Quality Measures

Reporting

**Benefits:**

- **Service Quality**
  - Improved service quality
  - Ability to benchmark services
- **Risk Management**
  - Manage and audit risk
- **Call Handling Between Organisations**
  - Improved handling of calls requiring priority response
  - Reduction in calls being inappropriately routed or handled
- **Integration With Other Organisations**
  - Joined up service to client
  - Reduction in duplication of visits from different organisations
- **Service Monitoring and Reporting**
  - Availability of national telecare data
  - Reduction in reporting overhead
- **Service Development**
  - Reduce resource and complexity associated with service change
  - Apply 'once for Scotland' best practice
  - Supports shared services and common platforms
- **Efficiencies**
  - Reduction in effort to develop operational procedures.
  - Procurement efficiencies
  - Potential reduction in system/service and implementation costs

**Practicalities:**

- Standardisation is largely an operational, not technical, change. Partnerships should be able to implement it on existing telecare solutions
- Standards developed from existing best practice and new processes developed in conjunction with partner organisations
- There could be resource or contractual implications associated with Partnerships implementing standardisation
- Standards should avoid a 'one size fits all' approach and allow for elements of local tailoring
- Need to establish who is responsible for developing and maintaining standards
- A voluntary adoption approach to standardisation could fail to achieve a consistent national approach
- Standards would need to be neutral to telecare delivery approach and technology
- Standards should be compatible with Partnerships' existing TSA / CECOPS accreditation

# 6. Automation

## 6.1. Automation Overview

Some telecare calls can be handled automatically, without the need for call taker Intervention. The level of automation currently used by Partnerships varies, with several Partnerships not using it at all.

Handling calls automatically has potential to free up call taker time and improve the speed with which system issues are resolved.

Three types of automation have been identified:

- Automated call answering (front-end);
- Automated call response and system monitoring (back-end);
- Automated outgoing calls - this potential improvement is examined in Section 7.

The types of incoming call that could be handled automatically are system maintenance and administration related. Examples include:

- Device battery low;
- Mains fail / restore;
- Phone line fail / restore
- Warden on site / off site.

Where these calls are not automated call takers must answer them. How the calls are handed by call takers varies depending on the ARC solution in use, but will typically present as a call which when answered has no speech but an on-screen message providing detail of the calling system and the system message the call relates to.

Although the automated calls are relatively short in duration, there is administrative work (wrap time) resulting from the call which must also be dealt with. As an example, battery issues will be logged and sent to the installation or responder team to schedule a maintenance visit.

There can also be examples of systems sending repeat calls, as an example, phone line fail messages cannot be sent by an alarm device at the time of the issue (as it has no phone line to send it with), this message is queued until the phone line is available again. At this point the alarm sends the phone line fail message, immediately followed by the phone line restore message, resulting in two separate calls to the ARC.

With front-end automation, system maintenance calls will be answered by the ARC solution which will collate a log of the calls answered and the maintenance issues notified. Call takers or other ARC staff will then be responsible for reviewing the log to identify issues that need to be addressed, and for scheduling maintenance activity. Where automation also includes call response (back-end automation), the ARC solution will collate a log of calls answered and will also identify and schedule any maintenance activity required.

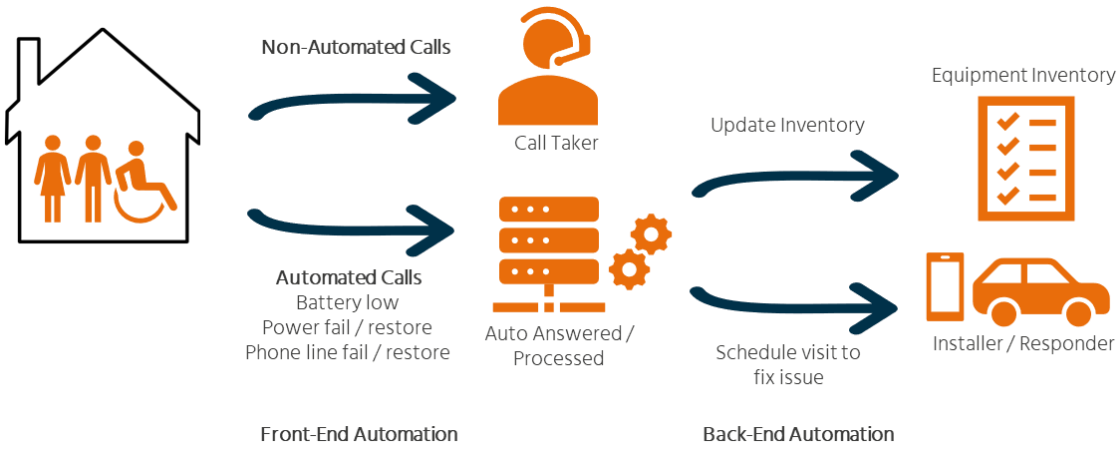



*Figure 6 – Overview of Automation Approach. Source: FarrPoint.*

## 6.2. Benefits

Implementing automation has the potential to free up call taker time, the extent of which is dependent on the number of calls that can be automated, and whether automation is just call answering (front-end), or also the response to calls (back-end).

There is limited information available from Partnerships on the current use of automation; the questionnaire responses provided for Phase 1 of this study found that 8% of East Lothian's calls were automated and 26% of Glasgow's. Many other partnerships do not use automation in call handling.

As a comparison of the extent to which calls can be automated, figures for the Tunstall based telecare service in Barcelona show that 46% of calls are handled this way. This suggests that there is scope for significantly increasing the proportion of calls automatically handled in Scotland.

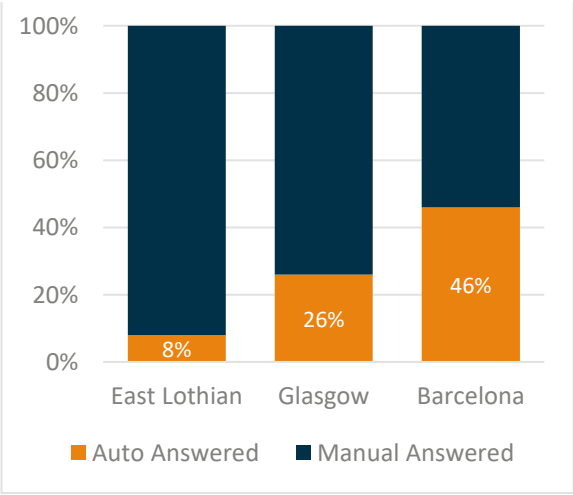



*Figure 7 – Comparison of Current Automation Levels as a Percentage of Total Incoming Calls. Source: East Lothian & Glasgow Figures from FarrPoint Stage 1 Report. Barcelona Figures from Tunstall Televida, 2017*

FarrPoint's Stage 1 report found that call takers currently spend an average of 27% of their day on administrative work, which will include handling the administration of system maintenance calls. Any reduction in this figure will allow call takers to spend more time talking to clients.

Back-end automation can be used to further reduce the amount of administrative work associated with responding to system maintenance messages. Current operational procedures differ between

Partnerships, but typically a call taker will log system issues, and schedule an installer or responder visit to fix the issue. Back-end automation would complete this process without the need for call taker intervention. The ARC solution would identify issues requiring a maintenance visit and would automatically pass this request to the installer / responder (potentially also scheduling the visit) – i.e. the call taker is not involved in the call being received or processed. This could result in system issues being resolved quicker than under existing manual arrangements.

With the move to digital telecare, system maintenance messages will no longer be sent to the ARC as a call but will instead be sent as data. This means that front-end automation of call answering will become less relevant, although back-end automation will continue to offer benefits.

## 6.3. Implementing Automation

The existing ARC solutions used by Partnerships have the capability to automatically answer calls, although Partnerships have not implemented this feature consistently.

Best practice for front-end automation of call answering could be developed to detail the benefits of automation and how to implement it from an operational and technical perspective. Implementation of this best practice will be simplified if Partnerships are using more standardised operational processes.

Back-end automation is currently offered by telecare manufacturers, providing the ability to integrate operational elements such as call answering, equipment inventory, and response services. However, this functionality is often provided as additional cost options, and requires the Partnership to buy all systems from a single supplier.

The ability of Partnerships to implement back-end automation themselves using systems from several manufacturers is limited by the lack of open standards and interfaces (APIs[11]) between different vendors' equipment.

In the short term this lack of ability to integrate manufacturers' solutions is likely to complicate call handling. Using current analogue systems, all information on system status is available to call takers via the ARC solution (albeit there is limited status information available given the nature of the analogue solution). Using digital telecare solutions, there is more information available on system status, however, this information resides in multiple locations, requiring call takers to log into several systems to see a complete picture of system performance. This situation is illustrated in Figure 8, which shows a scenario of a telecare service using alarm equipment from three manufacturers (as implemented by the Wave 1 Digital Telecare partnerships) and a GPS monitor service. The agent is required to monitor device management platforms for each of the alarm manufacturers in order to obtain information on alarm connection status, the portal for the GPS solution to provide location information, as well as the ARC solution to obtain alarm calls and status messages.

[11] API - Application Programming Interface. A defined communication protocol to allow different software applications to communicate with each other.

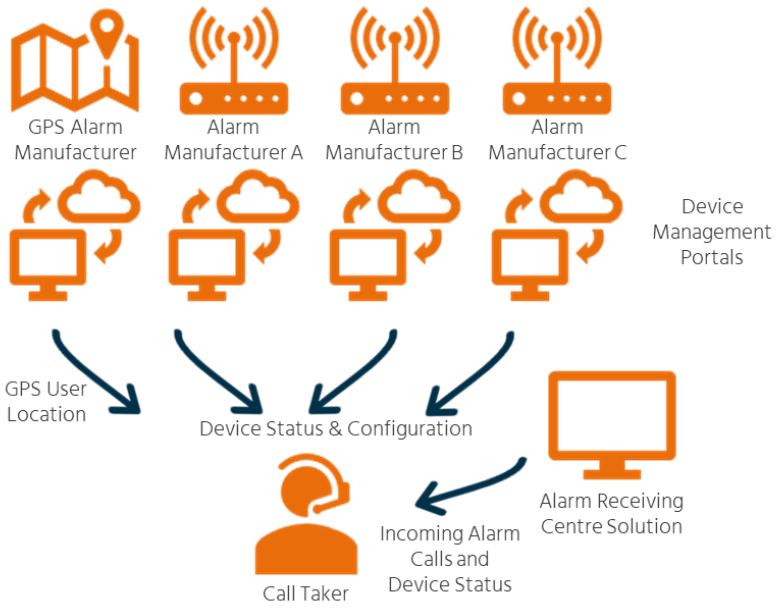



*Figure 8 – Example of Application Interfaces Post Digital Shift. Source: FarrPoint.*

In the longer-term, increased use of automation in telecare more generally is likely to deliver service and efficiency benefits. Automation technologies, such as Robotic Process Automation (RPA) and Artificial Intelligence (AI) are increasingly being implemented by organisations, including public bodies. There is scope for implementing these technologies within telecare, for example to automate operational processes and integrate the various systems used by ARC staff. This automation is likely to become more necessary as the scope of the telecare service increases to encompass a wider range of system, devices and sensors, including clients' own smart devices, meaning larger volumes and richer data being available to the ARC.

## 6.4. Automation Summary

**What Is It?**

Use of automation to answer and respond to calls

**Benefits:**

- Reduction in administrative overhead
- Free up call taker time
- Potential for faster resolution of system issues
- Robotic Process Automation and Artificial Intelligence can deliver further benefit in the longer term, especially once the scope of telecare increases

**Practicalities:**

- Potential for ~40% of calls to be automated
- Current ARC solutions have potential to automate call answering
- Advice can be issued on benefits and practicalities of implementing automation
- Front-end automation of call answering less relevant once digital telecare is implemented
- Back-end automation continues to offer benefit post-digital, though introduces the risk of supplier lock-in or complex integrations

# 7. Proactive Services

## 7.1. Proactive Services Overview

Stage 1 of this study found that around 75% of telecare calls are incoming to the ARC. Outgoing calls are typically either:

- In response to an incoming call. For example, mobilising a response or calling the client back to provide updates;
- Routine check calls. For example, regular calls made to the client to check their equipment is functioning, or to update a client's records.

These figures show that telecare services are currently reactive, responding to clients' alarm calls as they arrive at the ARC. Telecare services elsewhere in Europe are shifting to a more proactive model, where outgoing calls are used to provide health and wellbeing advice and services to clients. Figure 9 shows call types for the telecare service in Barcelona, which supports around 95,000 users. This shows that 52% of calls are outgoing and whilst some of these calls relate to response mobilisation and administration, as in Scotland, the majority are to provide health and care advice.

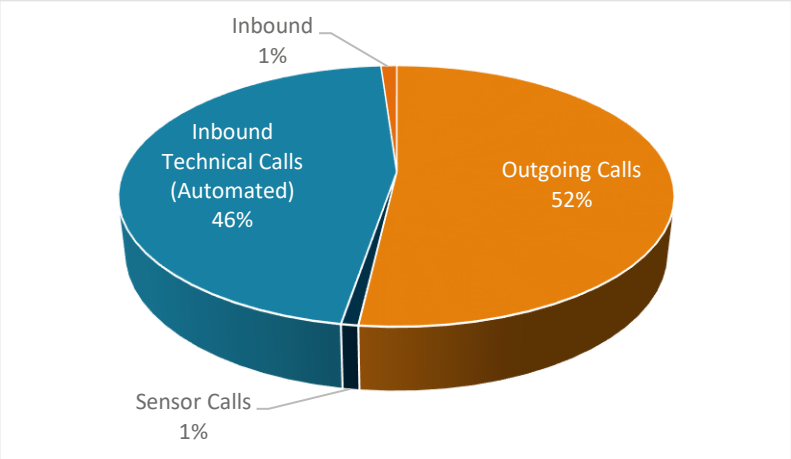



*Figure 9 – Call Types for Diputació Barcelona. Source: Tunstall Televida, 2017.*

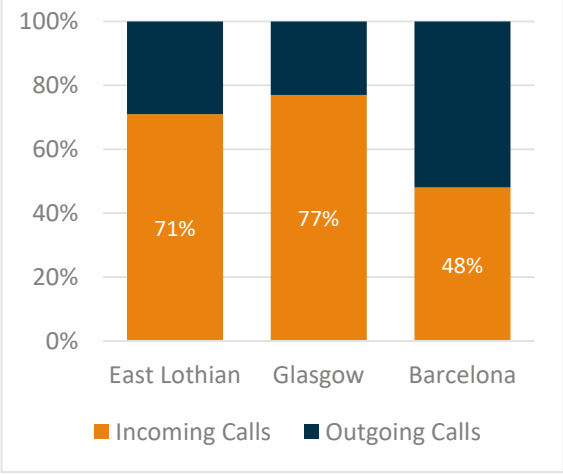



*Figure 10 – Incoming and Outgoing Calls as a Proportion of the Total.*

*Source: East Lothian & Glasgow Figures from FarrPoint Stage 1 Report. Barcelona Figures from Tunstall Televida, 2017*

Two main types of proactive service that could be used in Scotland have been identified; one or both of which could be implemented:

- Automated Reminder and Wellbeing Calls;
- Proactive Health & Wellbeing Advice.

**Automated Reminder / Wellbeing Calls:** An initial implementation that is already in use in Scotland is to use proactive telecare services to replace the need for certain types of client visits, either by a care worker or warden. This model has been implemented by Bield as part of its "Sure Call" service. The Bield service makes automated daily calls to clients to check wellbeing, and to remind them to take medication. The approach is also applicable to dispersed users, potentially using proactive calling to replace or reduce the need for some kinds of homecare or social work visits.

This approach can be changed for specific clients, for example, clients opting into the service, determining how reminder calls are received (automated phone call, text, etc), and based on medication frequency. However, the service offers relatively few standard proactive call types, with a limited degree of client-specific tailoring being possible.

**Proactive Health & Wellbeing Advice:** This approach focusses on using proactive calling of clients to provide health and wellbeing advice and services. The advice and services could be provided to all clients or tailored to an individual client's needs and could include general health advice, weather/seasonal related advice, signposting to other support services, or regular conversations to help tackle loneliness.

The tailored approach is a more personalised version of the service. The frequency of calls made, and the nature of the calls, will be tailored to each client's needs. An assessment of each user is completed to determine the type of proactive calling that will offer benefit; this can be based on factors such as health conditions, social relationships, and care package. Typically, higher risk / dependency users will be called on a more frequent basis than other users. The advice and support provided focusses on the client's needs, for example offering health condition specific advice. The nature of the support provided can change over time, for example, becoming more frequent as health deteriorates, or providing intensive support over a relatively short period in response to crises, such as a bereavement.

The proactive call approach that has been implemented by Tunstall Televida in Barcelona is detailed below. This proactive model is also delivered by Tunstall in other areas of Spain. In the UK, Carmarthenshire County Council is planning to run a proof of concept trial of proactive telecare calls in Llanelli. The trial, which is also based on the Spanish model, is combined with a new Council response service offering. Rhondda and Cardiff Councils are also believed to be considering trialling a similar service.

## International Case Study – Tunstall Televida, Barcelona

Tunstall Televida provides telecare services to around 95,000 users in Barcelona. In addition to telecare call handling services, Tunstall also provide a response service throughout the area.

The telecare service is proactive, with over half of calls being outgoing. The proactive call approach is based on providing advice to clients based on "let's speak about" themes. Tunstall works with commissioning bodies to develop the content of each of the themes; these could include tackling isolation, active aging, nutrition advice, handling hot weather, home security, etc.

As part of the assessment process completed when a client comes onto the service, the frequency of calls (based on the level of risk), and themes relevant to the client are identified in order to provide a degree of personalisation of the service. This assessment is completed by a social worker from the commissioning body, as Tunstall does not have direct access to the client's health and care record.

Clients are called regularly and provided with the advice relevant to them. Calls are also used as an opportunity to assess the clients, completing this on an on-going basis, rather than at fixed intervals. In addition to regular calls, clients will also be contacted more frequently following events such as discharge from hospital, or following an emergency call/fall.

The benefits of the service are improvement in client health, safety, and feeling of inclusion. Since introducing the service, Tunstall has seen the average length of time clients remain on the telecare service increase from 2.99 years in 2010 to 4.13 years in 2016. This increase benefits clients, allowing them to live at home for longer, as well as offering savings to the public sector in terms of reduced admissions and delaying the need for long-term care.

The service in Barcelona is currently a purely social care offering, not health care. Clients are not currently offered advice relating to their health conditions, although these are taken into account when developing a client's care plan.

Future developments of the service could include a health element. Tunstall is also looking to develop the service to take account of the additional functionality offered by digital technology, such as Internet of Things devices and the use of predictive analytics.

# 7.2. Benefits

## 7.2.1. Automated Reminder and Wellbeing Calls

From a client perspective the benefit of the automated reminder and wellbeing calls approach is that they have peace of mind that someone is regularly checking up on them, and that they have a degree of choice in how, and how often, these checks are completed.

The benefit from a provider's perspective is that this approach allows response and home care services to be used more efficiently. The use of proactive calling reduces the requirement for some visits/calls for wellbeing checks, medication reminders, and potentially some other types of check.

As an example of this efficiency, prior to using the Sure Call service Bield had to use wardens to visit or call each resident to complete wellbeing and medication checks. Using proactive calling to complete these tasks has resulted in a significant time saving. Bield estimate that effort has been reduced from 70 hours per day, to 35 minutes[12].

Bield use this model in a grouped housing environment, however, consultations completed as part of this study have shown that there is interest from Partnerships in using this approach in a dispersed alarm environment to replace some of the tasks currently completed by care workers.

## 7.2.2. Proactive Health & Wellbeing Advice

There are a range of benefits associated with the proactive health and wellbeing calls approach, both from a user and service provider perspective.

From a user perspective the service provides them with support and services to help them improve their health and wellbeing, and to live longer in their own home.

Tunstall Televida summarise the benefits to the user of the service as[13]:

- "Health: Promotes healthy lifestyles through outbound calls, (e.g., flu vaccination campaign), or telemonitoring people with long-term conditions as hearth diseases or COPD.
- Safety: Preventing falls, improving safety at home and away from home through mobile telecare.
- Inclusion: Reducing social isolation through outbound calls programs (e.g., "let's talk about" programmes) or special devices (Care chat for hear impaired persons)
- Carers: Supporting carers with specific programs (e.g. stress relief support programmes)"

Although these benefits are difficult to quantify, Barcelona clients consistently report high levels of satisfaction with the service, and the average time clients remain on the telecare service has increased since proactive and theme-based calling has been introduced, from 2.99 years in 2010 to

[12] Source: Bield, as detailed in FarrPoint's original Telecare Feasibility Report, 2015. A development manager in each of 70 developments previously spent an hour a day manually calling each resident, a review of residents needing this service, combined with the automation of calls has reduced the time required to 35 minutes total.

[13] Source: Case Study – Aj. Barcelona. Tunstall Televida.

4.13 years in 2016. Tunstall has commissioned a study to quantify the benefits associated with the proactive calling approach, the results of which are expected to be available at the end of the year.

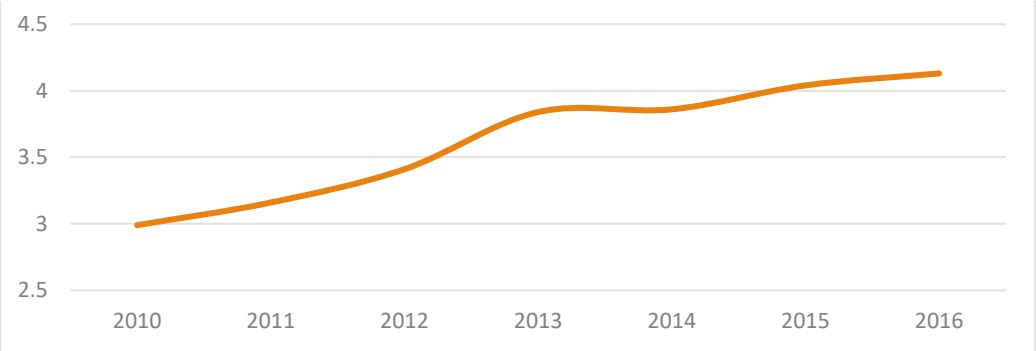



*Figure 11 – Average Length of Stay on Telecare Service in Years for Clients in Diputació Barcelona. Source: Tunstall Televida, 2017.*

Within its business case for completing a trial of proactive calling and providing response services, Carmarthenshire County Council describes the high-level benefits of the trial as being[14]:

- "To **prevent** the need for statutory intervention;
- To **reduce** the impact of disability and maximise independence;
- To **delay** dependency and escalation of care."

These benefits to clients also deliver benefits to the telecare provider, and the health and care system more widely. Helping clients to live healthier lives and helping to prevent falls and other acute care incidents reduces admissions, and delays progression of clients to higher dependence care, both of which result in cost savings.

## 7.3. Implementing Proactive Services

### 7.3.1. Automated Reminder and Wellbeing Calls

Some Partnerships in Scotland have existing ARC solutions that can already support automated reminder and wellbeing calls (Bield provide these services using their Jontek Answerlink solution). Clients' details and call requirements would be configured on the telecare solution, which would then make the automated calls at the appropriate times and log the responses (or lack of). Call takers would be presented with the log of calls completed, and would call clients as required, either where they had asked for a call back, or failed to respond to the call.

[14] Source: Business Case: A Technology Enabled Care (TEC) approach to prevention in West Wales. Carmarthenshire County Council. June 2018.

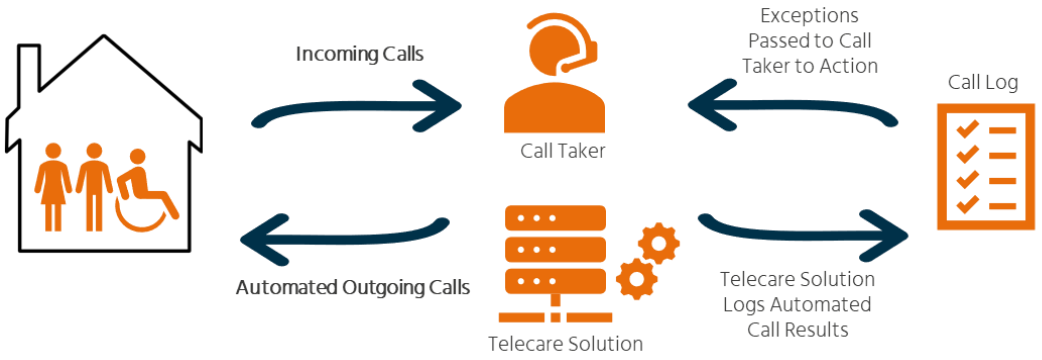



*Figure 12 – Overview of Automated Reminder and Wellbeing Calls Approach. Source: FarrPoint.*

Implementing automated reminder and wellbeing calls will have limited impact on Partnerships' call taker resource requirements as the calls are completed by the telecare solution. Call takers will be required to call clients that do not respond to a regular call, or respond saying that they want a callback, however, these calls are by exception, and so should be relatively limited in number.

There is an additional resource requirement associated with this service during assessment / reassessment in order to identify whether a client is suitable for the service, and to determine how and how often calls should be made. In addition, there is a resource requirement to configure client calls.

Regular reassessment of the configuration of a client's service would be required to ensure that it remained relevant. A particular consideration is ensuring that the telecare service is aware of any changes to a client's prescription, in order that any medication reminders provided remain current.

This service potentially replaces existing client calls and visits from homecare, social workers, or telecare staff, with an automated call to a client. There is a potential issue with client perception of this shift, meaning it will be necessary to communicate the benefits of the service to clients and other interested parties. This issue may be reduced if the initial rollout of the service is based on new telecare clients, rather than changing the service of existing users.

Partnerships' operational procedures will need to be updated to take account of the new service. These guidelines will need to define the type of client the service is suitable for, how to include the service in the assessment process, and how call takers should respond to the responses (or lack of) to automated calls.

### 7.3.2. Proactive Health & Wellbeing Advice

Providing the proactive health and wellbeing advice approach is reliant on having appropriate (additional) staff resources, rather than technology.

Call takers would be required to make regular outgoing calls to clients. Although most ARCs already make calls to clients, the reason for these calls are generally administrative in nature. Providing health and wellbeing advice is likely to increase both the number and duration of these calls, with an associated impact on call taker resource requirements.

The nature of the advice provided to clients, as well as the frequency of calls will define the call taker resource impact. However, some of this impact may be offset by some of the other changes outlined in this report, such as the use of automation and sharing to reduce the call taker resource required to deliver current telecare services.

There is a requirement to determine where the general health and wellbeing advice provided to clients is produced. This could be developed at a local level or produced centrally "once for Scotland". There are existing national health information services, such as NHS Inform, which could potentially be utilised to provide advice for the telecare service.

If advice is tailored to the needs of each client, the nature of the telecare service provided shifts from being purely social care to a joint health and care service. Development and maintenance of the care plan for each client is likely to involve input from a range of health and care practitioners, potentially aligning with multi-disciplinary community care teams, and so is likely to involve a significant change to current telecare procedures for assessment.

The change in the nature of the telecare service is also likely to impact upon the skills, training, and procedures for call takers. Dependent on the nature of the services provided, there is potential for call takers to require specialist skills and processes in areas such mental health, or health condition specific knowledge. These skills could be difficult to provide using the current local delivery model and may need to be linked to the shared service delivery approaches for telecare detailed in the next section of this report.

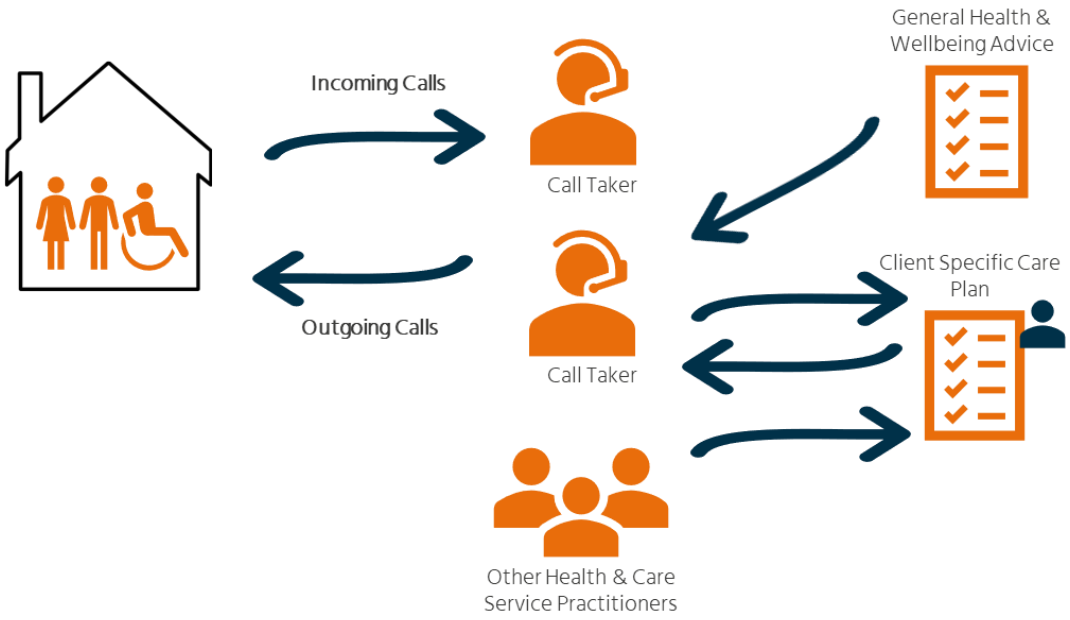



*Figure 13 – Overview of Proactive Health & Wellbeing Calls Approach. Source: FarrPoint.*

To provide a tailored proactive service, a view is required of both the health and social care requirements of clients. As a combined health and care record does not currently exist in Scotland, it would be necessary to determine how information on a client was accessed, stored and shared by a proactive telecare service. Data privacy and consent would also need to be considered as part of this planning. In Barcelona a combined health and care record does exist for every citizen, however, Tunstall Televida does not have access to this record. As part of the process of assessing a client joining the telecare service, the social worker in the commissioning body uses the combined health and care record to determine a client's needs, this is then passed to Tunstall in the client's care plan.

Many of the benefits associated with the proactive health and wellbeing advice approach are based on preventing acute care incidents or delaying the escalation of care. These benefits will largely be realised by health providers, whereas the costs of providing the proactive service will fall on the telecare provider. During the consultations completed as part of this study, this was highlighted as a potential issue in some areas where the Local Authority currently funds the telecare service. If the proactive advice approach is implemented at a local level, there is likely to be a need for agreements

to be put in place in some areas about how the costs and benefits of the service are apportioned between Council and health partners.

## 7.4. Proactive Services Summary

**What Is It?**

Telecare uses outgoing calls to provide proactive health and wellbeing advice and support

**Benefits:**

- **Automated Reminder and Wellbeing Calls:**
  - Clients have peace of mind that someone is regularly checking up on them
  - Clients have degree of choice of how, and how often, service is provided
  - Reduces the requirement for care / social workers to complete some kinds of client visits
- **Proactive Health & Wellbeing Advice:**
  - Advice and services provided improves clients' health and wellbeing and allows them to live longer in their own home
  - Wide range of proactive advice and services that can be provided to clients
  - Nature and frequency of advice provided can be tailored to each client's needs
  - Service helps prevent unscheduled admissions, and delays progression of clients to higher dependence care, both of which result in cost savings

**Practicalities:**

- **Automated Reminder and Wellbeing Calls:**
  - Some Partnerships can deliver service using existing telecare solutions
  - Likely limited impact on call taker resource requirements to operate
  - Will require updates to operational procedures for assessment and call handling
  - Need to establish the services and client types proactive calling is suited to
  - Client perception of shift from personal visits/calls to automated calling may be an issue
- **Proactive Health & Wellbeing Advice:**
  - Service will increase call taker resource requirements
  - Need to determine who produces the advice provided to clients
  - Tailored services require health and social care to develop plan for each client
  - Nature of services provided will require specialist call taker skills and processes – may be difficult to provide at a local level
  - Nature of services provided will require call takers to access and update clients' health and care records
  - Data privacy and consent considerations
  - Cost of service largely falls on Councils – benefits largely accrue to health

# 8. Shared Services

## 8.1. Shared Services Overview

Stage 1 of this study found that 72% of Partnerships own and operate their own ARC solution. A previous study[15] completed by FarrPoint in 2015 estimated that there were 22 ARCs delivering telecare services in, or on behalf of, Scottish Partnerships. ARCs are staffed on a 24x7 basis and often, but not in all cases, also support other Council services, particularly out of normal office hours.

The current telecare delivery model used by the 72% of Partnerships that operate their own ARC is summarised in Figure 14. This shows two Partnerships - blue and orange. Each Partnership's clients make alarm calls that are received on a dedicated ARC system and answered by a dedicated and local call taker. The call taker is responsible for mobilising a response, as required.

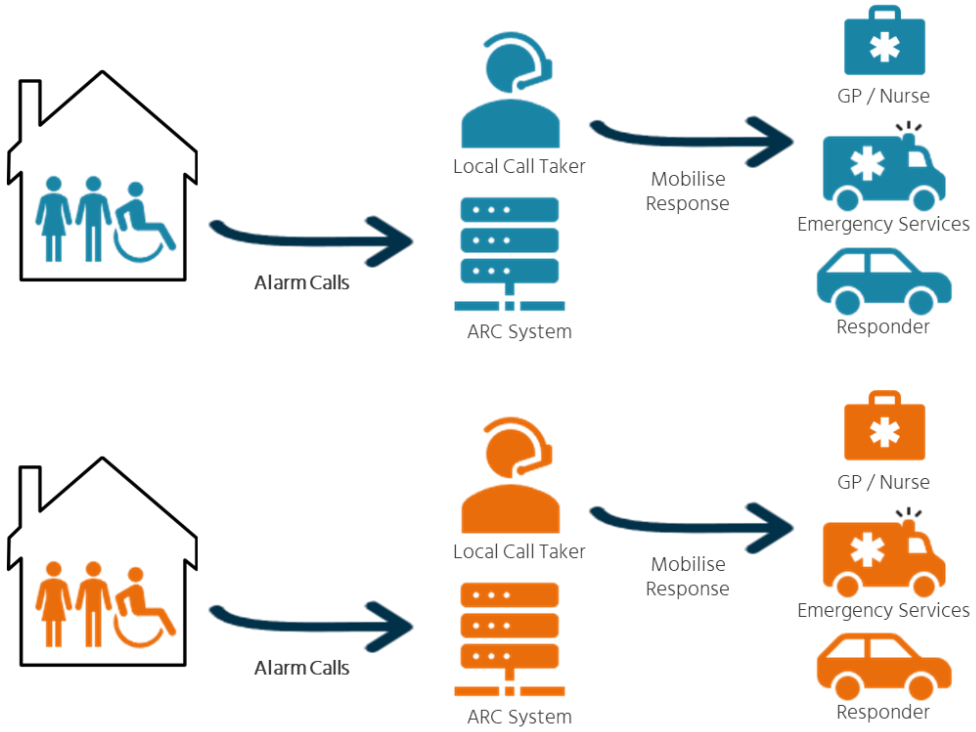



*Figure 14 – Fully Local Call Handling Topology. Source: FarrPoint*

Greater use of shared services in telecare delivery has potential to deliver a range of benefits to service quality, the efficiency of service delivery, and to support the development of services. There are several potential variants of shared services; three headline options are outlined below, but further options based on differing implementation of these headline approaches also exist:

- Shared technology;
- Fully shared call handling;
- Hybrid local-shared call handling.

[15] Feasibility Study: Telecare in Scotland Analogue to Digital Transition. August 2015. https://www.digitaloffice.scot/media/Feasibility%20Study%20-%20Telecare%20in%20Scotland%20A2DT%20Transition%20-%20Product%201%20Report.pdf

### 8.1.1. Shared Technology

The shared technology call handling approach is summarised in Figure 15. Using this approach Partnerships would share a single ARC solution. Call takers would continue to be located within each Partnership area and would access the shared ARC system in order to allow them to answer alarm calls from their users. Arrangements for mobilising response would remain unchanged from the existing situation.

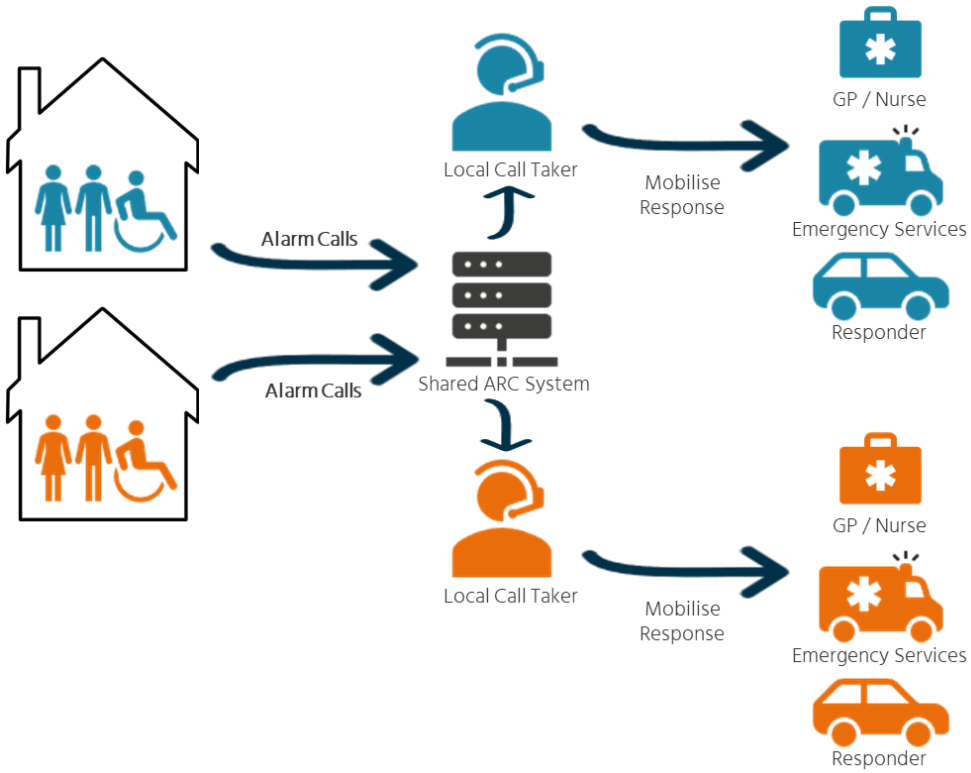



*Figure 15 – Shared Technology Call Handling Topology. Source: FarrPoint*

The example shows two Partnerships sharing technology for illustrative purposes only. Further planning would be required to determine the extent of sharing to be implemented and how this was completed. Several shared systems could be used in Scotland, potentially regionally based, or a single solution used by all Partnerships. Similarly, the shared systems could be procured and operated by Partnerships themselves, by another public body, or procured as a service (cloud) from a commercial provider.

### 8.1.2. Fully Shared Call Handling

The fully shared call handling approach is summarised in Figure 16. Using this approach local ARC solutions and call takers would be replaced by a shared ARC solution and a shared team of call takers. Calls from both Partnerships' users are received on the shared ARC solution and answered by the team of shared call takers. Response services would be unchanged but would be mobilised by the shared team of call takers.

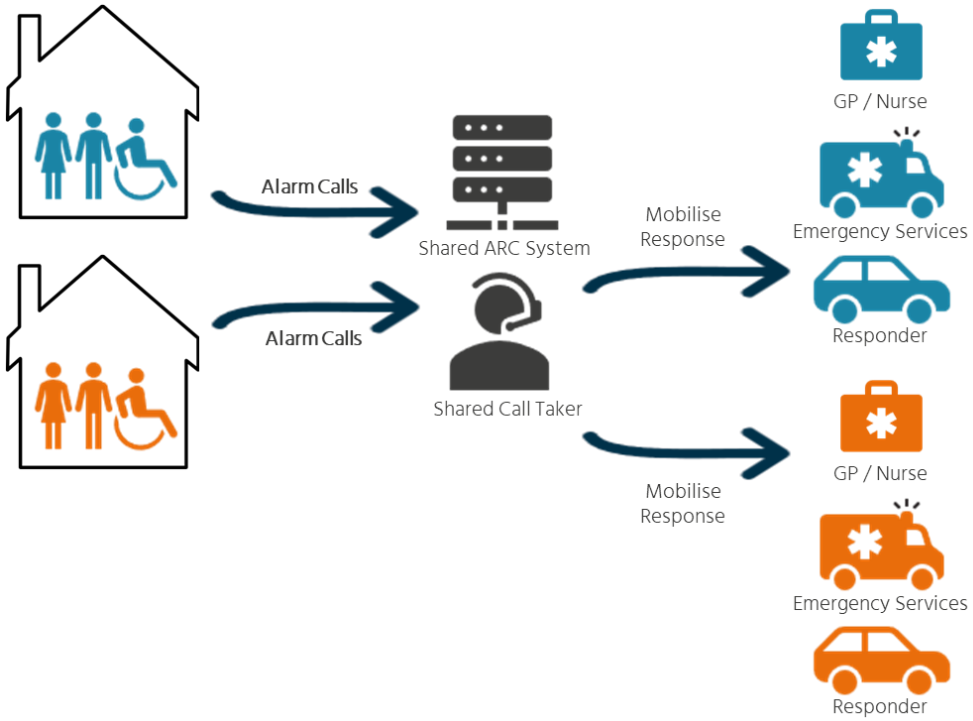



*Figure 16 – Fully Shared Call Handling Topology. Source: FarrPoint*

As with the previous approach, further planning would be required to determine the extent of sharing to be implemented and how this was completed. Shared call handling could be implemented regionally or nationally and could be provided by the public sector or commercially.

### 8.1.3. Hybrid Local-Shared Call Handling

The hybrid local-shared technology call handling approach is summarised in Figure 17. This approach is a combination of the shared technology and fully shared call handling options detailed above.

Using this approach Partnerships use a shared ARC solution. Call takers are based both locally and in shared central teams. Calls from both Partnerships' users are received on the shared ARC solution. Calls are then directed to either a local call taker, or the shared call taker team. The criteria to determine whether a call is directed to a local or central call taker would need to be determined, but could include the central team being used to answer calls:

- When local call takers are all busy (overflow – to assist with call peaks);
- Overnight. Providing an out of hours service;
- When calls require specialised training/handling. This is likely to be more of a requirement if the scope of telecare is expanded to include more health-related services (as detailed in the previous section of this report).

Response services would be unchanged but would be mobilised by either local or shared call takers, dependent on who received the call.

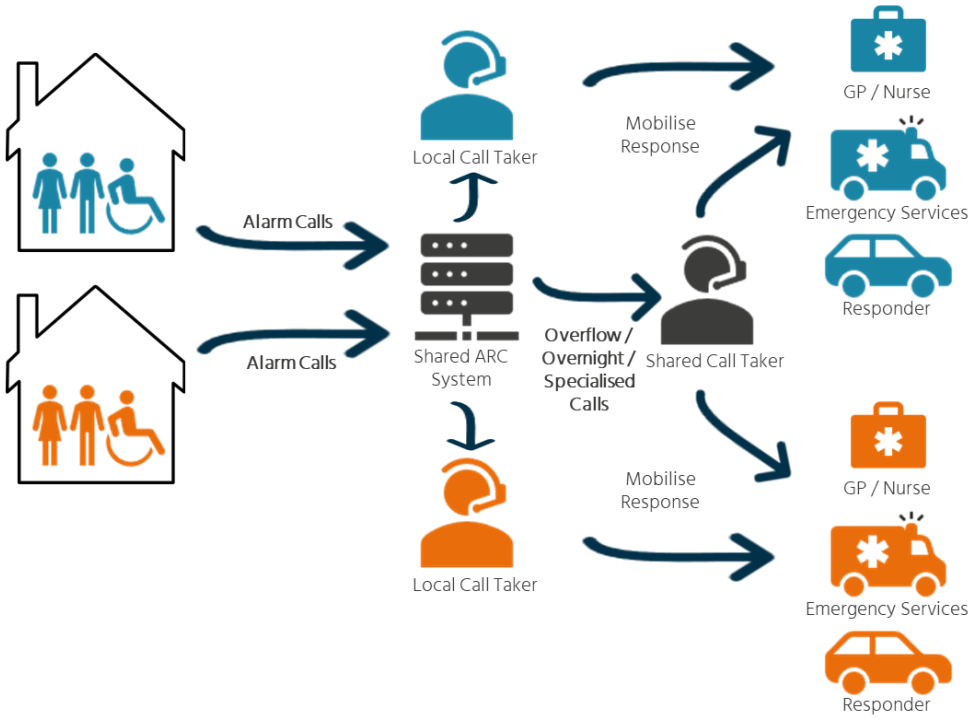



*Figure 17 – Hybrid Local – Shared Call Handling Topology. Source: FarrPoint*

As with the previous approaches, further planning would be required to determine the extent of sharing to be implemented and how this was completed. Shared call handling could be implemented regionally or nationally and could be provided by the public sector or commercially.

## 8.2. Benefits

Potential benefits associated with shared services are detailed below and are largely efficiency focussed. The extent to which these can be obtained is dependent on the sharing model implemented, and the future scope of telecare services.

Standardisation of the telecare service would need to be implemented prior to any of these sharing options being implemented. As detailed earlier in this report, standardisation brings a range of improvements to service quality and safety, and so should also be seen as additional benefits associated with the implementation of sharing.

### 8.2.1. Shared Technology

Most Partnerships currently buy ARC solutions that are used only for their own clients. A shared technology approach offers the potential for cost savings associated with fewer ARC solutions needing to be procured, supported and powered / cooled.

In most Partnerships telecare is currently operated as a standalone system, frequently supported using a combination of a Partnership's staff and their telecare supplier. The move to digital technology sees telecare move from a standalone service to one that is closely integrated with, and reliant on, the wider IT infrastructure operated by the Partnership. This means that in the event of an issue with the telecare system there is a requirement for Partnership IT staff, telecare supplier staff and, if applicable, 3rd party suppliers, to work together to diagnose and rectify the root cause of the issue. This issue could occur at any time, meaning out of hours support arrangements need to put in place – which can be an issue for some Council IT departments. Using a shared technology approach reduces the requirement for maintaining 24x7 IT support, with only the organisation hosting the system needing to put these arrangements in place.

Shared technology would make it easier to manage telecare systems, given the smaller number of larger scale solutions compared to existing arrangements. Processes for managing the systems and suppliers would be put in place to ensure that the solutions were monitored, managed and maintained using IT service management best practice. This will ensure that the solutions remain reliable and ensure that cyber security is maintained.

The shared telecare solution could also be utilised to allow call takers to work more flexibly, for example from different offices, or potentially as home-based workers. This would provide benefits in terms of improving call taker job satisfaction and retention and improve Partnerships' ability to deal with call peaks or business continuity events, such as severe weather.

The adoption of shared technology will help Partnerships align with the Digital Office's Common Platform project and, given the reduced number and variety of solutions in use, will simplify subsequent projects seeking to renew systems associated with telecare, such as the social work system.

The efficiencies that would be offered by the shared technology approach will be determined by the number of shared ARCs that are established. Based on experience of ARC digital upgrades completed to date, one-off supplier costs are typically £25K - £30K, with an annual support cost of around £15K. These costs relate to the situation where the Partnership has a solution capable of upgrade to digital. Where a complete new system is required, one off costs are likely to be higher than this. In addition to supplier-related charges, Partnerships also incur costs relating to the upgrades to their internal IT infrastructure and services required to support digital telecare, such as Internet connectivity and equipment hosting, power, etc.

### 8.2.2. Shared Call Handling

Implementing shared call handling brings a range of further potential benefits in addition to those offered by the shared technology approach.

Adopting shared call handling would allow call taker resources to be better aligned with call patterns. This approach would be of particular benefit to coping with peaks in call volumes, and more efficient staffing during overnight periods when call volumes are currently low.

Where local call taker resource was retained, intelligent call routing could be used to send client calls to the shared call takers only when required. This would allow Partnerships to tailor the use of the shared facility to their requirements – for example the shared facility could be used overnight only and/or only to assist in coping with call peaks.

As detailed elsewhere in this report, the scope of telecare services could widen to offer an increasing number of health-related services, with the distinction between telehealth and telecare disappearing. This widening of the service scope will increase the complexity of telecare service delivery and the need for call takers to have specialist training and procedures to provide a safe and quality service. Whilst this specialist training could be provided and maintained locally, the shared call handling approach could allow a pool of specialist call takers to be provided centrally, handling calls that required this level of specialism, while leaving other calls to be answered locally.

Stage 1 of this study found that the 16 Partnerships that provided staffing information had 296 call takers between them. These Partnerships provide services to around 120,000 clients and answer around 4.6 million alarm calls per annum. The average number of calls handled per annum per call taker varied from 48,400 in Hanover to 3,300 in Western Isles. Across all Partnerships that provided data, the average number of calls per agent was 14,854. As a comparison, figures from a commercial provider shows its call takers handle around 25,600 per call taker per annum. The same provider gave an example of a Partnership transferring its responsibility for call taking; the Partnership previously used 31 call takers to provide the service; the commercial provider delivers the same service using 9 call takers using economies of scale and standard processes to allow the service to be provided more efficiently.

Calls per call taker per annum for Scottish Partnerships are shown in Figure 18. As noted elsewhere, differences in service scope, reporting of calls and staffing arrangements means that care should be taken when directly comparing Partnerships' performance. However, this shows that, in general, the larger scale ARCs (Hanover, Bield, Commercial Provider) tend to have a larger number of calls per call taker, and are therefore more efficient, compared to smaller ARCs.

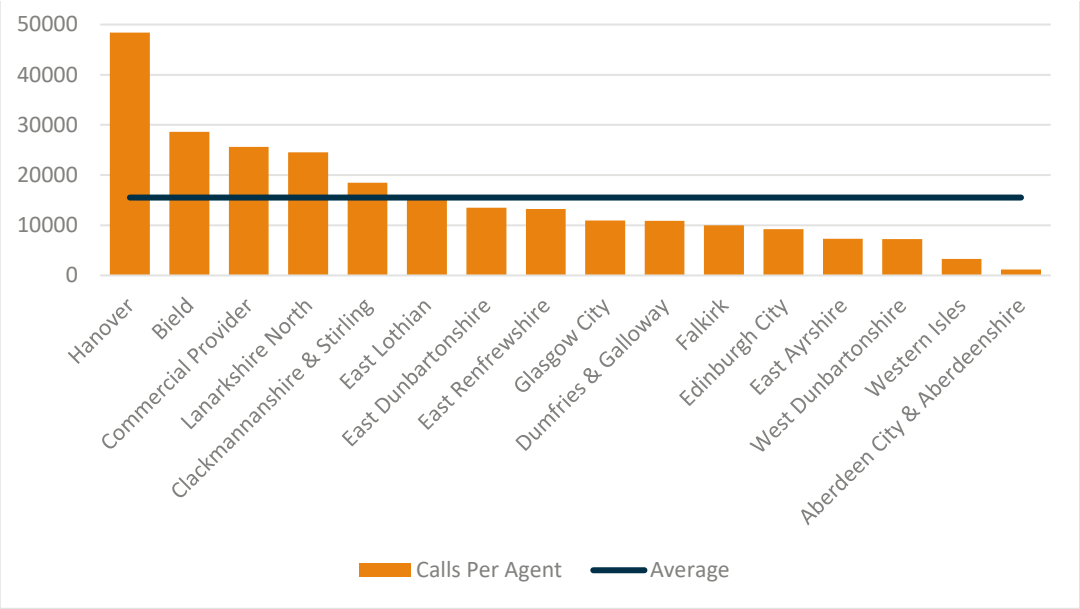



*Figure 18 – Alarm Calls Per Call Taker Per Annum by Partnership.*

*Source: Questionnaire Responses.*

To estimate the potential efficiency impact of an increase in the scale of ARCs in Scotland, the average calls/call taker figure for Hanover, Bield and the commercial provider (34,200 calls/call taker) has been considered. If this is applied to the 4.6 million calls handled by the 16 Partnerships that provided call taker details, then this suggests that 134 call takers would be required to answer these calls. This compares to the 296 call takers currently used. Note that these figures ignore the difference in service scope, etc, as detailed above, they also ignore the impact of other potential efficiencies detailed in this report, such as standardisation of operational processes and the use of automation.

A further example of the potential efficiencies associated with the Shared Call Handling approach comes from a Partnership that changed from local call handling to a shared call handling model. The organisation provided telecare services to around 3,000 clients in both dispersed and grouped scheme settings. This service was provided using an in-house ARC and 9 FTE call takers handling an average 16,600 calls / call taker / annum. The Partnership moved to a shared call handling approach by moving ARC functionality to another local authority and, as a result, reduced annual costs by 43% as well as improving the quality of the service provided to clients.

The staffing impact of implementing shared call handling will be determined by the nature of the telecare service being provided (and potentially any other Council services being provided), and the number of shared ARCs that are established. However, from the above examples it is clear there is potential for significant efficiencies if sharing is implemented.

### 8.2.3. Cost Estimates

FarrPoint's previous telecare feasibility study[16] provided estimates of the costs associated with the different telecare delivery approaches. The ARC only elements of these costs[17] were split as shown in Figure 19. As can be seen, 87% of ARC costs related to call taker staff and the accommodation required to house them. ARC equipment and associated services amounted to the remaining 13% of costs.

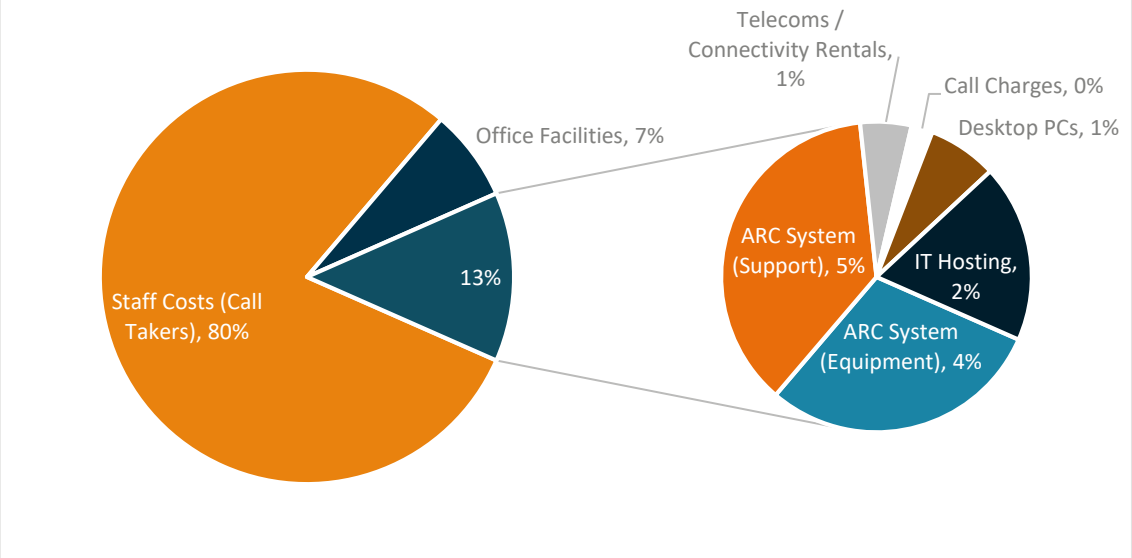



*Figure 19 – Current Telecare Service Delivery Approach (Standalone and Analogue) – Cost Elements. Source: FarrPoint Telecare Feasibility Report, 2015.*

The previous report provided estimated annual costs associated with different telecare delivery approaches. Table 1 shows the costs calculated for current, standalone, and shared delivery (8 ARC) approaches. In addition, estimated costs are provided for a new scenario based on shared delivery using 3 ARCs. The 3 ARC shared model uses an assumed total of 135 call takers – which is based on the figure estimated in the previous section of this report.

The scenarios presented below are based on assumed staff numbers and further analysis of staffing requirements for each of the delivery approaches would need to be completed once the scope of the telecare service to be offered, and degree of operational process standardisation, is known.

[16] Feasibility Study: Telecare in Scotland Analogue to Digital Transition. August 2015. Ibid.

[17] These costs include only the ARC solution, associated equipment and services, and call taking staff. This means that costs relating to in-home alarm equipment, peripherals and associated connectivity are not included. Costs relating to non-call taking staff, such as installers and responders are also excluded. These exclusions mean that the costs are different from other telecare cost estimates presented elsewhere, such as those contained in the Deloitte report.

| Telecare Delivery Approach | Estimated Annual Cost |
|---|---|
| **Current Estimated Costs**<br>**22 ARCs. All ARCs analogue** | £8.98M |
| **Standalone Digital Delivery**<br>**22 ARCs. All ARCs digital** | £9.03M |
| **Shared Digital Delivery (8 ARCs)**<br>**Number of ARCs reduced by a factor of 3. Total call taker numbers reduced from 286 (13 per ARC) to 208 (26 per ARC)** | £6.16M |
| **Shared Digital Delivery (3 ARCs)**<br>**Number of ARCs reduced to 3. Total call taker numbers reduced from 286 (13 per ARC) to 135 (45 per ARC)** | £4.01M |

*Table 1 – Estimated Annual Costs for Different ARC Delivery Approaches. Source: FarrPoint Telecare Feasibility Report, 2015.*

## 8.3. Implementing Shared Services

Shared call handling approaches have already been successfully used within Scotland:

- The fully shared call handling approach is currently being used by Partnerships that have contacted out service delivery to another organisation. Examples include East Lothian Council providing telecare and out of hours Council services for Midlothian and Scottish Borders Council, and Bield and Hanover providing telecare services for a range of Partnerships.
- The hybrid local-shared call handling approach has been successfully used by NHS24 where a combination of centralised call takers, based in its three main call centres worked in conjunction with local call takers based in each Health Board area.
- The shared technology approach is currently being offered by commercial providers, such as the cloud ARC service being offered by Tunstall.

While shared call handling has been implemented in Scotland, it is not the predominate delivery approach, with 72% of Partnerships still using standalone arrangements. This means that to implement shared services most Partnerships will need to obtain political and management approval for a change in service delivery approach.

### 8.3.1. Shared Technology

The telecare systems currently used by Partnerships are capable of supporting client numbers far in excess of their existing workloads meaning that they could potentially support a shared technology approach. However, a shared ARC solution would need to be able to route calls to the relevant group of local call handlers based on the location of the client. It is not currently known whether the ARC solutions used by Partnerships are capable of supporting this kind of intelligent call routing.

It would be necessary to determine which organisation(s) had responsibility for providing the shared technology solution. The solutions could be provided by existing Partnerships, by another public body, or by a commercial provider. There would also be a need to determine the optimum number

of shared technology solutions; with options including several regionally based systems, or a single national system. Economies of scale increase as the number of systems reduces, however, this introduces operational and staffing complexities, and the need for standardisation increases (see below for further details).

### 8.3.2. Fully Shared Call Handling

If the fully shared call handling approach is adopted:

- Local knowledge could be lost, meaning that alternative arrangements would need to be put in place to reduce the impact of this. This is likely to require more robust approach to maintaining care records and technology to provide information on local services and response resources.
- Tailoring of services to meet local requirements and delivery arrangements would be more difficult given that a centralised service would need to use a largely standard approach to service delivery. Associated with this are the complexities associated with integrating a centralised telecare service with the health and care services provided locally, such as home care and services from the third sector.
- Part of this integration would require shared call handers having access to a range of back end systems, such as Partnerships' systems for scheduling home care, social work records, etc.
- There are staffing and political considerations for Partnerships as services would no longer be provided locally and local call handling roles would no longer be required.
- Most partnerships currently use telecare call handlers to deliver other Council services, particularly overnight. Alternative arrangements for answering these non-telecare calls would need to be developed and are likely to impact the economic case for shared telecare call handling. In addition, the impact on citizens of these alternative arrangements would need to be considered given that many of them hold significant value for communities.
- Processes for shared call handlers mobilising local response services, and interfacing with other local social care services, such as social workers and home care, would need to be developed.

### 8.3.3. Hybrid Local – Shared Call Handling

If the hybrid local - shared call handling approach is adopted:

- This approach is more flexible than the fully shared approach – allowing partnerships to choose which calls are routed to them, and when. Call routing arrangements can be amended over time as requirements change.
- The shared ARC solution would need to be able to route calls to the relevant handler based on the defined rules. It is not currently known whether the ARC solutions used by Partnerships are capable of supporting this kind of intelligent call and skills-based routing.
- Operational processes would need to be developed in line with the call routing arrangements. This would need to include shared call handlers being able to mobilise response services, liaise with other local care providers, and having access to relevant back end systems, as required.

- If the shared call handlers are used to answer all calls overnight, consideration would need to be given to how other out of hours Council services are provided.
- There are staffing and political considerations for Partnerships associated with this approach, though they are less significant than those associated with the fully shared approach. Some services would no longer be provided locally, and this could impact on the requirement for local call handling roles.

## International Case Study – Agder Regional Coordination Group, Norway

There are around 74,000 users of telecare in Norway (from a population of 5.3M). These services are delivered by Municipalities (the equivalent of Scottish Councils), of which there are currently 422 in Norway (planned mergers will reduce this to 356 in the coming years).

In 2013 the Norwegian Ministry of Health & Care Services initiated a National Welfare Technology Programme[a1]. The main objective of this project was "*to make welfare technology an integral part of the care services by 2020*". Parts of this programme involved increasing the use of telecare and telehealth technologies, developing common tools and methods, and linking to the national project to develop an integrated health and care record for all citizens. The benefits of increased use of welfare technology are defined as:

- *"enhance the ability of users to manage their own daily lives;*
- *increase the sense of safety and security for users and their family members and relieve some of the concerns of family members;*
- *increase the participation of users and their family members in user networks and enhance the ability to maintain ongoing contact with each other and the support system."*

As part of the delivery of this national programme, 30 Municipalities in the Agder region have joined into a regional coordination group. The region has 300,000 inhabitants and around 11,000 telecare clients. The regional coordination group has jointly procured telecare equipment and operate a shared telecare Alarm Receiving Centre (ARC). The operation of the shared ARC has allowed the range of telecare equipment offered to clients to be increased and offers a more efficient way of delivering the service.

The ARC uses technical and operational procedures developed nationally. Municipalities are not obliged to use the shared ARC, consequently some use it as their primary call taking facility, while others use it as a backup facility. The ARC takes around 35,000 calls per month, of which around 80% need no further action.

In addition to telecare services, the programme is also increasing use of telehealth services and other care services, such as GPS monitoring. At present, these services are delivered using separate solutions, with integration of the solutions being a possible outcome of the project to develop a single health and care record.

Video monitoring is also included in the scope of the telecare service – this provides a means of checking on client wellbeing overnight, a task that was previously completed using a physical site visit. Users report that they prefer this technology-led approach as they are not disturbed by someone entering the house overnight. The solution also offers efficiency savings for the care provider.

Agder region is moving users to digital telecare equipment. This migration is being completed given the additional opportunities digital technology offers, rather than in reaction to a decommissioning of the analogue phone service.

[a1] – Norwegian Ministry of Health & Care Services: Future Care - www.regjeringen.no/contentassets/34c8183cc5cd43e2bd341e34e326dbd8/en-gb/pdfs/stm201220130029000engpdfs.pdf

## 8.4. Shared Services Summary

**What Is It?**

Partnerships increase the use of sharing in telecare service delivery. Several sharing models are available, including:

- Sharing technology
- Sharing call handling
- Regional or national sharing, provided by public bodies or commercially

**Benefits:**

- **Shared Technology:**
  - Cost savings – equipment procurement and support
  - Reduced requirement to provide out of hours IT support
  - Easier to maintain and secure the telecare system
  - Supports call takers working more flexibly, including from home
  - Aligns with the Digital Office's Common Platforms project

- **Shared Call Handling (Full & Hybrid)**
  - More efficient use of call taker resource
  - Better alignment of call taker resource to call patterns – particularly during call peaks and overnight
  - Use of shared call handlers could be defined by Partnerships to suit local needs
  - Easier to provide the specialist call taker training and processes required to support a wider range of health and care services

**Practicalities:**

- Shared services approaches have already been used in Scotland
- Political and management approval required for a change in telecare delivery approach and potential loss of local services/roles
- Call handers currently handle non-telecare Council services

- **Shared Technology:**
  - Need to determine who provides shared technology solutions and how many are provided

- **Shared Call Handling:**
  - Systems / processes required to replace loss of local knowledge
  - Approach requires standard approach to service delivery – loss of local tailoring of services
  - Difficult to integrate service with other local health / care services
  - Call handlers require access to back end systems

- **Hybrid Local-Shared Call Handling:**
  - Potentially complex call and skills-based routing required

# 9. Telecare Devices

## 9.1. Telecare Devices Overview

Current telecare services are entirely equipment focussed: the service is delivered using dedicated telecare devices provided to the client. The amount and nature of the equipment provided is determined using a telecare assessment procedure completed when a client is first referred (or, in some cases, self refers) to the service, and during any re-assessments completed during a client's time using the service.

In addition to the equipment provided to deliver telecare, clients increasingly have access to a range of other devices that could be used to support telecare delivery. These include consumer digital devices, and health/care devices provided either by the client themselves (for example activity trackers) or by other health/care services (for example, telehealth devices to monitor conditions such as hypertension, diabetes, or COPD).

These other devices could be integrated into the telecare service and impact call handling. Two headline uses of these devices have been identified:

- Telecare Delivery: Delivery of telecare on consumers' own devices instead of, or in addition to, delivery using dedicated telecare equipment;
- Telecare Monitoring: Integration of consumer technology and telehealth devices into the telecare service to provide an alternative or enhanced approach to monitoring the client.

### 9.1.1. Telecare Delivery

There is potential to use consumer technology to deliver telecare services, for example, using a client's own mobile phone, or devices such as Amazon Echo (Alexa). Telecare clients would use these devices to contact the telecare service, making calls into the ARC. This could use the telecare service as the primary contact, or to be used as a 'fallback' in the event of a family member not being available.

This approach to telecare delivery could be used instead of providing a client with dedicated telecare equipment, or in addition to this equipment.

As outlined above, telecare clients undergo an assessment process to determine the service and equipment required to meet their individual needs. However, broadly clients fall into two categories:

- Clients that use the service as a social alarm, typically these clients are only provided with a pendant/wristband and an alarm device ("button and a box"). These clients are typically low dependency, low risk, with many using the service for 'peace of mind', 'just in case'. This type of service user can represent 75% of a Partnership's client numbers.
- Clients that have more complex requirements, a higher level of dependency, or risk. In addition to a pendant/wristband and alarm device, these clients will typically be provided with a multiple telecare devices in the home, such as smoke alarms, door sensors, etc. This type of client is a relatively small percentage of a Partnership's total users, but generate a disproportionate amount of calls, given the large number of devices that can be triggered, and the higher dependence on the service.

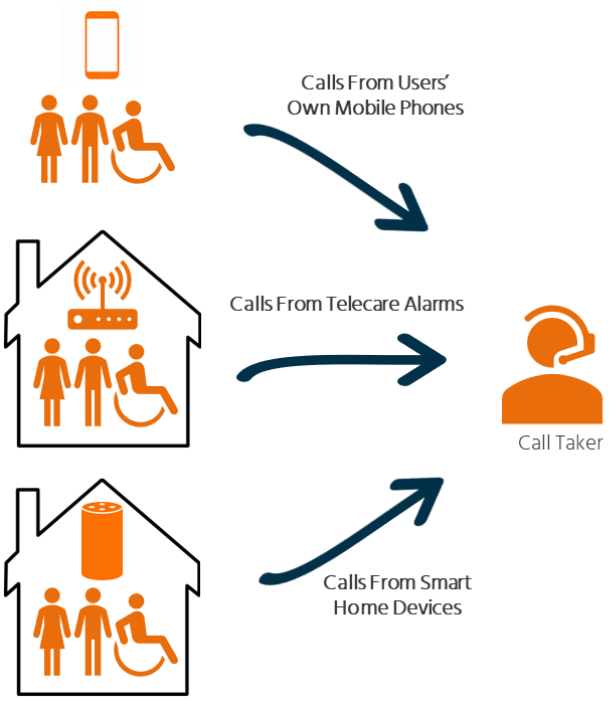



*Figure 20 – Use of Consumer Technology in Telecare Delivery. Source: FarrPoint.*

Offering access to telecare via a user's own device may be a suitable starting telecare package for some clients in the 'peace of mind' category. This could be in place of providing these clients with dedicated telecare equipment, or as a 'entry level' telecare offering for clients that may not yet have reached the point of needing in-home equipment. Delivering telecare via clients' mobile phones also allows the reach of the service to be extended outside the home.


*Figure 21 – Types of Telecare Client and Suitability for own-device telecare service. Source: FarrPoint.*

### 9.1.2. Telecare Monitoring

In addition to using consumer technology to deliver telecare, these devices could also be used to increase the range and granularity of the monitoring that can be provided for clients.

At present, telecare monitoring is provided using dedicated peripherals that deliver alarm signals and limited monitoring information to the alarm receiving centre. Monitoring of clients using more sophisticated devices is also provided by some Partnerships, these include GPS tracking, activity monitors such as Just Checking[18], and risk modelling services such as ARMED[19]. However, these systems all use separate management portals and are not integrated into the ARC solution. Clients can also be provided with telehealth services, such as Florence[20], which also have a dedicated portal, usually monitored by Primary Care services. In addition to the health and care devices provided to them, clients also increasingly use a range of consumer devices to monitor health and manage their home, such as fitness trackers, smart scales, smart boilers, etc.

These arrangements result in a situation where data on a client's health and wellbeing is spread across a number of standalone systems and organisations, making it difficult to obtain an overall picture of the client.

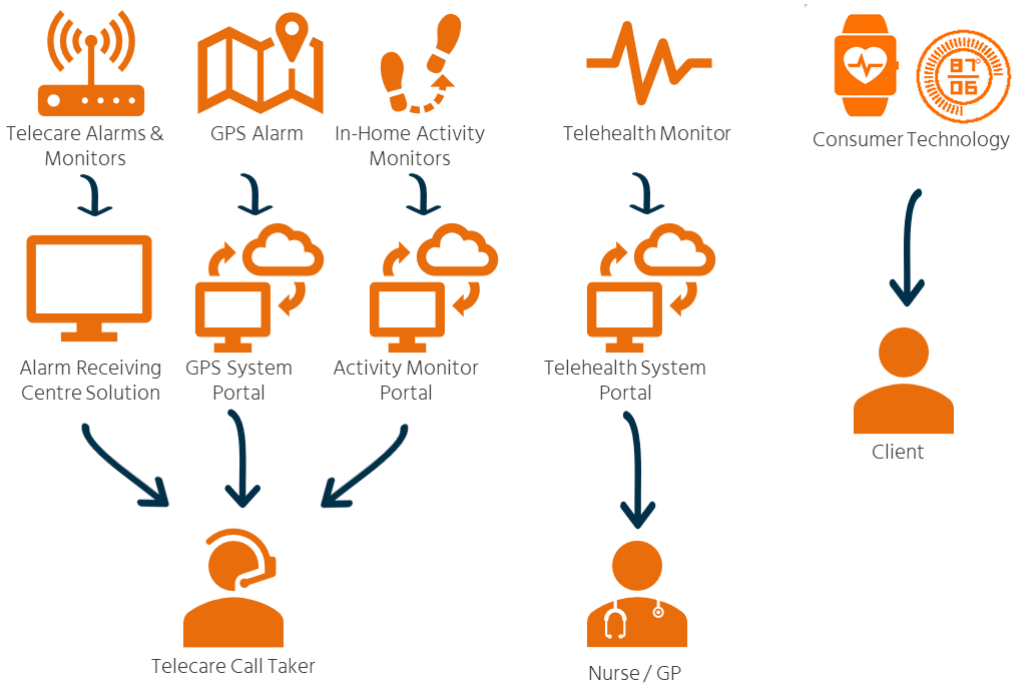



*Figure 22 – Overview of Current Client Monitoring Arrangements (Simplified Example: Solutions / Equipment Used and Organisations Involved Will Vary Between Partnerships and Clients). Source: FarrPoint.*

Telecare solutions could use consumer devices to provide a means of monitoring clients. For example, by using data from smart fridges, and security systems in place of dedicated activity monitoring equipment. Telehealth devices could also be integrated into telecare, using the same

[18] https://justchecking.co.uk/

[19] https://www.armedprevention.co.uk/

[20] https://www.getflorence.co.uk/

connectivity, as well as data provided by clients' own health monitoring devices, such as fitness trackers. Using this approach, the telecare service would act as a focus for data from a range of solutions providing information on a client's health, wellbeing, and about their home environment. This information could be accessed via a single system by both telecare staff, and other health/care providers.

This data would all reside in, or be accessed by, a single solution, allowing a complete picture of client health and wellbeing to be obtained, and potentially using data analytics to provide preventative advice and care.

Integration with smart home devices potentially provides a means for telecare providers to assist clients through monitoring of their home. This could include monitoring of the temperature, and adjusting the boiler, or answering/opening the door using smart doorbell/security devices.

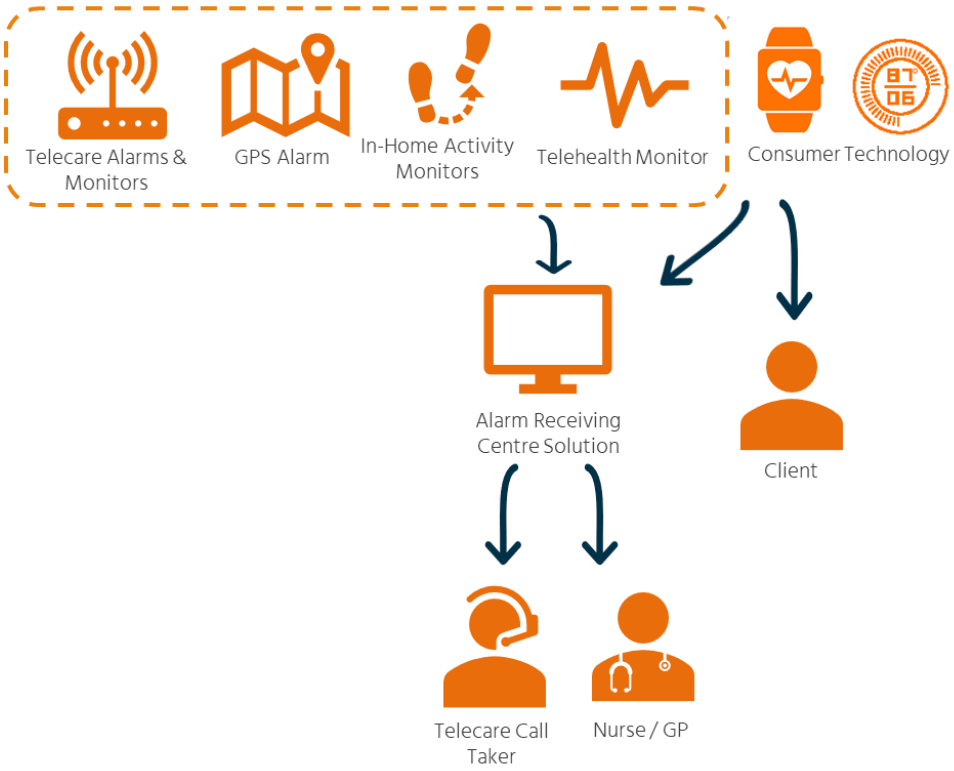



*Figure 23 – Overview of Potential Future Client Monitoring Arrangements (Simplified Example: Solutions / Equipment Used and Organisations Involved Will Vary Between Partnerships and Clients). Source: FarrPoint.*

## 9.2. Benefits

### 9.2.1. Telecare Delivery

Delivery of telecare using clients' own devices offers several potential benefits.

Use of clients' mobile devices extends the reach of the telecare service outside the home. This could encourage clients to leave the home whilst still having the comfort of knowing they can access assistance, if required. This would benefit clients' health, wellbeing, and help tackle social isolation.

Using clients' devices to provide telecare could provide a lower cost means of delivering services, reducing costs to the telecare provider, and potentially to clients. This in turn could support the

uptake of telecare services. This is in line with the findings of the Deloitte study[21] which recommended that the take-up of telecare services should be increased to a least a third of the over 75 age group. Deloitte highlighted service delivery costs and charging as key factors in delivering this uptake in services.

The client devices delivery method also potentially allows clients to be supported by telecare at an earlier stage of need than is currently possible. This form of delivery could provide an 'entry level' telecare service, allowing clients in the early stages of need, or a health condition, to be offered a 'light touch' telecare service, which is then re-assessed and moved to an equipment-based service as the level of need increases.

### 9.2.2. Telecare Monitoring

Using clients' own devices as telecare monitors would potentially allow the range and granularity of monitoring to be expanded. Integration with home automation technology would also provide telecare providers with the ability to monitor and control clients' home environment, for example monitoring temperature and altering the heating, if required.

Integration with telehealth devices would provide telecare solutions with a complete view of clients' health and wellbeing, removing the current silo-based approach where data resides in multiple, standalone and incompatible data stores. The data collected by the telecare solution could potentially be stored on, or interface with, the combined health and social care record provided as part of the Digital Platform project with data analytics assisting in identifying clients at risk or in need of support.

## 9.3. Implementing Telecare Devices

### 9.3.1. Telecare Delivery

Some Partnerships do currently offer clients telecare services using their own mobile phone. However, the number of clients offered this form of telecare is very limited and is completed on a special case basis.

From a technology perspective Partnerships would be able to offer a telecare service using clients' own phones using their existing ARC solutions. These ARC solutions would be programmed with clients' phone numbers, which would be used to identify any calls received.

Partnerships may struggle to be able to take calls from digital devices, such as Amazon Echo, given ARCs' lack of ability to receive calls in a digital format (VoIP) and the difficulties associated with identifying callers (given the potential lack of a static phone number or IP address).

There have been examples publicised about Amazon Echo (and similar devices) being used to support telecare clients[22], and to provide health information[23]. However, these are essentially

[21] Telecare Feasibility Study, August 2017. Ibid.

[22] Hampshire County Council and Argenti Telehealthcare Partnership / PA Consulting: https://www.paconsulting.com/our-experience/2019/Hampshire-County-Council-Helping-people-live-independently-for-longer-using-consumer-technology/

[23] NHS England and Amazon: https://www.gov.uk/government/news/nhs-health-information-available-through-amazon-s-alexa

complementary / companion services to telecare, rather than being used in the delivery of the core telecare service.

Offering telecare using clients' own devices would require operational procedures to be updated. Clients using phones to request assistance could be located anywhere, including outside the geography of the Partnership, meaning that procedures would need to be updated to detail what response can be provided, and how this is mobilised.

Delivering telecare using clients' own devices would also place some limitations on the level of service that could be provided. For example, the availability of the service would be dependent on equipment outside the control of the Partnership, and may be inoperable during power cuts, etc. The client would need to be made aware of these limitations as part of the service agreement, again reinforcing the need to ensure that assessment procedures identified the type of client suited to this kind of service.

If this form of telecare delivery was offered for clients in the early stage of need the additional call volumes this would generate are likely to be relatively low, meaning limited impact on call taker resource requirements, as these kinds of client are typically not frequent callers.

### 9.3.2. Telecare Monitoring

There appears to be a range of opportunities associated with using consumer devices to enhance telecare monitoring, and from integrating telecare and telehealth. However, this study has not examined these in detail because at this time there is no way to implement these changes using current telecare solutions. This is because:

- Telecare solutions use a small number of open and proprietary telecare-specific protocols that do not allow for the integration of equipment bought from outside a limited range of telecare devices;
- There are no common standards for consumer health devices and telehealth equipment that telecare solutions could use to integrate with these non-telecare devices;
- The digital platform, that could potentially act as a store for data from these different data sources is currently in development.

The DHI, as part of the Telecare Innovation workstream, is currently working with industry partners to develop future telecare delivery models. These models seek to address the monitoring and integration issues detailed here.

In addition to the technology issues highlighted above, integration with telehealth raises considerations relating to the skills and processes required for telecare to deliver health services. These considerations are the same as those detailed in the Shared Services section of this report.

## 9.4. Telecare Devices Summary

**What Is It?**

Use of clients' consumer devices as a means of delivering telecare and improving client monitoring

**Benefits:**

- **Telecare Delivery**
  - Extends telecare service reach outside the home. Promotes health, wellbeing and reduces social isolation
  - Lower cost means of delivering telecare. Reduced cost for Partnerships and potentially clients
  - Increases telecare uptake, potentially linked to universal telecare entitlement
  - Provides an entry level telecare offering to bring clients into the service at an earlier stage of need
- **Telecare Monitoring**
  - Improves the range and granularity of client monitoring
  - Allows Partnerships to monitor and control clients' home environment
  - Integration with telehealth provides a complete view of client health and wellbeing
  - Client data resides in a single location

**Practicalities:**

- **Telecare Delivery**
  - Partnerships should not require ARC upgrades to provide telecare using users own phones
  - Current ARC solutions may struggle to be use digital devices, such as Amazon Echo, to receive calls
  - Digital devices could be used as a companion / complementary service
  - Operational processes will need to be updated to take account of calls coming from outside the home
  - Clients would need to be made aware of the limitations of the service
  - Limited impact on call volumes and call taker resource given clients are not frequent callers
- **Telecare Monitoring**
  - Benefits exist – but not fully examined
  - Telecare monitoring approach cannot be implemented using current technology and standards
  - Digital Platform integrated health and care record still in development
  - Telecare innovation workstream developing this delivery model with industry partners
  - Staffing and operational considerations associated with telecare integrating with telehealth

# 10. Summary and Next Steps

## 10.1. Overview of Call Handling Improvements

Figure 24 presents a summary of the call handling improvements identified in this report. At this stage a high-level analysis of the benefits and practicalities of each of these improvements has been completed; input is now required from stakeholders to identify the call handling changes that are worthy of further analysis. These shortlisted changes will then be examined in more detail to fully understand their benefits and how they would be implemented across Scotland.

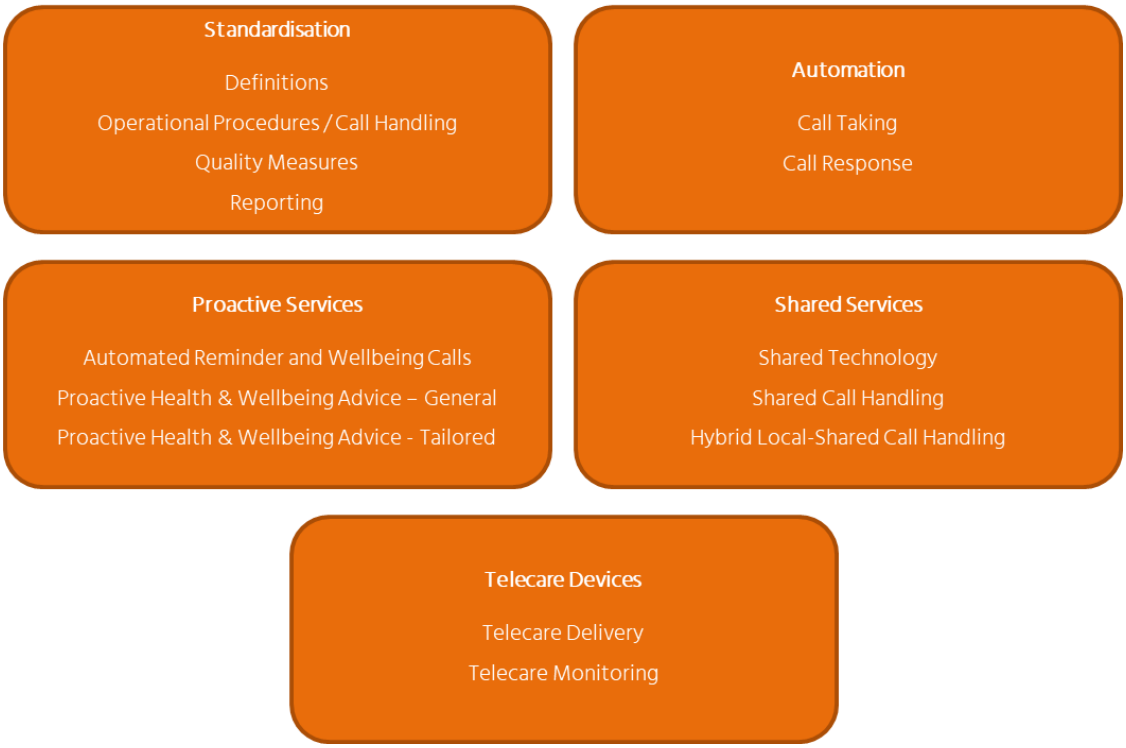



*Figure 24 – Summary of Potential Call Handling Changes Presented in This Report.*
*Source: FarrPoint.*

The call handling improvements identified are independent and so could be implemented in isolation, or in combination with a mix of other improvements. However, when determining the mix and timing of improvements to be progressed, we recommend that consideration is given to:

- Short term "foundation" improvements;
- The impact of the scope of telecare services;
- Longer term improvements and links to telecare innovation.

## 10.2. Short Term Improvements

As detailed in the Part 1 Report and in this document, there is significant variation in the scope and delivery approach for telecare services in Scotland. This report also details how this level of variation will make it more complex, and potentially resource intensive and expensive, to implement changes to telecare services, given the need to interpret, design, and implement the change differently for each telecare Partnership.

Implementing Standardisation across telecare prior to other call handling improvements would deliver short-term service improvements and efficiencies and provide the foundations on which further improvement could then be built.

Other call handling changes detailed in this report offer opportunities for service improvements and/or efficiencies in the short-term, with limited technical and operational changes required to implement them. These improvements could include implementation of automation in call taking, use of automated reminder and wellbeing calls, and use of clients' own phones for telecare delivery. If these improvements need further analysis in order to establish their impact and benefits, trials could be completed using existing telecare solutions in advance of a wider implementation once the benefits were established.

## 10.3. The Impact of Telecare Scope

Current telecare services largely act as an alarm response service, with limited integration to other health and social care services. Moving forward, telecare services could continue to operate in this way, or the scope of the service could widen significantly, with telecare becoming part of an integrated health and social care service.

Determining the future scope of telecare services is outside the remit of this study, however, this scope has a fundamental impact on the nature of call handling, and so the improvements that can be implemented to improve it.

If telecare remains largely as an alarm response service, this means that the types of call handled, and their complexity, is relatively limited. Call handling improvements will focus on increasing the efficiency with which these limited call types are dealt with. This means that changes will tend towards standardised services, delivered at scale, using centralised shared call handling facilities. Automation is also likely to be used to further improve the efficiency of call handling.

If telecare is delivered as part of an integrated health and social care service, then it is likely that call handling changes will not be focussed purely on efficiency (although this will still be an objective) and will instead need to focus on implementing joined-up working between the various health and social care practitioners that are involved in the delivery of service to clients. Using this approach, telecare could be involved in the delivery of health services, which has a significant impact on call handling procedures and skills. Using this model of telecare scope, the use of centralised call handling facilities is a less obvious outcome, given the need for telecare to integrate with health and care services, which will continue to be delivered at a local level.

During the stakeholder consultations completed as part of this study, differing views were expressed about the future scope of telecare services. As outlined above, the scope of telecare services must be determined before call handling arrangements to deliver these services can be developed. This means that longer term planning of the scope and role of telecare services should be completed at a local or national level prior to implementing some of the call handling arrangements detailed in this study. This is particularly true of the call handling improvements relating to shared service topologies, and the provision of proactive health and wellbeing advice.

## 10.4. Longer Term Improvements and Telecare Innovation

Some of the benefits associated with the call handling improvements detailed in this report can only be fully realised in the longer term. Examples of this include the use of robotic process automation

to improve call response, the use of clients' own digital devices to augment existing telecare monitoring, and using a common platform for the delivery of telehealth and telecare services.

These improvements cannot be implemented in the short term, either because of technical limitations of existing telecare solutions, lack of suitable open standards and interfaces, or lack of common platforms with which to deliver health and care services.

Implementing these improvements and benefits can be included as a longer-term objective on the development plan for telecare call handling. In addition, these improvements should be linked with the development work being planned as part of the telecare innovation workstream to ensure that call handling is included in future telecare service delivery models.

The potential changes to telecare call handling should also be linked to other related change projects given potential interdependency. Examples include, the Digital Office's Common Platforms project, the National Digital Service's Digital Platform project, and Local Authorities' plans for changes to out of hours service provision. Similarly, call handling changes should also take account of policy developments, such as the potential introduction of a universal telecare offering, or changes to the role of the Care Inspectorate in regulating telecare services.

## 10.5. Potential Implementation Plan

A potential implementation plan for the call handling improvements is presented in Figure 25. This plan assumes that it is decided that all the improvements identified in this report are progressed, which may not be the case. We recommend that an updated version of this plan is developed once shortlisted improvements are agreed.

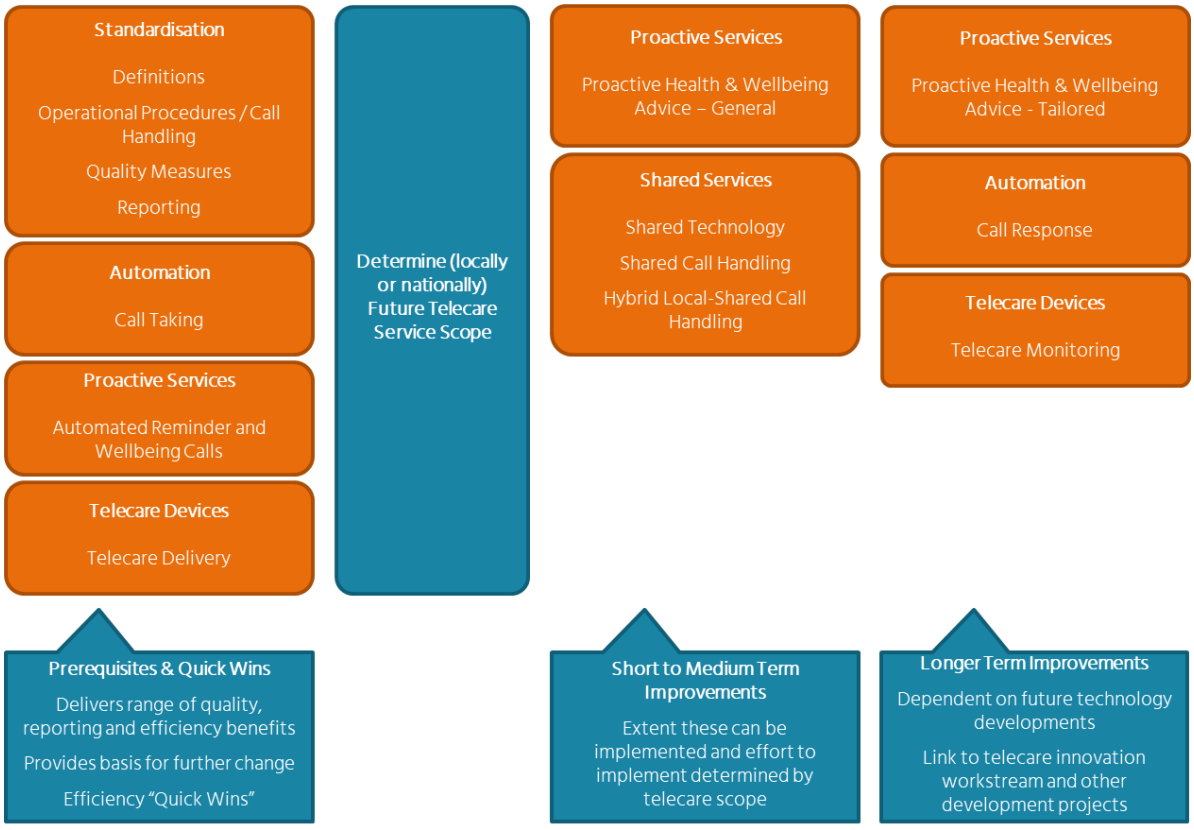



*Figure 25 – Potential Implementation Plan for Call Handling Improvements. Source: FarrPoint.*

The plan implements standardisation initially as a pre-requisite for the other improvements. Call handling changes aiming to achieve "quick wins" in terms of delivering service improvements and efficiencies are then implemented. These efficiencies have the potential to free up call taker resource which could then be used for the delivery of later call handling changes that have a resource impact.

Following implementation of these initial improvements, the next steps in the plan are dependent on the future scope of telecare services. Decisions, either at a local level, or nationally, on the scope of telecare and its relationship with other health and care services are required in order to ensure that subsequent call handling improvements align with this scope.

Once the scope of telecare services is known, the role of proactive services in call handling and the optimum shared services approach can be determined and implemented. At this stage, we have assumed that proactive services will initially be implemented to provide general advice to clients, with this service evolving to provide advice tailored to each client in the longer term.

We have also assumed that implementing automation of telecare call response and the integration of consumer devices and telehealth into telecare monitoring are also longer term objectives, given the reliance on developments of health and care technology / standards and to align these improvements with the telecare innovation workstream and other change projects in health and care.

## 10.6. Summary of Next Steps

A summary of the recommended next steps to progress the development of telecare call handling is as follows:

- Telecare stakeholders to review the call handling improvements presented in this report to determine those that warrant further investigation;
- Further work is commissioned to investigate the benefits and practicalities of implementing the shortlisted call handling improvements;
- Implementing standardisation initially to deliver immediate benefits and to simplify the delivery of subsequent improvements;
- Consider implementing some of the defined call handling improvements to deliver "quick wins", improving service quality and/or delivering efficiencies;
- Ensure that there is a local / national decision on the future scope of telecare services, and its link into other health and care services, before progressing beyond the implementation of the "quick win" changes. This decision impacts the call handling improvements that can be delivered, particularly those relating to shared services and proactive services;
- Align longer term call handling improvements with the Telecare Innovation workstream;
- Ensure that call handling improvements align with other related change projects, such as Digital Office Common Platforms, Digital Transformation Service Digital Platform, and Councils' planning for out of hours services;
- Ensure that call handling improvements take account of policy developments, such as the potential introduction of a universal telecare offering, or changes to the role of the Care Inspectorate in regulating telecare services.

# Version Control

Owner **Richard Parkinson**

Classification **Client Confidential**

| Revision | Description | Author | Checked | Reviewed | Authorised | Date |
|---|---|---|---|---|---|---|
| 1.0 | Initial Version | RP | AM | AM | RP | 07/08/19 |
| 2.0 | Update following client comments and further stakeholder interviews | RP | AM | AM | RP | 25/10/19 |
| 3.0 | Further update following client comments | RP | AM | AM | RP | 07/11/19 |
| 3.1 | Minor Updates | RP | AM | AM | RP | 19/12/19 |

**Edinburgh**

Exchange Place 2
5 Semple Street
Edinburgh
EH3 8BL

T: 0131 202 6018

edinburgh@farrpoint.com

**London**

1st Floor
99 Bishopsgate
London
EC2M 3XD

T: 020 3693 7310

london@farrpoint.com

**Manchester**

3 Hardman Square
Spinningfields
Manchester
M3 3EB

T: 0161 669 5821

manchester@farrpoint.com

@farrpoint