

North Wales Regional Collaborative Approach to Telecare

Feasibility Study

Work Package 4

**Investigation into the potential of developing
collective policies, service standards,
processes and training**

Telecare Think Tank 

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1. Introduction

The core elements of a telecare service are depicted in Figure 1. Many of these core elements have the potential to be co-ordinated across North Wales allowing a regional approach to be adopted (to varying degrees) with associated advantages, including:

- the sharing of 'best-practice',
- pooled resources, and
- the potential for various cost efficiencies to be made, including with respect to equipment procurement and training.

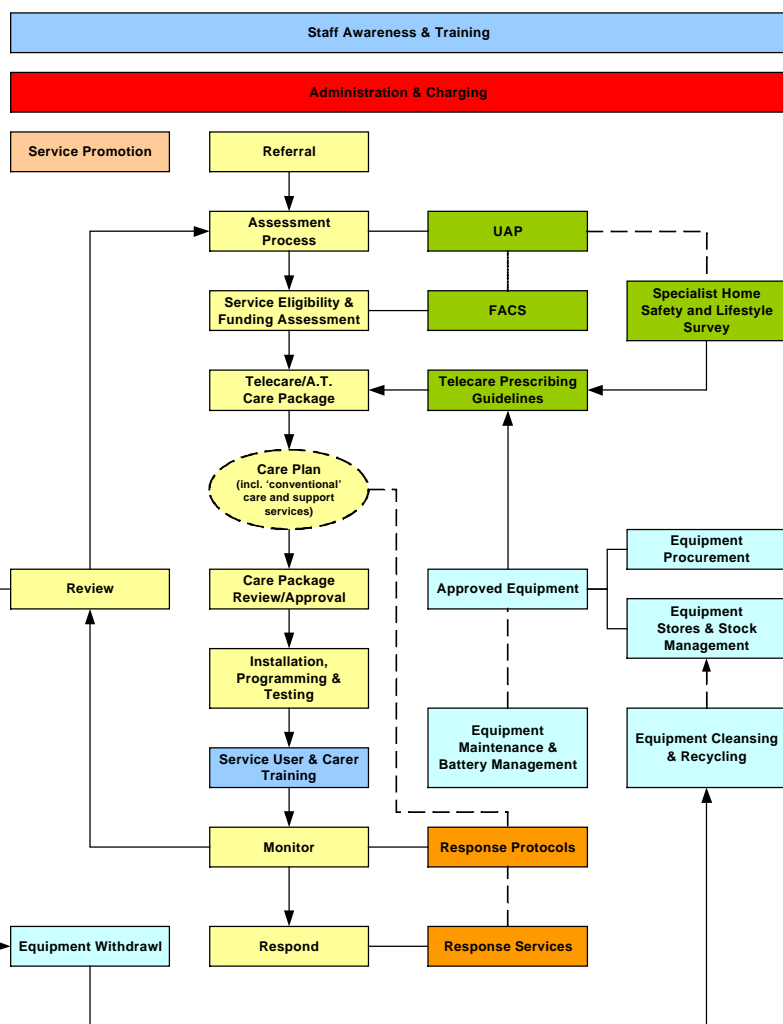


Figure 1. The core elements of a telecare service.

The exact detail of many of these core elements will depend on the nature of the telecare services that are provided. For example, the response protocols for a particular alarm condition will vary depending on the response options that are available locally at the time at which the alarm call is raised. Likewise, the questions asked as part of the telecare needs matching process might vary

according to the range and functionality of equipment that is approved for use in each region. Naturally, if all aspects of a telecare service could be standardised across North Wales, then there is no reason why each element could not be implemented in a similar fashion across the region, providing that suitable benefits could be achieved by doing so, allowing for the creation or the appearance of a single 'seamless' service.

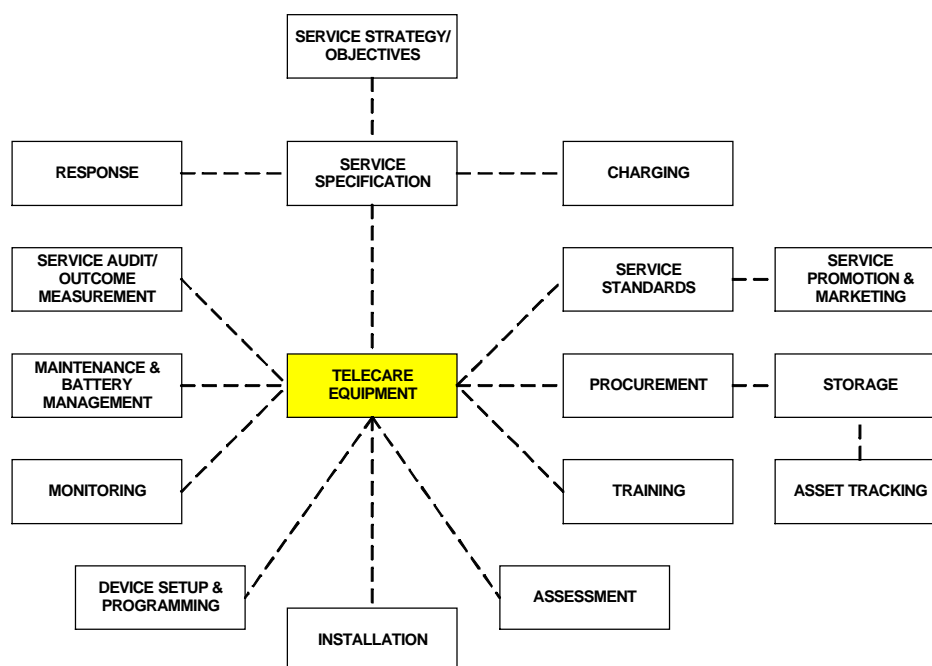


Figure 2. A selection of process/task interdependencies.

Figure 2 shows some of the interdependencies between a selection of tasks involved in implementing a telecare service. Clearly, in the first instance, there is a strategic requirement to agree a vision¹ for the service and define its overall aims and objectives (e.g. an objective might be to help manage the risk of falls in the community). Once the overall objectives are identified, it is then possible to progress on to defining a specification for the service – this would include:

- specifying the home-based equipment required to realise the objectives (e.g. fall detector, bed monitor and automatic lights),
- defining the relevant response mechanisms required (e.g. 24/7 rapid response team with lifting equipment), and
- devising a charging policy for the service.

¹ Such a vision might include service objectives for today, the next few years and a longer-term outlook (5+ years) based on technological solutions that will become available once broadband communications become commonplace and suitable home-based technologies are developed to take advantage of this (Refer to Work Packages 5 and 6).

The relationships in Figure 2 show that the choice of telecare equipment (and related electronic assistive technologies) that are selected for the service can have a significant impact on how the remainder of the core elements of the service are implemented. This report will discuss the potential for co-operation and standardisation of various aspects of providing a telecare service.

2. Service Strategy & Policy

2.1 Service Objectives

Some of the key strategic decisions to make with regards to setting up a new telecare service include:

- The target **service user-groups** which the service will be aimed at (e.g. elderly, learning disabilities, people who need chronic disease management);
- The **eligibility criteria** that will apply – in other words, whether telecare services are to be provided to those people with *critical* or *substantial* needs only or whether those with *low* or *moderate* needs will also receive a service.
- The **charging policy** that will apply and whether the service will also meet demand for the private-pay market.
- The (mobile) **response services** that are required, the hours over which they will be available in order to ensure that the service is workable, the equipment that these response services will require, and the range of emergencies to which they will respond.
- The **nature of the telecare packages** provided, i.e. the telecare and associated technologies that are approved for use and whether a universal *core package* (or *packages*) of basic telecare equipment will be provided to *all* service users with additional equipment provided if necessary following further assessment.
- How the **technical support infrastructure** to help support the deployment of telecare equipment will be implemented (e.g. equipment specification, installation and maintenance, training, etc.).
- The implications of providing a truly **bilingual** service.

It may be apparent that there is potential for many of these high-level issues to be standardised across North Wales especially when one considers the similarity of the strategic priorities in each of the *Health, Social Care and Well-being Strategies* across the region.

2.2 Service User Groups

The groups which are likely to be targeted for telecare will all involve vulnerable people who are most likely to be unable to self care and who are as a result likely to suffer from social exclusion, poor health and low quality of life. Typically these will include:

- the elderly (especially those who live alone),
- people with learning disabilities,
- people with physical, sensory or cognitive/memory impairments, and
- people with chronic disease (such as bronchitis) or long-term conditions.

In order to adopt a common service specification across the region, a review of each county's priorities in their Health, Social Care and Wellbeing strategies should take place with a view to harmonising the priorities and coming to an agreement on the key groups at which telecare services should be targeted.

2.3 Service Eligibility Criteria and Referrals

An individual's eligibility (or otherwise) to receive telecare services is likely to be determined by the local FACS (Fair Access to Care Services) criteria (e.g. refer to Table 1).

Table 1. FACS criteria.

| Category | Care Needs |
|--------------------|---|
| Critical | Life threatening, significant health problems, inability to carry out vital personal care, etc. |
| Substantial | Only partial choice or control of the immediate environment, majority of social support system and relationships cannot be maintained, inability to carry out majority of personal care, etc. |
| Moderate | Inability to carry out several personal care or domestic routines, several social support systems and relationships cannot/will not be sustained, etc. |
| Low | Inability to carry out one or two personal care or domestic routines, one or two social support systems cannot be undertaken, etc. |

All of the local authorities across North Wales, apart from Wrexham, require that an individual's needs are classified as being either '*critical*' or '*substantial*' in order to qualify for a full assessment and support from social services. In Wrexham, this provision is also extended to those individuals whose needs are deemed to be '*moderate*'. The level at which services are to be provided is important because it determines the nature of the care packages required and, specifically, the

telecare equipment to be installed in the service user's home. Individuals with *critical* or *substantial* needs will need to undergo an additional element of assessment which surveys the hazards in the home and seeks to identify further risks to independence that could be managed using telecare sensors. This provides the information necessary to propose for them a telecare package that best matches their specific requirements (refer to *Section 3.1*) which would be provided alongside more traditional elements of a care plan such as home care and a meals service. Usually, telecare equipment will be suitable for managing specific risks/needs such as wandering, falls, immobility, memory problems, or polypharmacy; and in many cases will include more than one of these. Individuals whose needs are classified as being *moderate* will generally live in circumstances where there is no *immediate* risk to their health and safety. Therefore, telecare services intended for individuals in this risk-band are likely to provide a more generic service based on prevention and/or reassurance. The most basic level of service is the ability to easily contact a response centre if required – i.e. something akin to the existing community alarm service. Some additional functionality may be appropriate, for example: fire prevention (smoke and heat detectors) or basic home security (bogus caller button and video door-bell). A common factor in each of these services is that no actual *physical* response service is required (apart from perhaps the relevant emergency services or a nominated informal carer).

If telecare services are to be offered to individuals with relatively low needs, then this will have an implication for the overall mix of equipment that will need to be made available (refer to *Work Package 3*). The relatively high numbers of people who might meet the *moderate* (or *low*) need criteria will mean that large numbers of basic packages may need to be provided (this might actually help reduce overall procurement costs as the more packages that are required, the greater the potential for volume discounts). This may of course have implications for the number of complex telecare packages that could be funded across the region.

Once eligibility criteria are established, a suitable inventory of equipment must be identified, training packages must be set up to deal with this inventory, and the necessary response services put in place. It is then imperative that as many individuals as possible, who meet the eligibility criteria, are referred on to the telecare service. This involves raising the profile of the service amongst care professionals and members of the public and of having clear guidelines in place as to what constitutes an appropriate referral for telecare and how to go about it, including self assessment and referral.

2.4 Service Charging

The topic of charging for telecare services is often a sensitive issue. Historically, community alarm services across the UK have been charged at a non-commercial rate where some groups (e.g. local authority tenants) pay as little as 50p per week (though the average local authority charge has risen above £2 per week in Wales in recent years). Large national providers of community alarm services, where the service involves only equipment provision and alarm monitoring, charge in the order of £15 per calendar month. They have very low running costs because of economies of scale, but make relatively small profits. It follows that the vast majority of local authority run services operate at a substantial loss – though the actual level of subsidy from the local authority depends on whether the service is operated through a housing department or through some other directorate. The loss also depends on other charged services being operated using the same resources. These might include lone worker monitoring, administration of out of hours repairs, school security, and CCTV monitoring. Herefordshire Housing, a voluntary stock transfer organisation which has taken over the community alarm function for the entire county, has 14,000 connections to its system, but is barely profitable.

With telecare providing a far greater range of support technologies in the home and, importantly, providing a dedicated 24/7 response service, the case for differentiating these services from 'basic' community alarm services is clear. One of the ways in which this service differentiation is likely to manifest itself is with the cost of the service to the user. The level at which any charge is set must of course depend on the level and quality of service that is being provided. The options available include:

- Providing a completely free service;
- If the service user undergoes a community care assessment – equipment (and its installation, maintenance and removal) is provided free of charge², consistent with other items of assistive technology provided from the Community Equipment Store, but the monitoring and response service is means-tested as per local FACS guidelines – as a result this may mean that many older people will make little or no contribution to this charge.
- Where the equipment is not part of such an assessment (e.g. is part of a preventative service) a charge can be made for the complete service which may be inclusive of equipment (replacement and maintenance) and service elements.

² *this is a requirement of the Welsh Telecare Capital Grant.*

- If the service is part of an Intermediate Care/Rapid Response Service it may be that the fees will be met for the first 6 weeks of the service.
- Where the service is not assessed as part of a community care assessment (i.e. by social services) but is assessed by health service staff then the equipment provided at the point of care must be free of charge (as per NHS guidelines). However, if there are elements (such as sensors) that need to be monitored by a telecare service provider, then the user will have to pay the weekly monitoring and response charge to the telecare service. This will appear anomalous to NHS staff and will need to be clarified to ensure that service users aren't misled or confused.
- There is also the possibility of the provision of a private service where everything can be charged (with equipment either being rented or bought outright). This may become the largest market in the future as FACS criteria are tightened to enable Social Services Departments to operate within constrained budgets.

Typically, charges for monitoring and administration only are in the range £3 to £5 per week whilst additional charges for a response service range from £2 per week for service users already receiving warden services through Supporting People up to £8 per week for dispersed service users in some areas where response times are required to be 30 minutes or less. The average charge in England for a complete service commissioned by a local authority social services department is about £9 per week. **It should be noted that the charge for the service commissioned by Social Services should not depend on the number of sensors provided, because this is the "free" part of the service.** Of course, where a service is provided privately (or outside FACS) then the charges may be linked to the number or cost of the actual sensors provided.

Charging policies also have to be determined to account for periods when a service user is away on holiday, in hospital, or in respite care. Local authorities are already experienced in providing appropriate policies for other charged services such as home care, day care and residential care. Generally, it may be assumed that charging will continue for a limited period when the service user is in hospital – perhaps a maximum of 4 weeks, but will then be halted until they return home. Equipment, on the other hand, may be left in place until a decision is taken to withdraw or replace according to a review of needs and risks.

The adoption of a standard set of policies would prevent misunderstandings, especially those that could arise in a hospital ward where some patients from one

county might have to continue to pay for their telecare service while others are able to stop paying immediately they are not in their own homes. Clearly, the situation is further simplified if the charging policies adopted by all counties are harmonised to avoid a post code lottery (and to avoid confusion when individuals happen to move home from one county to another). Naturally, if services are to standardise their pricing policy, then it implies that they must also standardise on the level and quality of service provided. It follows that these arguments could be extended to other social services.

2.5 Service Specification

The quality of a telecare service is often measured by the robustness of the response protocols, and by the way that an appropriate action can be defined a priori for each emergency condition for every service user at all times of the day or night. Indeed, the almost random nature of response protocols when only informal carers and key-holders are available, would fail even the most basic performance tests applied by health boards, trusts and local authorities. It follows that a high quality region-wide service will be possible only by ensuring that the necessary response services are in place in each county (and across all county borders) and operating to the same hours and with access to the same equipment and support resources.

Standardisation then implies the use of the same telecare services across the region (and by implication a common set of telecare equipment). This will become more relevant in the future where a whole raft of new telecare solutions will be enabled by access to broadband services. These will include various services designed to reduce social isolation, including activity monitoring, proactive calling, teleconferencing and virtual visits. Initially, telecare may be restricted to the monitoring of automatic alarms raised by sensors. In the near future, this will be extended to increasingly intelligent social, behavioural and physiological smart sensors, few of which will be developed by the traditional manufacturers of community alarm systems. It will be necessary for the North Wales Region to share a vision on the scope of their telecare service as this is likely to determine which companies will be able to provide the equipment needed. Currently, Tunstall has a lead on its competitors in offering additional sensors, and in marketing compatible 2nd generation products. Potential cost savings through equipment standardisation are considered in *Work Package 3*.

Work packages 5 and 6 will include ideas on a future vision and a time scale which may help focus attention on the dynamic nature of the market and the

need to future-proof as much as possible in terms of service delivery as well as monitoring centre equipment. Issues relating to equipment are discussed in more detail in *Section 4*.

2.6 Bilingual Service Provision

The Welsh Language Act (1993) places a duty on the public sector in Wales to treat Welsh and English on an equal basis when providing services to the public. Overall, there are nearly 40,000 Welsh speakers aged 65 or over across the region (over 18,500 of whom are aged 75 or over)^[1]. There are also many young people (especially in Anglesey and Gwynedd) who might only be able to communicate with confidence through the medium of Welsh (and who may need to interact with the local telecare service as an informal carer or as a service user in receipt of support for a chronic condition or learning difficulty). One of the requirements of a new telecare service across North Wales might therefore be to provide a fully bilingual service to all of its service users, irrespective of where they live. This is likely to be a requirement for achieving compliance with the Strategic Framework of the Telecare Service Association's Code of Practice (refer to *Section 3.2*). Issues relating to bilingualism should encompass various elements of the service, including:

- Assessment, Home Survey and AT Prescription
- Promotional & Marketing materials
- User Instructions
- Telephone Response
- User-Interface with telecare technologies

By combining efforts to standardise as much as possible across the region, many of the costs involved in producing bilingual versions of all of these elements can be shared and reduced. If a bilingual policy was adopted across North Wales, then this would mean that all monitoring centres in the region would have to comply and provide a truly bilingual telephone response service (currently only Gofal Môn and Conwy Careline offer such a guaranteed bilingual service). This has implications for any arrangements with backup facilities (and/or disaster recovery partnership schemes) that are hosted by monitoring centres that do not offer such a bilingual service. Alternatively, an arrangement could be worked out enabling people who would like a Welsh language service to be put through to the most appropriate response centre. This might be problematical however if only the monitoring centres using Tunstall PNC equipment offer a Welsh language

service (as there may be compatibility issues with other manufacturers equipment) – refer to *Work Package 3*. Elsewhere in Wales, the only other monitoring centre offering a bilingual service is that operated by Carmarthenshire. This too uses Tunstall PNC equipment. Indeed, the only non-Tunstall monitoring centre in Wales which lies outside the region is operated by the Wales and the West Housing Association from their Cardiff centre. This uses an Initial monitoring system, but does not offer a bilingual service. Compliance with a bilingual policy for Flintshire and Wrexham is therefore likely to be a major problem for their existing monitoring centres.

In the same way, people whose first language is Welsh, might expect their care phone (and other items of equipment that require user-interaction) to interact with them in the language of their choice. This problem was first raised over 20 years ago by the old counties of Gwynedd and Dyfed, but was not seen as a major issue because there were few (if any) speech or written messages generated by the care phone for the benefit of the service user. By today, the range of input and output options has increased to such an extent that a standard care phone could not possibly be used outside the country for which it was designed. The bigger manufacturers offer versions with English, French, German, Spanish and Italian options. The demand from smaller countries was insufficient to justify more variants.

However, Tunstall launched the Lifeline 4000+ Dragon in October 2006, enabling Welsh-speaking users to choose a Welsh speaking unit for the first time. Other manufacturers are unlikely to follow in the short term due to limited demand for their products in Wales. To comply with the Welsh Language Act, each local authority will, in the future, need to ask their service users to select their preferred language for their care phone. This will again favour a standard approach.

Similar arguments may in future apply to other minority languages and may help to address some of the social exclusions issues that apply to black and minority ethnic groups.

3. Service Standards & Procedures

3.1 Telecare Needs Assessment & Care Package Selection

The role of assessment is key to enable the most appropriate provision of equipment which, in turn, is essential to achieving a successful service that helps to support as many people as possible to live in their own homes whilst also

reducing the chances of avoidable hospital admissions and delaying a move into residential care. A well-considered and formal assessment process will help to:

- Identify people who are likely to benefit from a telecare service – and hence generate appropriate referrals on to the service (and equally help to reduce the number of inappropriate referrals) – thus maximising the impact of the telecare service;
- Help to provide a package of telecare that is tailored to the needs of the service user – this is important because only by providing solutions that actually match the specific needs of the service user can successful outcomes be achieved;

In practice, the telecare assessment process should be considered in three parts:

1. The identification/introduction of suitable 'trigger' questions and answers in the Overview Assessment of the Unified Assessment Process (UAP) that can be used to prompt assessors to consider a referral on to the telecare service (for further assessment).
2. A screening tool that is able to quickly determine whether the needs of the client are simple or complex and hence whether they require a further specialist survey in order to provide them with the best possible telecare package. In the first instance, for service users with moderate/low needs, a basic package of telecare might be sufficient in order to provide a basic level of reassurance to the service user. However, for service users with substantial or critical needs, the potential scope and complexity of their telecare package increases and a specialist home safety and lifestyle survey should be undertaken.
3. A specialist home safety and lifestyle survey – this is an holistic and comprehensive questionnaire which considers the circumstances of the client, the suitability of their living environment and how they are able to interact with it and with the fixtures and appliances therein.

The level at which a specialist survey as described in point (3) above is developed depends on the skills and training of the people who are to use it. With suitable knowledge and experience, the number of questions necessary in the survey can be reduced – this is particularly important as the length of time it takes to perform increases with the number of questions! The number of questions can be

reduced further by matching the questions asked to a standard inventory of available equipment, based on telecare services that are to be provided.

None of the authorities in North Wales currently have in place a suitable form of the UAP which includes all the trigger questions which would help determine the ways in which telecare and AT might be useful within a care package (nor, indeed, a full training programme which encompasses telecare). It should also be noted that new questions may need to be introduced occasionally to take into account new developments in telecare technology that help to tackle new risks. Consequently, it would make sense to develop a common home safety and lifestyle survey tool across the region for a number of reasons:

- It would avoid duplication of effort and subsequent waste of resource (e.g. development of questionnaires, piloting of scheme, translation costs, etc.)
- A larger user-base will help to speed up the validation of the tool – allowing more confidence in its reliability and measures such as inter-assessor repeatability as time goes on.
- A single training package could be developed for the region.
- A common assessment process for the region would help to make meaningful comparisons across each LA with regards to referrals, assessments, subsequent provision of equipment/packages and ultimately outcomes.
- Any move to a software-based solution would mean that only one version will need to be commissioned (refer to *Work Package 3*) – it would also simplify the integration with any software-based version of the UAP which would allow the importing of any data that had already been obtained, maybe resulting in fewer questions having to be asked.

Once a risk assessment and survey is undertaken, it is then necessary to match identified risks and unmet needs onto suitable telecare solutions. The process of matching telecare technology to the identified unmet needs and risks is of particular concern to groups who are new to this approach. It demands fine knowledge of the technologies, their applications and limitations, and a degree of clinical reasoning to decide between different items of equipment, price, availability and compatibility with any existing systems already in place. This requires that assessors are given suitable training in order that they are able to identify the unmet needs and risks that can be managed through technology, and to enable them to select the most appropriate technology/settings for individuals.

To help perform these functions, a bespoke software tool could be employed to assist the professional in matching technology to identified needs, greatly speeding up the process. This software could essentially perform the role of a 'smart' electronic catalogue capable of filtering out inappropriate solutions based on various criteria entered by the user. This software could be used as a general resource and as a tool to assist in the training of staff. However, such a tool would need to be specified and the software written and trialled as currently there is no commercial product on the market – but this situation could change quickly. Such software would need to operate on a suitable platform – such as a laptop, Tablet-PC, handheld-PC or Palm-type device.

It follows that each local authority might need software of the above type, and each could commission its own development. By standardising on the telecare services available, then it would be possible to procure a common solution for the whole region, with cost sharing and resource saving possibilities (see *WP-3*).

The specification and development of a *proof of concept* prescription tool, with associated support documentation, might cost in the region of £24,000. This may be too expensive for a single authority but may be deemed affordable if the cost were shared between the 6 authorities.

3.2 Monitoring, Installation & Response

There are various requirements and performance metrics associated with the monitoring, installation and response elements of a telecare service. Many of which are embodied in the Telecare Services Association (TSA) codes of practice, which offers the only industry standard accreditation for telecare & community alarm services. The TSA's codes of practice have been released in three parts:

- Part One – Telecare Calls Handling Operational Requirements
- Part Two – Telecare Installation Operational Requirements
- Part Three – Mobile Response Operational Requirements

Part One has been agreed as the applicable technical standard (for call handling services) in respect of Supporting People in England. The TSA are working with the Welsh Assembly with a view to their adopting the Code as the appropriate standard throughout Wales. Conwy Careline, Flintshire Carelink and Wrexham Carecall are all currently members of the Telecare Services Association (TSA) – with only Gofal Môn not being a member. None of the monitoring centres were (at baseline) compliant with any part of the TSA's codes of practice.

However, according to information supplied to the authors, Conwy Careline was hoping to achieve compliance with Part 1 (Call handling) and Part 2 (Dispersed Alarms) of the TSA codes of practice by the end of 2006. Furthermore, it is working towards compliance with Part 3 (Mobile response) and is hoping to comply by June 2007. Flintshire Carelink and Wrexham Carecall hope to achieve compliance with Parts 1 and 2 sometime in the future (2007/08) whilst Gofal Môn is not working towards compliance with any of the TSA codes of practice. It remains to be seen if these targets are over-ambitious.

The process of attaining accreditation can be a lengthy affair, depending on how far away the service is from the required standard and on how many of the codes the service wishes to be accredited against. In the first instance, the service must undertake a pre-audit assessment in order to establish the work that will need to be undertaken to get to the point where accreditation may be tested. The TSA offers a pre-audit inspection which can establish an organisation's readiness for compliance to assist in this process. The work necessary to get a service up to the necessary standard usually takes between 3 and 6 months. Typically a member of staff can be seconded to the task but it can also be outsourced to a consultancy firm that specialises in such matters. To achieve compliance, organisations must undergo a rigorous initial audit with annual maintenance inspections. On every third anniversary of the initial audit, the service provider will be required to undergo a full audit to ensure that they remain fully compatible with the currently applicable version of the Codes of Practice (we understand that these are due for review later this year).

To become fully compliant with the TSA's code of practice, organisations must achieve accreditation against the *Strategic Framework* as well as *each* of the operational requirements for the service areas that are being provided (i.e. monitoring, installation and response). Service Providers are required to provide evidence of compliance with four standards within the Strategic Framework:

- Standard One – Individual rights and empowerment
- Standard Two – Individual care and support
- Standard Three – Organisation and management
- Standard Four – Staffing and training

All services should strive towards compliance with these codes of practice as they represent elements of good practice and an independent 'endorsement' of the service can be achieved. For monitoring centres in particular, compliance with

Part 1 may increasingly be deemed as strategically important if it wishes to attract monitoring business from other corporate customers as they are more likely to seek monitoring centres who are TSA compliant.

However, in the opinion of the authors, the framework does not *guarantee* the delivery of high quality telecare services, and the North Wales Region should strive to achieve a rather higher service specification wherever possible. For example, the TSA codes are currently weak in terms of the specification of minimum staffing levels, response protocols, the recording of management information for review, and the need for Criminal Records Bureau (CRB) checks for operational staff.

Table 2. Estimated costs of TSA accreditation.

| Pre-Compliance Tasks | Estimated Cost¹ |
|--|-----------------------------------|
| TSA annual membership: | £914 |
| TSA Pre-Audit Inspection (optional): | £450 - £990 |
| Pre-Audit work ² : | £7,500 - £15,000 |
| Staff training: | £5,000 |
| Initial Audit: | £995 - £2,100 |
| FULL compliance (Year 1): | £24,004 |
| Post-Compliance Tasks | |
| TSA annual membership: | £914 |
| Annual Maintenance Inspections: | £610 - £1,550 |
| <i>Every Three Years - Full Audit:</i> | £995 - £2,100 |
| FULL compliance for single service over initial 5 year period³: | £34,410 |
| FULL compliance for all six authorities (5-year period)^{3,4}: | £203,010 |
| ¹ depends on the number of codes service is wishing to be accredited against ² seconded member of staff for 3 – 6 months or consultant for 30 days @ £500/day ³ assumes current prices throughout 5 year period; ⁴ assumes 4 monitoring centres; price for pt 2 & 3 compliance assumed to be same as that for part 1 & 2 – it is unclear how discounts for multiple accreditations apply. | |

The costs associated with achieving accreditation with the TSA Codes of Practice are not insignificant and should be considered. Table 2 provides an estimate of the costs involved at each stage, and provides an indication of the costs involved over a 5 year period for a *single* service offering monitoring, installation and response. The cost for the region for the current situation at present with 4

monitoring centres is also shown and assumes 6 separately accredited installation and response services. There is scope for significant cost savings if it were possible to setup a regional telecare service running a single service for response, installation, maintenance and monitoring rather than 6 independent services each requiring accreditation. This raises significant issues regarding ownership, control and governance of such a service as well as its funding and operation. These issues will be discussed in *Work Package 7*.

3.3 Performance Measurement

One of the important aspects of standardisation will be the ability to audit each service in order to compare service usage and performance. One of the key aspects of achieving this is to agree upon a standard set of performance metrics. This could be something as simple as defining the age bands over which clients are recorded for reporting purposes (e.g. quinary age-bands) so that age profiles of service users across each region can be compared easily. Perhaps the most important service metric that should be standardised upon is how calls and the subsequent response are categorised and recorded. Some of these data are defined in the TSA's Codes of Practice, e.g. call answering times.

Therefore, it is recommended that a standardised set of service data and performance metrics are agreed upon with which to compare services. This is to include the development of a standardised set of call and response codes to cover the reason for calls and the response selected, including a means of recording how long it takes for the care episode to conclude (e.g. time for response service to arrive at the client's home – where applicable).

More generally, it may be appropriate to evaluate local services against a common framework which takes into account both subjective measures of well-being and Quality of Life of carers and service users, and objective measures of performance. The Welsh Assembly Government is commissioning Imperial College, London, to prepare a Welsh framework, but it may be appropriate for the 6 counties of North Wales to independently work to gain a more detailed view of performance in order to progress their service beyond the most basic level likely to be offered elsewhere in the country.

Finally, there should be formal procedures in place to allow service users to submit complaints about the service received and provide feedback accordingly.

4. Telecare Equipment

Some of the issues concerning the compatibility and interoperability problems of mixing telecare equipment from different manufacturers have already been discussed in *Work Package 3*. Figure 2 showed how the decision to standardise on equipment may have a positive knock-on effect on the ability of a regional telecare service to standardise many other processes across the service. The decision to standardise on a set of equipment can be made at the device type level and then subsequently at the manufacturer level, with various advantages. However, the likelihood is that, during the lifetime of the Welsh Capital Grant, there are likely to be a maximum of two approved telecare suppliers for North Wales, namely: Tunstall and Initial-Attendo (formerly Shorrocks). There may be strong arguments for using a single supplier. These may become more apparent below:

4.1 Functional Specification of Equipment

Often, there is more than one method of implementing a particular telecare sensor or system. The method chosen might depend on, for example, the expertise of the manufacturer, the estimated cost of the final product or issues regarding existing patent protection. Subsequently, it is not always possible to compare two items of equipment from different manufacturers even though they might be described in similar terms in vendor literature. For example, a device advertised as a property exit monitor (for use by people with a dementia who are at risk of leaving their property and then of wandering and being unable to find their way home) might from two different companies be:

- (a) a simple set of contacts on a door, which alarms every time the door is opened, or
- (b) a system which can be programmed to alarm only if the service user leaves during a particular time of day or night and fails to return within a specified period of time.

The former may be low cost but prone to false activations by visitors or when the service user answers the door to callers. The latter may need to be configured to the specific needs of the end-user, requiring additional investment in installer training and in assessment skills. It follows that the device described in (a) may not be suitable as a direct alternative to device (b). Generally, it will be necessary to select devices which EXACTLY match the identified needs or risks, so having

access to a wider range of similar products can lead to more cases of incorrect provision.

It follows therefore that in order to ensure that services are consistent across North Wales, it might be beneficial to generate a *minimum feature specification* for each item of telecare equipment that is required to deliver the services that have been identified as a priority. This way, it will be possible to check the features of any new device against this minimum standard checklist to ensure that it will be fit for purpose prior to its procurement. This should also include a consideration of functional, safety and maintenance issues, for example: what temperature threshold a hypothermia alarm should be set at before it alarms and whether any battery low signal is transmitted automatically or is only transmitted if the device is 'triggered'.

4.2 Installation & Programming

Inevitably, each manufacturer will provide different methods of programming external devices into a care phone. Some (e.g. Tunstall) may offer so many settings that they will need to be programmed through a laptop computer running dedicated software which also save the configuration files for audit. On the other hand, others (including Initial) might favour the use of a simpler hand-held device which is lower cost and more portable, but perhaps not so suitable for programming and recording details of complex packages with multiple timer options. It means that the training required for assessors, for prescribers and for installers will differ depending on whether the equipment is provided by Tunstall or by Initial – this remains the case even when programming of the care phone is performed over the telephone using software in the monitoring centre.

The installation requirements of sensors might vary between manufacturers which means that there will be a need for 2 sets of guidelines, including test and repair requirements. Early academic studies of the risks associated with telecare services (Williams, Doughty et al 2000), concluded that human error was the most likely cause of system failure, and that incorrect installation would be a major contributor to the risk. Clearly, these risks would be greatly reduced if the number of different devices and systems required would be minimised. The use of a single supplier may therefore help to reduce such errors.

4.3 Procurement

Issues relating to procurement are discussed in *Work Package 3*.

4.4 Storage & Pooling of equipment

There have been two general approaches to telecare equipment storage:

1. Community alarm monitoring centres, and
2. The new integrated community equipment service.

The former approach may be attractive to those authorities who plan to use their existing community alarm service staff to install telecare equipment provided that sufficient storage space is available. This is certainly not the case for 2 of the 4 existing community alarm centres. Where an alarm centre provides monitoring for more than one authority, it would be necessary to have two stores or to have a means to avoid confusion about who owns which items.

The latter approach is attractive because it allows telecare equipment to be treated in exactly the same way as other items of community equipment such as walking frames and toilet seat raisers. The appropriateness of this solution is highly dependent on the use made of the new grant for community equipment services from the Welsh Assembly Government. Information on future plans was not available during the information collection phase of this project because applications for the grant were proceeding in parallel with the Telecare Capital Grant.

In both the above cases, the use of a single supplier of telecare equipment would reduce the area of storage needed (but probably not the overall volume). These problems may be compounded by the need for several satellite stores to ensure that products are distributed close to the sites of potential installations.

4.5 Technical & I.T. Resources

One of the more important conclusions from the request for information for baseline review was an evident lack of 'in-house' technical knowledge and expertise in the capabilities and limitations of telecare technologies. This situation is likely to become more acute in the future as Internet Protocols become relevant, and when new video-based services are offered (see *Work Packages 5 and 6*). Subsequently, it has been determined through several recent discussions with monitoring centre managers and senior local authority officers from other Welsh and English authorities that the same situation exists across the industry. Indeed, where community alarm systems have focused on the needs of sheltered housing (rather than on dispersed alarms), local knowledge of technical issues and limitations have been more limited.

Issues relating to product evaluation and potential issues regarding compatibility with existing infrastructure require technical expertise that is not readily available in any of the six local authorities of North Wales. The situation is not dissimilar elsewhere in Wales (and beyond). Indeed, the number of qualified technicians or engineers within the delivery side of the telecare industry is woefully small. The possibility of local service providers being unable to understand the finer details of new propositions remains high. For example, new wireless technologies can be used for efficient and reliable data transfer both within properties and across wider areas (such as a sheltered housing scheme). There are now many examples of local authority housing departments replacing old hard-wired community alarm systems in sheltered schemes with new hard-wired systems without considering the advantages of using dispersed technology.

There may be an opportunity for collaboration in this area with some kind of technical resource which would be independent of the equipment manufacturers and which would be available for all constituent services to provide impartial advice.

5. Training & Documentation

Training and documentation is a key element of the telecare service. In particular, it must be provided to a number of people, including:

- Health and social care staff;
- Telecare Officers/Assessors;
- Monitoring centre staff;
- Response services;
- Service users;
- Informal carers/responders (i.e. key-holders);

From this list of stakeholders, it may be observed that the level of training required will vary considerably and will range from:

- General awareness of telecare and its capabilities;
- Assessment & equipment selection;
- Equipment installation, programming & basic maintenance;
- System Operation;
- Procedural training, etc.

5.1 Staff Training

Staff training and 'awareness events' are essential on a number of levels:

- To raise the awareness amongst health and care professionals about the local telecare service and what its aims and objectives are including a description of the technologies in use and the response mechanisms available locally.
- To explain what the service *is* and *is not* able to do and provide guidelines for what are appropriate and inappropriate referrals.
- To assess the needs of potential service users in order that the most appropriate telecare package is provided to meet their individual needs and circumstances.
- To explain the range of telecare and electronic assistive technology equipment that is available from the service and the hazards and needs that they are able to manage/support with additional training if required on selection issues with respect to meeting identified needs/risks.
- To install and program telecare equipment correctly and appropriately.
- How to operate monitoring centre equipment and respond appropriately, etc.

Clearly many of these topics are generic to all telecare services and some will be specific to the aims and objectives of the local service and the local services in place to support such a service. Some however will be specific to the equipment that is used (and specific to the manufacturer). Thus, training packages that pertain specifically to functionality, installation and maintenance will have to either be tailored for each manufacturer being used or will have to be provided separately. Clearly, the fewer the number of manufacturers of telecare equipment that are used, the simpler training will be. It is estimated that the development of a technical training manual for telecare could cost between £12,000 and £15,000 – with the work being undertaken either by a seconded member of staff or a team of consultants. Naturally, if the same manual could be deployed across each county then this would provide significant savings. Likewise, training courses provided by manufacturers cost typically in the region of £400 - £500 per day for small numbers of attendees. Although, whether they will be able to meet the expected demand in training is another matter. There may be an opportunity for North Wales to take the initiative in telecare training, by nominating certain staff to become experts in telecare, allowing them to pass on their skills to other staff via in-house training events and even offering courses to other services across the country.

5.2 Service User & Informal Carer Training

Service users need to have the service explained to them and also how to use the equipment and what impact the equipment will have on their home once installed (if any) – this training might form part of the home survey, where potential care solutions might be discussed with them. They will require written documentation explaining the way in which the service they have been provided with will assist them.

Informal carers will require similar training/documentation to that of the service users so that they are also familiar with how the equipment works. They will also need to be told how the service might call upon them in the event of a problem and how they should go about informing the monitoring centre of issues such as if they go on holiday or move home, etc. More advanced services which utilise activity monitoring and web-enabled virtual visit applications (for example) will also require an element of training and the provision of suitable user instructions.

6. Service Promotion & Marketing

One of the key ways of ensuring that enough service users are referred on to telecare services across North Wales is to raise the profile of telecare amongst care professionals and the general public.

If services are standardised across North Wales, then this makes it easier to develop an umbrella organisation capable of representing each of the local services across the region. This could, in effect, create a North Wales telecare 'brand' e.g. "*North Wales Telecare*" – which could act a focus for telecare across the region and enable a single point of entry into each of the constituent telecare services. A similar scheme has been setup across London where London Telecare was set up by the amalgamation of all the London Borough Telecare Services who have merged together to reach a wider audience under the 'London Telecare' brand (see www.londontelecare.org).

There is potential by adopting this approach to achieve savings with respect to the development of various promotional materials such as leaflets, posters, banners and a web-site.

One of the advantages of this approach might be in raising the profile of telecare across North Wales by way of a promotional campaign and common information gateway. One of the best ways to raise the awareness of the service amongst the general public (and care professionals) might be via the creation of a dedicated

web-site. Such a site could provide details on various aspects of the local telecare services, some of which would apply across the region and some of which might be specific to each constituent service e.g. what telecare is, what equipment is available, how to get referred, eligibility criteria, pricing, response services, etc. (e.g. see www.mascot-telecare.org.uk). The web-site could also make available useful documents such as:

- Important contact details;
- User instructions for equipment (which may be frequently misplaced);
- Performance characteristics for the service;
- A telecare service 'charter' detailing the goals and standards of the service;
- Reporting problems and allowing service users to provide feedback (anonymously if required) on the quality of service, etc.
- A care professionals section (requiring a secure log-on) could provide access to resources such as advanced programming guides for equipment, assessment forms, etc.



Figure 3. Example promotional posters developed for 'London Telecare'.

Further promotion could involve the generation of leaflets or posters for 'advertising' the service in GP surgeries, hospitals, local press or elsewhere in the community. For example, London Telecare have created a series of posters to promote the various telecare services in place across London, Figure 3.

This campaign is estimated to cost in the region of £6,000 per annum with each authority paying a contribution. The overall cost of promotional materials is difficult to estimate as it would depend on content, design costs, paper quality, and the quantity required, etc. Approximate costs from members of the London

Telecare group include: £600 for two promotional banners; £3,500 for web-site development; £2,500 for 2,000 A4 'members pack' folders; £3,220 for 5,000 copies of an annual report; and between £900 and £2,300 for promotional leaflets (depending on quality). The effect of having to produce such materials bilingually must also be taken into account. If a standard form of service could be agreed upon then this cost could be reduced significantly or a larger/better quality marketing campaign could be developed.

The North Wales Telecare 'group' (even if virtual) could assume various common roles that may need to be shared across the region, e.g. service promotion, technical consultancy, new product evaluation, run local focus groups, organise special interest group seminars to facilitate the sharing of new information or share best practice, etc. Perhaps such a facility could be integrated within a state of the art smart home that could form a centre of excellence used to promote telecare and act as a training facility for the region. Such a facility could form the hub to a number of smaller demonstration facilities across the region.

7. Administration and Operations

There are numerous 'back-office' administration tasks that need to be undertaken when implementing a telecare service. Some of the tasks involved include:

- **Service User Relationship Management** – essentially a database of service users with their contact details. This information will be required by professionals in the field (e.g. when arranging for a home safety survey) and will have administrative uses such as for billing and other correspondence.
- **Financial Management** – Generating bills and handling payments, etc.
- **Managing the Telecare Process** – i.e. issues relating to referral, assessment, prescription, installation and review process – co-ordinating the schedules of relevant care staff in order to arrange assessments and home surveys, check stock inventories, order equipment, etc. Likewise, installation visits should only be scheduled once it is known that the necessary equipment is available and has been allocated to the service user and that the service user has confirmed that the time is convenient for them.
- **Battery Management & Maintenance** – the replacement of batteries in sensors is a major logistical issue with telecare and although many devices will report automatically when their battery is low, a pro-active approach to battery management might be easier to plan. Likewise, maintenance issues for each device in the field need to be recorded along with warranty details.

- **Asset Tracking/Stock control** – a central database of what equipment is held in stock and available for use including the use of minimum stock levels to trigger new orders, etc. An analysis of the equipment that is being used/returned can be used to predict future orders and also to help assess the popularity/reliability of particular pieces of equipment.
- **Report generation** – in order to generate statistical data for performance reviews and to extract the relevant information necessary in order to help manage the telecare service effectively.

Some of these tasks can be managed by using suitable software tools – some of which are included in monitoring centre software and some in specialist ‘Customer Relationship Management’ software (e.g. Tunstall’s Telecare Office Manager or TOM). It should be noted, however, that the efficacy of software packages like TOM in the telecare market are unproven as they are relatively new.

Finally, ancillary services such as home care delivery auditing and lone worker monitoring also need to be provided and may benefit from a co-ordinated approach across the region. The former allows a basic quality assurance scheme for domiciliary care by requiring the provider to manually record with the system when they provide a service. In the future, this information may be recorded automatically by, or correlated with, data from 2nd generation activity monitoring systems. The telecare monitoring centre would seem to be the ideal place at which to have software that automatically compares the actual service provided with the agreed roster for each service user. Any significant exceptions to the agreed plan (e.g. carer not arriving or not spending enough time in the house to perform the necessary tasks) could be used to automatically raise an alert, allowing further investigations.

There will undoubtedly be considerable costs associated with these functions and there may be scope for reducing these by considering how services across the region can collaborate through the adoption of common service requirements and processes and ultimately by processing through a single agency. It might therefore be inappropriate for any individual local authority to purchase a separate system for home care management (nor, indeed, an upgrade to existing social alarm monitoring provision) until the shape of future services is defined. It may be anticipated that future versions of monitoring centre systems will integrate these functions (along with various vital signs data collection and review functions, quality of life measures and activity analysis). The challenge will be to identify the optimum time for investment.

8. Conclusions/Recommendations

It may be concluded that if all existing services were to continue 'doing their own thing', then it would be:

- Wasteful in terms of time spent researching systems, providing training, organising procurement, marketing and preparing for accreditation.
- Expensive in terms of running costs and in on-going centre maintenance, disaster recovery systems, and new hard-ware.
- Variable in terms of the service proposition, scale and quality.
- Limited by the range of functions possible through the lack of technical expertise and client base to try new things, and to deliver the future vision.

There is significant potential to share costs, avoid waste and share best practices if a regional approach is considered in the specification, design and implementation of many of the key elements of a telecare service. These benefits may become more pronounced in the future as digital technologies take over from traditional analogue systems for TV, voice communication and the transfer of information. A digital revolution is already taking place with the convergence of telephony, television and computer systems, enabled through broadband communications and Internet Protocols which will be available throughout the region by 2011.

The advantages of working together appear to be great with many opportunities across housing, social care and health. In particular:

- The case for standardising service specifications, eligibility guidelines and charging policy across the region is strong. This implies a common approach to the provision of response services and a standard approved set of telecare equipment that meet pre-defined minimum feature specifications.
- There is an argument for telecare services in Wales to provide a 24/7 bilingual service to all of its service users.
- The argument for having a single supplier rather than two are also considerable (assuming a single supplier can be found that will meet all of the service requirements).
- There may be significant advantages in developing a common assessment process and tool for the region and of standardising on a common set of performance metrics so that services and outcomes across the region can be compared meaningfully.

- The adoption of common service standards and processes across the region should help to streamline training requirements across North Wales – which is essential if the necessary training packages are to be delivered to all stakeholders in a reasonable time (given that there are now waiting lists of several months for some training courses).
- The telecare services of North Wales should aim to meet the requirements of the TSA Codes of Practice as a *minimum* requirement and exceeding these where appropriate, with the intention of achieving accreditation for monitoring, installation and response services (where applicable). It should be noted that compliance with the codes doesn't only involve procedural and 'paperwork' developments; there might also be requirements for physical changes to the layout and infrastructure of the monitoring centre building which would be both expensive and limiting.
- If services work together, giving the appearance of a seamless 'unified service provider', then they can share marketing, publicity and advertising cost, and can benefit from shared experiences and examples of people benefiting from the service.
- There may be some advantages to creating a shared technical resource for the region, independent of all manufacturers, so that an unbiased opinion can be sought for new products and issues to do with interoperability, etc. This kind of resource will be especially useful once next-generation services start to appear on the market.

These issues will be explored further in *Work Package 7* (Final Report and Recommendations).

9. References

- [1] National Statistics Office, "Census 2001".
- [2] Williams G., Doughty K., Bradley D. A., "Safety and risk issues in using telecare" *Journal of Telemedicine and Telecare*, Vol. 6, No. 5, 2000, pp 1-14.