North Wales Regional Collaborative Approach to Telecare

Feasibility Study

Work Package 7

Final Report & Recommendations

Telecare Think Tank

Issue: Version 2 (July 2007)

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1. Version History

Version	Date of Issue	Reason for Issue
1	March 2007	Initial release.
2	July 2007	Modified recommendation 15 (page 25/26).

2. Executive Summary

Telecare is the branch of assistive technology that uses electronic devices in the home environment to support independence using information and communications systems to link the user appropriately with remote carers. It has the potential to reduce the need for human interventions, thereby enabling people to choose to continue living in their own homes rather than being admitted into care homes. Unscheduled care incidents can also be reduced through deployment of telecare systems.

This is the final report & recommendations of a feasibility study commissioned by the North Wales Telecare Regionalisation Project Management Board (PMB) in September 2006. It presents findings and analysis based on a number of work packages as defined by the PMB. The key points from the work packages are listed for reference.

The key findings from the work are:

- Many opportunities for joint-working in the development of a high quality telecare service across the region have been identified
- The 4 existing monitoring centres were not ready for telecare at the start of the project; they may be rated as average to fairly poor on their facilities, resources and management structures - none is compliant with the TSA Codes of Practice.
- There would be procurement benefits for the 6 counties to join together as a purchasing consortium.
- The standardisation of equipment, training, assessments, etc. would have significant financial and operational benefits to the region - especially if this was backed up by a single monitoring centre with good technical expertise.
- Moves towards IP telephony and 21st Century Networks will create lower cost, more effective communication channels which will radically change the way that future telecare services are delivered. These may be too complex for existing centres with their limited technical knowledge - so up-skilling will be essential before 2011 when infra-structure changes are in place and a new generation of monitoring centre will be available.
- Services will need to be operated in a more business-like manner in order to remain competitive and cost effective – this will require a more

professional approach to service promotion & marketing which may require a level of investment that is best achieved on a regional basis.

The key recommendations are listed in *Section 6* but in summary comprise of the following:

- Work together as much as possible, and as soon as possible.
- Define a common high quality service specification.
- Use this to determine the requirements for the technology, monitoring & response elements.
- Consider the immediate use of a single interim regional monitoring centre capable of providing a service for all of North Wales with as little disruption as possible.
- Plan for a new IP enabled monitoring centre for 2012/13 capable of offering video and other IP-enabled telecare services
- Use the Welsh Telecare Capital Grant to begin the process of standardising telecare equipment and services to the home.
- Engage with the local health boards and trusts in order to introduce to them the advantages of equipment standardisation and the use of a single high quality monitoring centre for the storage, location and processing of data relevant to health and social care across the region.
- Establish appropriate structures to plan the complex issues of service specification, assessment, procurement, training and technical development.

3. Introduction

The long-term aim of this project is to develop a *regional collaborative approach to telecare* in North Wales. This report outlines the findings of the *first phase* of the project – a *feasibility study* to investigate the potential for:

- Joint procurement of telecare equipment and maintenance;
- Collective policies, service standards, processes and training; and
- The expansion/integration of telecare services with shared supported client and other contact management services in one or more regional monitoring centres.

The study has investigated options for realising the above, including practical issues relating to their implementation including cost, human resource limitations and the effects on existing systems and services. An analysis of issues and risks associated with the identified options has been considered and recommendations are made for their management to assess the impact that the recommendations may have on them. This study has aimed to develop a *shared regional strategy* with the capacity and flexibility for individual partners to tailor and optimise services to meet specific local needs including the role of telehealth. These will be considered over a time-frame of 5 to 10 years which will then include an impact assessment of new telephony developments.

4. Review of Work Packages

A considerable volume of research and analysis was necessary in order to achieve the objectives of the feasibility study. It has resulted in the definition of 8 Work Packages in total, whose scope was agreed with the project manager at the outset of the work, and which are outlined in Figure 1, below.

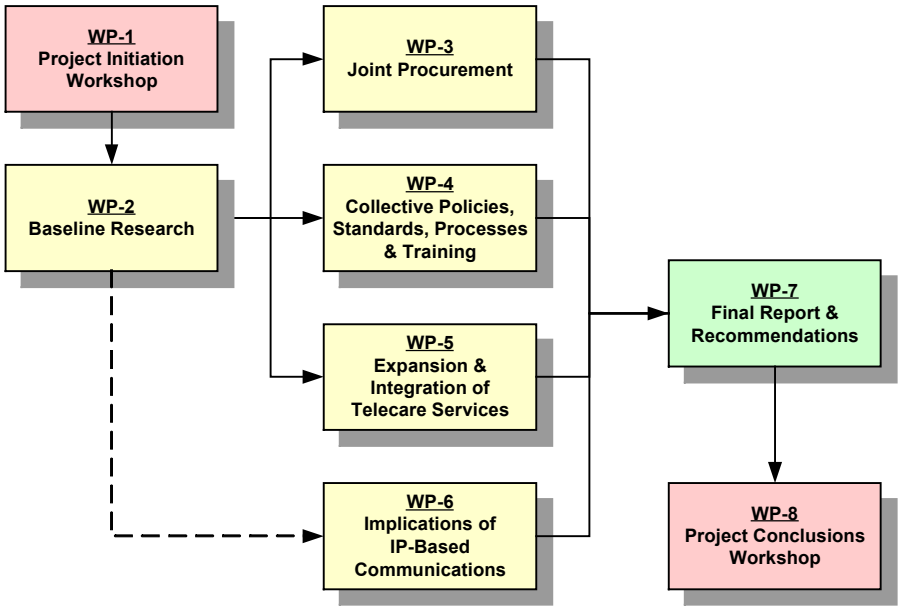

Figure 1. Work packages.

The Work Packages consisted of:

- 2 workshop/seminar meetings – one at either end of the project, to raise awareness of the project and to disseminate its findings;
- A baseline review of the existing telecare-related service provision across North Wales, which was to include a consideration of the state of readiness for expanding this provision into a fully-fledged telecare service;

- 4 'research reports' investigating a number of key topics;
- A final report, outlining key findings and recommendations (this report).

Work Packages 2 – 6 discuss in detail the most important topics highlighted by the project management board. Key-points from these reports are summarised in the sections that follow to provide a context to the subsequent analysis and recommendations. For a better understanding of how these key points were derived, or for a more detailed discussion of the issues, the reader is advised to refer to the Work Package reports themselves.

4.1 Work Package 1 – Project Initiation Workshop

The project initiation workshop was held on the 10th of October in Llanfairpwllgwyngyll, Anglesey. Its objectives were to provide an overview of telecare, raise awareness of the project, to present the proposed plan of work, and to inform delegates about a number of key issues. It was attended by approximately 30 delegates invited from across the region and was deemed to be a useful and informative event that highlighted the issues to be considered and resolved over the course of the project.

4.2 Work Package 2 – Baseline

Work Package 2 involved acquiring information from various documentation, statistical sources and a number of key stakeholders via questionnaires and interview in order to establish the baseline level of telecare service provision across North Wales. It also revealed the state of readiness for expanding this provision to benefit from the improvements that may be possible through new technology and service re-design. The key-points from this work package are:

Population & Demography

A1	**The population of North Wales is ageing with significant numbers aged 75 and over, many of whom live alone. There are some significant differences across the region - Flintshire, the county with the largest population, has only 15.8% aged 65 and over compared with 23.1% in Conwy.**

A2	**The availability of informal care provided by family and friends is a key element to help enable elderly people to remain in their own homes. In North Wales, approximately 1 in 10 people provide some level of informal care with approximately 1 in 35 providing 50 or more hours of informal care a week. This is slightly below the Welsh average which implies a need for more formal care or for new support services such as telecare.**

A3	**The population of North Wales is predicted to become increasingly older whilst there will be a drop in the number of children and in the number of people who are economically active, leading to an increase in the old-age dependency ratio. This, coupled with other socio-demographic factors including greater population mobility (with families distributed across the country), and an increase in the number of very elderly people who live alone in the community, will all have a significant impact on both formal and informal care capacity.**

A4	**Telecare services may help to manage the predicted changes (especially in care capacity) by helping to manage risk and by giving individuals and their families the confidence to continue to live at home rather than move into residential or nursing care. It may also help to target formal care resources more effectively at those who are most in need of them at any given time.**

A5	**The Welsh Language Act (1993) places a duty on the public sector to treat Welsh and English on an equal basis when providing services to the public in Wales. 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). People in Flintshire and Wrexham do not have access to a fully bilingual telephone response service (approximately 15% of the Welsh speakers aged 65 and over in North Wales live in these counties).**

Community Services & Housing

B1	**The number of people supported to live independently at home in each North Wales county is below the Welsh average by between 5 and 35%. Telecare could become another support service if provided appropriately and with sufficient emphasis on quality.**

B2	**All but one of the North Wales counties supports a higher number of people in care homes than the Welsh average. This may be due to the available capacity or to the approach taken by care managers. Telecare may increase choice and enable more people to choose not to move into care homes.**

B3	**Delayed transfers of care are not currently a major issue in North Wales where levels are significantly below the Welsh average. However, there may be a need for services such as telecare to provide more capacity for care in the community if hospitals were affected by an epidemic (or pandemic) of a virus such as bird flu.**

B4	**Flintshire and Denbighshire have considerably more units of sheltered housing than the other North Wales counties and the Welsh average. Considerable resources may need to be allocated to these schemes in order to bring their communications infrastructures up to a level that is suitable for the support of telecare services to replace existing community alarms.**

Community Alarm Services & Monitoring Centres

C1	**Each local authority in North Wales provides a basic community alarm service to its residents, involving a weekly charge which is not means-tested, and therefore lies outside formal assessment processes and the FACS criteria. None of the current services' core business can currently be described as telecare due to the low-level of technology that has been installed in the field and, in some cases, the lack of a co-ordinated community-based non-emergency response service.**

C2	**There are four community alarm monitoring centres across North Wales in Anglesey (Gofal Môn), Conwy (Careline), Flintshire (Carelink) and Wrexham (Care Call). Gwynedd and Denbighshire use Gofal Môn and Conwy Careline respectively. None of the monitoring centres are compliant with any of the Telecare Service Association's codes of practice.**

C3	**Only Gofal Môn and Conwy Careline offer a truly bilingual service to its service users. Flintshire Carelink and Wrexham Care Call may be unable to provide a bilingual service due to low staffing levels and possible recruitment issues.**

C4	**Anglesey, Gwynedd, Conwy and Denbighshire use Tunstall equipment (almost exclusively) both for sheltered and dispersed units; Flintshire generally uses equipment from Initial-Attendo while Wrexham's standard community alarm telephone is supplied by Scantronic (a division of Cooper Security Ltd.).**

C5	**There is, at present, considerable spare call-handling capacity in each monitoring centre, especially at night and at weekends. Across the region, less than 4 calls per hour are fielded between 1am and 7am by a minimum of 6 (and sometimes 7) call handlers.**

C6	**It is likely that the entire call handling operation for North Wales social alarm services could be performed by one monitoring centre, staffed by 2 call handlers during the night (a saving of 4 or 5 members of staff) and 5 call handlers during peak hours of the day (saving a further 7 or 8 members of staff). It is likely that there would be neither a noticeable increase in call answering times nor any reduction in other measures of service quality.**

C7	**None of the North Wales centres has a robust business continuity process in place even though it would be simple for Gofal Môn and Conwy Careline to put in place a reciprocal arrangement as they use different exchanges and have different power feeds from the National Grid. The situation with the other two centres is more difficult because of technical incompatibilities and the absence of similar services within Wales. A failure to address the risks to business continuity and, in consequence, a possible inability to provide a duty of care to vulnerable people is a threat which needs to be managed immediately.**

Telecare Readiness

Local authorities were deemed to be ready for the telecare revolution if they had committed resources to investigating the potential for telecare, and had introduced procedures, protocols and full pilot projects specific to telecare.

D1	**The preparation of training manuals and the running of courses on awareness, applications and installations are fundamental to the operation of telecare services. These can only be produced after the telecare inventory and the service scope have been agreed.**

D2	**The robustness of a telecare service will depend on the strength of the completeness of the response protocols, and the way that they evolve through professional input and questions from the public. The development of a FAQ (Frequently Asked Questions) may be appropriate to test the processes to be employed, which should also be compared with the appropriate best practice published by the Telecare Services Association.**

D3	**Telecare services are complex and require attention to the details of many steps in the process from referral and assessment through to review and evaluation. Pilots are generally required in order to test the procedures and the protocols. Pilots take many months to develop but are a popular means of ensuring that services are rolled-out in an efficient manner. Only Gwynedd has the experience of a full pilot on which to develop serious services. Other local authorities will not have the time to pilot their telecare, but must learn lessons from pilots performed elsewhere.**

D4	**The success of telecare at county level will depend on the ability to market the service successfully to the target audience. This will require a focus for publicity such as a demonstration home and appropriate newspaper features and radio articles in order to make the public and professionals aware of the attributes of the new service. Demonstration homes in Colwyn Bay and Mold have been underused for publicity compared with the property in Tywyn which has been successfully managed by the local Age Concern agency.**

4.3 Work Packages 3 and 4 – Joint Procurement & Working

Work Package 3 investigated the potential for the joint procurement of telecare equipment and maintenance. The key-points from this work package are:

E1	**The lack of a common standard for interoperability between devices within the home and between the home and the monitoring centre means that it is not possible to *guarantee* 100% compatibility between products from different manufacturers. This situation is likely to improve in the future as products appear that use agreed interoperability standards such as those under development by the Continua Alliance.**

E2	**In order to reduce the risk of incompatibilities, a 'vertical integration' of supply is normally recommended in the selection of sensors & peripherals, care phones, and monitoring centre equipment. Five of the six local authorities in North Wales have effectively adopted such an approach, with Anglesey, Gwynedd, Conwy and Denbighshire all using Tunstall equipment and Flintshire using Initial-Attendo equipment. Wrexham, however, use Scantronic equipment in the home and Jontek equipment in the monitoring centre. Wrexham will need to reconsider its position.**

E3	**It is important to note that compatibility between the monitoring centre and the care phones in the homes of service users not only ensures that alarms are uniquely identifiable, but also that equipment can be re-programmed remotely from the monitoring centre. This may become even more important in the future as more of the individual sensor alarm parameters (such as alarm enabling/disabling, operating times and alarm thresholds) can also be altered from the monitoring centre without the need to revisit a property.**

E4	**The Welsh Assembly Government has issued guidance for organisations involved in the commissioning, procurement and implementation of telecare and related services under the terms and conditions of the Telecare Capital Grant. This recommends that commissioners purchase from the NHS PASA National Framework Agreement for telecare approved list of suppliers (all of which have been competitively market tested via an OJEU/EU Public Procurement tendering exercise).**

E5	**Only two 1st generation telecare equipment manufacturers have been directly accepted onto the PASA list: *Tunstall* and *Initial-Attendo*. It is also possible to source 1st generation equipment from Tynetec via PaSA's third-party arrangements from RSL Steeper. However, we discounted this option because the prices quoted by the suppliers on the PaSA framework were typically 20% higher than those available directly from the manufacturer, making procurement through RSL Steeper an unattractive proposition. This implies that Wrexham should move away from Scantronic (primarily a security-based company whose equipment uses non telecare-standard radio frequencies and which has a limited range of sensors and peripherals) as its primary provider of home technology and use either Tunstall or Initial-Attendo equipment in its place.**

E6	**Moving forward – two options were considered for the region: a dual-supplier approach (i.e. Tunstall *and* Initial-Attendo) or a single-supplier approach (i.e. Tunstall *or* Initial-Attendo). In our original analysis, only minor financial differences were observed in *purchasing costs* between the two approaches. However, a single-supplier arrangement is likely to be the simplest option to implement and the one that offers the greatest opportunity for standardisation across the region and for associated cost-savings (with respect to training, etc. – refer to the following section on *Work Package 4*).**

E7	**The financial argument for a single-supplier arrangement has been strengthened recently by the announcement that Tunstall, the market leader both in Wales and in the UK, will offer 'Band-7' pricing to all Welsh local authorities – resulting in a significant discount for care phones and some sensors and peripherals. Moving to an all-Tunstall solution would require Flintshire and Wrexham to make changes to their current procurement arrangements. However, it should be noted that Wrexham will have to change suppliers in any case if they are to procure using the PaSA framework.**

E8	**The disadvantage of adopting a single-supplier route is a lack of competition and the possibility of missing out on new developments introduced exclusively by other manufacturers. However, until an industry-wide interoperability framework is adopted, allowing a mix-and-match 'best of breed' approach to procuring telecare solutions, issues like this will always be relevant, but their effects can be minimised by selecting the supplier which can provide the greatest range of compatible equipment. It follows that manufacturers from abroad who want to sell their products in the UK are most likely to use the market leader as their UK distributor.**

E9	**Some popular items of 'stand-alone' telecare (electronic assistive technologies) and other solution 'enabling' technologies (such as X-10 home automation controllers) can be sourced directly from the manufacturer or an appropriate distributor, with the potential for volume-based discounts if services across North Wales can agree on a standardised inventory. These items are generally not available from the PaSA framework agreement as they are manufactured or distributed by a plethora of smaller companies, many of them selling directly to the public over the internet. The total purchases of an individual product may be less than £10k per county p.a.**

E10	**The maintenance associated with dispersed telecare equipment will be significantly less expensive than for community alarm equipment in schemes. Return to manufacturer warranties will therefore dominate. Opportunities for joint maintenance agreements will arise, especially for sheltered housing, and especially if a single service contract was put in place.**

Work Package 4 investigated the potential for developing collective policies, service standards, processes and training across North Wales. The key-points from this work package are:

F1	**To maximise the opportunities for joint-working, it is necessary to ensure that a common strategic vision for telecare is shared between all local authorities. There is considerable agreement already between the 6 counties.**

F2	**The case for standardising service specifications, eligibility guidelines and charging policies across the region is strong. This implies a common approach to the provision of monitoring and response services and a standard approved set of telecare equipment that meet pre-defined minimum feature specifications.**

F3	**Bilingual telecare services should be available to all service users in Wales. The current situation where a fully bi-lingual telephone response service is only available in two of the four monitoring centres is far from ideal, and should have been considered already in the delivery of community alarm services. Full compliance with the existing, and developing, TSA codes of practice is likely to require more robust procedures and processes for dealing with the needs of people whose first language isn't English.**

F4	**There is a need to standardise on a common set of performance metrics and to agree on guidelines defining standard data classification methods (e.g. alarm call reasons, outcomes, false alarms).**

F5	**Some performance metrics are embodied in the Telecare Services Association (TSA) codes of practice. These are at present the only industry standard accreditation for telecare and community alarm services. The accreditation process can be resource-intensive taking typically 3 – 6 months. The estimated cost of full compliance over a 5-year period for a *single* service is approximately £34.5K. There is scope for significant cost savings with regards to TSA accreditation 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.**

F6	**Compliance with the TSA 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, and should impress on the TSA the need to push forward with a quality agenda.**

F7	**There may be significant advantages in developing a common assessment process for the region and an electronic tool which aids the matching of telecare to the unmet needs and risks to independence. They should ultimately integrate with the Unified Assessment Process (UAP).**

F8	**The adoption of common service standards and processes across the region should help to streamline training requirements across North Wales – this should reduce the cost of developing such packages and of updating them on an annual basis to ensure that they account for technology changes.**

F9	**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.**

F10	**There would be many advantages in 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 (see WP5) and when television, telephone and data services converge (see WP6).**

F11	**The arguments for having a single supplier rather than two are already considerable. The challenge may be to find a single supplier that will meet all of the service requirements.**

In summary, if 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.

4.4 Work Package 5 – Service Expansion & Integration

Work Package 5 investigated the potential for the expansion and integration of telecare services. The key-points from this work package are:

G1	**The vast majority of successful telecare implementations to date involve the use of first generation alarm-based telecare systems with or without the use of stand-alone electronic assistive technologies. These technologies and the services that they enable will also initially be the focus for services in North Wales.**

G2	**Demography and other market drivers will increase the number of opportunities to expand the role of telecare services. The expansion of telecare services can involve any of the following:** • **<u>increasing the number of service users</u> – raising the profile of the service, increasing awareness and ensuring that methods are in place to increase the number of appropriate referrals;** • **<u>increasing the number of available telecare services</u> – the introduction of new technologies and related support and response services;** • **<u>extending the range of service users to new groups</u> – identifying new markets for telecare services;**

G3	**Telecare is not just about technology. New ways of working are needed to support telecare – multidisciplinary community-based care and support teams as well as a 24/7 community-based response for non-emergency situations. The co-ordination of these services is key and the telecare monitoring service could be well-placed to act as the hub.**

G4	**New monitoring services such as remote vital signs monitoring (telehealth), activity and behaviour monitoring (lifestyle monitoring) and proactive calling are more data-intensive than 1st generation alarm-based systems. This has implications for the systems required in the monitoring centre and the procedures in place to secure and backup such data. Significant investment is required to ensure that the necessary skills are in place to support these new services both from an operational and technical point of view.**

G5	**To manage the transition from community alarms to telecare, monitoring centres will need to become a key proactive force, adopting a 'centre of excellence' mentality and fostering a highly focussed professional ethos. This will require an emphasis on quality and will require accreditation with the TSA's codes of practice as a *minimum* standard. This has significant implications not only for procedural components of providing a service but for the *physical infrastructure* of the monitoring centre premises. Difficult decisions may have to be taken on how these changes may be achieved in a timely and cost-effective manner.**

G6	**The expanded care co-ordination role that is required in order to provide an integrated response to an identified problem will also require new skills and procedures to be introduced. In particular, strong partnerships will be needed with both the Local Health Boards and the other health trusts to ensure that the new centres meet all the agendas. The potential for marrying services with NHS Direct Wales, out of hours GP provision, 999 and other public access non-emergency services might all need to be considered.**

G7	**An expansion in the number of service users may have implications for the capacity of a centre, including its telecoms infrastructure, its size and its business continuity procedures. The rate of change of technology is unlikely to slow down, so the centre, and the service that it provides, needs to be empowered with technical support that can ensure that it is both future-proofed and capable of providing expert knowledge into the process of planning new service delivery.**

4.5 Work Package 6 – Impact of IP-Based Communications

Work Package 6 investigated the impact of IP-based communications on telecare service users and providers. The key-points from this work package are:

H1	**The up-front costs of establishing an IP-based infrastructure are likely to be similar to those of traditional monitoring centres. Adding VoIP to an existing non-IP-based system may be more expensive and not cost-effective.**

H2	**The communications costs of an IP-based monitoring centre are essentially reduced to zero, but there may be additional costs in maintaining the increasingly-complex IT system. In particular, the security and integrity of the system and its data is critical. Service continuity also requires that sufficient system backup facilities are in place in the event of a failure of the primary system.**

H3	**The programmable communications capability of an IP-based monitoring centre means that the organisational structure of the monitoring centre can grow and adapt to changing needs, both of the client base and of the delivery organisations.**

H4	**In telecare, the key issue is not *take-up* of broadband, but its *availability*. Broadband availability is acceptably high in North Wales for supporting a telecare service. There will be a very few locations where a full broadband service will not be available even after the local exchange has been enabled. A less functional IP-based service may still be offered in such circumstances perhaps with a reduced bandwidth so that some of the more data-intensive applications (e.g. video-based services) may not be realisable.**

H5	**British Telecom's new digital IP-based telecommunications infrastructure (the 21st Century Network – 21CN) will be a key enabler for new telecare services in the next decade. The roll-out of 21CN started in November 2006 and BT expects that 50% of its national customer base will have migrated by the end of 2008, with the roll-out being completed within 4 years. North Wales should be fully converted to 21CN by the end of 2011.**

H6	**Many important future applications in telecare will be accessible and easy to implement if the North Wales Project opts for a service based on IP technologies, both in the monitoring centres and in the home environment, using broadband internet connections to maximise the future potential applications opportunities. It is important to note however that the adoption of an IP-based monitoring centre *at this time* will not guarantee compatibility with the home equipment from all manufacturers.**

H7	**Market drivers indicate that IP-based systems will eventually eclipse traditional systems. There will be a cost differential between 'new-building' and 'retrofitting' an IP-based facility, so integrating any new equipment with existing infrastructure should be carefully considered when developing a monitoring centre strategy. Timing will be key. New systems should not be considered before 2009.**

4.6 Discussion

Community alarms are a 20th Century solution and, as an extreme view, are no longer relevant to a society that has access to reliable, miniature and affordable mobile communications. Existing alarm services are dominated by a paternalistic housing model where people lived in council homes then moved into sheltered housing and finally into council-run residential care homes. Community alarm systems are based around an old model of expectation and go hand in glove with sheltered housing and residential wardens.

However, the role of the warden has evolved over time and the very existence of resident warden services is under threat as the needs and costs are understood. The emergence of housing associations as the social landlords for an increasing proportion of sheltered housing stock has accelerated the debate on the future of warden services. The transparency of warden service costs to the tenants, together with the age profiles of the tenants in many schemes, means that few

tenants are now prepared to contribute fully to the cost of a service that is, in practice, part-time – possibly 9 to 6, weekdays only. Recruitment of resident wardens is also difficult – so floating support services represent a favourable compromise in most situations. They fit in well with telecare services where the focus may be on a rapid and appropriate response to an emergency situation.

The level of investment in existing community alarm services has been insufficient over the past decade to enable services to expand with the availability of new technologies. It is also apparent that existing hard-wired warden call schemes have, in some counties (e.g. Flintshire), been replaced within the last 3 years with similar but more modern hardwired systems – rather than with telecare-enabled systems. It may be evident that the level of knowledge and advice available have been sub-optimal, and that some councils have avoided discussions surrounding the business case for services.

It is, then, not surprising that the four monitoring centres in North Wales are not "telecare ready" and each will need a rapid investment in training, "staff profiles/expertise" and equipment if they are to offer the local authorities (and their health board and trust partners) a robust and sustainable monitoring platform for the services that have been evolving elsewhere over the past 4 or 5 years. Given the difficult financial situation facing local authorities over the next few years, it would seem extremely unlikely that any of the four centres will be capable of making a valid business case for their continued operation and, in particular, for the major investments described above. Under these circumstances, the options would appear to be:

(a) outsourcing provision to an external centre capable of meeting the new requirements for monitoring, or

(b) working in partnership with neighbouring authorities in order to share costs, expertise and other resources in the development of fit-for-purpose high quality centre(s).

The acceptability of these ideas may depend on the analysis of costs but also on the impact on existing services and centres. It would be unreasonable to develop a service which forced one or two local authorities only to abandon considerable investment in hardware and systems in order to conform with the majority view. An optimum solution would enable all counties to benefit from changes in service monitoring and coordination immediately, with further benefits in the future if a further level of standardisation can be achieved.

These solutions are discussed below, together with a plan that might allow implementation over the next 3 to 4 years in an affordable manner.

5. Options Appraisal

There are three different sets of options to consider (discussed below):

- Monitoring centres – how many, their purpose and their location;
- The suppliers for equipment to the home; and
- The degree of standardisation for the local services.

5.1 Monitoring Centre Options

Assuming that each county plans to offer a telecare service to help support the independence of vulnerable people, services may be configured through any number of monitoring centres from 1 to 6. Maintaining the status quo would mean retaining 4 monitoring centres, whilst an increase in the number of centres to 6 would give each county the opportunity to control its own service from referral to response through its own local monitoring centre. We immediately discount the option of 5 centres as it involves disruption without providing any obvious benefits. The other options are discussed below.

5.1.1 Option 1 – The Status Quo

The "no change" option should always be considered in all appraisals at it involves least effort on behalf of staff, and is therefore a popular option. It is rarely the best option, however, in terms of efficiency and value for money, especially if services have not been reviewed or reconfigured in the past 10 years. In the case of telecare, and other services that depend on technology, the emergence of new devices and systems demands continuous re-evaluation to ensure that there is the correct focus, and that some level of future-proofing has been designed into the structure. The SWOT analysis in Table 1 brings this into context.

Table 1. SWOT analysis for the Status-Quo.

Option: *Status Quo (6 separate telecare services in conjunction with 4 existing monitoring centres)*	
Strengths	**Weaknesses**
• 4 mature centres and infrastructure • Experience of staff • Existing processes and procedures • More than 18,000 existing service users • Minimises disruption • Avoids costs associated with change	• Variable standard of service • Different equipment • Not experienced with telecare • Shortage of technical expertise • No TSA accreditations • Individual centres lose money • Lack of sufficient investment • Premises unsuitable for expansion • Expensive to prepare for 21CN • Only 4 of 6 counties have monitoring centre • Appears contrary to Welsh Assembly Government guidelines • Little scope for new developments • Missed opportunity for partnerships and bringing skills together • More difficult to standardise services
Opportunities	**Threats**
• Close working with individual Local Health Boards • Easier for small organisations to coordinate care services	• Financial pressure on individual centres • Reduced future investment/grants • Stock transfer may threaten customer base • New housing organisations may recognise the level of subsidy required and may withdraw support • TSA accreditation may be a future requirement for telecare services and, possibly, for Supporting People business • Registered Social Landlords may seek lower cost options from other counties or from large national monitoring centres • Insufficient investment in marketing to attract private payers

5.1.2 Option 2 – Three Monitoring Centres

This would involve pairing off counties with a shared monitoring centre. For example, Anglesey and Gwynedd would use the same centre (as they do now). Similarly, Conwy and Denbighshire would continue to use Conwy Careline. Flintshire and Wrexham would also share a monitoring centre. In practice, this approach would involve maintaining the status quo for 4 of the 6 counties, whilst offering some joint working opportunities for Flintshire and Wrexham. Had both these counties used the same home equipment then this may have been a sensible if narrow option. However, analysis shows that Flintshire Carelink has the greatest dependence on sheltered housing customers whilst Wrexham Care Call has the greatest percentage of dispersed connections. In other words, the two current monitoring centres are the most diverse of the four in North Wales, and

any form of amalgamation would pose significant technical and cultural challenges. It may also be argued that a reduction of 4 centres to 3 is not nearly radical enough to manage the changes envisaged in service provision as community alarms transform into telecare services.

5.1.3 Option 3 – Two Monitoring Centres

An East and West split would return services to the former Gwynedd and Clwyd days. However, such a separation would not now be simple because the monitoring of Denbighshire service users is performed by Conwy Careline. The practical opportunity would therefore be to consider one monitoring centre for the counties of Anglesey, Conwy, Denbighshire and Gwynedd, and a second centre for Flintshire and Wrexham. The former would benefit from using the same equipment both in the home and in the monitoring centre while the latter would suffer the same handicaps described above for the 3 centre option. In other words, the two centres could not support each other for business continuity because of the different technologies employed, and they might therefore compete with each other for service quality. In such a situation, the West would be at such an advantage compared to the East that the whole idea should be discounted.

5.1.4 Option 4 – Single Regional Monitoring Centre

This is perhaps the ultimate and logical option when regionalisation is being considered and allows for the creation of a regional 'centre of excellence'. The aim would be to establish a regional North Wales telecare service with a single monitoring centre and six regional telecare service providers working with common objectives, standards and processes giving the *appearance* of a single seamless service.

The full SWOT analysis is shown in Table 2 overleaf.

Table 2. SWOT analysis for a single regional monitoring centre.

Option: *Single Regional Monitoring Centre*	
Strengths	**Weaknesses**
• Lowest operating cost • Centre of excellence mentality • Bilingual 24/7 operation • Standardised approach encourages joint working • Easier to introduce new services • Focuses expertise • Can help drive forward telecare agenda • More effective use of human resource • Single united centre is a stronger business entity • Fits within Welsh Assembly Government guidelines • Easier to meet TSA codes of practice	• Reduces choice(1) • Compromises existing investments in equipment • Removes a local component(2) • Little redundancy in the system(3) • Not necessarily compatible with existing services. • Change may be costly • Potentially complex management & governance(4) • No previous examples
Opportunities	**Threats**

• Service Expansion:
  ○ Monitor and facilitate chronic disease management (CDM)
  ○ Promoting well-being and health 'coaching'
  ○ Hosting services for external bodies (other Welsh counties, English borders, Ireland)
• To become a leader in UK services
• Links with academia for research
• Links with industry for product design and testing
	• Telecare will fail (i.e. not cost effective)
	• Government policy change
	• External competition (e.g. regional, national and international – includes the potential to lose RSL business?)
	• Change in supplier landscape

Notes	
(1) In practice, service users have very little genuine choice of which telecare service (and hence monitoring centre) they are connected to. Service providers without their own monitoring centre may be affected more by this. *(2) But does it matter if response remains local.* *(3) System failure would effect everyone in North Wales rather than just at county-level.* *(4) This could lead to slow decision making and conflicting pressures on future direction.*	

5.2 The Supply of Equipment for the Home

It has been shown that stand-alone telecare equipment (i.e. electronic assistive technologies) does not need to connect to other monitoring services, and is therefore outside the scope of the current work except for the opportunity of jointly procuring devices in order to attract lower unit costs. The focus of this work is therefore on 1st generation telecare devices (i.e. linked sensors and alarms) as well as on 2nd generation telecare systems used to monitor vital signs and activities in the home environment.

The novelty of telecare is such that the technology has not matured to the point where several vendors are competing to supply similar (or sometimes identical) equipment. Indeed, only eight years ago, there was only one care phone available (the Lifeline 4000) which was designed specifically for telecare applications, and there was only one intelligent automatic fall detector on the market. Inevitably, this combination was used in the first serious large-scale telecare application (in West Lothian) and the success of the pilot, and subsequently, the service enabled the manufacture to roll out a number of other smart sensors and to offer more complete telecare prescriptions. The manufacturer (Tunstall) now has probably some 80% or more of this market in the UK and is able to continue to expand its range or telecare peripherals through the exclusive licensing of new products from third parties.

The competition has struggled to catch up due, in part, to a lack of investment, but also to a shortage of sensor design skills within the sector. Consolidation of suppliers, and the activities of Venture Capitalists, have also played a part in reducing the effectiveness of the competition. The gap has, however, closed but the vast majority of the evidence collected on the efficacy and effectiveness of telecare has been based on research performed on only one company's products.

The choice would therefore seem to be between opting exclusively for products from the market leader, a safe choice which fuels a near monopoly situation, or taking a possibly considerable risk by opting for a competitor which may (or may not) soon almost match the market leader in range and quality, and undercut him on cost.

5.3 The Degree of Standardisation for Local Services

A standard approach inevitably reduces the scope of individual counties to provide different methods of dealing with some specific issues. It may be possible to provide an acceptable level of local variation without compromising the standard approach through management of product inventories. For example, the standard risk management role of telecare depends on the identification of specific sensors to detect the problems characteristic of an emergency. However, the stand-alone devices used to help reduce the risk of an emergency occurring may not be within the standard package and can be modified on a county by county basis through local control of the telecare inventory.

Although a common approach to assessment and prescription tools might enable validated systems to be developed more cost-effectively, it does not follow that each county must use the same set of UAP questions. In England, there are 6 off-

the-shelf single assessment processes that have been approved by the Department of Health. These are: 'CAT' (electronic version), Easy-Care, 'FACE' for Older People, 'MDS' Home Care, 'NOAT' and 'STEP'. However, none of them is entirely suitable for helping to identify the best telecare solutions. The modifications that are being proposed are suitable for all processes which means that the tools developed for use in North Wales may be used by each county without having to throw away its own version of the UAP.

All the six counties are developing high level telecare services based on assessed risks and subject to FACS eligibility. Most are also offering lower level services which are essentially preventive in nature and which don't require a formal assessment. Within the umbrella of low level services, some counties might include only a home safety package whilst other might include a security package or a carer's package. Indeed, individual packages may be offered with different sensors or numbers of sensors across the region.

5.3.1 Types of Service

Telecare can include the use of electronic assistive technologies, sensors for risk management, as well as second generation systems (see below). Indeed, when new third generation services develop, including those which make use of a community portal and IP-based television, it may be possible for perhaps Wrexham to proceed without waiting for the other counties to catch up. The structure should allow for some of the counties to pilot new services on behalf of the whole region.

However, initially there may be a need to distinguish between low level (i.e. standard and un-assessed) telecare services and those that are individual and tailored to manage an individual assessed needs and risks to independence. Some authorities may focus all their attention on the latter, and sign-post potential users to private providers for preventive services.

Other different services that may be offered without compromising a regional approach might be those involving proactive calling.

5.3.2 Response

The ultimate success of telecare in reducing the need for unscheduled care may depend on the development of response teams which can be summoned appropriately to deal with emergencies at any time. The provision of out-of-hours staff can be expensive and must, therefore, be minimised. This will encourage providers of response services to work more effectively across borders. A single

monitoring centre will be able to coordinate diverse services provided by a number of different organisations.

5.3.3 Charging

Although each county has a charging policy for community services such as homecare and day-care, the rates may be considerably different to the actual cost of provision. Add to this the complex issue of financial testing, and possible capping of maximum charges, then charging for telecare becomes an area where joint working will encourage standardisation. It may be possible to share a pricing structure for low-level services whilst allowing each county to employ its own pricing and capping rules for the higher level services, as these are the ones which are likely to be used also by telecare service users.

5.3.4 Medical Telecare

Second generation telecare involves the monitoring and remote collection of vital signs and activities data, and their subsequent analysis to detect problems or trends. There is undoubtedly considerable scope for using daily (or continuous) measures of physiological parameters to provide support to people with chronic disease in order to avoid unnecessary hospitalisation when they experience an exacerbation of their condition. The technology has been in use for several years in the USA and fits in well with their financial model for healthcare. It is a service that many progressive telecare providers are now offering, but invariably with the support of their primary care trust. The evidence for using this form of telecare in the UK remains weak, so early adoption is limited to organisations that have confidence in the outcomes. This may vary across the North Wales region, as will the local demand for remote services to manage demand created by the closure, for example, of community or cottage hospitals. There should be no difficulties if the pace of development is considerably different across the region.

5.3.5 ADL Monitoring

In the same way as for medical telecare, the use of background, ambient or lifestyle monitoring has yet to be mainstreamed even though the potential for monitoring changes in ADL patterns with this technology has been recognised for a decade. Two counties (Conwy and Gwynedd) have been involved in early pilots so they may progress with this approach (perhaps to re-ablement services) without the need for the other counties to follow suit.

6. Recommendations

The key recommendations from this feasibility study are summarised below:

Ref	Recommendation
1	The project management board should recommend the establishment of a single 24-hour monitoring centre for the reception and response co-ordination of all telecare alarm calls and alerts generated by equipment across the 6 counties of North Wales. This centre should have the necessary equipment in place to decode accurately any telecare calls from existing field equipment so that investments already made by local authorities are not compromised by the single centre proposal.
2	A service specification for a single monitoring centre should be drawn up and used as the basis of a tendering exercise for determining where the centre should be located and which organisation should assume responsibility for its day to day management and operation.
3	Organisations should be encouraged to offer interim solutions for monitoring so that local authorities with existing monitoring centres may begin planning for a change of use without delay, and so that their new telecare installations can be monitored without having to invest in their existing monitoring centres.
4	The project management board should recommend the adoption of a single supplier of telecare equipment for the whole region in order to standardise service provision, simplify monitoring, training and matching of technology to the needs of the individual. The provider selected should be one which has been accepted onto the PaSA framework in their own right and should be able to provide the widest possible range of equipment and provide evidence of its success within pilot studies and trials within the UK. Alarm equipment must be 100% compatible with the monitoring centre selected for North Wales services.
5	For items not included in the PaSA framework, such as X-10 controllers and popular items of electronic assistive technologies, a North Wales consortium/purchasing group should be used to buy from a standard selection of equipment direct from the manufacturer or from a suitable distributor (to obtain volume discounts). Tenders should be considered for operating the purchasing groups.
6	Local Health Boards planning to use telecare for vital signs monitoring of vulnerable groups (with COPD and CHF for example) should also use the PaSA framework, and should be made aware of the procurement arrangements being considered by the local authorities. They should also be made aware of the potential of telecare monitoring centres to host servers and telephony equipment used for medical telecare, and encouraged to use the telecare infrastructure to inform appropriate responders when measurements lie outside normal parameters.
7	To ensure a common service specification for high level telecare across the region, a review of each county's priorities in their Health, Social Care and Wellbeing strategies should take place. This will serve to harmonise the priorities and agreement on the key target groups for telecare services.

Ref	Recommendation
8	Develop minimum functional specifications for all telecare devices (currently to include devices such as fall detectors and nocturnal epilepsy monitors) to ensure that they are fit for purpose and meet the minimum requirements of the agreed service specification.
9	Develop a common method for identifying the hazards in the home and the triggers for risks that may compromise the independence of service users, and arrange for this to be employed within the UAP frameworks of each county.
10	Develop an expert system approach to identifying the telecare equipment that may be prescribed to manage the risks identified through assessment. Such a system will be provided in software that can be run on laptops or other portable computing equipment that may be used by assessors and care managers. The systems should be capable of communicating with the monitoring centre and with equipment repositories so that the installation process can be automatically informed.
11	Develop and share manuals and packages including multi-media tools for training at various levels including the raising of awareness amongst professional, voluntary and informal carers, the familiarisation of assessors and care managers with the potential and limitations of equipment, the validated training of professionals having to specify equipment and programme parameters, and the formal and accredited training of installation staff.
12	Provide an independent technical resource for the region which can be called upon by each county and by the management of the monitoring centre to provide professional, expert and impartial advice on the choice of equipment and communication systems. The same resource may be useful in producing tailored technical solutions to problems that lie outside the mainstream.
13	The project management board should begin to consider the implications of IP-based communications for telecare service delivery and investigate with suppliers the potential for investing in an IP-based telecare monitoring centre as and when such systems become available (unlikely to be before 2009).
14	The project management board sets up a number of sub-groups to look into issues regarding: • Equipment purchasing; • Service & Monitoring Centre Specifications; • Assessment & Prescription issues and tools; • Service promotion & marketing, etc.
15	Engage with the emergency services to explain to them more fully the potential for telecare and the way that it might fit into a more integrated approach to the protection of the public. Current initiatives by the Fire Service to provide linked smoke alarms using WAG innovation funds in Gwynedd and Anglesey should be frozen until they can be reviewed in the light of telecare developments and the potential shape of future services.

Ref	Recommendation
15 ***Cont …***	In particular, developments in telecare in concert with new modular approaches to fire management, such as local water mist systems, may herald significant improvements in the management of fire risk in the homes of smokers, and those people who require oxygen therapy due to chronic lung disease. The Partnership Board and its advisors should consider using some telecare capital grant (and other funding sources) to pilot linked technologies in the homes of a small number of vulnerable people.

7. Implementation Issues

7.1 Introduction

This section will give a brief overview of the tasks that will be required in a subsequent implementation phase.

7.2 The Path to Regionalisation

In promoting a regional approach to telecare service provision, there is a need for a shared vision with a goal of quality services that are provided in a standardised and efficient manner. Telecare is a *disruptive technology* – it only works if it is part of an *integrated service* with a flexible and co-ordinated response. To realise this, there is a need to change the way services are run, either by introducing new elements or by re-engineering existing ones. Because of this and because adopting a regional approach amplifies this disruption, there are likely to be a number of obstacles to its deployment, all of which will need to be overcome. Table 3 lists some of these obstacles, many of which can be overcome by raising awareness of the *limitations* of the current service and systems, the *potential* for integrated telecare services and the *advantages* of regionalisation.

Table 3. Some obstacles to a regional approach to telecare.

Resistance to change:	Workforce, elected representatives (councillors, AMs, MPs), families and advocates, service users.
Technology:	Staff training, cost, fear of getting the wrong solution, technophobia, threat of buying the wrong system.
Cost of change:	Planning, investing, implementing, recruiting, training, charging, marketing.
Risk aversion:	Fear of getting it wrong, unwillingness to be first
Local rivalries:	Emphasising differences, 'superiority' complex, loss of autonomy.
Plans for local contact centres:	Assumption that health and social care emergencies can be dealt with safely by staff also viewing CCTV, reporting on lamp-posts, RTAs etc.

Figure 2 illustrates the key components of a telecare service, all of which need to be in place to offer a truly effective service. Taking a top-down approach, a service vision should help determine a strategy for the service, which in turn should help define its specification – both in terms of its function and in terms of the required level of quality and performance. The tools, processes, systems and levels of co-ordination necessary to make the service operate effectively then need to be put in place. A quality training regime is vital – ranging from general awareness (towards the top of Figure 2) to more specific, specialised and technical training (towards the bottom). Finally, it is necessary to promote the service – to care and health professionals and to potential service users and their families.

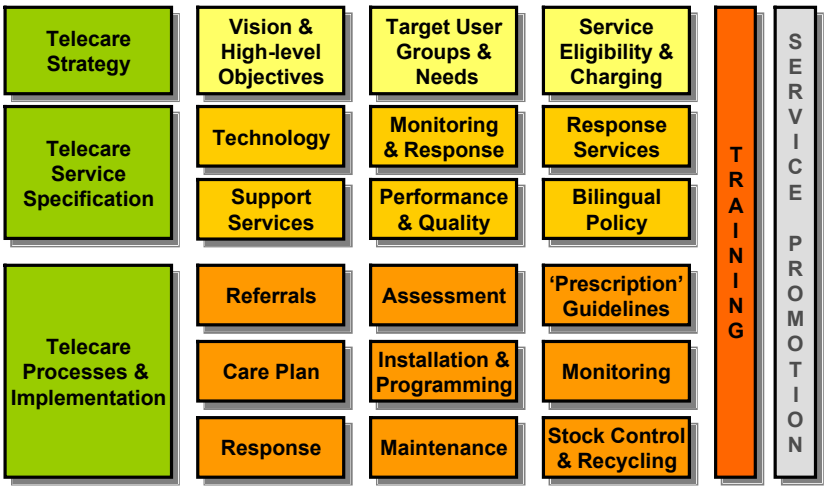

Figure 2. The key components of a telecare service.

There is scope across the entire range of tasks for collaboration and regional benefits. Naturally, these benefits are optimised if a top-down approach to harmonisation is agreed upon (i.e. starting with identifying common strategic goals and service specifications). The adoption of a regional model for telecare and in particular that of the monitoring centre allows for the potential for core regional elements to be co-located in, and/or co-ordinated from, a single 'centre of excellence', Figure 3.

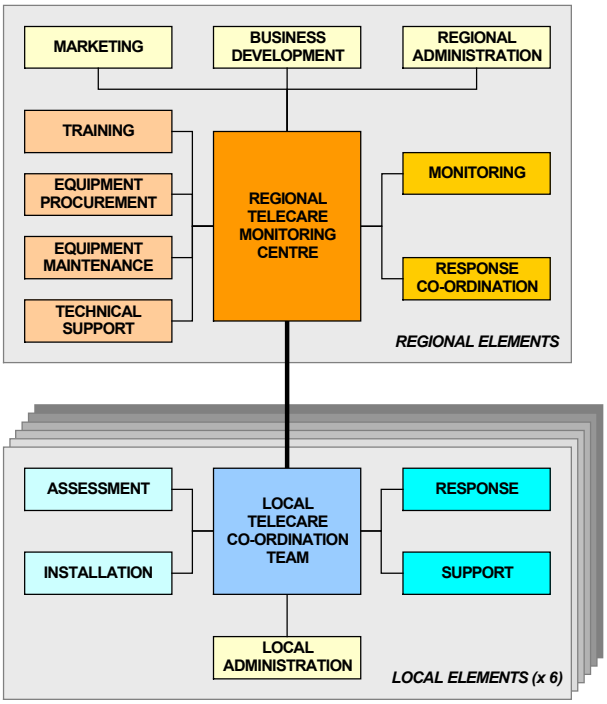

Figure 3. A possible structure for a regional telecare service for North Wales.

Figure 4 is a time-line showing the key events and milestones necessary for the implementation of a regional telecare monitoring centre for North Wales, starting with the end of the feasibility study at end of Q1 2007 through to the launch of a regional telecare centre of excellence with IP-based monitoring, service and data-hosting capabilities in 2012/13.

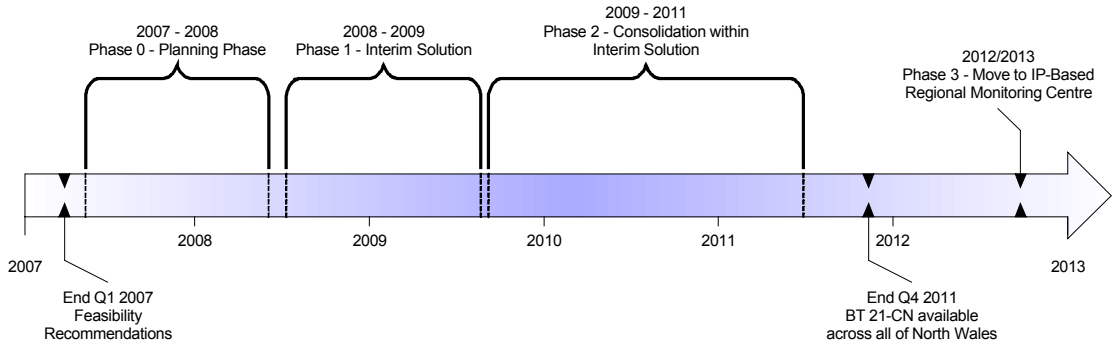

Figure 4. An estimated time-line of key phases for realising a regional telecare monitoring centre.

Some of the key steps towards regionalisation are described further in Table 4.

Table 4. Key Steps towards regionalisation (Phase 0).

Step	Goal	Tasks
1	**Develop a regional strategy for telecare**	• Define a future vision that can be shared by all councils. • Harmonise health, social care & wellbeing strategies with clear goals and timescales. • Determine the key objectives of telecare for the region. • Agree the scope of telecare services, especially the centre's role in responding to medical emergencies and the management of chronic disease • Define the high level target groups for service delivery: falls, dementia, LD, mental health etc. and identify their needs. Determine the relative mix between preventative and reactive services. • Establish the eligibility criteria for telecare services and associated charging policy.
2	**Define a telecare service specification.**	• Identify the technology required to realise the services required to meet the needs of the targeted service users and that can help the service meet its strategic objectives/targets. • Define the monitoring and response requirements. • Identify the community response & support services that are required to support telecare. • Develop the quality and performance standards that will be necessary to deliver a high-quality service and against which the service can be benchmarked. • Establish the bilingual requirements and policy for the service.
3	**Develop the necessary processes and tools required to implement telecare services.**	• Establish referral guidelines. • Develop an assessment tool appropriate for technology solutions, & consider implications for integration with the UAP. • Develop equipment 'prescription' guidelines. • Integrate telecare service provision with other 'conventional' services & design protocols for promoting the use of technology within the care plan. • Define the monitoring and response protocols. • Identify/Establish installation & programming & maintenance personnel/services. • Develop stock control & recycling/cleansing procedures.
4	**Establish the training requirements for the service**	To include: • General Awareness • Telecare Technology (& its limitations) • Assessment & Equipment Selection • Monitoring & Response protocols • Equipment Installation, Programming & Basic Maintenance.

Step	Goal	Tasks
5	**Consider service promotion and marketing**	• Need to raise awareness of the service amongst all stakeholders, including: care professionals, service users & their carers. • Web-site development including self-referral forms and some element of assessment. • Use of DVD's and multimedia for raising awareness and answering 'frequently asked questions'. • Engagement of LHBs and trusts to advance the use of technology in the health field.
6	**Details of adopted recommendations**	• Ownership & management • Costs & resources • Funding sources
7	**Develop implementation plan**	• Cost & project management (time, milestones, etc.) • Selling the plan to each council. • Risk Assessment • Contingency planning • Change management review

7.3 Creating a Regional Centre

7.3.1 Project planning

The detailed analysis of steps and processes required for the transition from 4 monitoring centres and 6 community alarm services needs to be performed by experts in the field. The process also needs to be project managed closely for at least 12 months. 24 man months of effort may be required at a nominal £4K per month, resulting in ~ £100K to plan and implement the proposal. An alternative approach would be for a secondment of an existing local authority employee to work alongside consultants in managing the plan. The overall costs may be similar but may have the advantage of empowering staff with the necessary technical skills.

Item	Estimated Cost
Senior/Mid-level Management	120 days @ £200 per day = £24K
Operational staff	120 days @ £150 per day = £18K
Travelling Costs	£8K
Total	**~ £50K**

The involvement of existing council staff will be considerable during the 12 month planning and implementation phase. It will range from attendance at meetings

through to developing or approving the detail of service specifications. It is likely that each authority will need to commit a minimum of 20 days of senior to mid-management time plus a similar level of operational staff time to the process.

7.3.2 Capital Costs

Although purchasing premises for the regional monitoring centre is an option, without knowing the status of the operating company it may be safer to assume rental or leasing costs. These costs are therefore included in the operating costs rather that the setup costs, which are therefore restricted to those in Table 5.

Table 5. Estimated capital costs for setting up the monitoring centre.

Item	Estimated Cost	Notes
Project planning	£150K	Transferred from Section 7.3.1
Telecare Equipment	£80,000	Previously owned equipment bought from existing centres.
Transfer costs of moving monitoring centre equipment	£30,000	Depends on how many systems need to be moved and to where.
Office equipment and IT systems	£60K	Broadband links and modern telephony systems.
Backup generators, UPS, etc.	£20K	
Recruitment & HR Services	£20K	
TSA Accreditation (Pt. 1 & 2)	£24K	
Total	**~ £384,000**	

Therefore, the total capital cost for this implementation is estimated to be approximately £384,000. Phase 1 and 2 will also have capital costs but these lie outside the scope of the present work and need to be considered within the detailed project plan for other phases. As an example, Tunstall have indicated that the guide price for the next generation of Piper Network Controllers (PNC 5) to be launched in 2007/08 will be circa £100K for a system capable of managing more than 20,000 connections.

7.3.3 Operating model

The organisation of the new monitoring centre is perhaps one of the most difficult tasks facing the regionalisation of telecare group. Figure 5 below attempts to show a structure which includes managers with responsibility for each of the functions of the centre as defined in Figure 3. The costs of these staff will be considered as operating costs and are estimated in the following section.

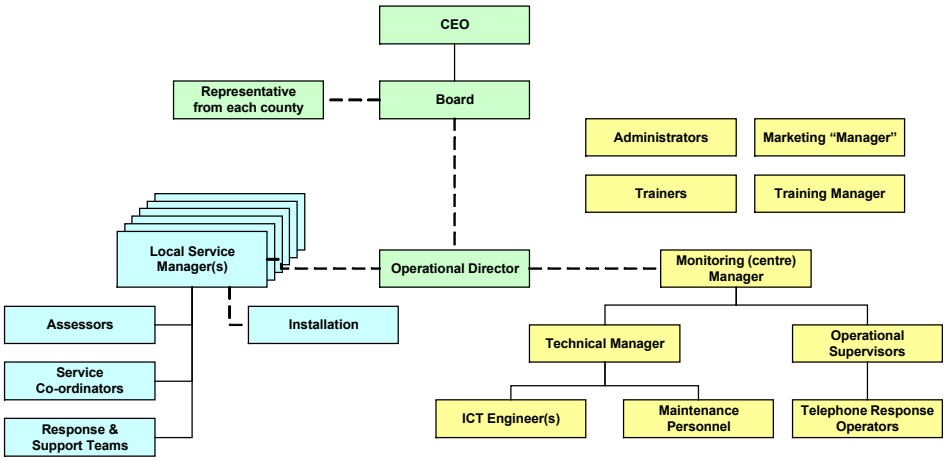

Figure 5. Possible structure for a regional North Wales telecare service.

7.3.4 On-going costs

In Table 6 we list the most significant on-going costs for the centres. These are derived in part from some of the data returned to us from the questionnaire and requests to the existing monitoring centres for financial data. However, these data are incomplete as they were considered by some centres to be commercially sensitive. Therefore it is likely hat there will be other costs not yet identified and some of the estimates may be under or over the actual cost by a higher level than we would normally tolerate in estimating.

Table 6. Estimated on-going costs.

Item	Estimated Cost
CEO	£50K
Centre Manager	£36K
Technical Manager	£32K
Operational Manager	£30K
Marketing Manager	£30K
Secretarial support	£18K
ICT Engineer	£25K
Technician	£20K
Supervisors x 2	£20K each = £40K
Operators	600 x 52 x £7 per hour = £218,400
Salary Bill	**~ £500K (+ 30% on cost) ~ £650K**
Rental of premises	£50K
Accountancy & Book-keeping costs	£40K

Item	Estimated Cost
Legal advice and contracts	£10K
Utility bills	£50K
Telephony & Internet costs, etc.	£50K
Training	£25K
Technical support unit	£60K
New equipment for testing/ evaluation	£20K
Marketing	£50K
Office overheads	£25K
Travel	£20K
Maintenance	£25K
Insurances (inc professional indemnities, etc.)	£25K
TSA accreditation (Part 1 and 2)	£2.5K
Business rates	50K
Total Annual cost (estimated)	**~ £1,152,500**

7.3.5 Income

There are three source of income for the centre:

a) Grants from the Welsh Assembly Government or from individual local authorities;

b) Monitoring charges levied on either individual customers (i.e. service users) or paid on their behalf by local authorities, local health boards or trusts, RSL's or private landlords; and

c) Service charges for specific advice and contract work for local authorities or other stakeholders.

It is impossible at this stage to predict a) and c) however we can estimate potential income through monitoring charges fairly accurately assuming current levels of community alarm provision and the potential for new telecare and telehealth connections using the Welsh Telecare Capital grant over the next 12 months. In table 7 below we have estimated the income per annum from various levels of service.

Table 7. Estimated income from telecare services.

Tier	Estimated Number of Service Users	Cost / wk	Total / yr (x 52)
Community Alarm	18,000	£1.00	£936,000
Low-level telecare	3,000	£1.25	£195,000
High-level telecare	1,000	£2.50	£130,000
Complex (e.g. medical & lifestyle/ambient activity monitoring)	100	£4.00	£20,800
Total (estimated)	**22,100**	**-**	**£1,281,800**

7.3.6 Benefits

It is impossible to estimate the gains of regionalising telecare in isolation to the benefits of operating telecare services. These, in turn, depend on assumptions of the reduction in demand for other council and NHS services, and the success of the services in finding the people most likely to benefit from telecare. A simplistic approach to the possible revenue streams and savings using the TLC model (see *Work Package 2*) indicate savings in excess of £500,000 per annum per county plus similar gains per county to the health economy. These figures remain small compared with overall community care budgets and therefore need to be considered alongside the potential of the technology to become a catalyst for change. The value of this approach cannot be estimated.

The major effect of regionalisation might therefore be to ensure that the business case for telecare is robust and is made early on so that services can be built on a firm financial platform which is viable. A failure to do so would compromise this viability and would lead to cost cutting in order to balance the books. This would effect service quality and also compromise future investment.

It was shown in Sections 7.3.4 and 7.3.5 (above) that the likely income exceeds expenditure by approximately £129,000 per annum, generating a surplus for reinvestment. By comparison, the Telecare Services Association estimate that monitoring centres with less than 10,000 connections can at best break even but are more likely to be run at an annual loss requiring subsidies from other sources (e.g. housing revenue account, general rate fund) in order to survive. Although the financial data provided by the four centres does not reveal the extent of any losses, we can with confidence state that the single regional monitoring centre will offer financial benefits as well as the improvements in quality described elsewhere in this and other reports.

7.4 Selling Telecare at a Local Level

Unless the benefits of telecare to older and other disadvantaged groups are clearly articulated to elected members of councils, (plus AMs, MPs and EMPs), advocates of these groups and to the public at large, then any decisions relating to future developments will be lost as a reactionary gesture. It is therefore essential to "sell" telecare to representatives and to the public at large **BEFORE** the infrastructure is discussed and the local presence changed. This is not a trivial matter and can be compared to the voting of council house tenants on issues such as voluntary stock transfer to a housing association or trust. It is possible that individual councils may need to take an arm's length approach to the issue so that they can be seen as acting on external advice.

7.5 Risks

Table 8, overleaf, considers some of the risks associated with setting up a new telecare service, including those risks introduced by the regionalisation agenda.

Table 8. Risks of setting up a regional telecare service.

Ref	Risk & Consequence	Risk Management
A	**TECHNICAL**	
A1	Equipment selected for region is not fit for purpose.	This involves ensuring that all equipment provided is fit for purpose, is of the highest quality and is unlikely to malfunction and if it does, does so in a fail-safe manner. To help in this process, basic minimum feature specifications should be defined for each item of equipment against which to check the performance of products prior to their selection and procurement.
A2	Equipment selected for region is unreliable resulting in an unacceptable level of false alarms or missed alarms.	Select equipment that has been designed with a Built-In Self-Test capability (if such an option exists) Select equipment which has undergone a vigorous product testing and acceptance evaluation process. Key indicators include the number of units out in the field, the number of local authorities already using the devices, the mean time between breakdowns figure, and the availability of independent pilot study reports using the device. Select genuine smart technologies that employ multiple techniques to monitor high-risk alarm conditions.
A3	Regional monitoring centre is unable to function due to a fault. This would leave all service users in North Wales without a monitoring service.	Develop service contingency plans – to include a UPS and back-up generator; Data backup facility; and switch-over and synchronisation with a suitable backup service (capable of meeting the specification of the regional centre);

Ref	Risk & Consequence	Risk Management
A4	IP-Based monitoring centre is attacked by a computer-based Virus/Trojan, etc. *(This will not be an issue until the IP-based centre is implemented which could be 2012.)*	Suitable firewalls and anti-virus/anti-spam/anti-spit software and systems are put in place and adequately maintained by appropriate technical staff.
A5	Region adopts a single supplier for telecare equipment and misses out on new or different solutions that are subsequently developed or made available by other suppliers.	Prior to selecting a single supplier, review the product ranges of all (PaSA – accredited) suppliers and compare against the desired minimum feature specifications and service specifications. Identify the supplier with the widest range of existing products. Use market information and research to prepare for new product ranges.
B	**HUMAN**	
B1	This relates to the potential for human error in the process of technology selection, its installation/setup or to any of the response functions.	Improved and continuous training may be the only method of reducing the risk. Reviews and evaluations will also be relevant. The development of software tools to assist in the matching of telecare solutions to identified risks and needs may help to reduce inappropriate care packages.
B2	Service user interferes with equipment in the home rendering it ineffective.	Correctly assess suitability of equipment for service user prior to installation.
B3	Equipment is removed from properties without informing the centre and is re-used elsewhere.	Proper asset tracking systems need to be put in place.
B4	A member of staff behaves or acts in an irresponsible or dangerous manner compromising the performance of the system.	Full CRB checks and robust pre-employment processes are required.
B5	An inability to recruit appropriately trained or skilled staff.	Competitive salaries with suitable associated packages.
B6	Region adopts a single supplier for telecare equipment which is subsequently taken over resulting in uncertainty with regards to future supply and possible compatibility issues with future product ranges.	Push for, and when available, select products that comply with an agreed interoperability platform (an 'open' platform would be even better).
C	**ORGANISATIONAL**	
C1	A lack of coordination and planning could lead to problems in delivering a service, especially where service users have complex needs and different agencies are involved.	A co-ordination officer may be recruited to ensure that practical problems are solved.
C2	A specification for a regional telecare monitoring centre cannot be agreed between all 6 local authorities.	Use small sub-committees to produce details and use political champions to drive through change.
C3	Failure to get all local authorities to buy into the service.	Ensure that planned service is competitive and of the highest possible quality so that rival services may not appear attractive.

Ref	Risk & Consequence	Risk Management
C4	Individual councils break away from the regional monitoring centre.	Long-term contracts are put in place with opportunities for grievances to be aired.
C5	One council wants to leave the consortium to integrate telecare with other community services 24/7.	Continuously researching the benefits and limitations of shared contact centres so that the business model can be modified and kept ahead of developments.
D	**FINANCIAL**	
D1	A failure to recruit sufficient service users or to charge an economic rate for the service will lead to financial problems and an unsustainable service.	A robust business plan is needed which factors in financial contributions from the agencies which will benefit most from telecare.
D2	Single supplier route leads to a monopoly situation and increased costs	Only purchase major items using PaSA framework. Apply pressure to vendors to accelerate moves towards interoperability. Review supplier contracts on an annual or bi-annual basis.
D3	Another privately run monitoring centre is opened locally or bids for local monitoring services.	Offer new and improved services utilising the technical superiority of centre staff in distinguishing between rival products.

8. References

[1] Telecare Think Tank, "Work Package 2 – Baseline Research", March 2007.

[2] Telecare Think Tank, "Work Package 3 – Investigation of the potential for the joint procurement of telecare equipment and maintenance", January 2007.

[3] Telecare Think Tank, "Work Package 4 – Investigation into the potential of developing collective policies, service standards, processes and training", January 2007.

[4] Telecare Think Tank, "Work Package 5 – Investigation into the potential for expansion and integration of telecare services", March 2007.

[5] Telecare Think Tank, "Work Package 6 – The Impact of IP-Based Communications on Telecare Service Users and Providers", January 2007.

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