

## Welcome

Welcome to the West Midlands NHS Telehealthcare Toolkit. You will find it contains a set of resources that provide guidance, tools and links that support the crafting of business cases for telehealthcare.

The toolkit supports commissioning of telehealthcare whether PCT, or PBCor GP commissioning. It also provides resources more generally for staff to develop telehealthcare business cases.

Create a business case for telehealthcare by:

1. Clarifying your **focus**—whether a single telehealthcare project or a more comprehensive case for your organisation's adoption of telehealthcare
2. Working through the **eight steps**. Each covers a key aspect of telehealthcare that needs to be thought through for a credible business case. Link through to research and case examples to ground your case in **evidence**. Use the **guidelines, models and templates** to help guide your discussions and to document the business case.
3. Testing the business case through **reviews** before seeking approval.

## What if I need an overview?

Use the [overview document](#) for the key steps and important evidence sources.

## Core resources

The core of the toolkit is pragmatic guidance organised around [eight steps](#):

1. [Identifying telehealthcare needs](#)
2. [Establishing buy-in](#)
3. [Considering the technology](#)
4. [Workforce requirements](#)
5. [Designing evaluation](#)
6. [Planning implementation](#)
7. [Business case](#)
8. [Sharing best practice](#)

Depending on your focus - project, programme or strategy – the guidance provided may prove too detailed. So adapt accordingly.

## Knowledge base

If you do not already have the telehealthcare expertise you need for the business case, then the knowledge base provides links to good telehealthcare [resources](#) and published [evidence](#). Care does need to be taken when evaluating evidence.

## Further guidance on the toolkit

Some guidance on using the toolkit is included:

- [General information on toolkits](#)
- [Theory underlying this toolkit](#)
- [Definitions of terms used](#)
- [Help page](#)
- [FAQs](#)

## Further information on this toolkit

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West Midlands NHS



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Email: [joanne.harding@westmidlands.nhs.uk](mailto:joanne.harding@westmidlands.nhs.uk)

## Adding resources to the toolkit

### Alan Warr PhD

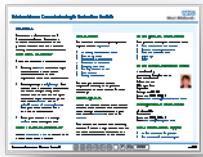
Tribal Health  
Telephone: 07900 607249  
Email: [alan.warr@tribalgroupp.com](mailto:alan.warr@tribalgroupp.com)

## Wider telehealthcare support

- [IfH Telehealthcare Programme](#)
- [Telehealthcare Project Managers](#)

# Telehealthcare Commissioning & Evaluation Toolkit

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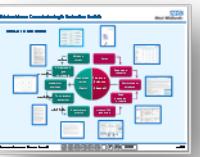
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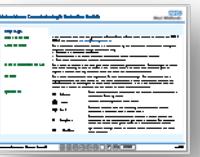
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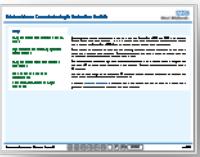
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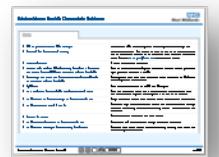
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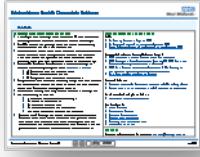
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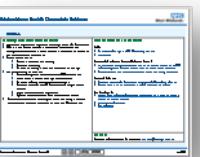
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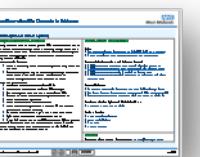
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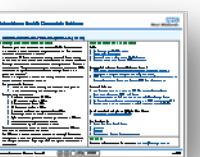
[Asthma](#)



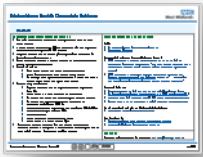
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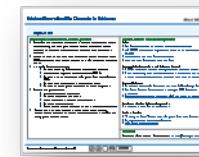
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[Overview \(PDF\)](#)



[Full Toolkit \(PDF\)](#)

## Overview of Toolkit Steps

### Step 2: Establishing buy-in

Who are the stakeholders for telehealthcare?  
What are their needs for involvement?  
What involvement activities are needed?

### Step 4: Workforce requirements

How will telehealthcare impact the workforce?  
What training and change management?  
How will the workforce be consulted?

### Step 6: Planning implementation

How will we implement telehealthcare?  
What programme governance and organisation?  
What are the risks and how to mitigate them?

### Step 8: Sharing Best Practice

How can we identify shareable practices?  
What channels will we use to share?  
Can we gain recognition and awards?

Step 1: Identifying needs

### Step 1: Identifying needs

What are the telehealthcare needs?  
What will be the impacts and implications?  
What telehealthcare initiatives should we pursue?

Step 2: Establishing buy-in

### Step 3: Considering technology

What telehealthcare technologies do we need?  
How can we work with others to lower cost & risk?  
What technology standards and plans do we need?

Step 4: Workforce requirements

### Step 5: Designing evaluation

What evaluations will be needed?  
Review medical, technical, users & organisation?  
What plans are needed for evaluation?

Step 6: Planning implementation

### Step 7: Business case

What is the business case?  
How can it be funded and justified?  
What procurement is needed?

Step 7: Business case

Step 8: Sharing best practice

## Toolkits

### History of toolkits

Many toolkits have been created to support a wide range of NHS activities. The analogy of a toolkit describes several of their characteristics. Like a toolkit they provide a set of useful resources that can be used to get a task done. Like tools generally, these resources make the tasks easier to perform and also enable good practices. These tools should ideally help both the experienced and inexperienced.

### Economic rationale

Across healthcare many organisations face similar challenges. Whilst there will be important local differences, much of the core activities will be similar, or even identical sometimes. A toolkit reflects this by assembling the resources once and then providing them to many people to use. This seeks to avoid everyone having to start from scratch and develop their own tools.

### Philosophy of this toolkit

Most toolkits use the vehicle of a document to describe their resources. This makes them similar to a guidebook or textbook. This toolkit extends this vehicle by also using the flexibility of hypertext to link in resources and loosely link steps and knowledge bases together. This is intended to allow the toolkit to grow and adapt to change. It should also allow people to adapt the toolkit locally to their preferences.

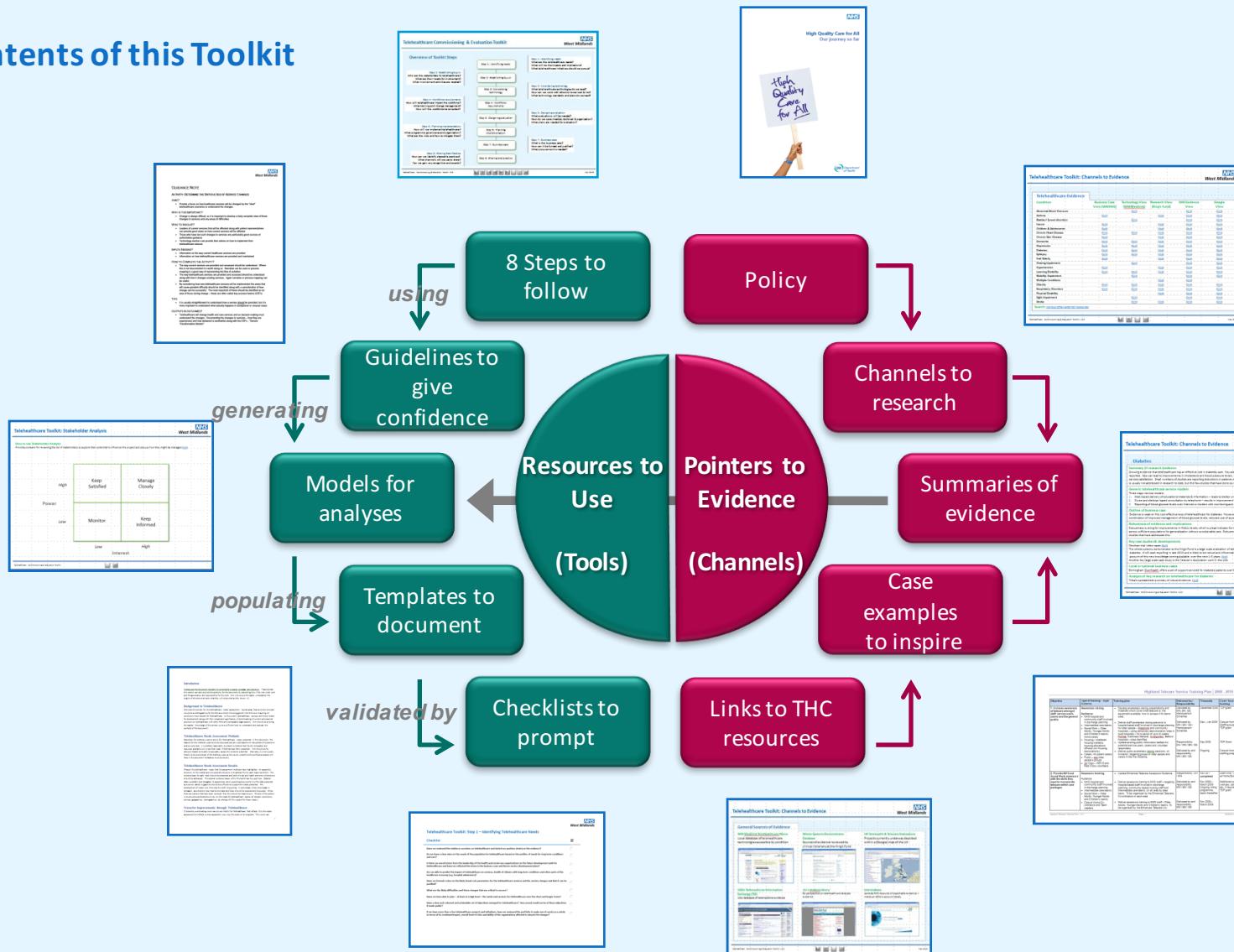
The toolkit structure reflects three core bodies of knowledge:

1. Research into the implementation of major strategic change in organisations that shows that success is higher if the change addresses comprehensively the different dimensions of change. The steps 1 to 8 roughly cover 1) Populations and consumers; 2) Stakeholders; 3) Technology drivers and developments; 4) Processes and people; 5) Managing benefits and risks; 6) Securing resources and change; 7) Financial and economic rationale; and 8) Profile and branding
2. Research into personality preferences of people which shows they vary. Some personalities are pragmatic and want pithy actions to follow, others are quite different and want to explore the issues and reflect, etc. The toolkit allows quick pragmatic actions whilst providing routes into more in-depth materials
3. Business case policy has developed over the last decade with better definitions of content and the realisation that a business case is better developed by evolving from an strategic outline case through stages of better definition to a full business case

### A note on evaluation

The stage of development of the research on telehealthcare makes authoritative statements that evaluate its clinical and economic outcomes contentious. The toolkit routes you into authoritative materials on telehealthcare for your own evaluation rather than proposing a single evaluation for you to adopt.

## Contents of this Toolkit



## Definitions of terms used

Telehealthcare	Any piece of assistive technology that is being used in a patient's home to better help themselves manage and remain independent, that may trigger a response from a carer, social worker, health profession and/or medical intervention. Home can include care home and activities in the local community
Business case	An explanation of how a new initiative will affect an organisation and what is required to be successful. It presents the arguments and evidence for why resources should be allocated
Toolkit	A collection of resources brought together to support people in a task or process, comprising guidance, tools, techniques, examples and access to research and sources of relevant evidence
Needs assessment	A way of asking members (or representatives) of a group or community what they see as their most important needs (e.g., using interviews, meetings, surveys, focus groups or forums). The results of the needs assessment are used to guide future plans and actions
Risk stratification	Arranging patients according to the severity of their illness with a view to predicting outcomes from a given intervention or service change. Contemporary risk stratification employs the recent availability of patient and population data in electronic formats to exploit the power of computers, analytical software and cheap data storage
Stakeholders	Those groups and communities with a stake in the outcome of a change or situation
Workforce	A wide concept that includes the individuals and groups and functions that are involved in the delivery of healthcare whether employed or involved, either directly or indirectly
Evaluation	The activity of synthesising generalisable outcomes for the usage of telehealthcare that includes the full range of contributing factors to the value (positive or negative) of its deployment and use
Best practice	A generally held view that the practice is adopted by the best practitioners or organisations in the field

## Help Page

### Short term support

In the short term, support is being provided by Dr Alan Warr of Tribal Health who can be contacted on 07900 607249 or by e-mail on [alan.warr@tribalgroup.com](mailto:alan.warr@tribalgroup.com)

### Aim of the toolkit

The toolkit aims to support those involved in the commissioning and evaluation of telehealthcare through the provision of support for developing business cases using:

- Guidance in the form of a set of steps
- Resources in the form of tools, templates, checklists and links to case studies and examples
- Evidence on the clinical and economic case for telehealthcare

### Do I need to follow the toolkit?

The toolkit is for support, so it is aiming to provide a reasonable, generic approach. But tailoring to other local methods or improving on what is provided is fine. If improvements are made, then it would be good to upgrade the toolkit by adding them in as an additional pathway or additional resources

### Structure

The toolkit is structured around the eight steps. But this structure is not rigid. The key is that the areas highlighted in these steps are considered. If they are not addressed then it is important to understand the rationale for this. Undertaking the steps in a different order is also fine, in most cases the earlier steps will overlap and feed back on each other as a way forward on telehealthcare is formulated

### Symbols used

	<b>Evidence</b>	Evidence is quantitative or qualitative sources of data or validated research or best practice (including policy)
	<b>Notes</b>	Notes are additional guidance on the activity
	<b>Tools</b>	Tools are a variety of resources comprising mainly models and analysis frameworks that could be used to explore issues
	<b>Templates</b>	Templates are documents that would be produced for telehealthcare but without the specific content for the organisation in question. Typically these contain the section headings and advice on the contents for the sections
	<b>Checklists</b>	A general list of things that would typically have been considered or included within an activity

## FAQs

Using the toolkit with PowerPoint 2003-2005?

This prototype version of the toolkit should work fine with PowerPoint 2005 and 2003, if the current Service Packs have been installed. If this is not the case, then contact the support for the toolkit and a version for PowerPoint 2003-5 can be provided which has the same functionality.

Requests from the operating system to accept content

These should be accepted for all the content coming from the toolkit and located on the site on which the toolkit has been deployed. For Internet content, the sites selected are all safe sites but do not accept unless your security software is up to date.

Using the toolkit without an Internet connection?

The toolkit makes extensive usage of links to resources available via the Internet and is designed for use from a PC or laptop whilst connected to the Internet. So these links will not work if run from a PC or laptop.

Can it be used on PDAs and Smartphones?

No, the toolkit is designed for a standard PC or laptop and the amount of content on a screen will mean it is not suitable for devices with small screens.

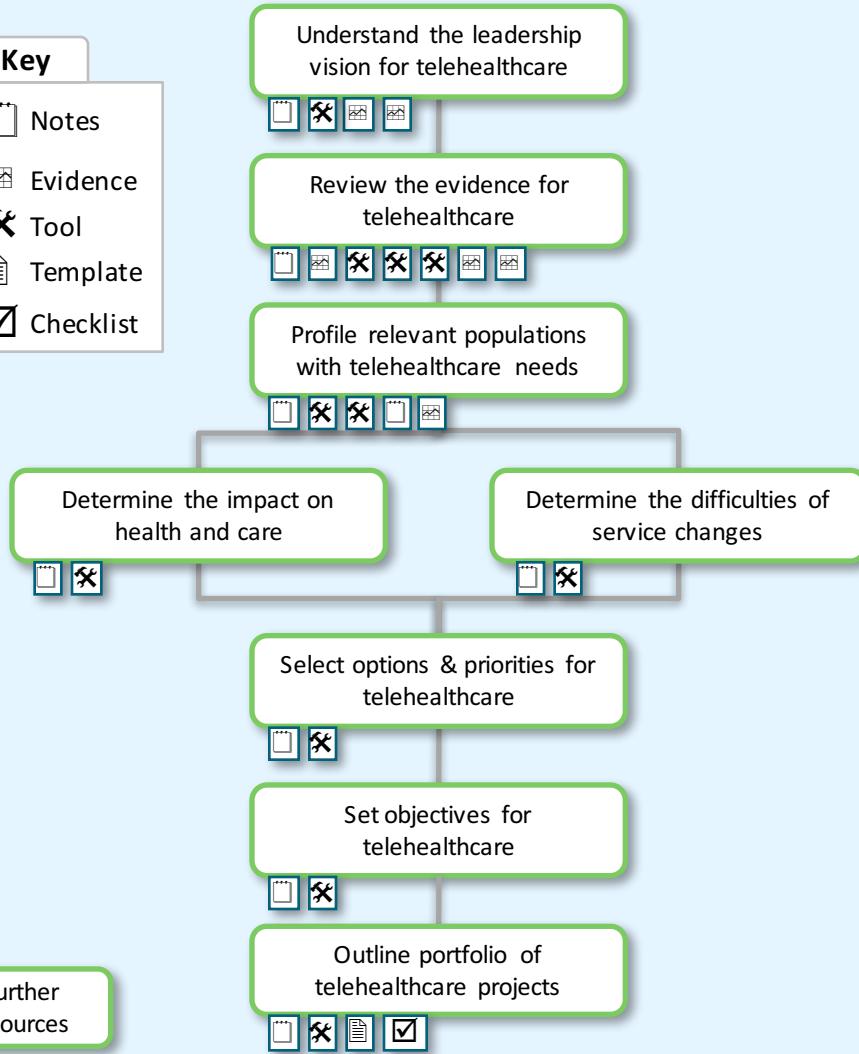
Is this toolkit available as a single document?

A shorter [overview document](#) is available within the toolkit that can be used as a stand alone guidebook for the creation of telehealthcare business cases.

# Telehealthcare Toolkit: Step 1 – Identifying Needs

## Guidance

Key
Notes
Evidence
Tool
Template
Checklist



Further resources

## Information

### Aims

- Identify local needs for telehealthcare
- Select optimal development path for telehealthcare

### Inputs

- Relevant healthcare sector, PCT and provider strategies
- Internal and external consultation
- Population and health risk datasets
- Evidence on telehealthcare effectiveness
- Local & national policies applying to telehealthcare

### Staff Involved

- Risk stratification & commissioning
- Public health

### Activities

- Risk stratification for conditions relevant to telehealthcare
- Apply knowledge base on telehealthcare
- Options appraisal for telehealthcare
- Set objectives for telehealthcare

### Outputs

- Profile of telehealthcare needs for population for 5 years
- Range of options with justified preferred options
- Portfolio of projects to develop telehealthcare services

### Knowledge Base

- [Sources of population data](#)
- [General telehealthcare information](#)
- [Telehealthcare information by condition](#)

# Telehealthcare Toolkit: Step 1 – Identifying Needs

## Resources

### Guidance notes

- [Leadership vision](#)
- [Assessing evidence](#)
- [Profiling population needs](#)
- [Impact analysis](#)
- [Service changes](#)
- [Options & priorities](#)
- [Setting objectives](#)
- [Portfolio management](#)

### Conceptual tools

- [Visioning: Tomorrow Mural](#)
- [PEST analysis](#)
- [SWOT analysis](#)
- [Benchmarking](#)
- [Risk Stratification Pyramid](#)
- [Impact Analysis – 5Ws](#)
- [Process Mapping Tools at NHSI](#)
- [Options Appraisal](#)
- [SMART Objectives](#)
- [Strategic Grid - Portfolio Management](#)

### Analytical tools

- [West Midlands Medilink Telehealthcare Menu – equipment by conditions](#)
- [NW NHS Healthcare Commissioning Services - Risk Stratification Project](#)
- [WSD – Search telehealthcare evidence](#)

### Spreadsheet tool

- [Telehealthcare Benefits Profiles Spreadsheet Model](#)

### Sources of data

- [Telecare Outcomes](#)
- [General NHS & Government Data Sources](#)

### Template

- [Telehealthcare Needs Assessment Template](#)

### Checklist

- [Telehealthcare needs analysis checklist](#)

### Case example of Health Needs Analysis

- [Birmingham East & North Health Needs Analysis Video Case](#)

### Case examples

- Simple Telehealth – Innovation in Stoke to provide low cost web-based telehealth – [Contact Phil O'Connell](#)
- [Newham Trial – Video overview of telehealthcare & technologies](#)
- [Newham telecare & telehealth trial – information, news, videos](#)
- [Kent – Telehealth Video Case](#)
- [USA Case: Needs Assessment for Telehealthcare Applications in Southern Fingers Lakes, 2009](#)

### Reference materials (HNA)

- [HDA – HNA Workbook](#)
- [NICE – HNA Guidance](#)
- [DH – Commissioning to Promote Health](#)
- DH Telecare Modelling Toolkit contact [Nathan Downing](#)

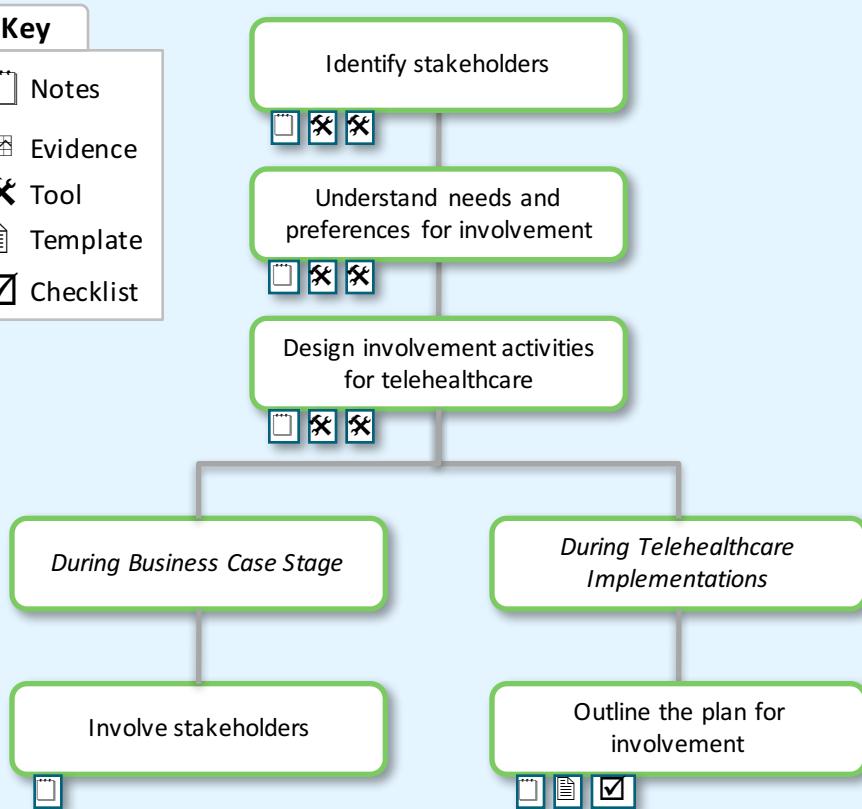
### Reference materials (Telehealthcare)

- [Telecare Benefits – Bow Group](#)
- [Telehealthcare Systematic Reviews](#)
- [Presentation: Cost Effectiveness of Remote Care – Barlow](#)
- [Presentation: Telehealthcare: Promises & Challenges – Boules](#)
- [DH – Our health, our care, our say](#)
- [DH – Building telecare in England](#)
- [DH – Whole Systems Demonstrator](#)
- [DH - Summary only of WSD](#)
- [DH – Building the National Care Service, 2010](#)
- [DH - Understanding what commissioners want & need from telehealth and telecare by Mike Clark](#)
- [WSADN - Sustaining innovation in telehealth and telecare by Nick Goodwin and Mike Clark](#)

# Telehealthcare Toolkit: Step 2 – Establishing Buy-In

## Guidance

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Further resources

## Information

### Aims

- Meet stakeholder needs & expectations for involvement
- Communicate telehealthcare plans & outcomes

### Inputs

- PCT & SHA strategies & policies for involvement
- Organisation structures for PCT, local authority & providers
- Structures of relevant public and political organisations

### Staff Involved

- Clinical and managerial leads
- Commissioners and providers
- Patient representatives

### Activities

- Clarify the many stakeholder groups for telehealthcare
- Map current stakeholder issues with telehealthcare
- Analyse stakeholder needs, preferences and styles
- Consult stakeholders on plans to involve

### Outputs

- Plans for involving stakeholder groups in telehealthcare
- Inclusion of telehealthcare in plans for public involvement
- Communications plan for telehealthcare

### Knowledge Base

- [Sources of population data](#)
- [General telehealthcare information](#)
- [Telehealthcare information by condition](#)

# Telehealthcare Toolkit: Step 2 – Establishing Buy-In

## Resources

### Guidance notes

- [Identifying stakeholders](#)
- [Understand needs and preferences for involvement](#)
- [Design involvement activities](#)
- [Involve stakeholders in business case stage](#)
- [Outline the plan for involvement](#)

### Conceptual tools

- [Stakeholder inventory](#)
- [Stakeholder influence mapping](#)
- [Stakeholder needs & expectations](#)
- [Stakeholder analysis](#)
- [Stakeholder AIDA analysis](#)
- [Stakeholder ladder of participation](#)

### Resources in other toolkits

- [eHealth Scotland Toolkit: Engagement](#)

### Template

- [Telehealthcare Involvement & Communications](#)

### Checklist

- [Checklist on establishing buy-in](#)

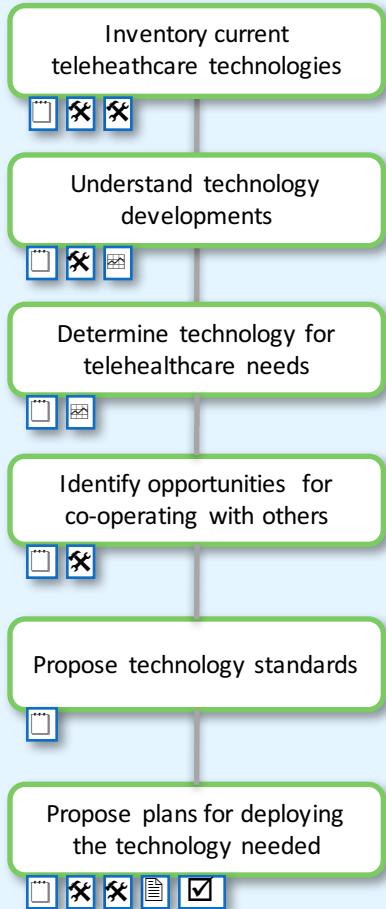
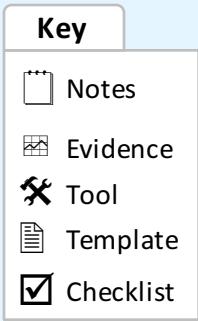
### Case examples

- [Newham trial – User involvement forum](#)
- [Birmingham i-House demonstrator](#)
- [Dumfries & Galloway – example of a poster for telecare](#)
- [Edinburgh – poster for telecare – pill dispenser](#)
- [North Yorkshire Telecare – example of involvement and making a strong case](#)
- [Barnsley Hospital & partners – user involvement in development of voice driven home control system](#)
- [Denmark – User involvement in telemedicine for diabetes](#)
- [Norway – People centred healthcare innovation through design](#)
- [Norway – User involvement in assistive technology for dementia](#)

### Reference materials

- [DH policy on public and patient engagement](#)
- [NHS Evidence – public & patient involvement](#)
- [NHS Centre for Involvement](#)
- [Summary of Local Government & Public Involvement in Health Act 2007](#)
- [DH – Invest in Engagement Website](#)
- [NHS Confederation - Talking it through: the importance of communications when discussing local service change](#)

## Guidance



Further resources

### Information

#### Aims

- Ensure plans for healthcare technology are developed
- Exploit opportunities for joint purchasing

#### Inputs

- Technology assets from PCTs, local authorities & providers
- Meditech database of telehealthcare technologies
- Insights from technology research firms and academia

#### Staff Involved

- IT function
- Telehealthcare support function

#### Activities

- Update current inventory of telehealthcare technology
- Apply Meditech knowledge base to telehealthcare needs
- Technology options appraisal
- Consult SHA & PCTs on joint procurement opportunities
- Specify technology plans, policies & standards

#### Outputs

- Plans for telehealthcare technology
- Opportunities for aggregating technology purchasing

#### Knowledge Base

- [Telehealthcare equipment database from Alvolution](#)
- [Sources of population data](#)
- [General telehealthcare information](#)
- [Telehealthcare information by condition](#)

# Telehealthcare Toolkit: Step 3 – Considering Technology

## Resources

### One page guidance notes

- [Inventory current telehealthcare technologies](#)
- [Understand technology developments](#)
- [Determine technology for telehealthcare needs](#)
- [Identify opportunities for co-operation](#)
- [Propose technology standards](#)
- [Propose plans for deploying the technology needed](#)

### Conceptual tools

- [Gartner Hype Cycle for Telehealth, 2009](#)
- [Impact Analysis – 5Ws](#)
- [Options Appraisal](#)
- [Holding to Account - RACI Analysis](#)
- [Project planning – GANTT](#)
- [Co-operation Matrix](#)

### Spreadsheet tool

- [Telehealthcare Technology Inventory](#)

### Telehealthcare technologies

- [West Midlands Medilink Telehealthcare Menu – equipment by conditions](#)
- [OGC Buying Solutions Framework – equipment available under the framework](#)
- [WSD – Search facility of telehealthcare evidence – can search by technology](#)

### Template

- [Telehealthcare technology plan](#)

### Checklist

- [Checklist on considering technology](#)

### Case examples

- Simple Telehealth – Innovation in Stoke to provide low cost web-based telehealth – [Contact Phil O'Connell](#)
- [West Lothian, Scotland - Smart Technology & Community Care for Older People](#)
- [Listing of telehealth projects in Scotland as at December 2009](#)

### Models of telehealthcare technologies

- [Center for Information Technology Leadership \(CITL\)](#)
- [Umbrella models for telehealth and telecare technologies](#)

### Reference materials

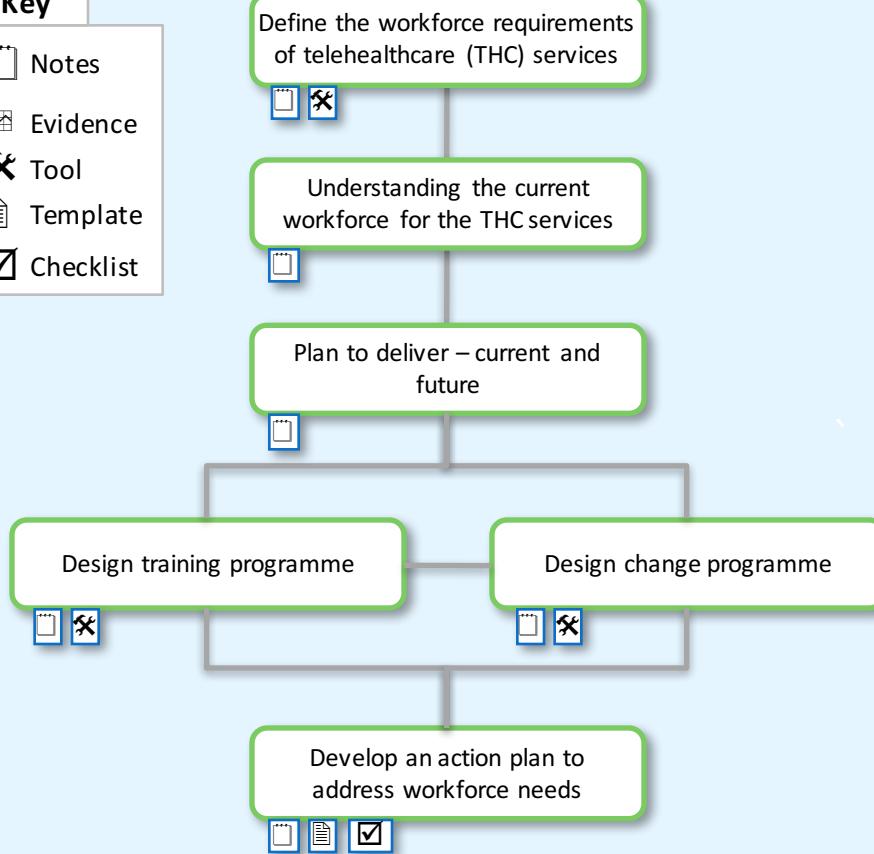
- [Generic technology business model from doc@home](#)
- [University of St Gallen, Switzerland – Business models for independent living](#)

### Technology Framework Agreements

- [Buying Solutions Assistive Technologies Framework Agreement – covers telecare, telehealth and telecoaching](#)

## Guidance

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## Information

### Aims

- Develop the workforce ahead of telehealthcare services
- Ensure workforce plans are developed for telehealthcare
- Develop PCT-wide understanding of telehealthcare

### Inputs

- Organisation charts for telehealthcare functions
- Workforce capacities & capabilities needed for telehealthcare
- Relevant workforce policies & practices

### Staff Involved

- Workforce leads
- Clinical lead for telehealthcare

### Activities

- Analyse workforce requirements of telehealthcare
- Training needs analysis for telehealthcare
- Change management for telehealthcare
- Design activities to raise understanding of telehealthcare

### Outputs

- Workforce development plans for telehealthcare
- Change management plans for telehealthcare
- Consultation plans on telehealthcare changes

### Knowledge Base

- [General telehealthcare information](#)
- [Telehealthcare information by condition](#)

# Telehealthcare Toolkit: Step 4 – Workforce Requirements

## Resources

### One page guidance notes

- [Define workforce requirements](#)
- [Understanding current workforce for THC services](#)
- [Plan to deliver – current & future](#)
- [Designing training programme](#)
- [Designing change programme](#)
- [Develop an action plan to address workforce needs](#)

### Conceptual tools

- [NHS Institute's role redesign tools](#)
- [Process modelling](#)
- [Training needs analysis](#)
- [T-map or transformation map](#)
- [Swirl: WM NHS large scale change model](#)
- [NHS Institute's 5 Frames for inspiring change](#)

### Resources in other toolkits

- [eHealth Scotland Toolkit: Skills](#)

### Source of training opportunities

- [Higher Education Training](#)
- [PCT Training](#)

### Template

- [Telehealthcare workforce development plan](#)

### Checklist

- [Telehealthcare workforce requirements](#)

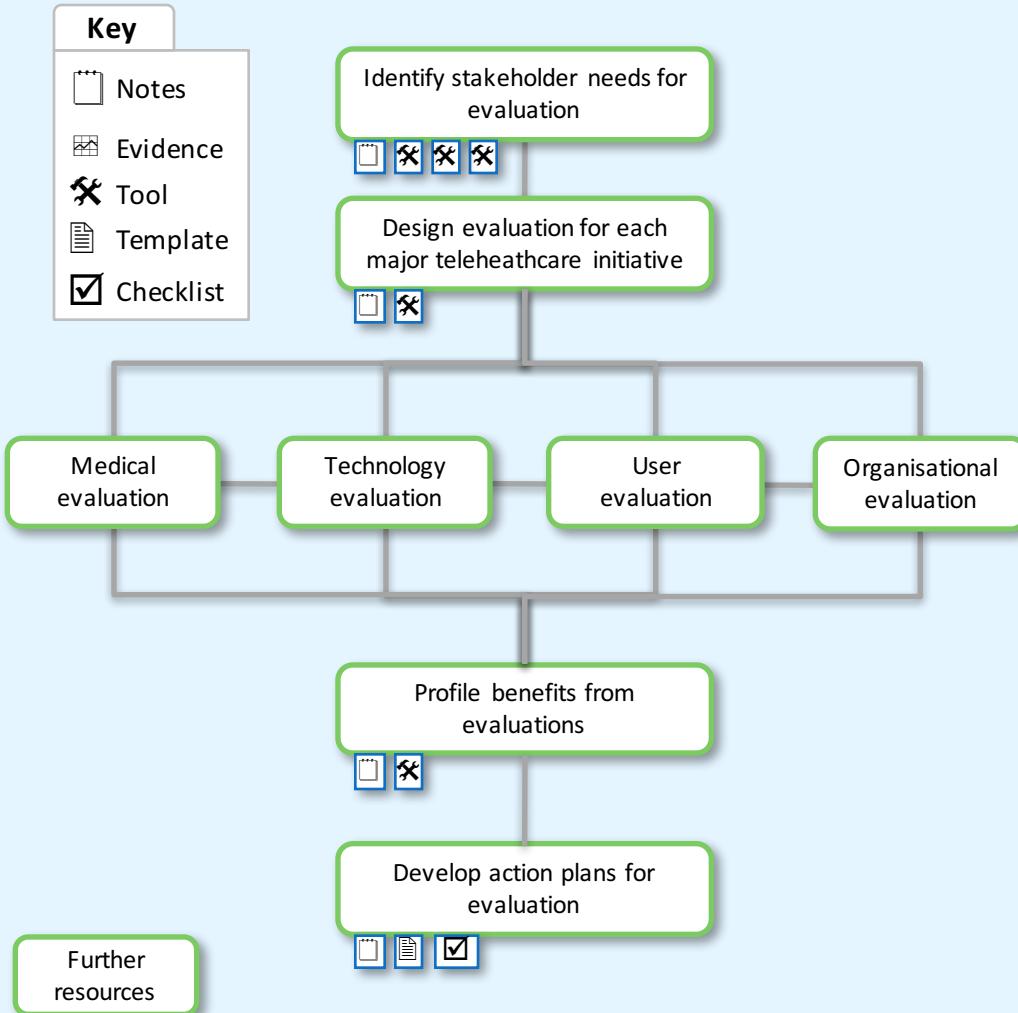
### Case examples

- [Newham trial – Views & opinions of health and social care staff](#)
- [Highland Telecare Service Training Plan](#)
- [Iowa USA – Planning & Training for Telehealth Workforce](#)

### Reference materials

- Telehealth care competences have been identified by NHS West Midlands Telehealthcare Workforce Group 2009 (contact Navinder Dhillon at WM NHS)
- [Report – Understanding the Implementation & Integration of e-Health from the NIHR SDO Programme](#)
- [Skills for Health : Six Steps Methodology to Integrated Workforce Planning](#)
- [DH Report – A High Quality Workforce – NHS Next Stage Review](#)
- [DH Policy – Planning & Developing the National Workforce: The National Framework](#)

## Guidance



### Information

#### Aims

#### Inputs

#### Staff Involved

#### Activities

- Map needs for evaluations for stakeholder groups
- Design methods for healthcare evaluations
- Create a plan for evaluations
- Ensure cost justification for evaluations
- Design uses for evaluations that will influence future telehealthcare initiatives

#### Outputs

- Rationale for evaluation of each telehealthcare service
- Plan for evaluation of telehealthcare programme

#### Knowledge Base

- [General telehealthcare information](#)
- [Telehealthcare information by condition](#)

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# Telehealthcare Toolkit: Step 5 – Designing Evaluation

## Resources

### One page guidance notes

- [Identify stakeholder needs for evaluation](#)
- [Design evaluation of each telehealthcare initiative](#)
- [Profile benefits from evaluations](#)
- [Develop action plans for evaluation](#)

### Conceptual tools

- Apply to stakeholders for evaluations:
  - [Stakeholder inventory](#)
  - [Stakeholder influence mapping](#)
  - [Stakeholder needs & expectations](#)
- [Benefits realisation planning](#)

### Evaluation tools

- [Questionnaires, instruments and evaluation tools used in the Whole System Demonstrator Evaluation](#)

### Benefits realisation tools

- [WMNHS Investing for Health: Introduction to Economic Evaluation](#)
- [QQUIP – Concepts and Tools for Measuring Value for Money in Healthcare](#)

### Template

- [Evaluation Plan for Telehealthcare](#)

### Checklist

- [Designing evaluation](#)

### Case examples

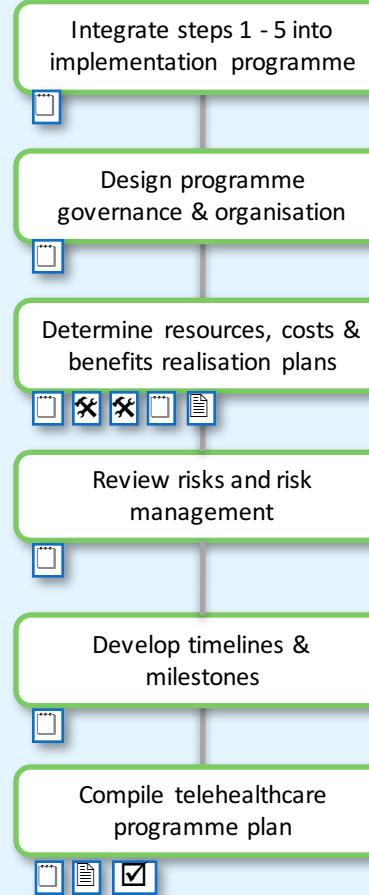
- Stoke on Trent Telehealthcare Evaluation Framework – [Contact Lisa Taylor](#)
- [Aberdeenshire Council – Telecare Project Final Evaluation Report](#)
- [Evaluation of the Whole Systems Demonstrator](#)

### Reference Materials

- [Guidance on Telehealthcare Evaluation from the WSD Action Network](#)
- [When and How to Evaluate Health Information Systems by Jeremy Wyatt](#)
- [Guidelines for the Economic Evaluation of Health Technologies \(3<sup>rd</sup> Edition\) from the Canadian Agency for Drugs and Technologies in Health](#)
- [NHS Integrated Service Improvement Programme \(ISIP\) – Step 3 Benefits Realisation Plan for Projects](#)

## Guidance

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Further resources

## Information

### Aims

- Ensure THC is implemented through a risk managed plan
- Utilise all the funding sources available

### Inputs

- Policies and practices on programme management
- Funding mechanisms for telehealthcare

### Staff Involved

- Clinical leads
- Service managers & commissioners
- Patient representatives

### Activities

- Design governance and organisation structures
- Profile resources needed including funding needs
- Create benefits realisation plan
- Identify sources of funding available for telehealthcare
- Risk manage telehealthcare programme
- Craft into a formal implementation plan

### Outputs

- Proposed governance for telehealthcare
- Risk assessments for programme
- Programme plan for telehealthcare
- Funding options and plans

### Knowledge Base

- [General telehealthcare information](#)

# Telehealthcare Toolkit: Step 6 – Planning Implementation

## Resources

### One page guidance notes

- [Integrate steps 1 to 5](#)
- [Design programme governance](#)
- [Determine resource, cost & benefits profiles](#)
- [Risk management](#)
- [Timelines and milestones](#)
- [Telehealthcare programme plan](#)

### Conceptual tools

- [Risk management](#)
- [Project planning – GANTT](#)
- [Guidance on people issues in projects](#)
- [Funding sources](#)

### Spreadsheet tools

- [NHSI - Spreadsheet providing a generic ROI](#)
- [eHealth Scotland – Spreadsheet for benefits realisation planning](#)

### Resources in another toolkit

- [eHealth Scotland's benefits realisation Toolkit](#)

### Templates

- [Planning implementation template](#)
- [Template – Project initiation document \(PID\)](#)
- [Template – Risks and issues log](#)
- [Template – Stakeholder management plan](#)

### Checklist

- [Planning implementation](#)

### Case examples

- [North Yorkshire – Telecare Implementation Guide](#)
- [Argyll & Bute \(Scotland\) – Telehealthcare Programme](#)
- [Fife Telecare Project Plan](#)

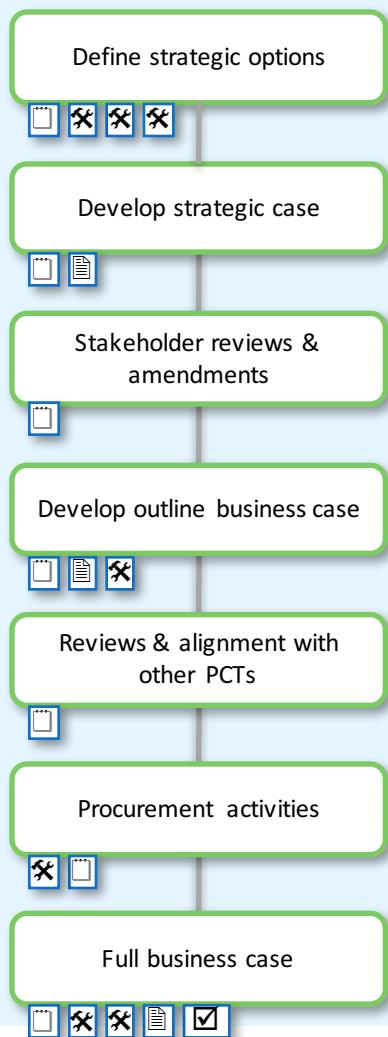
### Reference materials

- [Audit Commission: Implementing Telecare: Strategic Analysis & Guidelines](#)
- [DH Care Networks: Telecare Implementation Guide](#)



## Guidance

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Further resources

## Information

### Aims

- Build the business case for telehealthcare
- Allow stakeholders to influence the business case
- Enable an unequivocal decision on telehealthcare

### Inputs

- Telehealthcare requirements, options, benefits, resource profiles, risk management, funding, implementation planning
- Standards (local & national) for business cases
- Understanding of decision-makers for business case

### Staff Involved

- Finance
- Board members

### Activities

- Create strategic case for review & decision
- Create outline business case for review
- Create full business case for investment decision

### Outputs

- An audit trail of how the business case evolved
- Decisions at the three stages of strategic case, outline business case and full business case

### Knowledge Base

- [General telehealthcare information](#)

# Telehealthcare Toolkit: Step 7 – Business Case

## Resources

### One page guidance notes

- [Define strategic options](#)
- [Develop the strategic case](#)
- [Stakeholder reviews and amendments](#)
- [Develop the outline business case](#)
- [Reviews and alignment with other PCTs](#)
- [Full business case](#)
- [Procurement activities](#)

### Conceptual tools

- [OGC technical note on full business case](#)
- [Options appraisal – simple](#)
- [Options appraisal – multi-criteria scaling](#)
- [Options appraisal – qualitative assessment](#)

### Templates

- [Strategic case template](#)
- [Outline business case template](#)
- [Full business case template](#)

### Templates from eHealth Scotland

- [eHealth Scotland template for OBC](#)
- [eHealth Scotland template for FBC](#)
- [eHealth Scotland template for procurement strategy](#)

### Template from the USA

- [American Telemedicine Association – Business planning template for telemedicine](#)

### Checklist

- [Business case checklist](#)

### Case examples

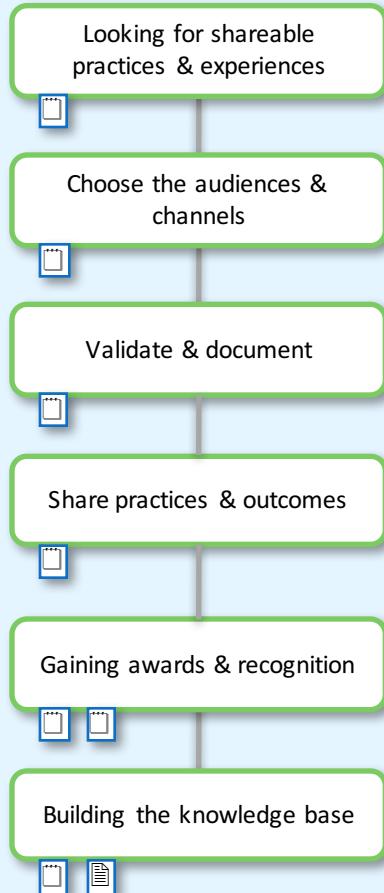
- [Cornwall and Isles of Scilly Outline Business Case – WSD Demonstrator Site for LTC](#)
- [Canada Health Infoway Business Case](#)
- [Alberta Telehealth Business Plan](#)
- [Scotland Joint Improvement Team's \(JIT\) Telecare Strategy 2008-2010](#)
- [Inverclyde Telecare Strategy 2008-2010](#)
- [Orkney Telecare Strategy 2009-2010](#)

### Reference materials

- [UK Treasury – Public Sector Business Cases Using the Five Case Model – Toolkit](#)
- [UK Treasury – Public Sector Business Cases Using the Five Case Model – The Templates](#)
- [Local Government \(Idea\) Capacity Building Programme – Business Case Guidance](#)
- [UK Treasury Guidance – The Green Book](#)

## Guidance

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Further resources

## Information

### Aims

- Share practices and experiences
- Gain recognition and awards

### Inputs

- New telehealthcare practices, experiences and outcomes
- Understanding of audiences and channels for sharing
- Needs for external profile and PR
- Types of documentation available
- Criteria for awards and other recognition
- Criteria and process for journal and on-line publications

### Staff Involved

- Communications
- Translational researchers

### Activities

- Finding best practices to share
- Sharing through the selected channel or communities

### Outputs

- Sharable best practices and other experiences
- When appropriate, awards and recognition
- Case studies deposited in WMNHS THC knowledge base

### Knowledge Base

- [General telehealthcare information](#)

## Resources

### One page guidance notes

- [Looking for sharable practice](#)
- [Choosing the audiences and channels](#)
- [Validation and documentation](#)
- [Sharing practices and outcomes](#)
- [Gaining awards and recognition](#)
- [Building the knowledge base](#)

### Tools

- [Listing of awards and channels for recognition](#)
- [eHealth Scotland Toolkit: Knowledge Management](#)

### Template

- [Template for telehealthcare knowledge management](#)

### Case examples

- [Newham trial – EU 2008 e-Inclusion Award](#)
- [Outer Hebrides telehealth](#)
- [TED \(USA\) Future of home telehealthcare](#)
- [TED \(USA\) Telehealthcare on wireless devices](#)

# Telehealthcare Toolkit: Channels to Evidence

## General Sources of Evidence

### WM Medilink Telehealthcare Menu

Local database of telehealthcare technologies accessible by condition – key & superb resource



### USA's Telemedicine Information Exchange (TIE)

USA database of telemedicine evidence



### Whole Systems Demonstrator Database

Sources of evidence reviewed by clinical librarians at the King's Fund



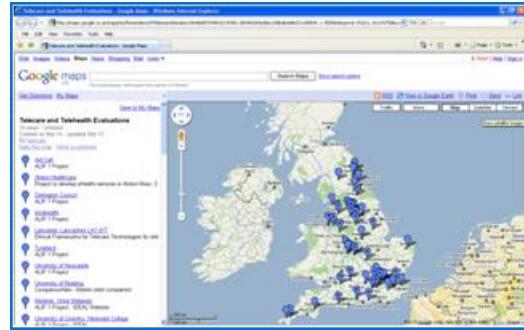
### EU's Medetel Library

EU perspective on telehealth and telecare evidence



### UK Telehealth & Telecare Evaluations

Projects currently underway depicted within a (Google) map of the UK



### NHS Evidence

General NHS resource of searchable evidence – needs an Athens account ideally



## Telehealthcare Evidence

Condition	<b>Business Case View (Tribal)</b>	<b>Technology View (WMMedilink)</b>	<b>Research View (King's Fund)</b>	<b>NHS Evidence View</b>	<b>Google View</b>
<b>Telecare</b>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Asthma	<a href="#">(link)</a>		<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Bladder/ bowel disorders		<a href="#">(link)</a>		<a href="#">(link)</a>	<a href="#">(link)</a>
Coronary Heart Disease (CHD/CHF)	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Chronic Skin Disease	<a href="#">(link)</a>		<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Dementia	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Depression	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Diabetes	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Epilepsy		<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Hearing Impairment		<a href="#">(link)</a>		<a href="#">(link)</a>	<a href="#">(link)</a>
Hypertension	<a href="#">(link)</a>		<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Learning Disability		<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Mobility Impairment		<a href="#">(link)</a>		<a href="#">(link)</a>	<a href="#">(link)</a>
Obesity		<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Respiratory Disorders (COPD)	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Physical Disability			<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>
Stroke		<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>	<a href="#">(link)</a>



# Telehealthcare Toolkit: Channels to Evidence

## Data

- PCT long term conditions (LTC) strategies  
Local data on LTCs, population growth and strategies for addressing need.
- WM NHS Risk Stratification Reporting  
Under development. This system provides reports on the local population and its conditions - stratified by the severity of their disease and associated costs. Contact [nick.longman@bupa.com](mailto:nick.longman@bupa.com) for further information.
- National Statistics  
General economic and social data.
- Institute of Public Care (IPC) - Projecting Older People Population Information System (POSSI) from Institute of Public Care (IPC)  
Data for local authorities in England on older populations including numbers, ages, growth and prevalence of LTCs.
- Projecting Adult Needs and Service Information System (PANSI) from Institute of Public Care (IPC)  
Provides population data and prevalence of some conditions for 18-64 year olds in England by local authority.
- QOF Data  
Data on prevalence of disease by PCT and GP surgery.
- Hospital Episode Statistics (HES) – NHS Information Centre  
Data for periods of admitted care in a hospital trust. Includes the condition and treatment and length of stay along with some data on the patients.
- NHS Statistics for Commissioning – NHS Information Centre  
Range of datasets on population, lifestyle, health and social care performance.
- NHS Comparators - NHS IC and CfH  
Provides a range of comparators and activity data at practice level, enabling a better understanding of local commissioning activity, referral patterns and outcomes.
- Telecare Outcomes  
Comparative data on telecare spend and activity.
- NHS Workforce Statistics – NHS Information Centre  
Statistics on NHS staff numbers, earnings, turnover and absences.
- NHS Evidence – Listing of Commissioning Data Sources  
Extensive list of data sources for commissioning covering both health and other more general data sets.



# Telehealthcare Toolkit: Channels to Evidence

## Telecare

### Summary of THC business case for telecare

- Increasing body of knowledge from practice with 1.7 million UK citizens benefiting from various types of telecare and assistive technologies
- Few RCTs but instead a growing body of case studies demonstrating improvements to care and sound economic case
- Very flexible set of devices can provide benefits to ensure personal safety - enhance mobility – support cognitive impairment – monitor dietary intake – continence management – medication compliance – falls response – hearing and sight impairment – support hospital discharge
- Sandwell STAY project in West Yorkshire is a UK exemplar of good practice and compelling savings and much [referenced in reviews](#):
  - 48% of service users able to stay at home
  - 22% had a fall or accident prevented
  - 23% might have been admitted to residential care
- Straight forward business models comprising a range of devices, monitors and alarms that can be fitted into the home environment and carried by service user. Some service reconfiguration needed.
- All studies are showing compelling benefits. No study is showing harm.
- Key benefits being reported are:
  - Hospital bed days from speedier discharge
  - Reduced hospital admissions
  - Reduced care home bed days
  - Reduced sleepover care and home checks
  - Alleviation of worries of service users and carers
- Pure economic ROI is large and positive - potentially within first year. Realisation of benefits is needed as costs and savings are in different parts of the health system and time delays will result and costs may materialise as additional capacity rather than cash. Partnership of local government and healthcare commissioners and providers needed.

### Evidence sources on THC for telecare

#### Policy

- [DH Building Telecare in England, 2005](#)
- DH Telecare Modelling Toolkit contact [Nathan Downing](#)
- [DH Strategic Business Case Models for Telecare, 2005](#)
- [British Geriatrics Society – Best Practice Guide for Telecare, 2010](#)

#### Systematic Reviews of Research Evidence (recent)

- [2008 systematic review by Barlow et al. at York University](#)
- [2008, Telecare: A Rapid Review of the Evidence 2005-2008 by Iestyn Williams at Birmingham University for WM NHS](#)
- [2006, Care Services Improvement Partnership \(CSIP\), Building an evidence base for successful telecare implementation](#)
- [DH – Review of Evidence Base on Telecare](#)

#### Research Evidence

- [Summary of robust THC research on telecare at WSDAN \(King's Fund\)](#)
- [Tribal Health spreadsheet summary of THC evidence for frail elderly](#)

#### Database of Technologies for Telecare

- [Aivolution – equipment for telecare](#)

#### Key Case Studies

- [North Yorkshire; West Lothian Project](#)
- [Dudley Telecare Services; \(video\)](#)
- [Sandwell, West Midlands](#)
- [West Midlands MediLink i-House](#)
- [Telecare trials at Newham; Netwell Centre, Ireland](#)

#### Feedback

Summary by Tribal Health. Comments to [alan.warr@tribalgroupp.com](mailto:alan.warr@tribalgroupp.com)



# Telehealthcare Toolkit: Channels to Evidence

## Asthma

### Summary of THC business case for asthma

- Very limited research and case study knowledge base on THC for asthma.
- RCTs in Japan, Taiwan and USA show effective for improved self management of asthma in children. Most hospitalisations are caused by non compliance with medications
- Three business models:
  1. On line information and learning
  2. Telephone coaching
  3. Remote monitoring in the home of spirometer readings
- Key benefits being reported are:
  - Fewer emergency hospital admissions (55% reductions)
  - Improvements from better usage of medications
  - Compliance (using smart inhaler technologies)
  - Telephone consultations 30% cheaper than surgery asthma reviews
  - Improved asthma nurse productivity
  - QOL for patient improved. School absences decreased
- Whilst case for telephone coaching and home monitoring is clinically worthwhile the economic case is not reported and ROI is unknown.

### Evidence sources on THC for asthma

#### Policy

- [DH National Strategy for COPD \(including Asthma\)](#)
- [Asthma UK](#)

#### Systematic Reviews of Research Evidence (recent)

- No systematic reviews at this time that are up to date but one from 2003 by [Wainwright and Wooten](#) showed benefits but no economic cases
- [Overview article on new developments in home monitoring of asthma](#)

#### Research Evidence

- [Summary of robust THC research on asthma at WSDAN \(King's Fund\)](#)
- [Tribal Health spreadsheet summary of THC evidence for asthma](#)

#### Key Case Studies

- [Marple Cottage Surgery Stockport – Award winning remote monitoring service for asthma patients](#)
- [Health Net of California](#)
- [Taipei, Taiwan](#)

#### Feedback

Summary by Tribal Health. Comments to [alan.warr@tribalgroupp.com](mailto:alan.warr@tribalgroupp.com)



# Telehealthcare Toolkit: Channels to Evidence

## Coronary Heart Disease (CHD)

### Summary of THC business case for CHD

- Growing number of studies including many RTCs. Note that some studies do report no improvements but most are reporting a range of improved outcomes over normal care. Several systematic reviews confirming this.
- Where the economic case has been measured then substantial cost savings reported (10-40%)
- Two dominant THC models:
  1. Nurse led coaching and condition management using telephone and web
  2. Telemonitoring including electrocardiogram, oxygen saturation, blood pressure and temperature. Interpretation of electrocardiogram should be by specialist clinicians
- Benefits being reported are:
  - Lower one year mortality rates (circa 20%)
  - Lower levels of hospitalisation (circa 20% average)
  - Shorter lengths of stay when hospitalised (circa 10%)
  - Earlier detection of post cardiac surgery complications
  - Improved clinical judgements
  - Improved compliance with medications
  - Improved self management of condition – BP, cholesterol, medications, exercise, smoking
  - Reduced patient visits to surgery and shorter nurse visits
  - QOL not so conclusive but some positive studies
  - Good THC patient acceptance (90% short term, 50% long term)
- Economic ROI seems positive and substantial and robust. Reduced deaths appear significant as do hospitalisations. And CHD / CHF is a major area of cost for the healthcare system.

### Evidence sources on THC for CHD

#### Policy

- [DH – National Service Framework for CHD 2000 \(p96 for telehealth\)](#)
- [British Heart Foundation – Information sheet on telemedicine](#)

#### Systematic Reviews of Research Evidence (recent)

- [2010 Overview of systematic reviews for CHD by Schmidt et al](#)
- [2010 Systematic review and meta analysis for CHF by Polisena et al.](#)
- [2009 Systematic review of THC for CHF by Ditewig et al.](#)
- [2009 Systematic review for THC for secondary prevention of CHD by Neubeck et al.](#)

#### Research Evidence

- [Summaries of robust THC research studies at WSDAN \(King's Fund\)](#)
- [DH Whole Systems Demonstrator will report in 2011 on large scale RCT](#)
- [Tribal Health spreadsheet summary of THCevidence base for CHD](#)

#### Database of Technologies for CHD Telehealthcare

- [Alvolution – equipment for CHD](#)

#### Key Case Studies

- [Hull – HeartCycle Project](#)
- [Knowsley Health & Wellbeing](#)
- [Newham WSD Trial](#)
- [Cornwall](#)
- [Veterans Affairs](#)

#### Feedback

Summary by Tribal Health. Comments to [alan.warr@tribalgroupp.com](mailto:alan.warr@tribalgroupp.com)



## Chronic Obstructive Pulmonary Disease (COPD)

### Summary of THC business case for COPD

- There is a good body of research and cases for COPD. Whilst some are inconclusive, the majority are showing various benefits. The economic case is not well addressed in research
- A key study in S.E. Essex used telemonitoring with NHS Direct nursing staff and has reported very positive outcomes both clinical and economic. This large deployment is well reported and is being extended. The report concluded that "*If this service was extended to more patients with COPD there would be significant potential financial savings for the local healthcare economy*".
- Service reconfiguration is needed and training of staff in equipment has proven difficult in some case examples
- Two dominant THC models:
  1. Nurse led telephone coaching and condition management
  2. Home telemonitoring with case management
- Benefits being reported are:
  - Reduced hospitalisations (30-80%)
  - A&E visits reduced (up to 75%)
  - GP visits reduced (up to 50%)
  - 999 calls reduced (up to 70%)
  - Reduced nurse/case manager visits (circa 10%)
  - Overall significant reduction in exacerbations
  - QOL inconclusive generally but strongly improved in SE Essex
  - Improved self management of condition
  - Improved coping with symptoms reported
- Reductions in mortality are not reported in studies or in the SE Essex project, so are best excluded as a benefit
- The SE Essex project has increased the case for a strong ROI available through reduced use of a number of health services, particular hospital and emergency services. Targeting of THC through risk stratification is probably key.

### Evidence sources on THC for COPD

#### Policy

- [DH Strategy for COPD Services](#)
- [British Lung Foundation](#)
- [Scottish Centre for Telehealth: COPD Review](#)
- [Education for Health Report: COPD Uncovered](#)

#### Systematic Reviews of Research Evidence (recent)

- [2010 Home telehealth for chronic obstructive pulmonary disease: a systematic review and meta-analysis by Polisena et al.](#)
- [2009 Systematic Review of Telemedicine Services for Patients Affected by Chronic Obstructive Pulmonary Disease \(COPD\) by Bartoli et al.](#)

#### Research Evidence

- [Key Report - 'At home, not alone' COPD Telehealth Project Final Evaluation – February 2010 , NHS Direct](#)
- [Summaries of robust THC research studies at WSDAN \(King's Fund\)](#)
- [DH Whole Systems Demonstrator will report in 2011 on large scale RCT](#)
- [Tribal Health spreadsheet summary of THC evidence base for COPD](#)

#### Database of Technologies for COPD Telehealthcare

- [Alvolution – equipment for COPD](#)

#### Key Case Studies

- [South East Essex / NHS Direct](#)
- [Newham](#)
- [Swindon](#)
- [West Lothian, Walsall, Central Lancashire](#)

#### Feedback

Summary by Tribal Health. Comments to [alan.warr@tribalgroupp.com](mailto:alan.warr@tribalgroupp.com)



## Chronic Skin Disease (Tele-dermatology)

### Summary of THC business case for Chronic Skin Disease

- Teledermatology is a maturing field with high levels of satisfaction for teledermatology consultations by both patients and clinicians. Where studies and cases have reviewed economic case the findings are contradictory with both higher and lower costs being found
- Two main business models:
  1. Images and consultation from GP or nurse to dermatologist
  2. Images and consultation between dermatologists – usual between consultant and academic dermatologists (specialist)
- Benefits being reported are:
  - Access to dermatologists which are in short supply and to specialists
  - Access to services at a distance
  - Phototriage of patients to general and plastic surgery
  - Avoiding unnecessary referrals to specialists
  - Fast tracking skin cancer
- The economic drivers are shortages of specialist dermatology capacity and access to services at a distance, but the ROI is uncertain
- Requirements for success have been investigated and include:
  - Political support
  - Benefits and commitments sufficient to outweigh effort needed
  - Pragmatic approach to efficacy and safety
  - Flexibility in practice by both individuals and the organisation

### Evidence sources on THC for Chronic Skin Disease

#### Policy

- [British Teledermatology Society](#)
- [International Society of Teledermatology](#)

#### Systematic Reviews of Research Evidence (recent)

- [2010 Tertiary teledermatology: a systematic review by van der Heijden et al.](#)
- [2007 Maturity of teledermatology evaluation research: a systematic literature review by Eminović et al.](#)
- [2007 Teledermatology in the UK: lessons in service innovation by Finch et al.](#)
- [2006 Ten years of teledermatology by Eminović et al.](#)
- [2006 Teledermatology research review by Whited](#)

#### Research Evidence

- [Summaries of robust THC research studies at WSDAN \(King's Fund\)](#)
- [Teledermatology Society's List of References \(USA\)](#)

#### Key Case Studies

- [NHS Forth Valley](#)
- [Nottingham](#)

#### Feedback

Summary by Tribal Health. Comments to [alan.warr@tribalgroupp.com](mailto:alan.warr@tribalgroupp.com)



# Telehealthcare Toolkit: Channels to Evidence

## Diabetes

### Summary of THC business case for diabetes

- Good body of evidence of improved management of diabetes from telehealthcare
- Includes substantial number of RCTs and several in USA are large scale deployments with largest at 27,000 patients
- Large body of case studies including Birmingham Own Health and DH Whole Systems Demonstrator
- Studies that have included the economic case are consistently positive with benefits greater than costs
- Three THC models:
  1. Web based information and educational materials
  2. Nurse / dietitian based telephone coaching service
  3. Reporting of blood glucose level over the internet with remote monitoring and case management by a nurse
- Benefits being reported are:
  - Significantly improved management of blood sugar levels (HbA1C)
  - Improvements in cholesterol and blood pressure
  - Better adherence to blood monitoring and exercise routines
  - Better adherence to retinal and foot examinations
  - Lower use of A&E (circa 10-20%)
  - Lower admissions to hospital and bed days (circa 20% & 10%)
  - Lower prescribing costs (circa 10%)
  - Lower care visits
  - Improved service user satisfaction levels
  - Improvements in health related QOL
- Costs are not reliably available. But studies that have reported economic case are showing reduced costs of care exceeding additional costs of THC services. Positive but low ROIs available.

### Evidence sources on THC for diabetes

#### Policy

- [DH National Service Framework for Diabetes](#)
- [Diabetes UK \(Charity\)](#)

#### Systematic Reviews of Research Evidence (recent)

- [2009 systematic review and meta analysis of research on THC for diabetes by Polisena et al. concluded "In general, home telehealth had a positive impact on the use of numerous health services and glycaemic control"](#)
- [2008 systematic review of the cost effectiveness of telehealthcare \(including for diabetes\) by Rojas & Cagnon concluded "...there is fair evidence of cost-effectiveness for many telehomecare applications"](#)

#### Research Evidence

- [Summaries of robust THC research studies at WSDAN \(King's Fund\)](#)
- [DH Whole Systems Demonstrator will report in 2011 on large scale RCT](#)
- [Veteran Affairs THC deployment to 17,000 veterans - half with diabetes](#)
- [Tribal Health spreadsheet summary of THC evidence base for diabetes](#)

#### Database of Technologies for Diabetes Telehealthcare

- [Alvolution – equipment for diabetes care](#)

#### Key Case Studies

- [Birmingham OwnHealth telephone support for diabetes](#)
- [Newham WSD Trial – Diabetes case examples](#)

#### Feedback

Summary by Tribal Health. Comments to [alan.warr@tribalgroupp.com](mailto:alan.warr@tribalgroupp.com)



# Telehealthcare Toolkit: Channels to Evidence

## Depression

### Summary of THC business case for depression

- Several studies worldwide have shown that telehealthcare is effective in the monitoring and management of depression, however due to the nature of the condition, most studies to date have been qualitative in approach.
- Many of the key studies completed have looked at post traumatic stress (PTSD) in veterans and have been funded by the Department of Veterans Affairs
- A set of THC models is emerging:
  1. Remote screening to identify the extent of the condition
  2. computerised cognitive behaviour therapy (CCBT)
  3. Remote therapy, predominantly Cognitive Behavioural Therapy (CBT)
  4. Remote professional support or support network
  5. Remote monitoring of adherence to medication regimens
- Benefits being reported are:
  - Lower prevalence of depression
  - Better adherence to medication
  - Improved access to care and personalisation
  - Better patient satisfaction
  - Productivity of health practitioners due to shorter consultations
- Studies and cases have not yet examined well the economics of telehealth for depression, so neither its cost-effectiveness nor ROIs can be suggested with confidence

### Evidence sources on THC for depression

#### Policy

- [DH Policy New Horizons: a shared vision for mental health](#)
- [NICE 2008 Computerised cognitive behaviour therapy for depression and anxiety](#)
- [National Mental Health Development Unit](#)
- [Mental Health Foundation, Mind and Sane](#)

#### Systematic Reviews of Research Evidence (recent)

- [2010 The evidence base: the management of depression by Nick Goodwin](#)
- [Computerised cognitive behaviour therapy for depression and anxiety update: a systematic review and economic evaluation by Kaltenthaler](#)

#### Research Evidence

- [Summaries of robust THC research studies at WSDAN \(King's Fund\)](#)
- [DH Whole Systems Demonstrator reporting in 2011 & includes depression](#)
- [Tribal Health spreadsheet summary of THC evidence base for depression](#)

#### Database of Technologies for Depression

- [Alvolution – equipment for depression](#)

#### Key Case Studies

- [“Beating the Blues” Computerised Cognitive Behaviour Therapy](#)
- [Telemental health proposals in Scotland](#)
- [USA Dept of Veterans Affairs](#)

#### Feedback

Summary by Tribal Health. Comments to [alan.warr@tribalgroupp.com](mailto:alan.warr@tribalgroupp.com)



## Hypertension

### Summary of THC business case for hypertension

- There are few RCT studies of telehealthcare usage for hypertension. But generally the case examples show improvements in the management of blood pressure. The most recent cases are showing very significant improvements with Kaiser Permanente in the USA achieving 50% improvements in patients getting their BP under control
- Two THC models:
  1. Nurse-led telephone coaching
  2. Home telemonitoring activating interventions
- Benefits being reported are:
  - Better control of blood pressure within healthy levels (up to 50% more likely)
  - More complete follow up
  - Better adjustment of medications
  - Access to care from rural or remote locations
- Economics have not been well addressed by cases and studies. But short term ROI appears low. But hypertension leads onto more serious conditions, if not managed

### Evidence sources on THC for hypertension

#### Policy

- [DH National Pulmonary Hypertension Standards](#)
- [British Heart Foundation – Information sheet on telemedicine](#)
- [Blood Pressure Association](#)

#### Systematic Reviews of Research Evidence (recent)

- [2009 The Role of Telemedicine in Helping to Manage Hypertension - A Review of Health Outcomes and Cost Benefit by Grange et al.](#)
- [2006 A systematic review of the effects of home blood pressure monitoring on medication adherence by Ogedegbe and Schoenthaler](#)

#### Research Evidence

- [Summaries of robust THC research studies at WSDAN \(King's Fund\)](#)
- [Tribal Health spreadsheet summary of THC evidence base for hypertension](#)

#### Key Case Studies

- [Quebec, Canada](#)
- [Kaiser Permanente, Colorado](#)

#### Feedback

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## Neurological Conditions (incl. Dementia)

### Summary of THC business case for neurological conditions

- A rising body of case studies on supporting dementia patients (and carers) through assistive technologies and telecare.
- THC model:
  1. For dementia, the use of a range of telecare services for prompts, medication compliance, personal safety and location tracking
- Benefits being reported are:
  - Improvements in QOL
  - Safety improvements
  - Alerts to carers or professionals when patient wanders
  - Reductions in care visits
  - Avoiding the need for residential care
  - Reduced stress on carers
- The economic case is good based on enabling patients to remain in their homes longer and to avoid expensive residential care homes. Business case seems strong. ROI will be impacted by differences in timings of early costs and later benefits in other parts of the care system

### Evidence sources on THC for neurological conditions

#### Policy

- [DH – National Dementia Strategy](#)
- [DH Care Networks – Dementia](#)
- [DH National Carers Strategy](#)
- [Age Concern](#)
- [Alzheimers Society](#)

#### Systematic Reviews of Research Evidence (recent)

- [2008 Telehealth for Acute Stroke Management \(Telestroke\): Systematic Review of Studies by Canadian Agency for Drugs and Health Technologies](#)
- [2008 A systematic review of networked technologies supporting carers of people with dementia by Powell et al.](#)

#### Research Evidence

- [Mike Clark of WSDAN - Collection of evidence on telecare and dementia](#)
- [Summaries of robust THC research studies at WSDAN \(King's Fund\)](#)
- [Tribal Health spreadsheet summary of THC evidence base for dementia](#)

#### Database of Technologies for Neurological Conditions Telehealthcare

- [Alvolution – equipment for diabetes care](#)
- [at Dementia – information on assistive technology for dementia](#)

#### Key Case Studies

- [Stafford County Council](#)
- [Newham](#)

#### Feedback

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