Calculating the Economic Value of a Physiotherapy Service

User manual

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INTRODUCTION

The Chartered Society of Physiotherapy (CSP) has funded the development of three evidence informed models upon which calculation of the economic value of physiotherapy services may be based. This work has been carried out by the York Health Economics Consortium and is based on the currently available published evidence (up to year end 2009).

The work has concentrated on three areas of clinical service delivery, and is uni-professional in focus. These three areas are:

1. Stroke

2. Low Back Pain

3. Pulmonary Rehabilitation in Chronic Obstructive Pulmonary Disease.

About the Manual

The manual is divided into three parts, one for each evidence-based model.

- A PDF version of the literature review, from which the model is derived, accompanies each model.

- Working through the models will enable you to derive information about the relative costing and savings available in your service BUT it will only be as useful as the accuracy of the information you put into the model.

- The models require that you populate them with information about your local service; they need to be grounded in your local context.

- This will enable you to derive a broad picture of the economic value of your service, BUT it must be grounded in the broader elements of your service.

- Each model gives figures for the service in isolation. Physiotherapy services do not work like this, are not planned like this and in fact are unlikely to be commissioned or purchased individually.

What does this mean?

- It means that while you make the calculations for (say) Low Back Pain management, you will need to determine how provision of this service crosses with

other musculoskeletal services, and how the staff profile that you have given to deliver for low back pain will also deliver in other musculoskeletal areas.

- Similarly, for stroke, you will need to determine how the provision of services for stroke survivors co-ordinates with other neurological services; where are the economies of scale for transferable skills? where are the 'pinch points' that require specialist skills?

- In essence you will need to stratify your workface and map across service provision to see how they interact.

- By doing this you will be able to understand your workforce now, what it does, and then identify learning and skill needs based on projections of future demand (gap analysis).

- You will then be able to map elements of service provision against each other so that you can construct a workforce shape that will enable you to best meet future demands.

About the Models

Three spreadsheets have been created to demonstrate the impact of the use of physiotherapy on outcomes for patients and resources for commissioners for three conditions:

- Stroke
- Back pain (acute and chronic)
- COPD practice

This manual should be read together with 'The Economics of Physiotherapy Summary Report' from York Health Economics Consortium (with additional comments following peer review) available at http://www.csp.org.uk. The latter summarises the main assumptions and the results for a typical primary care trust.

This manual summarises the structure of each model and uses pictures of the key screens to describe the data fields, the inputs which can be inserted by users, and the results.

Each of the spreadsheets is essentially the same in structure and user input. All are Microsoft Excel based. The spreadsheets for each of the conditions are built around underlying models for each of the conditions, which are based on patient pathways. As with all models, they are representations of reality and are designed to generate tractable and defensible solutions based upon the evidence available.

As can be the case for models of this nature, assumptions on cost or effectiveness have been made to fill gaps in evidence or where the evidence is not of sufficient detail. Available evidence does not point to how the effectiveness or efficiency of physiotherapy

varies by the grade of the physiotherapist employed. This is a key point and must be kept clear in the mind of the user when creating local cases and interpreting findings.

These models will not give you an optimum workforce structure; you will need to develop this from costs derived from the model, knowledge of your current and projected service demand, knowledge of your existing workforce, and projections of what you will need in the future.

What should you know about your service before you start?

When assessing your services, it is useful to think in the manner of a commissioner or purchaser. [1] Achieving excellence in service delivery will require dialogue and co-operation between commissioners and providers and it is intended that these models will assist in developing a shared approach in achieving an improved understanding of the benefits realisation of physiotherapy intervention in stroke, COPD / pulmonary rehabilitation and back pain.

How will the models help?

The models will derive the economics of your proposed service for you, based on the local data that you input and based on evidence of the success of physiotherapy as an intervention.

The model will not locate the economics in the whole picture of your service. In calculating the value for money, this will need to be situated in the context of other care pathways and services provided by the team and the workforce plan for the whole service. Establishing a service for a single entity such as stroke, COPD or back pain is only a single element of service redesign. To achieve excellent services there are many layers of provision that require integration of provision and joint assessment of need.

Assessing Need & Demand – strategic planning

Action:

- Work with the public health observatory[2] to access information on the health needs of your population; identifying those who may be disadvantaged or marginalised in society: target identified need

- Use a proven tool like the combined predictive model to risk stratify your local population, e.g. King's Fund tool [3]

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[1] While much of the language in the text is applicable to England, the models are applicable to physiotherapy services across the UK
[2] Intelligent Commissioning; Report by the Association of Public Health Observatories June 2009

Learn about:

- Current demand?

- Demographic profile of population and the evidence base for impact on incidence and prevalence of the condition?

- Age mix?

- Gender mix?

- Ethnicity: existing, accounting for immigration demand, cross border workforce mobility, traveller population?

- Actual and projected success of health promotion strategies such as healthy eating, atrial fibrillation monitoring, smoking and smoking cessation programmes, active lifestyle advice as indicators of incidence and prevalence?

- Projected impact of prevention strategies?

- Projected improvements in technological intervention?[4]

Deciding Priorities – strategic planning

Action:

- Know your local health and social care economy vision, key priorities

- Know the national perspective and national drivers for local delivery

Learn about:

- Examples of good practice in stroke, musculoskeletal or COPD service provision; the 'who, what, when, where and how' of these exemplar services

- What makes these services good?

- What can be translated into your services?

- Can the existing services be remodelled in the same way?

- Can the services work in a mutually beneficial manner for service user benefit, i.e. integrated provision, single point of access, single point of delivery for some services?

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[3] Combined Predictive Model, Kings Fund, accessible at
http://www.networks.nhs.uk/uploads/06/12/combined_predictive_model_final_report.pdf accessed November 2009
[4] http://www.qualityobservatory.nhs.uk accessed November 2009

Reviewing Service Provision – strategic planning

Action:

- Work with service providers to agree outcome data that needs to be collected for a specific service area to demonstrate effective intervention

- Ensure robust systems are put in place to collect this data

- Link this to the quality frameworks and if appropriate contracts including payment frameworks, quality markers

- Develop systems and processes to encourage constant patient, service user and carer feedback; audit changes made as a result of feedback on user experience.

Learn about:

- What services are currently available for stroke survivors, people with COPD or back pain? Is the standard consistently good?

- Is service provision based on current evidence?

- What support is available for family, carers and all those affected by stroke, COPD or long-term back pain?

- Who provides these services?

- What do these services cost?

- What is the return on investment?

- Primary care, independent sector, 3rd sector support?

- Waiting times?

- Knowledge of and access to services?

- Geographical location?

- Family support systems?

- Does what is in place meet current requirements specified in national guidelines or service frameworks such as the National Stroke Strategy, NICE guidelines, or similar?

- What is required to make the current service provision fit for purpose?

- Will what is currently in place meet projected demands?

- What will be needed to meet projected demands based on incidence and prevalence data?

- What skills and workforce shape will be required to deliver to meet the current and projected need?

- What education and training is available, what will be needed in the future, how will it be provided?

- How is evidence informed practice demonstrated?

- Are personalised care plans provided; what about joint planning or integrated assessments?

- Do patients have a named key worker or case manager?

- Is there a local carers strategy – what does it offer?

- Is there appropriate IT resource so that clinical pathways can be interlinked using shared records and joint care plans?

Improving Services

Consider:

- The shape and structure of supply – how will 'form' ensure required 'function'?

- How will demand for services be managed so that it is equitable and addresses inequalities?

- How will services be evaluated and ensure an ethos of continuous improvement?

Designing the Service

Consider:

- Stages of the journey for the person with stroke, COPD or back pain: the management of acute onset, successful self-management of and (if appropriate) living with a long-term condition through to increasing support and end of life care, e.g.
  - Acute care
  - Immediate post-acute rehabilitation period
  - Vocational/occupation related rehabilitation and return to work
  - Ongoing rehabilitation
  - Secondary prevention of subsequent event/onset
  - Management of co-morbidities/concomitant illness/problems
  - Entry into appropriate subsequent pathways e.g. end of life care

- How will the requirements for the person with stroke, COPD, long-term back pain be similar to those of others with long-term conditions?

- How will the specific requirements for stroke, COPD and back pain be identified and accommodated?

- Provision of services for others impacted upon by living with someone with a long-term condition i.e. carers, partners, children, employers

- The issues key to making the provision of these services high quality:

  - **Access:** is there direct access/self-referral to the service?
    There is substantial evidence to support self-referral as being effective in reduction of waiting times for access to services, improving patient satisfaction with a reduction in the 'referral merry go-round', and better assisting patients to manage their conditions, thereby reducing the development of co-morbidities and having a positive impact in secondary prevention.
    Does the service provide ongoing availability of the right services at the right time by the right provider, simultaneously meeting the needs of others with long-term conditions?
    Is the service geographically convenient? is advice available by telephone with extended hours to suit return to work?

  - **Dignity and the patient as a person:** how does the service offer personalized and individualised care?
    How is respect for the individual evidenced, and are quality of life issues at the centre of the planning?

  - **Integrated care and partnership:** is there evidence of partnership in decision making between the service user and the practitioner?
    Are services focused around the needs of the person with stroke, COPD, back pain – what evidence is there for this?
    How does the service engage and empower the individual in taking responsibility for secondary prevention and for maximising the outcome of interventions?
    Is the model of care multi-professional?
    Is there seamless transition from one stage to the next?
    Are all elements of need addressed?

  - **Choice and personal control:** is there evidence of close working with service users, and advocacy for service users and all those affected by the presence of a long-term condition?
    Is decision making a user–led, clear and supported process?
    How does the service promote and enable social inclusion, where and how is choice offered, and does the information offered meet quality standards?
    How are satisfaction and experience incorporated into service evaluation and ongoing development?

o **Stroke, COPD and chronic back pain as a long-term conditions and quality of life:** does the service acknowledge individuals as people living with a long-term condition that has an impact upon future health, wellbeing and quality of life? How does the service work across the boundaries to ensure that the service is integrated and provides what is needed to enable an individual, as far as possible, to develop the capacity to live successfully with a long-term problem?

Achievement – what data do you need to tell you if the service is improving?

- Service user feedback is positive about key issues of concern such as access, continuity of care, experience of health and well-being services

- How will public and patient views be sought?

- Evidence on access, referral, assessment of individual need, advice on choices, treatment and other activities

- Clinical and multi-agency teamwork enables all practitioners to deliver high quality care, achieve agreed outcomes, maximise productivity, promote and measure service user experience

- Variability is reduced

- Seamless model of service provision

- Practitioners have confidence that the systems will support and empower them to deliver, and time spent with individuals and families is maximised.

Managing performance – how will you evaluate the service?

Within the service, how is quality of life for the person determined? As far as possible:

- Do individuals live their own lives to the full, maintaining their independence and managing their own condition?

- Are those with Stroke, COPD, back pain less dependent on services than previously?

- Where carers are involved, are they able to balance their role and maintain an acceptable quality of life?

- Do people receive the support they require to be independent and only go into hospital or care when they have a need?

- Are people put in control of the services they receive?

- Do service users feel respected, safe, and secure that services are sensitive to their needs and respect their right to privacy?

- Do people have a genuine choice in how and when services are provided and know how to access the support they need to make such choices?

- Do people know what is available to them locally, what they are entitled to and who to contact when they need help?

- Are people able to engage socially as much as they wish, avoiding loneliness and isolation?

- Do people feel that they are treated fairly and equally by services?

- As appropriate, are people able to be financially secure, find employment or access to benefits and allowances?

- Do people feel able to contribute to community life if they wish to and able to access information when they need it? [5]

- Within the service, do the service providers demonstrate the transformational attributes of the workforce? These being:

  1. Health promoting practitioners, focused on health, wellbeing and addressing health inequalities

  2. Clinical innovators and expert practitioners enabling increasingly complex care to be provided at home

  3. Professional partners in expert-to-expert relationship with patients and in building teams across organisations

  4. Entrepreneurial practitioners exploring business opportunities, including social enterprises and other innovative approaches

  5. Leaders of service transformation: individual, organisational and across systems

  6. Champions of clinical quality using new techniques and methodologies to embrace continuous improvement [6]

Within the service, is it clear how quality of the service is achieved?

- What does high quality care look like?

- Is there a quality measurement framework for the service?

- Is the data available to staff, patients and the public?

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[5] Making Policy Count: developing performance indicators for health and social care partnerships, Simon Medcalf, Local Performance Strategy DH, presented 29th September 2009
[6] Ambition, action, achievement: how to deliver quality care closer to home; HSJ Supplement 9 July 2009, DH

- Is there a mechanism for recognising and rewarding quality?[7]

- Are practitioners empowered to improve quality?

- How is quality in the workforce safeguarded: regulation, CPD?

- How is innovation supported and enabled?[8]

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[7] The Good Indicators Guide: Understanding how to use and choose indicators; NHS Institute for Innovation and Improvement 2008
[8] 'Looking Good' in Ambition, Action Achievement, HSJ supplement 9 July 2009, DH

PART 1: STROKE

The Underlying Model - Schematic
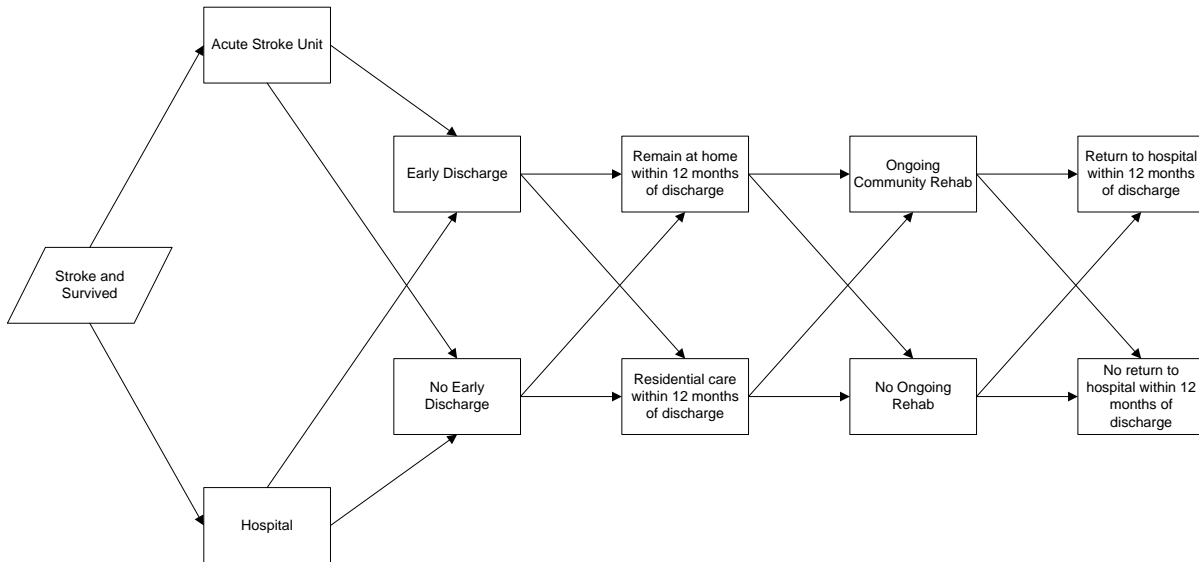
The Underlying Model - Description
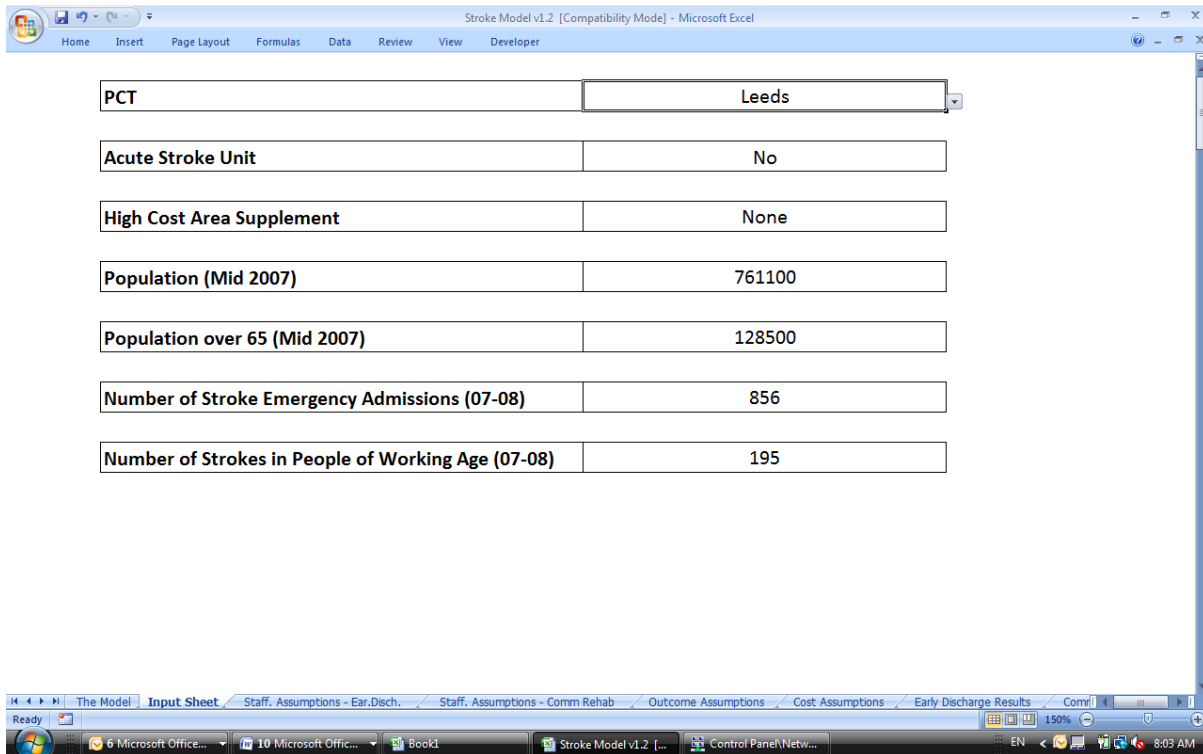
The model is concerned with patients who survive stroke and are admitted either to 'normal' hospital care or to an acute stroke unit. Whilst physiotherapy can be provided in either of these settings, the model looks at the impact of physiotherapy at discharge in two other areas: to enable early discharge from acute services as part of a multidisciplinary team, and to provide ongoing rehabilitation in a community setting.

Within the model three outcomes are considered on which physiotherapy delivered in the two areas above can have an impact over a twelve-month period following discharge:

- Whether early discharge is achieved resulting in a reduction in the length of stay in hospital

- Whether a stroke survivor remains at home or is placed in residential care

- Whether a stroke survivor is readmitted to hospital

The Input Screen

Figure 1: The Input Screen - Stroke

All the spreadsheets have an input screen where the user selects the PCT they are interested in analysing. On selection of a PCT, data is automatically populated on population and incidence or prevalence.

For the stroke spreadsheet, PCT level information is provided on:

- the population and population over 65

- the number of stroke emergency admissions

- the number of those admissions involving people of working age (<65)

Stroke data is taken from Hospital Episode Statistics (HES) data for 2007-08.

The user must also select whether an acute stroke unit is used by the acute service commissioned by the PCT and, for cost purposes, whether the PCT is in a high cost supplement area and, if so, which (e.g. inner London).

The Assumption Sheets

All the spreadsheets are driven by a number of estimates of cost and effectiveness that have been derived from published evidence. Where there is no published evidence but an estimate of cost or effectiveness is required for the generation of results, assumptions have been entered.

The values within the assumption sheets can be modified by the user, although it is suggested that the 'user defined' columns are used to make changes unless the user has robust evidence to change the other values. Throughout the assumption sheets, where a range of estimates have been found in the literature or are plausible, lower and upper ranges of estimates are provided. Cells where assumptions have been made are highlighted in yellow.

The sources of the estimates can be found in comment boxes that can be highlighted by hovering the cursor over, or clicking on, any cells with a red triangular tab in the top right corner.

If the user does not wish to change any of the assumptions then the spreadsheet will generate results that can be accessed through the results sheets.

For the stroke spreadsheet, there are four assumption sheets.

The first two sheets look at staffing levels and costs for early discharge and community rehabilitation respectively, as shown below.

Fig 2. Staff Assumptions – Early Discharge - Stroke

For the model to generate results, estimates are required for the size, nature and cost of the multi-disciplinary early discharge team. The size of the team is set at the number of whole time equivalent (WTE) professionals required per 100 patients. The professional roles within the team were established from the literature.

Fig 3. Staff Assumptions – Community Rehab - Stroke

WTE Per 100 patients

	Base Case	Lower Estimate	Upper Estimate	User Defined
Physiotherapist	1.00	0.80	1.20	

Seniority of Team/Wage Assumptions

	Base Case	Lower Estimate	Upper Estimate
Physiotherapist	Specialist (Grade 6)	Therapist (Grade 5)	Advanced (Grade 7)

Estimated Annual Costs per WTE

Inner London

	Standard Assumption	Lower Estimate	Upper Estimate	User Defined
Physiotherapist	£47,977	£40,409	£54,926	

Outer London

	Standard Assumption	Lower Estimate	Upper Estimate	User Defined
Physiotherapist	£46,533	£35,909	£53,144	

London Fringe

	Standard Assumption	Lower Estimate	Upper Estimate	User Defined
Physiotherapist	£43,784	£37,049	£50,532	

Rest of England

	Standard Assumption	Lower Estimate	Upper Estimate	User Defined
Physiotherapist	£42,377	£35,909	£48,988	

As is the case for early discharge, estimates are required of the number of physiotherapists per 100 stroke survivors for community rehabilitation, as well as the costs of providing this service. The physiotherapy in a community setting may be delivered as part of a multi-disciplinary team. However, the evidence of the effectiveness of physiotherapy over the first twelve months of physiotherapy in keeping people out of hospital appears to be independent of whether it is delivered in a team setting or in isolation.[9] Therefore, only costs of employing community physiotherapists are considered.

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[9] Refer to Literature Review

Fig 4. Outcome Assumptions – Stroke

Estimates are required on the proportion of patients suitable for early discharge and community rehabilitation, the effectiveness of discharge teams in reducing the length of stay in hospital and admission to residential or nursing homes, and the effectiveness of community rehab on reducing days in hospital due to readmission. These outcomes, as is the case for all the spreadsheets, are those where the literature supports physiotherapy as having an impact.

Fig 5. Cost Assumptions - Stroke

Finally, the stroke spreadsheet requires estimates of the costs of the events potentially avoided from the use of physiotherapy. Included in this are estimates of the net benefit to the exchequer of keeping a stroke survivor of working age within work rather than in the "Support Group" of incapacity benefit claimants. With no published evidence on the effectiveness of physiotherapy in keeping stroke survivors of working age in work, the spreadsheet estimates how many of these stroke survivors would need to be kept in work to make the use of physiotherapy proposed by the sheets cost neutral.

The Results Sheets

Each of the spreadsheets presents the results in equivalent ways, showing the number of physiotherapists and other team members required with associated costs. Estimates of overall effectiveness of the physiotherapists, as well as associated cost savings, are then shown with an estimate of the net cost of the physiotherapy taking the potential savings into account.

Various scenarios are produced based upon the estimates in the assumption sheets. The 'base case' scenario is built upon the base case estimates. The 'best case' scenario takes the assumptions of cost and effectiveness that would be most favourable to the introduction of physiotherapy. The 'worst case' scenario uses the assumptions of cost and effectiveness that would be least favourable to the introduction of physiotherapy.

THE CHARTERED SOCIETY OF PHYSIOTHERAPY

Fig 6. Early Discharge Results - Stroke

Outcomes

	Base Case	Lower Estimate	Upper Estimate	User Defined
Number Suitable for early discharge	317	77	548	0
Bed Days Saved	2,853	616	5,480	0
Nursing Home Placements Avoided	12.7	0.8	43.8	0.0

Team Required

	Base Case	Smallest Team	Largest Team	User Defined
Physiotherapist	3.2	2.6	3.9	0
Occ. Therapist	3.2	2.6	3.9	0
Speech Therapist	1.3	1	1.6	0
Nurse	2	1.6	2.3	0
Social Worker	0.8	0.7	1	0
Assistant	0.8	0.7	1	0
GP	0.32	0.32	0.32	0

Annual Costs/Savings

	Base Case	Best Case	Worse Case	User Defined
Cost of Team	£536,343	£369,738	£706,280	£0
Saving from Bed Days Saved	£399,420	£399,420	£399,420	£0
Net Cost 1	£136,923	-£29,682	£306,860	£0
Saving from Reduced Nursing Home Placements	£235,392	£565,072	£47,062	£0
Net Cost 2	-£98,468	-£594,754	£259,798	£0

Number Required to Not Enter "Support Group" to Make Team Cost Neutral

	Base Case	Best Case	Worse Case	User Defined
Excluding Bed Day/Nursing Home Savings	179	123	235	#DIV/0!
% of All Stroke Patients of Working Age	92%	63%	121%	N/A
Including Bed Day/Nursing Home Savings	N/A	N/A	87	N/A
% of All Stroke Patients of Working Age	N/A	N/A	44%	N/A

Fig 7. Community Rehabilitation Results - Stroke
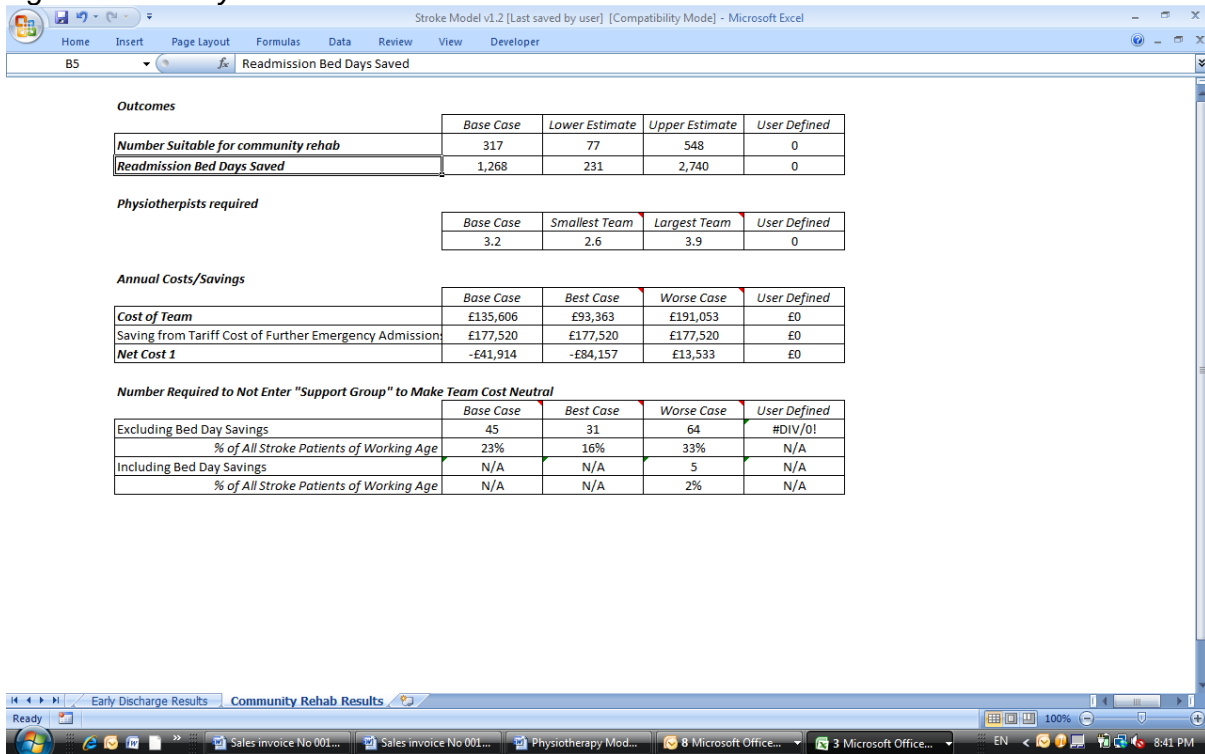
The early discharge results show the number of stroke survivors who would be suitable for discharge within the PCT, the number of bed days saved, and the number of nursing home placements avoided. The community rehabilitation sheet shows the number of stroke survivors suitable for community rehabilitation and the number of readmission bed days saved.

The size of the early discharge team required or number of physiotherapists is shown in the results sheets as well as the costs of the team or physiotherapists. The saving from the effectiveness of the interventions is also shown.

The net cost of the introduction of the team or physiotherapists offsetting the actual costs by potential savings is provided. A negative net cost indicates that the team or physiotherapists will actually be cost saving.

Finally, the number and percentage of working age stroke survivors needed to return to work to make the team of physiotherapists cost neutral is presented.

PART 2: LOW BACK PAIN

The Underlying Model - Schematic
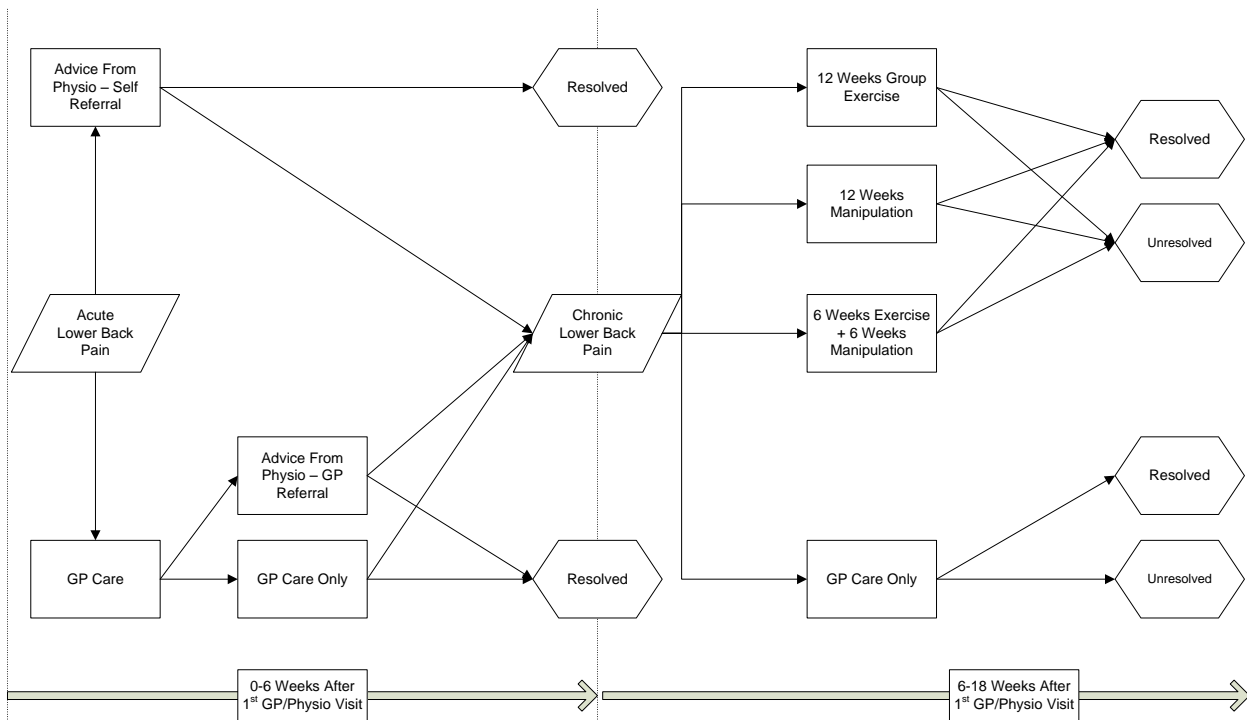
The Underlying Model - Description

The model is concerned with people who suffer an episode of acute back pain that may develop into chronic back pain six weeks after onset.

In the first six weeks, patients can initially either receive advice from a physiotherapist through self-referral or seek assistance from a GP. If GP care is sought the GP may carry on providing care over the six weeks or refer the patient to a physiotherapist for advice. For any of the three pathways the patient's back pain may resolve by the end of the six weeks or develop into chronic back pain.

For patients with chronic back pain, four pathways are potentially open over the next twelve weeks. The patient could receive GP care only, have 12 weeks of group exercise, 12 weeks of manipulation, or 6 weeks of exercise followed by 6 weeks of manipulation. At the end of the 12 weeks the back pain could have resolved or continue.

The model is based around the NICE guidance for back pain. There is little evidence on the effectiveness of physiotherapy over GP care in treating back pain so the model and spreadsheet instead focus on the resource use from the different pathways, such as GP time, NSAID costs and side effects, and referral into secondary care.

The Input Screen

Fig 8. The Input Screen – Back Pain

As was the case for stroke, the user selects the PCT of interest. The user must also select whether the PCT is in a high cost area. Information on the incidence of back pain is limited but evidence suggests that 5% of the adult population will have an episode of acute back pain in a calendar year. This figure is the default on the input screen but can be adjusted by the user.

The Assumption Sheets

Fig 9. Cost and Staff Assumptions – Back Pain

The first set of assumptions required for the model are the costs associated with delivering treatment across the different arms of the model.

Fig 10. Acute Treatment Assumptions – Back Pain

Fig 11. Chronic Treatment Assumptions – Back Pain

The Results Sheets

To generate results, estimates are required of the resource use for the acute and chronic treatment phases. These estimates include numbers of GP consultations and physiotherapy appointments. As was the case for stroke the user does not have to change any values in the assumption sheets and may define their own scenario.

Fig 12. Acute Treatment Results – Back Pain

Physiotherapy Advice

	Base	Best	Worst	User Defined
Number of Physios Required	8.3	9.4	7.1	0.0
Costs of Physio Advice	£336,817	£326,181	£333,739	£0
Cost of GP Care Delivered with Advice Over 6 Weeks	£2,316,754	£1,077,560	£3,555,948	£0
Total Cost GP and Physio Advice Over 6 Weeks	£2,653,571	£1,403,741	£3,889,687	£0
Cost of GP Care if Physio Advice Unavailable	£3,232,680	£4,310,240	£2,155,120	£0
Net Cost of Physio Advice Per Person	-£579,109	-£2,906,499	£1,734,567	£0
Cost Saving Per Substituted Appointment	£22	£24	£21	

Fig 13. Chronic Treatment Results – Back Pain

Results sheets are presented in a similar way to those for stroke with costs, cost savings and net costs. To indicate whether the interventions are cost neutral, service costs should be set against savings in benefit claimant costs.[10] In addition, the potential reduction in disability from the different chronic treatment pathways as measured by the Roland Disability Scale is provided.

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[10] This recognises the accepted interdependence of different public services which are publicly funded, 'Fit for Work' initiatives and 'Total Place' pilots

PART 3: CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD); PULMONARY REHABILITATION

The Underlying Model - Schematic
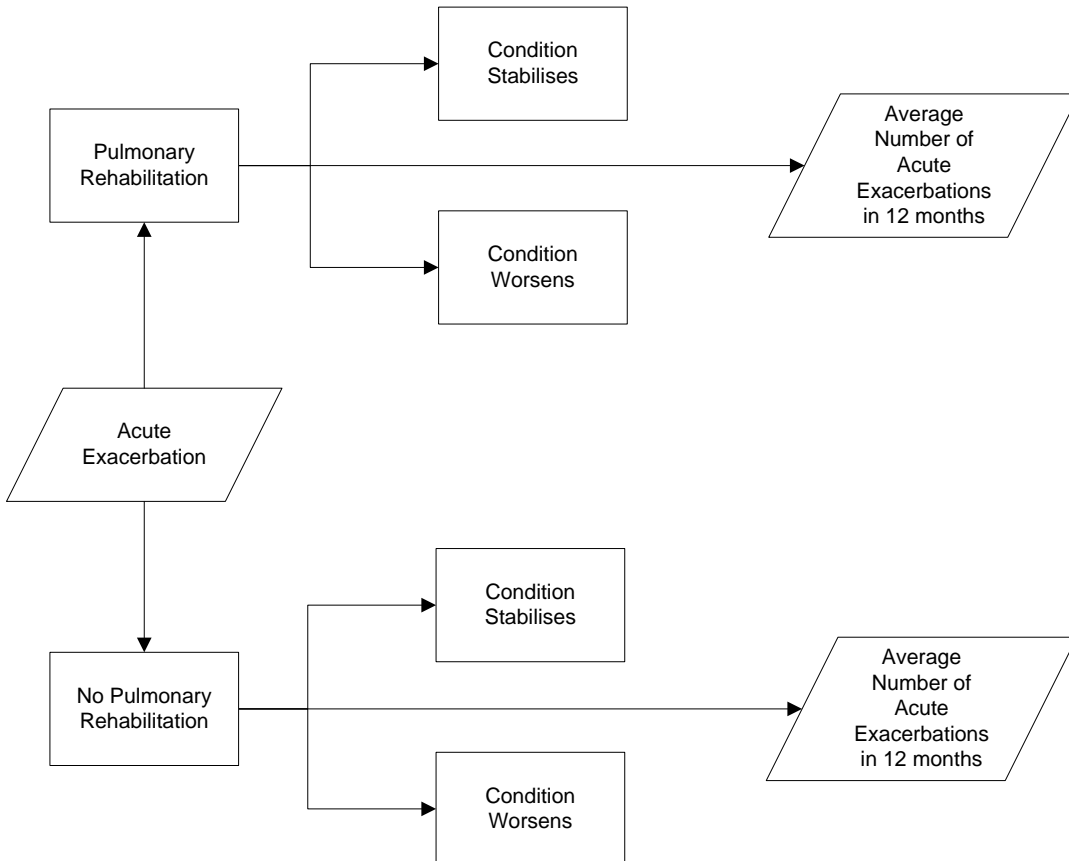
The Underlying Model - Description

The COPD model is built solely around whether a patient with COPD receives multidisciplinary pulmonary rehabilitation following acute exacerbation. The premise is that rehabilitation stabilises COPD symptoms and so reduces the number of acute exacerbations in the future.

The Input Screen

Fig 14. The Input Screen - COPD
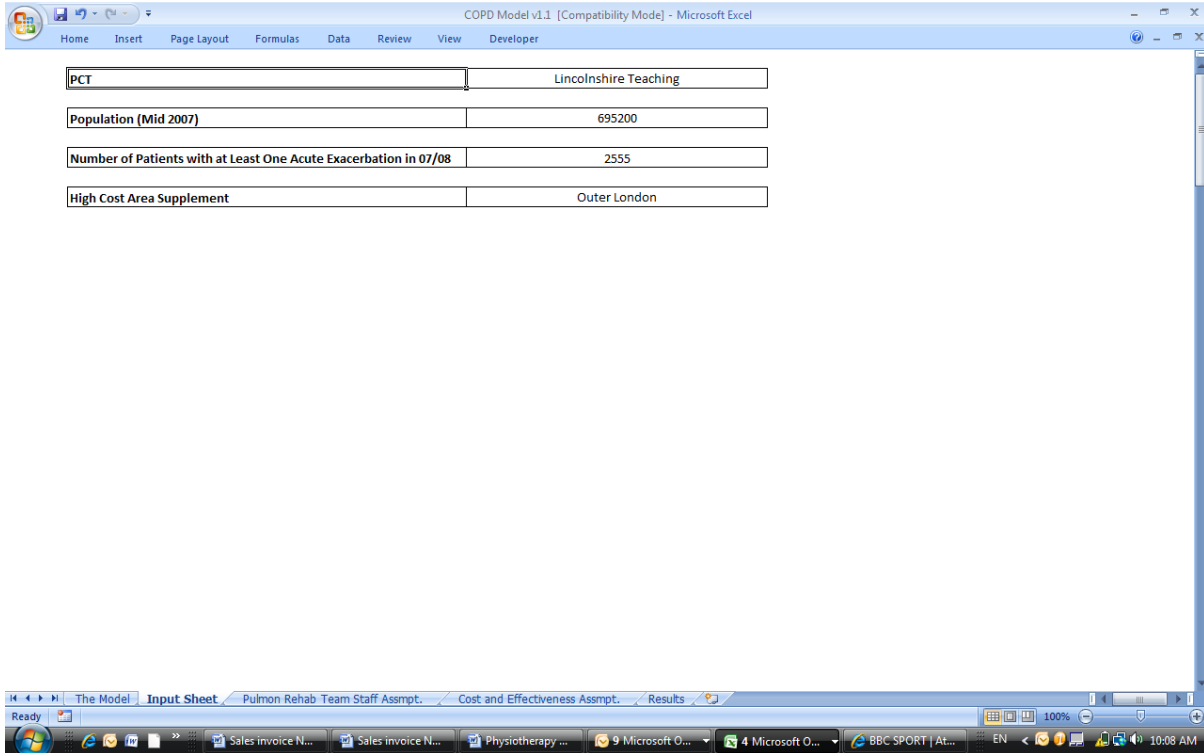
As was the case with the other spreadsheets, the input screen requires selection of PCT and whether it is in a high cost area.

The Assumption Sheets

Fig 15. Pulmonary Rehab Staff Assumptions - COPD

Pulmonary rehabilitation takes the form of exercise classes led by physiotherapists and nurses, and education delivered by a range of professionals. To generate results estimates are required for the number of classes a patient will attend and the number of patients in each class. In addition information is provided at the bottom of the sheet on the salary costs of team members. As was the case for the other spreadsheets, the user does not need to enter any information into the assumption sheet if they do not wish to.

Fig 16. Cost and Effectiveness Assumptions - COPD

This sheet shows the estimates of costs of staff time and effectiveness of rehabilitation on reducing exacerbations.

The Results Sheets

Fig 17. Results - COPD

Outcomes

	Base Case	Best Case	Worst Case	User Defined
Number of Acute Exacerbations No Pulmonary Rehab	4,088	4,599	3,577	0
Number of Acute Exacerbations Pulmonary Rehab	2,300	1,789	2,811	0
Acute Exacerbations Avoided with Pulmonary Rehab	1789	2811	767	0

Team Required

	Base Case	Smallest Team	Largest Team	User Defined
Physiotherpist	13.6	6.4	35.5	#DIV/0!
Dietician	2.2	0.7	6.5	#DIV/0!
Pharmacist	3.8	1.3	11.5	#DIV/0!
Nurse	17.1	8.0	44.4	#DIV/0!
Psychologist	3.7	1.2	11.1	#DIV/0!
Social Worker	2.1	0.7	6.4	#DIV/0!
Occupational Therapist	3.3	1.1	9.9	#DIV/0!
Respiratory Doctor	1.5	0.5	4.5	#DIV/0!

Annual Costs/Savings

	Base Case	Best Case	Worst Case	User Defined
Cost of Team	£2,945,660	£1,089,426	£8,966,338	#DIV/0!
Saving from Hopitilisation/Bed Days	£4,179,725	£6,568,139	£1,791,311	£0
Net Cost	-£1,234,065	-£5,478,712	£7,175,028	#DIV/0!

Finally, the results sheet shows the reduction in acute exacerbations with pulmonary rehabilitation, the size of the team required, the cost of the team and the potential cost savings.

CONCLUSION

In successfully working through the models you will have derived the economics of your service based on the local data that you have used and based on evidence of the success of physiotherapy as an intervention.

For further information and support contact the Director of Practice and Development at The Chartered Society of Physiotherapy, tel: 020 7306 6666.