

## **Web appendix 1: Further details of the PhysioDirect service**

### *Background*

PhysioDirect involves the provision of an easily accessible telephone assessment and advice service from an experienced physiotherapist, supported by a computerised assessment algorithm. Following the telephone assessment, patients are usually given exercise advice and then invited to telephone back to report progress. They can then be invited for a face to face appointment if necessary, or this can be offered following the initial assessment if appropriate. Patients offered PhysioDirect can state at any time that they do not want to discuss their problem on the telephone but instead want to wait for a face-to-face appointment.

The rationale for PhysioDirect is that all patients will have access to earlier assessment and advice about their problem from a physiotherapist. Furthermore, those patients most likely to benefit from face-to-face physiotherapy should be able to receive it more quickly (by filtering out the patients who do not need face-to-face care), hopefully leading to a faster clinical improvement and a quicker return to work and/or usual activities.

The term 'PhysioDirect' is used variably by different services in the UK, but the model used in this trial was modelled closely on the system developed in Huntingdonshire Primary Care Trust (PCT) in 2001. This service was runner-up in the 2003 Health and Social Care Awards. Currently 350,000 people in Cambridgeshire are served by this PhysioDirect system. The established nature of the service, the structured format of the system, and the experience of the Huntingdon physiotherapy staff both in using and in training other physiotherapists in using this system, made the system particularly suitable for use in the PhysioDirect trial.

### *Setting up the service*

In order to establish a PhysioDirect service, each participating site needed to provide a suitable office and to train about eight physiotherapists to provide telephone assessments using the assessment software. Apart from training and set-up costs, no extra physiotherapist resources were used within the study – the time of the existing staff was reallocated within existing resources.

### *Training the physiotherapists*

Based on advice from Huntingdon, it was decided that only senior experienced physiotherapists would be involved in providing the PhysioDirect telephone advice. All physiotherapists operating the PhysioDirect telephone services undertook a structured training programme led by the physiotherapy service in Huntingdon which involved attending a 1½ day course of teaching, demonstrations and observation of live calls. The training is described in more detail in a related published paper.[1]

A visit to each participating PCT was undertaken by a PhysioDirect trainer approximately two weeks after completion of the training programme. The trainer observed calls and facilitated a problem solving session. The trainer then listened to individual calls and using a structured format assessed each physiotherapist's competency to utilise the system safely and effectively. All physiotherapists had to be certified as competent to undertake PhysioDirect before they assessed patients in the trial.

### *The PhysioDirect software and the assessment*

The PhysioDirect assessment was based on a computerised system, which needed to have sufficient structure to guide an effective and efficient assessment by prompting physiotherapists to cover all key aspects of the patient assessment, whilst being flexible enough to be responsive to presentations of individual patients and taking account of the lack of visual clues provided by a patient during a face-to-face consultation. The system had to be as simple as possible as physiotherapists undertaking telephone assessment are required to perform a number of skills simultaneously, including asking questions, visualising the patient and their presentation, analysing the patient's responses, formulating the next question and typing responses into the system. The software includes mandatory fields with drop down menus and tick boxes for key aspects of the assessment, with text boxes provided to allow the physiotherapists to record responses to supplementary questions eliciting further information or clarification from the patient.

The software is based on Microsoft Access. It first allows the patient's demographic details to be checked, then collects brief details regarding the patient's occupation, hobbies/activities and main problem for which they have been referred. The physiotherapist selects an appropriate assessment framework, depending on the area of the body affected. This ensures that any relevant questions relating to 'red flag' symptoms are asked that relate to that area. For example, if the patient is complaining of low back pain, questions regarding symptoms suggestive of cauda equina compression are included in the assessment algorithm. The assessment, prompted by the software, includes the investigation and recording of the patient's presenting, medical and drug history, details of aggravating, easing and diurnal patterns and assists the physiotherapist in reaching a clinical diagnosis. Example screen shots from the system are shown below.

**Figure 1 Example screen shots from PhysioDirect assessment software**

Microsoft Access

**Enter Problem**

Patient Name: mickey mouse    Sex:    DOB: 01/01/1980    Age: 32

On Set Period: 12 Weeks    Problem: back  
 Sick Period: 0 None    Occupation:  
 Treated Before: No    Hobbies:

**Lumbar Spine**

**Question: Description & distribution of symptoms**

1 constant low back pain more to the right side -intensity 7/10  
 Intermittent spread of deep ache to the right thigh posteriorly .Illi in right calf .Right foot  
 constantly numb on outside of foot and under the heel .  
 Left leg ok .

Previous Question    Next Question    Change Area    Save


48464    182985    gannonb    Fast Track    Pain Protocol

Record: 1 of 1    No Filter    Search

Form View    Num Lock

Microsoft Access

**Enter Problem**

Patient Name: mickey mouse    Sex:    DOB: 01/01/1980    Age: 32

On Set Period: 12 Weeks    Problem: back  
 Sick Period: 0 None    Occupation:  
 Treated Before: No    Hobbies:

**Lumbar Spine**

**Question: Operations**

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Previous Question    Next Question    Change Area    Save

General	prostatectomy	tonsils	sinus	varicose veins	kidney	lung			
Orthopaedic	TKR	THR	TSR	arthrosocopy	ACL	PCL	acromioplasty	ORIF	
Cardiac	bypass	angioplasty	valve replacement	pacemaker					
Abdominal	hernia		gall bladder	gastroscopy	laparotomy	thorcotomy	bowel surgery		
Gynaecological	hysterectomy	due to cancer	not due to cancer	caesarian section	colposcopy				

48464    182985    gannonb    Fast Track    Pain Protocol

Record: 1 of 1    No Filter    Search

Form View    Num Lock

### *Process of referrals*

As soon as possible after consent to participate in the trial was received, patients randomised to PhysioDirect were sent a letter inviting them to telephone the service for initial assessment and advice and explaining the times during which the PhysioDirect service was available each week. When a patient called the service, if a physiotherapist was not engaged in a call, they would be the first person the patient spoke to and the assessment would start immediately. If the physiotherapists were engaged with other calls, then the call would be answered by a receptionist. The receptionist would take the patient's details and place them on a 'call-back' list along with information regarding when would be most convenient for this to happen. The physiotherapists would either field any calls arriving if they were free, or would consult the call-back list for available patients.

The physiotherapist responding to the telephone call followed the computer-assisted assessment system to assess the patient and record the findings.

### *Process of care following the encounter*

There were several possible outcomes following the initial telephone call:

- In some cases, at the end of the call the physiotherapist posted a relevant advice leaflet about self-management and exercises to the patient, inviting them to phone back to report progress after about 2 to 4 weeks, if appropriate. If the patient phoned back they could be given further advice or be booked for a face-to-face consultation if necessary.
- In some cases, the initial phone call established that face-to-face assessment and/or care was needed, in which case this was arranged either by putting the patient on the PhysioDirect waiting list for face-to-face care, or by arranging an urgent appointment if necessary.
- In other cases, the initial assessment established that physiotherapy was unlikely to be effective and the patient was given appropriate advice or referred to another service, and discharged from physiotherapy.
- In a few cases the initial assessment revealed that urgent medical intervention was required and these patients were sent to a hospital emergency department with an accompanying fax detailing the need for attendance. If the medical intervention was not considered 'an emergency' patients were asked to attend their GP, e.g. to obtain an X-ray.

Further information about the PhysioDirect software used in this trial can be obtained from:

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1. Bishop A, Gamlin J, Hall J, Hopper C, Foster NE. PhysioDirect: Supporting physiotherapists to deliver telephone assessment and advice services within the context of a randomised trial. *Physiotherapy* 2012 doi: <http://dx.doi.org/10.1016/j.physio.2012.08.002>.