Integrated Care Protocol

Produced for use in integrated health care for patients with chronic low back pain.

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Contents

Integrated care management

Executed by the Clinical Occupational Physician

1. Problem assessment

Draw up a diagnosis of the medical situation or problem on the basis of the case history and a physical examination.

Assess

a. adequacy of illness behaviour;
b. presence of psychosocial problems;
c. workplace, particularly with regard to organizational obstacles to work resumption;
d. perceived limitations with regard to work;
e. adequacy of the treatment;
f. fitness for work.

Liaise with the medical specialist concerned by telephone or e-mail the same day in the event of serious doubts regarding the medical diagnosis.

Go to ***step 2*** when there are no longer any doubts.

2. Rehabilitation plan

Reassure the patient, give the positive prognosis regarding their work, point out the importance of persevering with normal activities as far as possible, emphasize that physical exercise cannot cause any injury. Make use of the cognitive behavioural model for back complaints which will be used by all carers providing treatment.

- In the case of inadequate illness behaviour:
  - ***Look for*** underlying reasons for inadequate illness behaviour;
  - ***Discuss*** inadequacy of the illness behaviour, dispose of the fear of physical exercise;
  - ***Recommend*** a solution, for example a work plan involving a gradual resumption of activities.
- In the case of psychosocial problems:
  - ***Look for*** signs of depression, problematic events in the employee's life, conflicts and other work problems;
  - ***Discuss*** them with the employee;
  - ***Look for*** solutions: Antidepressive treatment, psychosocial counselling and conflict mediation.

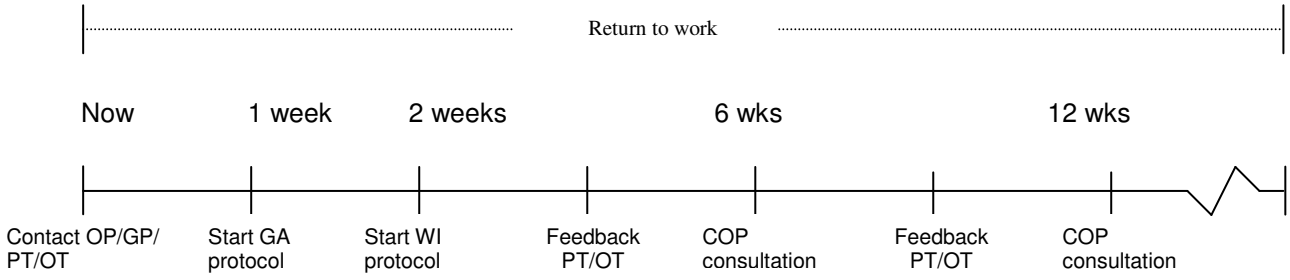
- In the case of inadequate treatment:
  - ***Contact*** the care provider in question;
  - ***Discuss*** factors that may hinder return to work;
  - ***Look for*** solutions and formulate policy together.
- In the case of perceived limitations with regard to work or organizational obstacles:
  - ***Advise*** reduction of the work load by temporary adjustment of hours or activities;
  - ***Consult with and advise*** the work environment (the patient's occupational physician and superior, if relevant) on the policy to be followed.

Write a rehabilitation plan for the patient. Give both advice on the graded activity and workplace intervention but also on other forms of intervention if indicated by the case history and physical examination.

It is important that the clinical occupational physician produces a return to work prognosis that is as concrete as possible for discussion with the patient's occupational physician, so that other care providers can use this as a guideline when drawing up their graded activity training, workplace intervention or other training.

Inform those involved how the intervention plan works.

Time line



COP	: Clinical occupational physician	OT	: Occupational therapist
OP	: Patient's occupational physician	WI	: Workplace intervention
GP	: General Practitioner	GA	: Graded Activity protocol
PT	: Physical therapist		

Inform the employee about the content and the objective of the interventions:

- About the general content of the graded activity protocol;
- About the participative work adjustment protocol procedure.

3. Information lines

Action	Who	When
Inform the patient's general practitioner and occupational physician	COP	Immediately after the first consultation
Inform the physiotherapist and occupational therapist by sending the contact details for making an appointment	COP	If the patient's occupational physician and supervisor agree

4. Telephone contacts

- ***Call*** the patient's occupational physician **two days** after sending the rehabilitation plan to discuss it and to obtain a commitment patient's for implementation and participation.
- ***Emphasize*** that the patient's occupational physician will not be losing any of their responsibilities. Agree on a possible first resumption date.
- ***Make*** appointments on discussions on the workplace intervention protocol: who has to attend, when will the first contact take place, who will approach the patient's supervisor, etc.
- ***Suggest*** that the occupational therapist informs the patient's supervisor about the course of action (partly on behalf of the patient's occupational physician) by telephone.

If no reply after two telephone calls

- If the patient's occupational physician does not respond by e-mail or telephone on being asked to call back by the clinical occupational physician:

The clinical occupational physician will assume that the patient's occupational physician agrees with the rehabilitation plan that has been drawn up. The letter of information to the patient's occupational physician states that if they do not respond after having been contacted twice by telephone, the clinical occupational physician will assume that they agree with the rehabilitation plan drawn up and that the case management of the patient in question be transferred to the clinical occupational physician for the period of the course of action for rehabilitation.

The patient's occupational physician does not commit to implementing the course of action for rehabilitation

- Listen to the arguments of the patient's occupational physician and try to look for a solution where both parties agree with.
- If the patient's occupational physician is still not in agreement the discussion, indicate to them that the patient will be asked to take the final decision as to whether to participate in the course of action or not.

Go on to step 5 if the patient's occupational physician agrees on the course of action for rehabilitation.

5. Start integrated care protocol

- ***Contact*** the physical therapy practice chosen by the patient within two working days of obtaining the approval of the patient's occupational physician.
- ***Pass on*** the patient's personal details by telephone (or via the website) and ask that the graded activity protocol be started within one week of the first visit to the clinical occupational physician.
- ***Give*** an indication of the first return to work date, as agreed with the patient's occupational physician, to the physical therapist.
- **Send** the personal details of the patient and his or her supervisor by post or e-mail, with an accompanying letter, to the occupational therapist with the request to plan the first appointment for the workplace intervention protocol within two working days of obtaining the patient's occupational physician agreement.

NOTE: a copy of the letter to the supervisor will suffice.

6. Receiving information

- Short-term: In a few days after the occupational therapist and physical therapist received the personal details of the patient, the clinical occupational physician receives information on the first graded activity sessions and the first workplace intervention session.
- Long-term: Every three weeks after the start of the protocol, the clinical occupational physician receives an update of the graded activity protocol and the workplace intervention.

7. Adjusting the rehabilitation plan

- If during the execution of the integrated care protocol it is becoming clear that it is not possible for the patient to return to work at the set date (i.e. due to illness, complaints of a other body region ect), the return to work date can be adjusted.
- Bear in mind the contraindications for participation in the study.
- Contact the patient's occupational physician, the physical therapist and occupational therapist to inform them about the adjusted return to work date.

Graded Activity Protocol

executed by the Physical Therapist

1. Resources needed for implementation of the graded activity protocol

Diary

A separate diary for recording arrangements made with the clients.

Patient's record card

A card bearing administrative and anamnestic details concerning the patient, on which at each session the physical therapist notes any information that he/she considers relevant to the further progression of treatment (e.g. changes in the client's psychosocial circumstances, injuries suffered, illness, etc).

Treatment file

A ring binder in which information about the progress of the treatment can be recorded, e.g. details of the exercises done and the associated quota. Each client has his/her own treatment file. The information recorded in the file is also used as a basis for providing feedback on the progress made.

Exercise equipment

Cycle ergometer, rowing ergometer, step, Latissimus machine, lower back bench, bar-bells, dumbbells, crates and exercise mat.

2. Exercise duration and frequency

The exercise sessions may take place between three times a week (at the start) and once a week (at the end). The first three sessions are one-to-one. Thereafter, clients attend group exercise sessions with periodic one-to-one evaluation sessions. The group sessions involve four to six people per physical therapist. Each client in a group follows his/her own program for the back or other body region (based on a graded activity protocol or another protocol). Finally, four weeks after completion of the graded activity program, the client attends a half-hour one-to-one session to establish how he/she is getting on at work.

3. Total duration of graded activity program

The exercise program entails up to twenty-six sessions over a period of up to about three months. However, the program can be stopped early if the client has fully returned to his/her own or equal work. If a client has to take more time off work due to back pain within four weeks of returning to work, he/she may be readmitted to the program; the patient is not considered a new case.

4. Baseline (first three sessions)

When the client arrives for the first session, the physical therapist begins by recording the client's name and other administrative data on a patient's record card.

Anamnesis

At the start of the first session, a brief anamnesis obtained in order to gain an impression of the client's problems and his/her perception of them. To this end, the client is asked the following questions:

a) Just what problems have you been experiencing? (Obtain full details)
b) How long have you had these problems? (Establish time line)
c) Have your problems become worse over time, got better or stayed about the same?
d) Do you have any idea how the problems originally arose and what their cause is? Do you think that your work was a factor?
e) What did the specialist and the clinical occupational physician say about the origin and cause of your back problems? (The physical therapist should back up the opinion of the medical specialist and clinical occupational physician.)
f) Are there any particular movements or activities – at work or in day-to-day life – that you find particularly difficult because of your back problems? If so, what are they?
g) When do you expect to be able to go back to work and what needs to happen before you can do so?

The physical therapist notes the client's responses in abbreviated form on the patient's record card. No more than ten minutes should be spent on the anamnesis.

Physical examination

After completing the anamnesis, the physical therapist performs a physical examination. For the purpose of this examination, the client is asked to make movements that involve the following for the spinal column: flexion, extension, lateroflexion to the left and right and rotation to the left and right. If the client experiences pain radiating to beyond the knee, the

physical therapist performs a brief neurological test from (Lasègue's test or Bragard's test, hamstring reflex test and/or Achilles reflex test, or a foot sensitivity test).
On the basis of the physical examination, the physical therapist confirms the conclusion of the medical specialist and the clinical occupational physician. The latter will have concluded that the client has no spinal abnormalities. The physical therapist tells the client that he/she agrees with the medical specialist and clinical occupational physician and does not believe that the client has any spinal abnormalities.

Explanation
Next, the client is told briefly what the protocol entails, what its aim is and how it is structured. Information is also given about back pain. The information provided is on an individual basis. The following topics are discussed, with the physical therapist using a bullet list for guidance.

a) How do back problems develop?

   Back pain usually results from overloading of the structures in the back. Lifting abruptly, lifting excessive weights, or making a wrong movement can play a role. It is also possible to overload the back by prolonged tensing of the back muscles. People often tense their back muscles without being aware of it.

   It is not always entirely clear why someone has back problems. Several causal factors may be involved, such as lack of physical fitness, frequent driving and stress.

b) Can it have serious consequences?

   Although back pain can be very unpleasant, it is not usually caused by anything serious – even if the pain is serious.

c) What can someone with back pain do about it?

   Exercise will help you to get over your problems. People with back problems need to remain active, despite the pain. *The pain that you have been experiencing is not a sign that something is damaged. (The physical therapist must emphasize this point.)* Walking, cycling and swimming will do you good. Improving your general physical fitness (including the strength of your back and abdominal muscles) will reduce the pain.

If the client does not understand the information provided, the physical therapist explains back problems by reference to a load-capacity model. The client is told that a balance has to be struck between the load on the back and the back's load-bearing capacity, otherwise

problems are liable to develop. As with a set of scales, if weight is added to one side, it is necessary to add weight to the other side in order to maintain the balance. If the back needs to withstand greater loads, its capacity needs to be increased. So the prevention of problems depends partly on keeping fit and having strong muscles.

Baseline tests

The physical therapist goes on to describe the structure of the graded activity program to the client:

- The physical therapist explains that the first three sessions are for baseline testing.
- The purpose of the baseline tests is explained. The physical therapist tells the client that the baseline tests are used to gauge the client's fitness, i.e. ability to perform various forms of exercise. The results are used to formulate a plan for incrementally increasing the strenuousness of the client's exercise program.
- The physical therapist tells the client that the program will end when the client is able to fully return to work (the client is not told that the maximum duration of the program is three months).
- The clinical occupational physician will already have indicated how soon the client should be able to return to work (the forecast number of weeks until return to work). A return to work target date is agreed with the client once the baseline tests have been completed.
- The client is also told that he/she will have an evaluation meeting with the physical therapist once every three weeks, at which progress and the potential for return to work will be discussed.

The baseline tests involve six predetermined forms of exercise and three other forms specially chosen by the physical therapist. The specially chosen exercise forms are selected on the basis of what the client has said about movements and activities that he/she finds difficult because of his/her back problems. Two of these three specially chosen exercise forms should be performed during the exercise sessions, while the third is for the client to do at home.

Baseline test 1: Cycle ergometer

The client is asked to ride a cycle ergometer for ten minutes. The client is asked to ride as 'far' as he/she is able to in the ten minutes, given his/her back problems (Fordyce: 'working to tolerance'). The client is allowed to adjust the wattage and cycling speed to suit him/herself. The client is given the option of stopping before the ten minutes is up, if in great

pain or exhausted; it is up to the client to decide when he/she is unable to continue. The physical therapist records the distance covered, the wattage and the speed in the treatment file. If the client was unable to ride for the full ten minutes, a note is also made of how long he/she did ride for; this information is also passed on to the client. The values of the various parameters (distance, wattage and speed) are shown on a display.

Baseline test 1: Rowing ergometer

As an alternative to using a cycle ergometer, baseline test 1 can also be performed on a rowing ergometer. The client is allowed to choose which ergometer he/she will use. If the rowing ergometer is chosen, the client is asked to row as 'far' as he/she is able to in the ten minutes. (The total distance covered, the time and the average wattage are shown on a display.) Before the client begins the test, the physical therapist explains and demonstrates the correct rowing technique. The client then practises for a minute or two with the machine on the lowest resistance setting (setting 1). The test proper begins with the resistance of the ergometer on setting 3. The physical therapist records the distance covered, the average wattage and the speed in the treatment file. If the client is unable to row for the full ten minutes, a note is made of how long he/she did row for; this information is also passed on to the client.

Baseline test 2: Stepping exercise

The client performs an exercise that involves stepping on and off a step. Five repetitions are done using the right leg as the 'leading' leg, then five repetitions are done leading with the left leg. The exercise continues with the leading leg switched after every five repetitions. The client is asked to maintain the exercise for as long as possible. It is left to the client to decide when to stop and the physical therapist does not encourage him/her to continue. Once the client has stopped, the physical therapist records in the treatment file how many repetitions the client has performed. If the physical therapist considers it appropriate, the exercise can be made more demanding by raising the height of the step or increasing the distance to the step.

Baseline test 3: Latissimus machine

The client takes up a position on a bench and with both hands takes hold of a horizontal bar suspended within comfortable reach above his/her head. He/she then pulls the bar down. The bar is connected to an adjustable weight by means of two pulleys. The client is asked to pull the bar down as many times as he/she can. The physical therapist decides on the weight

to be lifted, selecting a weight that the client is likely to be able to lift between twenty and thirty times (target for weight selection: twenty-five repetitions). In the treatment file, the physical therapist notes the number of repetitions and the selected weight.

Baseline test 4: Dynamic trunk extension exercise

The client takes up a position on a 'lower back bench'. From the hips up, the upper body hangs free, while the legs are held by a resistance on the backs of the ankles. The client's hands are placed on supports. The client is then asked to put the backs of his/her hands on his/her forehead, elbows pointing out to the sides, and to bring his/her upper body upright into a sitting position, before lowering it again to a position below the horizontal and starting again. The client is asked to repeat this manoeuvre as many times as possible.

Some clients are nervous about attempting this exercise. If that is the case, the client should be asked to perform the exercise first with his/her hands on the supports and then to lie in the extended position, with the body 'hanging' unsupported by the hands, for a few seconds. Once the client feels confident about holding this starting position, the baseline test can start. The physical therapist records the number of repetitions performed in the treatment file.

Baseline test 5: Abdominal muscle exercise

The client lies on his/her back on a mat, knees bent at 90 degrees. He/she puts one hand on his/her head and with the other attempts to touch the opposite knee. He/she returns to the starting position, and then performs the exercise to the other side. The client is asked to repeat the whole procedure as many times as possible. The physical therapist records the number of repetitions in the treatment file.

Baseline test 6: Standing from a sitting position

The client sits on a chair, with his/her back against the backrest, arms folded. Without unfolding his/her arms, the client has to stand up, and then sit down again. The client is asked to repeat the exercise as many times as possible. The physical therapist records the number of repetitions in the treatment file. Where appropriate, the exercise may be made more strenuous by getting the client to hold something (e.g. an exercise ball or a weight) while getting up and down.

Baseline tests 7, 8 and 9: Specially chosen exercises

In the context of the anamnesis, the client was asked to identify tasks or movements that he/she found difficult because of his/her back problems. By reference to this information as

far as possible, the physical therapist should devise up to three additional exercises that simulate the problematic action. These exercises may make use of equipment such as dumbbells, pulleys, everyday objects, crates, etc. The client should be asked to repeat the exercise as many times as possible.
The physical therapist should place a detailed description of each exercise, plus an explanation for it (its relationship to a problematic activity/movement), in the treatment file. The physical therapist should also note in the file the number of repetitions performed. For the rest of the program, the client is expected to perform one of the exercises at home. It makes sense that this 'homework exercise' should be associated with a problematic everyday task or movement.

The physical therapist must ensure that a quota is recorded in the treatment file for each of the exercise forms referred to above. The baseline tests performed at the first session are repeated, using the same exercise forms, at the second and third sessions. At the end of the third session, the average score achieved for each baseline test is calculated and recorded. These average scores are used to devise an exercise program in which the load is incrementally increased over time.
The next step is for the physical therapist to ask the client when he/she thinks a return to work may be possible (date). **In consultation with the physical therapist, the client sets a target date for return to work, which should take the advice of the clinical occupational physician into account.** The program ends when return to own or equal work has been established. **After returning to work, the client will visit the physical therapist for a final exercise session.** This final session provides an opportunity for the client to tell the therapist how he/she is coping back at work and how he/she is feeling. Four weeks after the client's return to work, the physical therapist should call him/her to check that he/she is still at work; if the client has had to stop work again, the graded activity program can be resumed.

4. Communication between physical therapist and clinical occupational physician

Once a target date for return to work has been set (at the third exercise session), the physical therapist contacts the client's clinical occupational physician by phone or e-mail to pass on the target date. The clinical occupational physician is then able to align subsequent absenteeism policy with the return to work target date and decide (in consultation with the client) whether the client can fully return to work on the target date.

From the time that a return to work target date has been set and the graded activity program has begun, the physical therapist normally completes a communication form once every three weeks describing the progress of the client's treatment and e-mails it to the clinical occupational physician. Every four weeks there is also a multidisciplinary (telephone) conference involving the physical therapist, the occupational therapist, the clinical occupational physician and/or the medical specialist.

4. Incremental build-up of the graded activity program

- The exercise program begins with a load that is below the average baseline loads. In practical terms, the client is initially asked to perform the various exercises, in each case completing a number of repetitions equal to 70 per cent of his/her average score in the corresponding baseline test.
- The various exercises are performed one after the other in a series, and the entire series of exercises is performed three times. Between each series, the client is allowed at least half a minute's rest.
- In appropriate cases, the physical therapist may depart from the 70 per cent starting load. However, the aim should always be to set the starting load at a level that the client is almost certain to be capable of ('sure to win').
- For each exercise, the client sets a target. This target (load) should be expressed as a quota consisting of a weight and/or a number of repetitions, which the client regards as attainable for the particular exercise by the final session prior to returning to work. The targets may be adjusted by the physical therapist if he or she considers them to be unrealistic or insufficiently ambitious.
- Next, the client draws a graph for each exercise, showing how the exercise load is to be built up by incremental increases in the exercise quota, taking it from the starting level to the target level. On this graph, the date is plotted on the horizontal axis and the exercise quota on the vertical axis.

In this way the exercise load for each session between the baseline tests and the final session prior to return to work or the next evaluation session is defined. Generally speaking, at least two sessions should be done at each quota level before the exercise load is increased.

It is <u>explicitly agreed</u> with the client that in principle he or she will build up the exercise quota in accordance with the plan. The exercise quota will not be reduced if the client's back pain increases, and the client will not go beyond the quota even if he

or she is managing comfortably. The point should be made to the client that sticking to the agreed quotas is vital to the success of the program: the incremental increase in exercise load is not pain-contingent but time-contingent.

If the return to work target date is some way (e.g. several weeks) ahead, it is advisable to set interim (shorter-horizon) targets linked to interim evaluations. At each evaluation session, a further set of targets can then be set for the period ahead and the exercise load increased in this way.

At subsequent exercise sessions, the client is expected to go through his/her exercises independently and to record the quota done in the treatment file. The treatment file is therefore given to the client on arrival. After each exercise, the client or the physical therapist records the results in the treatment file. The physical therapist is in attendance and at appropriate moments compliments the client on what has been achieved, drawing the client's attention to the graph and pointing out the progress made.
As indicated earlier, the client is expected to perform one specially chosen exercise at home. The graph showing the incremental increases planned in this exercise is therefore taken home by the client. However, he or she is asked to bring the graph along to each supervised exercise session so that progress can be discussed with the physical therapist.

5. Evaluation

Every three weeks after the baseline tests, the physical therapist and the client have a brief evaluation meeting lasting no more than fifteen minutes. Following each such meeting, the physical therapist contacts the clinical occupational physician using the communication form (appendix 4) to update him/her regarding the client's progress.
The final session before the client returns to work should also be concluded with an evaluation meeting. At an evaluation meeting, the following points should be covered:

- The progress made (or lack of it). If progress has been made, the physical therapist and the client should take a shared look at the graph showing the incremental increases in exercise load. The physical therapist should emphasize to the client what has been achieved and compliment him/her on his progress.
- The potential for return to work is discussed and the client is encouraged to think about going back to work, even if he/she is still experiencing pain.
- The targets for subsequent sessions. The client and the physical therapist together

produce a new graph showing the incremental increases in exercise quotas planned for the forthcoming sessions.

6. Recidivism of back pain

Sometimes, a client will say at the start of an exercise session that his/her pain has increased. However, as a general rule, preset exercise quotas should not be adjusted on an ad hoc basis. So, if the client's pain gets worse, the plan should still be followed.
Nevertheless, if the clinical picture leads the physical therapist to believe that the client may be suffering recidivist back pain (as suggested, for example, by a clear trauma incident in the anamnesis), the physical therapist may decide to modify the policy.

- The physical therapist might, for example, decide to pause the program for a few days or a week, with a view to allowing the pain to ease before the program resumes.
- If the physical therapist suspects that the client is suffering from a radicular syndrome or any other specific pathological condition, the therapist should consult the clinical occupational physician and the client's occupational physician about subsequent policy. The physical therapist should record any change to the exercise program (and the reasons for it) in the treatment file.

7. Failure to achieve exercise quotas

At some point in the program, a client may fail to achieve one or more of his/her quotas. There can be various reasons for such a failure. For example, the client may have reached his/her 'true' limit, may be 'having a bad day', or may have relapsed into pain-contingent behaviour. Under such circumstances, the physical therapist should proceed as follows:

- The physical therapist should not try and talk the client into continuing (Fordyce: 'attention is contingent on performance, not on non-performance') or comment positively or negatively on the client's failure. The physical therapist should merely ensure that the quotas that have been achieved are recorded and perhaps leave the client alone for a while. A little later, the physical therapist should then return and ask the client to start the next exercise.
- Alternatively, the physical therapist might remain with the client and wait in silence for him/her to start the next exercise. If the client then achieves the quota for the following exercise, the physical therapist compliments him/her, but makes no reference to the earlier failure.

- Sometimes, a client says at the start of a session or exercise that he/she doubts that he/she will be able to achieve the day's quota(s). In that case, the physical therapist should not press the client to keep going no matter what. Instead, the physical therapist should say something along the lines of, 'You must decide for yourself whether you are capable of doing what we agreed, but why don't you just give it a try and see how far you get?' Then, when the client begins the exercise, it may help for the physical therapist to remain with the client and to keep talking to him/her while he/she exercises. Thus, the physical therapist's attention is performance contingent.

- If the client nevertheless stops before achieving the quota, the physical therapist should respond in the way described earlier. At the next session, the client should still be expected to exercise in accordance with the original plan.
- If the client fails to achieve his/her exercise quotas for several successive sessions, the incremental quota increases should be revised. As a rule of thumb, an appropriate trigger for revision is failure in three successive sessions. The physical therapist and the client should then agree on a lower exercise quota. It may also be appropriate to revise the speed at which the load is increased and possibly the ultimate exercise target(s). It is the physical therapist's responsibility to decide on such revisions, on the basis of his/her 'clinical judgement'. However, the aim should always be to return as quickly as possible to a situation where the client is 'succeeding' ('sure to win').
- In some cases, a client may still fail to achieve a particular exercise quota, even after the speed at which the load is increased has been revised. Under such circumstances, the procedure described above should be repeated.
- When confronted by persistent failure to achieve a particular quota, a physical therapist should of course consider whether the client has reached his/her 'true' limit for the exercise in question. If it is the physical therapist's clinical opinion that the client has reached his/her limit, the physical therapist may, following consultation with the client, decide that the client should continue to exercise at a constant level.

8. Reporting

The physical therapist is expected to write a brief report on each client's graded activity treatment. This report is sent to the clinical occupational physician.

Graded Activity Protocol appendix 1. Specimen exercise plan

Client's name	Mr/Ms ……
Plan date	……./ ……../ …….

Example of how data should be recorded and calculated

Suppose that a client indicates that the main thing he/she has difficulty with as a result of his back problem is walking to and from the shops. During the baseline tests, the physical therapist establishes how long the client can walk for on a treadmill. The client defines his exercise goal as being able to walk to and from the shops: a total of forty minutes walking. A plan for increasing the exercise load is accordingly drawn up in consultation with the client, taking account of the number of available exercise sessions.

Example: Walking on the treadmill

Data	***Walking on the treadmill***	
Baseline 1	8	minutes
Baseline 2	12	minutes
Baseline 3	7	minutes
Average	9	minutes
70%	6	minutes
Target	40	minutes
Increment (steps)	4	minutes

Planned increases in exercise load																									
Session	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Time/ repetitions	6	6	10	10	14	14	18	18	22	22	26	26	30	30	34	34	38	38	40	40					

Workplace intervention protocol

executed by the Occupational Therapist

1. Starting point

The workplace intervention procedure starts when the clinical occupational physician refers the patient to the occupational therapist for workplace intervention. The clinical occupational physician defines the conditions (working hours, duties, etc) under which the patient may return to work.

2. Basic principles

- ✓ The workplace intervention process must start within two weeks of referral (following consultation with the clinical occupational physician).
- ✓ The report on the first workplace visit (steps 1 to 4) must be drawn up within two working days.
- ✓ Total reporting time is eight hours (two rounds of person-to-person contact; steps 1 to 5).
- ✓ Total multidisciplinary consultation time is 0.5 hours (two meetings).
- ✓ The aim is the patient's full return to work in own or equal work.
- ✓ Workplace intervention must not postpone or slow down return to work.
- ✓ The workplace intervention process should take place even if return to work is not yet possible. If that is the case, it is important that a proposal regarding the patient's eventual return to work is drawn up and submitted to the clinical occupational physician.
- ✓ The advice of the clinical occupational physician (regarding working hours, etc) should be adopted by the occupational therapist and communicated effectively to the patient and the employer.

3. Procedure

The steps described below and the associated action should lead to the formulation of an advisory report regarding the workplace intervention necessary to enable the patient to return to his or her own or equal work. The advisory report should detail the findings of each step, and should end with a conclusion or final assessment concerning workplace intervention. The seven steps making up the procedure should be followed in the order described.

***Step 1*: Preparation**

- Check that the employer at the company or organization within which the patient will be supervised is aware of the procedure that will be followed and its potential implications (the types of solution that are possible), and that the employer is happy with what is to be done (i.e. committed to supporting the process).

Action Call the HRM officer, patient's supervisor, occupational physician or relevant (line) manager.

- Find out who is responsible for workplace intervention within the company/organization

Action Call the contact person at the company/organization and ask:

- Is an organogram (diagram showing the structure of the organization) available?
- Who is responsible for purchasing policy?
- What is the purchasing procedure?
- Who actually does the purchasing?
- Should someone from purchasing be involved in the workplace intervention? If so, who, when and how?

- Inform the patient, his/her supervisor and anyone else with responsibility for workplace intervention within the company/organization about the procedure to be followed. Also inform any people with whom the patient shares a workplace.
- Inform the patient and his/her supervisor about the clinical occupational physician's advice (e.g. that the patient should only work half days) and emphasize that you, the occupational therapist, support the clinical occupational physician's view.

Action Call to make arrangements for a day when both the patient and his/her supervisor (and, where appropriate, someone from purchasing) are available. The purpose of this meeting is to go through the following steps of the procedure, which should be orally outlined at the outset; see appendix 1.

***Step 2*: Problem specification**

Steps 2 and 3 take place on the same day (the first workplace visit). Consequently, there is a risk of proceeding too quickly from problem to solution, which can result in suboptimal improvements. It can therefore be helpful to use the lunch period to introduce a 'natural' break between the steps.

Action Introduce yourself to the patient, his/her supervisor (and any other relevant stakeholders present). Describe the program for the day, and what will happen afterwards (appendix 1).

- By talking to the patient and observing him/her at work, ascertain exactly what workplace-related problems the patient is experiencing. Discussion and observation should take place even if you are told that the patient is not experiencing workplace-related problems. It is important to consider not only any physical stress that the patient may be subject to, but also any related issues.
  Attention should be paid to the following:
  - Technical/ergonomic issues: the fabric of the workplace (desk, chair, monitor, machines and other equipment and facilities used by the patient)
  - Organizational issues: control opportunities, working methods, scope for planning work and rest times, management arrangements, task rotation, communication, contacts, etc
  - Personal issues: physical capabilities, knowledge and skills, etc

Action Ask the patient to do some work in his/her normal workplace and observe exactly what he/she does. Use the checklist in appendix 2 and record your observations. After the observation session, talk to the patient about any problems he/she experienced.

Action Find somewhere where you can talk to the patient alone for a while without being disturbed. Follow the interview plan set out below.

- Ask the patient what his/her duties/activities are. Distinguish his/her primary duties from ancillary activities.
- Ask how often each task/activity is performed (daily, weekly, etc).
- How (physically) strenuous does the patient find his/her duties/activities (light, moderate, strenuous or very strenuous)?
- Once all duties and activities have been defined in the manner described above, priorities can be set: problems that are both serious and frequent have the highest priority.

- The patient's supervisor should be asked for his/her views on the identified problems; in this way any discrepancies between the patient's perception of his/her duties/activities: and the manager's should be identified and discussed.

Action Find somewhere where you can talk to the patient's supervisor alone for a while without being disturbed. Follow the same interview plan as used for your discussion with the patient.

Show the supervisor the list of duties, activities and problems drawn up on the basis of your discussion with the patient.

- Before any decisions are taken as to which problems should be addressed, in your expert capacity go over what the patient and his/her supervisor have told you and compare it with your own observations. Define your reasons for believing that certain problems should be addressed; if your observations are at odds with what the patient or supervisor has said, your reasoning needs to be particularly clear.

Action Study the information provided by the patient and his/her supervisor and compare it with your own observations and analysis. Give consideration to the following:

- The scope for making use of existing solutions
- The importance of each problem in the context of return to own or equal work

- Talk to the patient and his/her supervisor together about which problems should be addressed. Record the outcome of this discussion on the form in appendix 3, using drawings or photos as necessary for clarification.

Action Before the lunch break, have a brief meeting with everyone concerned and present the findings of the initial problem identification exercise. Decide together which problems need to be addressed and record what is decided.

***Step 3*: Reflection and the identification of solutions**

- The patient, the supervisor and any other stakeholders should be asked to think of as many potential solutions as possible for the problems identified earlier (without ifs and buts and regardless of practicality).
- In your expert capacity, you should also suggest solutions, but make sure that the patient and his/her supervisor have their say first. Follow the discussion plan described below:

Action Find somewhere where you can talk to the patient, his/her supervisor and any other stakeholders (e.g. anyone who works alongside the patient, or the person responsible for purchasing equipment and resources). Explain that the purpose of the discussion is to come up with as many (creative) ideas as possible about how to resolve the patient's problems. The discussion should be structured as follows:

- State the patient's problems and explain what each problem entails. Then go through the following procedure for each problem:
  - Give each person present a pad of sticky notelets or a pile of cards.
  - Ask them to write down a possible solution to the problem, without discussing their ideas. Write down an idea of your own. Encourage everyone to think creatively and not to worry about how realistic their ideas are. Emphasize that all categories of solution should be considered:
    - Technical/ergonomic solutions (involving equipment, resources, etc)
    - Organizational solutions (involving working methods, work/rest periods, task rotation, etc)
    - Personal solutions (involving information/instruction, postural/methodological changes, etc)
  - Write all the ideas for each problem on a flipchart or board.
  - Repeat the process until you have gathered all the suggestions for all the problems.
- Sort the solutions (group similar items together, remove duplicates).
- Ask whether any explanation of the listed ideas is necessary and whether anyone can add to them.
- Examine each idea to decide the extent to which it meets the following criteria:
  - The solution already exists and can be implemented in the short term.
  - The solution is affordable and can be purchased/arranged.
  - The solution contributes to removal or reduction of the problem.

  (yes = +, yes, but/if = +/-, no = -, not known = ?)
- Decide together which suggested solutions have the highest priority (those with most pluses, except where it is agreed that compelling arguments exist). Number the suggested solutions in descending order of priority, where the highest-priority solution is solution number 1.
- Establish whether a schedule of applicable requirements is required for each solution.

  Suppose, for example, that it is decided that the patient needs a more ergonomic chair. What requirements must the chair meet in order to be suitable for the patient and his/her workplace: should it have casters, extra lumbar support, armrests, etc?

- Record all your findings on the Solution Form (appendix 4).

- It may be that a solution that offers good prospects for the patient's return to work cannot be implemented by the supervisor, or at least would be difficult to implement. This can result in a conflict, which requires input from an independent third party (e.g. the occupational therapist) and the deferment of decision-making.

At the end of the first workplace visit these activities should be undertaken.

Action Conclude the visit by telling the various parties that, possibly following the discussion of certain practical matters on the phone, you will draw up a written plan within a week, identifying the solutions recommended for each of the patient's problems and indicating who is responsible for implementation and by when. Let everyone know that you will be visiting again in due course to give the patient instructions on working in his/her adapted setting.

***Step 4*: Preparing for implementation**

- Draw up an advisory plan specifying what is to be done, how, when and by whom (see appendix 5). This plan should be sent to the clinical occupational physician, the patient's occupational physician, the physical therapist, the patient and his/her supervisor.

Action Draw up a plan describing the workplace intervention recommended for the patient (see appendix 6: Model Workplace Intervention Report). Call the clinical occupational physician to discuss the plan and send a copy to the patient's occupational physician the physical therapist, the patient's supervisor and the patient.

- Call the responsible person at the company/organization to establish what the various possibilities are for the purchase and/or introduction of solutions. If the solution involves the acquisition of material products, it is necessary to find out what options are available (bearing in mind the applicable requirements). If the solution involves organizational measures or other measures with implications for other people at or associated with the company/organization, the path followed should allow stakeholders to have their say. In practice, this means following a similar participative procedure to accommodate the interests of the stakeholders concerned.
- Where product purchases are necessary, the 'purchaser' should be asked to look into the possibility of initially taking products on a trial basis. This is because it is not always clear beforehand whether a product will be appropriate for the patient – as with an adjustable desk or chain, for example. Where possible, the patient should

have the opportunity to try things out before they are bought, so that anything which brings no improvement may be returned. Depending on the outcome of the trial, it should be possible to make further improvements (workplace adaptations) and/or to try out other comparable products.

- The people responsible for implementing the workplace intervention plan should be called and prompted to make the necessary changes or purchases, taking delivery lead times (which are sometimes considerable) into account.

***Step 5*: Solution implementation**

- Depending on the workplace adaptations to be made, the patient should be given instruction on working in the modified setting. This may involve arranging a second workplace visit.

Action Arrange to visit the patient at his/her workplace to provide information and instruction.

- If possible, also talk to the supervisor about how he/she can supervise/support the patient in the modified setting.

***Step 6*: Review/evaluation**

- After about a month, call the patient and his/her supervisor to evaluate how the solutions are going: which have already been implemented and when; what problems remain, etc.
- After certain intervals (i.e. in the shorter and longer term), the effects of the workplace adaptations need to be ascertained. Responsibility for this follow-up may be passed on to an appropriate person within the company/organization, or to the company's/organization's own occupational physician.

***Step 7*: Revision/continuation**

- Further improvements should be sought where solutions have proved not to be totally effective.
- A supervisor or other appropriate person within the company/organization should be asked to provide ongoing support for the implemented changes, to continue to give the patient advice on good practice and to make further improvements where necessary.

Work Intervention appendix 1: Program (for the first workplace visit)

The times given below are for guidance only. However, it is strongly recommended that there should be a good interval between step 2, problem analysis, and step 3, identification and selection of solutions. The interval may consist of an 'engineered' break or a 'natural' break, as in the example below.

- Reception, meeting the patient and his/her supervisor
    - Explanation of the purpose of the meeting and the procedure (by the occupational therapist)
- Observation of the patient at work
- Discussion with the patient about his/her problems
- Discussion with the supervisor about the patient's problems
- Personal assessment of the patient's problems (reflection and interim reporting)
- Group discussion about the patient's problems involving the patient and his/her supervisor
- Lunch (draw up list of identified problems with explanatory notes)
- Meeting with the patient, his/her supervisor and any other important stakeholders to identify possible solutions
- Wind up visit

Work Intervention appendix 2: Workplace Observation Checklist

Look out for physical strain resulting from:

- Pushing
- Lifting
- Pulling
- Reaching/bending
- Posture and movements

Refer to applicable (general) standards relating to matters such as weights, use of force, etc.

Be sure to also consider what the patient *is* still able to do.

Pay attention to issues relating to:

- supply (of work) by others (= production process);
- dimensions/ratios (e.g. anthropometric data on the patient relative to the design of the workplace;
- cooperation with others;
- instruction (skills);
- equipment, tools, resources, etc.

Work Intervention appendix 3: Problem Form

Problem table:

Complete the table below as fully as possible.

Primary duties	Activities	Problems	Frequency	Seriousness
1.	a. b. c.	a. b. c.		
2.	a. b.			
3.				

Frequency: indicate how often each task/activity is undertaken:

* = occasionally (e.g. once a week or month)

** = regularly (e.g. a few times a week, perhaps once a day)

*** = frequently (several times a day)

**** = continually (throughout the day)

Seriousness: indicate how serious the problem is (for the individual patient):

* = moderately serious

** = serious

*** = very serious

Example: an office worker in a wages department

Primary duties	Activities	Problems	Frequency	Seriousness
1. Maintenance of pay records	a. Data input and other computer work	a. Shoulder and neck problems caused by work posture and high workload	****	***
	b. Checking	b. Numerous errors in output	***	*
	c. Reading notices	c. Poor communication	**	*

Work Intervention appendix appendix 4: Solution Form

Solution chart:

Draw up this chart and use it to record the outcome of the solution identification meeting.

Problems	Solutions	Notes	Assessment criteria			Priority
			1.	2	3.	
1.						
2.						
3.						
etc						

Criteria:
1: The solution already exists and can be implemented in the short term.
2: The solution is affordable and can be purchased/arranged.
3: The solution contributes to removal or reduction of the problem.

Use pluses and minuses to indicate satisfaction of the criteria:
- = Rates negatively against the criterion
+ = Rates positively against the criterion (use up to three pluses to indicate rating)
+/- = Has both positive and negative aspects
? = Not known

Priorities:
Priorities are indicated using numbers 1 to 10.

Example: *a nursery nurse*

Problems	Solutions	Notes	Assessment criteria			Priority*
			1.	2.	3.	
1. Sitting on low children's chairs to help toddlers with their food (back problems)	a. Children and nurses should be seated at adult height for meals: adjustable-height chairs. Nurses' chairs should also have casters.	Alignment with pedagogical policy needed, info for parents, selection of chairs	++++	+	++++	1.
	b. Low (short-legged) nurse's chair on casters	Other nurses may have the same problem	++++	++++	+	2.

* 1. Significant implications for the rest of the organization.

* 2. Does not address source of the problem and may trigger new problems.

Work Intervention appendix 5: Remedial Action Form

Action table:

Draw up this table and record what is to be done, how, by whom and when.

Problem	Solution	Action	Actor	When	Done

Example: *scaffolder*

Problem	Solution	Action	Actor	When	Done
Frequent manual lifting of heavy objects	Light electric winch	Suitable winch to be a. selected and b. ordered	a. H&S coordinator b. Purchaser	a. x-x-'xx b. x-x-'xx	(initials)

Workplace Intervention protocol appendix 6. Model Workplace Intervention Report

1. Introduction:
    a. Patient's details
    b. Patient's supervisor and (where relevant) other stakeholders
    c. Occupational therapist/expert in charge of case
2. Problems:
    a. Problem analysis chart (patient and supervisor)
    b. Summary observation report
    c. Identified problems with explanatory notes
3. Solutions:
    a. Table listing solutions and assessment criteria ratings
    b. Selected solution(s) and rationale
    c. Applicable requirements and (where relevant) conflicts
4. Remedial action plan/recommendations
    a. Action plan: who does what, when

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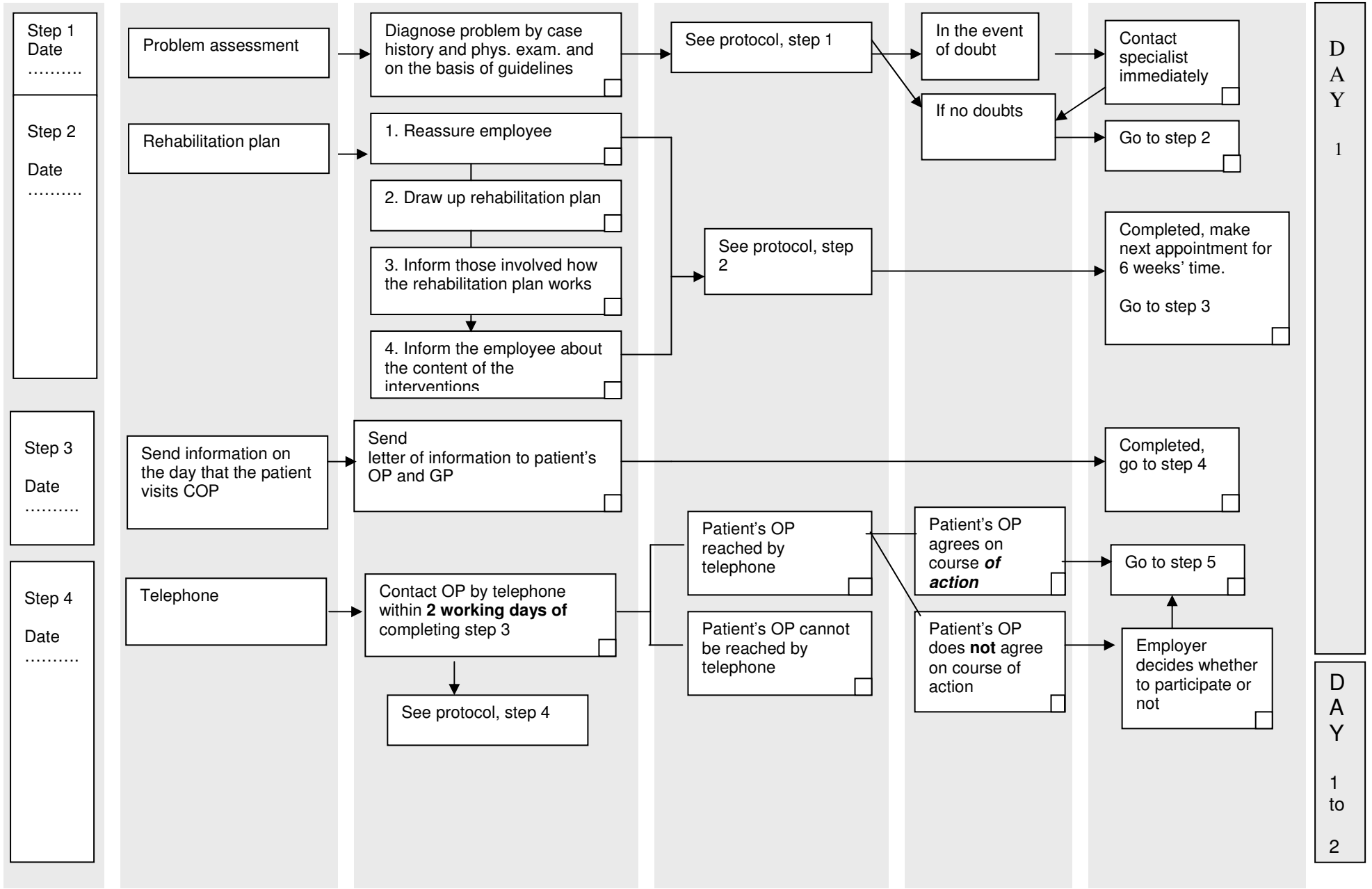
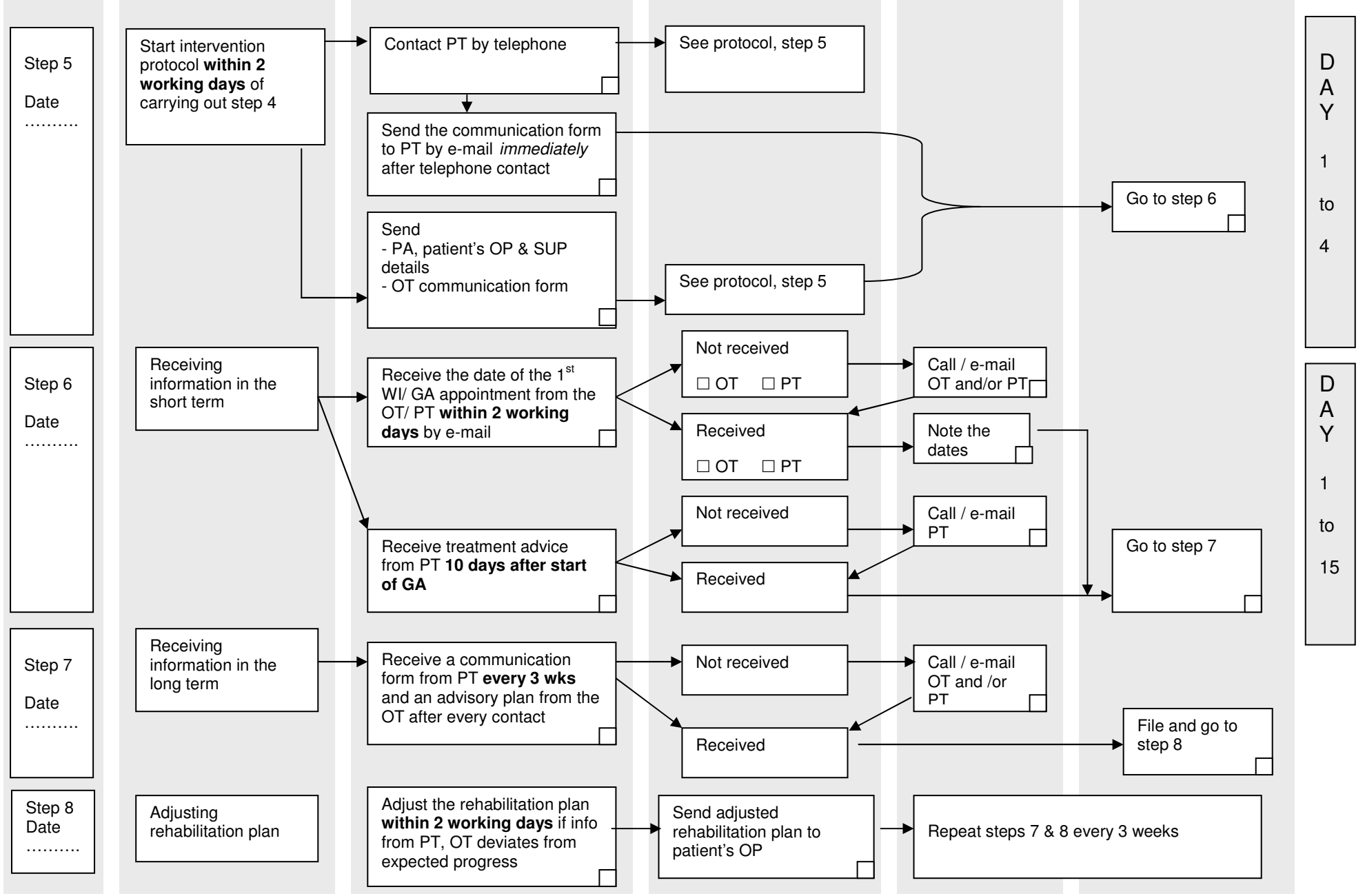
General appendices

Appendix 1: Clinical Occupational Physician Flowchart



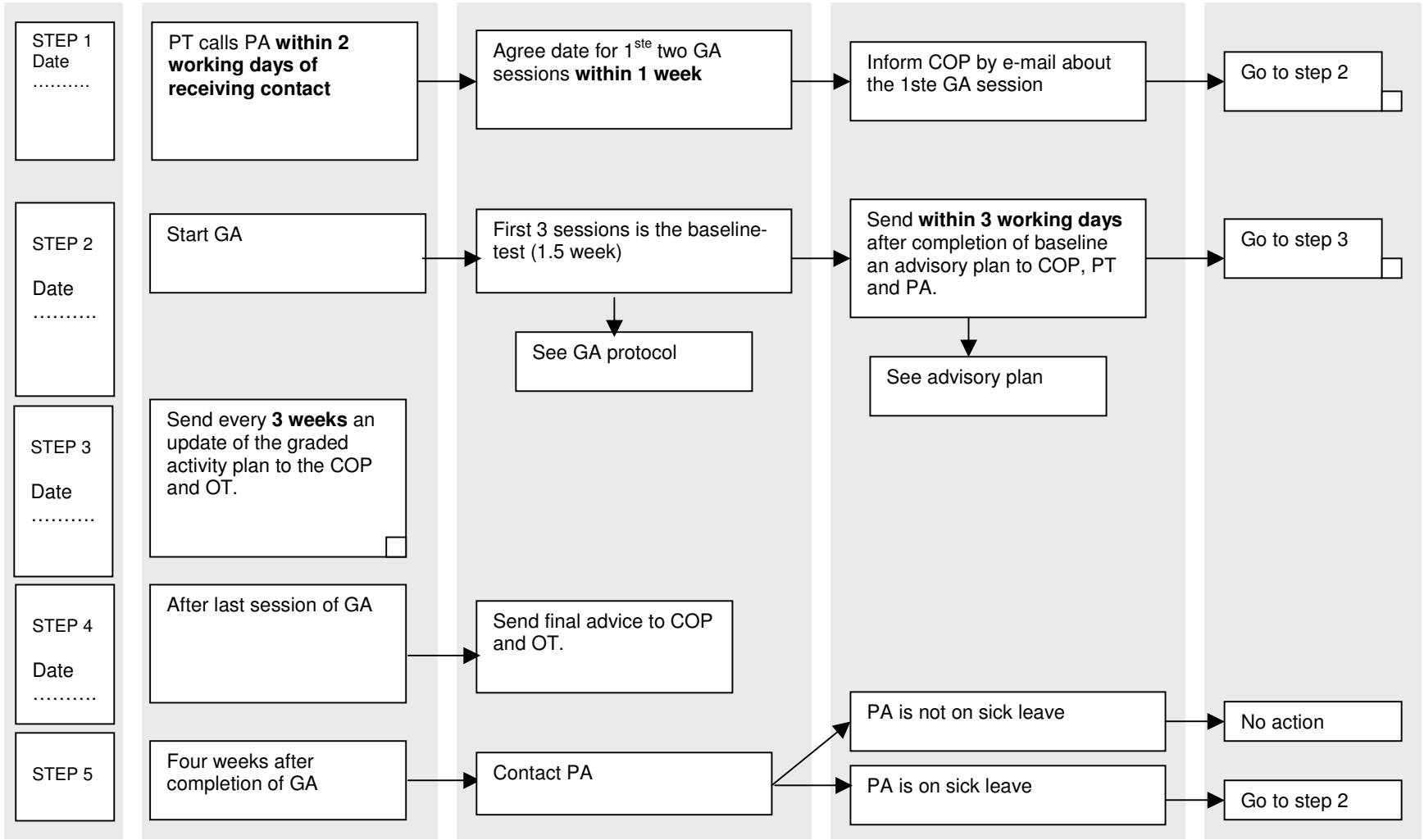


COP = Clinical Occupational Physician
OT = Occupational therapist
PT = Physical therapist

OP = Patient's occupational therapist
GP = General practitioner
SUP = Patient's supervisor

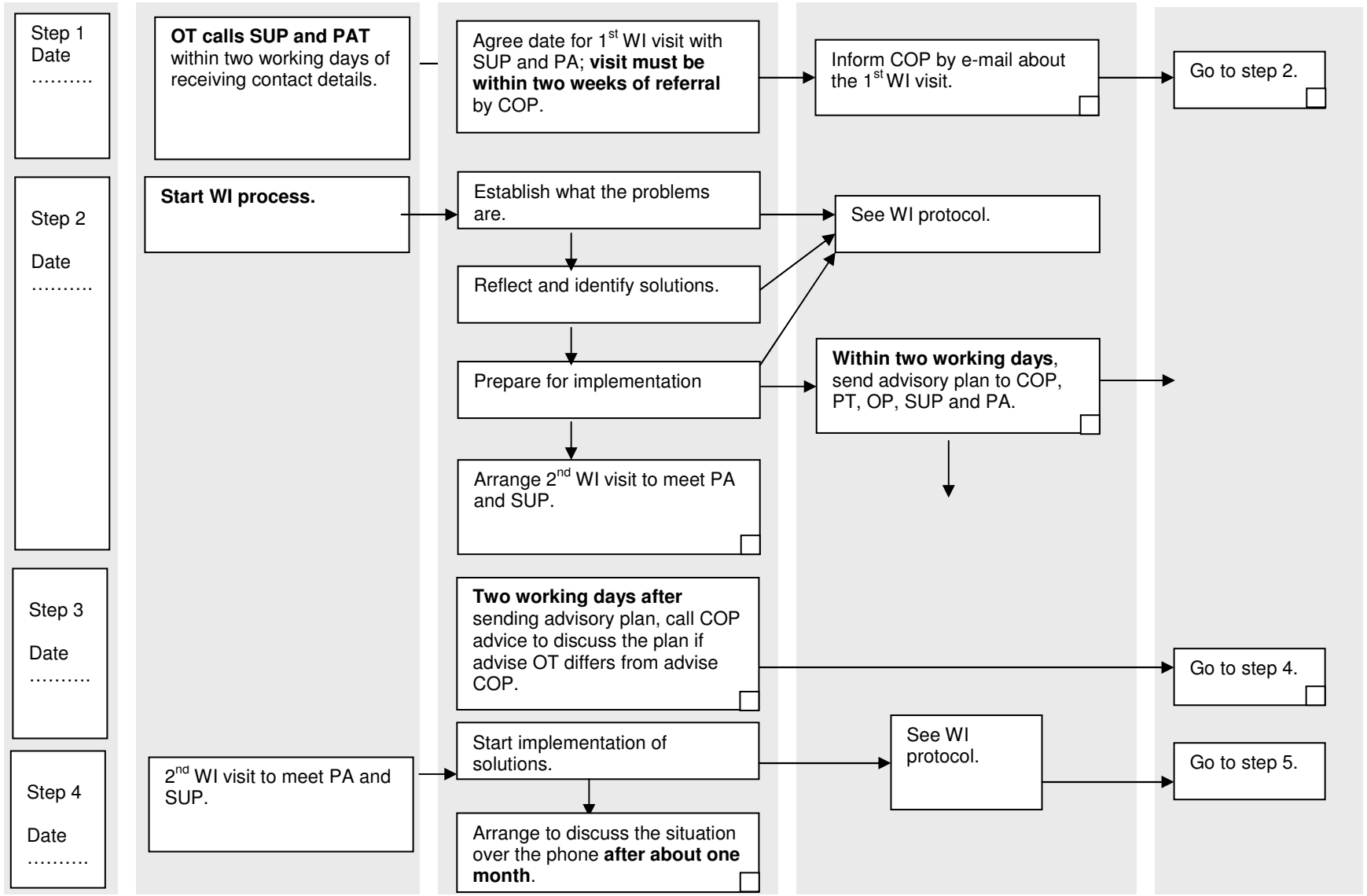
WI = Workplace intervention
GA = Graded Activity Protocol
PA = Patient

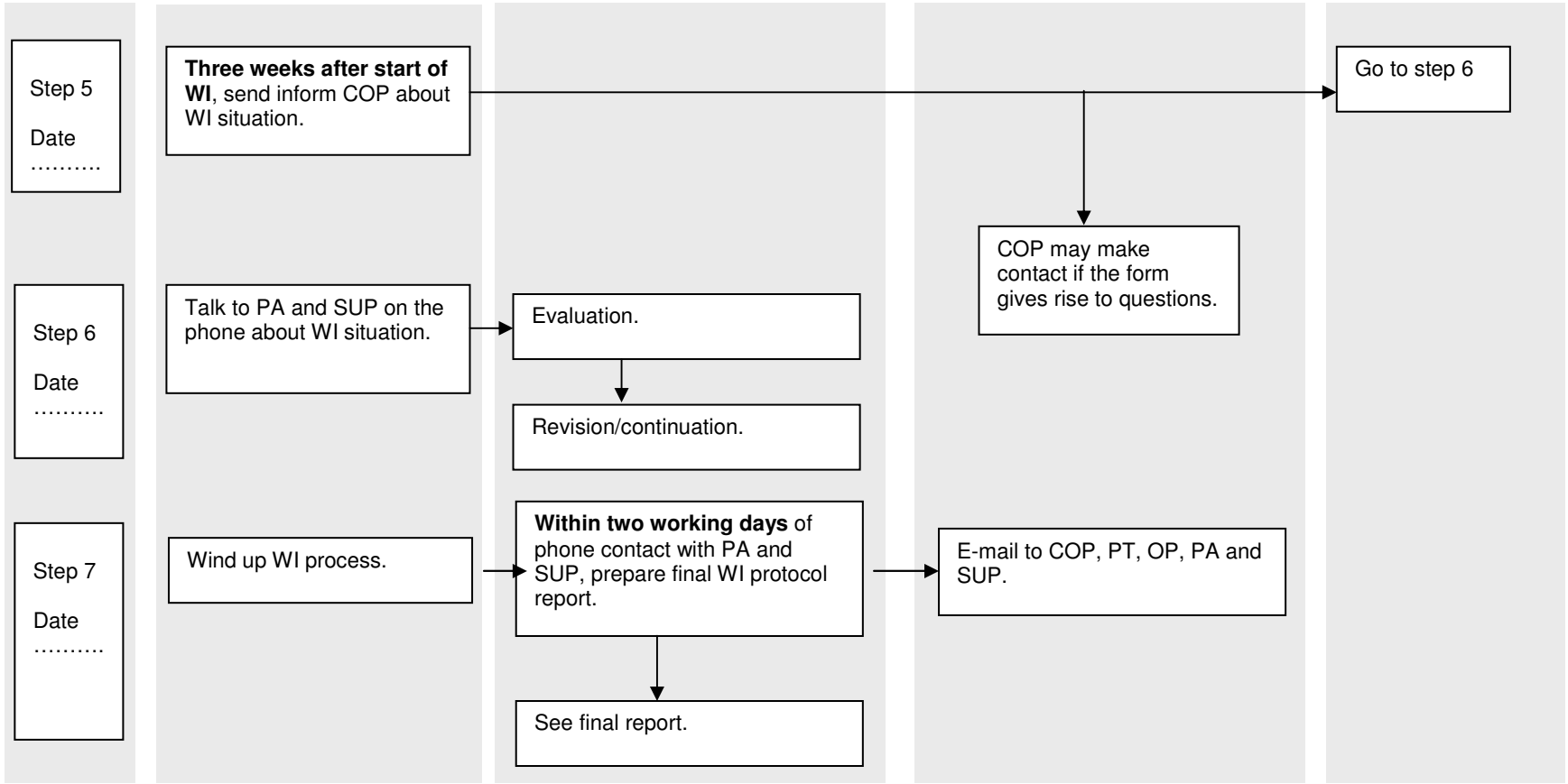
Appendix 2. Physical Therapist Flowchart



PT	=	Physical therapist	COP	=	Clinical occupational physician
PA	=	Patient	OT	=	Occupational therapist
GA	=	Graded Activity Protocol			

Appendix 3. Occupational Therapist Flowchart





OT = Occupational therapist
COP = Clinical occupational physician
WI = Workplace intervention
PA = Patient

SUP = Supervisor
COP = Clinical occupational physician
PT = Physical therapist