Evaluation of *OHSxtra,*

a pilot occupational health case management programme within NHS Fife and NHS Lanarkshire

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Executive Summary

Background

This report describes a pilot study undertaken in NHS Fife and NHS Lanarkshire to provide a case management service for staff who were struggling at work or absent from work with a health problem. The programme, known as OHSxtra, was funded by the Scottish Government for 18 months (January 2006 – May 2007), and overseen by a steering group.

The programme adopted a case management model, whereby the case manager provides dedicated support for individuals with the clearly stated goal of retention in work or early return to work as a successful outcome. The case managers' role is to facilitate the access to services, liaising with the service providers, other health care providers such as GPs, and the individual's manager to expedite a return to or retention in work. This was a new approach for the Health Boards involved; it was intended to complement rather than replace existing Occupational Health services.

The service was delivered by trained case managers (1.5 full time equivalent in Fife; 1 in Lanarkshire from January – November 2006, when a second was recruited). A dedicated phone line and a website were established for accessing the service. The programme was marketed through talks to managers, stands, posters and other promotional material. When the programme was established, word of mouth became an effective marketing approach. Clients could self-refer into the programme, or be referred through occupational health, human resources or their line manager.

Clients were eligible for the OHSxtra programme if they were an employee of NHS Fife or NHS Lanarkshire; and were either absent from work due to a health problem, or at work but having some difficulty doing their job due to a health problem.

On being referred into the programme, and deemed eligible to participate, the client received a face to face appointment with the case manager who undertook an assessment using predetermined tools. Depending on the identified need, the client could be referred to other specialist service providers for a number of sessions of treatment/ therapy; services available included physiotherapy, occupational therapy, cognitive behavioural therapy (CBT) and counselling. Other professional support was available if required. The case manager oversaw the delivery of the service to ensure effectiveness and to manage the available resources; the case manager could agree the extension or curtailment of services. In some cases a formal progresses assessment was undertaken during the service delivery. The case would be closed (client discharged) when adequate progress had been made, or as much as could be done for the clients had been done and the client was no longer benefiting, in which case they could be referred on to occupational health or other professionals. A post-intervention assessment was undertaken at this point.

The tools used during the assessments were designed and selected based on previous research experience. They were:

- two bespoke questionnaires concerning biographical details, health issues, existing services accessed and absence status – one was completed at pre-intervention assessment, the other at post-intervention assessment;
- GHQ-12 (General Health Questionnaire 12);
- EQ-5D (European Quality of Life Questionnaire);
- COPM (Canadian Occupational Performance Measure);

- WAI (Workability Index);
- CIS-R (Clinical Interview Schedule-Revised) (only used in some cases).

Slight differences in implementation were adopted at the two Health Boards due to different cultures and working arrangements.

Results

Client details

Altogether 540 clients had referred into the programme by 22nd December 2006, the date at which the programme stopped receiving new clients. By 4th April 2007, the cut off date for analysis, 250 had been discharged, 142 were still active in the programme, 126 had voluntarily withdrawn from the programme, and 22 were ineligible or had been inappropriately referred.

Of the 540 clients who were referred to the project, 310 (57%) clients worked for the Fife Health Board and 230 (43%) for Lanarkshire Health Board. In total, 17% clients were male and 83% were female. The mean age at referral was 43.3 years (sd = 9.9 years). There was no significant difference between the Health Boards in terms of age and gender of clients. The majority of the clients (56%) were from the nursing and midwifery groups, with 16% from administrative services and 12% from allied health professionals.

Almost three quarters (72%) of clients' primary presenting issue was musculoskeletal, while 25% were common mental health problems. A third of clients (33%) were absent from work at the pre-intervention assessment.

In terms of service provision, the majority of primary interventions provided were physiotherapy, with a higher percentage of cases in Lanarkshire (79%) being referred for physiotherapy than in Fife (56%); and more counselling and CBT services were provided in Fife (28%) than in Lanarkshire (15%). This can be explained by the fact that during the course of the programme Lanarkshire had a separate counselling service (self-referral) available to NHS staff; in Fife, although a similar programme had been available, it was withdrawn partway through OHSxtra.

Following the intervention, only 9% of clients were absent from work; of those who had been absent at pre-intervention assessment, 72% had returned to work at the post-intervention assessment. Of those who had a pre-intervention absence length of more than 21 working days, 65% had returned to work at post-intervention assessment. Only 1 client who was at work at pre-intervention was absent at post-intervention, meaning 99.4% of those who were at work at pre-intervention were also at work at post-intervention assessment.

A statistically significant greater number of clients were not taking any medications post-intervention compared to pre-intervention.

The mean time from registration to pre-intervention assessment was 13 days. The mean time between the pre-intervention assessment and service delivery was 9 days for physiotherapy, 14 days for counselling, 19 days for Occupational Therapy and 26 days for CBT. These time periods were longer than had been anticipated, and were largely due to the time required to complete the data collection paper work associated with the pilot.

Performance measures

The mean GHQ-12 Bimodal Score at the pre-intervention assessment was 4.1; this dropped to 3.7 during the intervention and to 2.6 post-intervention. Lower scores indicate better health. These changes were statistically significant. A score of over 3 was taken as an indicator of 'caseness'. Clients were categorised into a Musculoskeletal, Common Mental Health Problems or Miscellaneous group. For both the Musculoskeletal and Common Mental Health Problems groups there were significantly fewer cases at the post-intervention assessment than at the pre-intervention assessment (47% of Musculoskeletal clients had case status at pre-intervention assessment, dropping to 11% post-intervention; 92% of those with Common Mental Health Problems had case status at pre-intervention, and 22% at post-intervention). The biggest change was for the Common Mental Health Problems group; this tool primarily measures mental health status. It is worth noting that the post-intervention GHQ-12 scores for the Common Mental Health Problems group were similar to those in the Musculoskeletal group.

Comparison of these scores against those obtained in other studies shows fewer OHSxtra clients had case status at post-intervention than in other healthcare workers studies; there are also fewer cases post-intervention than are seen in a general working population.

Using the COPM tool, clients were asked to report up to 5 activities they had problems completing, that they attributed to their primary presenting issue. The most commonly reported activity was paid/unpaid work, both for the Musculoskeletal group and the Common Mental Health Problems group. Clients were asked to score their perceived performance of these activities at the pre-intervention, during intervention and post-intervention assessments. There was a consistent and statistically significant improvement to the performance ratings given to activities over time for both the Musculoskeletal group and the Common Mental Health Problems group.

When rating their satisfaction with their ability to perform the identified activities, there was again a consistent and statistically significant improvement to the satisfaction ratings given for the Musculoskeletal group (for all activities) and the Common Mental Health Problems group (for the first four activities identified).

The Work Ability Index allows clients' scores to be categorised into poor, moderate, good and excellent. Again, there was a statistically significant improvement in these scores for the Musculoskeletal group and the Common Mental Health Problems group between pre-intervention and post-intervention; 46% of the Musculoskeltal group had good or excellent health pre-intervention; this was 78% post-intervention. In the Common Mental Health Problems group 25% had good or excellent health pre-intervention; this was 84% post-intervention.

The EQ-5D measures health status according to 5 dimensions (Mobility, Self-Care, Usual Activities, Pain/Discomfort and Anxiety/Depression) and through the use of a Visual Analogue Scale. A statistically significant higher proportion of clients report no problems on each of the 5 dimensions in the post-intervention assessment than at pre-intervention for both the Musculoskeletal group and the Common Mental Health Problems group.

At the pre-intervention assessment, 14% of Musculoskeletal clients had extreme pain or discomfort; this dropped to 1% at post intervention. Only 2% reported no pain or discomfort at pre-intervention assessment; this was 39% at post-intervention assessment.

This is mirrored with the scores relating to the ability to perform their usual duties, with only 14% saying they had no problems with this at pre-intervention assessment, and 65% having no problems post-intervention.

For those with Common Mental Health Problems, 31% reported being extremely anxious or depressed pre-intervention; this dropped to 2% post-intervention. Only 8% reported not being anxious or depressed pre-intervention while 61% were not at post-intervention assessment. This too is mirrored with significant improvements in the number of clients not experiencing problems in performing their usual duties.

Statistically significant improvements were also seen to the mean Visual Analogue Scale scores of rating of overall health for both the Musculoskeletal and Common Mental Health Problems groups.

All the health measurement tools used showed statistically significant improvements from the pre-intervention assessment to the post-intervention assessment both for clients with Musculoskeletal problems and those with Common Mental Health Problems.

Other data

Limited data were available from other sources within the Health Boards that would indicate the impact of OHSxtra (e.g. bank/agency staff usage, overtime worked). There is an indication that OHSxtra reduced the number of NHS staff referred into NHS physiotherapy, with an associated improvement in waiting list durations. There are clear indications that the withdrawal of the Employee Counselling Service in Fife had an impact on OHSxtra, with the number of OHSxtra referrals to counselling / CBT increasing following the withdrawal of the service.

Satisfaction measures

Subjective feedback from clients concerning the service was overwhelmingly positive on all parameters measured. Feedback from line managers and human resources personnel was also positive, although a minority felt unsatisfied with the information received from the case managers, and did not feel involved with the process, possibly because some of the client management had been taken from them. A minority of service providers were also unsatisfied with the feedback from the case manager, did not feel involved with the process, and were not satisfied with the waiting times.

Cost effectiveness

Economic analysis was undertaken to assess the cost effectiveness of the programme. Significant improvements to quality of life were observed among clients (as measured using the EQ-5D). Based on these improvements to quality of life, and clients' sickness absence during the programme, OHSxtra has been shown to be cost effective. Implementing OHSxtra is more effective and has a lower cost than not implementing it; it can be said to be a dominant strategy. This is based on the assumption that OHSxtra was responsible for all the clients who were on sickness absence at the onset of the programme subsequently returning to work at the end of the intervention period. Threshold analysis showed that if the implementation of OHSxtra was only responsible for less than 17% of clients returning to work following sickness absence from the onset of the programme, the strategy would no longer be cost effective.

Costs

The cost of case management in the pilot was £111,119. The cost of case management per active or completed client (401) is approximately £277. In on-going service delivery, where the requirements for data collection are reduced, the costs are anticipated to be approximately £161 per client.

The costs of service provision were £50,618 for the 246 clients who completed, equating to approximately £206 per client. The approximate cost per client during the pilot was therefore approximately £482. This could be expected to be £387 per client in on-going service delivery. Overall service delivery costs during the pilot £161,737.

The anticipated cost of absence of the clients who returned to work during the programme is £32,576 had they not received the intervention. The anticipated cost of absence of the clients who stayed at work throughout is £236,374 had they not received the intervention. A further £5,006 of management time can be estimated to not have been spent due to the avoidance of absence. This give a total of £273,956 cost avoided.

Based on this, it can be seen that for every £1 spent on service delivery there is an estimated avoidance of absence cost of £1.66; this is £1.69 when including the management time avoided. These figures do not include the costs associated with repeated absence, staff replacement, the maintenance of patient care, avoidance of work restrictions, the retention of skilled staff in service delivery, and reduced medication use.

These figures relate to the cost of service delivery as undertaken in this pilot study. It is likely that on-going service delivery adopting these principles, but without the requirement for such extensive data gathering for evaluation, would mean that case managers costs would be reduced per client. This would also potentially result in more clients being seen and potentially helped to return to work or prevented from becoming absent. If the cost of service delivery was reduced, and the number of clients assisted was increased, the relative reduction in absence costs investment is likely to increase.

Considering the cost of case management and service delivery per client, if the programme assists all participating staff to avoid an average of approximately 4 days of sickness absence, the reduced absence costs will equate to the cost of service delivery.

It is estimated that in on-going service delivery, each full-time case manager could manage approximately 210 cases per year.

Conclusions

A case management programme has been developed and delivered that has been shown to be effective, and cost effective. Significant improvements in health have been reported; 72% of absent clients have returned to work, and 99% of those who were at work but struggling have remained in work. Very positive feedback has been received concerning the service. The service has been shown to be cost effective, being less costly and more effective than not adopting the service. The avoidance of absence costs are estimated to equate to £1.66 for every £1 spent on service delivery, as conducted in the pilot; on-going service delivery is likely to bring about greater avoidance of absence costs. It is recommended that the programme continue. Lessons have been learnt from the implementation of the pilot which have allowed the model to be refined for future service delivery.

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1. Introduction and background

In 2003 the Scottish Government commissioned a working group to look at the potential to implement Fast Track Rehabilitation programmes in the NHS in Scotland. The working group produced a paper, which described a scheme, '*OHS-Extra'*, which advocated an approach to tackling long-term sickness absence among NHS staff by providing rapid access to an integrated service comprising of physiotherapy, occupational therapy and mental health assistance (e.g. clinical psychology/counselling/ cognitive behavioural therapy (CBT)). The steering group that was set up to oversee the implementation of OHSxtra recommended the use of a case management approach, based on evidence in the literature and from the case management model used in the Department of Work and Pensions sponsored 'HealthyReturn' project which was run in Glasgow (part of the Job Retention and Rehabilitation Pilot). Case management is increasingly being adopted by many other organisations.

Within this model the case manager provides dedicated support for individuals with the clearly stated goal of retention in work or early return to work as a successful outcome. The case managers' role is to facilitate the access to services, liaising with the service providers, other health care providers such as GPs, and the individual's manager to expedite a return to or retention in work. The case manager does not require clinical skills, but must have training for the role and have the right personal qualities. The intention is that the use of a case manager frees up the highly trained and qualified occupational health staff, human resources staff, service providers, and clients' managers, while directly supporting the employee. This should benefit the individual employee, the employer, and the public that the employer serves. It is anticipated that this investment will also be cost effective.

In order to test this and develop a practical model for implementation in the NHS the Scottish Government provided funding for two pilot schemes in the NHS. OHSAS, the NHS Fife occupational health service, and Salus, the NHS Lanarkshire occupational health service, agreed to work together to deliver these pilots within NHS Fife and NHS Lanarkshire. The programme ran from January 2006 to May 2007.

2. Objectives

The objectives of the programme were:

i. To design a scheme which takes account of the experience and lessons learnt from the Department of Work and Pensions funded project, 'HealthyReturn'.

ii. To improve patient (public) care by improving the availability of NHS staff through avoiding absence from work and facilitating the return to work.

iii. To improve patient (public) care through focused rehabilitation services for NHS staff to support them to optimal functional capacity and therefore to be effective members of the NHS workforce.

iv. To achieve an acceptable return on investment, thus demonstrating the cost effectiveness of the approach.

v. To produce a model for implementation in the wider NHS.

3. Literature and context

A recently published study for the Health and Safety Executive reviewed the evidence for the cost effectiveness of a case management approach for those with Musculoskeletal Disorders (MSDs) (Hanson *et al*, 2006). This identified that there is good evidence for case management being an effective and cost effective approach; the literature shows this not only for MSDs, but other health conditions. The evidence suggests that case management is most effective when it is separated from the therapeutic role and is not provided by the therapy provider.

A number of examples were obtained of UK organisations that were undertaking case management and rehabilitation for those with MSDs; although the data available from these organisations was incomplete, taken together there was evidence that there is a return on investment of two to three times the amount spent when adopting a case management approach for those with MSDs.

In that study, two NHS Trusts that were adopting models to support those with MSDs were identified. Both these were physiotherapy led services, only for those with MSDs. At one, an in-house physiotherapy and rehabilitation service is provided to staff in the Hospitals Division (13,500 employees). The service was established in 1997, with an estimated cost of initially setting up the service of just over £6,000. The majority of referrals to the service are self referral (85%) with the remainder being line manager referrals. Referrals are screened by telephone triage, with high priority cases seen within 48 hours. For the remainder, written and verbal advice is provided; individuals are encouraged to self-manage and come back to the service if their discomfort has not improved in 5-7 days. Those who return are assessed, and receive physiotherapy (on site), advice and workplace assessments / return to work support as appropriate. The service is staffed by 4 full time equivalent physiotherapists; in 2003 762 clients were seen by the service (573 at work; 189 absent), and in 2004 738 clients were seen (478 at work, 260 absent).

Evidence indicates that for every £1 spent on the service in running costs, there was a saving of approximately £3 (medium estimate) (i.e. approximately 300% return on investment). Figures are estimates of costs[1], based on low, medium and high estimates. This gives a range of savings for every £1 spent of: £0.65 - £6.52 (medium estimate of £3.08) for 2003 and £1.35 - £5.79 (medium estimate of £3.38) for 2004.

Clients receiving this service also completed questionnaires on their work status (absent or at work), their functional ability, and their view of the impact of the service their health on discharge, and at 3 and 9 months following discharge. The benefits of the intervention are seen to be sustained at the 9 month evaluation.

In the second Trust, a Primary Care Trust with approximately 1,100 staff at approximately 200 sites piloted a physiotherapy run case management programme in 2003/04. The service was staffed by 0.5 full time equivalent physiotherapist. Most referrals were self referrals. Clients received an assessment and advice within 3 days of referring; on average 3 further 30 minute physiotherapy sessions were provided. 159

[1] This comprised the estimates of the amount of line management time per case; number of sessions of physiotherapy attended during work time; estimated number of days absence avoided – 1 (low), 10 (medium), 20.5 (high) [HSE's figure for average absence of those with MSDs in 2004/05]; productivity rate on return to work; and prevention of repeated absence.

clients were seen during the 12 month pilot; 122 were at work, 37 were absent. Evidence suggests that for every £1 spent on service provision there was a saving of between £1.31 and £1.62 (i.e. approximately a 31 – 62% return on investment). There were reported to be fewer MSD related absences during the pilot, but the average length of MSD related absence was not affected.

These studies indicate that programmes to provide physiotherapy and workplace support within the NHS are effective for those with MSDs.

The HOPE project, funded by NHS Lanarkshire, was open to all employees in Lanarkshire, identified individuals who visited their GP or attended Accident and Emergency Departments with a work related problem; these individuals were asked to participate in a telephone interview. The information was screened by an Occupational Health Nurse who could provide further advice, or conduct further occupational health assessments. Most clients within the programme had experienced an accident, but musculoskeletal disorders and mental health / stress were the second and third most common health problems, and resulted in the greatest amount of lost work time. The mean number of days lost from work for musculoskeletal disorders was 27, and for mental health / stress was 31. The programme commenced in 2000, and is on-going.

The DWP funded Job Retention and Rehabilitation Pilot study encompassed a number of projects, including 'HealthyReturn'. Programmes were provided for those who were employed 16 hours or more per week, but who had been off work for between 6 and 26 weeks. Clients volunteered to participate in the programme. Comparison was made between three interventions and a control group. The interventions were: a workplace intervention, a health intervention and a combined workplace and health intervention. No overall difference was seen in the return to work of clients using any of these interventions, as compared to the control group. One indication is that those who were in the control group tended to take responsibility for their own return to work, while those assigned to an intervention group tended to relinquish this responsibility to the providers.

The Scottish Government's strategy for adult rehabilitation was launched in 2007 (Co-ordinated, integrated and fit for purpose: A delivery framework for Adult Rehabilitation in Scotland. Scottish Government 2007). This has as one of its three target groups, people returning from work absence and/or aiming to stay in employment. The approach recommended for this group in the strategy is in line with the approach adopted in this pilot study.

4. Terms and definitions

For the purposes of clarity in the pilot the following definitions were used:

Case management

Case management is a collaborative process which assesses, plans, implements, coordinates, monitors and evaluates the options and services required to meet an individual's health, care and employment needs, using communication and available resources to promote quality outcomes, with effective management of resource.

Case managers were able to refer clients to one of three main services, physiotherapy, occupational therapy, and mental health support, either cognitive behaviour therapy (CBT) or counselling. Other support was also available (e.g. Occupational Health Nurse, Occupational Physician, Podiatrist, Manual Handling Coordinator etc).

Physiotherapy

Physiotherapy is a health profession concerned with the assessment, diagnosis and treatment of physical problems, injury and disability by the use of therapeutic exercises and the application of modalities, intended to restore or facilitate normal function or development.

Occupational Therapy

Occupational Therapy is a health and rehabilitation profession which helps individuals achieve independence in their lives despite any impairments or disabilities they may have. Occupational therapists provide customised treatment programmes to help individuals achieve independence in all facets of their lives, from daily living activities to assistance in the workplace. An Occupational Therapist will often undertake performance skills assessments and comprehensive home or job site evaluations, making adaptive workplace or equipment recommendations and providing training in the use of equipment.

Cognitive Behaviour Therapy (CBT)

Cognitive Behaviour Therapy is a psychological treatment approach which allows individuals to examine and change the relationship between their thoughts, feelings and behaviours. Based on the assumption that cognitive processes and behavioural patterns are linked and one can significantly affect the other, this approach can be quite structured and focuses the individual on the present.

Counselling

Counselling is a process which allows an individual to define, understand or address a difficulty that are having by allowing them to take a step back and see it more clearly. Because counsellors do not give advice or direct an individual to take a particular course of action, counselling is a way of enabling choice or change, or of reducing confusion and enabling people to live more resourcefully.

5. Design of the programme

5.1 Overview

The study design comprised of prospective data collection; the requirement was to evaluate a programme of service delivery; as such there was no control group. The programme was run as a pilot, and it was therefore necessary to gather data that could be used to evaluate the impact and effectiveness of the interventions on the NHS as well as for the individual clients.

The service was launched by Andy Kerr, Minister for Health and Community Care, as 'OHSxtra'. It was available for all staff within the two participating Health Boards.

5.2 The case management approach

The key feature of the programme was that it adopted a case management approach, where the case manager was the gate keeper for referral to other services (physiotherapy, occupational therapy, counselling and cognitive behavioural therapy), and liaised with other stakeholders involved in the management of the client (e.g. line manager, other healthcare providers etc). The programme was intended to allow rapid access to services, as well as access to services that were not otherwise available on the NHS (e.g. cognitive behavioural therapy)).

Within the two Health Boards involved in the pilot, case management was a new approach for dealing with heath issues affecting staff at work (both those staff who were at work, but struggling, and those who are absent due to the health problem). The approach is distinct from the traditional occupational health model. The programme was intended to complement and integrate with the existing occupational health services, rather than replace them. The case manager was not the gate keeper to access to occupational health physicians and nurses, but could refer to them if judged appropriate.

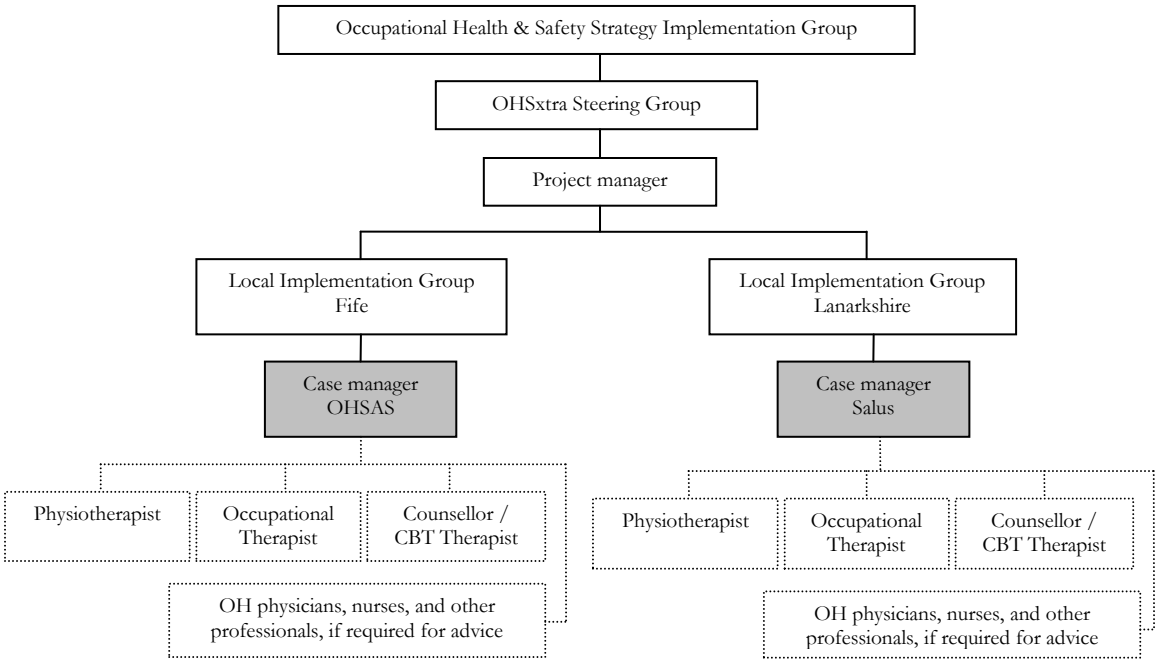
5.3 Programme management

The programme was implemented in the two NHS Health Board areas of Fife and Lanarkshire. While they worked independently within the programme and had slightly different approaches, there was regular communication to ensure overall consistency. The project was overseen by a single project manager who was responsible for the effective and smooth running of the programme in each Health Board and in facilitating and ensuring effective communication between them. The management structure is shown in Figure 1.

A steering group was established to oversee the running of the programme. This met approximately every 6-8 weeks and comprised of the Directors of OHSAS and Salus, the Salus operations manager, a Salus case manager who was not involved in the operational running of the programme, a Glasgow Health Board finance director, a Fife Health Board HR director, an external consultant occupational physician working in the private sector where this type of service is already established, and representatives of the Scottish Government's Health Department, who provided the funding.

An expert reference group was also established, which provided comments on the potential future implementation of the programme. This met in September 2006 and May 2007.

Figure 1. Management structure for OHSxtra pilot



5.4 Case managers

5.4.1 Personnel

Two case managers were initially recruited for the project; one in Fife and one in Lanarkshire. During the project it became clear that this was not sufficient to deal with the case load, and two further case managers were recruited, one working as a case manager half time, and joining the project relatively early (in Fife) and one working full time in Lanarkshire from November 2006 onwards.

One of the case managers recruited had previous experience of working as a case manager; the background of the others were occupational health nursing, occupational therapy, and administration.

Throughout the project there was close working between the case managers, with regular sharing of experience, and exchange of information and advice. A monthly case managers' meeting was held which included peer review of cases.

Detailed job descriptions were developed for the project manager and the case managers prior to their appointment.

5.4.2 Training

The case managers received 14 days of training at the start of the project; this was delivered as 2 days per week over a 7 week period. The training content was based on a programme developed for the HealthyReturn project (DWP, Job Retention and Rehabilitation Pilot); tutors were personnel from within NHS Fife and NHS Lanarkshire Health Boards who had expertise in these areas, and external experts. Some private study was required.

Detailed protocols were developed for the case managers concerning case management and completion of the questionnaires. All the case managers were trained to manage all client groups and primary presenting issues.

5.5 Service providers

5.5.1 Personnel

One dedicated physiotherapist was recruited at each of the Health Boards to work with OHSxtra clients. Other service providers were either contracted from within other parts of the NHS (e.g. occupational therapy was available in-house in Fife, and was contracted in to Lanarkshire); or from external providers (e.g. counselling and CBT was contracted in on a sessional basis). All service providers were recognised professionals. Clients saw physiotherapists, occupational therapists and occupational health professionals at the occupational health centres; counselling and CBT was provided at other locations, where the service providers were based.

5.5.2 Training

The service providers were given information on the programme at the outset. They were informed of the records and communication required for the programme. Detailed protocols were developed for the service providers.

5.6 Communication

Effective communication was key to the successful running of the programme. The case manager was the main route of communication, liaising with the service providers, line managers, and others as necessary. The case manager kept and maintained the client files. Each client file contained:

- notes of phone discussions between the case manager and the client;
- completed assessment questionnaires;
- copies of letters / emails sent to service providers; and
- copies of reports back from service providers.

Copies of referral forms were passed to the Occupational Health department if the client was also under their care.

It was intended that case conferences would be held with the case manager, and other relevant stakeholders (e.g. occupational physician, physiotherapist, occupational therapist, line manager etc). However these were difficult to schedule due to workload commitments, so a more informal approach was adopted when the case manager or one of the service providers would request a conference to discuss specific client issues on an ad hoc basis. The requirement for this was low, and few were actually held.

5.7 Advertising and marketing of project

A dedicated helpline number was established so that clients could self-refer by telephone or contact the programme while enrolled in it. Managers could also use this number to refer their staff. A website (www.ohsxtra.scot.nhs.uk) was also established which provided information on the programme and how to refer to it. Management and self-referral were possible via the website.

Slightly different promotional activities occurred within the two Health Boards. In Fife, an email was sent to all staff within the Health Board informing them of the project, and inviting them to visit the display at the canteens; at these promotional materials were available (mugs, pens, coasters, leaflets etc), and OHSxtra staff were available to answer questions concerning the programme. Posters were also put up in staff areas.

A series of half hour seminars were also held within the four main hospitals in the Fife Health Board, to provide information to managers / HR personnel concerning the programme, and how to access it. Managers were invited to attend a seminar at a time that was convenient to them; they were not required to book to attend.

Because of delays in appointing service providers in Lanarkshire (physiotherapy was available from mid-June 2006 onwards; occupational therapy from October 2006 onwards), OHSxtra was not heavily promoted initially.

The initial marketing activities in Lanarkshire (February / March 2006) involved canteen exhibitions using the promotional materials; OHSxtra staffed these displays to answer questions. These were undertaken at each of the main hospitals. Posters were also placed in canteens.

All Lanarkshire line managers attended seminars relating to their newly introduced sickness absence management programme; OHSxtra was mentioned at this. However, since the Health Board required that the line manager referred cases to occupational health rather than OHSxtra, line managers were not provided with extensive information on the programme.

Following review of the effectiveness of this, at which it was seen that referral rates were relatively low, information was provided as an insert with all staff's pay slips in August 2006. In addition, posters were placed on more of the staff notice boards throughout the hospitals.

5.8 Clients

5.8.1 Capacity

It was anticipated that approximately 500 people could be seen within the programme in a 12 month period.

5.8.2 Eligibility

Clients were considered to be eligible for the OHSxtra programme if they:

1) were an employee of NHS Fife or NHS Lanarkshire;
2) and
    a) were at work but had some difficulty doing their job due to a health problem; or
    b) were off sick.

Clients were ineligible for the programme if they were participating in the Fife Job Retention Programme (a programme offering employment support for employees of NHS Fife and Fife Council whose employment is at risk because of mental ill-health problems).

5.9 Operational arrangements

5.9.1 Route through the programme

The route a client could take through the programme is shown in Figure 2. It can be summarised with the following key features:

1. An individual would be referred or self-refer to the programme; their eligibility to participate in the programme was determined (eligibility assessment).
2. They would receive an initial appointment with a Case Manager who assessed the individuals using predetermined tools (pre-intervention assessment).
3. Depending on need, as identified by the case manager through interview and outcome of questionnaires, the client may be referred to other specialist service providers for a number of sessions of treatment/ therapy; the main interventions available included physiotherapy, occupational therapy, cognitive behavioural therapy, counselling. It was also possible for the case manager to refer to occupational health nurses, occupational physicians, manual handling advisors, DSE assessors, podiatrists and other specialists as required.
4. The case manager oversaw the delivery of the therapy to ensure effectiveness and to manage the available resources; the case manager could agree the extension or curtailment of services. In some cases a formal assessment of progresses was undertaken during the service delivery.
5. The case would be closed (client discharged) when adequate progress had been made, or as much as could be done for the clients had been done and the client was no longer benefiting, in which case they could be referred on. A post-intervention assessment was undertaken at this point.

5.9.2 Service level agreements and targets

The intended service level agreements were:

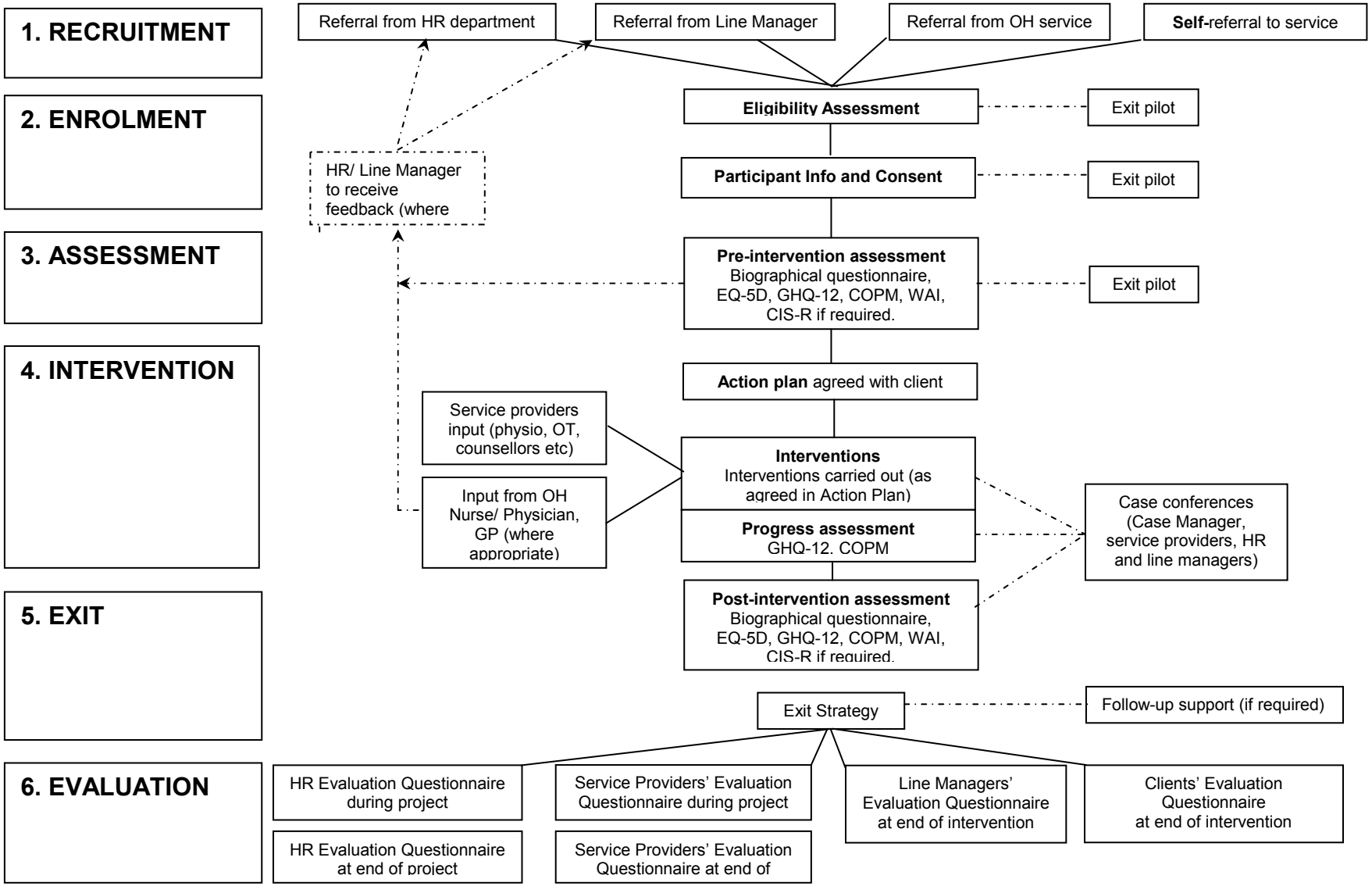
- Case manager to have made contact with the client within 2 working days of referral;
- Client to have an appointment (pre-intervention assessment) with the case manager within 2 weeks of the contact;
- Clients to have an appointment with the specialist therapy provider within 2 weeks of the case management assessment;
- Clients to receive a maximum of 6 therapy sessions before review, although review after 3 was recommended.

5.9.3 Assessment tools

Questionnaires were developed for data gathering purposes at the pre-intervention assessment and the post-intervention assessment. These were based on the need to monitor clients through the programme, and to evaluate the impact of the programme. They covered biographical details, health issues, existing services accessed, and absence status.

Client information and consent forms were also developed.

Figure 2. Route through OHSxtra



In order to monitor the progress of clients within the programme a number of formal measurement tools were used. These were:

- GHQ-12 (General Health Questionnaire 12)
- EQ-5D (European Quality of Life Questionnaire)
- COPM (Canadian Occupational Performance Measure)
- WAI (Workability Index)
- CIS-R (Clinical Interview Schedule-Revised) (only used in some cases)

These questionnaires were completed at the pre-intervention assessment, during the intervention period (for GHQ-12 and COPM only), and at the post-intervention assessment. Further details about these tools are given in Appendix 1.

The standardised tools were selected based on previous research experience. COPM and WAI had been used in the HealthyReturn project which involved Case Manager support for clients, and the questionnaires were found to be useful as research tools. Similar occupational health projects had used GHQ-12 and EQ-5D as health screening tools.

5.9.4 Time frame

The pilot project started to receive clients in March 2006 following a period of publicity and promotion. The reputation of the service spread quickly and the service rapidly became very busy. August was the peak month for referrals in Fife, while October was the busiest in Lanarkshire. The programme closed to new clients on 22nd December 2006. Since clients potentially required a number of sessions with the therapy provider or Case Manager, clients already in the programme at this point continued to be seen over the following months. For the purposes of analysis, completed assessment questionnaires were received and entered into the database until 4th April 2007.

5.9.5 Pre-intervention, interim and post-intervention assessments

During the pre-intervention assessment the case manager gained information on the client's background, any treatment they had received, how effective it had been, and what the client felt was needed to help them stay in work or return to work. The assessment tools were also completed. This assessment was undertaken face to face, and typically lasted 1 hour (range from 45 minutes to 1 hour 15 minutes).

The interim assessment involved the client completing the COPM and GHQ-12. Where possible this was done face to face; if this were not possible it was done by phone. It typically lasted 20 minutes.

The post-intervention assessment allowed the case manager and client to review their progress and to identify any other issues that hadn't been addressed. The assessment tools were also completed. It was intended that post-intervention assessments would be conducted face to face, but some was done by a combination of phone and post, and some only by post. When completed face to face it typically lasted 30 minutes. It was found that telephone assessments typically took less time than face to face assessments.

5.9.6 GP referral to physiotherapy

Some clients had been placed on an NHS waiting list for physiotherapy by their GP as well as attending OHSxtra. They were advised by OHSxtra to take whichever appointment arose first. If this was their GP referred appointment the client became a voluntary withdrawal from OHSxtra.

5.9.7 Differences between the Health Boards

NHS Fife employs approximately 8,600 staff; NHS Lanarkshire employs approximately 11,100. NHS Lanarkshire covers a larger geographical area (2,242km^2) than Fife (1,325 km^2), with a greater population that it serves (Lanarkshire 630,000; Fife 357,000). Both cover mixed rural and urban areas.

5.9.7.1 Fife

The main centres for OHSxtra clients to be seen were:

- Victoria Hospital, Kirkcaldy or the Occupational Health Centre, Kirkcaldy
- Queen Margaret Hospital, Dunfermline
- Occupational Health Centre (OHSAS), Rosyth

Cases were initially allocated between the case managers as they were referred; however, they later split the cases geographically, so that one case manager covered the centre and east of the county, and the other the west. The full time case manager was based at Kirkcaldy, but also undertook a clinic one day per week in Dunfermline. The part time case manager was based at Rosyth. Staff based in one of the two hospitals could see the case manager on site; those working in primary care were asked to attend whichever location was most convenient for them. The OHSxtra physiotherapy services were provided at Victoria Hospital Kirkcaldy three days per week, and Dunfermline two days per week. The OHSxtra counselling services were provided at the occupational health centre in Kirkcaldy and in the Occupational Health Centre (OHSAS), Rosyth. OHSxtra CBT services were provided at a range of non-Health Board premises across the area. NHS Fife had an Employee Counselling Service that was available at the start of OHSxtra, but was withdrawn on 1st September 2006.

The purpose and scope of OHSxtra was discussed with Occupational Health staff at a workshop at the start of the pilot. It was agreed that clients who were under the care of Occupational Health would be referred to OHSxtra if they required a service that could not be easily accessed in another way (e.g. physiotherapy, occupational therapy, counselling, cognitive behavioural therapy).

Fife was also running a Job Retention Pilot programme, which started in October 2004. This helps people with mental health problems to find work and stay in work. It has two main strands: a confidential service to help people retain their jobs in the statutory sector through a case management approach; and a vocational rehabilitation service, which aims to support people to get jobs in the statutory sector. Employees participating in that programme were not eligible to participate in OHSxtra.

5.9.7.2 Lanarkshire

The main centres for OHSxtra clients to be seen were:

- Wishaw Hospital, Wishaw
- Hairmyres Hospital, East Kilbride
- Monklands Hospital, Airdrie
- Occupational Health Centre (Salus), Coatbridge
- Medical Rehabilitation Unit, Uddingston, Glasgow

Both case managers were based at the Occupational Health Centre (Salus), Coatbridge; however, one case manager spent one day per week at each of the three hospitals. Hospital based staff could therefore attend on site, or at the Occupational Health Centre in Coatbridge. Those working in primary care were asked to attend whichever location was most convenient for them.

The OHSxtra physiotherapy services in Lanarkshire were provided at each of the three hospital sites one day per week, and at the Medical Rehabilitation Unit (Primary Care) one day per week. The CBT and counselling services were provided at a range of non-Health Board premises across the area. Lanarkshire launched an Employee Counselling Service in May 2006, to which staff could self-refer.

At the launch of OHSxtra, Lanarkshire had recently adopted a sickness absence management programme, which was run through the occupational health services. There was concern within the Health Board that some of the intended referral procedures associated with the OHSxtra programme were different from those in the absence management programme, and that this could cause confusion. At the request of the Health Board it was therefore decided that line managers and Human Resources personnel should refer staff to Occupational Health, as was the recommended route under the absence management programme, rather than directly to OHSxtra. Occupational Health staff would then refer clients to OHSxtra, as appropriate. Self referral into OHSxtra was still possible. Although this route of management referral was not the ideal model for referral, it was trialled for the initial 3 months of the pilot. It was clear that referral into OHSxtra was lower in Lanarkshire than in Fife, primarily because of this difference. The policy was adjusted after 3 months of running the pilot so that marketing information was sent out with payslips and posters were displayed in staff areas. This boosted the referral rate.

In Lanarkshire a meeting was held with the Occupational Health teams at the three acute hospitals and at the PCT to explain the programme. It was recommended that any clients whom it was thought OHSxtra could assist would be referred to the programme; this included those who would benefit from the services provided through OHSxtra. In the traditional service provision, physiotherapy services were not available to staff in the acute hospitals, although they were in the PCT.

Case managers at both Health Boards commented that the reputation of the service built quickly by word of mouth; this led to high referral rates.

5.9.8 Consultation prior to implementation

The scope of the programme was discussed with a variety of stakeholders prior to its implementation. This included:

- Discussions with the host NHS Boards
- Meetings with the existing occupational health teams.
- Meetings with line managers
- Meetings with HR professionals
- Consultation with staff side representatives

Support for the programme was obtained at all these levels within both NHS Health Boards.

5.10 Evaluation of the programme

In order to evaluate the effectiveness of the case management approach and of the programme, questionnaires and assessment tools were used, and further objective data was sought.

5.10.1 Impact on health and performance

The impact of the programme on the health and performance of clients was measured using the assessment tools outlined in Section 5.9.3, prior to the intervention, during the intervention and following the intervention when the client was discharged.

5.10.2 Impact on sickness absence

For the purposes of the evaluation it was important to try to quantify the impact of the programme on absence rates. This was done in the following ways:

- Review of sickness absence status and length of absence for clients at the point of entry into the programme;
- Review of sickness absence status and length of absence for clients at discharge from the programme;
- Clients' subjective view of whether the programme had helped them avoid taking sickness absence, or had helped them return to work more quickly;
- For those clients who were in work at the start of the programme, and remained at work, their condition and any diagnosis was reviewed, and standardised absence lengths for the condition were obtained from UK HSE data drawn from the Labour Force Survey (HSE 2007). This allowed potential likely lengths of absence to be estimated.
- For clients who returned to work during the programme, standard absence duration data were obtained from a large organisation, and the expected potential absence duration calculated for participating OHSxtra clients; this was compared with the observed absence to estimate the amount of absence that may have been avoided.

5.10.3 Perceived effectiveness of programme

The views of the key stakeholders were sought in relation to the impact and effectiveness of the programme. These were:

- Views of the clients concerning their experience of the programme;
- Views of the line managers of clients who participated in the programme;
- Views of Human Resources staff supporting those who participated in the programme;
- Views of service providers involved in the programme.

Clients and line managers completed these questionnaires at the end of the client's involvement in the programme. The service providers and Human Resources staff completed the questionnaires both during the course of the programme (August 2006), and at the end of the programme (March 2007).

5.10.4 Other measures

It was also intended to review other measures to determine the impact of the programme on these. These were:

- Referral rates to the traditional occupational health services in 2006 (when the programme was running) compared with in 2005.

- Types of referral to the traditional occupational health services in 2006 compared with the referrals to OHSxtra.
- Baseline and ongoing data on overtime, bank and agency hours and costs.
- Waiting list times for physiotherapy via the traditional referral routes.

Interviews were also conducted with the case managers concerning the running of the programme and operational issues, to help identify what lessons could be learnt.

5.10.5 Evaluation report

The evaluation was conducted by an independent researcher, with the support of an external research assistant and external health economist.

5.11 Data management

Standardised record management arrangements were developed and adopted. Case managers kept records of clients' progress through the programme on a management information database. Completed questionnaires were stored in the clients' files by the case managers at the local offices until the case was closed (discharged). At that point the files were transferred to a central location, where they were entered into a series of linked databases to enable analysis of the programme. Data both from the case managers' records and the completed questionnaires were used in the analysis. Data protection procedures were adhered to throughout.

6. Results

6.1 Introduction

The following results describe:

- The method of referral into the programme
- Demographics of those referred
- Services provided to clients
- Timescales of progress through the programme
- Impact of the service on assessment tool scores.

Data have been drawn from a number of questionnaires that were completed at various stages of the programme. Due to different clients starting and finishing involvement with the programme at different times, some clients had not completed the programme at the point at which data had to be analysed for the project (4th April 2007). All questionnaires were kept together in the client file, and this was only transferred for project analysis once they were discharged; i.e. if they had not completed their intervention, none of their questionnaires were available for analysis. The data that are available at various stages is summarised in Table 1.

Table 1. Number of clients at various stages of the programme

Stage	Source of information	Number
Referral into the programme	Case management database	540
Eligible for programme	Eligibility screening questionnaire	401
Pre-intervention assessment	Pre-intervention assessment questionnaires	276
Discharge	Post-intervention assessment questionnaires	246

The numbers at each stage drop for the following reasons:

- Client still active in the programme (at 4th April 2007) so none of their assessment paperwork was available for analysis
- Client not eligible for programme
- Client not referred appropriately
- Client voluntarily withdrew from programme.

Altogether 540 clients were referred to the project; 310 clients worked for the Fife Health Board and 230 for Lanarkshire Health Board. Tables 1-3 have been constructed using data gathered by the Case Managers and relate to all 540 clients who were referred to the pilot.

6.2 Referral to the service

Clients could be referred to the service by their line manager, the occupational health service, Human Resources or could self refer. The means of referral of the 540 clients who were referred to the service is shown in Table 2.

It can be seen that self-referral was the main route of referral, and the proportion of self referrals was similar at both Health Boards. However, different referral routes patterns are seen in Fife and Lanarkshire for other referral routes. In Lanarkshire, no clients were referred through their line manager or Human Resources due to the local requirement for all management referrals to be to Occupational Health for onward referral to OHSxtra as required (see Section 5.9.7.2). One third of Lanarkshire's referrals came

through Occupational Health, and none through the line manager or HR, reflecting these operational arrangements.

Table 2. Referral route into the service

Referral Route	Health Board				Total	
	Fife		Lanarkshire			
Case Manager	0	0%	1	0%	1	0%
Human Resources	5	2%	0	0%	5	1%
Line Manager	55	18%	0	0%	55	10%
Occupational Health	29	9%	73	32%	102	19%
Self-referral	221	71%	156	68%	377	70%
Total	310		230		540	

Line manager referral was the second most frequently used route used in Fife (18%), followed by Occupational Health referral (9%); there were few (2%) Human Resources referrals.

There were a number of possible methods for referring into the programme; the rates of referral by the different methods are shown in Table 3.

Table 3. Referral method

Referral Method	Health Board				Total	
	Fife		Lanarkshire			
OHSxtra phone line	131	42%	110	50%	241	45%
OHSxtra website	30	10%	10	5%	40	8%
Telephone direct to CM	63	20%	32	14%	95	18%
Email	2	1%	3	1%	5	1%
Management referral form	68	22%	61	27%	129	24%
In person	16	5%	6	3%	22	4%
Total	310		222		540	

Data are missing for 8 clients in Lanarkshire

The OHSxtra phone line and website could be used by the line manager, referring officer or the individual; this dedicated phone line was the most commonly used route of referral, with only a small number of referrals coming through the website. This possibly reflects that staff have easier access to telephones than to the internet. A significant number of referrals came through phone calls directly to the case managers; once clients were involved in the programme they were given their case manager's phone number, and these numbers were often passed to other potential clients through word of mouth. Furthermore, the phone number of one of the case managers was listed on the promotional leaflets for individuals to find out more about the programme, potentially further increasing the use of this method of referral. An email address was also listed for further enquiries on the promotional material; only a small number of referrals were made in this way. Those who referred in person did so during the promotional activities, where OHSxtra personnel staffed stalls to raise awareness of the programme.

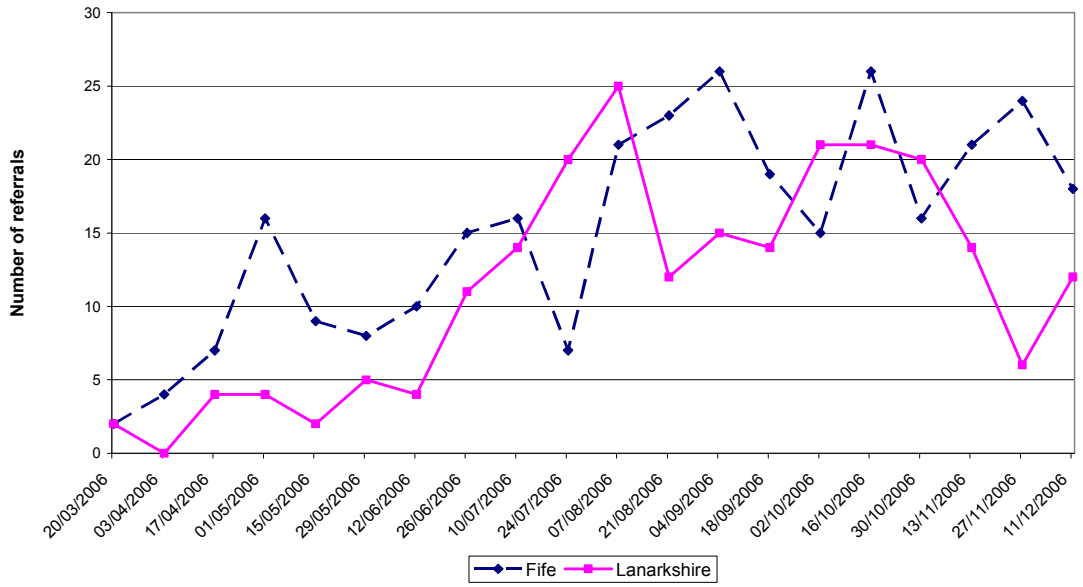
From this it appears that clients prefer to talk to someone in the project when making a referral (67% of referrals were by phone or in person). However, having a range of options for referral also appears to be beneficial.

The management referral form could be completed by those in Occupational Health, Human Resources, or the clients' line manager; this method was used for almost a quarter of referrals (24%).

There were slight differences between the Health Boards regarding the referral method used. More people referred in person in Fife (at the initial promotional events); this is likely to reflect the greater marketing activity in this area. More clients referred by telephone (rather than the OHSxtra phone line) in Fife than Lanarkshire; this possibly indicates that there were more word-of-mouth recommendations in Fife than in Lanarkshire, although this cannot be substantiated.

The rates of referral into the programme over time are shown in Figure 3.

Figure 3: Fortnightly referral rates by Health Board



The referral rate was not affected by the case manager availability (cases could still be referred even if the case manager was on leave). Different referral patterns are seen in the two Health Boards, with more clients being referred earlier into Fife than Lanarkshire, reflecting the different marketing approaches. However, peaks and troughs of referral are seen in both Health Boards. The drop in referrals in Fife at the end of July could relate to staff being away on holiday; however this is not mirrored in Lanarkshire. The peaks and troughs indicate that there will be times at which the service is stretched.

6.3 Status of clients

Of the 540 clients who entered the programme, not all were eligible to participate in the programme or were inappropriately referred, and some chose to withdraw from the programme ('voluntary withdrawals'). Clients were discharged from the programme on completion of the post-intervention assessment ('discharged'). Those clients still receiving treatment on 4th April 2007 (the closing date for data being entered for analysis) are classed as 'active'. Table 4 shows the status at 4th April 2007 of all clients who entered the programme. These data are drawn from the case managers' database rather than the number of questionnaires completed, which are used in subsequent analysis.

Table 4. Status of Clients on 4th April 2007

Status 4/4/2007	Health Board				Total	
	Fife		Lanarkshire			
Discharged	133	43%	117	51%	250	46%
Active	102	33%	40	17%	142	26%
Voluntary Withdrawal	60	19%	66	29%	126	23%
Inappropriate Referral	11	4%	6	3%	17	3%
Ineligible	4	1%	1	0%	5	1%
Total	310		230		540	

6.3.1 Voluntary withdrawals

Clients were free to withdraw from the programme at any time. The stages at which these voluntary withdrawals occurred are shown in Table 5. Most of the withdrawals occurred very early in the process, between the eligibility assessment and the pre-intervention assessment. Once clients had started to receive an intervention from a service provider few withdrew voluntarily from the programme.

Table 5. Stage at which Voluntary Withdrawal occurred

Prior to eligibility assessment	4	3%
Prior to pre intervention assessment	102	85%
Prior to service provider intervention	9	8%
During service provider intervention	2	2%
Prior to post intervention assessment	3	3%
Total	120	

Data are missing for 6 clients

The reasons that clients voluntarily withdrew are shown in Table 6. The main reasons were that they had used an alternative service provider (e.g. an appointment through a GP referral to a service may have occurred before the OHSxtra appointment), or that they did not respond or attend the service offered. Although it was not possible to ascertain the reason for non-attendance, this is likely to be because they did not consider that they required the intervention (e.g. their condition had improved).

Table 6. Reasons for Voluntary Withdrawals

Alternative service providers used	31	33%
Repeated non-response/attendance	30	32%
Issue resolved	12	13%
OHSxtra services not required	10	11%
OHSxtra services not appropriate	4	4%
Left Health Board	4	4%
More pressing medical needs	2	2%
Too ill to attend appointment	1	1%
Service provider not yet available	1	1%
Total	95	

Data are missing for 31 clients

There was no significant difference between those who completed the programme and those who voluntarily withdrew from the programme, in terms of demographics, primary presenting issue, or whether they self-referred.

6.3.2 Inappropriate referrals

A small number of clients (17) were inappropriately referred into the programme; this was usually identified early in the assessment process, either prior to the eligibility assessment (4 clients), or prior to the pre-intervention assessment (12 clients). One client was identified prior to service delivery.

The reasons for the referral being inappropriate are shown in Table 7. The main reason for a referral being deemed inappropriate was that the client hoped that by referring to the service their access to medical treatment would be expedited. If clients were already awaiting treatment (e.g. on waiting lists for physiotherapy through the GP or occupational health) it was not a function of the programme to accelerate the client's progress in that list; alternative arrangements for service provision were made through the programme where required.

Table 7. Reasons for Inappropriate Referrals

Wanted medical treatment expedited	5	36%
Should have referred to traditional occupational health services	2	14%
Too soon following surgery	2	14%
OHSxtra services not appropriate	2	14%
OHSxtra services not required	1	7%
Issue resolved	1	7%
Wrong Health Board	1	7%
Total	14	

Data are missing for 3 clients

6.3.3 Ineligible clients

The five clients who were judged to be ineligible for the programme were identified during the eligibility screening questionnaire. Two were not NHS staff, and one was participating in the Fife Job Retention Pilot. Reasons were not recorded for two clients.

6.4 Eligible clients at pre-intervention assessment

By 4th April 2007 eligibility forms had been completed for 401 clients; this comprises those who had been discharged from the programme on completion, those who had voluntarily withdrawn, or were ineligible or inappropriately referred to the programme. Their demographics are outlined below. Statistical tests were conducted, where relevant, to identify differences between groups.

6.4.1 Gender

As shown in Table 8, 67 (17%) clients were male and 333 (83%) of clients were female. There was no significant difference between the Health Boards in terms of the gender of those who were referred to the programme.

Table 8. Gender by Health Board

Gender	Health Board				Combined	
	Fife		Lanarkshire			
Males	39	18%	28	15%	67	17%
Females	178	82%	155	85%	333	83%
Total	217		183		400	

Data are missing for 1 client in Lanarkshire

6.4.2 Age at referral

The mean age at referral was 43.3 years (sd = 9.9 years); the minimum age at referral was 19.6 years, and the maximum was 64.0 years. There is no evidence of a difference in the mean ages of clients between Fife and Lanarkshire.

The mean age of male clients at referral was 45.7 years (sd = 10.1), and of females was 42.8 years (sd = 9.9). Male clients were significantly older than female clients ($p<0.05$).

6.4.3 Staff group

The Agenda for Change staff groups were used for classifying job categories. The number and proportion of clients participating are shown in Table 9 by staff group and Health Board. A slightly higher proportion of clients in Lanarkshire were from the nursing and midwifery group than in Fife; Lanarkshire had more actively promoted the service among this group, so this finding is not surprising. A slightly higher proportion of clients in Fife were from the support services group than in Lanarkshire.

Table 9. Staff Groups by Health Board

Staff Groups	Health Board				Total	
	Fife		Lanarkshire			
Administrative Services	38	18%	25	15%	63	16%
Allied Health Professions	26	12%	19	11%	45	12%
Health Science Services	5	2%	7	4%	12	3%
Medical and Dental	8	4%	5	3%	13	3%
Nursing and Midwifery	109	50%	109	64%	218	56%
Support Services	28	13%	5	3%	33	9%
Other	2	1%	0	0%	2	1%
Total	216		170		386	

Data are missing for 1 client in Fife and 14 clients in Lanarkshire

Almost half of the clients (195) were females from the nursing and midwifery staff group, as shown in Table 10. The representativeness of the sample in relation to the full staff demographics in these NHS Health Boards is discussed in Section 6.4.7.

Table 10. Staff Groups by Gender

Staff Groups	Gender				Total	
	Male		Female			
Administrative Services	6	9%	57	18%	63	16%
Allied Health Professions	5	8%	40	12%	45	12%
Health Science Services	4	6%	8	2%	12	3%
Medical and Dental	7	11%	5	2%	12	3%
Nursing and Midwifery	23	36%	195	61%	218	57%
Support Services	18	28%	15	5%	33	9%
Other	1	2%	1	0%	2	1%
Total (one gender not recorded)	64		321		385	

Data are missing for 3 clients in Fife and 12 clients in Lanarkshire

6.4.4 Working status

Overall 66% of clients were employed on a Full-Time basis; there was no significant difference in the proportions of Full-Time workers between the Health Boards. A significantly larger proportion of male clients were Full-Time employees (91%) compared with females (61%) ($p<0.001$). Part Time workers worked an average of 26.9 hours per week (min=12, max=36.5, sd=6.0).

6.4.5 Duration of employment

On average, clients had worked in their current post for 7.2 years (min=1 month, max=32 years, sd=6.9 years). Clients had worked for the Health Board for 12.8 years on average (min=1 month, max=43 years, sd=9.7 years). This implies that the typical clients seen by the service were experienced staff.

6.4.6 Ethnicity and disability

The majority of clients (90%) were Scottish, with 5% being English and 2% being Irish. Other ethnic groups comprised 2% of the clients. There were slight differences between the Health Boards, with 97% of Lanarkshire clients being Scottish, and the remainder English; in Fife, 86% were Scottish, 7% English, 4% Irish, and 4% Other.

Altogether 8 clients (3%) considered themselves disabled (7 in Fife and 1 in Lanarkshire).

6.4.7 Representativeness of the sample

The demographic details of the sample were compared against the staff profile of NHS Fife and NHS Lanarkshire, in terms of age, gender and staff grade. Standardised referral rates using indirect standardisation were calculated. Clients were representative of the NHS Fife and NHS Lanarkshire workforce in terms of age and gender. Staff groups were grouped together so that nursing and midwifery groups were compared with all the rest. For both males and females the standardised referral rates for nursing and midwifery was higher than the rest, but the difference was not significant.

6.4.8 Presenting conditions of clients

A total of 421 clients were diagnosed with a Primary Presenting Issue (from the eligibility questionnaire). The primary issue with which clients presented is shown in Table 11. Where data are recorded as missing, this is because the client did not complete the eligibility questionnaire (e.g. because they had already voluntarily withdrawn from the programme, been ineligible or inappropriately referred).

The majority of the conditions that clients presented with were Musculoskeletal (72%). A slightly greater proportion of the cases had a Musculoskeletal condition in Lanarkshire than in Fife, and a greater proportion had a Common Mental Health Problem in Fife. This reflects the other support services available to staff in these Health Boards: Lanarkshire had an Employee Counselling Service, which staff could directly refer to; Fife had had a similar scheme, but this was withdrawn on 1st September 2006, during the course of the OHSxtra pilot. It is therefore unsurprising that a greater proportion of cases in Fife were referring with mental health conditions.

Table 11. Primary Presenting Issue

Primary Presenting Issue	Health Board				Total	
	Fife		Lanarkshire			
Musculoskeletal						
Back and Neck	*98*	*38%*	*76*	*47%*	*174*	*42%*
Upper Limb	*48*	*19%*	*26*	*16%*	*74*	*18%*
Lower Limb	*25*	*10%*	*28*	*17%*	*53*	*13%*
Total Musculoskeletal	171	67%	130	80%	301	72%
Common Mental Health Problems	77	30%	28	17%	105	25%
Miscellaneous						
Nervous System	*3*	*1%*	*2*	*1%*	*5*	*1%*
Ill Defined Condition	*0*	*0%*	*2*	*1%*	*2*	*0%*
Respiratory System	*1*	*0%*	*1*	*1%*	*2*	*0%*
Digestive System	*1*	*0%*	*0*	*0%*	*1*	*0%*
Genitourinary System	*1*	*0%*	*0*	*0%*	*1*	*0%*
Neoplasm	*1*	*0%*	*0*	*0%*	*1*	*0%*
Circulatory System	*1*	*0%*	*0*	*0%*	*1*	*0%*
Endocrine System	*0*	*0%*	*1*	*1%*	*1*	*0%*
Skin	*1*	*0%*	*0*	*0%*	*1*	*0%*
Total Miscellaneous	9	4%	6	4%	15	4%
Total	257		164		421	

Data are missing for 53 clients in Fife and 66 clients in Lanarkshire (this includes those who were ineligible, inappropriately referred, or who voluntarily withdrew from the programme).

Of those with a Primary Presenting Issue, 105 (25%) were also identified as having a Secondary Presenting Issue. Of these, 75% were Musculoskeletal, 7% were Common Mental Health Problems, and 18% were Miscellaneous, as shown in Table 12.

Table 12. Secondary Presenting Issue

Secondary Presenting Issue	Health Board				Total	
	Fife		Lanarkshire			
Musculoskeletal						
Back and Neck	*8*	*18%*	*4*	*7%*	*12*	*11%*
Upper Limb	*7*	*16%*	*24*	*39%*	*31*	*30%*
Lower Limb	*10*	*23%*	*26*	*43%*	*36*	*34%*
Total Musculoskeletal	25	57%	54	89%	79	75%
Common Mental Health Problems	1	2%	6	10%	7	7%
Miscellaneous						
Nervous System	*1*	*2%*	*0*	*0%*	*1*	*1%*
ENT	*0*	*0%*	*1*	*1%*	*1*	*1%*
Respiratory System	*2*	*5%*	*0*	*0%*	*2*	*2%*
Digestive System	*3*	*7%*	*0*	*0%*	*3*	*3%*
Genitourinary System	*2*	*5%*	*0*	*0%*	*2*	*2%*
Circulatory System	*4*	*9%*	*0*	*0%*	*4*	*4%*
Endocrine System	*4*	*9%*	*0*	*0%*	*4*	*4%*
Skin	*2*	*5%*	*0*	*0%*	*2*	*2%*
Total Miscellaneous	18	41%	1	1%	19	18%
Total	44		61		105	

When considering musculoskeletal disorders, neck discomfort was classified with back discomfort; because it can be difficult to distinguish discomfort between the shoulder and neck it is possible that a client who reported this discomfort would have been categorised as having a primary presenting issue in the neck, and secondary presenting issue in the upper limb (or vice versa).

6.4.9 Absence from work

Clients were asked whether they were absent from work or at work on two of the questionnaires prior to any intervention: as part of the eligibility assessment, and as part of the pre-intervention assessment. In some cases these questionnaires were completed some time apart, however, the proportions reporting being absent at each point were identical. This implies that those who were not absent were no more likely to withdraw from the project than those where were absent.

Altogether 33% of clients (76) were absent from work at the pre-intervention assessment. There was no significant difference in the sample between the Health Boards or genders in terms of absence prior to the intervention. The mean duration of sickness absence was 41 working days (N=76, min=1, max=420, sd=61).

Of those who responded, 123 clients (50%) had been absent from work with the same presenting issues before. The previous mean absence was 44.2 days (N=106, min=1, max=545, sd=78.6).

6.4.10 Sickness absence in previous two years

Clients were asked whether they had taken sickness absence in the previous 2 years. Altogether 252 (91%) had taken sickness absence, and the mean number of episodes of sickness absence was 2.8 (min=0, max=40, sd=3.2).

6.4.11 Pre-intervention services/support

Clients reported on any services or support they were receiving at the time of the pre-intervention assessment. More than one service could be reported; the maximum number reported was three.

Table 13. Number of services/support

Number of services/support	Number of clients	% of clients (n = 276)
None	109	40%
One service	104	38%
Two services	48	17%
Three services	15	5%
Total	276	

It can be seen from Table 13 that 40% of clients were not receiving another form of intervention other than OHSxtra. This may indicate that the conditions were relatively recent in their development, or were not regarded by the clients as serious.

Table 14 describes the services/support being received by the 167 clients who reported using at least one service at the time of the pre-intervention assessment. Because clients could be receiving more than one service the percentage does not add up to 100.

Table 14. Services/support reported by clients

Service	Number of reports	% of clients who were receiving a service (n = 167)	% of all clients (n = 276)
G.P.	118	71%	43%
OH Nurse	36	22%	13%
Physiotherapist	27	16%	10%
OH Physician	16	10%	6%
Other (unspecified)	12	7%	4%
Consultant	11	7%	4%
Counsellor	5	3%	2%
Orthopaedic Consultant	4	2%	1%
Chiropractor	3	2%	1%
Osteopath	2	1%	1%
Plastic Surgeon	2	1%	1%
Remedial Masseur	2	1%	1%
CBT Therapist/ Psychotherapist	1	1%	0%
Diabetic Clinic	1	1%	0%
Endoscopy	1	1%	0%
Line Manager	1	1%	0%
Psychiatrist	1	1%	0%
Psychologist	1	1%	0%
Rheumatologist	1	1%	0%

In total, 118 of the 276 clients were or had seen their GP in relation to their primary presenting issue; this is 43% of all clients. The main services provided by OHSxtra were physiotherapy, counselling, CBT and occupational therapy. At the point of pre-intervention assessment, 10% of all clients had received physiotherapy (from sources other than OHSxtra), 2% had seen counsellors, and 1 person had seen a CBT Therapist/ Psychotherapist, indicating that the majority of clients were not accessing these services in other ways.

6.4.12 Waiting lists

Clients were asked if they were on any medical waiting lists at the time of the pre-intervention assessment, and, if so, for what. Being on a waiting list indicates that the condition was sufficiently serious to warrant further medical investigation or intervention.

Of the 276 clients, 52 (20%) reported being on a waiting list. Twenty clients were on a waiting list for assessment, 25 were on a waiting list for an appointment with a specialist and 9 were on a waiting list for intervention. Some may have been on more than one waiting list.

6.4.13 Histories of significant physical and mental problems

Clients were asked if they had a history of significant physical or mental problems. Altogether 116 clients (42%) reported a history of physical problems and 56 (20%) reported previous mental problems. This is shown in Tables 15 and 16 respectively.

Table 15. Previous Significant Physical Problems

Physical Problems	Number of Reports	% of the clients who reported this	% of all clients (n = 276)
Musculoskeletal			
Back and Neck	*40*	*37%*	*14%*
Upper Limb	*3*	*3%*	*1%*
Lower Limb	*7*	*6%*	*3%*
Total Musculoskeletal	**50**	**46%**	18%
Circulatory System	11	10%	4%
Digestive System	11	10%	4%
Endocrine System	10	9%	4%
Genitourinary System	9	8%	3%
Respiratory System	4	4%	1%
Neoplasm	3	3%	1%
Pregnancy/Childbirth	3	3%	1%
Skin	3	3%	1%
Blood Forming Organs	1	1%	0%
ENT	1	1%	0%
Eye Disease	1	1%	0%
Nervous System	1	1%	0%
No Diagnosis	1	1%	0%
Total	109		

Data are missing for 7 clients

Table 16. Previous significant mental health problems

Mental Health Problems	Number of Reports	% of the clients who reported this	% of all clients (n = 276)
Dependency			
Alcohol	*1*	*2%*	*0%*
Other	*1*	*2%*	*0%*
Dependency Total	**2**	**4%**	**1%**
Common Mental Health Problems			
Depression	*17*	*32%*	*6%*
Anxiety Disorder	*9*	*17%*	*3%*
Other	*9*	*17%*	*3%*
Mood Disorder	*7*	*13%*	*3%*
Stress	*7*	*13%*	*3%*
No Diagnosis	*2*	*4%*	*1%*
Common Mental Health Problems Total	**51**	**96%**	18%
Total	53		

Data are missing for 3 clients

6.4.15 Medication use

Clients were asked at the pre-intervention assessment whether they were taking any medication. This medication may not have been related to their primary or secondary presenting issue. The number of medications that clients were taking is shown in Table 17. For those taking medication, the average number of medications taken was 1.9 per client.

Table 17. Number of medications that clients were taking at pre-intervention assessment

Number of medications	Number of clients	% of clients reporting
No medication reported	105	38%
One medications reported	89	32%
Two medications reported	40	15%
Three medications reported	26	9%
Four medications reported	8	3%
Five medications reported	8	3%
Total	276	

6.5 Service provision

In total, 406[2] clients were referred to at least one Service Provider (intervention); 72 of these received a second intervention, and 10 of these received a third. Tables 18 - 20 show the services that were provided. The first service provision was the intervention that they received first. The case manager recommended whether additional service provision was appropriate.

The majority of primary interventions provided were physiotherapy, with a higher percentage of cases in Lanarkshire (79%) being referred for physiotherapy than in Fife (56%); and more counselling and CBT / Psychotherapy services were provided in Fife (28%) than in Lanarkshire (15%).

During the course of the programme Lanarkshire had a separate counselling service (self-referral) available to NHS staff; in Fife although a similar programme had been available, it was withdrawn partway through the running of OHSxtra. This is likely to account for the higher rates of referral to counselling support through the OHSxtra programme in Fife, and the proportionally higher rates of referral to physiotherapy in Lanarkshire.

At the start of the programme, Fife had an Occupational Therapist as an established part of their occupational health team, whereas Lanarkshire did not. The higher percentage of clients referred for Occupational Therapy in Fife (12%) than in Lanarkshire (1%), is likely to reflect the familiarity of the case managers with this service.

[2] This figure is higher than the 401 clients who completed an eligibility questionnaire, as this figure is drawn from the case managers' database. Slight discrepancies in numbers occurred between the two sources of data.

Table 18. First Service Provider

First Service Provider	Health Board				Total	
	Fife		Lanarkshire			
Physiotherapist	136	56%	129	80%	265	65%
Counsellor	45	18%	20	6%	65	16%
Occupational Therapist	30	12%	2	2%	32	8%
CBT Therapist/Psychotherapist	23	9%	3	3%	26	6%
Case Managed only	10	4%	6	6%	16	4%
Occupational Health	0	0%	2	2%	2	1%
Total	244		162		406	

Those who only received case management did not receive an intervention as their condition resolved without the need for therapy provision. This applied to a small number of cases (4%).

Almost three quarters (73%) of interventions related to physical conditions (physiotherapy or occupational therapy), while almost a quarter (23%) relate to psychological conditions (counselling or CBT/psychotherapy). This reflects the fact that 75% of clients referred to the programme had a musculoskeletal condition as their primary presenting issue.

Table 19. Second Service Provider

Second Service Provider	Health Board				Total	
	Fife		Lanarkshire			
Physiotherapist	12	26%	1	5%	13	19%
Counsellor	6	13%	6	27%	12	17%
Occupational Therapist	23	49%	3	14%	26	38%
CBT Therapist/Psychotherapist	4	9%	0	0%	4	6%
Occupational Health	2	4%	12	55%	14	20%
Total	47		22		69	

Table 20. Third Service Provider

Third Service Provider	Health Board				Total	
	Fife		Lanarkshire			
Counsellor	2	50%	3	60%	5	55%
Occupational Therapist	2	50%	0	0%	2	22%
Occupational Health	0	0%	2	40%	2	22%
Total	4		5		9	

A significant number of the further interventions in Fife were to the Occupational Therapist (49%), who undertook workplace assessments to identify any work or workplace modifications required to assist the client in their work; this was done primarily for those with a musculoskeletal condition. The Occupational Therapist was used less frequently as a service provider in Lanarkshire, probably due to them not having such an established role in the Occupational Health team.

6.6 Post-Intervention assessment

A total of 246 clients were assessed following service provision. These were clients who had completed the paperwork related to the programme, as well as having completed their intervention treatment. A further 30 clients received their full intervention from the service provider, but did not complete the post-intervention assessment.

6.6.1 Absence status

The numbers of clients who were absent from work at the post-intervention assessments are shown in Tables 21 and 22. Only 9% of clients were absent from work at the post-intervention assessment. There is no difference between the Health Boards or genders in terms of absence at the post-intervention assessment.

Some clients were absent at the point of discharge from the programme, but had an imminent return to work date. A review of the cases shows that two weeks following the post-intervention assessment 5 of the 22 clients absent at that time had returned to work (4 in Fife, 1 in Lanarkshire; all female).

Comparison of absence status at pre-intervention assessment and post-intervention assessment was important to identify any potential impacts of the programme on absence rates. This is shown in Table 21, in which the percentages are total percentages.

Table 21. Absence rates at Pre-intervention and Post-intervention assessment

Absent at Post-intervention assessment	Absent at Pre-intervention assessment				Total
	Yes		No		
Yes	21	9%	1	0%	22
No	55	24%	154	67%	209
Total	76		155		231

Data are missing for 15 clients

Table 21 shows that two thirds (154) of clients were at work both at the pre- and post-intervention assessment, and 21 clients absent were absent on both occasions. Therefore, 175 (76%) of clients were unchanged between the two periods. However, between these two time periods 55 clients returned to work, and one client became absent. This represents a significant difference in the number of clients whose status did change between the two periods ($p<0.001$), with a significant number returning to work.

Table 22. Showing absence status by type of absence

Absent Post-intervention assessment		Absent at Pre-intervention assessment			
		Yes		No	
Musculoskeletal (n = 169)	Yes	13	8%	0	0%
	No	30	18%	126	75%
Common Mental Health Problems (n = 54)	Yes	6	11%	1	2%
	No	24	44%	23	43%
Miscellaneous (n = 7)	Yes	2	28%	0	0%
	No	1	14%	4	57%

Data are missing for 1 client in the No/No category concerning their health condition

Note: Percentage figures are for the percentage of clients with that health condition.

Altogether 75% of clients with musculoskeletal conditions were not absent either pre- or post-intervention; 18% of those who had been absent had returned to work at post-intervention assessment. A comparable number of those who had been absent with a Common Mental Health Problem at pre-intervention assessment had returned to work at post-intervention assessment as had remained absent. Service provision appears to be particularly effective for absent clients with common mental health problems.

Of the 246 clients for whom both pre- and post-intervention assessment data are available, 79 were absent at the pre-intervention assessment. Of these, 69 provided information concerning the length of their absence (min=1, max=420, mean=42, sd=63.5). Absence was categorised into 'short' (1-20 working days) and 'long' (more than working 21 days). Table 23 shows absence status at the post-intervention assessment, based on the pre-intervention assessment absence length.

Table 23. Post-intervention absence status based on pre-intervention length of absence

Pre-intervention length of absence	Absent at Post-intervention assessment				Total
	Yes		No		
Short absence (1-20 working days)	6	16%	31	84%	37
Long absence (21+ working days)	11	35%	20	65%	31
Total	17	25%	51	75%	68

Of those who had been absent for relatively short periods of time at the point they entered the programme (up to 20 working days), 84% had returned to work following the intervention. Of particular importance is that 65% of those who had longer absences (more than 21 working day) returned to work following the intervention. Longer absences can be harder to manage, and successful return to work of more than half of this client group is an important finding.

6.6.2 Medication use

Table 24 shows the medication status for the 191 clients who provided this information.

Table 24. Medication usage at pre-intervention and post-intervention assessment

On medication at Post-intervention assessment	On medication at Pre-intervention assessment				Total	
	Yes		No			
Yes	92	48%	10	5%	102	53%
No	27	14%	62	33%	89	47%
Total	119	62%	72	38%	191	100%

From this it can be seen that 92 clients (48%) taking medication at pre-intervention assessment were still taking medication post-intervention assessment; 62 clients (33%) took no medication either at pre- or post-intervention assessment. Therefore, 154 (81%) of clients' medication status remained unchanged. (Data are missing for 55 clients). Between these two time periods 27 (14%) clients stopped taking medication and 10 (5%) started. This represents a significant reduction in the number of clients who were taking medication between the two periods ($p<0.01$). Although it is not known whether the medication being taken was related to their primary presenting issue, the reduction in medication use indicates an improvement in health.

6.7 Time involved in the programme

6.7.1 Time between registration and pre-intervention assessment

Of the 276 clients who were assessed prior to intervention, data on the time period between registration and pre-intervention assessment could be calculated for 269. The mean delay was 13 days (SD = 12.6, minimum = 0, maximum = 70).

6.7.2 Time between pre-intervention assessment and first contact with service provider

Altogether, 406 clients were referred to at least one service provider. The time, in days, between pre-intervention assessment and first appointment with the service provider could be computed for 208 clients. Table 25 summarises the delay overall and by service provider.

Table 25 Time between Pre-intervention assessment and Service Provision assessment

Service Provision	N	Mean Wait (days)
Physiotherapy	147	9.3
Counselling	38	14.4
Occupational Therapy	12	18.7
CBT/Psychotherapy	11	25.5
Total	208	11.6

The mean time before access to all service provision is 11.6 days. Overall, there is a significant difference in the delay between the service providers ($p<0.001$); the physiotherapist delay was significantly less than that for CBT/psychotherapy ($p<0.001$).

6.7.3 Number of service provision sessions attended by clients

Altogether, 406 clients were referred to a total of 484 service providers (clients could be referred to more than one service provider). Table 26 summarises the number of sessions and time spent, by service providers, based upon the data available.

Table 26. Number of sessions and time spent by Service Provider

Service Provision	Number of Sessions				Time Spent (minutes)			
	N	Mean	Min	Max	N	Mean	Min	Max
Occupational Therapy	-	-	-	-	15	262	210	420
Physiotherapy	175	5.3	1	22	169	190.7	30	660
Counselling	37	5.1	2	12	35	320.6	120	720
CBT/Psychotherapy	10	8.1	6	12	10	514.5	360	840

6.7.4 Time between first and final appointment with service provider

Based on the data available, clients (N = 213) spent an average of 60.9 days between their initial appointment with the service provider and being discharged by the service provider (min = 4 days, max = 214 days). If a client had more than one service provider, this duration covered the time between their first and final service provider appointments (even if these were two or more different service providers).

6.8 Additional clients

In order to evaluate whether there was any difference between the clients who completed their post-intervention assessment by 4th April 2007 and those who completed over the following 2 months, the demographic data received from these later completers were analysed and compared with the main sample. A further 36 clients completed their post-intervention assessment between 4th April and 30th May 2007. This increases the sample size of the clients who completed the pilot by 15%. The demographic data relating to this group are shown in Appendix 2. It can be seen that they are very similar in terms of demographics, primary presenting issue, and absence status at both pre- and post-intervention assessment. Because of this, the same formal statistical conclusions about this group can be reached as for the main group.

6.9 Summary

Altogether 540 clients had referred into the programme by 22nd December 2006, the date at which the programme stopped receiving new clients. On 4th April 2007, the cut off date for analysis, 250 had been discharged, 142 were still active in the programme, 126 had voluntarily withdrawn from the programme, and 22 were ineligible or inappropriate referrals. By 30th May 2007 a further 36 had been discharged.

Of the 540 clients who were referred to the project, 310 clients worked for Fife Health Board and 230 for Lanarkshire Health Board. In total, 67 (17%) clients were male and 333 (83%) were female. The mean age at referral was 43.3 years (sd = 9.9 years). There was no significant difference between the Health Boards in terms of age and gender of clients. The majority of the clients (56%) were from the nursing and midwifery groups, with 16% from administrative services and 12% from allied health professionals.

Almost three quarters (72%) of clients' primary presenting issue was musculoskeletal, while 25% were common mental health problems. A third of clients (33%) were absent from work at the pre-intervention assessment.

In terms of service provision, the majority of primary interventions provided were physiotherapy, with a higher percentage of cases in Lanarkshire (79%) being referred for physiotherapy than in Fife (56%); and more counselling and CBT / Psychotherapy services were provided in Fife (28%) than in Lanarkshire (15%). During the course of the programme Lanarkshire had a separate counselling service (self-referral) available to NHS staff; in Fife, although a similar programme had been available, it was withdrawn partway through OHSxtra.

Following the intervention, only 9% of clients were absent from work. Of those who had been absent at pre-intervention assessment 72% had returned to work at the post-intervention assessment. Of those who had a pre-intervention absence length of more than 21 working days, 65% had returned to work at post-intervention assessment.

The mean time period from registration to pre-intervention assessment was 13 days. The mean time period between the pre-intervention assessment and service delivery was 9.3 days for physiotherapy, 14.4 days for counselling, 18.7 days for Occupational Therapy and 25.5 days for CBT.

7 Performance Measures

7.1 Number of completed forms

Clients completed a series of performance measures at their pre-intervention assessment, during the intervention, and at the post-intervention assessments. By 4th April 2007 the performance measures of 246 clients had been recorded. Table 27 outlines the measures employed at which stage, and the number of valid and missing cases for each. Due to service delivery pressures, not all clients completed the during intervention assessment.

Table 27. Performance Measures

Performance Measure	N	Missing Data
General Health Questionnaire		
Pre-intervention	242	4
During intervention	109	137
Post-intervention	238	8
Canadian Occupational Performance Measure		
Pre-intervention	242	4
During intervention	110	136
Post-intervention	232	14
Work Ability Index		
Pre-intervention	225	21
Post-intervention	212	34
Euro Quality of Life 5D		
Pre-intervention	225	21
Post-intervention	226	20

Analysis of these measures allows changes over time to be quantified. It is of particular interest to know whether performance measures vary between clients presenting with different issues. To this end, the 246 clients were categorised into three groups: Musculoskeletal disorders (N=183), Common Mental Health Problems (N=55), and a third category 'Miscellaneous' (N=7) which includes clients presenting with all other issues. One client could not be categorised.

7.2 The General Health Questionnaire 12 Bimodal Score

The GHQ-12 can be analysed as a bimodal score, or using a Likert scale. Table 28 summarises the results of the GHQ 12 Bimodal measure. Each of the 12 scales is scored as either 0 or 1, and the total score is added together. A higher score indicates worse health.

Table 28. The GHQ 12 Bimodal measure – summary of scores

	N	Minimum	Maximum	Mean	SD
Pre-intervention	242	0	12	4.64	4.1
During intervention	109	0	12	2.28	3.7
Post- intervention	238	0	12	1.18	2.6

The Pre-intervention GHQ 12 Bimodal scores were significantly higher than either the During score ($p<0.001$) or the Post-intervention score ($p<0.001$) scores. The During scores were also significantly higher than the Post-intervention scores ($p<0.001$). This indicates a significant improvement in health over the course of the intervention.

Clients were categorised as to whether their GHQ 12 Bimodal score was less than 3, which indicated 'non-caseness', or equal to or greater than 3 i.e. 'caseness'. Caseness

implies that the individual is suffering from a sufficiently high level of stress that they require and would benefit from some professional help. The caseness status is shown in Table 29, and presented graphically in Figure 4.

Table 29. GHQ 12 Bimodal 'caseness status' Results

Primary Presenting Issue	Pre-intervention		During intervention		Post-intervention	
Musculoskeletal						
'Case status' (score ≥ 3)	86	47%	22	28%	20	11%
'Non-case status' (score < 3)	96	53%	56	72%	160	89%
Missing	1		105		3	
Total	183		183		183	
Common Mental Health Problems						
'Case status' (score ≥ 3)	48	92%	9	35%	11	22%
'Non-case status' (score < 3)	4	8%	17	65%	40	78%
Missing	3		29		4	
Total	55		55		55	
Miscellaneous						
'Case status' (score ≥ 3)	5	71%	2	50%	3	50%
'Non-case status' (score < 3)	2	29%	2	50%	3	50%
Missing	0		3		1	
Total	7		7		7	
All Clients						
'Case status' (score ≥ 3)	140	58%	33	30%	34	14%
'Non-case status' (score < 3)	102	42%	76	70%	204	86%
Missing	4		137		8	
Total	246		246		246	

Figure 4. Percentage of clients who had GHQ-12 bimodal scores of over 3 (i.e. 'case status')

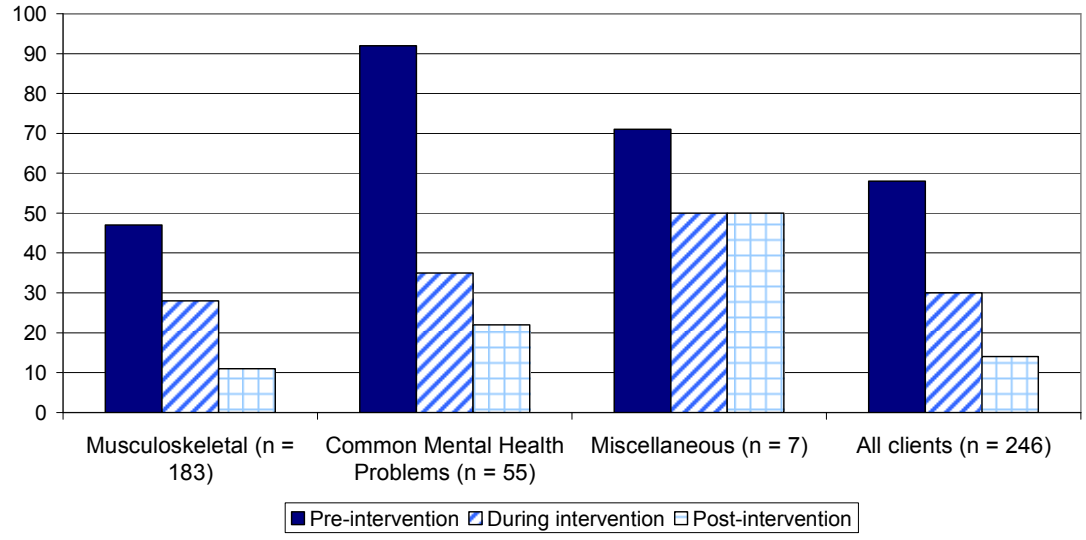


Table 29 shows the following. For clients presenting with Musculoskeletal disorders or Common Mental Health Problems, the proportion of scores categorised as 'cases' decreases steadily across the three phases (from 47% of clients Pre-intervention to 11% Post-intervention for Musculoskeletal and from 92% Pre-intervention to 22% Post-intervention for Common Mental Health Problems). Follow-up analyses for both groups show that the trend towards 'non case status' is statistically significant between the Pre-

intervention and During intervention scores ($p<0.001$) and between the During and Post-intervention scores ($p<0.001$).

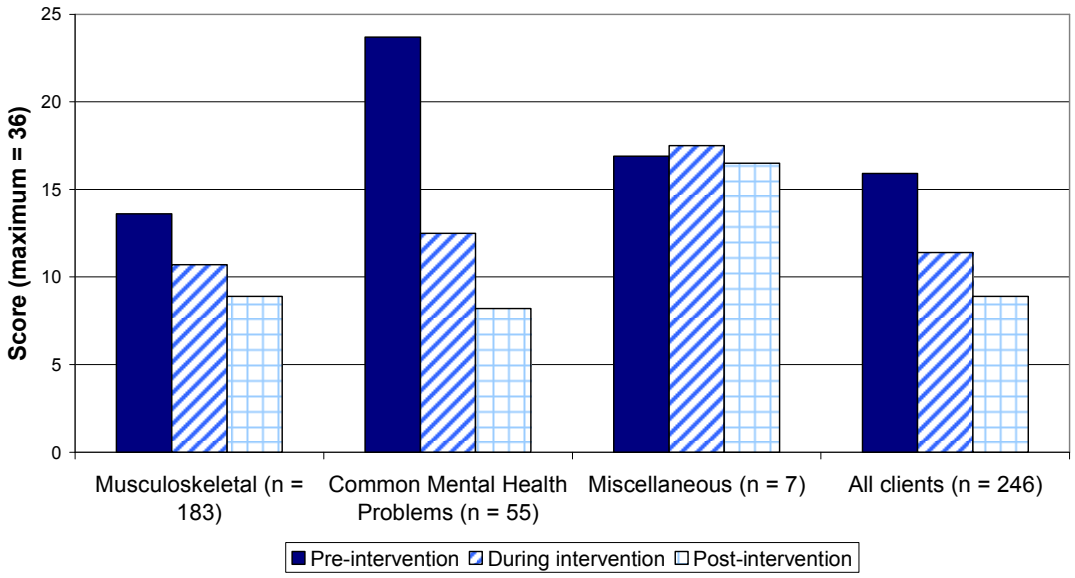
The GHQ-12 is particularly a measure of mental health. A particularly large change is seen with the clients with Common Mental Health Problems, where the percentage of clients with 'case' status drops from 92% at Pre-intervention assessment to 22% at Post-intervention assessment.

It is difficult to draw conclusions about the Miscellaneous group as the numbers involved are so low.

7.3 The General Health Questionnaire 12 Likert Measure

The GHQ-12 can also be scored using a Likert scale, where each question has a score of 0, 1, 2 or 3. This allows greater discrimination between the measures; the highest score possible using this scale is 36; a higher score indicates a more significant issue. Figure 5 summarises the results of the GHQ 12 Likert measures by primary presenting issues. The detailed figures are given in Table 30.

Figure 5. GHQ-12, Mean Likert Scores



The Musculoskeletal group shows statistically significant decreases in the mean GHQ 12 Likert score across the three phases of the study (Pre-intervention to During, $p<0.001$; During to Post-intervention, $p<0.001$). A similar pattern is observed within the Common Mental Health Problems group (Pre-intervention to During, $p<0.001$; During to Post-intervention, $p<0.01$). No change is observed in the Miscellaneous group.

Perhaps the most noticeable feature of Table 37 is the very large decrease in the mean scores for the Common Mental Health Problems group. In this group the mean score fell by 11.2 points between the Pre-intervention and During phases, and fell a further 4.3 points between the During and Post-intervention phases. Although the mean scores within the Musculoskeletal groups also decreased, by 2.9 and 1.8 points in the two phases respectively, the differing degrees of decrease meant although there was a significant difference between these two groups scores at Pre-intervention ($p<0.001$), there ended up being no significant differences between them either at the During or Post-intervention interventions.

Table 30. GHQ 12 Likert scores by Primary Presenting Issues

Primary Presenting Issue	N	Mean	SD
Musculoskeletal			
Pre-Intervention	182	13.6	5.6
During Intervention	78	10.7	5.7
Post-Intervention	180	8.9	5.2
Common Mental Health Problems			
Pre-Intervention	52	23.7	7.6
During Intervention	26	12.5	9.8
Post-Intervention	51	8.2	5.6
Miscellaneous			
Pre-Intervention	7	16.9	6.3
During Intervention	4	17.5	10.0
Post-Intervention	6	16.5	4.6
All Clients			
Pre-Intervention	242	15.9	7.3
During Intervention	109	11.4	7.1
Post-Intervention	238	8.9	5.4

This indicates that there were significant improvements in health status during the intervention. This improvement was more marked for the Common Mental Health Problems group than the Musculoskeletal group, as higher initial scores were recorded.

The GHQ-12 primarily measures mental health indicators (e.g. feelings of anxiety, confidence, happiness, loss of sleep, concentration etc), so those with mental health issues are more likely to score highly on it than those with primarily physical issues.

To summarise, there are significant improvements in scores for those in the Musculoskeletal group and the Common Mental Health Problems group over the course of the intervention. Significant improvements are already seen at the During intervention assessment. Although there are significant differences between the pre-intervention scores for those in the Common Mental Health Problems group and the Musculoskeletal group, these differences no longer exist at the post-intervention assessment.

7.4 The Canadian Occupational Performance Measure

In the COPM, clients were asked to report up to 5 activities that they had problems completing, that they attributed to their primary presenting issue. These activities were identified un-prompted during the pre-intervention assessment with the case manager. These activities were then categorised into one of 11 activity group. Table 31 summarises the number of activities reported by clients that they experienced problems completing.

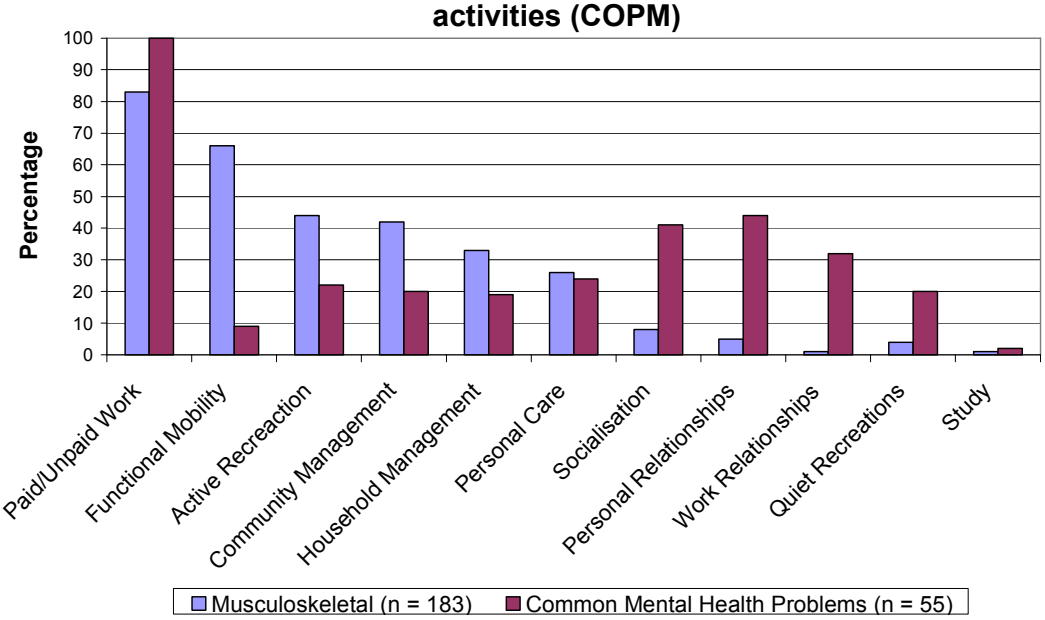
Table 31. Number of activities clients reported having difficulty completing

Number of activities	Number of clients	Percentage of clients
None	4	2%
One activity	42	17%
Two activities	44	18%
Three activities	45	18%
Four activities	44	18%
Five activities	67	27%
Total	246	

Almost all clients experienced difficulty with completing at least one activity; the mean number of activities reported was 3.2.

The types of activity that clients reported experiencing difficulty with are shown in Figure 6 for the Musculoskeletal group and the Common Mental Health Problems groups. This is shown in more detail in Table 32.

Figure 6. Percentage of clients who reported problems with activities (COPM)



Due to one missing primary presenting issue, the case totals in the three primary presenting issue categories may not always add up to the total at the right hand side. Paid/Unpaid work is the most frequently cited activity by all groups. As might be expected, Musculoskeletal clients than identified problems with functional mobility, active recreation and community management, while clients in the Common Mental Health Problems group tended to identify problems with personal and family relationships and socialisation.

COPM is used to track clients' progress over time; at the Post-intervention assessment clients were only asked about their ability to perform the activities that they had identified having difficulties with at the Pre-intervention assessment.

Each of the activities identified by the client was rated by the client both for their ability to perform it, and their satisfaction with their ability, at pre-intervention, during intervention and post-intervention. A higher score indicates their greater ability or satisfaction with performance of the activity. Table 33 summarises the *performance* ratings by clients in each of the three primary presentation issue categories. Activity 1 is the activity that the client identified first (therefore most likely to be the most significant activity they are experiencing difficulty with). It is not possible to analyse these scores by the activity type.

Table 32. Type of Activities reported by clients by Primary Presenting Issue

Activity	Musculoskeletal (n = 181)		Common Mental Health Problems (n = 55)		Miscellaneous (n = 7)		Total (n = 243)	
	No. of Clients	% of Group	No. of Clients	% of Group	No. of Clients	% of Group	No. of Clients	% of Group
Paid/Unpaid Work	150	83%	55	100%	7	100%	213	88%
Functional Mobility	119	66%	5	9%	3	43%	127	53%
Active Recreation	80	44%	12	22%	5	71%	97	40%
Community Management	75	42%	11	20%	3	43%	89	37%
Household Management	59	33%	10	19%	6	86%	76	31%
Personal Care	46	26%	13	24%	1	14%	60	25%
Socialisation	14	8%	22	41%	3	43%	39	16%
Personal Relationships	9	5%	24	44%	1	14%	35	15%
Work Relationships	2	1%	17	32%	0	0%	19	8%
Quiet Recreation	8	4%	11	20%	0	0%	19	8%
Study	1	1%	1	2%	0	0%	2	1%

Table 33 shows that there is a consistent increase in the performance ratings given to activities over time for all groups, except for the Miscellaneous group. The means ratings in Table 33 were subjected to a series of paired t-tests to determine if there are significant improvements occurring over time; statistically significant improvements occur from pre- to during and during to post-intervention assessment for all paired comparisons except those involving the miscellaneous group (where the number of clients was very low). Figure 7 shows the Musculoskeletal group's performance ratings of activities, and Figure 8 shows this for the Common Mental Health Problems group.

Clients were also asked to score their *satisfaction* with their ability to perform the identified activities; this is shown in Table 34. This shows that there is a consistent increase in the satisfaction ratings given to activities over time in all groups, except for Miscellaneous. The mean ratings in Table 34 were subjected to a series of paired t-tests to determine if there are significant improvements occurring over the three assessments. The battery of t-tests demonstrates that all the satisfaction ratings within the Musculoskeletal group improve significantly across time. The same pattern is seen for the Common Mental Health Problems group, except for activity 5, where there is no significant difference between the during and post-intervention satisfaction ratings. No significant differences are seen for the Miscellaneous group; again the number of clients in this group is low. Figure 9 shows the Musculoskeletal group's satisfaction ratings of activities, and Figure 10 shows this for those with Common Mental Health Problems.

Table 33. Mean performance ratings by clients by time and by Primary presenting issue

Activity Performance rating	Musculoskeletal (n = 181)			Common Mental Health Problems (n = 55)			Miscellaneous (n = 7)			Total (n = 243)		
	Pre-intervention	During intervention	Post-intervention	Pre-intervention	During intervention	Post-intervention	Pre-intervention	During intervention	Post-intervention	Pre-intervention	During intervention	Post-intervention
Activity 1	5.0	7.0	8.2	4.2	6.7	8.2	4.7	4.0	5.2	4.8	6.8	8.2
Activity 2	4.7	6.6	8.1	3.9	5.4	7.7	4.4	3.3	4.5	4.5	6.1	7.9
Activity 3	4.3	6.3	7.9	3.8	5.5	8.1	4.6	3.3	4.2	4.2	6.0	7.8
Activity 4	4.3	6.0	8.0	3.2	5.6	7.5	3.5	1.0	2.3	4.0	5.6	7.6
Activity 5	3.6	6.0	7.7	3.8	7.1	8.2	5.0	2.7	3.8	3.8	6.0	7.6

Table 34. Mean satisfaction ratings by clients by time and by Primary Presenting Issue

Activity Satisfaction rating	Musculoskeletal (n = 181)			Common Mental Health Problems (n = 55)			Miscellaneous (n = 7)			Total (n = 243)		
	Pre-intervention	During intervention	Post-intervention	Pre-intervention	During intervention	Post-intervention	Pre-intervention	During intervention	Post-intervention	Pre-intervention	During intervention	Post-intervention
Activity 1	2.9	6.4	8.1	2.9	6.2	8.3	2.9	3.0	3.3	2.9	6.2	8.0
Activity 2	3.2	6.0	8.0	3.5	5.1	7.7	2.6	2.3	3.5	3.2	5.6	7.8
Activity 3	3.0	5.8	7.9	2.9	5.6	8.4	2.9	2.5	3.0	3.0	5.6	7.8
Activity 4	3.3	5.8	7.9	3.0	5.4	7.7	2.0	1.0	1.8	3.2	5.4	7.6
Activity 5	2.4	5.4	7.4	2.6	7.3	8.3	2.3	1.3	2.0	2.5	5.6	7.4

Figure 7. Musculoskeletal COPM Performance Rating (n = 181)

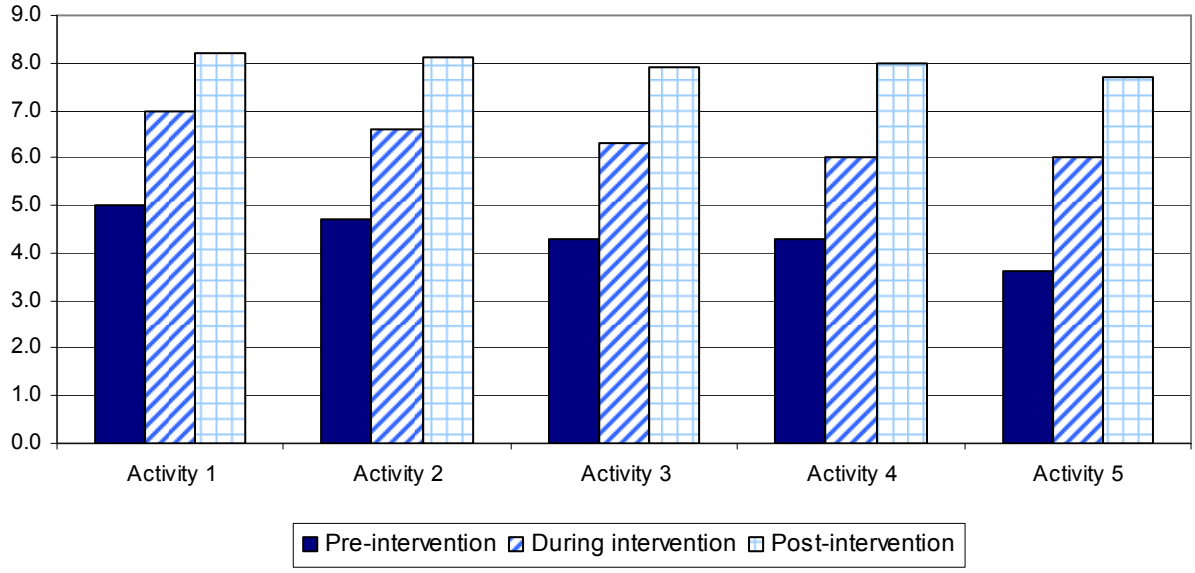


Figure 8. Common Mental Health Problems COPM Performance Rating (n = 55)

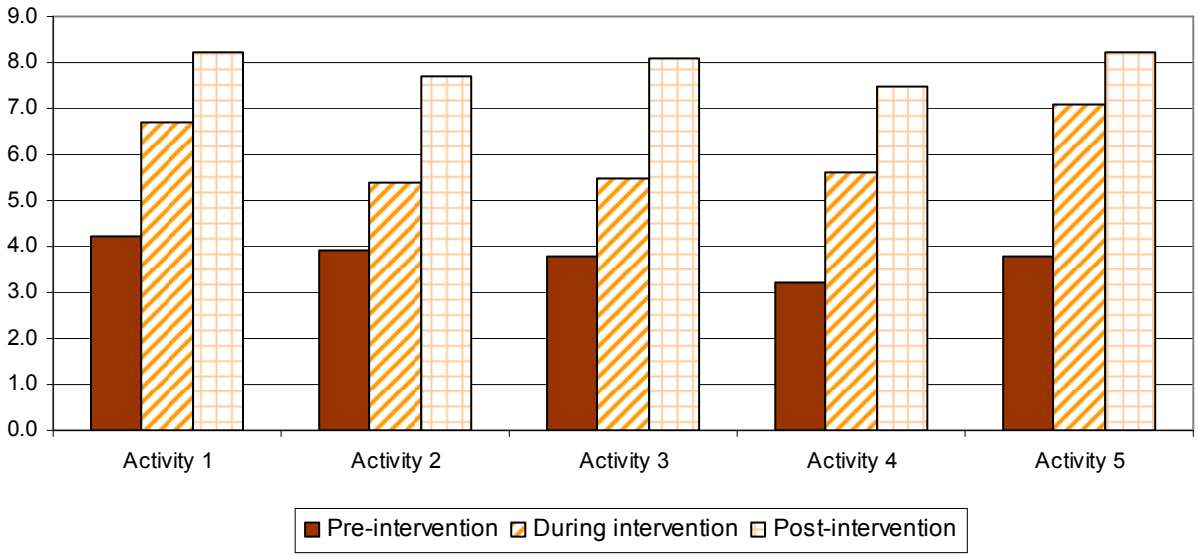


Figure 9. Musculoskeletal Problems COPM Satisfaction Rating (n = 181)

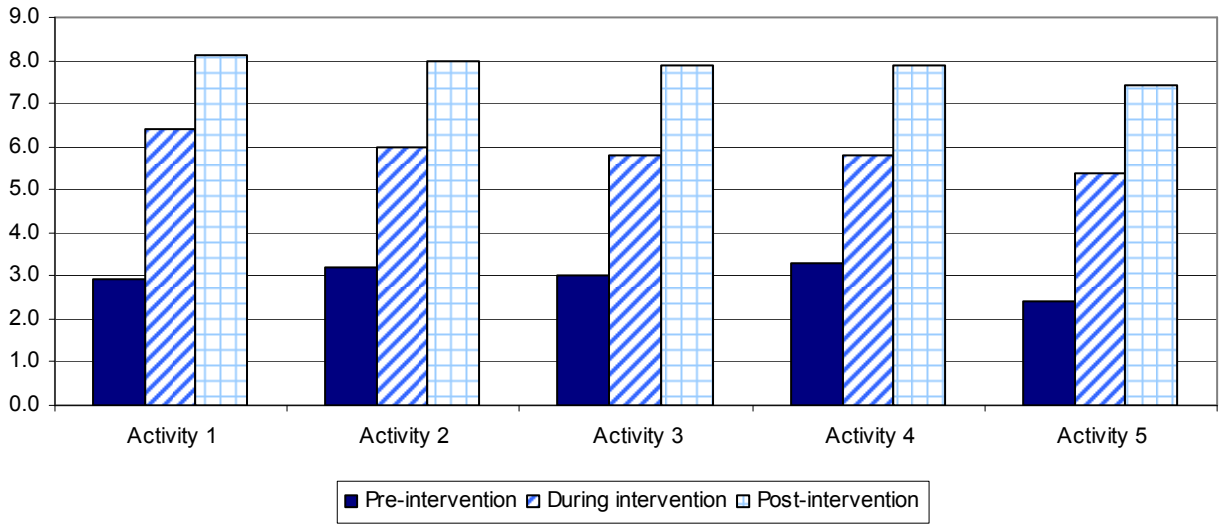
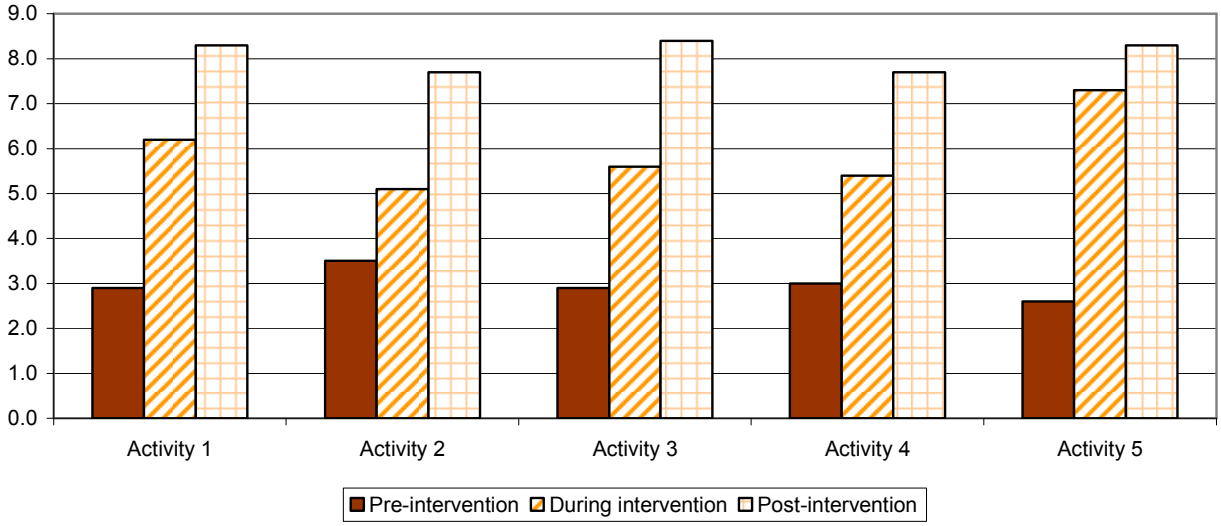


Figure 10. Common Mental Health Problems COPM Satisfaction Rating (n = 55)



To summarise, there are statistically significant improvements in the COPM scores of both performance and the clients' satisfaction with their ability to perform the activity, both for clients in the Musculoskeletal group and in the Common Mental Health Problems group.

7.5 Work Ability Index

The Work Ability Index (WAI) is an assessment of how well an individual is able to perform their work. Clients' answers to a questionnaire are scored. The range of the index is between 7 and 49, which are categorised as poor (7 – 27 points); moderate (28 – 36 points); good (37 – 43 points); excellent (44 – 49 points). The WAI was measured on two occasions; Pre-intervention and Post-intervention. Table 35 summarises the results.

Table 35. The Work Ability Index by time and Primary Presenting Issue

Work Ability Index	Musculoskeletal				Common Mental Health Problems				Miscellaneous				Total			
	Pre-intervention		Post-intervention		Pre-intervention		Post-intervention		Pre-intervention		Post-intervention		Pre-intervention		Post-intervention	
Poor	25	15%	7	4%	26	49%	5	10%	3	50%	0	0%	54	24%	12	6%
Moderate	64	39%	27	17%	14	25%	3	6%	3	50%	2	67%	82	36%	32	15%
Good	69	42%	75	47%	12	23%	25	51%	0	0%	1	33%	81	36%	101	48%
Excellent	7	4%	50	31%	1	2%	16	33%	0	0%	0	0%	8	4%	67	32%
Missing Data	18		24		2		6		1		4		21		34	
Total	183		183		55		55		7		7		246		246	

Table 35 shows that there was an improvement in WAI categories for all primary presenting categories. The improvements within the Musculoskeletal and Common Mental Health Problems groups are statistically significant ($p<0.001$). No significance test can be applied to the Miscellaneous group. Over 30% of clients in both the Musculoskeletal and Common Mental Health Problems groups score 'excellent' at the post-intervention assessment, and almost a further 50% in both groups scored 'good'.

These changes are shown in Figure 11 (Musculoskeletal disorders) and Figure 12 (Common Mental Health Problems).

Figure 11. Percentage of clients with Musculoskeletal conditions who scored poor, moderate, good or excellent at pre- and post-intervention assessments (n = 165)

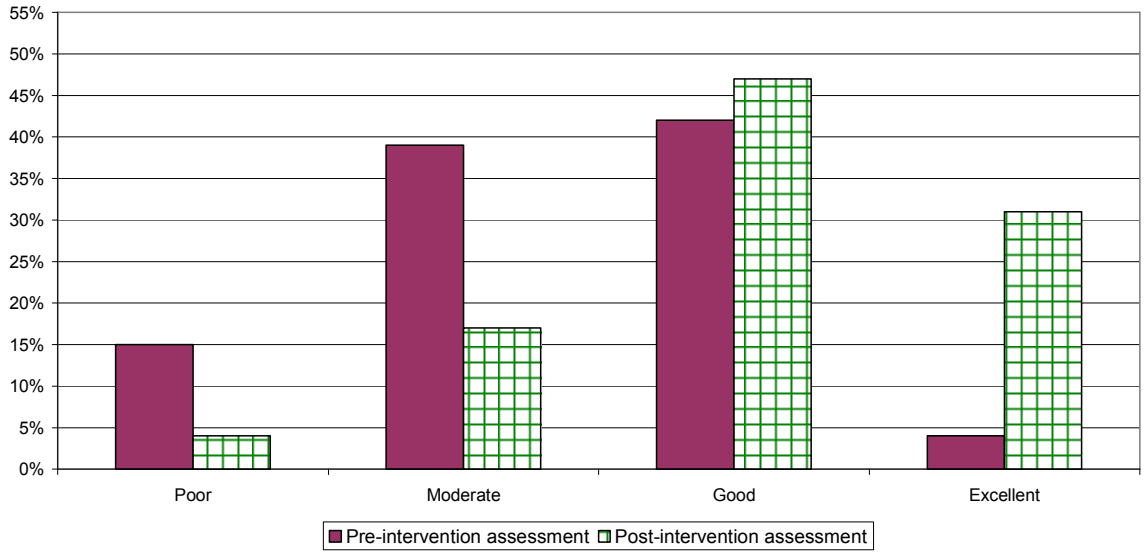
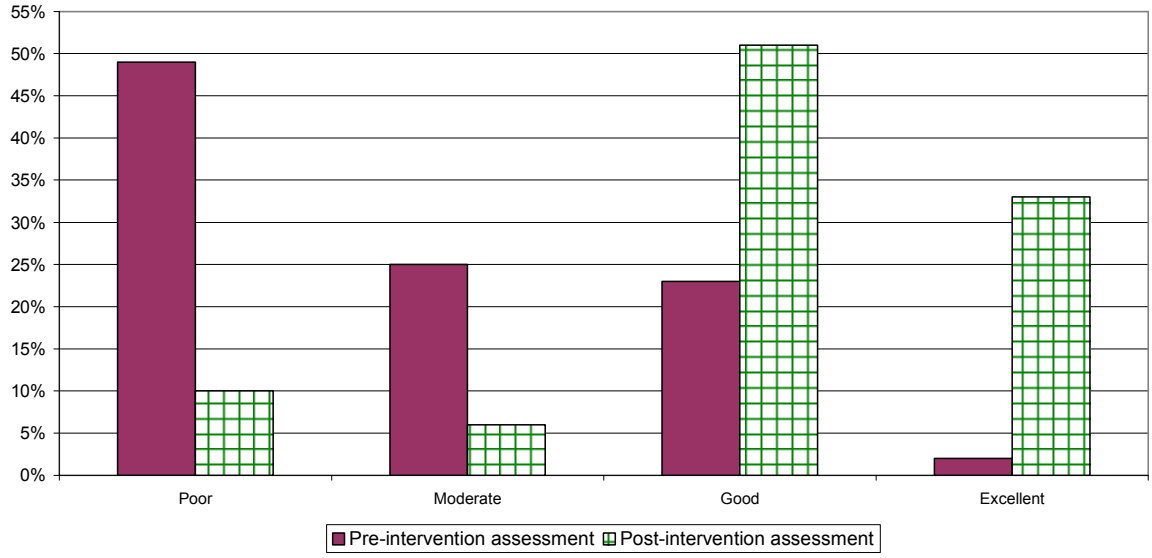


Figure 12. Percentage of clients with Common Mental Health Problems who scored poor, moderate, good or excellent at pre- and post-intervention assessments (n = 53)



To summarise, statistically significant improvements in WAI scores were observed for both the Musculoskeletal and Common Mental Health Problems groups from pre- to post-intervention. At post intervention 80% of clients scored 'good' or 'excellent'.

7.6 European Quality of Life 5D

The European Quality of Life 5D (EQ-5D) measures health status according to 5 dimensions and through the use of a Visual Analogue Scale. The 5 dimensions consist of Mobility, Self-Care, Usual Activities, Pain/Discomfort and Anxiety/Depression. Clients completed the EQ-5D both Pre- and Post-intervention. Table 36 summarises the clients' responses to the EQ-5D by time and by primary presenting issue.

Examination of Table 36 suggests that, in general, higher proportions of clients report better scores on each of the 5 dimensions in the Post-intervention assessment than at Pre-intervention assessment. This is shown in Figure 13 for Musculoskeletal conditions, and Figure 14 for Common Mental Health Problems.

At the pre-intervention assessment, 84% of clients with Musculoskeletal conditions said they had moderate pain or discomfort, and 14% reported extreme pain or discomfort. At the post-intervention assessment, 39% said that they had no pain or discomfort, while only 1% had extreme pain or discomfort. This is mirrored in the scores relating to the ability to perform their usual duties, with only 14% saying they had no problems with this at pre-intervention assessment, and 65% having no problems post-intervention.

It would be expected that improvements in musculoskeletal conditions would result in improved reports of mobility, self-care, performance of usual activities, and reduced pain and discomfort; clear improvements in these scores are seen. It is interesting to note that there were also improvements in the levels of anxiety and depression, with 70% reporting no problems with this at pre-intervention but 86% at post-intervention assessment ($p<0.01$).

For those with Common Mental Health Problems, 8% reported not being anxious or depressed at pre-intervention, while 61% reported this at post-intervention assessment ($p<0.001$). Another significant improvement was seen with the scores relating to the ability to perform usual activities, with 31% reporting no problem with this at pre-intervention, but 84% reported no problems at post-intervention assessment ($p<0.001$).

For both groups, fewest problems were reported with self care.

Figure 13. EQ-5D Musculoskeletal Conditions (n = 181)

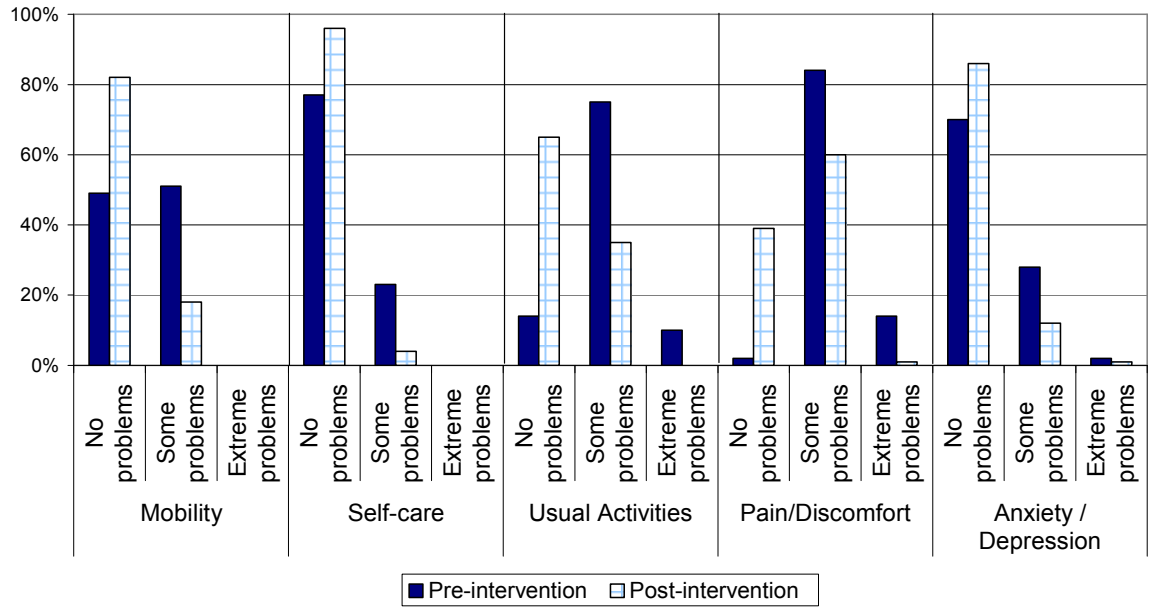
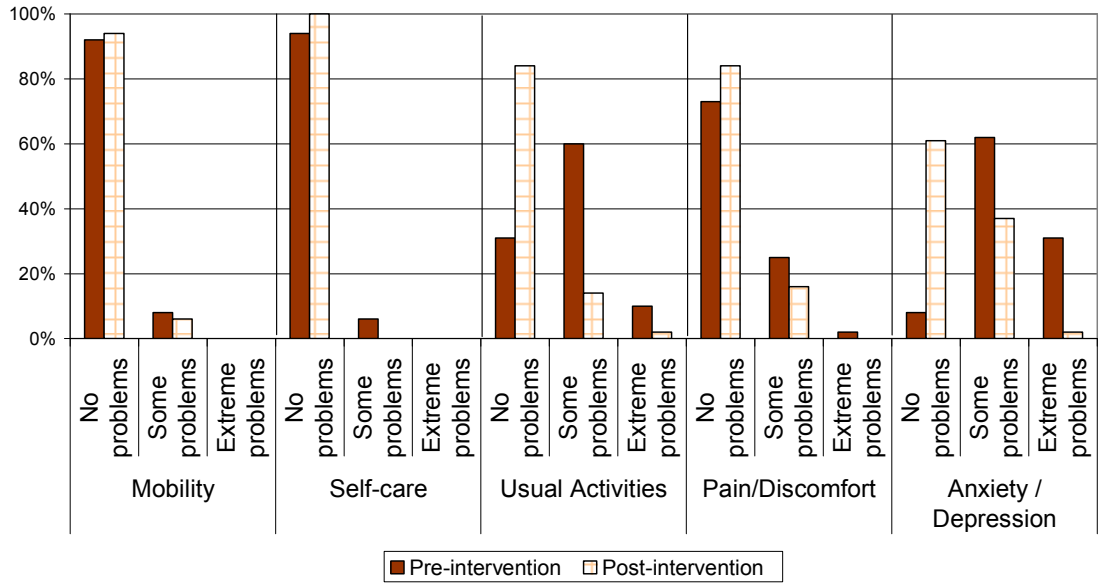


Figure 14. EQ-5D Common Mental Health Problems (N = 55)



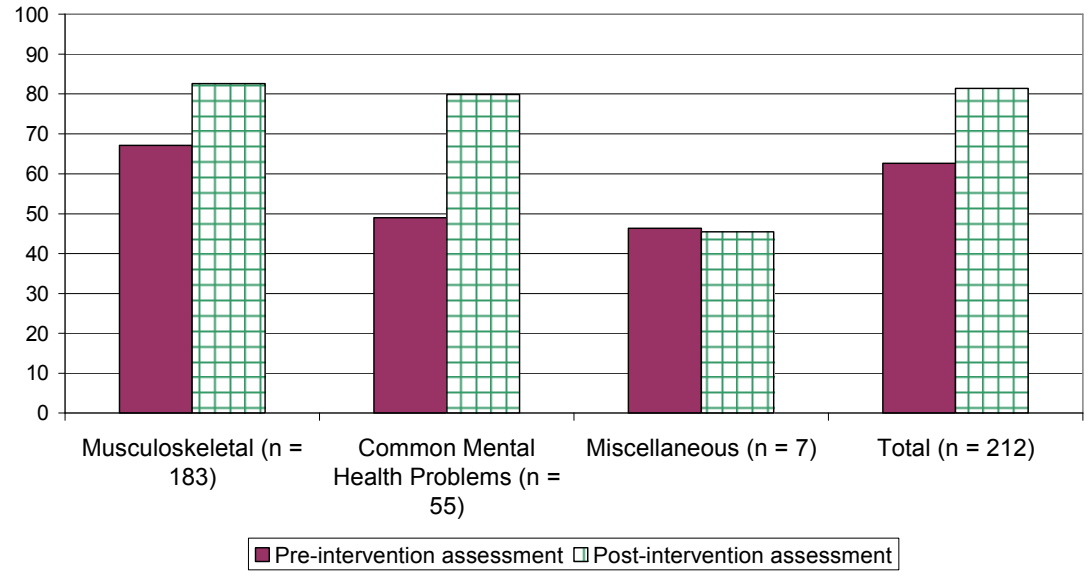
Where it was possible to carry out statistical tests, statistically significant improvements were made between pre- and post-intervention for the Musculoskeletal group and the Common Mental Health Problems group. The one exception to this was with the mobility scale for Common Mental Health Problems, where, not surprisingly, no significant difference was seen between pre intervention and post intervention scores. No significant differences were seen for the Miscellaneous group for any of the dimensions.

Table 36. European Quality of Life 5D by time and Primary Presenting Issue

EQ-5D	Musculoskeletal				Common Mental Health Problems				Miscellaneous				Total			
	Pre-intervention		Post-intervention		Pre-intervention		Post-intervention		Pre-intervention		Post-intervention		Pre-intervention		Post-intervention	
Mobility																
I have no problems in walking about	82	49%	138	82%	48	92%	48	94%	1	20%	2	33%	132	59%	189	84%
I have some problems in walking about	85	51%	30	18%	4	8%	3	6%	4	80%	3	50%	93	41%	36	16%
I am confined to bed	0	0%	0	0%	0	0%	0	0%	0	0%	1	17%	0	0%	1	0%
Self-Care																
I have no problems with self-care	128	77%	163	96%	49	94%	51	100%	4	80%	4	67%	182	81%	219	97%
I have some problems washing or dressing myself	39	23%	6	4%	3	6%	0	0%	1	20%	2	33%	43	19%	8	3%
I am unable to wash or dress myself	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Usual Activities																
I have no problems with performing my usual activities	24	14%	110	65%	16	31%	43	84%	3	60%	2	33%	40	18%	156	69%
I have some problems with performing my usual activities	126	75%	59	35%	31	60%	7	14%	2	40%	3	50%	161	72%	69	30%
I am unable to perform my usual activities	17	10%	0	0%	5	10%	1	2%	0	0%	1	17%	24	11%	2	1%
Pain/Discomfort																
I have no pain or discomfort	3	2%	66	39%	38	73%	43	84%	1	20%	3	50%	43	19%	113	50%
I have moderate pain or discomfort	141	84%	101	60%	13	25%	8	16%	3	60%	2	33%	157	70%	111	49%
I have extreme pain or discomfort	23	14%	2	1%	1	2%	0	0%	1	20%	1	17%	25	11%	3	1%
Anxiety/Depression																
I am not anxious or depressed	117	70%	146	86%	4	8%	31	61%	3	60%	3	50%	124	55%	181	80%
I am moderately anxious or depressed	46	28%	21	12%	32	62%	19	37%	2	40%	3	50%	81	36%	43	19%
I am extremely anxious or depressed	3	2%	2	1%	16	31%	1	2%	0	0%	0	0%	19	8%	3	1%

The mean Visual Analogue Scales are shown in Figure 15; clients could score this from 0 (worst imaginable health state) to 100 (best imaginable health state).

Figure 15. Visual Analogue Scale Scores



At pre-intervention assessment, those in the Common Mental Health Problems group had a significantly lower score (mean = 49.7, sd = 21.1) than the Musculoskeletal group (mean = 67.2, sd = 18.3) ($p<0.001$). Both the Musculoskeletal and Common Mental Health Problems groups show a statistically significant improvement between pre- and post-intervention assessments. At post-intervention assessment there is no significant difference between the Musculoskeletal and Common Mental Health Problems groups.

To summarise, there are statistically significant improvements on almost all measures for both the Musculoskeletal and Common Mental Health Problems groups between the two intervention periods. The one exception to this was the mobility score for the Common Mental Health Problems group.

7.7 Summary

The tools all show significant improvements from pre-intervention to post-intervention for the Musculoskeletal and Common Mental Health problems groups. The GHQ-12, which is particularly an indicator of mental health shows particularly significant improvements for the Common Mental Health Problems group, with their post-intervention scores being similar to those of the Musculoskeletal group. The post-intervention scores are favourable when compared with other healthcare workers studies, and when compared with a normal working population. Significantly reduced levels of discomfort are reported for the Musculoskeletal group on the EQ-5D tool. There are significant improvements in the clients' perceived performance of tasks and their satisfaction with the performance of tasks, both for the Musculoskeletal group and the Common Mental Health Problems group, as measured on the COPM tool. The Work Ability Index also shows significant improvements in health over time for both groups (overall 4% having 'excellent' health pre-intervention, and 32% at post-intervention).

8. Impact on NHS service delivery

8.1 Impact on traditional occupational health referrals

The number and type of referrals to the traditional occupational health services in NHS Fife and NHS Lanarkshire in 2005/06 was compared with that in 2006/7 (during which the OHSxtra pilot ran). The cases were reviewed to determine the Primary Presenting Issue, and to try to identify whether OHSxtra had an impact on referral to traditional Occupational Health. Data were obtained from NHS Fife for the first 100 referrals within these two time periods. Clients were referred to the occupational health service for a variety of reasons, including Cardiac/Circulatory; Endocrine/metabolic; Eyes, ears, throat; Gastro-intestinal; Musculoskeletal; Neurological; Psychological/Psychiatric; Respiratory; Skin; Surgical/post-operative; and Urogenital. Of the first 100 cases, in 2006 28 clients were referred for a musculoskeletal condition, while in 2007 this was 30. Of the first 100 cases, 39 clients were referred for a psychological or psychiatric reason in 2006, while in 2007 this was 36. The numbers are too low to draw conclusions concerning the impact of OHSxtra on referrals to traditional occupational health.

8.2 Impact on referrals to traditional physiotherapy services

Staff involved in the delivery of NHS physiotherapy services at four hospitals in the two Health Boards were consulted concerning the impact of OHSxtra on their service delivery. At three of these four hospitals there was a perception that OHSxtra had reduced the number of NHS staff they had seen, with an associated positive impact on waiting times (one thought that the number of clients who attended OHSxtra physiotherapy was too small to have had an impact on their figures). Data on referral were collected in different ways at each hospital, and it is difficult to make comparisons between them; in most cases it was also not possible to identify whether a patient was an NHS member of staff, unless they had been referred via Occupational Health. However, there was an indication that referrals to the NHS physiotherapy service by Occupational Health increased following the end of OHSxtra.

One centre had 93 non-OHSxtra NHS staff referrals to physiotherapy in the 12 months prior to the OHSxtra physiotherapist being in post. In the subsequent 9 months there were 29 non-OHSxtra NHS staff referrals (which could be expected to equate to 39 over a 12 month period). There was therefore a significant drop in the number of NHS staff who attended physiotherapy when referred by their GP or Consultant. Note that these referrals were for all musculoskeletal injuries including fractures. There were 186 OHSxtra referrals (self, case manager or OH) to physiotherapy at this centre in the same 9 month period.

It therefore appears that OHSxtra has reduced the number of NHS staff physiotherapy appointments.

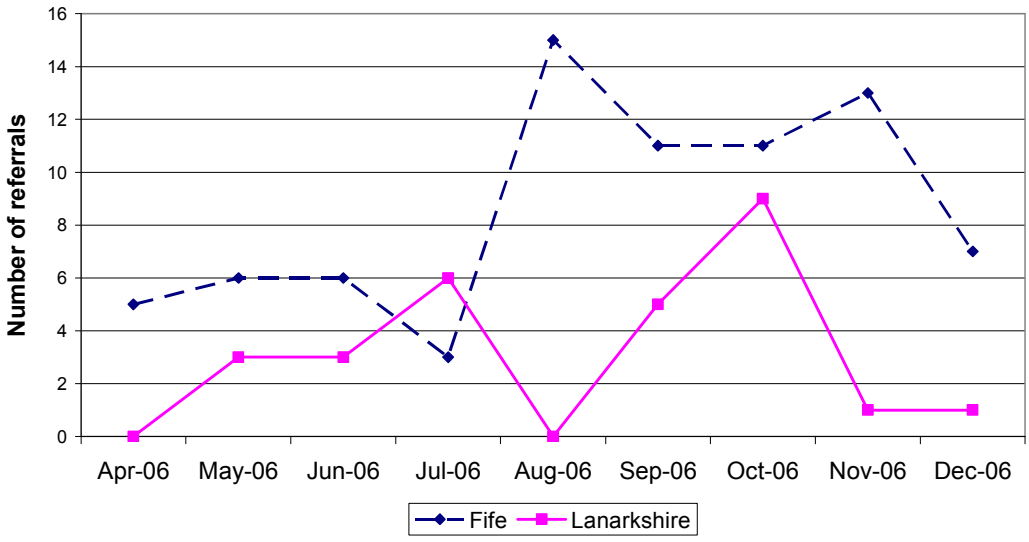
8.3 Impact on referrals to Employee Counselling Service

Lanarkshire's Employee Counselling Service (ECS) (to which staff could self-refer) started at approximately the same time as the OHSxtra project (May 2006). It is therefore not possible to identify the impact of OHSxtra on it. However, data from Lanarkshire's ECS indicates that in the first 6 months (May – November 2006) 82 clients received a structured counselling programme (104 were referred, but 22 failed to attend). Of those 82 who participated the programme 43% were absent at the first session, and only 4% were absent at the final session. This indicates the effectiveness of the programme.

Fife were offering a similar programme at the time that OHSxtra commenced, but this stopped receiving clients on 1st September 2006; any clients in the system at that point received treatment until discharge. The month of referral for those clients in Fife who had Common Mental Health Problems (77 clients) was reviewed to determine whether there was an impact of the withdrawal of the Fife ECS. This is shown in Figure 16.

There is no significant difference in referral rates over time in Lanarkshire. However, in Fife, there is a significant higher number of referrals from August – December 2006, than in April – July 2006 ($p=0.001$). Although the ECS was still receiving clients in August, it was known that the service was going to be withdrawn, and this is likely to account for the increase in referral of those with Common Mental Health Problems in Fife from August onwards. It appears that OHSxtra met some of the demand for psychological support created by the withdrawal of the ECS in Fife.

Figure 16. Number of referrals for counselling / CBT over time



8.4 Impact on other measures

Ill health retirement figures for Lanarkshire were obtained for 2005/06 (prior to OHSxtra) and 2006/07 (during the running of OHSxtra). There were 55 ill health retirements prior to OHSxtra, and 60 during the period it was running. It is unlikely that OHSxtra had a significant impact on these figures, as those who received ill health retirement during the running of the programme are likely to have had significant health problems by this stage, and are unlikely to have been seen within the OHSxtra programme. Figures for 2007/08 may indicate an impact (as potential ill-health retirement may have been avoided over a longer time period).

A limited amount of data was available on the cost of Agency and Bank staff within the whole of NHS Lanarkshire. The costs of Agency staff reduced from £384,000 in 05/06 to £165,000 in 06/07; however, the cost of Bank staff increased from £7,298,000 in 05/06 to £8,693,000 in 06/07. It was not possible to extract the reasons for the use of Agency and Bank staff time; since many factors will contribute to the use of Agency and Bank staff it is not possible to say what impact OHSxtra had on this.

Data were not available to quantify the impact of OHSxtra on overall sickness absence levels or on the amount of overtime worked.

8.5 Summary

Although it had been hoped that data would be available from a variety of sources that would indicate the impact of OHSxtra, limited data were available. Those that are available indicate that OHSxtra reduced the number of staff referrals to NHS physiotherapy. There are clearer indications that the withdrawal of the Employee Counselling Service in Fife had an impact on OHSxtra, with the number of referrals into the service increasing following its withdrawal.

Because many factors impact on the overall sickness absence levels within a Health Board, the amount of overtime worked, bank and agency staff usage and early retirement rates, it is questionable whether the impact of OHSxtra on these would be measurable. However, it could be inferred that improving health and assisting staff to return to work will have a positive impact on these measures.

9 Subjective evaluations

9.1 Overview

Throughout the pilot project feedback was sought from various stakeholder groups via self-completed questionnaires. Table 37 describes the sample size and number of respondents per group, and the associated response rate.

Table 37. Number of questionnaires returned in subjective evaluation

	Number of Questionnaires issued	Number of Questionnaires returned	Response rate
Client (post-intervention)	401	239	60%
Line Managers (post-intervention)	260	171	66%
Human Resources (midway)	93	55	59%
Service Providers (midway)	16	13	81%
Human Resources (Post-pilot)	92	46	50%
Service Providers (Post-pilot)	47	34	72%

Client Feedback A feedback form was completed by clients at discharge. This was either completed during the post-intervention assessment or returned by post.

Line Manager Feedback The Line Manager feedback questionnaire was posted to the line managers of clients who had received service provision, following their discharge.

Human Resources and Service Providers Anonymous questionnaires were sent to human resources personnel and service providers midway through the programme, in August 2006. The same anonymous questionnaire was sent out to human resources personnel and service providers on 1st March 2007.

9.2 Client feedback

The client feedback form consisted of 12 questions. The first two asked clients whether OHSxtra had either helped them to return to work more quickly, or whether OHSxtra helped them to remain at work. The subsequent questions required clients to rate different aspects of OHSxtra on a 6 point Likert scale. Clients were then invited to add any further relevant comments.

Table 21 showed the number of clients who were absent or at work at the pre- and post-intervention assessments. For the 55 clients who had returned to work during the intervention and who expressed a view, 98% thought that OHSxtra helped them to get back to work more quickly (4 reported the question was not applicable, and 6 did not answer the question).

Of the 154 clients who were at work both at the pre- and post-intervention assessment and who expressed a view, 95% thought that OHSxtra helped them to stay at work (16 reported the question was not applicable, and 21 did not answer the question).

The remaining questions were answered by all 246 clients who completed the post-intervention assessment. For clarity, the six point Likert scale was collapsed into two categories, with one category representing 'favourable' ratings by the client, and the other 'unfavourable' ratings. The percentage of positive responses is shown in Table 38.

Table 38. The percentage of positive client responses Post-intervention (n = 246)

Question	Positive response	Number of missing responses
How would you rate your overall impression of OHSxtra?	97%	24
How would you rate your overall impression of the Case Manager?	100%	22
How would you rate the impact of OHSxtra on your attendance or effectiveness at work?	95%	37
How would you rate the impact of OHSxtra on your perception of NHS Fife or NHS Lanarkshire as an employer?	95%	27
What do you think of the waiting times for OHSxtra?	97%	27
What did you think of the help you received from OHSxtra?	97%	22
How involved did you feel throughout the entire OHSxtra process?	96%	23
Do you think OHSxtra is worthwhile?	97%	22
How likely are you to recommend OHSxtra to other people?	97%	22
How likely are you to use OHSxtra again, if necessary?	96%	27

Clients' views of the programme and of the case manager were overwhelmingly favourable. They reported the programme had had a positive impact on their attendance or effectiveness at work, and on their view of the Health Board as their employer. The waiting times and the help received by clients were viewed favourably. The vast majority of clients felt involved in the process. The clear majority of clients thought the programme was worthwhile, and were likely both to use it again if necessary, and to recommend it to others. Only a minority of clients gave negative responses to any of these questions.

9.3 Line managers' feedback

Feedback was sought from Line Managers following the intervention their staff member had received. As of 4th April 2007 171 Line Managers' questionnaires had been returned.

Again with reference to Table 21 (which showed the number of clients who were absent or at work at the pre- and post-intervention assessments), managers were asked whether the pilot had helped their staff remain in work or return to work.

Of the line managers whose staff member had returned to work during the intervention (55 clients) and who expressed a view, 77% thought that OHSxtra had helped their member of staff to get back to work more quickly, while 23% did not. (4 reported the question was not applicable, and 21 did not answer the question).

Of the line managers whose staff member had remained at work throughout the intervention (154 clients) and who expressed a view, 84% though that OHSxtra helped their member of staff to stay at work, rather than going on sick leave; 16% did not (19 reported the question was not applicable, and 59 did not answer the question).

If managers had responded positively to either of these questions, they were asked whether OHSxtra has contributed to quality of care or finance measures (see Table 39). There was a strong perception that OHSxtra had helped with both improved service delivery and improved patient care. The majority of managers also thought that this had resulted in savings both through the use of bank or agency staff or overtime costs.

Table 39. Showing the views of the Line Managers who thought that OHSxtra had helped their staff member return to work more quickly or stay in work (n = 87)

Question	Scale		N/A	Number of missing responses
	Yes	No		
Improved service delivery	98%	2%	6	17
Improved patient care	96%	4%	9	31
Saved on cost of using bank/agency staff	69%	31%	26	26
Saved on overtime costs	65%	35%	24	43

Line managers' responses to the remaining questions are shown in Table 40. The majority of line managers were positive about the service, with 83% reporting favourably on the impact of OHSxtra on their staff member's attendance at work. Two thirds (66%) were favourable about the feedback they received from the case manager about their staff member, and just under half (48%) felt involved in the OHSxtra process. Line managers may not have been aware that their staff member was accessing OHSxtra (staff could refer confidentially), which may account for the lower levels of satisfaction concerning feeling involved, and receiving feedback. However, the vast majority thought that OHSxtra was worthwhile, would recommend it to others, and would use it again.

Table 40. Line Managers' Responses Post-intervention (n = 171)

Question	Positive response	Number of missing responses
How would you rate your overall impression of OHSxtra?	86%	18
How would you rate your overall impression of the Case Manager?	89%	42
How would you rate the impact of OHSxtra on your member of staff's attendance or effectiveness at work?	83%	29
How would you rate the impact of OHSxtra on your perception of NHS Fife or NHS Lanarkshire as an employer?	88%	20
What do you think of the waiting times for OHSxtra?	88%	32
What do you think of the feedback you received from the Case Manager regarding your member of staff?	66%	52
How involved did you feel throughout the entire OHSxtra process?	48%	26
Do you think OHSxtra is worthwhile?	94%	15
How likely are you to recommend OHSxtra to other people?	95%	18
How likely are you to use OHSxtra again, if necessary?	96%	16

Line managers were invited to add comments they thought relevant. The majority of these were favourable; 49 line managers made positive comments, 47 made neutral comments and 8 made negative comments; 67 made no comments.

9.4 Human resources' feedback

In total, 93 HR professionals were identified in the two NHS Health Boards. They were surveyed midway through the pilot (August 2006), and at the end of the pilot (March 2007) to establish their involvement with and views of it. The questionnaires were completed anonymously; it is not possible to identify whether the same service providers completed them at the two survey points.

9.4.1 Midway through the project

A total of 55 completed questionnaires were received from HR professionals, 32 from Fife and 23 from Lanarkshire. Altogether 42 (78%) of respondents were aware of OHSxtra; however, only 9 (17%) respondents had been involved with OHSxtra.

Of the nine HR professionals who had had some involvement with the project, all gave positive responses concerning:

- their overall impression of OHSxtra
- their overall impression of the case manager
- the impact of OHSxtra on employees' attendance at work
- the impact of OHSxtra on their perception of NHS Fife or NHS Lanarkshire as an employer
- waiting times for OHSxtra
- their feeling of involvement throughout the OHSxtra process
- their view of whether OHSxtra is worthwhile
- their likelihood of recommending OHSxtra to other people
- their likelihood of using OHSxtra again if necessary.

The majority of respondents were positive about the feedback received from the Case Manager about the staff member, although one respondent thought it was unsatisfactory.

Views received from the HR personnel were generally very positive, although completed questionnaires were only received from a small number at this point. The only negative view related to one respondent who did not regard the feedback from the case managers concerning the staff member to be satisfactory.

9.4.2 Post-pilot

A total of 46 questionnaires were received following the pilot, 25 from Fife and 21 from Lanarkshire. Thirty seven (84%) of respondents were aware of OHSxtra; nine respondents (21%) had been involved with OHSxtra.

Of the nine HR professionals who had had some involvement with the project, all gave positive responses concerning:

- their overall impression of OHSxtra
- their overall impression of the case manager
- the impact of OHSxtra on employees' attendance at work
- the impact of OHSxtra on their perception of NHS Fife or NHS Lanarkshire as an employer
- their view of whether OHSxtra is worthwhile
- their likelihood of recommending OHSxtra to other people
- their likelihood of using OHSxtra again if necessary.

Five answered the question concerning waiting times for OHSxtra; two respondents were unsatisfied with these. Seven answered the question concerning feedback from Case Managers about the staff member(s); one of these was unsatisfied. Six responded to the question concerning how involved they felt throughout the OHSxtra process; two respondents felt uninvolved.

A similarly small number of HR personnel had had any direct involvement with the programme at its completion as at the midway stage (August 2006). Since the

questionnaires were completed anonymously it is not possible to identify whether these were the same respondents. Slightly more negative responses were received at the end of the pilot than at the midway stage. In particular, there was some dissatisfaction with the waiting times, and with the feedback from the case managers concerning the staff member(s). Two respondents also felt uninvolved in the OHSxtra process.

9.5 Service providers' feedback

Altogether, 39 service providers were available for case managers to refer clients to. An evaluation questionnaire was issued to service providers approximately midway through the programme (August 2006), and at the end of the programme (March 2007). These were completed anonymously; it is not possible to identify whether the same service providers completed them at these two points.

9.5.1 Midway through the pilot

A total of 13 anonymous questionnaires were received from service providers at the midway point of the pilot. Twelve respondents had received a relevant referral from OHSxtra, while one did not answer this question. Of the 12 service providers who responded to the remaining questions, all gave positive responses concerning:

- their overall impression of OHSxtra
- their overall impression of the case manager
- the impact of OHSxtra on employees' attendance at work
- the client's progression through OHSxtra
- their view of whether OHSxtra is worthwhile
- their likelihood of recommending OHSxtra to other people

Eleven of the 12 respondents gave positive responses concerning:

- The impact of OHSxtra on their perception of NHS Fife or NHS Lanarkshire as an employer
- waiting times for OHSxtra
- feedback from the Case Manager about the client(s)
- the efficiency of OHSxtra

Nine of the 12 respondents reported positively concerning their feeling of involvement throughout the OHSxtra process.

Views concerning the programme were generally very favourable, although one respondent considered that OHSxtra had had a negative impact on their perception of NHS Fife or NHS Lanarkshire as an employer. One also thought that the waiting times and feedback from the case manager were not satisfactory. One considered that the programme was not efficient. Most importantly, three respondents reported not feeling involved throughout the OHSxtra process. This indicates the importance of involving the service providers throughout, and of ensuring effective communication.

Service providers were invited to add relevant comments. Five respondents made neutral comments and 1 respondent made a negative comment.

9.5.2 Post-pilot

A total of 34 anonymous questionnaires were received from service providers following the pilot, 15 from Fife and 19 from Lanarkshire. All 34 were aware of OHSxtra, and 29

respondents had received a referral from OHSxtra; 24 of these reported that the referral was suited to their area of clinical practice. Table 41 summarises the responses to the remaining items for these 24.

Table 41. Summary of post-pilot feedback from Service Providers (n = 24)

Question	Positive response	Number of missing responses
How would you rate your overall impression of OHSxtra?	83%	0
How would you rate your overall impression of the Case Manager?	79%	0
How would you rate the impact of OHSxtra on your workload and/or time management?	81%	3
How would you rate the impact of OHSxtra service has on your own perception of NHS Fife or NHS Lanarkshire as an employer?	74%	1
What do you think of the waiting times for OHSxtra?	65%	4
What did you think of the client's progression through OHSxtra?	83%	1
What did you think of the feedback from the Case Manager about the client(s)?	75%	0
How involved did you feel throughout the entire OHSxtra process?	65%	1
Is OHSxtra efficient?	75%	0
Do you think OHSxtra is worthwhile?	88%	0
How likely are you to recommend OHSxtra to other people?	83%	0

Not surprisingly, more service providers reported having been involved in the programme at the end of it, than at the midway stage. Slightly less favourable views were received at the end of the pilot than earlier on. Four of the respondents (17%) had a negative view of OHSxtra, and five (21%) had a negative view of the case manager. Four (19%) thought OHSxtra had had a negative impact on their workload and/or time management, and 6 (26%) reported it had had a negative impact on their perception of NHS Fife or NHS Lanarkshire as an employer. Over a third of respondents (35%) thought that the waiting times for OHSxtra were unsatisfactory, and felt uninvolved in the OHSxtra process. A quarter thought that the feedback from the case manager about the client(s) was unsatisfactory. It is concerning to note that 6 of the 24 service providers did not think that OHSxtra was efficient, 4 would not recommend it to other people, and 3 did not think it was worthwhile.

Service providers were invited to add relevant comments. 6 respondents made positive comments, 2 made neutral comments and 2 made negative comments.

9.6 Summary

Subjective feedback from clients was overwhelmingly positive on all parameters measured. Feedback from line managers and human resources personnel was also positive, although some felt unsatisfied with the information received from the case managers, and did not feel involved with the process, possibly because some of the client management had been taken from them. Some service providers were also unsatisfied with the feedback from the case manager, did not feel involved with the process, and were not satisfied with the waiting times. All groups of respondents indicated that the programme had improved their view of their Health Board as an employer.

10. Economic analysis

10.1 Introduction

One of the aims of this project was to evaluate the economic impact of implementing the OHSxtra approach within NHS Fife and NHS Lanarkshire. This section reports on the estimated costs associated with implementing the OHSxtra approach in these two Health Boards. This consisted of the cost of intervention (Section 10.2) and subsequent cost of managing ill health including the costs associated with support from healthcare professionals (service providers) (Section 10.3), GP consultations (Section 10.4), and sickness absence (Section 10.5).

A second objective of the economic component of the OHSxtra pilot was to evaluate the relative cost effectiveness of implementing OHSxtra within NHS Fife and NHS Lanarkshire. In order to determine relative cost effectiveness, comparisons of costs and effectiveness or benefits between two or more alternatives are needed. The two major components of the evaluation are:

i. costs, which were expressed as intervention costs (Section 10.2) and costs associated with sickness absence (Section 10.5); and
ii. effectiveness, which was expressed as quality adjusted life years (Section 10.6).

However, due to the nature of the study design, data on matched comparators were not available; therefore, relative cost effectiveness was explored through scenario analysis by comparing the implementation of OHSxtra with the absence of OHSxtra (Section 10.7) and its findings tested in a threshold analysis (Section 10.8).

10.2 Costs of intervention

This cost of intervention included the cost of the salaries of the case managers, training, travelling to sites, and overheads (Table 42). Case manager costs include 24% of salary for pension and National Insurance. The costs associated with the running of the pilot study such as that incurred by project management and evaluation were not included in the intervention cost.

Table 42. Components of Intervention Costs

Components of the Intervention	**Costs**
Case managers (based on salary costs)	£96 759
Training	£9 188
Travel*	£1 625
Overheads (including telephone costs)	£3 547
Total Costs	**£111 119**

* This is based on mileage for one return journey per week from the main centres where the case managers were based to each of the hospitals at which weekly clinics were held at £0.45 per mile.

The total cost of implementing four case managers in NHS Fife and NHS Lanarkshire for the duration of the pilot was estimated to be £111 119.

10.3 Cost of support service from service providers

The overall cost associated with managing ill health through support from service providers was estimated for the OHSxtra cohort. All resource use associated with service provision from healthcare professionals were recorded during the study. These included the number of contacts with healthcare professionals such as occupational therapists, psychological interventions, physiotherapists and occupational health nurses.

The number of clients that were referred to such services was recorded in the project (Table 43). However, the number of individual service consultations associated with each client was poorly recorded; therefore, the mean number of consultations associated with each service was calculated from existing data. In the case of occupational health nurses, the data on mean number of contacts were not available; it was assumed that, on average, those clients who were referred received one consultation.

Unit costs associated with occupational health nurses and physicians and psychological interventions were obtained from the Occupational Health and Safety Advisory Services (OHSAS). Unit cost data relating to the occupational therapists and physiotherapists in Fife and Lanarkshire were obtained from routinely collected data published in *Service Provision Costs for Community Services (2005/2006)* produced by the Information Statistics Division for Scotland.

Table 43. Resource use and costs associated with services from healthcare professionals (based on 246 completers)

Service Provider	Number of clients referred	Resource Use (mean no. of sessions)	Unit Costs
CBT or Psychotherapy	13	8.1 (range 6 to 12)	£50
Counsellor	44	5.1 (range 2 to 12)	£37
Occupational Health Nurse	11	1	£15†
Occupational Therapist	22	4.4* (range 3.5 to 7.0)	£97.50§‡
Physiotherapist	176	5.3 (range 1 to 22)	£29.50‡

Note: One client may be referred to multiple services.
†Based on the assumption that the typical duration of sessions was 30 minutes, at £30 per hour.
*Mean resource use expressed as hours.
§Cost referred to one session, assumed to be one hour.
‡Mean of the Fife and Lanarkshire costs used.

The total costs associated with individual services were estimated based on the number of clients referred to individual services, the mean number of consultations per service, and the unit costs per consultation (Table 44).

Table 44. Total costs (range based on resource use) associated with individual services

Service Provision	Total Costs	Lower Range	Upper Range
CBT or Psychotherapy	£5 265	£3 900	£7 800
Counsellor	£8 303	£3 256	£19 536
Occupational Health Nurse	£165	-	-
Occupational Therapist	£9 367	£7 508	£15 015
Physiotherapist	£27 518	£5 192	£114 224

The total cost related to support from healthcare professionals provided through OHSxtra in completers (n = 246) over the study period was estimated to be approximately £50 618.

10.4 Cost of contacts with General Practitioners

The cost associated with managing ill health due to visits to general practitioners (GPs) in the three months prior to the post-intervention interview was estimated for the OHSxtra cohort. Unit cost per GP visit was estimated to be £27 per clinic consultation (based on the assumption that an average consultation lasts 12.6 minutes) based on the value reported in the *Unit Costs of Health and Social Care 2006* produced by the Personal Social Services Research Unit, University of Kent. The total cost related to GP contacts in completers (n = 246) over this three-month period was estimated to be £9 099. Note that GP visits may have related to other medical conditions other than those they received support for from OHSxtra; also, since the clients' involvement with OHSxtra may have been for less than 3 months, some of these visits could have related to their health status prior to entering the programme.

10.5 Cost of sickness absence

The cost associated with sickness absence was estimated for the OHSxtra cohort.

The OHS cohort can be divided into four key groups (Figure 17):

i. 'Absent-Absent' – those who were absent at the onset of the intervention and remained absent from work at the end of the intervention period;

ii. 'Absent-Present' – those who were absent at the onset of the intervention and had returned to work at the end of the intervention period;

iii. 'Present-Absent' – those who were at work at the onset of the intervention, but were absent from work at the end of the intervention period; and

iv. 'Present-Present' – those who were at work at the onset on the intervention and continued to be at work at the end of the intervention period.

10.5.1 Absent-Absent

At the onset of the project prior to intervention, 33% (n = 79) of completers were reported to be on sickness absence, of which 28% (n = 21) were found to have remained on sickness absence at the end of the intervention period. It was assumed that these clients have been off sick for the whole duration of the project and the estimated mean duration of sickness absence for this group (i.e. time during the project) was 160.6±19.1 calendar days, approximately equivalent to 114.7 working days (based on the assumption of five working days per week).

10.5.2 Absent-Present

Contrary to the 'absent-absent' group, 72% (n = 55) of those who were on sickness absence at the onset of the study returned to work during the study following case management intervention. The estimated mean duration of sickness absence of those who returned to work was 66.5±8.5 calendar days (based on data from 35 cases), approximately equivalent to 47.5 working days.

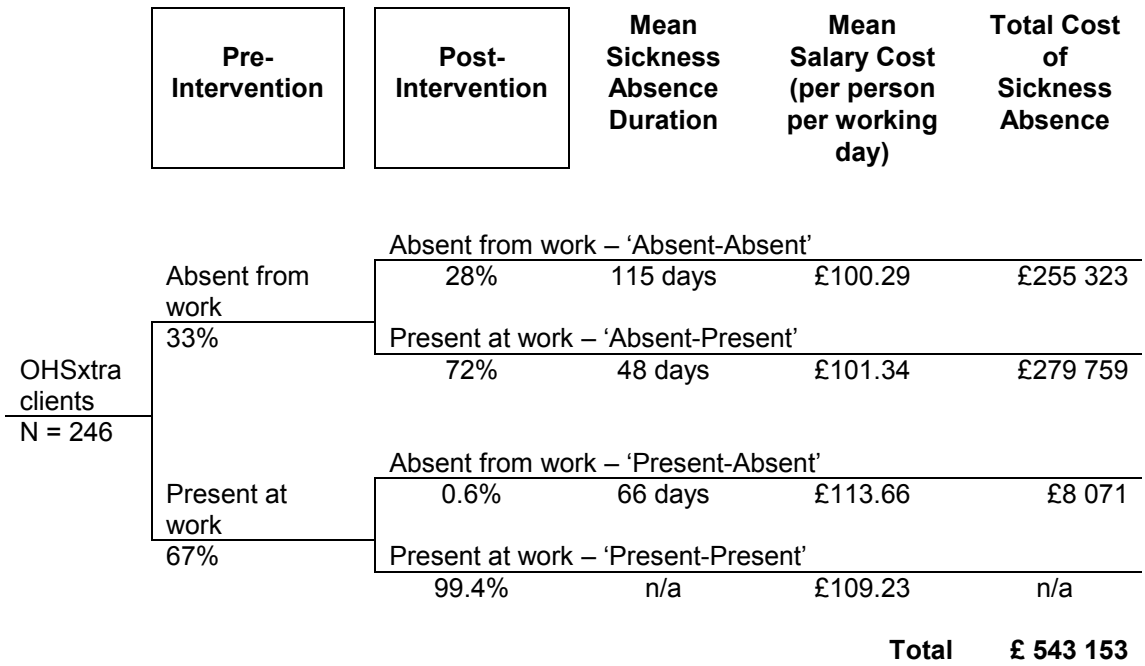
10.5.3 Present-Absent

Of the 67% who remained at work at the onset of the project, 0.6% (n = 1) went onto sickness absence during the project. However, the length of sickness absence for this group of clients is unknown, therefore, for the purpose of analysis, it was assumed that the length of sickness absence was equivalent to the duration of the intervention (93 calendar days, equivalent to 66.4 working days).

10.5.4 Present-Present

The majority (99.4%) of those who was at work at the onset of the project was also found to be at work at the end of the intervention period. It was assumed that these clients did not incur sickness absence during the project period.

Figure 17. Probabilities of client flow and costs associated with sickness absence in OHSxtra



The cost associated with sickness absence was estimated, based on the proportion of clients who had sickness absence, the average salary costs of these staff (based on salary data stratified by age, gender, and staff group, see Appendix 3) and the duration of the absence. Overall, the total cost of sickness absence incurred in the OHSxtra cohort was estimated to be £543 153.

10.6 Effectiveness measure of the intervention

The effectiveness or benefits of implementing OHSxtra is expressed as quality of life, measured as gain in quality adjusted life years.

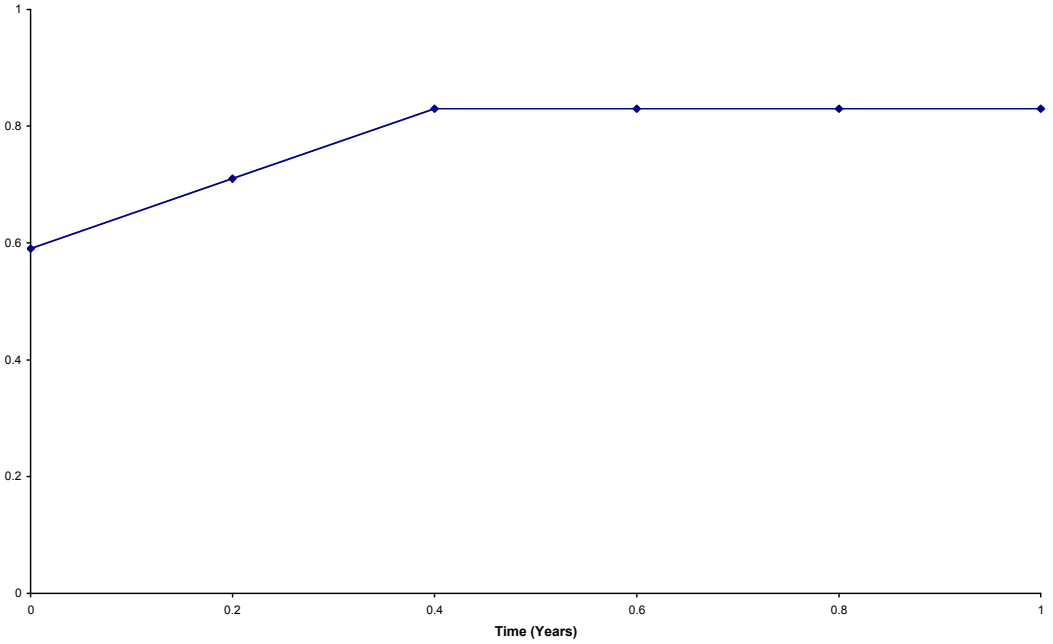
Quality of life may be valued by health utilities, valuations that are scaled between zero (representing the worst health state – death) and one (representing the best health state – perfect health), representing an individual's preference for a given health state. In this project, health utilities were measured using EQ-5D.

The EQ-5D consists of five dimensions: mobility, self-care, usual activities, pain or discomfort, and anxiety or depression based on choices from three levels (no problem, some problem, and major problems) per dimension. Overall, 243 possible health states are generated based on the five dimensions and three levels per dimension. Each EQ-5D health state can then be converted into a score using published values (Brooks *et al*, 1996) This score is a numerical representation of the quality of life in a given health state and was used to calculate quality-adjusted life years (QALY).

A quality-adjusted life year (QALY) takes into account both quantity and the quality of life. It is a measure that provides a common currency to compare the extent of the benefits gained from interventions in terms of health-related quality of life and survival for the patient. In order to calculate QALYs, the amount of time spent in a health state is weighted by the utility score given to that health state.

In order to express the utility values over a one year period, QALYs were calculated based on the assumption that following the intervention, the clients would remain in the post-intervention health state until the end of the year.

Figure 18. Illustration of utility values over a one year period



The health utility associated with the OHSxtra cohort is shown in Figure 18. Overall, the mean pre-intervention utility score associated with the cohort was 0.59 compared with post-intervention score of 0.83. This improvement was observed over a mean

intervention of 144 days. For the purpose of analysis, it was assumed that the utility value post-intervention will sustain over the remaining period of the year.

Figure 19 shows the probabilities of client outcomes and the mean utility scores obtained.

Figure 19. Probabilities of client flow and utility score associated with OHSxtra

	Pre-intervention	Post-intervention	Mean duration of intervention (Year)	Mean Pre-intervention score	Mean Post-intervention score
OHSxtra clients N = 246	Absent from work 33%	Absent from work – 'Absent-Absent' 28%	0.44	0.46	0.67
		Present at work – 'Absent-Present' 72%	0.40	0.49	0.85
	Present at work 67%	Absent from work – 'Present-Absent' 0.6%	0.24	0.69	0.32
		Present at work – 'Present-Present' 99.4%	0.39	0.64	0.85

Overall, with the exception of the 'present-absent' group (1 client) who demonstrated a reduction in quality of life; substantive improvement in the health utility score was observed in all groups (ranging from 33% improvement in the 'present-present' group to 73% in the 'absent-present' group). Similar to costs, quality adjusted life years were calculated separately for the four key groups, taking into account (Figure 19) the proportion of clients, the mean duration of intervention and the difference between post- and pre-intervention health utility score in each group. Overall, the total QALY associated with the OHSxtra cohort was estimated to be 192.30. This figure is used to compare the relative quality of life (see Section 10.7).

10.7 Cost effectiveness

In order to determine relative cost effectiveness, comparisons between two or more alternatives are needed. When comparing two alternatives, four possible outcomes can be observed (Figure 20):

i. relative to the comparator, the intervention of interest is more costly, but has greater effectiveness (northeast quadrant);

ii. relative to the comparator, the intervention of interest is less costly, but has greater effectiveness – this is when the intervention is 'dominant' and the intervention is favoured (southeast quadrant);

iii. relative to the comparator, the intervention of interest is less costly, but is less effective (southwest quadrant); and

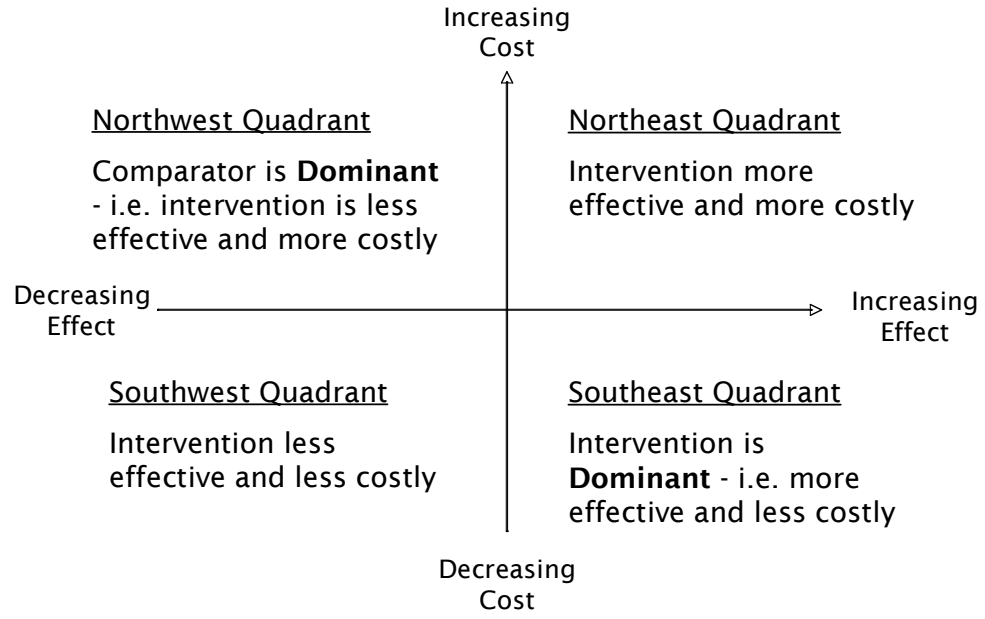
iv. relative to the comparator, the intervention of interest is more costly, but less effective (northwest quadrant) – this is when the comparator is 'dominant' and the intervention should not be adopted.

Cost effectiveness is measured as a ratio of cost to effectiveness, and is often expressed as an incremental cost effectiveness ratio (ICER). This ratio expresses the additional cost required to achieve an extra unit outcome. In the cases where one alternative is more costly to adopt but has greater effectiveness (northeast quadrant in Figure 20) or where one alternative is less costly but has is less effective (southwest quadrant in Figure 20), value judgements are required, the ICERs should be calculated. The greater the ICER, the more money is required to purchase each unit of outcome. Therefore, interventions with lower ICERs are more effective than those with greater ICERs.

In contrast, in the case where the alternative is less costly and more effective (southeast quadrant in Figure 20), the alternative is termed the 'dominant' strategy. Such interventions should definitely be adopted from a cost effectiveness perspective. Where there is dominance, ICERs are not calculated.

In addition, where the alternative is more costly but less effective (northwest quadrant of the cost effectiveness plane in Figure 20), this alternative should definitely not be selected. Similarly, ICERs are not calculated.

Figure 20. The cost effectiveness plane



Due to the nature of the study design, data on matched comparators were not available. Although there are insufficient data in this pilot project to enable a formal economic evaluation to be carried out, relevant data are available to conduct scenario analysis. In this analysis, the relative cost effectiveness of the intervention of implementing case manager compared with the absence of case manager was determined.

The OHSxtra approach is based on the assumption that intervention by case managers would result in a reduction in sickness absence. In contrast, it is expected that in the absence of OHSxtra, these clients would eventually receive the same services that are required, but would be associated with longer duration of sickness absence. Therefore, when comparing the OHSxtra approach to the absence of such an approach, the costs associated with support service provision by healthcare professionals (Sections 10.3 and 10.4) becomes a variable that is common to both arms and is not taken into account in the analysis.

Overall, the total cost associated with OHSxtra was £652 272 (intervention cost and sickness absence cost) and the total QALY of the OHSxtra cohort was estimated to be 192.30. In the comparator arm, it was assumed that those who were absent from work at the onset of the study would remain on sickness absence in the absence of OHSxtra – i.e. the 'absent-present' group would remain absent from work (Figure 17), the associated cost was £932 096; consequently, the QALY became lower than that observed with implementing OHSxtra – 183.17 QALYs – i.e. the 'absent-present' group would remain off work and incur similar improvement in quality of life as the 'absent-absent' group (Figure 19).

This indicates, based on the assumption that those who were absent at the onset of the and subsequently returned to work was a result of OHSxtra, the costs associated with implementing OHSxtra is less than that if OHSxtra was not available, and the QALY associated with implementing OHSxtra is greater than that would observed if OHSxtra was not available; suggesting that OHSxtra is a dominant strategy compared to no implementation – due to the lower cost and the QALY gained.

10.8 Threshold analysis

Threshold analysis was also carried out to explore the assumption that in the absence of OHSxtra, those who were absent from work at the onset of the project would have remained on sickness absence for the duration of the project – i.e. 0% return in the 'Absent-Present' arm in the absence of OHSxtra. The overall effect on the findings when varying this probability was tested.

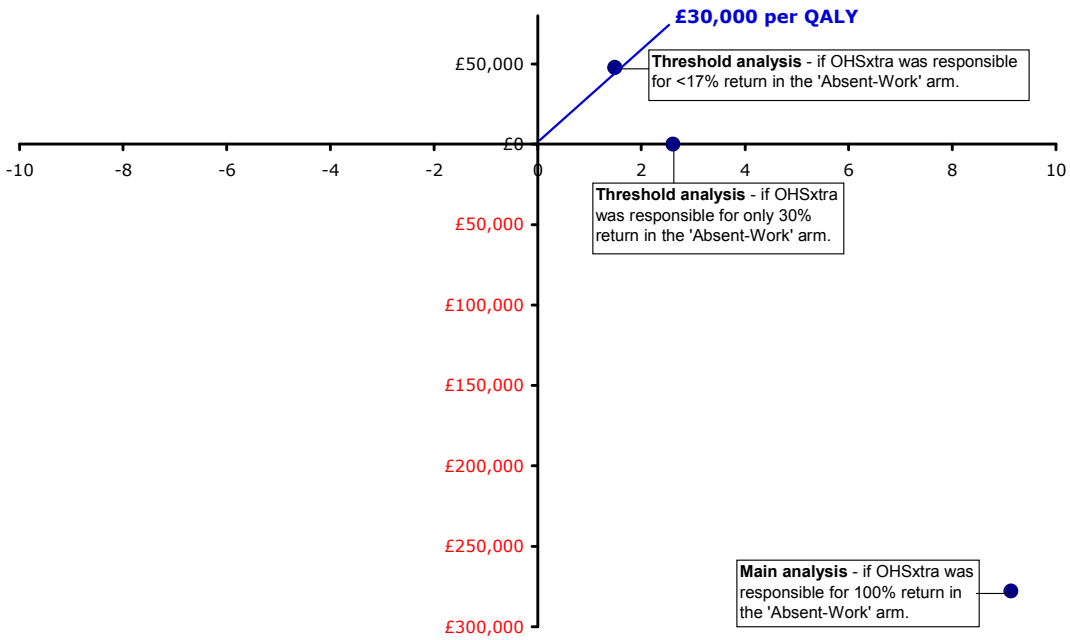
The results showed that OHSxtra would no longer be the dominant strategy (if the incremental cost per QALY gained was greater than zero – set at £0.01 per QALY gained) if there was a 70% return – i.e. if OHSxtra was only effective in 30% of the patients; or if in the absence of OHSxtra, 70% of clients who were absent from work at the onset of the project would return to work within the same time period (Figure 21).

The National Institute for Health and Clinical Excellence (NICE) uses outcomes of economic evaluations to aid healthcare decision-making. The decision rule that NICE adopts are:

- Below an ICER of £20 000 per gain in QALY, judgments about the acceptability of a technology are based primarily on the cost-effectiveness estimate.
- Above an ICER of £20 000 per gain in QALY, judgments about the acceptability of a technology are more likely to make explicit reference to factors including the degree of uncertainty surrounding the calculation of ICERs, the innovative nature of the technology, the particular features of the condition and population receiving the technology, or the wider societal costs and benefits.
- Above an ICER of £30 000 per gain in QALY, the case for supporting the technology on these factors has to be increasingly strong.

Therefore, threshold analysis was conducted to examine the probability of return when ICER would exceed £30 000. The results showed that when the probability of return was greater than 83% - i.e. if OHSxtra was effective in less than 17% of the clients; or if more than 83% of those who were on sickness absence at the onset of the project would return to work by the end of the project in the absence of any OHSxtra intervention (Figure 21), then OHSxtra would not be deemed as cost effective.

Figure 21. Threshold analysis



10.9 Summary

The key points of the economic analysis can be summarised as:

- The implementation of OHSxtra is less costly than no implementation, based on the assumption that OHSxtra was responsible for all the clients who were on sickness absence at the onset of the programme subsequently returning to work at the end of the intervention period.
- The implementation of OHSxtra was associated with significant improvement in quality of life.
- Compared with no implementation, the implementation of OHSxtra is not only cost effective, but a dominant strategy – it has a lower cost and greater effectiveness.
- Threshold analysis showed that if the implementation of OHSxtra was only responsible for <17% of clients returning to work following sickness absence from the onset of the programme, the strategy would no longer be cost effective.

11. Costs and impact of the service on sickness absence

11.1 Costs of case management and service delivery

11.1.1 Costs of case management

The cost of case management for the pilot was £111,119 (up to the end of March 2007) (see Section 10.2). This includes the costs of training, and operational costs, but excludes costs associated with evaluation and other pilot costs.

Four case managers were involved in the programme. Two of the case managers were full time (January 2006 – March 2007); one was half time (April 2006 – March 2007); one was full time (November 2006 – March 2007). This equates to 41 months of case manager time. The total case manager costs for this period were £96,759; this figure includes Pension and NI contributions (24%) of salary. This equates to a cost of £2,360 per full time equivalent case manager per month.

Altogether 540 clients entered the programme, of whom 401 were eligible for the programme and did not voluntarily withdraw. The case management costs per active (at the point of analysis) or completed client in the pilot were therefore approximately £277 (based on 401 clients). This does not include the costs associated with the 139 clients who were involved in the programme but did not complete (due to being ineligible, or voluntarily withdrawing); the cost associated with the active or completed clients is therefore likely to be an overestimate.

Clients started to be recruited into the programme in March 2006; the initial 2 months of case management time (January and February 2006) was spent on system development and advertising the programme. These necessary start-up costs have been included in the calculation of cost per client; future delivery of the service would not require this initial cost, so relative cost of service delivery per client would be reduced. It could be expected that this would reduce to approximately £230 per client for on-going service delivery (if the costs of the first two months when no cases were seen are removed).

Furthermore, it is estimated that 30% of case management time was spent in pilot related activities (completing the battery of tests etc required for evaluation). The cost of case management time could therefore be further reduced by 30% in on-going service delivery, as more clients could be managed by the case manager. This would reduce the cost to £161 per client.

11.1.2 Costs of service provision

Service provision costs were £50,618 for the 246 clients who completed (see Section 10.3). This equates to approximately £206 per client. Clearly, some clients required more service provision than others, and caution should be used when applying this figure to other populations.

11.1.3 Costs per client

The approximate cost per client during the pilot was therefore approximately £482 (£277 + £206). This is likely to be higher than would be seen in on-going service delivery due to the removal of initial start up costs, the operational programme running at full capacity rather than the reduced capacity seen during the initial months of the pilot programme as it was ramping up, and improved efficiencies due to learning by case

managers. It is estimated that ongoing service delivery costs would be approximately £387 per client (£161 + £206).

11.2 Potential impact of service on absence

Because the pilot was not designed with a control group it is difficult to quantify how much absence may have been avoided through the provision of the programme. However, an estimate may be made drawing on data from other sources on typical absence durations for health conditions. These have been obtained from a large organisation, and the HSE standard figures, in order to estimate the potential absences saved. This is quantified in terms of speeding the return to work for those who were absent, and the amount of absence that may have been avoided for those who did not go absent.

11.2.1 Speedier return to work

Altogether 79 of the 246 clients (32%) were absent when entering the programme. The mean absence duration prior to their entry to the programme was 42 days (sd = 63.5 days) (based on data from 68 clients).

In order to quantify the impact on the programme on the speed of return to work, data on typical absence durations associated with different health conditions were obtained from a large organisation (private sector, but with public sector pay and conditions) (Litchfield, 2007). Data were obtained for the typical ongoing absence durations seen for those who had been absent for 42 days or more (i.e. the average absence duration at which absent clients entered OHSxtra). This is shown in Table 45. These figures are based on closed cases (i.e. clients returning to work or being ill health retired).

Table 45. Typical additional number of calendar days absence for those who have been absent for 42 days. Data from a large organisation (Litchfield, 2007)

	Additional number of calendar days absence	*Number of cases absence duration is based on*
Musculoskeletal (all)	74	*103*
Upper limb	38	*29*
Back and neck	95	*70*
Lower limb	41	*14*
Common mental health problems	83	*265*

Based on these figures it is possible to estimate the number of days absence that could be expected within the OHSxtra cohort from the point at which they entered the programme.

Altogether there were 54 clients who were absent at the start of their involvement with the programme who returned to work at the point of discharge; 30 of these had a musculoskeletal condition (6 relating to the upper limb, 15 relating to the back /neck; and 9 to the lower limb); 24 had a common mental health problem.

Based on the figures in Table 45 the anticipated number of days absence for these clients is shown in Table 46. A total of a further 4,014 calendar days absence could have been expected for this group.

Table 46. Anticipated absence durations for clients who returned to work during the interventions

	Additional number of calendar days absence per case (from Table 45)	Number of cases	Number of additional days absence anticipated
MSD - Upper limb	38	6	228
MSD - Back and neck	95	15	1,425
MSD - Lower limb	41	9	369
Common mental health problems	83	24	1,992
	Total	54	4,014

In comparison, the observed average absence duration for clients who returned to work during their involvement with OHSxtra was 66 calendar days. For the 54 clients, this gives a total number of calendar days absence while within the programme of 3,564 days.

Therefore OHSxtra may have avoided 450 calendar days of sickness absence through speedier return to work (difference between anticipated and observed calendar days absence). This is an average of 8.3 days per client. The average salary cost for this group is £72.39 per calendar day, meaning cost of the absence that was potentially avoided through speedier return to work was £32,576.

11.2.2 Preventing absence

It is difficult to quantify how much absence may have been avoided through the programme. Normative data on typical absence durations for musculoskeletal disorders and common mental health problems are not available for NHS Fife or Lanarkshire. However, data are available from the HSE on typical durations for the length of absence within the UK workforce. The average lengths of absence due to health conditions reported by the HSE in the Survey of Work-Related Ill-Health (SWI) are shown in Table 47.

Table 47. Average working days lost per case due to a self-reported health condition caused or made worse by work (from SWI 2005/06)

Type of complaint	**Average working days lost per case**
All musculoskeletal conditions	17.3
Musculoskeletal condition mainly affects upper limbs or neck	17.2
Musculoskeletal condition mainly affects back	15.7
Musculoskeletal condition mainly affects lower limbs	21.6
Stress, anxiety and depression	30.1

Altogether 154 clients who attended the programme were not absent at either pre- or post-intervention assessment (see Table 21). It cannot be assumed that all these clients would have taken sickness absence due to their condition. Data from the client feedback was therefore used to estimate how many clients were helped to stay at work due to OHSxtra. Of the 154 clients who were at work both at the pre- and post-intervention assessment, 117 answered the question about whether OHSxtra helped them to stay at work; 95% reported that it did. This equates to 111 clients who consider that OHSxtra

helped them stay at work. Assuming that these clients were representative (by health condition) of those who remained in work, Table 48 shows the amount of absence that they may have incurred.

	Average number of working days absence per case (from Table 47)	Projected number of cases	Number of working days absence anticipated
MSD - Upper limb and neck	17.2	41	705
MSD - Back	15.7	35	550
MSD - Lower limb	21.6	17	367
Common mental health problems	30.1	18	542
	Total	111	2,164

Note, that clients with neck conditions were re-classified from the back group to the upper limb group for this analysis.

The total amount of absence that this group may have experienced is 2,164 working days. Using the average cost per working day of £109.23 for this group, this equates to an avoidance of £236,374 in absence costs.

No figures are available for the amount of management time required to manage those who are absent; however, if it were 1 hour per case, the cost for managing the 111 clients had they become absent would be £2,503 (based on a line manager's salary estimate of £30,000 = £22.55 per hour); if the average management time were 2 hours per case the cost would be £5,006; if the average management time were 5 hours per case the cost would be £12,515.

11.2.3 Return on investment

The cost of case management and service provision was £161,737. This leads to an estimated avoidance of absence cost of £268,950 (£32,576 + £236,374). Therefore for every £1 spent there is an estimated avoidance of absence cost of £1.66.

Including the estimate of 2 hours of management time per absent case into the costs that have been avoided through the programme means the programme avoids the costs of £273,956. Therefore, for every £1 spent there is an estimated avoidance of cost of £1.69.

Note that these return on investment figures do not include the costs associated with repeated absence, staff replacement (bank and agency costs), the maintenance of patient care, and the retention of skilled staff in service delivery, including the avoidance of work without restrictions. It also does not include the costs associated with medication usage. Although it was not clear whether medication was taken in relation to the primary or secondary presenting issue, 27 clients who were taking medication pre-intervention were not post-intervention, while 10 who were not pre-intervention, were taking medication post intervention. The average number of medications taken at pre-intervention was 1.9 per client taking medication. There will be a saving associated with this reduced medication, but this has not been quantified.

These costs relate to the cost of service delivery as undertaken in this pilot study. It is likely that on-going service delivery adopting these principles, but without the

requirement for such extensive data gathering for evaluation, would mean that case managers costs would be reduced per client (less time required per client). An increased capacity of the service providers would also potentially result in more clients being seen and potentially helped to return to work or prevented from becoming absent. If the cost of service delivery was reduced, and the number of clients assisted were increased, the relative return on investment is likely to increase.

Considering the cost of case management and service delivery for each client to be between £387 – 482 per client (see Section 11.1.3), and knowing that the average cost per working day of staff is approximately £100 for the typical clients who attended OHSxtra (range £100.29 – £113.66), if the programme assists all participating staff to avoid an average of approximately 4 days of sickness absence, the reduced absence costs arising from this will have equated to the cost of service delivery.

11.3 Capacity of one case manager for cases

Altogether 540 clients entered the programme within a 10 month recruitment phase (March – December 2006), and were managed by FTE of approximately 3 case managers. Altogether 401 clients were active or completed at the end of the programme. Some case management time was taken up with managing those who are ineligible or who voluntarily withdrew from the programme, but most of the time was taken by the 401 who were active or completed. Based on this, over a 12 month period it is feasible that three case managers could manage 480 active cases, undertaking the paperwork and procedures required in the pilot. However, it is estimated that approximately 30% of the case managers' time was taken up with pilot related activities, in particular the time required to complete the paperwork for the pre- and post- intervention assessments. This requirement has been reduced for the on-going service delivery stage, so it is likely that 30% more clients could be seen by the case mangers, meaning 3 case managers could manage approximately 624 clients per year, or one case manger could manage approximately 210 clients per year. This recognises that with on-going service delivery there are also likely to be voluntary withdrawals from the programme, which will require case management time.

11.4 Summary

The cost of case management for the pilot was £111,119 (up to the end of March 2007). This equates to a cost of £2,360 per full time equivalent case manager per month. The cost of case management per active or completed client (401) is approximately £277. With on-going service delivery where the requirements for data collection are reduced, the costs are anticipated to be approximately £161 per client.

The costs of service provision were £50,618 for the 246 clients who completed, equating to approximately £206 per client. The approximate cost per client during the pilot was therefore approximately £482. This could be expected to be £387 per client in on-going service delivery. Overall service delivery costs were therefore £161,737.

The anticipated cost of absence of the clients who returned to work during the programme is £32,576 had they not received the intervention. The anticipated cost of absence of the clients who stayed at work throughout the programme is £236,374 had they not received the intervention (based on HSE data). A further £5,006 of management time can be estimated to not have been spent due to the avoidance of absence.

Based on this, it can be seen that for every £1 spent there is an estimated avoidance of absence cost of £1.66. (£1.69 when including the management time avoided). These figures do not include the costs associated with repeated absence, staff replacement (bank and agency costs), the maintenance of patient care, and the retention of skilled staff in service delivery, including the avoidance of work without restrictions. It also does not include the costs associated with medication usage.

These costs relate to the cost of service delivery as undertaken in this pilot study. It is likely that on-going service delivery adopting these principles would lead to greater avoidance of absence costs.

Considering the cost of case management and service delivery per client, if the programme assists all participating staff to avoid an average of approximately 4 days of sickness absence, the reduced absence costs arising from this will equate to the cost of service delivery.

It is estimated that in on-going service delivery, each full-time case manager could manage approximately 210 cases per year.

12. Views of case managers and implementation issues

12.1 Introduction

Following completion of the pilot, discussions were held with the four case managers involved in the programme, to elicit their views on its running, and key lessons that could be learnt.

12.2 Resource

Case managers were typically managing up to 100 cases at one time, but reported that, with the requirements to gather data for project evaluation, this was a demanding case load. Case managers reported feeling stretched, particularly in the final six months of the project. As a result, some referrals did not receive the pre-intervention assessment and therefore referral to the service provider as quickly as intended.

The case managers reported feeling professionally frustrated in the service they were able to deliver due to the case load that they were managing. Their frustration was due both to the speed of service delivery they were able to offer, and their ability to be proactive in managing the cases.

The reason for the high case load was two-fold; firstly, the number of clients referring to the programme was higher than anticipated, and secondly, the length of time taken to complete the pre- and post-intervention assessments (which was partly required for evaluation of the programme).

Case managers also perceived that there was a shortage of service providers (particularly physiotherapists) meaning that there were some delays in speed of access.

12.3 Service provision

In Lanarkshire the service provider were not all in place at the launch of the pilot (March 2006). The physiotherapist started working with the pilot in early June 2006, and the Occupational Therapist in October 2006. However, a relatively small number of clients referred to the service in the first 2-3 months in Lanarkshire, and it is not thought that this delay in the physiotherapist being in post had a negative impact on the programme.

Lanarkshire Occupational Health department had not previously had access to an Occupational Therapist, and the case managers in Lanarkshire consider that full use was not made of the Occupational Therapist during the programme, although the potential for their work was recognised, and it was thought that this should be further developed.

The case managers all considered that clients had received a good service, and that the programme had been beneficial for them, with noticeable improvements in health. Clients reported to the case managers that they thought the service was good, that they had benefited from it and were appreciative of it. Client feedback to case managers on the quality of the services provided was excellent. Uptake of service provision was good.

Case managers thought that the programme had enhanced the reputation of occupational health. OHSxtra was not seen as a management tool (which traditional occupational health services can be), as clients could access it directly. Clients appreciated the confidentiality of the service and that their line manager did not necessarily know that they were attending the service.

Very few case conferences were required to be undertaken during the programme; it had initially been anticipated that these would be a significant component of the programme, but this was not found to be the case.

Some of the service providers (physiotherapists and Occupational Therapists) were based in the same building as the case managers, which meant that it was possible to have regular and effective communication with them; this was viewed as beneficial by the case managers. The physiotherapists were based at the acute hospitals and in the main primary care centres (where case managers also ran clinics); this meant clients did not have to travel to attend the treatment sessions, and could often be seen quickly.

12.4 Waiting times

The case managers recognised that in some cases, waiting times were longer than ideal, both for the pre-intervention assessment with the case manager, and for the first appointment with the service provider. However case managers commented that clients received therapy more quickly than they would have been on the NHS (where there was approximately a 9 week wait for physiotherapy). On some occasions, particularly early in the pilot, a client attended a physiotherapy session on the same day as their pre-intervention assessment.

12.5 Tools used

The need to evaluate the programme meant that a number of formal measures were taken. Case managers were asked their views of the usefulness of the tools used.

All the case managers thought that GHQ-12, EQ-5D and COPM were useful tools for their assessment and management of a case. However, the WAI was reported as less useful, and to take too long to complete. It was also reported to be unpopular with clients. Specifically, the question which requested clients to rate their current work performance relative to their lifetime's best performance was disliked. Despite reassurances of confidentiality, it is thought that clients may not have answered this honestly. In addition, wording on some of the questions was reported to be unclear. However, one question in the WAI which was considered to be useful asked the client to consider their health status and ability to work in two years time; the case managers used this to help the client identify aspirations and support required.

Because a range of tools were used which measure similar parameters, some clients were reported to feel that there was duplication of questions; this was frustrating because of the time required to complete the questionnaires.

As well as being useful for assessing the client's needs, the tools were reported to be useful in allowing the clients to see the change in their health status over time. This could positively reinforce the progress that had been made, although it was less helpful if clients had not made significant progress.

12.6 Obtaining discharge paperwork

One challenge faced by case managers was in successfully completing the post-intervention assessment ('discharge') with the client. It was intended that this assessment would be completed face to face, particularly because the WAI was a computer based questionnaire requiring clients to attend the clinics in order to complete it. However a significant proportion of clients did not attend the post-intervention assessment. A

variety of factors may have contributed to this, including the time required for the assessment, the need to travel to the clinic for it, and because clients had completed the therapy (and generally experienced an improvement in their condition); there was no personal benefit in individuals undertaking the post-intervention assessment.

Telephone post-intervention interviews were attempted with those who had not attended (case manager completing the WAI using the clients' verbal answers); however, because most clients were working many were not available for a phone interview during the day. Therefore 'discharge packs' (containing the questionnaires and tools) were posted to those who could not be discharged over the phone. Clients could return the forms via their nearest occupational health department, internal mail, or post. Using this combined approach the number of discharges was increased.

It was not thought feasible for the physiotherapists to complete the discharge questionnaires for the musculoskeletal disorder cases, due to their work pressure.

It was noted by case managers that the sooner the client was invited to complete the post-intervention assessment after the intervention was completed, the better the chance of them attending. However, in some cases there were delays in paper work being received by the case manager from the service provider at the end of the intervention; this decreased the likelihood of the client attending the post-intervention assessment.

12.7 Communications

One key lesson from the pilot was the importance of good communications with all the stakeholders, in order for case management to be successful. Their views on the effectiveness of communication with the different stakeholders are discussed below.

12.7.1 With service providers

Case managers considered that communications with the service providers were generally good, although there were differences between service providers, particularly in the speed of provision of reports. Because of the case managers' high case load, these reports were often used as the prompt for case managers to take action, and therefore timely delivery of them was essential.

12.7.2 Links with Occupational Health (OH)

In both Fife and Lanarkshire the case managers were based in the same building as the OH service, which was considered to facilitate the relationship between them. Close links between OH and the OHSxtra project were encouraged at the start of the programme through communication and meetings; however the relationship was not as close as it had been hoped. Some clients were under the care of both OHSxtra and traditional OH; it was possible for neither professional group to know that the other was involved, and therefore to work less effectively. There were also unfortunate administrative errors which resulted in a significant proportion of OHSxtra client eligibility forms not being filed in the occupational health notes. It had been intended that this would be the route by which OH would know that their client was being supported by OHSxtra. This communication breakdown meant OH staff could have been supporting clients who were also receiving interventions from other service providers through OHSxtra. This highlights the importance of sharing of records and two-way communication between OH and OHSxtra case managers.

Some difficulty was also experienced during the pilot with OH not agreeing to allow case managers access to case notes, due to concerns over client confidentiality. This was resolved and consensus reached in September 2006.

Some very complex and chronic cases were referred to OHSxtra; although case managers thought that they did benefit from the programme, they also needed further support, and were therefore referred to OH on discharge. This applied to eight of the 22 clients who were absent at both pre- and post-intervention.

12.7.3 With line managers and Human Resources personnel

If a client was absent their line manager could refer them to the Occupational Health department; the client themselves could have referred to OHSxtra without their line manager being aware of this. Because of this, Occupational Health tended to have closer links with line managers than OHSxtra staff did. Clients did not necessarily want their line manager to know that they were attending OHSxtra services; in some cases the evaluation questionnaire was the only contact that OHSxtra had with the line manager.

Case managers found that the line managers were generally co-operative. The case managers saw their role as supporting the clients so that they were able to relate to their line manager. The case managers were not able to directly affect factors such as shift patterns, but could work with the individual and, for example, set up meetings with HR or others to facilitate this. The case manager could attend those meetings with the client; the case managers thought that this was particularly helpful for those clients who were experiencing work related stress.

12.7.4 With clients

In some cases the case managers had very little contact with the client between their pre-intervention assessment and their discharge, specifically if it was a straightforward case.

12.7.5 With project steering group

The project steering group oversaw the strategic running of the project. The Project Manager and at least three other members of the steering group attended both site implementation groups (responsible for the detailed running of the project). Both meetings were usually held in the same month, in order to facilitate communication between them. Despite this the case managers felt that the links with the steering group could have been better, both concerning providing case managers with input into decision making, and communication of those decisions.

12.8 Project management and support for case managers

There was a change in project manager partway through the project (September 2006), which created challenges for all involved. Some case managers reported feeling isolated and unsupported in their work; this arose partly due to the unforeseen change in project management. However, the case managers reported that the support they had from each other was very beneficial; they met one afternoon each month for peer review and support and valued this very highly. The case managers all commented that there was excellent communications between them, and that they worked well as a team, supporting each other in their role. Case managers also received some support from their occupational health colleagues, (who were based in the same building).

Under the Agenda for Change process, the case management role has a knowledge and skills framework, with defined competencies for the role, and will follow standard NHS recruitment and appraisal practices. This includes annual review of Personal Development Plans, and monthly peer reviews, which will be included in the implementation of the programme.

12.9 Direct access to physiotherapy service

Following the close of the pilot to new referrals (22nd December 2006) staff in Fife were able to directly self-refer to the physiotherapist, via a phone line, where they were triaged. They could be referred to the case manager, or receive physiotherapy from a therapist who adopted case management principles. The physiotherapist could refer the client to a case manager at any time, if judged to be required.

This was not offered in Lanarkshire as their dedicated physiotherapist had a full case load completing treatment for those who were still within the OHSxtra programme.

12.10 Is case management a useful approach?

All case managers though that case management was a useful approach particularly for the more complex cases where the client may need to be redeployed, or needed support from more than one service provider, or there was also involvement from occupational health or HR, or for those with significant mental health problems.

The approach as adopted in this pilot was perceived as less necessary for simple musculoskeletal cases, where clients may have required only one or two sessions of physiotherapy. The project required these clients to complete all the assessment tools.

12.11 Summary

The key issues to emerge from the case managers concerning implementation of the programme are shown below.

12.11.1 Perceived positive aspects of the programme

- Clients could obtain quicker access to service provision than was available through the traditional NHS routes.
- Most clients were reported to be very pleased with the service, and health improvements were observed.
- Service providers were considered to deliver high quality services.
- Case managers worked well together.

12.11.2 Challenges / lessons

- Providing sufficient resource to the programme to allow timely response.
- Ensuring that the demands on the programme don't delay service delivery.
- Using suitable tools to assist the case manager manage the cases, but without being overly burdensome for the clients.
- Providing appropriate support for different clients; case management may not be required for simple musculoskeletal cases.
- Talking to clients during the day (when at work), to obtain discharge paperwork.
- Integrating OHSxtra into traditional OH services.

13 Discussion

13.1 Introduction

The preliminary results of the study were presented to the Expert Reference Group at a meeting on 17th May 2007. Group discussions concerning the findings were held following the presentation (see Appendix 4 for full summary). The discussion reported here includes some of the comments received on that day. The discussion considers the characteristics of the clients seen, the impact of the programme, and operational issues.

13.2 Client characteristics

13.2.1 Representativeness of sample

The clients were representative of the health boards from which they were drawn in terms of gender, age and job group. The average age at referral (43 years) was slightly higher than the average age of British workers of 39 years reported by Royal & SunAlliance (2005). This was also found to be the case in the Job Retention and Rehabilitation Pilot study (Purdon *et al*, 2006). This is likely to be because there is an age effect with some conditions (e.g. musculoskeletal) with older workers more likely to experience them.

The proportion of clients coming from the nursing and midwifery job group was higher than the other job groups, but the difference was not significant. The project had particularly targeted marketing material to nursing and midwifery staff due to the relatively high prevalence of sickness absence in this group, and the associated costs associated with these skilled staff. This is reflected in the clients seen, with the average duration in their current post being 7.2 years, and the average duration of employment with the Health Board being 12.8 years. This implies that the typical clients seen by the service were experienced staff, whose absence would have a significant impact on costs and service delivery.

13.2.2 Voluntary withdrawals

Although 120 clients voluntarily withdrew from the programme, the vast majority (88%) of these withdrew prior to the pre-intervention assessment. The main reasons for withdrawal were that they had received alternative service provision, repeated non-response / non-attendance, their issue had resolved, or they did not require OHSxtra services. Few clients withdrew once they had completed the pre-intervention assessment; following this they received service provision, if required, and typically experienced an improvement to their health. Case managers reported that the uptake of service provision was good; clients appeared committed to receiving the intervention.

13.2.3 Primary Presenting Issues

The most commonly reported Primary Presenting Issues were musculoskeletal disorders (72%) and common mental health problems (25%). Few clients (3%) presented with other health conditions; this is likely to be because it was known that the service was particularly offering support for musculoskeletal and common mental health problems. Considering data for the whole of the UK (HSE, 2007), around three quarters of Labour Force Survey self-reported health problems were due to musculoskeletal disorders and stress and other types of mental illness. In that survey, it was identified that nurses had above average prevalence rates of both self-reported musculoskeletal disorders and stress, depression or anxiety. It was for this reason that the marketing of OHSxtra was particularly targeted at nursing and midwifery professionals.

A quarter of clients also had a secondary presenting issue, most of which were musculoskeletal or common mental health problems; these clients are likely to have more complex needs, and it could be postulated would be more likely to become absent.

13.2.4 Absence status

Two thirds of clients (67%) were at work at the pre-intervention assessment. This is comparable to the proportions for the other NHS Health Boards that are running an MSD case management / physiotherapy service (2003 = 75%, 2004 = 65%, a PCT = 77%, Hanson et al, 2006). However, those who were at work and struggling are a group that are not typically seen by traditional Occupational Health services; OHSxtra was able to provide early access to support and service provision, with the intention being that this would help reduce costs. This is discussed further in Section 13.3.

13.2.5 Previous absence

Of the clients who completed the pre-intervention assessment 123 had been absent from work previously with the same condition with a mean absence of 44.2 days. This represents a loss of 5,437 working days. Assuming an average salary cost of £100 per day, this equates to a cost of over £5 million in previous sickness absence for the clients. Altogether 252 clients (91%) had taken sickness absence, with the mean number of episodes of sickness absence being 2.8; this represents 705 episodes of sickness absence. It can be seen that clients had a significant amount of sickness absence for the health issue for which they attended OHSxtra; resolving this issue could have a significant impact on future sickness absence.

13.2.6 Length of absence

A relatively small number of clients (21) were absent throughout their involvement with the programme; however, they have long periods of absence (average 115 working days). Those clients (55) who returned to work during the intervention have an average of 48 working days absence, assuming a 5 day working week. These figures are significantly longer than the average length of absence due to health conditions reported by the HSE in the Survey of Work-Related Ill-Health (SWI), see Table 47.

The long periods of absence may have been due to the complexity of the cases that were being managed; more complex health problems are likely to take longer to resolve. However, since the post-intervention assessment required the client to complete some paperwork, the long recorded absences may also partly be due to the delays in obtaining this paperwork.

13.3 Impact of interventions

13.3.1 Impact on tool scores

All the assessment tools showed significant improvements between the pre-intervention and post-intervention assessments for the musculoskeletal and common mental health problems groups. Not surprisingly, the musculoskeletal group showed greater improvements in the dimensions which related more to physical health (e.g. questions on mobility on the EQ-5D). Likewise, the common mental health problems group showed greater improvements in the questions that related more to mental health (e.g. the GHQ-12, which is primarily a measure of psychological health). Interestingly, the bimodal GHQ-12 post-intervention scores for the musculoskeletal group and the common mental health problems group are very similar, indicating that the mental health of a

client who had entered with a common mental health problem was comparable to someone who had entered for a musculoskeletal problem.

In this study 14.3% of all clients had a GHQ-12 score of 3 or over (threshold for caseness) at post-intervention assessment. Comparing this against other GHQ-12 data relating to healthcare populations indicates that these clients had improved mental health. In a study of 71 primary healthcare teams caseness was 21.8% (Borrill and West 1998), and in another study of 406 healthcare teams caseness was 23.3% (Borrill et al 1998). This can be contrasted to 26.7% for a larger group of health care employees (n=22,298, Mullarkey et al 1999) and 18.4% for the general working population (BHPS, Taylor, Brice, Buck et al 1995). This implies that clients had improved mental health both when compared with other healthcare workers, and with the general population.

13.3.2 Benefits over time

It can be postulated that involvement with the programme started to have a beneficial impact on clients' health from the start of their involvement with it, due to the role of the case manager. The benefits of the interventions were measured at the 'during' stage of the intervention using the COPM and the GHQ-12. Significant improvements were seen from the pre-intervention stage to the during stage, as well as from the during to the post-intervention stage, indicating that beneficial effects of the programme can be measured prior to completion.

13.3.3 Impact on sickness absence with the group

Of the 76 clients who were absent at pre-intervention, 72% (55) were at work at the post-intervention assessment. Of the 155 clients who were at work at the pre-intervention assessment, 154 were also at work at the post-intervention assessment. This suggests the programme is highly effective in assisting clients to return to work or remain in work. Because of the costs associated with sickness absence, any significant reduction in sickness absence, or avoidance of sickness absence is likely to have a significant impact on costs.

It is particularly significant to note that 65% (20) of clients who had been absent for more than 21 working days at the pre-intervention assessment were at work at the end of the intervention. This implies that the service assisted in facilitating those with longer term absences return to work. Long term absences are particularly costly to the employer, and measures to address this can have a significant impact on avoidance of costs.

13.3.4 Impact on Health Boards overall sickness absence levels

It was not possible to quantify the impact of OHSxtra on sickness absence rates in NHS Fife and Lanarkshire. However, the pilot covered a total staff population of almost 20,000. Within the 10 month period during which the programme was recruiting clients, approximately 400 were recruited who were eligible, and did not voluntarily withdraw. This represents 2% of the population the programme was available to. Of these, two thirds were at work, while one third were absent. Altogether 72% of those who were absent returned to work by the end of the programme. This is approximately 0.3% of the population the programme was available to. Although the number in the sample is small, this suggests the programme may help to reduce overall sickness absence by 0.3%. This reduction in sickness absence will assist in meeting the Scottish Government targets for reducing sickness absence in NHS Scotland.

13.3.5 Avoidance of future sickness absence

As discussed above, the cost of previous sickness absence among clients was high. It was not within the scope of this project to monitor on-going sickness absence once a client was discharged from the programme; however, assuming that the intervention has helped to resolve the health problem, the cost of future sickness absence related to the health condition is likely to be reduced.

13.3.6 Impact on professionals' time

The number of HR professionals who reported being involved with the programme is relatively low (9) for the 540 clients who were referred to the programme. This implies that HR involvement was not required for many of these cases. It is possible that OHSxtra reduced the requirement for HR involvement with these clients' cases, and that the programme saved HR time and resource.

There was also some evidence that OHSxtra had reduced the number of NHS staff referred into the traditional physiotherapy services. This reduced demand will impact positively on NHS physiotherapy waiting times, and although it was not possible to quantify this, there was a perception at one of the centres that this had been the case.

There is also evidence from Fife that the removal of the Employee Counselling Service led to an increased number of OHSxtra referrals to counselling or CBT. OHSxtra appears to be picking up some of the service that was withdrawn.

13.3.7 Impact on medication usage

Fewer clients were taking medication at the post intervention assessment than at the pre-intervention assessment. The medications taken were not necessarily related to their presenting issues, so it is not possible to quantify the potential cost savings arising from the interventions; however 17 fewer clients were taking no medications post-intervention compared with pre-intervention. It is also possible that the number of medications taken per client was reduced at post-intervention, but this was not quantified in the assessment. However, the reduced number of people on medication indicates an improved health status, and reduced cost.

13.3.8 Impact on view of the Health Board as an employer

Clients, line managers, HR personnel and service providers all reported that the programme had improved their view of their Health Board as an employer; this was particularly clear for the clients who responded.

13.3.9 Perception of OHSxtra's impact

Subjective evaluation of the effectiveness of the programme indicates it to be very positive. Of the 55 clients who returned to work during the intervention, 98% thought the programme helped them do so. 77% of their line managers also thought that it helped their member of staff return to work. Of the 154 who stayed in work throughout the intervention 95% thought it helped them stay in work; of their line managers, 84% thought it had helped their staff stay at work. It can therefore be seen that there is a positive perception concerning the effectiveness of the programme.

Furthermore, there was a clear perception among line manager that OHSxtra had helped save on bank and agency staff costs (24 line managers reported this); 13 also reported that it helped save on overtime costs. It was not possible to quantify these costs, but this effect is a further benefit of the programme.

13.3.10 Cost effectiveness and cost savings

The programme has been shown to be a dominant strategy when undertaking a cost effectiveness analysis. This means that is results in measurable health improvements, and adoption of the programme is less costly than not adopting the programme (doing nothing).

The estimated cost of the absence avoided is £236,374. Taking account of the cost of case management and service provision, this implies that for every £1 spent on service delivery there was a saving of £1.66 (£1.69 if including management time costs). These are the costs based on the programme as delivered in the pilot. It is likely that on-going service delivery will incur reduced costs, as discussed in Section 13.3.10.

It can be concluded from this that the programme was cost effective, and offered a good return on investment through avoidance of absence costs.

13.3.11 Potential impact of on-going service delivery on costs and effectiveness

Some of the time spent by the case managers and service providers in the programme was due to the programme being a pilot. Significant amounts of time were therefore spent in setting up the processes, and in obtaining paper work related to the project, including attempts to obtain discharge paperwork. It is estimated that approximately 30-40% of case managers' time may be attributable to pilot costs, and that the on-going costs of service delivery would therefore be less. This is likely to result in clients being seen more quickly, and the programme being more cost effective.

Other measures such as productivity were not quantified; it is likely that the improved health of clients had a positive impact on productivity, and that this will further increase the programme's cost effectiveness.

13.4 Operational issues

13.4.1 Effectiveness of marketing approaches

Different marketing approaches were adopted in the two Health Boards, with associated differences in effectiveness. In the initial stages of the programme, wide communication concerning it, and enabling clients to self refer to the programme appears to have been more effective. It also appears that word-of-mouth was an effective means of marketing the programme; following initial marketing, maintaining an ongoing profile (e.g. through posters) and relying on word-of-mouth referrals appears to be appropriate.

A strong brand image was develoed through the marketing activities, and the benefits of this should be maximised in future roll-out of service delivery.

Some concern was noted at the Expert Reference Group meeting that over-marketing the programme could create a demand that could not be met; this would introduce delays into the system which would reduce the effectiveness of the programme. Marketing activities were reduced in the pilot once the number of referrals had increased, and this approach could be used in future roll-our of service delivery.

13.4.2 Resources

It is clear that sufficient resource was a significant issue in the effective running of the pilot. Insufficient case managers for the case load meant that there were delays in clients receiving their pre-intervention assessment. There was also reported to be a lack of service provider resource, meaning there were some delays to accessing the service providers. Because the programme was a pilot, a significant amount of paperwork had to be collected; this meant that the pre-intervention assessment lasted between 1 and 1½ hours, and had to be conducted face-to-face. Similarly, the post-intervention assessment was also intended to be done face-to-face and last approximately 45 minutes. These time-consuming requirements could not be sustained in ongoing service delivery, and it is anticipated that in this it would not be necessary to collect so much information. Furthermore, it would be possible in on-going service delivery for case management to be conducted over the telephone in most cases. Case managers reported that telephone interviews were quicker than face to face interviews, and this would further reduce the case managers' time per case. This is likely to reduce the length of time from referral to be intervention assessment, and help ensure speedier service delivery.

It is estimated from the pilot that a suitable caseload for a case manager may be approximately 210 clients per year. Based on the pilot, it is thought that a working population of 20,000 could be supported with 3 case managers, and approximately 624 cases could be managed. Case management is likely to be more effective if the number of cases managed at one time is not too high, so that cases can be effectively overseen. It was reported that managing 100 cases simultaneously with the number of tools involved in this programme was excessive.

The case managers commented that they did not feel adequately proactive in the management of some cases. Reducing the caseload would assist with this, as well as enabling clients to be processed more quickly.

OHSxtra enabled clients quicker access to services provided than would have been possible via traditional routes in the NHS, and also enabled access to services that were not available in other ways through the NHS e.g. the counselling service in Fife was withdrawn during the pilot; it was not possible to be referred for CBT on the NHS. In order to support timely delivery, it is necessary that sufficient service providers are available prior to the implementation of the programme.

13.4.3 Timescales of access to services

A key concept in providing case management is that it facilitates timely access to service delivery. As noted, there were delays in the system due to the need for a lengthy face-to-face pre-intervention assessment. This was an artefact of the study being a pilot, which required this data collection. It is anticipated that with fewer questionnaires required in on-going service delivery the process and access to services would be speedier.

The mean time delay to see a physiotherapist was 9 days following referral from the case manager. This is considerably less than the NHS waiting times for physiotherapy services. Longer waits were required for counselling (14 days) and CBT (26 days); as noted these services were not all available on the NHS via another route. The delays to see the service providers were longer than was originally intended; it is anticipated that in on-going service delivery phase with reduced data gathering, the waiting times would be reduced.

13.4.4 Tools

Four tools and some project specific questionnaires were used at the pre- and post-intervention assessments. Because the tools had been developed and used in other areas, there was some overlap between the questions asked on the tools, and this caused frustration for some clients.

The number of questionnaires to be completed meant that the pre- and post-intervention assessments were both lengthy; they were felt to require a disproportionately long time, particularly for the simple cases. As mentioned, it also created a bottle neck in the programme. For on-going service delivery the use of questionnaires should be streamlined, to those which are beneficial to the management of the case, and which will assist in the evaluation of the effectiveness of the interventions and for clinical audit of Occupational Health service provision.

All of the tools used showed statistically significant improvements in the clients' health status from pre to post-intervention. In considering, which tools may be appropriate for future service delivery the following was noted. The COPM was reported by case managers to be an effective tool in identifying needs of the clients. This tool does not need to be purchased, but should only be used by trained personnel. It can be considered to be a means of documenting the information that would be gathered by a case manger during their discussion with a client, rather than requiring additional information to be gathered. The EQ5D provides an economic quantification of health, and as such, is a useful tool in subsequent evaluation, although it is of limited use in the management of cases. It does not need to be purchased. It is also a very quick tool to use. The GHQ 12 can be a useful tool in identifying psychological issues, although these may also be identified in other ways. It may be appropriate to use the GHQ 12 in some cases. Use of the GHQ 12 requires payment of a fee to the publisher. The WAI was not popular, and did not assist the case manager in their role. Because it was computer-based, extra work was generated if a discharge pack had to be posted to a client.

13.4.5 Communication

Effective communications are key to the successful implementation of a programme such as this. In particular, information needs to be communicated between the case manager and service providers speedily. Some delays were reported by case managers in the receipt of discharge paperwork from some service providers. There was also some indication from the service providers that they would have appreciated more feedback from the case manager concerning the client, with a quarter not being satisfied with the feedback received from the case manager. It is important that this communication route is as effective as possible. It appears that communication is facilitated if the case manager is in the same building as the service provider.

Communications with occupational health professionals are also important, so that both groups of professionals are aware of any client who are under the care both of OHSxtra and occupational health. Appropriate systems need to be introduced to facilitate this.

Some line managers reported being dissatisfied with the feedback received from the case manager concerning their staff member. Some line managers may not have been aware that they were attending OHSxtra, and may have wanted more information concerning it. Also, because the case manager undertakes some of the management responsibility in relation to the client's absence, line managers may have felt less involved.

13.4.6 Impact of Lanarkshire's Absence Management Programme

Lanarkshire's Absence Management Programme introduced an extra layer of administration in the clients accessing OHSxtra, as all management referrals had to be made through the Occupational Health service. This is likely to introduce delays into the time between the client being referred into the service, and receiving any service provision. Direct referral by the client, their line manager or human resources into the OHSxtra service is likely to allow more timely delivery of service.

13.4.7 Differences between Health Boards

A greater proportion of post-intervention assessments were received in Fife than in Lanarkshire. It is possible that the referral method in Lanarkshire, which required that staff were referred via traditional Occupational Health in order access OHSxtra, meant that staff did not perceive the service to be different from the traditional Occupational Health service and therefore were unwilling to participate in the questionnaire completion.

It is also clear that even when the programme itself is new, it takes some time for new services to be integrated into it (e.g. the Occupational Therapist in Lanarkshire).

While local variability in approach will allow the programme to run successfully according to different local cultures and structures, it is important that a consistent approach is adopted concerning key case management principles. These are discussed further in Section 15.

13.5 Summary

The programme has been effective at assisting absent clients return to work and supporting clients at work to remain n work. A number of measures, including change in formal tool scores, reduced medication usage and number of clients who return to work during the intervention, indicate its effectiveness. Issues around the operational delivery of the programme have been discussed.

14. Recommendations

These recommendations are proposed for on-going service delivery of an OHSxtra programme within other Health Boards, building on the experience of this pilot study.

1. A range of marketing approaches appears to be successful; the existing brand image should be developed and built on. Local contact points will need to be established for each Health Board.

2. Ways to reduce waiting times to receive the pre-intervention assessment, and to receive service provision should be implemented. This could be achieved through a combination of the following:

    a. Reduce the number and length of questionnaires used as compared with those used in the pilot. Following the completion of the pilot, the questions asked on the biographical questionnaires were reviewed, to identify those that were necessary for on-going service delivery. There were two criteria for inclusion of questions: those that would be useful to the case manager in their task; and those that are useful for evaluation of the programme. Revised, shortened, pre-intervention and post-intervention questionnaires have been produced. It is also recommended that the number of tools used is reduced. It is recommended that each case uses the COPM, as this is an effective tool for establishing the needs and progress of the client; and the EQ-5D, as this allows an economic value to be placed on the change in health status pre- and post-intervention. The GHQ-12 and the CIS-R can be useful tools for the case manager, but their use is not required in each case. It is not recommended that the WAI is used.

    b. Provide the case management service via a phone line, with appropriate triage and advice, and onward referral where necessary. Eliminating the need for face-to-face appointments will mean each contact is quicker, and should speed up the service delivery. Face-to-face contacts should be available if judged to be required.

    c. Ensure appropriate resources to support the service. Based on the pilot, and anticipating reduced paperwork, it is estimated that a case manager could manage approximately 210 cases per year.

3. In implementing a programme of this type it is essential that good communications are established between all the stakeholders. Close links are required to ensure full integration of the services, and to enable appropriate and timely communication. The following should be ensured:

    a. Close links between Occupational Health and OHSxtra personnel concerning mutual clients, so that relevant information can be exchanged.

    b. Service providers should provide feedback to the case managers at appropriate times (e.g. immediately on completion of the treatment), so that unnecessary delays in discharge are avoided.

    c. Case managers provide adequate and timely information to line managers.

4. Ensure there is appropriate supervision and peer support for case managers; regular team meetings have been found to be beneficial. For a case manager working alone,

there may be benefit in establishing a network (e.g. web based) of case managers between the Health Boards so that experience can be shared.

5. If the client meets with the case manager face-to-face, it is most suitable if the case managers are based (as far as possible) where the clients work, to reduce the need for clients to travel. However, there are also significant benefits in the case manager being located close to Occupational Health staff or service providers so as to encourage appropriate communication on cases.

6. The longer term impact of the interventions could be assessed by questioning clients at an interval following their discharge from the programme (e.g. 3, 6 or 9 months). This could be done via a postal questionnaire with reply paid envelope.

7. Funding has been provided by the Scottish Government for other Health Boards to implement a similar model. In order to allow for comparison and evaluation, there is a need for common data to be gathered and stored in order to standardise record keeping. A common database template will be developed which will be issued to all stakeholder Health Boards. To support this, the following training is recommended to help ensure consistency between the Health Boards:
    a. Training in the case management approach including understanding the scope of the role, communication requirements, service provision etc.
    b. Training in the use of the assessment tools.
    c. Training in the recording and storage of the necessary data. This should be provided to those who will use or manage the database.

8. Integration of a case management database into existing databases should be considered in the longer term.

9. Other Health Boards may implement these principles in different ways, but it is recommended that the key principles of case management and rapid access to service provision are adopted. These are outlined in Section 15.

10. Some means of providing quality assurance (i.e. audit) of service delivery in other NHS Health Boards that may adopt these principles should be considered.

11. Consideration should be given to how this model could be applied in other parts of the health service that are not geographically limited to one area (e.g. blood transfusion, ambulance service etc).

15. Key operating principles for case management programmes

The following key operating principles can be identified from this pilot, and the literature:

- Staff using case management principles should be trained in their use.
- It is beneficial if the case manager does not also have a therapeutic relationship with the client.
- Each client should have a designated case manager.
- Assessment of the client as soon as possible after the point of referral is recommended.
- Provision of advice and support to clients at an early stage is beneficial.
- The case manager should develop a plan, with the client, for a safe, sustainable return to work or retention in work.
- Regular review of the case during intervention is recommended, with contact with the client as necessary.
- Best clinical guidelines should be followed by case managers and service providers.
- Service provision for a client should be reviewed following a specified number of sessions (e.g. 6 physiotherapy sessions)
- Close communication is required between occupational health professionals and the case manager. It is essential that this is a two-way sharing of information and records. Information should be passed on as soon as possible, so that delays are not introduced.
- The case manager should work closely with the line manager concerning the client's return to work or retention in work. Communication with the client's line manager should provide sufficient information for them to be aware of the case status, and to be able to support the client in their work.
- Communication with human resources will be required in more complex cases.
- Alterations to work arrangements should be seen as transitional, with the focus on returning the client to normal working duties.

16. Conclusions

A programme has been developed that takes account of the evidence relating to best practice in case management. There is strong evidence that this has lead to an improvement in the health of participants, and that it has facilitated in their work retention or return to work. Altogether 72% of clients who were absent at the pre-intervention assessment had returned to work at the post-intervention assessment. The programme was effective in supporting those with longer term absences in returning to work, with 65% of those who had been absent for more than 21 working days prior to entering the programme having returned to work by their post-intervention assessment.

The results from the tools used all show improvement in the health and wellbeing of the individual clients due to the interventions undertaken. Very positive feedback was received from clients concerning the programme.

The programme has been shown to be cost effective, due to the substantial improvements in the quality of working life recorded, and the number of absent clients who returned to work. Adopting OHSxtra is less costly and more effective than doing nothing.

It is estimated that the avoidance of absence costs for the 246 clients who completed the programme is £268,950, with associated line management cost avoided of £5,006. For every £1 spent on service delivery, there is an associated avoidance of absence cost of £1.66. This figure is likely to be higher in a programme of on-going service delivery where extensive data collection is not required; an improved return on investment could be anticipated.

Key lessons have been learnt from the running of the pilot which can be applied to future implementation of programmes. Reducing the number of tools and questionnaires used will allow more rapid processing and progress of clients through the programme, and increase efficiencies within the programme.

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Appendix 1

Tools used in OHSxtra

A1.1 GHQ-12

The General Health Questionnaire 12 (GHQ-12) is used to measure general psychological health and well-being. It is not used in the diagnosis of specific psychological problems or disorders. It is a self-administered questionnaire that focuses on two major areas – the inability to carry out normal functions and the appearance of new and distressing phenomena. The GHQ-12 comprises 12 statements of psychological strain, and respondents are asked to circle one of four responses for each statement. The responses should relate to their experiences the past few weeks.

There are two different scoring systems for GHQ-12: Likert and Bimodal. With the Likert scoring system, each of the four answers from left to right, is scored 0,1,2,3. With the Bimodal scoring the answers are scored 0,0,1,1. The coded scores of each item are then aggregated. Thus for the Likert system scores range from 0 to 36, and for the Bimodal system, from 0 to 12. In this study, a threshold of 3 (bimodal scale) was taken to indicate 'caseness'. Regardless of which scoring system is used, a higher GHQ-12 score indicates a higher level of psychological distress.

The GHQ-12 is self-administered and little training is needed to become competent in scoring the answers. It is quick to complete, taking about two minutes. Copies of the questionnaire must be purchased from the publisher.

A1.2 COPM

The Canadian Occupational Performance Measure (COPM) is designed to detect change in a client's self-perception of occupational performance over time. It consists of three performance areas (self care, productivity and leisure) within which individuals identify their own areas of difficulty.

COPM uses a semi-structured interview, allowing individuals to assess their daily activities in terms of those they want to do, they need to do and are expected to do. From these activities, those that are currently difficult to perform can be identified. The identified activities are rated on a scale of 1 to 10 for importance, and the five most important recorded. These five activities are venerated for the individual's ability to perform the task and their satisfaction with their ability to perform the task, also using a scale of 1 to 10. The scores of the initial assessment compared with those of the reassessment to detect any changes in the individual's self-evaluation. COPM is to be completed by the case manager during a discussion with the client. It typically takes 40 minutes to complete an assessment. Use of the paper-based version of the COPM is free.

A1.3 EQ-5D

The EQ-5D is a standardised non-disease-specific instrument for describing and valuing health-related quality of life. It is used to measure health status by generating an index value and providing a simple descriptive profile. EQ-5D consists of three components: a self classify, the visual analogue scale and an optional demographic questionnaire. In this study, the demographic questionnaire was not used.
The self classifier describes how the status accorded to five dimensions: mobility, self care, usual activities, pain or discomfort and anxiety or depression. These five dimensions

are defined by three levels (from poor to good) and the individual ticks which is most applicable.
The vertical analogue scale has endpoints of 100 (best imaginable health state) at the top and 0 (worst imaginable health state) at the bottom. The respondent places a mark on the scale which corresponds to their own health state that day.

The EQ-5D is quick for the individual to complete; without the demographic data, it typically takes less than two minutes.

An economic cost can be attributed to changes in EQ-5D scores, and for this reason it is a useful too in evaluating the cost effectiveness of an intervention. It is a freely available tool.

A1.4 WAI

The Work Ability Index (WAI) is an assessment of how well a worker is able to perform his/her work, taking into consideration the physical and mental demands of work and the worker's health status and resources. The index covers 7 items, each of which is evaluated using one or more questions. The items are:

1. Current work ability compared with a lifetime best;
2. Workability in relation to the demands of the job;
3. Number of current diseases, has diagnosed by a physician;
4. Estimated work in payments due to diseases;
5. Sick leave during the past year (12 months);
6. Own prognosis of work ability two years from now;
7. Mental resources.

Participants response to a number of questions in each of these areas. Each of the items is scored individually, and WAI is cultivated by adding up the points for each item. The range of the index is between seven and 49. Number of points, which makes up the index is categorised as follows:

7 to 27 points: poor

28 to 36 points: moderate

37 to 43 points: good

44 to 49 points: excellent

The WAI is completed on a computer; it is self-administered, but is generally used under the supervision of an occupational health professional. It generally takes about 20 minutes to complete.

A1.5 CIS-R

This is used to assist the Case Manager provide identify appropriate support and therapy that those with some mental health conditions. It was only used in a small minority of cases.

Appendix 2

Additional client data

A2.1 Introduction

Although only the data relating to clients that had been discharged from the service by 4th April 2007 was included in the main analysis, data relating to discharged clients continued to be collected until 31st May 2007. Key demographics of this group are presented in this appendix.

A2.2 Client status

The status of the clients who had entered the programme, on 30th May 2007 is shown below.

Table 1a. Status of Clients on 30th May 2007

Status 30/5/2007	Health Board				Total	
	Fife		Lanarkshire			
Discharged	147	47%	135	59%	282	52%
Active	80	26%	17	7%	97	18%
Voluntary Withdrawal	68	22%	71	31%	139	26%
Inappropriate Referral	11	4%	6	3%	17	3%
Ineligible	4	1%	1	0%	5	1%
Total	310		230		540	

This table can be compared with Table 4 in the main report; it will be seen that a further 32 clients had been discharged from the programme in the intervening period. An additional 13 had become voluntary withdrawals.

A2.3 Data from Eligibility Assessment

By 30th May 2007 eligibility records for 441 clients had been recorded. Of these, 240 (54%) clients were from Fife, while 201 (46%) clients were from Lanarkshire. Altogether 73 (17%) clients were male and 367 (83%) clients were female. One gender was not recorded. There was no significant difference between the Health Boards in terms of gender.

Of the 441 clients, 249 (57%) were from the Nursing and Midwifery staff group; 70 (16%) were from Administrative services; 54 (12%) were from Allied Health Professions; 34 (8%) were from Support Services; 14 (3%) were from Medical/Dental and 13 (3%) from Health Science Services. One was categorised as 'Other' and data were missing for 6 clients.

A2.4 Sickness absence

Altogether, 280 clients completed both pre- and post-intervention assessments. The status of clients is shown in Table A2.1.

Table A2.1. Absence status pre and post intervention assessments, on 30th May 2007

Absent Post-Intervention Assessment	Absent at Pre-Intervention Assessment			
	Yes		No	
Yes	21	8%	2	1%
No	66	25%	173	66%

This table can be compared with Table 21 in the main report. It can be seen that an additional 11 clients who had been absent at the outset of the project had returned to work, and an additional 19 had remained in work. One client who had been at work at the pre-intervention assessment had become absent. The percentage of clients in each category remains very similar. Subdividing the absence status into the primary presenting issues allows the data to be presented as shown in Table A2.2.

Table A2.2. Absence status by Primary Presenting Issue, on 30th May 2007

Absent Post-intervention assessment		**Absent at Pre-intervention assessment**			
		Yes		**No**	
Musculoskeletal (n =189)	Yes	13	7%	0	0%
	No	36	19%	140	74%
Common Mental Health Problems (n =65)	Yes	6	9%	2	3%
	No	29	45%	28	43%
Miscellaneous (n =7)	Yes	2	28%	0	0%
	No	1	14%	4	57%

Note: Percentage figures are for the percentage of clients with that health condition.

This can be compared with the data in Table 22. The percentages in the Table 3a and Table 22 (main report) are almost exactly the same and so the same formal statistical conclusions can be reached.

A2.5 Conclusion

There is no significant difference between the clients who completed by 4th April 2007 and those who completed by 30th May 2007.

Appendix 3

Mean Salary (£) by Work Group and Gender

	Mean	Lower CI	Upper CI
Males			
Administrative Services	27 156	22 631	31 681
Allied Health Professions	32 540	28 216	36 865
Health Science Services	27 836	27 500	28 172
Nursing and Midwifery	21 222	20 306	22 139
Support Services	15 876	15 193	16 558
Medical/Dental	45 400	33 425	57 374
Females			
Administrative Services	14 039	13 552	14 526
Allied Health Professions	20 802	20 460	21 143
Health Science Services	21 239	18 887	23 591
Nursing and Midwifery	18 418	18 239	18 597
Support Services	8 223	7 759	8 687
Medical/Dental	32 956	20 166	45 746

Based on information from NHS Fife (2005/06)

Appendix 4

Expert Reference Group discussions

A4.1 Introduction

The provisional findings of the pilot were presented at an evaluation meeting on 17 May 2007. Delegates were invited from:

BT Group plc
Golden Jubilee National Hospital
Healthy Working Lives
NHS 24
NHS Ayrshire & Arran
NHS Borders
NHS Education for Scotland
NHS Fife
NHS Forth Valley
NHS Greater Glasgow & Clyde
NHS Highland
NHS Lanarkshire
NHS Lothian
NSS
OHSAS
OHSAS (NHS Tayside)
RCM UK Board for Scotland
Salus
Scottish Ambulance Service
Scottish Government Health Directorates

Following presentation of the findings, three focus groups were formed to discuss the following questions:

- How will you integrate the Case Manager's role within the Occupational Health Team?
- How will you market OHSxtra in your Board area?
- How will you gather the data required for evaluation?

Each group fed back the key points from their discussion.

A4.2 Integration of the case management role

Key themes here were clarifying the case management role, liaising and communicating with occupational health, human resources and GPs, and consideration of arrangements for the 'specials' (e.g. NSS, Blood Transfusion, Ambulance Service etc).

It was recognized as important to be extremely clear concerning the function and role of case management, so that it could be successfully integrated with other stakeholders' roles (e.g. Occupational Health, Human Resources, Management).

It was recognized there was a need to train existing staff, and that the activities related to OHSxtra needed to be integrated into existing operational health and human resources

activities. This would require clarification of the concept of case management (including a clear definition) and effective communication of this to all those involved. It was also recognized that the model needed to be flexible in its approach and application: there are recognizable differences between health boards. The way it would be integrated would depend on the board, on existing services.

Delegates recognize the importance of integrating the service with HR activities; the emphasis should be on the use of the case management approach rather than of the Case Manager per se. Delegates thought the function could sit within HR or occupational health.

It was recognized that integration of the service into HR may be difficult across the Health Boards if there is not consistency in the management of ill-health, or absence. Different parts of the NHS may have different absence policies, and different targets, as well as different referral routes and criteria for accessing services. It was recognized there was a need to build on existing services, where these are working; a flexible approach will be required in adopting the model, particularly for the 'specials'.

There was discussion around the provision of a national OHSxtra service, rather than the service being provided at local Health Board level, so that national bodies (e.g. NSS, Blood Transfusion, Ambulance Service etc) could use the model. It may be possible for these organisations to partner with local Health Boards to meet their needs across different geographical regions. It was recognized as important that service delivery is close to the clients who need it, is easily accessed and that there is a quality and consistency of service across the boards. This may require a core administration team e.g. with a hub contact centre, some form of initial screening, and service providers at appropriate locations and with appropriate skills, so that clients can be referred onward.

There was an identified need for protocols for implementation of the service; this will include criteria for referral, triage and service delivery. Although the service may be implemented in different ways in different health boards, it was recognized as important to have common objectives.

It was also recognized the collation of outcome data was important for successful evaluation; this may require central coordination in terms of what data to collect, and subsequent analysis.

The programme should be within SPAs, and take account of KPIs.

Close liaison with GPs is required for the programme to be successful. This is likely to require education of GPs concerning the programme, and consideration of how to integrate the services with their existing practices.

A4.3 How will you market OHSxtra in your Board area?

Key themes here were building on the success of existing marketing, considering a central phone line / website, and avoiding over marketing the service.

Delegates recognized that the existing marketing material is strong, in particular the brand is well recognized and clear, and has been shown to be effective. It was suggested that marketing built on the success of the existing arrangements. The brand should be copyrighted, if this has not already been done. A common website for all health boards would be useful, as would standardising on items like posters and leaflets.

Methods of advertising that had been used in OHSxtra pilot were identified in groups, including:

- Intranet, a bleak website
- Payslips
- Stands at road shows
- 'Promoting attendance' training
- Existing networks e.g. partnership meetings.
- Phone lines
- Text messages

Some delegates thought that different marketing material would be used depending on the target audience, for example, those who are long-term sick, may require a different approach. It may be appropriate to undertake stakeholder analysis to identify what might be the most appropriate marketing (although it was recognized that word-of-mouth appeared to be most successful within OHSxtra pilot).

There was some debate about whether national or local phone lines should be introduced for contact to the service; there may be some benefit in one central, national number.

It is thought that the programme is likely to become self promoting, as staff who benefit from the services discuss it with their colleagues. However, it is thought that there was a need to focus marketing activities on outlying areas, which may have less access to these other means of equivocation. It could be included in induction training.

There may be benefit in considering the potential uptake of the service within the wider NHS family, for example sub contract services, GP employed staff etc. this may provide an avenue of revenue generation.

Some caution may be required concerning the marketing, as resource to support the demand will be finite; energetic marketing may create a demand which cannot be met. It is also important to be clear that the service does not provide all healthcare needs for all staff.

A4.4 How will you gather data required for evaluation?

Key themes here were the integration of data collection into existing systems, and standardisation of data collection.

It was thought important to try to integrate data collection into current personnel systems and databases. The possibility of using the national SEHD database (with a web front end), should be considered. Data on personnel is collected in COHORT and SWISS. Ideally, the data would be integrated into the existing personnel management databases (e.g. SWISS); however, it is recognized that this will not happen in the short term.

Whatever database is used it is important that accurate data is entered, and that this is done in a standardised way, so that useful data can be obtained from it.

It is important that there is an agreed common dataset collected, with data reported in a standardised way. This should be adopted throughout the NHS in Scotland.

It was recognized that it was important to gather baseline measures prior to implementation of the programme (including from the tools such as GHQ12, COPM, EQ5D; it was also important to gather measures concerning clients prior to the intervention so that the impact of intervention could be assessed. There was also a comment that data collection should be kept simple; unnecessary data should not be collected. It is important to be clear what data is required for evaluation as some data is difficult to obtain.

There may be benefit in linking to the Healthy Working Lives vocational database. The clinical effectiveness team may be able to support data collection.

There may be some data that can be collected from the staff survey; particularly concerning staff's perceptions, and the amount of sickness absence, etc. Standardised recording of sickness absence across the Health Boards is required.