



Building the case for wellness

4th February 2008



Terms of reference

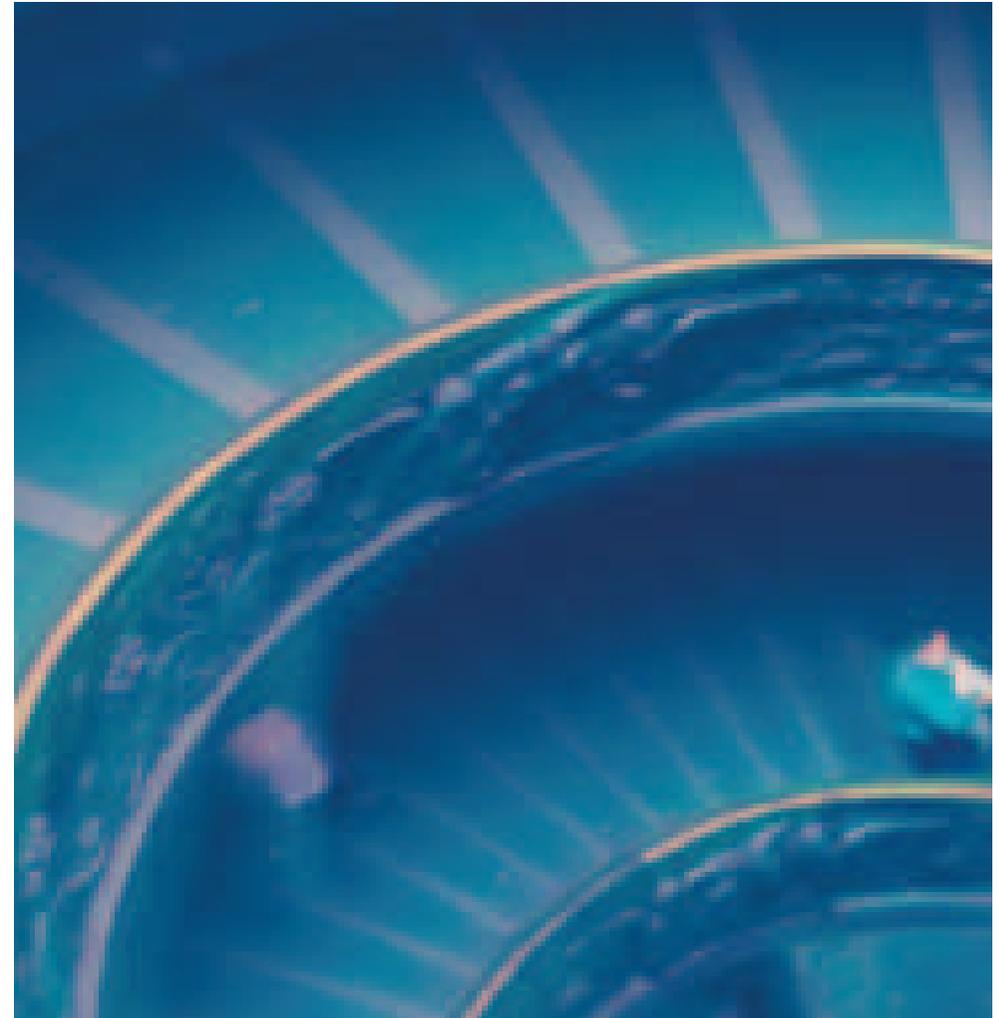
PricewaterhouseCoopers LLP was commissioned by the Health Work Wellbeing Executive from 12th December 2007 – 4th February 2008 to undertake the following research:

Objectives:

- Review the wider business case for workplace wellness programmes in the UK
- Consider the economic business case for undertaking wellness programmes among UK employers
- Provide a framework for programme implementation and management

Agreed methodology:

- Systematic review of relevant UK case studies provided by the Health Work Wellbeing Executive. Follow-up interviews conducted with a selected group of organisations.
- Review of additional published literature covering systematic case reviews and individual case studies
- Key themes and messages extracted in relation to key programme costs and benefits and best practice in programme implementation and management



Contents

Section	Page
• Executive summary	4
• Report objectives	8
• Methodology	9
• Defining wellness	10
• Building the case for workplace wellness	11
• An implementation framework	26
- Enablers	28
- Plan	31
- Execute	36
- Manage	40
• Appendices	47



Executive Summary

Report Objectives

The objective of this report is first to consider the wider business case for workplace wellness programmes and then specifically the economic case for UK employers.

We will assess the available evidence in literature and link this through to practical examples of UK businesses across a range of industries and company sizes.

We will also provide a framework for implementation by outlining important principles in the planning, execution and management of wellness programmes.

Defining wellness

The following diagram, based on literature and case study findings, describes three components of workplace wellness:



Building the Case for Wellness

There has been a slow uptake of wellness programmes as employers in the UK in general have not considered it their role to improve the health and well-being of their workforce. In addition, there is as yet no clear business case that demonstrates wellness programmes have a direct financial return or effects on tangible business benefits.

However, some employers have identified clear demographic, societal and economic realities that have led to their implementing wellness programmes:

- An increase in workforce age and change in its composition leading to employee expectations of wellness programmes and work-life balance initiatives
- Rising costs of chronic disease and ill-health
- External governmental and business pressures such as corporate social responsibility and competition

Executive Summary

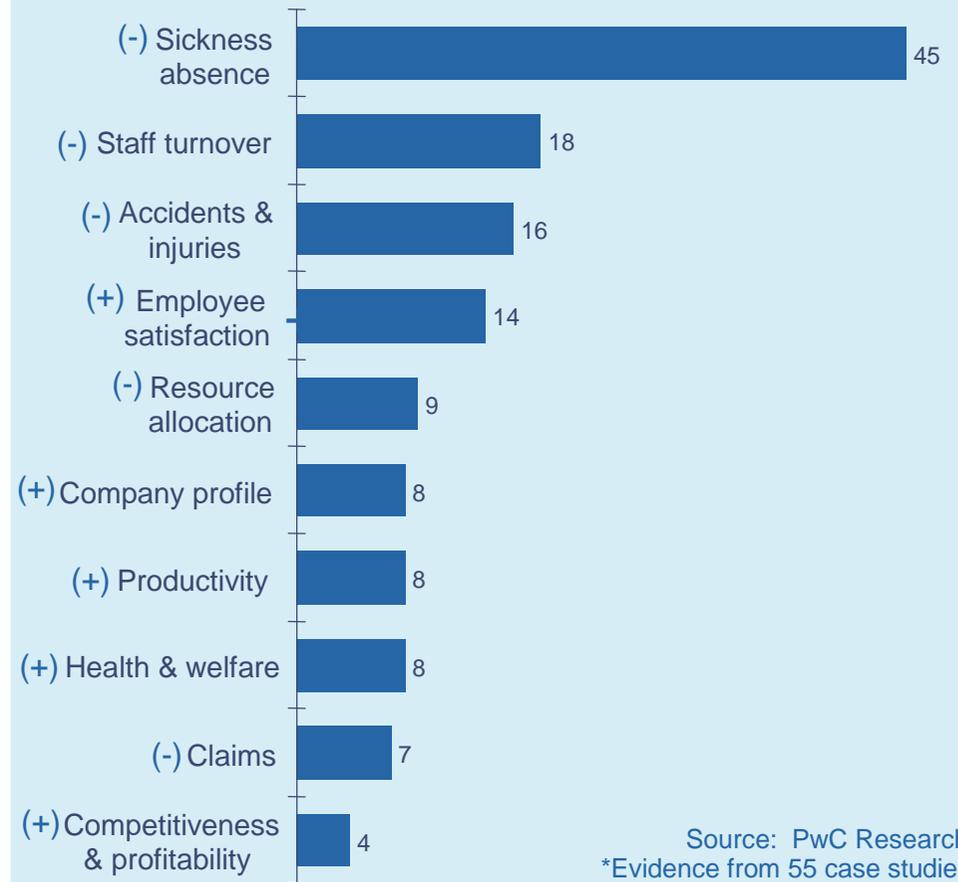
Workplace wellness makes commercial sense.

Evidence from a review of the available literature and case studies provided by the Health Work Wellbeing Executive supports the idea that wellness programs have a positive impact on intermediate and bottom-line benefits.* The intermediate business benefits that the firms in the 55 UK case studies reviewed directly or indirectly linked to their wellness programmes, and the number of reporting organisations making these links are illustrated in the figure to the right.

The available literature suggests that programme costs can quickly be translated into financial benefits, either through cost savings or additional revenue generation, as a consequence of the improvement in a wide range of intermediate business measures.

Quantifiable and significant financial consequences of organisations' wellness interventions were made available in a number of cases. Most of the financial benefits take the form of cost savings rather than increased income or revenue flows.

Benefits attributed to wellness programmes in the UK*



Source: PwC Research
*Evidence from 55 case studies
Appendix 2b

Executive Summary

Workplace wellness makes commercial sense.

After identifying key programme costs and perceived or realised benefits, 7 case studies reviewed report a return on investment, in terms of a benefit-cost ratio (BCR), for their wellness programmes. This ratio highlights the nominal return for every unit of cost expenditure (i.e. 4.17 illustrates that for every £1 spent the organisation recovered £4.17 in programme benefits).

While we were able to identify only a few analyses with financial or bottom line metrics, most companies are increasingly aware of the need to justify programme costs and demonstrate a return on investment.

Overall, in most cases reviewed, an improvement in key intermediate performance measures can be seen and in a number of cases the organisations linked these improvements through to an estimation of the financial benefits. The improvement in intermediate and financial benefits is observed in various different types of organisations, across different sectors and firm sizes, and for various types of interventions.

The magnitude of the benefits can vary significantly and this will depend not only on what type of organisation and programme is involved, but also on the way in which the programme is planned and executed.

Company / Programme	Benefit : cost ratio
Manufacturing company: ergonomic improvements	4.17 (over 1 year)
Manufacturing company: physical wellbeing	2.67 (over 1 year)
Call centre: physiotherapy	34 (over 6 months)
Public sector health service provider: flu immunisation	9.2 (over 2 years)
Manufacturing organisation: ergonomic support	12
Manufacturing company: health and safety awareness	1
Retail & distribution company: ergonomic support	1 (over 2 years)

Source: PwC Research, Appendix 2b

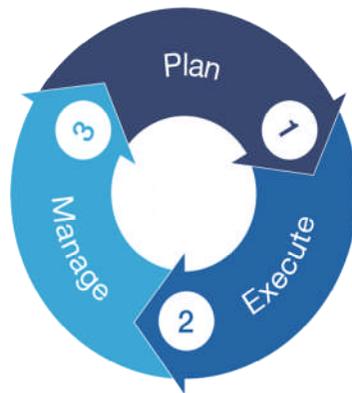
Executive Summary

Implementation Framework

In this review, it is clear that successful wellness programmes were those that were specifically designed to meet employee needs. As there is no “one-size fits all” offering, there is a need for a framework that offers a practical approach to implementation which focuses on employee need and value.

Enablers

- Leadership goes beyond endorsement of programmes and involves active and visible participation of senior management in wellness programmes
- Create a culture of wellness that aligns wellness with a business' overall goals and missions
- Create effective communication channels that ensure employees are consulted and continually informed of wellness initiatives



Plan

- Conduct a needs analysis that investigates employees health needs, motivations and readiness for change
- Understand wellness services currently offered and how they are meeting employee needs
- Understand specific organisational risks and priorities in relation to workplace wellness
- Consider the range of wellness initiatives and providers and assess which options would fulfil the organisation's priorities

Execute

- Programme design is tailored and considers the scope and severity of need
- Decide a set of key performance indicators that evaluate process, outcomes and impact
- Ensure a programme engages employees through appropriate incentives and social marketing techniques

Manage

- Ensure evaluation and management steps are a continual process that inform the plan and execute steps of the cycle
- Monitoring systems should be clear, simple and ensure confidentiality
- Identify and collect cost and benefit data to undertake financial impact modelling

Report Objectives

Employers in the UK have not in general considered it their role to improve the health and well-being of their employees. While they may believe that a healthy workforce is a key to their success, they have been slow to act. A number of factors may contribute to this:

- Lack of a clear definition for workplace wellness and core wellness service offering
- Incentives to increase employee buy-in are poorly understood
- No clear business case and evaluation of direct financial return that demonstrates wellness programmes' impact on tangible business benefits

However, employers have cited wider demographic, societal and economic realities that have led them to implement wellness programmes. There is growing evidence that wellness programmes offer tangible business benefits, however, the question remains if these are sufficient and robust enough to support the business case for wellness programmes. Furthermore, as much of the evidence is from outside the UK, there is a need for confirmation from UK employers whether wellness programmes can provide clear business benefits.

In an effort to build the business case for wellness programmes, the Health Work Wellbeing Executive commissioned PricewaterhouseCoopers LLP to undertake the following research:

- **Consider the wider business case for workplace wellness programmes among UK employers**
 - Changing demographics and expectations
 - Rising costs of chronic disease and ill-health
 - External influences such as corporate social responsibility and competition
- **Consider the economic business case for undertaking wellness programmes in the UK**
 - Assess the available evidence to understand the business costs and benefits associated with wellness programmes
- **Provide a framework for programme implementation and management**
 - Identify principles for implementing successful wellness programmes
 - Provide an economic framework for evaluation of benefits of wellness programmes

Methodology

Literature Review

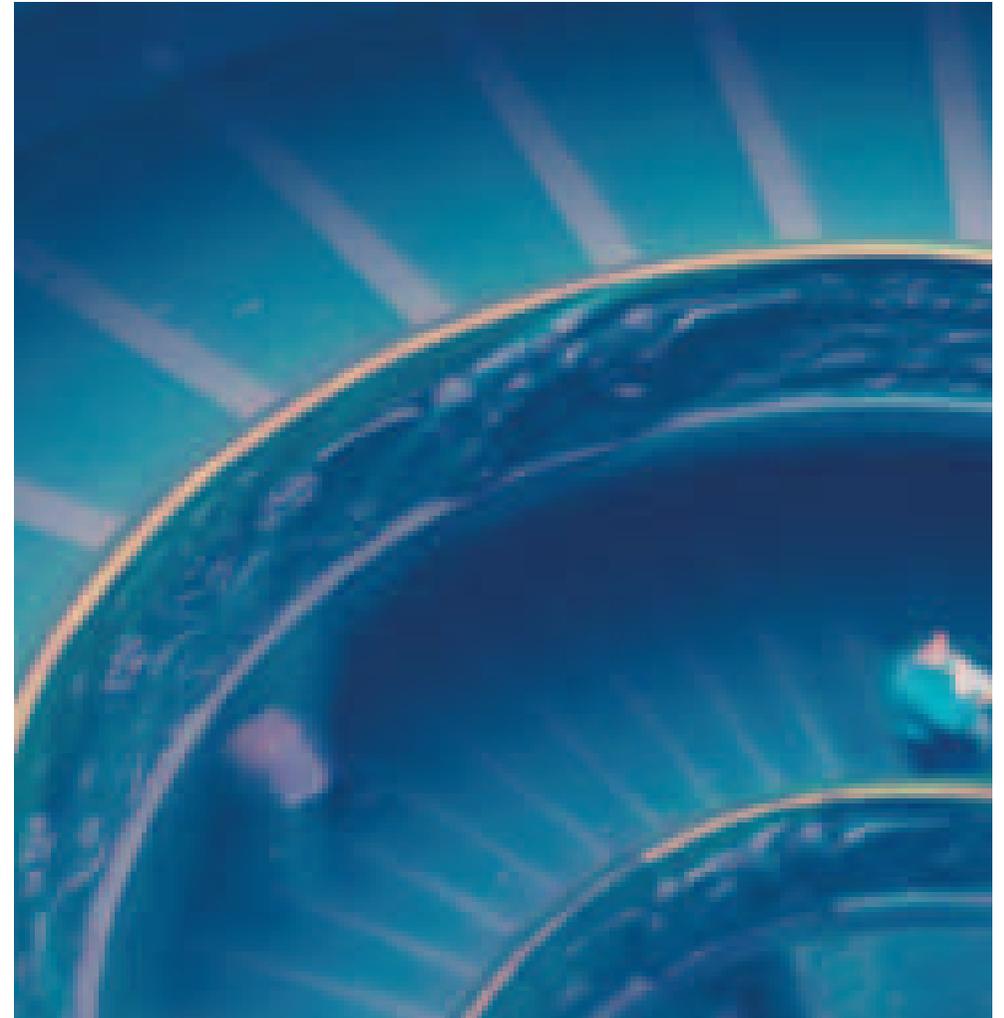
- An extensive and thorough review of published evidence, both peer-reviewed (white literature) and non-peer reviewed (grey literature), covering systematic case reviews and individual case studies
- Key themes and messages extracted in relation to key costs and benefits associated with programmes and specific interventions
- Identification of best practices in wellness programme implementation and management

Case Study Review

- Systematic review of relevant UK case studies, provided by the Health Work Wellbeing Executive
- Key themes and messages extracted in relation to key costs and benefits associated with programmes and specific interventions
- Identification of general trends and best and innovative practice in wellness programmes among UK employers

Interviews

- Face-to-face and telephone interviews with selected UK case study organisations
- Extracting common themes and best practices by company size and industry



Defining workplace wellness

Historically, employee health has fallen under the health and safety banner and has been restricted to occupational health related interventions for injuries or illnesses acquired while at work. Recent initiatives have begun to challenge this relatively restrictive view of employee health, advocating an expansion of health and safety programmes to encompass a more holistic approach to wellness.

This approach calls for employers to be proactive rather than reactive to employee health issues, focusing on preventative measures to avoid injuries and illnesses, rather than on the strictly rehabilitative measures in place once an event has occurred.

This critical shift in thinking has also led employers to expand the concept of employee health beyond conditions acquired at work to any condition which could potentially impact employee performance. This trend incorporates a wider spectrum of promotion interventions outside the traditional health remit, such as work/life balance initiatives, which are believed to contribute to greater employee wellbeing.

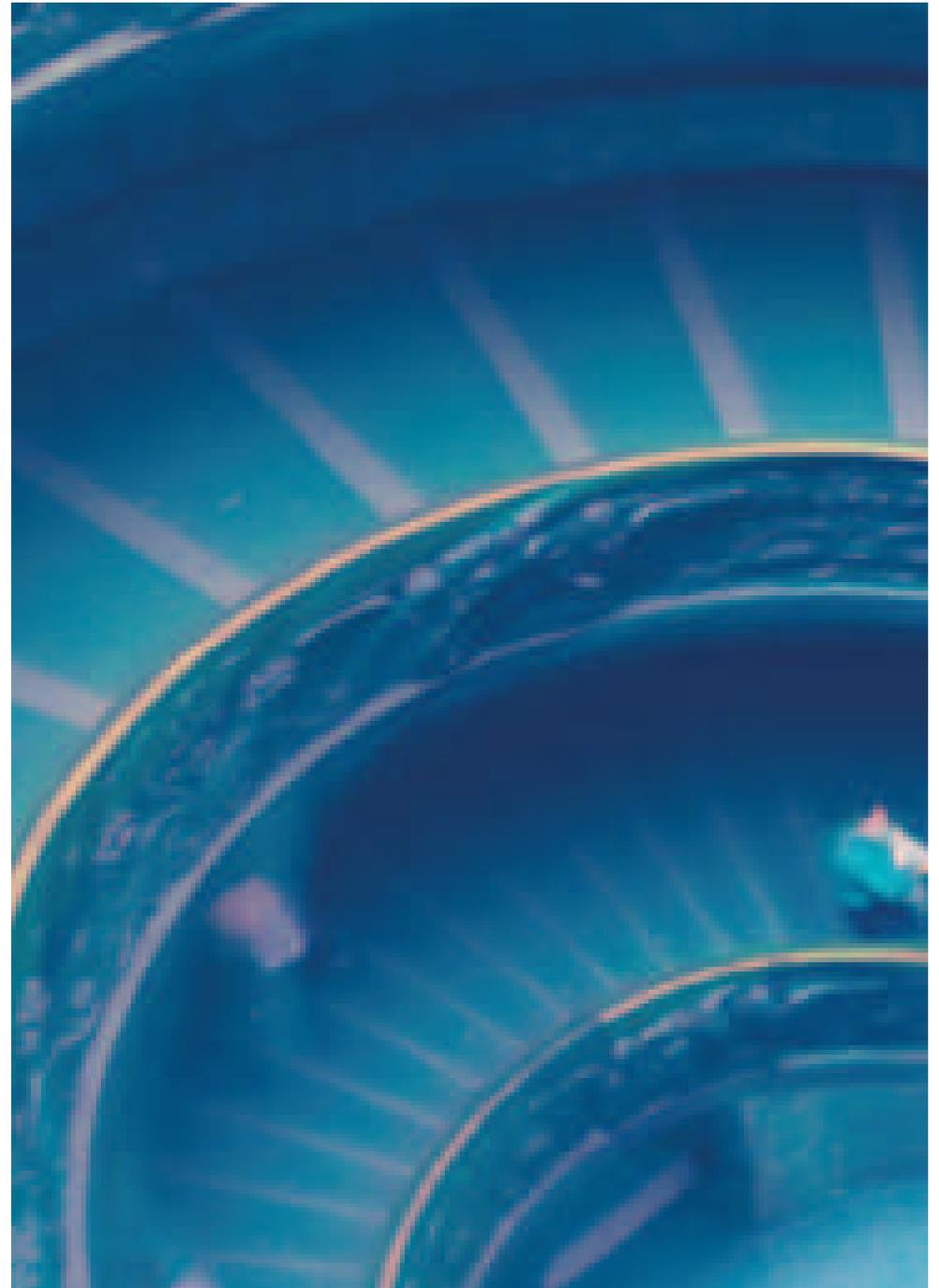
Based on these findings, a conceptual model for wellness includes three main types of interventions:

1. **Health and safety:** These interventions are driven by government policy initiatives and shaped by statutory requirements.
2. **Management of ill health:** These interventions focus predominantly on 'reactive interventions' and include occupational health, rehabilitation, long-term disability management, return to work schemes and absence management programmes.
3. **Prevention and Promotion:** There is a range of interventions that could fall under the prevention and promotion banner, including: health promotion activities, work/life balance, time management schemes and primary care management.



Part I:

Building the case for wellness



Why wellness in the workplace?

The shifting demographic profile of Britain, and of its workforce, has specific implications for employers.

General trends in population demographics, rising costs of chronic disease and external pressures such as corporate social responsibility are well recognised reasons to implement wellness programmes. A number of employers have cited that these macro-level arguments as reason enough to justify a comprehensive wellness programme. Key trends and factors are presented in the following discussion.

Changing Demographics

The population of the UK is growing. As of 2006, according to the Office for National Statistics, the resident population was 60,587,000, of which 84% reside in England.¹ The population has steadily increased over time, with an average increase of 0.5% since 2001. Net international migration from abroad is the primary cause of this increase. A higher birth rate than death rate, despite the 16% decrease in birth rate over the past twenty years, is also responsible for the growth.²

Although the population is growing, the population has not been evenly distributed across age groups. Between 1971 and 2006, the population aged 65 rose by 31% whereas the population aged 16 and under declined by 19%. This shift is largely attributable to declining mortality rates and an associated increase in life expectancy and the declining birth rate. As a result, the proportion of people aged 65 and over is approximately one in five, compared to one in six people aged 16 and under.³

An aging population is directly linked to an ageing workforce. According to DWP estimates, by 2024, nearly 50% of the adult population will be 50 and over.⁴ Several other factors contribute toward this trend. Better educational standards coupled with cultural changes which place less value on the 'traditional' family model have meant that more people are pursuing careers and choosing to stay in work longer. Medical advances and better health care have helped to make this possible. For some however, an increased retirement age and insecurity about pensions upon retirement has forced them to stay in work longer than desired.

Why wellness in the workplace?

Changing Demographics

The type of people seeking employment is also changing. The workforce is increasingly comprised of women and migrant staff. Since 1971, the rate of women's employment has increased from 56 to 70%.⁵ There are approximately 2.3 million more people in work since 1997, of which one million are women.⁶

In addition, the job profile of the British population is markedly different from what it was twenty years ago. In 1981, one in three men and one in five women worked in manufacturing. By 2001, this has decreased to one in five and one in ten respectively.

Conversely, the number of people working in the service industry has increased, with one in five UK jobs offered in business and financial services alone compared to one in ten jobs in 1981.⁷

Changing Expectations

The shift of the demographic profile of the workforce has caused employee expectations to change. There is a call towards greater flexibility in the workplace and many employees are looking to change their work hours, work from home and have flexible schedules in order to accommodate a better work/life balance.

In addition to a better work/life balance, employees are also beginning to expect services beyond the traditional health and safety mould, such as improved personal and career development and support and a range of health promotion services.

The changing job profile also has very specific implications for wellness. Whereas in the past, a health and safety model may have been sufficient, the decrease in number of people in manual labour jobs and a corresponding increase in the number of office-based workers means that the spectrum of illnesses and injuries encountered in the workplace is changing. As a result, traditional occupational health driven wellness programmes may no longer address the full requirements of staff from their employers.

Why wellness in the workplace?

Increasing rates of ill health among the workforce are expensive for employers.

Rise in Chronic Disease

Disease patterns across Britain have changed significantly over the past 50 years. Improved health care has led to a decrease in communicable disease rates while rates of chronic disease have risen significantly, irrespective of level of income.

Chronic disease represents the major source of health problems for adults, with an overwhelming 37% of deaths in the total population attributed to cardiovascular disease alone.⁸ It is estimated that chronic disease rates will continue to rise disproportionately. Much of this is due to an increase in poor lifestyle factors that are known risk factors for chronic disease. These include poor nutrition, smoking and lack of exercise.

Despite increasing rates of chronic disease, healthcare improvements have led to better management of many of these conditions. As a result, most people afflicted with chronic disease are able to continue to lead highly functional lives. While this means that they will be able to remain economically active, managing their conditions properly will be crucial to ensuring their continued contribution.

Why wellness in the workplace?

Rise in Costs

The cost of ill health in the workplace is high and is rapidly becoming an issue that employers can no longer afford to ignore. The poor health of the workforce is a cost to employers through both increased absenteeism and lowered job performance.

- The HSE estimates that musculoskeletal disorders (MSDs) were responsible for 9.5 million lost working days in 2005/6.^{9,10}
- Approximately 13.8 million working days lost in 2006/7 due to work-related stress, depression and anxiety.¹¹
- Employees suffering from stress are also more likely to report depression and other psychosomatic complaints, resulting in greater need for recovery due to exhaustion and fatigue compared to workers without high level of work-related stress.¹²
- Research shows that smokers cost employers 64 minutes a day in lost productivity.¹³

Estimating the actual costs of these illnesses can be difficult. High level estimates suggest that stress and back pain are costly conditions, costing the British economy £3.7 billion and £5 billion per year respectively.^{14,15} Accidents and injuries are estimated to cost an additional £512 million annually.¹⁶

The 30 million working days lost in the UK due to occupational illness and injury cost the economy £30 billion, approximately 3% of the GDP.¹⁷ According to the Confederation of British Industry, sickness absence can cost roughly £495 per employee per year, which can be a particularly high costs for small and medium enterprises.¹⁸

The costs of presenteeism, defined as reduced performance and productivity due to health while at work, are more difficult to measure. According to a US study, presenteeism is actually more costly than absenteeism, costing approximately two to three times more than direct health costs incurred as a result of illness.¹⁹ While hard data on the costs of presenteeism in the UK is unavailable at this time, preliminary evidence suggests that presenteeism could cost employers 2 to 7 times more than absenteeism.²⁰

For many employers, the costs of ill health, which, given the ageing population and the increase in chronic disease will only grow in the absence of intervention, is enough to justify a comprehensive wellness scheme.

Why wellness in the workplace?

External pressures may force wellness programmes to become a core feature of business models.

Corporate Social Responsibility

Changes are also taking place in company management where success and company excellence are not measured in financial terms alone but business performance is measured in a more balanced way. The success of management tools such as the balance scorecard are evidence of this.

For many years, European companies have regarded wellness as a duty of corporate social responsibility. Many multinational companies also share this attitude and include wellness in their annual reports on social responsibility. Of the 20 largest multinational companies, 75% published corporate responsibility reports online, of which 93% emphasised their commitment to improving the health of employees. This reflects the view of the World Business Council for Sustainable Development, which states that corporate social responsibility is about 'improving the quality of life of the workforce and their families as well as of the local community and society at large.'

Growing international pressure from leading edge employers to drive wellness as part of corporate social responsibility strategies may encourage businesses to start treating wellness as an integral component of their business model.

Government and Competition

This pressure will likely be reinforced by the government in an attempt to reduce the burden on public services, such as the increased costs of chronic disease on the NHS. Healthy working conditions improve the health of the population as a whole. A reduction in people using medical and rehabilitative services leads to savings in public health service expenditure.

In an increasingly competitive labour market, there will also be more pressure on employers to distinguish themselves in order to attract and retain staff as well as to ensure that older workers remain healthy. A wellness programme is one way of attracting and retaining employees as well as helping to keep the ageing talent pool healthier.²¹

Workplace wellness makes commercial sense.

The combination of these social, demographic, and external influences alone has led many employers to institute wellness programmes and initiatives. Others have instituted programmes for specific reasons such as improved retention, recruitment and company image.

While other companies may operate on the argument that healthier, happier employees will also be the most productive employees, our analysis finds evidence in the academic and non-academic literature, as well as multiple case studies in the UK and abroad, that highlight the business benefits that can be reaped from well structured wellness programmes. In many instances the intermediate benefits (i.e. absenteeism, presenteeism etc) are linked through to financial outcomes in the form of increased revenues or reduced costs and lead to a healthy return on the initial and on-going investment outlays.

The following analysis should provide potential or existing programme stakeholders with a greater understanding of the business benefits that can be achieved through implementing wellness programmes. Our aim was to consider the available evidence contained in the published white and grey literature, and link this through to practical examples of business implementation of wellness programmes in the UK. A summary of this approach is highlighted in Table 1, with detailed information on the reference material provided in Appendix 2.

Workplace wellness makes commercial sense.

Considering the evidence: Literature review

There is a wealth of literature that highlights the business benefits that can be reaped from well structured wellness programmes. Most research studies cover North America, in part relating to the myriad of wellness initiatives aimed at alleviating the heavy corporate medical expense burden. However, we have also identified a number of European research reports in our review.

Our review covers both white and grey literature. The former relates to peer-reviewed published research, while the latter tends to refer to material that has not been formally published or peer-reviewed by experts in the research field of question.

In addition to systematic case study reviews that summarise the available evidence, there is also a large amount of data available from the grey literature in terms of descriptions of health promotion programmes, case studies and qualitative statements. In most cases we have attempted to restrict our analysis to evidence that is supported by robust and transparent research and analysis.

Table 1. Research material considered in the review

Document type	Document count	References
Comprehensive and systematic literature reviews (covering from 9 to 72 research papers each)	8	Listed in Appendix 2a (studies labelled "SR")
Single or multiple case studies from available literature in various sectors and geographic locations	11	Listed in Appendix 2a (studies labelled "CS")
UK based case studies provided by Health Work Wellbeing Executive	55	Appendix 2b (Anonymised for confidentiality)

Workplace wellness makes commercial sense.

Considering the evidence: Literature review

In reviewing the available literature, a common set of business benefits becomes quickly identifiable. Typical intermediate business benefits cited in the literature and associated financial benefits are listed in Table 2.

Intermediate benefits can be considered as business performance indicators that are likely to lead to improved financial variables but do not in themselves provide a quantifiable financial measure. On the other hand, the related financial benefits are quantifiable and directly affect the bottom line.

The available literature provides a wide range of measures for the return on initial and on-going wellness programme outlays. For example, the systematic reviews considered provide the following benefit-cost ratios:²²

- Programmes targeting medical costs alone found a return on investment of 2.3
- Programmes targeting absenteeism found returns on investment of 2.5, 4.9 and 10.1.
- Programmes targeting absenteeism and presenteeism found returns on investment of 1.81, 3.24 and 8.81.

Individual case study reviews highlight even higher returns:²³

- The benefit-cost ratio for programmes targeting musculoskeletal issues were as high as 15.4, 24.6 and 84.9.

Table 2. Benefits associated with wellness programmes

Intermediate benefits (non-financial)	Related bottom line benefits (financial)
▼ Sickness absence	▼ Overtime payments ▼ Temporary recruitment ▼ Permanent staff payroll
▲ Employee satisfaction ▼ Staff turnover	▼ Recruitment costs
▼ Accidents & injuries	▼ Legal costs / claims ▼ Insurance premiums ▼ Healthcare costs
▲ Productivity	▲ Revenues ▼ Overtime payments ▼ Permanent staff payroll
▲ Company profile	▼ Recruitment costs
▲ Employee health & welfare	▼ Healthcare costs
▲ Resource utilisation	▼ Management time

Source: PwC Research

Workplace wellness makes commercial sense.

Considering the evidence: UK case studies

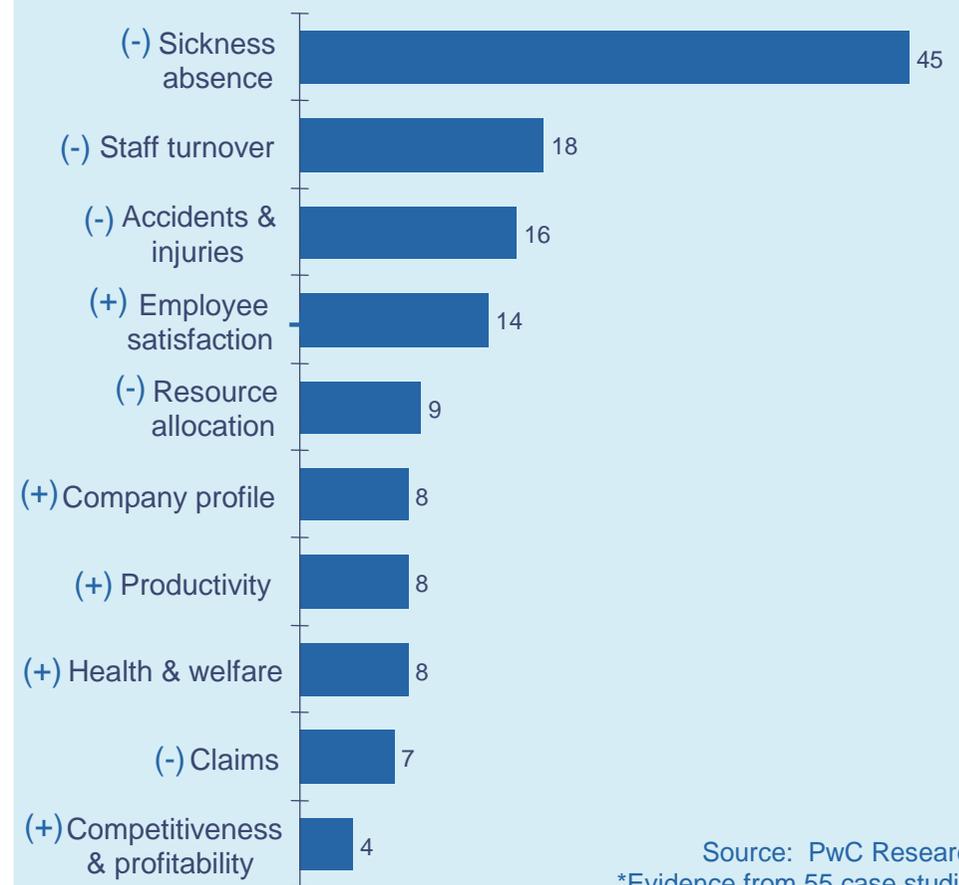
We evaluated the evidence from 55 organisations in the UK that had implemented a variety of wellness programmes and initiatives in recent years and submitted this information to the Health Work Wellbeing Executive. The programmes themselves can be categorised into:

- *Health and safety and managing ill-health programmes*, which focus on reactive interventions, targeted at work attendance and performance, such as sickness absence management, rehabilitation, and return to work schemes.
- *Health promotion programmes*, which focus on overall wellbeing, for example smoking cessation, healthy diet and subsidised exercise programmes.

Most case studies reported on the programme activity and perceived or realised benefits. The intermediate business benefits that the UK case studies directly or indirectly linked to their wellness programmes and number of reporting organisations are illustrated in Figure 1.

The industry sectors, programmes and a summary of the perceived intermediate business benefits are listed in Table 3, while more detailed descriptions of the case studies is contained in Appendix 2.

Figure 1: Benefits attributed to wellness programmes in the UK*



Source: PwC Research
*Evidence from 55 case studies
Appendix 2b

Workplace wellness makes commercial sense.

Table 3: UK case studies: cases by industry and programme type

Industry	Cases	Summary of Wellness Programmes	Summary of Perceived Benefits
Manufacturing	17	Lifestyle choices (5); occupational health and safety (12). Among the latter, targeted ergonomic, physiotherapy, and/or manual handling issues (5).	Reduction in absenteeism or days lost; reductions in injuries and/or accidents (14); reduction in insurance payouts, premiums and/or civil claims (7); lifestyle improvements focused on positive health outcomes (2).
Financial services	8	All are directed at lifestyle choices and health monitoring (8).	Reductions in absenteeism or days lost (8); positive impact on staff turnover, reduction and/or return to work (6); positive impact on staff wellbeing, whether this is through positive health outcomes, work-life balance or satisfaction (4).
Public sector	7	Lifestyle choices (2), occupational health and safety (5).	Reductions in absenteeism or days lost (7); savings from reduced absence and managing attendance (3).
Utilities	7	Lifestyle choices (2); occupational health and safety (3); combination of both (2).	Reductions in absenteeism (4); positive impact on turnover and/or staff retention (3); boost in internal or external perceptions of the company (3); One company reports a benefit to cost ratio for its wellness programme of £34 for every £1 spent.
Business services	4	Lifestyle choices (3), combination of both (1).	Reductions in absenteeism (3); reduced staff turnover, increased staff retention and/or increased staff satisfaction (4).
Construction/ Engineering	4	Occupational health and safety (4). Qualifications rather than general training (1).	Reductions in accident/injury rates (3); reduction in time spent on accident investigation (2); improved staff morale (2); increased competitiveness due to wellness programmes (2).
Retail	2	Lifestyle choices (1); occupational health and safety (1).	Reduced lost hours due to sickness absence (2). Both cases attribute the wellness programme to some bottom-line financial measure. For one company, this was profits at 3% higher than target, for the other this was savings from fewer lost hours.
Education	2	Lifestyle and occupational health and safety (2)	Reduced absenteeism (2); increased employee satisfaction (2).
Others	4	Occupational health and wellbeing (2); lifestyle choices (2).	Reduced sickness absence from work (2), positive impact on staff turnover or return to work rates (3).

Source PwC Research: Appendix 2b

Workplace wellness makes commercial sense.

Considering the evidence: UK case studies

Absenteeism

45 out of 55 cases reported a reduction in days lost through sickness absence as a consequence of wellness interventions. The reductions in lost days vary enormously, ranging from 10% to 97% over the evaluation period, with the reported average around 30-40%.

Staff turnover

18 cases mention a positive impact on reduction in staff turnover, through improved staff retention and/or return to work rates. Reductions in staff turnover rates range from about 10% to 25%. On average, the reduction in staff turnover was around 20-25%.

Accidents and injuries

16 cases reported reductions in accidents and injury rates as a consequence of worksite wellness initiatives. Reductions ranged from 30% to 73%, with the average reduction around 50%. 7 cases cite reduced insurance or civil claims, and/or savings on insurance premiums.

Employee satisfaction

14 cases mention a positive impact on employee satisfaction as a result of wellness programme intervention and participation. For example, one organisation saw a dramatic and positive increase in employees' opinion of the organisation from -0.08 in 2003 to +0.53 in 2006 (range is -2 to +2).

Resource allocation

9 cases cite a reduction in time dedicated to managing sickness absence, employee disciplinary procedures or injury investigation as a consequence of wellness interventions.

Company profile

8 cases report an improvement in their external reputation, which can help attract and retain quality staff and raise public profile.

Output and productivity

8 cases attributed improvements in productivity levels to implementing wellness programmes, some referring to reduced errors or rejects and increased utilisation rates. A further 4 cases attribute increased competitiveness and profitability to wellness programmes. For example, the increase in productivity at one manufacturing organisation was partly responsible for the working week falling from 48 to 40 hours, coupled with a significant reduction in stock levels.

Health and welfare

8 cases explicitly mention an improvement in the health and welfare of their employees associated with their wellness initiatives, including improved diet, exercise and general wellbeing. One case reports a 33% success rate from its smoking cessation programme; another tracked reductions in employee fatigue through a personal resilience evaluation.

Workplace wellness makes commercial sense.

Considering the evidence: UK case studies

Financial benefits

Fewer case studies reported on the financial or bottom line benefits accrued as a result of their wellness programmes. However, quantifiable and significant financial consequences of organisations' wellness interventions were made available in a number of cases. Most of the financial benefits take the form of cost savings rather than increased income or revenue flows. In part, this reflects the difficulty of measuring factors such as increased productivity or output and attributing these to wellness initiatives alone.

Of the UK case studies that were provided by the Health Work Wellbeing Executive (Appendix 2b), the financial benefits that were attributed to the individual organisations' wellness programme include:

- 14 cases provide actual cost savings estimates attributable to reduced sickness absence. Most cases take an average cost (e.g. lost wages) per absence day, and multiply by the absence reduction.
 - A car manufacturer estimated gross cost savings of £11m (1999-2002) owing to a 1 percentage point reduction in absenteeism rates over this period.
 - A manufacturing company estimated costs associated with short-term injury sickness absence were cut from £130k to almost zero (2001-06).
 - A manufacturing company estimated gross savings associated with reduced sickness absence (including additional over-time and temporary recruitment) of around £50k p.a.
- An academic university estimated the cost saving associated with reduced sickness absence as £165,000 from 2002-2006, owing to a reduction of total sickness days of around 350 days per year.
- A professional services company estimated the cost saving at £23,000 associated with reduced sickness absence of 0.5 percentage points in 2005-06
- 2 cases provide actual cost savings estimates attributable to reduced staff turnover rates. These estimates incorporate management, recruitment and marketing costs.
 - A professional services organisation estimated the cost saving associated with reduced staff turnover as £464k, owing to a reduction in staff-turnover by 10 percentage points from 2005-06.
 - A financial service organisation estimated that by reducing staff turnover by 9 percentage points the company has achieved cost savings of £1.6m since its programme was initiated
- 3 cases provide actual cost savings estimates attributable to reduced injuries and associated claims, including:
 - A manufacturing organisation calculated that injury claims fell from £700k to zero in 6 years.
 - A pharmaceutical company cited health insurance savings of £200k p.a.

Workplace wellness makes commercial sense.

Considering the evidence: UK case studies

The bottom line

Few case studies attempted to estimate the return on investment associated with their wellness programmes. In part, this reflects the initial objectives of the programme, such as improved employee health and wellbeing rather than improved financial metrics. A further complicating factor is the difficulty of obtaining necessary data linking programme costs, intermediate benefits and financial outcomes.

Nevertheless, most cases (based on feedback from the follow-up interviews) are increasingly aware of the need to justify programme costs and demonstrate a return on investment outlays. In some of the case studies, a simple dashboard of success highlighting key performance indicators was deemed sufficient. In others, a stringent financial assessment identifying the benefit to cost ratio was preferred.

Seven case studies report return on investment by establishing a benefit-cost ratio (BCR) for their wellness programmes. The wide variation in the investment returns seen in Table 4 reflect a number of factors including the nature of the issue being tackled, as well as the planning, execution and management of the programme.

The case studies suggest there is a wide variation in the reported BCRs. This is to be expected as the costs and benefits are likely to be highly dependent on the nature and focus of the intervention. It is clear that the benefits of wellness programmes can significantly outweigh the costs. Some estimates, such as those focused on interventions for musculoskeletal disease, show an even higher return than those reported in the case studies.

Table 4: Return on investment from wellness programmes

Company / Programme	Benefit : cost ratio
Manufacturing company: ergonomic improvements	4.17 (over 1 year)
Manufacturing company: physical wellbeing	2.67 (over 1 year)
Call centre: physiotherapy	34 (over 6 months)
Public sector health service provider: flu immunisation	9.2 (over 2 years)
Manufacturing organisation: ergonomic support	12
Manufacturing company: health and safety awareness	1
Retail & distribution company: ergonomic support	1 (over 2 years)

Source: PwC Research, Appendix 2b

Workplace wellness makes commercial sense.

Conclusions

There is a wealth of evidence in the academic and non-academic literature that suggests a positive link between the introduction of wellness programmes in the workplace and improved business key performance indicators. The available literature suggests that programme costs can quickly be translated into financial benefits, either through cost savings or additional revenue generation, as a consequence of the improvement in a wide range of intermediate business measures.

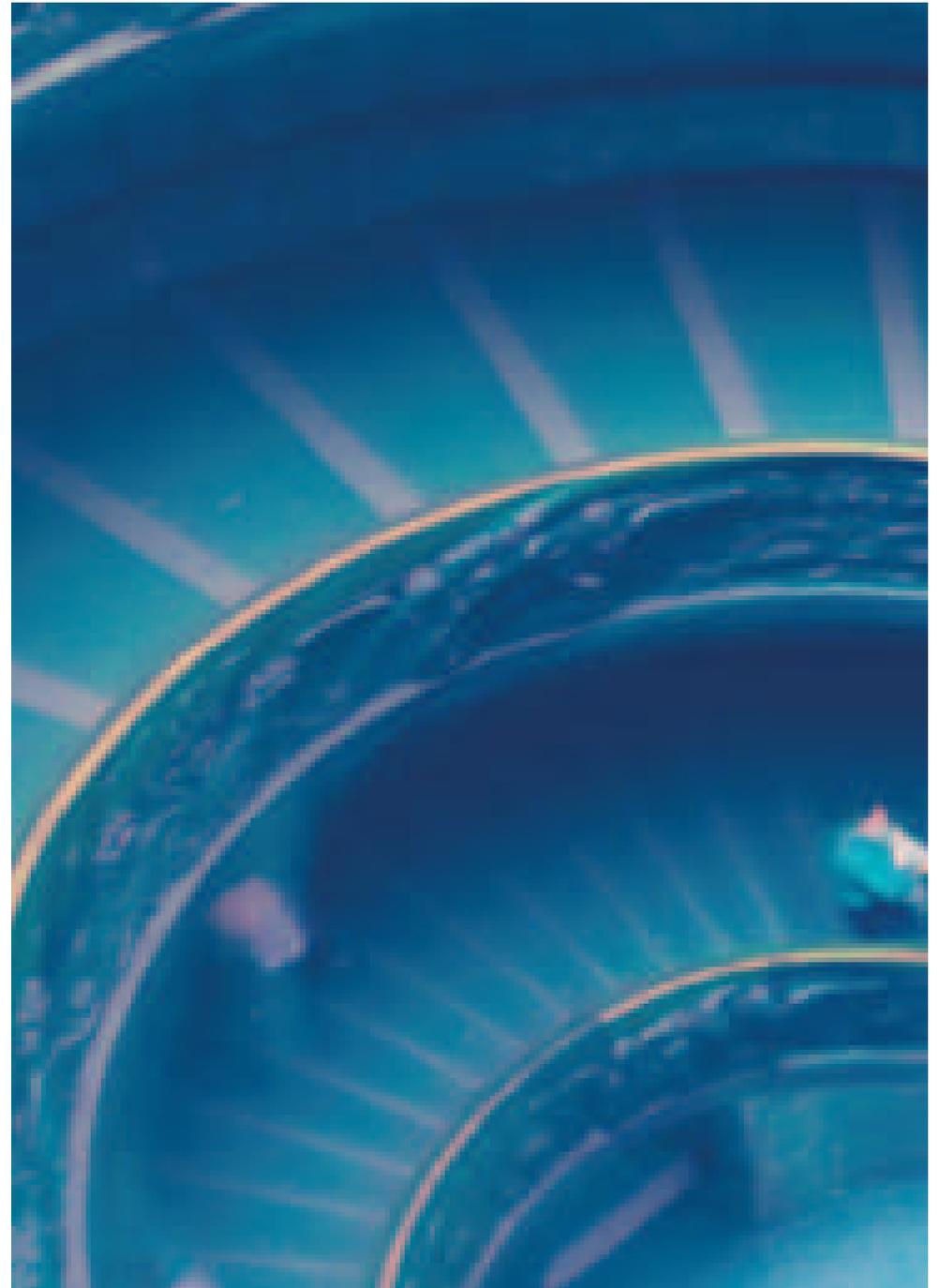
The available literature provides a wide range of measures for the return on initial and on-going wellness programme outlays. Benefit-cost ratios, which measure the financial return for every unit of cost expenditure, were found in the systematic literature reviews ranging from 2.3 to 10.1. Some published and peer-reviewed individual case studies indicated even higher positive outcomes for wellness programmes, ranging from 5.5 to 84.9. To a large extent, the variation in these investment returns reflect the severity of the measure being targeted and the focussed nature of the programme being implemented.

These conclusions appear to be confirmed by the experience of UK businesses that have instigated wellness programmes. This is true both in terms of the causal link between intervention and financial benefits, as well as magnitude of financial returns. In most UK business case studies, an improvement in key performance measures can be seen and in a number of cases the organisations linked these improvements through to an estimation of the financial benefits. The improvement in intermediate and financial benefits is observed in various different types of organisation, in terms of sector and size, and for various different types of intervention.

The magnitude of the benefits can vary significantly. From the relatively limited literature, it is difficult to speculate on why this might be. However, the costs and benefits of a wellness programme are likely to be highly dependent on the type of organisation and programme, and also the way in which the programme is planned, executed and managed. The nature and target of the intervention will also matter. The literature reviewed on interventions related to musculoskeletal disease suggests that benefits can be large when intervention is focused on illnesses that are a large burden in the workplace and are amenable to early intervention.

Part II:

An implementation framework

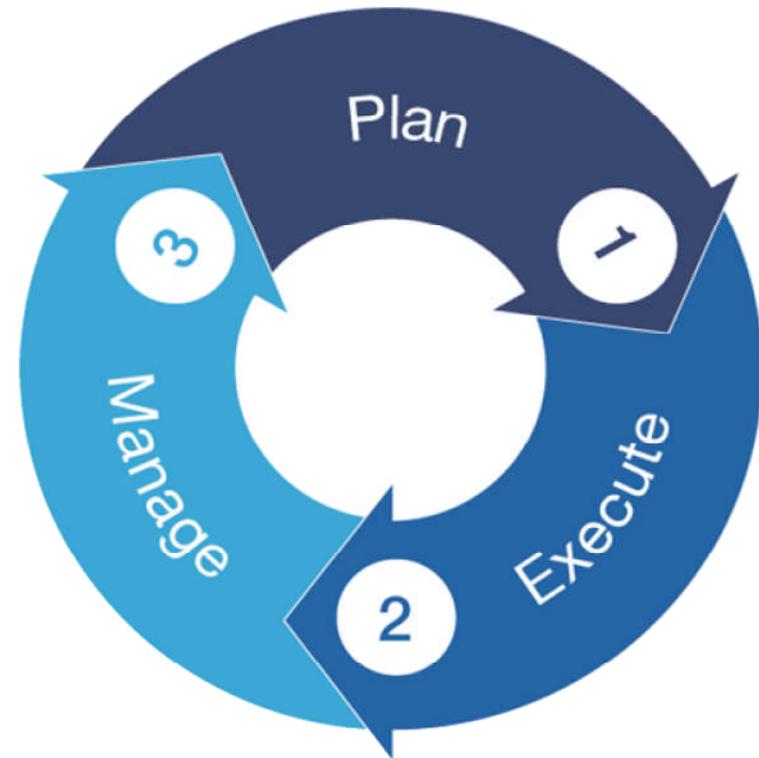


An implementation framework

From this review of the literature and case studies, it is clear that wellness programmes vary among each employer based on a number of factors including job type, health issues, organisation size and structure. However, the one theme that arose throughout our review is that successful wellness programmes were those that were specifically designed to meet employee needs. As there is no obvious “one-size fits all” offering, there is a need for a framework of how to approach the implementation of wellness programmes.

In this section, we offer an implementation framework that provides a practical way to approach wellness while focusing on value and employee needs. Having tested this model with a number of organisations in different sectors, we have found that it has all the qualities of a robust and enduring framework.

The following slides outline simple, practical principles to follow in implementing a wellness programme that are applicable to organisations regardless of size, industry or health issue. Many of the case study organisations studied have demonstrated these steps and best practices are presented throughout the following discussion.



Establishing enablers

In order for wellness programmes to be effective, they need to focus on both improving the health and wellbeing of employees and on organisational change and development. As many large scale initiatives fail without the appropriate supports, it is critical that an organisation ensures certain enablers are in place before implementing a wellness programme.

Leadership

Leadership can shape the culture of a company and institutionalise ideas into systems. It is critical to engage senior management at the earliest stage and promote active leadership in wellness initiatives.

Leadership must go beyond endorsement of programmes through funding and budgetary support and involve active and visible participation of senior management in wellness programmes. Nominating a senior management wellness champion is one means of achieving this.

Barriers to leadership support will exist such as limited resources or competing business priorities but can be overcome in a number of ways. For instance, coaching senior management about their own wellness before rolling out a broader programme can generate enthusiasm and support and create a cascade effect throughout the organisation.

Creating a multi-disciplinary team of stakeholders to ensure programme buy-in at this early stage can help subsequent planning and implementation efforts.

A local authority that employs 9000 staff and has a number of wellness initiatives that include absence management and improved work/life balance policies. The authority used an innovative approach to involve senior management. A regular newsletter feature investigated the contents of a member of senior management and provided advice on better nutrition.

Noted Case Study Examples

- Coach senior leadership about their own wellness; run an initial focused initiative to raise awareness among senior managers
- Chief executive and other senior management lead employee focus or “listening” groups on wellness issues
- Create multi-disciplinary team of stakeholders to ensure programme buy-in

Establishing enablers

Culture

Creating a culture of wellness is integral. While stand alone wellness programmes are becoming common practice, leading edge organisations are going a step beyond this and instituting coordinated programme of wellness initiatives with regular monitoring at a board level. They are making wellness a part of the company's overall mission statement.

Changing the physical work environment, by creating “chill-out” zones or quiet rooms to modifying vending machines and cafeteria menus, can help in creating a culture of wellness. Employer changes can be as innovative and simple as having a blender available in kitchens to make fruit smoothies to having time for exercise breaks.

In many ways, building a culture of wellness in SMEs is easier than in large enterprises. Smaller cultures tend to be more amenable to change and the positive benefits can be more readily communicated between management and employees.

One retailer clearly linked its wellness campaign with the corporate mission and strategy and has succeeded in integrating employee wellness with the corporate goals. In the company's 'CSR Scorecard', workplace health has been added as a core issue, reflecting its importance. Each of the core issues within the scorecard has ownership and targets. Progress is reported to the Social Responsibility Committee, which is a sub-committee of the main Board. The company publishes an annual CSR Report externally which is available on its CSR website.

Noted case study examples

- Align wellness with company business strategy
- Regular board monitoring of wellness programmes
- Annual report on company's physical health
- Changes in office layout to create more relaxed atmosphere

Establishing enablers

Communication

Having effective communication channels is key to success of any change initiative. In essence, employees need to understand the importance of wellness and be involved in creating an environment that supports change. Otherwise, they might lack the motivation and engagement to participate. As a worst case, they may resist wellness programmes if they feel they have not been consulted about their personal wellness requirements.

The right starting point for management would be to ask some fundamental questions that seek to understand employees' needs, motivations and knowledge. Similarly, it is important that employees are involved in the design and implementation of wellness programmes as well as communication strategies.

There should also be continuous communication about the outcomes or progress of any wellness initiative. These messages should be communicated in a variety of ways to ensure reach and understanding. This could include informal conversations, team meetings, on-line information, personalised messages or flyers/posters.

A health advisor, wellness champion or some other form of continuous support, will help increase employee engagement in this process. He or she will also be a key source of employee feedback when further developing the programme.

A large university's wellness initiative began with visits by the chief executive to all university departments to understand attitudes about the university as an employer. This led to a larger survey of the staff and creation of a wellness agenda to improve the workplace environment. The reporting structure demonstrates transparency in their decision making process and have clear effective communication systems in place. The initiative's steering and development groups are very effective in frequently measuring the 'pulse' of the initiatives and provide regular feedback at staff meetings.

Noted case study examples

- Internet based communications about wellness initiatives
- 24-hour wellness help-lines and resources
- Management led focus groups or "listening" sessions
- Utilisation of existing forums, message boards, posters/flyers, education sessions

An implementation framework

1. Plan



Assessing Need

The first stage in planning a wellness programme is understanding the employee population through a needs assessment. It will help determine the scope, content and approach to wellness initiatives, to ensure that employers are investing in the 'right' programmes. It will also provide the baseline data for subsequent evaluations. In time, it should be conducted seamlessly as part of the programme management and evaluation process.

An assessment can be undertaken in a variety of ways and need not be resource-intensive. Methods such as informal interviews, existing employee surveys and focus or feedback groups can all contribute to a needs assessment. The assessment should investigate employee health needs and understand their motivation and readiness for change. Workplace 'forecasts,' which consider how employee needs may change in the future in relation to workforce and organisational restructuring, policy change may also be included.

A well designed needs assessment will ensure that stakeholders are represented in the design process and that planned strategic interventions represent issues that matter to employees. It is also critical that the findings from needs assessments are fed back to the employee population and other stakeholders such as unions and management.

A manufacturer of concrete products with 230 employees prides itself on listening and positively responding to employee opinions, view and advice. As part of this process, they conduct regular needs assessments that clearly inform their workplace wellness initiatives. The organisation feels that through employee involvement, they have moved towards a proactive, preventive approach to health and wellness.

Actions

- Agree questions and areas of investigation with support from employees, human resources, management
- Decide methods for data gathering, such as team meetings, employee surveys.
- Work as a group to process and analyse findings

Outcome

- Clear understanding of overall employee needs and concerns. Ideally, an understanding of employee readiness for change is understood.

An implementation framework

1. Plan



Describing Services and Gap Analysis

An organisation should demonstrate a thorough understanding of their wellness initiatives. This review should encompass all initiatives, ranging from health and safety obligations to health promotion and work/life balance policies. Many organisations utilise external providers and form partnerships with local charities and others to help deliver their wellness agenda. A service review would encompass all of these components and help understand how these different activities interact as part of an integrated offering toward improved wellness.

An employer should be able to demonstrate how current wellness services address identified population needs. Where possible, this analysis would include quality and safety issues as well as a review of applicable performance indicators. It is also important for an organisation, in these early phases of programme planning, to review if their current performance indicators are appropriate and if other indicators should be considered for future programme evaluation. Gap analyses should also include a financial review. Resources utilised by individual service offerings should be clearly delineated.

The combination of a needs assessment and gap analysis should help employers identify whether current wellness services are addressing the needs of the population and their cost effectiveness. It should also isolate gaps in services and pinpoint areas of inefficiency or those in need of improvement.

A utilities company that employs 400 staff in a review of their legacy wellness offerings found the company already offered and supported many wellness initiatives but they were under-utilised. Other unmet needs were identified through employee surveys. A gap analysis identified marketing issues so certain existing initiatives were restructured and re-branded to improve uptake while a few new benefits were introduced. These quick wins demonstrated the company's commitment to creating a healthier workplace and furthered its wellness agenda.

Actions

- Review current services through desktop review of current policies and survey of programmes
- Conduct a gap analysis by comparing current services against identified needs
- Review appropriateness of current data collections and performance indicators
- Analyse the reasons for the possible gap between needs and services, such as marketing issues, poor service design, etc.

Outcome

- A clear understanding of the wellness “gaps” that currently exist and direction on how to close these gaps.

An implementation framework

1. Plan



Risk Management and Deciding Priorities

Companies should clearly understand their priorities around wellness and have an understanding of their organisational risks in relation to their wellness agenda. This includes a review of the changes that are likely to impact the organisation in relation to employee wellness. Political risks such as new government regulations and initiatives, economic risks such as competition, workforce trends, social and lifestyle changes should be considered. In the case of wellness, an organisation should carefully consider the risks of not implementing a wellness programme and how that risk should be addressed.

Deciding priorities flows from the reasons an organisation decides to implement a wellness programme. Employer objectives may be to decrease absenteeism, to improve morale or to directly respond to employee expectations. Regardless, organisations will be faced with a number of wellness initiatives and limited resources so having a clear understanding of its wellness objectives (e.g. improving retention) will aid in decision-making among stakeholders.

One case study's call centres in the UK found they had rising rates of absenteeism and high staff turnover. A number of changes in the broader banking industry were believed to account for this increase. In particular, the change from a small office setting with regular personal client interactions to large impersonal call centres teams with little face-to-face client engagement played a large role. By gaining an understanding of the risks in light of broader industry changes, the company's priority over the past 2 years has been reducing sickness rates, promoting active lifestyles and improving its support systems for employees with health problems.

Actions

- Initiate discussion between stakeholders about key issues/risks likely to impact an organisation, e.g. loss of competitive edge
- Agree on methods to mitigate identified risks
- Using feedback from needs assessment, gap analyses and risk management discussions, decide organisational priorities for a wellness programme

Outcome

- An agreed understanding of the key risks
- A strategic plan for risk reduction
- Agreed priorities for the wellness agenda, including steps forward

An implementation framework

1. Plan



Wellness Options

By fulfilling the preceding steps, an organisation will have a number of options for promoting wellness in the workplace. By considering each options' outcomes, outputs and attributes, such as short, medium and long term cost implications, an organisation can decide how each option moves it towards its wellness goal. Assessment of the level of difficulty of implementation, potential timing, barriers (structural, staffing etc.) as well as other criteria should be considered at this stage as well.

It is important to remember however, that different interventions may be necessary over a period of time to tackle a range of needs. As such, each option should also be considered as part of a comprehensive scheme, or pathway towards wellness. It is important at this stage to further clarify data needs and performance indicators to help measure the success of the different options.

Employers will need to understand whether programmes are best built internally, shared with other organisations or procured externally. As utilising a range of local community providers such as primary care trusts, retailers and others can help increase the success of wellness initiatives by providing expertise and resource, companies should consider different provider options and partnerships.

It is also important at this stage to test the proposed wellness framework with key stakeholders, such as senior management, employees, employee representatives and unions to ensure programme buy-in.

A product service provider with 150 employees, successfully implemented varied wellness initiatives ranging from onsite yoga classes to blood pressure checks and advice on smoking cessation. The company partnered with many external providers including their local Primary Care Trust, local gym and other organisations that provide workplace injury and rehabilitation services and advice on smoke cessation & nutrition.

Actions

- Consider which types of programmes would meet employee needs and potential performance indicators
- Assess difficulty of implementation, barriers and expected impact
- Consider partnerships and providers to help deliver the programmes

Outcome

- A meaningful wellness framework that identifies programmes that would address an organisation's particular needs

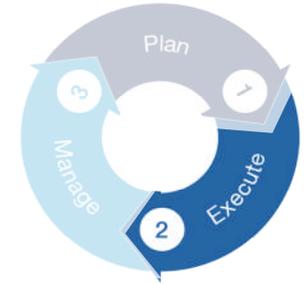
1. Plan: UK case study examples

Table 5

Stage	Noted case study examples
Assessing Need	<ul style="list-style-type: none"> • Staff surveys (web-based, personal interviews, focus groups) • Risk assessments (stress, ergonomic) • Review of existing policies and procedures, public health documents, HR insights • Review initiative feedback forms to better understand unmet need • Collecting turnover rates, absenteeism rates, occupational health data, presenteeism (planned)
Describing Services and Gap Analysis	<ul style="list-style-type: none"> • Benchmarking exercises – comparisons with other employers through on-site visits • Review of existing policies and procedures • Occupational health services review • Group exercises with management and key stakeholders to identify gaps
Risk Management and Deciding Priorities	<ul style="list-style-type: none"> • Joint exercise with management and stakeholders to identify potential organisational risks • Working group prioritisation workshops to identify and understand organisational wellness priorities
Wellness Options	<ul style="list-style-type: none"> • Develop working relationships with a number of outside providers to deliver services • Working with employee representatives and unions • Systematic evaluation of different wellness options that meet employee needs and offer value for money

An implementation framework

2. Execute



Appropriate programme design

Robust programme design, built on wellness agenda priorities, will increase the effectiveness of wellness initiatives. Programme design should consider the scope and severity of need, so that initiatives can be tailored appropriately.

For example, if a company has a high rate of long-term smokers, it would be naïve to assume that the distribution of smoking cessation pamphlets would be an effective mechanism to encourage quitting. In this instance, outsourcing a longer term smoking cessation programme to an experienced provider that provides multiple points of contact may be more appropriate. Many companies have found it useful to consider partnering with a foundation or another organisation with a proven track record in similar work.

Examples of best practice wellness programmes from UK organisations are provided in Appendix 3. Programmes are presented by wellness components (health and safety, managing ill health, prevention and promotion).

As discussed in the planning stage, organisations should continue to further identify and refine key performance indicators that will evaluate programme processes, impact and outcomes. A practical evaluation and monitoring system will help ensure continual programme improvement and enhanced effectiveness.

Continued communication

The challenges in implementation include overcoming employee scepticism and apathy. Key enablers, such as leadership, culture and communication are critical during the execution stage as they can increase employee engagement and participation. Communicating consistent and honest messages is important as employees that trust the company to be doing the right thing for them are more likely to participate in wellness initiatives.

Employees also need to see the action and results from wellness initiatives from the very outset. Having continued contact with employees is vital. Communicating how the programme is contributing to the mission of the company and its goals is critical as this stage.

An implementation framework

2. Execute



Engaging employees

Ensuring a programme is attractive to employees is an additional implementation challenge, even when the programme is founded on a sound needs assessment. Incentives and social marketing are useful techniques for encouraging employees to engage in wellness.

Incentives

The use of programme incentives will vary for each organisation depending on the target population's needs and readiness for change, purpose of incentives and programme design. The case study and literature review found different approaches. Some successful wellness programmes did not use incentives. This was largely the case where programme design and employee need were closely matched, or where there was clear alignment of wellness and the company culture and strategy.

Other organisations found incentives very useful and utilised different means including direct financial incentives, such as subsidised gym memberships or monetary rewards for programme participation or indirect ones through employer charity donations or increased funding for employee activities and away days.

Most important, regardless of the use of specific programme incentives, there is evidence that creating an environment and culture that supports wellness can bolster individual motivation.

Case study examples

- Direct financial incentives for participation
- Time off for participation
- Token gifts and merchandise such as pens and T-shirts
- Internal competitions among division/service lines
- Company donations to social and sports clubs
- Team building away days
- Company donations to employee charities

An implementation framework

2. Execute



Engaging employees

Social marketing

Applying marketing concepts and principles can help improve the impact and effectiveness of wellness interventions and related services. Targeted marketing campaigns that focus on specific employee behaviours or characteristics, such as age and sex, are particularly effective in increasing participation. Examples of best practice are those where companies chose different modes of communication based on their specific employee characteristics. For example, a business may segment its population and choose to reach younger employees through the intranet or podcasts and others with pamphlets or informal discussions at team meetings.

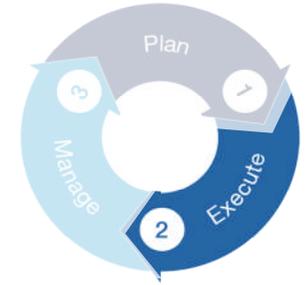
Establishing a dedicated team of people or wellness champions is effective as it is an opportunity to provide on-going, personalised messages to employees. When the team includes programme participants, marketing is even more effective. A number of companies have made employees an integral part of programmes by training them to deliver their wellness programmes.

Similarly, forming partnerships with other organisations such as Primary Care Trusts, local charities and retailers are low cost and effective ways to help increase employee participation. Involving external organisations in programmes provides innovative, novel methods for health education and other wellness activities. For example, some case studies jointly sponsored nutrition health fairs and events with local supermarkets and restaurants while others utilised local gyms and other sports facilities in their physical activity initiatives.

Case study examples

- Establish a dedicated committee of people with influence, passion and expertise across all lines of service or job types
- Involve employees early in the planning process
- Appoint wellness champions
- Personalised counselling
- Offer tailored messages to different groups
- Develop a brand identity for the wellness programme
- Make employees an integral part of programme by training them to deliver it
- Partner with external organisations to increase reach and appeal

Implementation for small-medium enterprises (SMEs)



SMEs may find it more difficult to invest in wellness programmes due to the belief that wellness is an expensive venture. In addition, given competing business priorities, many SMEs have opted out of wellness programmes, in the absence of guidance that they can be planned and executed in a relatively inexpensive way.

Much of the implementation framework discussed may be easier in smaller organisations. The culture of smaller organisations can be more amenable to change. Communication channels may be more effective and the positive benefits can be more readily communicated between management and employees. The use of nominated wellness champions from within the organisation can help quickly demonstrated organisational commitment to improved health and wellbeing and help market initiatives and wellness priorities.

Similarly, needs assessments and gap analysis can utilise existing structures such as team meetings, employee groups or informal interviews. Forming partnerships with community organisations such as primary care trusts and local charities, are effective in helping SMEs further their wellness agenda as they provide expert advice and greater resource.

Case study examples

- Healthy lunch groups or 'Lunch n' Learns,' where representatives from local health services and other relevant organisations discuss priority concerns of staff
- Company-sponsored participation in locally-run sports events, e.g. Walk-a-thons for cancer awareness
- Flexi-time, such as longer lunches, to allow employees time to exercise
- Exploration of local partnerships with other SMEs, to co-fund more larger interventions, such as joint assessments of office-place ergonomics, health MOTs and on-site screenings

An implementation framework

3. Manage



Overall programme evaluation and improvement

Establishing evaluation and monitoring programmes to evaluate programme processes, outcomes and financial impact is vital for any wellness initiative. These methods should capture critical aspects of participation as well as measuring both short- and long-term strategic aims of the wellness programme. In some cases, a simple dashboard of success highlighting key performance indicators may be sufficient as a measure of success for some employers.

Ongoing evaluation must continue to inform programme development and design to ensure the programme has maximal impact and reach and continues to meet changing employee needs. Therefore the implementation cycle is a continual process where information from the evaluation/manage stage will continue to inform the plan and execute stages. Continued leadership support and commitment are essential at this phase and can be continued through ongoing reporting at the board level that includes informal employee feedback.

Data management technology can facilitate the evaluation of these programmes, but privacy and limited resources will present a challenge. Therefore, the monitoring systems should be clear, simple and use aggregated, anonymous data for monitoring and reporting. It may be possible to outsource collection/ evaluation to a third party service provider to reassure employees regarding confidentiality. Some organisations go a step further and include privacy and security as a performance measure.

An implementation framework

3. Manage



Financial evaluation of wellness programmes

We found limited evidence in the UK case studies that an evaluation of the financial implications of wellness programmes had been undertaken. In part, this seems to reflect the general perception that the required data is difficult to collate, while the effects of wellness programmes cannot be disentangled from other internal and external factors affecting workplace performance. Also, measurement techniques are often considered to be complicated.

However, modelling the financial impact of wellness programmes need not be an over-elaborate or complicated process, as long as certain data requirements are met. Organisations that have successfully undertaken financial evaluations of their wellness programmes have identified the causal link between programme costs and intermediate and financial benefits and have monitored the change in the key financial variables before and after programme initiation.

There are numerous examples of economic evaluations of wellness programmes in the research literature, ranging from a financial assessment of the impact of single interventions to overarching or holistic programmes. In general, financial models focus on identifying and estimating programmes costs and benefits, then calculating financial variables such as the net present value (NPV), internal rate of return (IRR) or break even point (BEP). Such measures are readily understood by senior management and provide meaningful insights into a programmes financial viability.

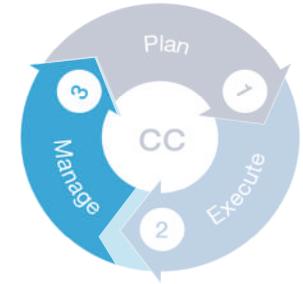
Clearly, a crucial aspect of modelling is identifying and collating all costs associated with wellness interventions and all of the savings or, in some cases, the extra revenue generated. Occasionally, and owing to a lack of available data or clarity on the proportion of any change attributable to wellness programmes, reasonable estimates and assumptions are required to complete the analysis, something that is not unusual in financial modelling.

Programme costs and benefits will vary considerably depending on a number of factors, including: the type and size of the intervening organisation; the type and scope of the wellness programme being implemented; and, the time frame of the intervention. However, as discussed in previous sections (see Table 2), there seem to be a set of costs and benefits that frequently appear when evaluating the financial implications of wellness programmes.

In addition to placing cash values of programme associated costs and benefits, the only other key ingredients to a financial evaluation are an appropriate discount rate and terminal value. These inputs allow for a comprehensive financial evaluation that reports on the key measures of: net present value; return on investment; internal rate of return; and, pay-back period.

An implementation framework

3. Manage



Financial evaluation of wellness programmes

Measuring programme costs

The costs of implementing wellness programmes will be unique to the organisation and programme. Nevertheless, a simple categorisation of costs can help programme managers quickly identify those that apply to their specific case:

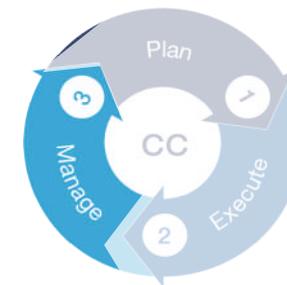
- Start-up costs
 - Management time dedicated to project planning
 - Specialist input fees
 - Capital equipment
 - Promotion/marketing
 - External goods & services
- Operating costs
 - Management time
 - Staff salaries
 - Bought-in goods
 - Bought-in services

Measuring programme benefits

Similarly, the benefits of implementing wellness programmes will be unique to the organisation and programme. But, again a simple categorisation of costs can help programme managers quickly identify those that apply to their specific case:

- Staff cost savings
 - Reduced overtime payments
 - Reduced temporary recruitment fees
 - Reduced permanent staff payroll
 - Reduced recruitment costs
 - Reduced management time
- Legal cost savings
 - Reduced liability claims
 - Reduced insurance premiums
- Healthcare
 - Reduced medical expenditures
- Revenue
 - Increased turnover (productivity gain or output per employee)
 - Increased orders (improved product / service quality)

Workplace wellness makes commercial sense.



Financial evaluation of wellness programmes

Table 6 highlights the commonly cited programme costs, intermediate benefits and financial benefits associated with wellness programmes. Identifying and quantifying costs and benefits that are related to each other allows programme managers to begin the process of financial evaluation.

Typical intermediate to financial measurement issues:

- The cost savings associated with sickness absence are often calculated by estimating the cost of each day using the average daily wage rate. This is a reasonable proxy for additional incurred costs such as necessary overtime or temporary recruitment. Ultimately, reducing sickness absence allows organisations to reduce their full-time staffing levels and associated payroll.
- Cost savings such as reduced recruitment costs, liability claims, insurance premiums, healthcare expenditure etc should be readily available and easy to calculate.
- On the income side, increased productivity, which entails increased output per employee can sometimes be difficult to measure. However, the financial benefit should be identifiable in terms of an improvement in financial measures such as increased revenues (per employee), reduced over-time payments, reduced wage bill (i.e. less employees required for the same amount of work), etc.

Table 6. Cost and benefits associated with wellness programmes

Programme costs	Intermediate benefits (non-financial)	Related bottom line benefits (financial)
Start-up costs	▼ Sickness absence	▼ Overtime payments ▼ Temporary recruitment ▼ Permanent staff payroll
	▲ Employee satisfaction ▼ Staff turnover	▼ Recruitment costs
Operating costs	▼ Accidents & injuries	▼ Legal costs / claims ▼ Insurance premiums ▼ Healthcare costs
	▲ Productivity	▲ Revenues ▼ Overtime payments ▼ Permanent staff payroll
Management time	▲ Company profile	▼ Recruitment costs
	▲ Employee health & welfare	▼ Healthcare costs
	▲ Resource utilisation	▼ Management time

Source: PwC Research

Financial assessment: relate costs to financial benefits

An implementation framework

3. Manage

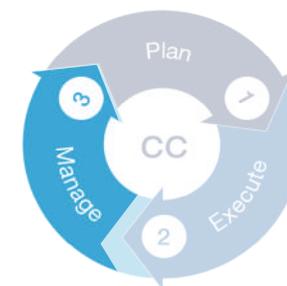
Financial evaluation of wellness programmes

When collating cost and benefit data, care should be taken to ensure consistency. It is important to gather all data over the same time period, as well as match costs and benefits. Any costs and benefits that do not relate to each other, or the programme, should be avoided, while “one-off” costs (i.e. training) that may actually recur should be included at relevant points over the analysis period.

Ideally organisations will have access to data prior to the intervention, which acts as a benchmark from which any change can be evaluated. Assumptions relating to the impact of a wellness programme on key cost, intermediate and financial variables may be required as other activities within the organisation (i.e. marketing) may be interfering with the data being measured.

Financial cost and benefit data can be presented in either nominal or real terms, with the latter stripping out the effects of inflation. However, all data used in the analysis (i.e. costs, benefits, discount rate etc) must be consistent with the choice of nominal or real evaluation.

After identifying and monetising programme costs and benefits, the remaining evaluation inputs are the relevant discount rate and terminal value in order to construct a discounted cash-flow (DCF) model and carry out the investment appraisal:



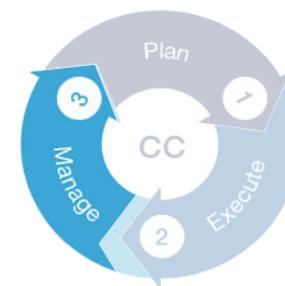
Terminal value: the difference between costs and benefits in each year provide the yearly cash-flow of the programme. When estimating the cash-flow in future periods it is usual to provide a value for all future cash flows, or the terminal value. This assumes that the programme does not finish at the end of the analysis period. The terminal value can be derived from:

$$\frac{[\text{Cash-flow in the final period}]}{[\text{Discount rate} - \text{Long-term growth rate}]}$$

Discount rate: the percentage by which the value of the cash-flow is reduced in each future time period. The estimation of a suitable discount rate is crucial, as a small change in the discount rate causes a large change in the value. The discount rate is often provided by an organisation’s weighted average cost of capital (WACC), which is a weighted average cost of equity and after-tax debt. The discount rate can be in nominal or real terms, but must be consistent with the cost and benefit data (i.e. if the cost and benefit data is in nominal terms then a nominal discount rate is applicable).

An implementation framework

3. Manage



Financial evaluation of wellness programmes

Interpreting the output or key financial ratios

A rounded investment appraisal will ideally cover all four of the measures listed in Table 7. These measures can be derived once the cost, benefits, discount rate and terminal value are established.

Typically, holistic wellness programmes can be expected to show a positive financial return over a period of 2 to 3 years. However, very targeted interventions may show a pay-back period (PBP) in a shorter period of time. It would be unrealistic to demonstrate meaningful and measurable benefits in less than 3 months owing to necessary time dedicated to development, implementation, training etc.

The internal rate of return (IRR) is often used to by firms to determine whether they should make an investment. It is an indicator of the efficiency of an investment, as opposed to net present value (NPV) which indicates value or magnitude. An investment should be undertaken if the IRR, or yield on the investment, is greater than the rate of return that could be earned by alternative investments of equivalent risk (i.e. bonds, bank accounts, other projects etc).

A hypothetical example of financial evaluation is presented in Figure 2. The example is based on a wellness initiative aimed at occupational health and safety improvements. The example reports start-up and running costs, and shows three potentially measurable financial endpoints (overtime costs, recruitment cost and injury costs). In addition, if data were available, an evaluation model might also included intermediate outcome measures, such as changes in absence rates and the incidence of injuries.

Table 7: Key investment appraisal measures

Measure	Interpretation
Net present value (NPV)	The NPV takes cost and benefit cash flows and discounts them using the company's cost of capital or hurdle rate. This measure articulates the cash value of the investment, providing a "one number" method of comparing programmes incorporating the time value of money (TVM). NPV does not show the time taken to achieve the return.
Internal rate of return (IRR)	The IRR expresses the value of a series of cash flows in the form of an average annual percentage return on the investment. 0% indicates "break-even", >0% indicates a positive return while <0% indicates a negative return. This measure provides a "one number" method for comparing programmes. IRR does not provide a cash value on the return nor any indication of the time taken to achieve the return.
Pay-back period (PBP)	The PBP determines the amount of time it takes for cash inflows to equal cash outflows, resulting in the break even point. This measure indicates how quickly a project turns profitable but does not illustrate the cash magnitude of the return.
Benefit to cost ratio (BCR)	The BCR is the ratio of benefits enjoyed by a certain effort divided by the costs incurred. This measure provides a "one number" method of comparing programmes. ROI does not illustrate the cash value of the return nor identify the time taken to achieve the return.

An implementation framework

3. Manage

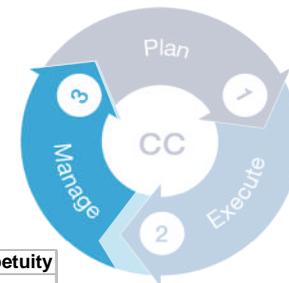
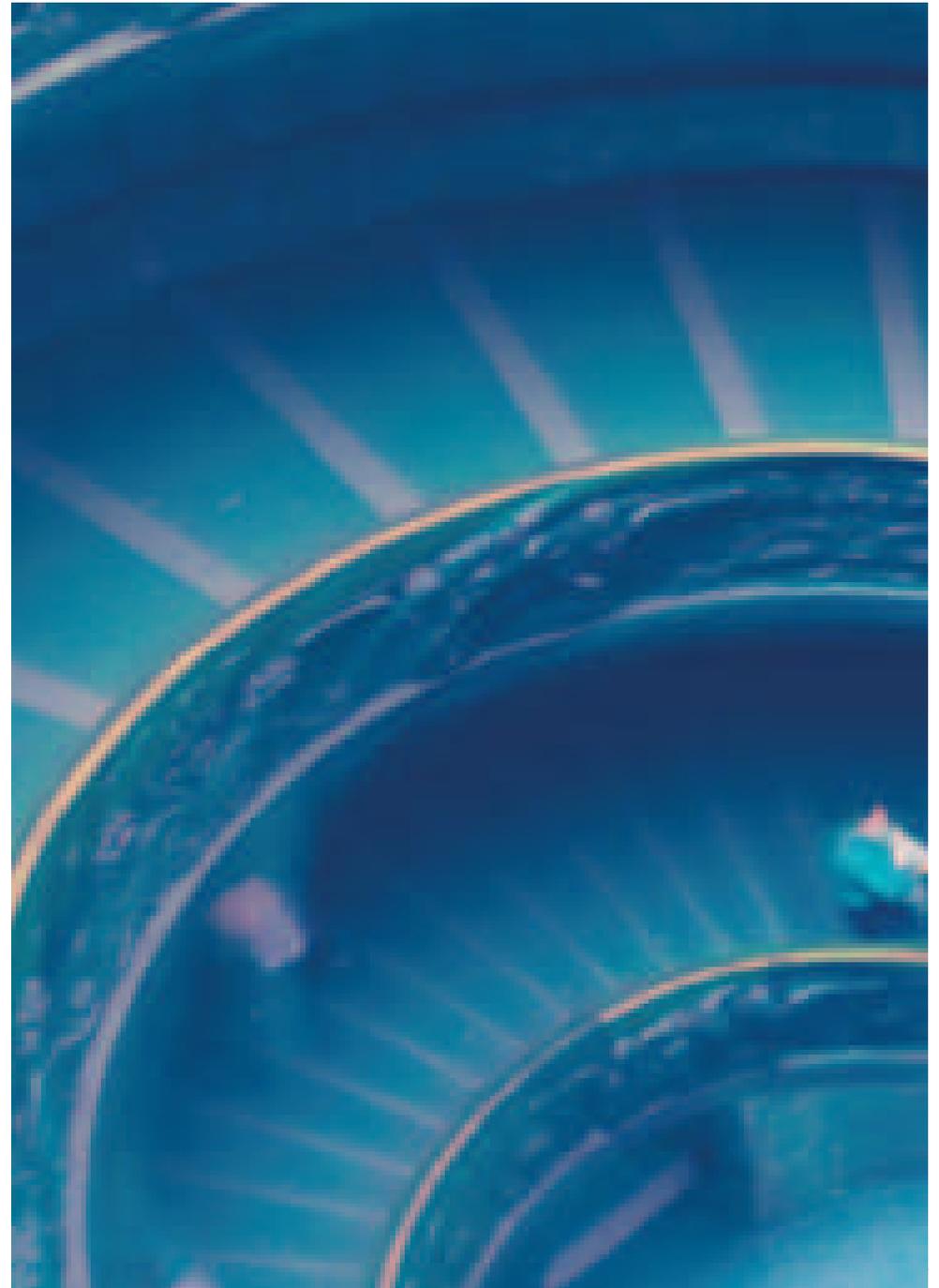


Figure 2: A simple discounted cash flow model for investment appraisal

	2000	2001	2002	2003	2004	2005	2006	Perpetuity
Start-up costs	-35,000							
- Management time	-10,000							
- Specialist advice	-10,000							
- Equipment	-15,000							
Running costs	-68,000	-64,260	-65,545	-66,856	-68,193	-69,557	-70,948	-1,194,295
- Management time	-35,000	-35,700	-36,414	-37,142	-37,885	-38,643	-39,416	
- Staff salaries	-23,000	-23,460	-23,929	-24,408	-24,896	-25,394	-25,902	
- Training	-10,000	-5,100	-5,202	-5,306	-5,412	-5,520	-5,631	
Benefits	0	72,000	80,300	86,608	99,423	102,496	107,827	1,815,086
- Over-time & temp fees	-	25,000	30,000	34,250	44,750	46,750	48,750	
- Injury claims	-	42,000	45,000	46,750	48,750	49,500	52,500	
- Recruitment costs	-	5,000	5,300	5,608	5,923	6,246	6,577	
Cash return	-103,000	7,740	14,755	19,751	31,229	32,939	36,879	620,791
Terminal value								620,791
- Long-term growth								1.0%
Cashflows								
- Yearly cash flow	-103,000	7,740	14,755	19,751	31,229	32,939	36,879	620,791
- Cumulative cash flow	-103,000	-95,260	-80,505	-60,754	-29,524	3,414	40,293	661,084
Discounting								
- Discount rate	7.0%							
- Discount factor	1.00	0.93	0.87	0.82	0.76	0.71	0.67	0.62
- Discounted total costs	-103,000	-60,056	-57,250	-54,574	-52,024	-49,593	-47,276	-743,747
- Discounted net benefits	0	67,290	70,137	70,698	75,849	73,078	71,850	1,130,344
- Discounted cash return	-103,000	7,234	12,887	16,123	23,825	23,485	24,574	386,597
- Discounted yearly cash flow	-103,000	7,234	12,887	16,123	23,825	23,485	24,574	386,597
- Discounted cumulative cash flow	-103,000	-95,766	-82,879	-66,756	-42,931	-19,446	5,128	391,725
Investment appraisal ratios								
- NPV	391,725							
- IRR	8.3%							
- PBP	4.9							
- BCR	1.42							

Appendices

- Appendix 1: Reviewing the evidence
- Appendix 2: Literature review
- Appendix 3: Wellness programmes
- Appendix 4: Caveats to measuring economic impact
- Appendix 5: References



Appendix 1: Reviewing the evidence

This study collated the evidence on the potential and realised costs and benefits associated with wellness programmes. The research and compilation of evidence was conducted in three stages as described below:

Appendix	Stage	Method
2a	Literature review	<p>An extensive review of national and international published research literature assessing the business impact of wellness programmes:</p> <ul style="list-style-type: none">• On-line searches using Google, PUBMED and specific journal databases (i.e. American Journal of Health Promotion, Journal of Occupational and Environmental Medicine, The New England Journal of Medicine)• Request for studies identified by academic experts in economic appraisals• Assessment of white (published peer-reviewed) and grey (non-peer reviewed) literature, incorporating systematic case study reviews, individual case studies and qualitative statements.• Key themes and messages extracted in relation to costs and benefits associated with wellness programmes and specific interventions.
2b	UK case studies (anonymised for confidentiality)	<ul style="list-style-type: none">• Systematic review of 55 UK case studies provided by the Health Work Wellbeing Executive.• Follow-up face to face and telephone interviews with selected UK case studies• Key themes and messages extracted in relation to costs and benefits associated with wellness programmes and specific interventions.

Appendix 2a: Literature review

Author (date); Source	Title	Type*	Sector / Geography	Summary
Institute for Work & Health (2007)	A systematic review of OHS interventions with economic evaluations.	SR	Various / International	Review of 67 published peer-reviewed papers that suggest incremental expenditure on health and safety produces a positive financial outcome after accounting for programme costs and benefits. The report identified 22 high quality studies with economic evaluations, including: <ul style="list-style-type: none"> • 22 case studies in 4 sectors (business services, healthcare, manufacturing, and transport) and 4 intervention types (multifaceted intervention, ergonomics & musculoskeletal, occupational disease prevention and disability management programmes). • Reduced injuries, reduced absenteeism, reduced medical and insurance costs, reduced insurance premiums and claims, increased productivity, increased efficiency and reduced errors,
Initiative Gesundheit & Arbeit (2004)	Health-related and economic benefits of workplace health promotion and prevention	SR	Various / International	Review of 25 published peer-reviewed papers focussing on occupational health programmes. Assessment of the financial consequences of programmes found evidence of reduced absenteeism and reduced medical costs directly linked to intervention programmes. <ul style="list-style-type: none"> • In terms of business pay-off the report finds strong evidence to support the view that benefits outweigh costs. The return on investment ranged from 1:2.3 for medical costs and 1:10.1 for absenteeism.
European Network for Workplace Health Promotion (2004)	Making the case for workplace health promotion	SR	Various / International	Review of available literature that suggest positive outcomes from wellness interventions in the workplace. The report finds evidence that worksite health promotion interventions provide positive outcomes in terms of: <ul style="list-style-type: none"> • Improved general working environment, employee health levels and human resource management, reduced absenteeism, increased productivity, as well as enhanced company image and employee satisfaction levels. • The report lists numerous business case studies to support its arguments relating improved business performance indicators.
Conference Board of Canada (2002)	Health promotion programs at work: frivolous cost or sound investment	SR	Various / International	Part of this report reviews 9 research papers that were undertaken to determine the financial impact of workplace health promotion programmes. <ul style="list-style-type: none"> • Evidence is presented that supports positive outcomes such as reduced absenteeism, short-term and long-term disability costs and total healthcare costs, as well as improved productivity.

*SR - Systematic case review; CS - Case study

Appendix 2a: Literature review

Author (date); Source	Title	Type*	Sector; Geography	Summary
Aldana (2001); American Journal of Health Promotion	Financial impact of health promotion programs: A comprehensive review of the literature	SR	Various; International	Review of 72 studies on the financial implications of occupational health promotion programmes. <ul style="list-style-type: none"> • 14 case studies found strong evidence to support the link between health promotion and reduced absenteeism. Reductions in absence from work range from 12% to 36% for participants of wellness programmes. • The benefit-cost ratio of various interventions targeting sickness-related absenteeism range from 2.5 to 4.85 and 10.1
Chapman (2003); The Art of Health Promotion	Meta-evaluation of worksite health promotion economic return studies	SR	Various; International	Review of 42 studies on the economic effects of occupational health promotion (OHP) programmes. <ul style="list-style-type: none"> • The report finds strong evidence to link OHPs to reduced absenteeism, reduced health plan related costs, workers' compensation payments and disability costs.
Golaszewski (2001); American Journal of Health Promotion	Shining lights: Studies that have most influenced the understanding of health promotion's financial impact	SR	Various; International	Review of 12 studies on the economic effects of occupational health promotion (OHP) programmes. In general, health promotion interventions are found to provide positive financial returns, most notably for health care costs and absenteeism reduction. <ul style="list-style-type: none"> • The report finds strong evidence to link OHPs to reduced absenteeism.
Pelletier (1999); American Journal of Health Promotion	A Review ... of the Clinical and Cost-Effectiveness Studies of Comprehensive Health Promotion and Disease Management Programs ...	SR	Various; International	Critical review of 11 cost-effectiveness studies of comprehensive, multifactorial health promotion and disease management programmes conducted in corporate worksites. The review finds evidence to support improved health conditions and business performance in relation to programmes, including: <ul style="list-style-type: none"> • Reduced medical expenditures, reduction in sickness-related absenteeism, reduce non-productive time (presenteeism). • The benefit-cost ratio of various interventions range from 1.81 to 3.24, 6.47 and 8.81.

*SR - Systematic case review; CS - Case study

Appendix 2a: Literature review

Author (date); Source	Title	Type*	Sector; Geography	Summary
Amick & DeRango (2003); Spine	Effect of Office Ergonomics Intervention on Reducing Musculoskeletal Symptoms	CS	Government; USA	<p>Assessment of ergonomic interventions aimed to reduce back injuries by comparing worksite intervention and control groups.</p> <ul style="list-style-type: none"> • Key costs: capital equipment, staff/management time, bought in consultancy services. • Key benefits: no impact on sick leave but significant increase daily productivity rates. The increase in taxes collected per worker per year was estimated at US\$25,400. • Bottom line: The benefit-cost ratio was established as 24.61
Lahiri (2005); American Journal of Industrial Medicine	Estimation of Net-Costs for Prevention of Occupational Low Back Pain: Three Case Studies from the US	CS	Manufacturing; USA	<p>Assessment of ergonomic interventions aimed to reduce back injuries by comparing before and after (uncontrolled) worksite intervention programmes. Employee levels were 637 (automotive supplies), 123 (wood processing) and 1,500 (automotive supplies).</p> <ul style="list-style-type: none"> • Key costs: capital equipment, staff/management time, bought in consultancy services. • Key benefits: reduced injuries, absenteeism and medical costs. Increased productivity. Back pain related sick days were reduced from 20 to 0, remained at 0 and from 693 to 1 respectively. • Bottom line: Benefit-cost ratios were established for the three cases as 15.4, 84.9 and 5.5 respectively. Cost savings per employee were US\$625, US\$111 and US\$1,556, with associated pay-back periods of 0.5 months, 5.5 months and 3.3 months.
Collins (2004); BMJ Journals	An evaluation of a best practices musculoskeletal injury prevention program in nursing homes	CS	Healthcare; USA	<p>Assessment of a multi-faceted musculoskeletal injury prevention programme in nursing homes.</p> <ul style="list-style-type: none"> • Key costs: Capital equipment and internal programme management/staffing. • Key benefits: Significant reduction in resident handling injury incidence and lost workday injuries post intervention. • Bottom line: Pay-back period just under 3 years.
Lanoie (1996); CIRANO	Costs and benefits of preventing workplace accidents: The case of participatory ergonomics	CS	Wholesale distribution; Canada	<p>A participatory ergonomic intervention to reduce back disorders at an alcohol distributor (90 employees).</p> <ul style="list-style-type: none"> • Key costs: Capital equipment and internal programme management/staffing. • Key benefits: Increased productivity and reduced medical/insurance costs. • Bottom line: Significantly positive net present value and pay-back after one year.

*SR - Systematic case review; CS - Case study

Appendix 2a: Literature review

Author (date); Source	Title	Type*	Sector; Geography	Summary
Abrahamsson (2000); Applied Ergonomics	Production economics analysis of investment initiated to improve working environment	CS	Manufacturing (steel); Sweden	<p>Assessment of work environment improving interventions comparing before and after (uncontrolled) outcomes. Programme motivated by low productivity, high absenteeism (due to illness and injury), high staff turnover and poor working conditions.</p> <ul style="list-style-type: none"> • Key costs: capital equipment and bought in consultancy services. • Key benefits: Improved production quality and efficiency (i.e. fewer breakdowns, less wastage, reduced returns, reduced maintenance and materials consumption, reduced need for manpower, and reduced absenteeism due to illness and occupational injury). • Bottom line: Significantly positive NPV, IRR of 36% and pay-back after 2.2 years.
Kjellen (1997); Safety Science	Economic effects of implementing internal control of health, safety and environment	CS	Manufacturing (aluminium); Norway	<p>Assessment of advanced safety, health and environment management systems based on internal control principles. Uncontrolled before-after study on 405 employees.</p> <ul style="list-style-type: none"> • Key costs: capital equipment, bought in consultancy services and internal management/staffing. • Key benefits: Significant reduction in lost-time injuries, sick leave hours, accident count and reclaims. • Bottom line: No data available.
Loisel (2002); Journal of occupational and environmental medicine	Cost-benefit and cost-effectiveness analysis of a disability prevention model for back pain management: a six year follow up study.	CS	Multiple (Manufacturing, healthcare, services); Canada	<p>Clinical and occupational interventions (mainly ergonomic) to reduce high injury costs. Controlled studies of 25 employees.</p> <ul style="list-style-type: none"> • Key costs: Bought in services (health-care, occupational medicine physician, back pain specialist, back school, rehabilitation and ergonomist services), plus opportunity costs of employees spent in participatory ergonomic interventions. • Key benefits: Reduced worker compensation payments and sickness absence. • Bottom line: No data available.
Arnetz (2003); Journal of occupational and environmental medicine	Early workplace intervention for employees with musculoskeletal-related absenteeism	CS	Multiple; Sweden	<p>A disability management programme that includes early medical, rehabilitation and vocational interventions, as well as ergonomic improvements and adaptation of workplace conditions. Control group 65 employees and intervention group 72 employees.</p> <ul style="list-style-type: none"> • Key costs: Capital equipment, ergonomic improvements, occupational therapist/ergonomist and vocational/occupational training. • Key benefits: Reduced sick days and sick leave, plus fewer reimbursed rehabilitation days. • Bottom line: Significantly positive NPV with benefit:cost ratio of 6.8.

*SR - Systematic case review; CS - Case study

Appendix 2a: Literature review

Author (date); Source	Title	Type*	Sector; Geography	Summary
Serxner et al (2001); Journal of Occupational and Environmental Medicine	The impact of a worksite health promotion program on short-term disability usage	CS	Telecoms; USA	<p>A study of 1,628 employees was conducted to determine the impact of a work site health promotion programme on short-term disability.</p> <ul style="list-style-type: none"> Participants in the worksite health promotion programme were found to use on average 6 fewer net disability days than similar employees, leading to a saving to the company of US\$397,000 during the 2 years of the programme.
Ozminkowski (2002); Journal of Occupational and Environmental Medicine	Long-Term Impact of Johnson & Johnson's Health & Wellness Program on Health Care Utilization and Expenditures	CS	Healthcare; USA	<p>Assessment of a holistic health and wellness programme. The focus of the programme was To provide services before, during, and after major health-related events, such as accidents, injuries, or illnesses. Interventions included health risk assessments; referrals to high-risk intervention programmes; preventive health services; health education and training; ergonomics assessments; medical surveillance; and workplace drug and alcohol awareness training.</p> <ul style="list-style-type: none"> The results of the programme evaluation indicated an average estimated net saving of US\$225 per employee per year for the four years examined after the programme introduction. Most of the savings occurred in the third and fourth years after programme implementation. Most savings were accrued through reduced medical costs.
Ozminkowski et al (1998); American Journal of Health Promotion	Cost-Benefit analysis of the Citibank N.A. health management program.	CS	Financial services; USA	<p>The Citibank "Health Management Program" provided a health risk appraisal to 40 percent of Citibank's 42,000 employees, followed by risk-appropriate interventions to help employees manage chronic conditions and to reduce the demand for unnecessary health services.</p> <ul style="list-style-type: none"> Over a 38-month period, Citibank spent nearly US\$2m and accrued US\$12.6m in programme benefits, most of which came from the difference in medical expenditures between programme participants and non-participants.

*SR - Systematic case review; CS - Case study

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Retail	60,000+	Wellness pack with health guide, pedometer, healthy eating & smoking cessation.	Total information packs cost £100,000; total joiner pack cost £250,000	Intermediate: ↓ absenteeism; ↓ staff turnover; improved health outcomes: improved PR relations & reputation, Financial: ↓ management time dedicated to H&S; ↓ staff replacement costs reduced; ↑ profits (by 3% compared with target).
Public Sector Service Organisation	100,000+	Strategy boards for physical exercise, help-line, musculoskeletal clinics, counselling & Advisory services.		Intermediate: ↓ sick absence rates (1.8 pct points 2004 -2007); ↓ accidents (30% less 2004-2007).
Manufacturing	20,000	Sickness absence management through IT programmes, and early rehabilitation.	Policy development (1 month) £7,800; Management training (one-off) £200,000	Intermediate: ↓ absenteeism rates (0.7 pct points 1999-2002); ↓ absence due to stress (4 pct points 1999-2002); Financial: cost savings due to reduced absence 1999-2002 (£11,000,000).
Manufacturing	150	Holistic interventions for prevention. Wellbeing policies created, management training, smoking cessation, healthy eating & counselling.		Intermediate: ↓ absenteeism (1.53 pct points 2006-2007).
Business services	500	Healthy eating, Smoking cessation, counselling, healthcare cash plan & gym membership. Wellbeing clinic services.	Healthcare cash plan (capped annually) £35,000 2006-2007	Intermediate: ↓ absenteeism; staff turnover kept low (less than 5% per annum since 1993).

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Property management	300	Subsidised gym membership, health cash plans, personal health management plans & sickness management policy. Executive board introduced all wellness programmes.		Intermediate: ↓ Absenteeism (18.3% less days forecasted to be lost due to sickness for April 2007 compared with April 2006).
Manufacturing	200	Occupational health services & activities. Counselling & annual health screenings.	External training £7150 (26 days @£275)	Intermediate: ↓ sickness absence by 97% (113 to 3 days); ↓ disciplinary/grievance proceedings to 0; ↓ output reject rate; ↑ machine utilisation; low staff turnover rates; ↓ lost days from accidents; ↑ productivity. Financial: ↓ injury claims 9@£77k to 0; ↓ overtime by 37%; ↓ energy usage by 9.20%; ↓ work week by 8 hours; ↓ stock by £1,300,000; ↓ insurance premiums.
Employment Support	400	Mental health awareness training, support line, wellbeing facilitators.	Total value of £2,500,000	Intermediate: ↓ Absenteeism; ↑ return to work rate (90% within an average of four weeks).
Manufacturing	2000	Clinics at work and wellness weeks implemented.	Medical Centre £1,000,000	Intermediate: ↓ general absence/total no of days lost by 40% 2003-2006; ↓ long-term absence due to sickness by 40% 2003-2006; improved health outcomes (↑ smoking cessation with 33% success rate in 2006);
Financial services	800	Attendance & Well-being team, healthy eating, counselling, screening clinics.		Intermediate: ↓ absenteeism rates by 1/3.

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Manufacturing	1,000	Ergonomic improvements made. Redesigning manual handling training programme in 2006. new manual handling training (reducing soft tissue injuries).	Equipment (approx) £2,000 Physio (approx) including assessments and analysis £ 10,000	Intermediate: ↓ Sickness absence; ↓ days lost per MSD incident by 5 days; ↓ soft tissue injuries by 60%. Financial: ↓ overtime and temporary recruitment fees by £50,000 pa. Bottom line: ROI of 1:4.17.
Financial services	400	Smoking intervention classes & healthy living. Physical activity week. Wellness coordinator, cycle to work schemes. 85% of employees participated in at least one well-being exercise; 44% attended well-screening programmes.	Set up fees £100,000 HR resources 18 hours per week	Intermediate: ↓ absenteeism (by 0.2 pct points); ↓ staff turnover (by 4 pct points); ↑ smoking cessation; improved health and welfare outcomes (improved diet).
Manufacturing	1000	Physiotherapy & exercise. Prevention talks, stretching programme . induction for new employees	Physiotherapist time on programme £340 Operatives away from work for the programme (1/2 hour @£4.15 x 21 staff) £87.15	Intermediate: ↓ sickness absence due to muscular skeletal issues by 137.2 hours in a year. Financial: ↓ absences related costs by £1,139 in one year (average operative wage £8.30/hour). Bottom line: ROI of 1:2.67 (muscular skeletal issues).
Utilities	400	On-site crèche, subsidised social club, private healthcare schemes, free on-site health checks. Holiday buy-back scheme.		Intermediate: ↓ absenteeism; ↓ staff turnover; ↑ company profile in local community as favoured employer. Financial: ↓ recruitment fees, overtime & temp fees.

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Financial services	150	Free health assessments to all staff. Smoke cessation & physical health in workplace. Massage, onsite yoga & body conditioning. Counselling & advice onsite.		Intermediate: ↓ absenteeism (155 days to 62 days); ↓ turnover by 10.2%; awarded accreditation in area of staff well-being.
Education	400	Gyms and relaxation classes subsidised. Absenteeism policies implemented. Employee Assistance Programmes.		Intermediate: ↓ absenteeism by 26% (3,430 to 2,544 days) between 2004-2006; ↓ staff turnover by 11%; ↑ employee satisfaction. Financial: ↓ recruitment fees.
Education	6000	Stress Management, Counselling & Advice. New sport centre. transport plan implemented.	Human Resources p.a. £371,083; Development & team costs p.a. £550,000; Sport centre £5,000,000; Employee health & wellness over 2 yrs £740,000; Hands on support to date £1,200,000	Intermediate: ↓ total sickness absence by 1744 work days; ↓ long term sick leave by 8% from 2002/3 -2006; ↑ staff productivity; ↑ employee satisfaction levels; ↑ research grant income. Financial: ↓ absenteeism related costs by £165,680 (estimated @ £95/day).
Construction/ Engineering	800	Health & Safety training	Induction & H&S costs p.a. £15,000; Assurance and supply chain management p.a. £120,000	Intermediate: ↓ accident rates by 69% 2001-2002 per 200,000 hours worked; ↓ mgmt time spent investigating accidents; improved competency in H&S.
Manufacturing	2000	Behavioural safety programme – observation of employees safe/unsafe behaviour at work.	Training p.a. £145,000	Intermediate: ↓ work days lost by 45% (550 to 301 days lost) 1999-2003 ; ↓ accidents by 40% (45 to 27 accidents); ↓ lost time incident rate from 44 to 11.8 per 1,000,000 hours worked; ↑ productivity. Financial: approximate savings 1999-2003 of £285,000 pa.

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Public sector transport organisation	400	Sickness absence management. Support return to work interviews.	Occupational health service £16,000 p.a.	Intermediate: ↓ absenteeism by 7.66-8.66 pct points 1999-2003; ↓ staff absence by 70% 1999-2003; ↓ staff on long term absence (15-16 to 2-3 at any one time).
Business services (Legal & Professional)	1500	Healthy living. Accident reporting processes. Policy monitoring staff sickness. Free gym and medical checks. Flu points set up during winter.		Intermediate: ↓ staff turnover. Financial: ↑ profits four-fold.
Utilities	2500	Stress interventions – stress ball fights, workplace competitions, employee assistance programme. Smoking cessation classes & fitness classes.		Intermediate: ↓ absenteeism by 12%; ↓ staff turnover by 25%; improved external reputation and PR.
Utilities	20,000	5 year H&S and environmental plan, stress management programmes. Lifestyle programmes.		
Financial services	1000	Healthy lifestyle, fitness classes, relaxation classes.	Occupational health adviser, Project development £75,000	Intermediate: ↓ absenteeism by 0.47 pct points 2005-06; ↓ staff turnover by 10%; ↑ employee satisfaction (31.5% of staff recommended it good place to work). Financial: absenteeism related cost savings £23,000; staff turnover related savings of \$464,885
Financial Services	17,000	Flexible working policy. Discounted gyms. Free phone counselling services, absence support management.	Total 2005-2006 revenue expenditure £8,000,000	Intermediate: ↑ employee satisfaction (right work-life balance achieved according to 78% employees responding to 2005/6 survey).

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Local authority	9000	Diet & nutrition advice, Healthy breakfast campaign. Protection in the sun campaign. Exercise classes.	Work site lifestyle clinics £13,000 in 12 months (£1.5 mil from non-cash savings)	Intermediate: ↓ sickness absence equal to additional 141 full time employees 2001-2007; ↑ employee satisfaction from 26% surveyed in 2002 to 44% in 2006 (68% surveyed agreed good work-life balance in 2006, up from 57% in 2002). Financial: sickness absence related savings of £1.5m over three years.
Financial services	50,000	24 hour Counselling face-to-face / over phone. Maternity coaching. Running & Cycling challenges. Subsidised gyms & information on intranet.		Intermediate: ↓ sickness absence days; new employees absence rates cut by 1/3; 66% of employees believed counselling helped return to work rates.
Criminal justice organisation	400	Counselling, physiotherapy, healthy living. Education on smoking cessation, alcohol & stress. Yoga classes & therapy sessions.	£1,600,000 over 9 sites	Intermediate: ↓ sickness absence rates over duration of project.
Manufacturing	1500	Health & lifestyle screening. One-to-one sessions. Nutritional advice. Web based fitness programmes. 50% of employees used leisure centre; 90% registered with gyms on other sites.		Intermediate: improved health outcomes within workforce.
Criminal justice organisation	50,000	IT infrastructure implemented to identify sick staff. Outsourced health service provided advice. New policy developments		Intermediate: ↓ absence days by 25% 2002-2006; ↑ productivity Financial: estimated cost savings from reduced absence days of £38m 2002-2006

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Government department	90,000	Health & wellbeing site including advice & help on RTW and at work.		Intermediate: ↓ absence days by 8% (8.5 days to 7.8 days) 2005-mid 2007.
Financial services	60,000	Healthy living advice. On site flu jabs. Telephone and face-to-face assessment process.	Start up costs £75,000 On-going costs £1,250,000 p.a.	Intermediate: ↓ sickness absence; ↓ injury claims; ↓ musculoskeletal absence by 3% in 1 year; programme turnover increased leading to rapid case resolution.
Financial services	60,000			Intermediate: ↓ absenteeism by 3.7 pct points, ↓ staff turnover by 9.2 pct points; ↑ employee satisfaction (96% staff happy with new services). Financial: absence related cost savings of £561,000 when compared to industry; staff recruitment cost savings of £1.6m when compared to industry
Financial services	3000	Stress management, Counselling, healthy living		Intermediate: ↓ stress absence rate down by 80%, ↓ staff turnover by 20%; ↑ productivity estimated by 1% at no cost; ↑ employee satisfaction (72% agree organisation has positive environment); health outcome (5% less smokers). Financial: absence related cost savings of £250,000 in lost wages alone.
Manufacturing	7000	Healthy lifestyle, smoking cessation. Weight management & back / stress management.		Intermediate: health outcomes (18% staff improved diet, 14% staff improved lifestyle, 45% staff started exercise, 34% staff increased frequent activity, 82% more aware of health).

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Utilities	30,000	In-house and discounted physiotherapy scheme. Up to 90% utilisation of in house physiotherapy scheme.	Physio treatments £75 Physio assessments £35-50	Intermediate: ↓ absence rates; ↑ staff retention; ↑ health awareness & education amongst employees. Bottom line: ROI (6 months for call centre staff) 1:34
Business services	100	Workplace staff initiatives, gym discounts, healthy eating.	Fruit £548 p.a.; Water £2,318 p.a.; Insurance £9,995 p.a.; Massage £3,320 p.a.	Intermediate: ↓ absence rates; ↑ employee satisfaction (87% reported work environment as good; 1.73 sick days per employee per year
Utilities		All employees entitled to 45 minute health assessments with follow ups in company time. Lifestyle advice, health promotion. Discounted gyms and bike purchasing / memberships.		Intermediate: ↑ employee satisfaction (Staff survey reveals 45% improved opinion of workplace); positive health outcomes (47% motivated to change lifestyle; 87% more aware of their health).
Manufacturing	20,000	Ergonomic improvements, absence management (recording system). Mental health team.	Waste plant programme £26,000 Safety shoes programme £40 per person	Intermediate: ↓ absenteeism by 4.75 pct points (sick days down to 174 days p.a.); improved personal resilience evaluation (↓ fatigue 15%, ↑ mental clarity 7%, ↑ self esteem 14%, ↑ ergonomic awareness 15%. Financial: absence related cost saving of £196,320 (based on hourly staff rates).

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Utilities	15,000	Manual handling skills training by body-mechanics experts.	<p>£53,000 in first year for specialist equipment, ergonomics support etc. mostly one-off</p> <p>£2,000 p.a. estimated thereafter for occupational physiotherapy</p>	<p>Intermediate: ↓ annual rolling total of accidents by nearly 50% (79 to 41); ↓ proportion of total accidents caused by manual handling (70% to 25%)</p> <p>Financial: £19,000 p.a. anticipated in savings from halving days lost to manual handling injuries; ↓ in civil liabilities claims (currently £166,000 p.a.)</p> <p>Bottom line: break even expected in first 2 years.</p>
Manufacturing	10,000	Home-work balance, physiotherapy, counselling, return to work and health promotion programmes including screening.	Both standalone and ongoing projects – difficult to quantify	<p>Intermediate: ↓ absence levels (31% lower than CBI benchmark); ↑ concentration and productivity reported by employees; ↑ company profile; ↓ ergonomic-related cases (per million hours) by 53% (Jan-Jun 2003); ↓ number of work-related stress cases (scores for depression 20%-30%);</p> <p>Financial: absenteeism related savings £5m (compared with CBI data); ↓ health insurance premiums by £200,000 p.a.</p>
NHS organisation	7,000	Voluntary flu immunisation for staff	Vaccine £8,000; time spent receiving jab £15,500	<p>Intermediate: ↓ average number of days of sick leave among immunised group by 25% (cut absence by 540 staff days or over 2 staff years).</p> <p>Financial: absence related savings of £217,000 in 2001/2 (approx. £400/day, direct and indirect costs).</p> <p>Bottom line: ROI of 9.2.</p>

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Manufacturing	4,000	Rehabilitation of muscular skeletal disorder sufferers through expert support, prompt treatment of injuries and absence management to assist return to work.	£16,000 in 2001 (around 400 treatments)	Intermediate: ↓ average working days lost due to muscular skeletal disorders by over 80%. ; ↓ civil compensation claims; more positive health and safety culture (only 16% of referrals to physiotherapists had to take time off work). Financial: estimated benefits of £192,000 p.a. Bottom line: ROI of 12 achieved.
Construction/Engineering	3000	Health and Safety training for Certification Scheme for managers and supervisors	£2,000,000 approx. since 1997	Intermediate: ↓ time lost and time spent in accident investigation; ↓ staff turnover by 29 pct points; ↓ accident rate by 60%; ↑ competitiveness; ↑ staff morale; supply chain management improved. Financial: reduced staff turnover, recruitment, training and other associated costs estimated at £500,000 p.a.
Manufacturing	300	Wellness programme included safety levels target setting, training, observers, feedback, and empowering staff to identify and implement improvements.	£238,000 p.a. average running costs, including training costs, time, salary of co-ordinators and observers, IT software	Intermediate: ↓ occupational Safety & Health administration time; injury rate to 0 in 2002/3 from 3 per 200,000 hours worked in 1997/8; improved awareness and proactive approach in safety management. Financial: reduced steam leaks, energy consumption and Climate Change Levy taxes savings at £250,000 p.a.; ↓ insurance premiums by 32% in 2003 (programme contributed); ↓ operating costs as workers identify and rectify plant problems themselves. Bottom line: ROI > 1 estimated.

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Manufacturing	50	Programme addressing manual handling injuries, including more suitable equipment, training in prevention and exercise, early treatment and annual checkups.	Equipment £270,000 External osteopath £8,500 over 2 years	Intermediate: ↓ days lost through injury by 25%; ↑ staff retention; ↓ injuries (from 10 to 3 per year); ↓ time managing short-handed production teams; ↓ potential civil claims; improved company profile. Financial: production capacity saved by 1.5% previously lost through injury (↑ production £20,000 p.a.)
Public sector administrative services and associated trade union	70,000	Work-life balance project, including surveys and focus groups to identify staff needs, piloted new ways of working at work, trained staff in organising work flexibly and securely.		Intermediate: ↓ unit costs due to greater efficiency; ↑ employee satisfaction; ↑ company profile (improved relationships with union, workforce and prospective employees).
Retail	100	Focused on manual handling, including written safe work systems, training and monitoring.	Consultancy on training & developing safe practices £5,000 Staff time for training £19,500 (direct and indirect costs)	Intermediate: ↓ hours lost through manual handling injuries reduced to zero in 2003 from 521 in 2002; ↓ injuries to zero in 2003 from 6 in 2002; ↓ compensation claims; ↓ time spent on accident investigation and staff support. Financial: £15,500 savings in one year from fewer lost hours (£30/hour direct and indirect costs). Bottom line: ROI >1 expected in 1-2 years.
Manufacturing	450	Programme addressed health and safety performance, including greater reporting and communication, and monitoring remedial actions.		Intermediate: ↓ absenteeism by 7.5 pct points; ↓ injuries by 50% compared to hours worked; ↓ insurance claims to zero in 2002 from over 50 in 1997; ↓ unit costs by 40%; ↑ company profile in local community.

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Manufacturing	2,000	Programme aimed at improving health and safety performance, including improving management systems and procedures and providing training.	Consultancy to improve management systems £100,000 Manager training £75,000	Intermediate: ↓ days lost to injuries by 73%; ↓ reportable injuries by 61%; ↓ overall accident rate by 64%; Financial: £100,000 p.a. annualised savings from reduced days lost since 1997; ↓ employee insurance claims by 73%; ↓ rate of increase in Employers Liability Insurance premiums.
Construction/ Engineering	7,000+	Management of health and safety, including bonuses linked to safety targets, providing training and information, improving management systems and benchmarks.		Intermediate: ↑ company profile and reputation (seen as employer of choice). Financial: Claims, injuries and delays costs minimised
Business services	70	General programme encompassing manual handling improvements, health management and smoking cessation.		Intermediate: ↓ absenteeism; ↑ staff retention and morale; ↑ productivity; improved health and safety. Financial: ↓ overtime costs.
Utilities	12,000	Programme includes investigations and increased accountability and communications	Direct costs of safety training and mgmt £600,000	Intermediate: ↓ lost time injuries by 80%; ↑ staff morale; improved reputation with key stakeholders; improved health and safety culture, incident investigations and reporting. Financial: £4.5m savings over four years from less lost time to injuries; non-time lost injuries and civil claims cost savings.

Appendix 2b: UK case studies

Industry	Approximate size (employees)	Wellness Programme	Perceived Costs	Perceived Benefits
Manufacturing	5,000	Health and safety management programme.		Intermediate: ↓ lost days through accident injury by 36% from 1999/2000 to 2002/2003; ↓ reportable incident rate by 18.1 pct points 1999/2000 - 2003/2004; ↓ civil claims per staff member by 45%+; Financial: £100,000+ savings from reduced days lost; ↓ employers' liability insurance premium.
Construction/ Engineering	1,000+	Onsite medical room and nurse to provide first aid, medical advice and lifestyle checks.	No additional cost – part of normal site overhead.	Intermediate: ↓ lost time offsite seeking medical attention/advice; ↑ staff morale; ↓ accidents and accident frequency rates; positive health outcomes. Financial: £145,000 over ten months saved from recovered lost time.

Appendix 3: Wellness programmes by component

Wellness Component	Area of Intervention	Possible Interventions	Example of Best Practice
Health and Safety	Statutory policies	<ul style="list-style-type: none"> • Employee Assistance Programs • Setting goals to exceed all health laws • Spreading message of “zero tolerance” for accidents 	A utilities organisation re-branded their “health and safety” team to “health and well-being” to increase its appeal and reach among employees. This has helped create a culture of wellness within the organisation.
Management of ill health	Musculoskeletal Disorders	<ul style="list-style-type: none"> • Physiotherapy support • Ergonomic improvements to offices • Paid time off for doctors visits 	One manufacturing organisation had health and safety concerns regarding the musculoskeletal health of employees due to manual handling. As a result, they launched a joint proactive/reactive scheme to tackle MSDs. This includes early identification and treatment of MSDs acquired either at work or outside work. In addition, the company is in the process of making ergonomic improvements across their sites and redesigning the manual handling training programme.
	Mental health problems	<ul style="list-style-type: none"> • 24-hour freephone counselling • Solution focused brief therapy • Organised employee activities to encourage stress management 	A financial services company developed a stress management programme in partnership with its city council’s environmental office, which was rolled out to all staff. In addition, a counselling service is provided for staff on work and personal matters.

Appendix 3: Wellness programmes by component

Wellness Component	Area of Intervention	Possible Interventions	Example of Best Practice
Prevention/ Promotion	Health promotion	<ul style="list-style-type: none"> • Walking programmes • Bike to work scheme • Smoking cessation support • Health eating options • Pedometer challenges • Lunch n Learn sessions • Exercise taster classes • Massage/Reflexology • Free fruit • Discounted gym memberships 	A high street retailer offers a comprehensive health promotion package, including distribution of free pedometers, sponsorship of health events, healthy foods in canteens and smoking cessation support, coupled with a strict no smoking policy in all of its buildings. Their health promotion initiatives have also been successfully embedded and aligned into their overall corporate strategy and marketing campaigns.
	Primary care	<ul style="list-style-type: none"> • Onsite health checks/screening • Osteoporosis and prostate clinics • Health MOTs • Diabetes management/support • Men's' and Women's health days 	As part of one manufacturer's wellness programme, all employees have access to a free, confidential health check on site. As well as a comprehensive range of tests including blood pressure and cholesterol, employees are given a detailed resource pack, a personal report containing their clinical data and an opportunity to agree a personal action plan. In its first 12 months, 2,247 employees had health checks, approximately 1/3 of the total workforce and there is demand for more.

Appendix 3: Wellness programmes by component

Wellness Component	Area of Intervention	Possible Interventions	Example of Best Practice
Prevention/ Promotion	Time management support	<ul style="list-style-type: none"> • On-site crèche • Childcare vouchers • Maternity coaching • Time off for studies • Enhanced holiday entitlements • Holiday buy-back scheme • Work/life balance support • Flexible working 	<p>A utilities company launched a wellness campaign, which emphasised the importance of a positive work/life balance in order to maintain a healthy outlook. Benefits include additional company maternity pay, child care vouchers, on-site crèche, exam and study leave, accumulated leave scheme, enhanced holiday entitlements and holiday buy-back schemes. The aim of all these benefits is to offer a range of practical, meaningful benefits that will appeal to the widest audience and introduce an element of choice for employees. Employee survey results have indicated a positive response to the work-life balance initiatives.</p>
	Career development and training	<ul style="list-style-type: none"> • Career coaching and mentoring • Career development training and support • Management training, focusing on reducing absenteeism and stress management of staff 	<p>As part of one university's wellness initiative, they developed a holistic approach to wellness, which includes the provision of career advice to all staff, increased job security through the reduction of fixed contracts, training workshops on stress management and work/life balance and expanded management training opportunities. As a result, absenteeism and sick leave has decreased, recruitment and retention of staff have increased and there has been a marked improvement in general opinion about how the university cares for its staff.</p>

Appendix 4: Caveats to measuring economic impact

There is an abundance of literature and case studies that support the idea that wellness programmes have a positive impact on intermediate and bottom line benefits. However, there are also numerous references that suggest the evidence remains inconclusive. In terms of academic research methods, a number of concerns regarding the methodologies used have been raised by both proponents and opponents of the programmes alike. These include:

- *Self-selection*: As employees are given the choice of whether or not to participate in programmes, the formation and comparison of randomised groups is not possible, potentially weakening the experimental study design.
- *Short duration of evaluation*: Many evaluations cover a relatively short period of time (1 or 2 years). Subsequently, it can be difficult to determine whether employees permanently or only temporarily adopt new health behaviours and whether improvements in business outcomes are short lived.
- *Subjectivity of measures*: It can be difficult to measure productivity in some workplaces. Qualitative measures, where adopted to gauge the effectiveness of wellness programmes, do not provide quantifiable evidence and can be considered to be weak.

- *Diffusion of information*: Employees who participate in wellness programmes (i.e. the intervention group) and those who do not (i.e. the control group) often work in the same location. Should the control group change their behaviour according to “leaked” information, differences between the groups may be diminished and relative changes can become less significant.
- *Statistical issues*: The types of statistical measures applied to evaluations often assume a normal distribution of the data when, in fact, data may be skewed due to the voluntary nature of many programmes. As such, the results calculated using these measures might lead to erroneous conclusions.
- *Confounding factors*: Workplace wellness programmes are offered at work sites and not in controlled environments. Evidently, there are a number of intervening factors that might explain, to some extent, the results of an evaluation.

In recognition of these potential drawbacks in programme evaluation, we have included a wide range of both white (peer-reviewed) and grey (non-peer reviewed) literature in our analysis, as well as practical business case assessments, covering holistic and risk specific programmes. This approach enables us to draw rounded conclusions on the economic evaluation of worksite wellness programmes.

Appendix 5: References

1. Office for National Statistics (2007). Population Estimates. <http://www.statistics.gov.uk>
2. World Health Organisation Regional Office for Europe (2004). <http://www.euro.who.int>
3. Office for National statistics (2007). Population Estimates. <http://www.statistics.gov.uk>
4. Department for Work and Pensions (2007). Welfare Reform. <http://www.dwp.gov.uk/welfarereform/c4.asp>
5. The Telegraph (2006). Number of Women Working Hits Record. <http://www.telegraph.co.uk>
6. Department for Work and Pensions (2005). Opportunity and Security Throughout Life. <http://www.dwp.gov.uk>
7. Institute for Manufacturing. University of Cambridge. <http://www.ifm.eng.cam.ac.uk>. (Data from ONS website)
8. World Health Organisation Regional Office for Europe (2004). <http://www.euro.who.int>
9. University of Surrey (2006). Robens Centre for Health Ergonomics. <http://www.surreyergonomics.org.uk>
10. The Chartered Society of Physiotherapy (2007). <http://www.csp.org.uk>
11. Health and Safety Executive (2007). Why Tackle Work-Related Stress. <http://www.hse.gov.uk>
12. University of Surrey (2006). Robens Centre for Health Ergonomics. <http://www.surreyergonomics.org.uk>
13. Ryan and Crampin (2006). Time cost associated with smoking at work highlighted by baseline survey of employees participating in a workplace smoking cessation programme. Occupational Medicine 56:510. <http://occmed.oxfordjournals.org>
14. Health and Safety Executive (2005). Business loses 4.9 million days a year to work-related back pain - HSE launches campaign to make bad backs 'Better Backs'. <http://www.hse.gov.uk>
15. Health and Safety Executive (2006). Absence costs UK economy £12 billion every year. <http://www.hse.gov.uk>
16. Health and Safety Executive (2006). A fifth of British workers concerned about work-related stress. <http://www.hse.gov.uk>
17. Institute of Directors and The Health and Safety Commission (2006). Leading Health and Safety at Work. <http://www.corporateaccountability.org>
18. BUPA (2005). BUPA Wellness Launches New Health at work service for SMEs. <http://www.bupa.co.uk>
19. Hemp, P (2004) Presenteeism: At Work – But Out of it. Harvard Business Review
20. Main, C; Glozier, N; Wright, I (2005). Validity of the HSE stress tool: an investigation within four organizations by the Corporate Health and Performance Group. Occupational Medicine 2005;55:208–214
21. Sinclair. Creating a Well Workforce: A Case Study. The Institute for Employment Studies. <http://www.employment-studies.co.uk/pdflibrary/op3.pdf>
22. Institute Gesundheit & Arbeit (2004), Aldana (2001) and Pelletier (1999). See Appendix 2b.
23. Lahiri (2005) and Amick & DeRango (2003) See Appendix 2b

This report has been prepared for and only for the Department for Work and Pensions in accordance with the terms of our engagement letter dated 12th December 2007 and for no other purpose. We do not accept or assume any liability or duty of care for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

This publication has been prepared for general guidance on matters of interest only, and does not constitute professional advice. You should not act upon the information contained in this publication without obtaining specific professional advice. No representation or warranty (express or implied) is given as to the accuracy or completeness of the information contained in this publication, and, to the extent permitted by law, PricewaterhouseCoopers LLP, its members, employees and agents accept no liability, and disclaim all responsibility, for the consequences of you or anyone else acting, or refraining to act, in reliance on the information contained in this publication or for any decision based on it.

© 2008 PricewaterhouseCoopers LLP. All rights reserved. 'PricewaterhouseCoopers' refers to PricewaterhouseCoopers LLP (a limited liability partnership in the United Kingdom) or, as the context requires, other member firms of PricewaterhouseCoopers International Limited, each of which is a separate and independent legal entity.

Design 0800052pic(vcl)