



Information sheet: 2/99/EMSU

(Last updated September 1999)

Economic Impact: Revised data
from the self-reported work-related illness
survey in 1995 (SWI95)

Survey of self-reported work-related illness

Re-analysis of the economic impact of work-related illnesses

Introduction

In the original report^[1] of the survey of Self-reported Work-related Illness (SWI), tables and detailed commentary were given on the number of people who took time off work or were forced to leave their job because of their illness. Since this report was published further analysis of this data has been requested by the European Commission, to compare with similar data they had collected, and by HSE economists, to produce estimates of the costs to the British economy^[2] of work-related illnesses. During this further analysis a fault with the electronic routing of the days lost questions in the original questionnaire was discovered. This fault resulted in around one hundred respondents not being asked the days lost questions when they should have been. In the original report these sample cases have been treated as “unclassified” and it was assumed that they did not take any time off work because they had not responded to the questions. To try and account for these cases the estimated amount of time they took off work has been calculated using statistical imputation methods. During this re-analysis further improvements to the estimates have been made, including an adjustment for part timers that was made to bring the figures into line with those used by HSE economists to calculate the costs to the British economy of work-related illnesses. Full details of the revisions and imputation methods can be found in annex one.

Adjustments have also been made to tables showing the number of people who were forced to leave their job because of their work-related illness. These adjustments were mainly made to remove duplicate cases that had not been identified in the original report. Full details of these revisions can be found in annex 3.

Variability of the days lost estimates

Estimates based on sample surveys are subject to a margin of error. The main thing that determines the width of the margin of error around a given estimate is the number of sample cases it is based on. Errors on estimates involving some form of measurement of individuals (eg days of sick leave) are also affected by the variability of the measure from person to person. All errors are also affected by aspects of the survey design, in particular whether the sample is stratified or clustered. The Labour Force Survey (which is used to identify cases of work-related illness) is both stratified (by post code sector) and clustered (at household level).

The sampling errors in this paper (and the original report) are expressed as 95% confidence intervals. These represent a range of values which has a 95% chance of containing the true value. Tests of statistical significance have been used to assess whether or not differences between different regional, occupational or disease groups could be due to sampling error alone.

The days lost estimates are based on all respondents who worked at some time in the previous year. The overall days lost estimate is, therefore, based on 771 cases. Certain disease groups and occupations have been grouped together in the days lost tables to help increase the sample size and hence improve the precision of the estimates. These groupings were not used in the original SWI report but should be used in future since they give a more reliable estimate.

Summary of revisions:

The revisions have resulted in the estimated number of days lost decreasing by 8% from 19.5 million to **18 million**. The main reason the estimates have been revised downwards has been the adjustment for part timers (the adjustment to account for “unclassified” sample cases resulted in an increase to the number of days lost). A summary table of all the revisions can be found in annex one.

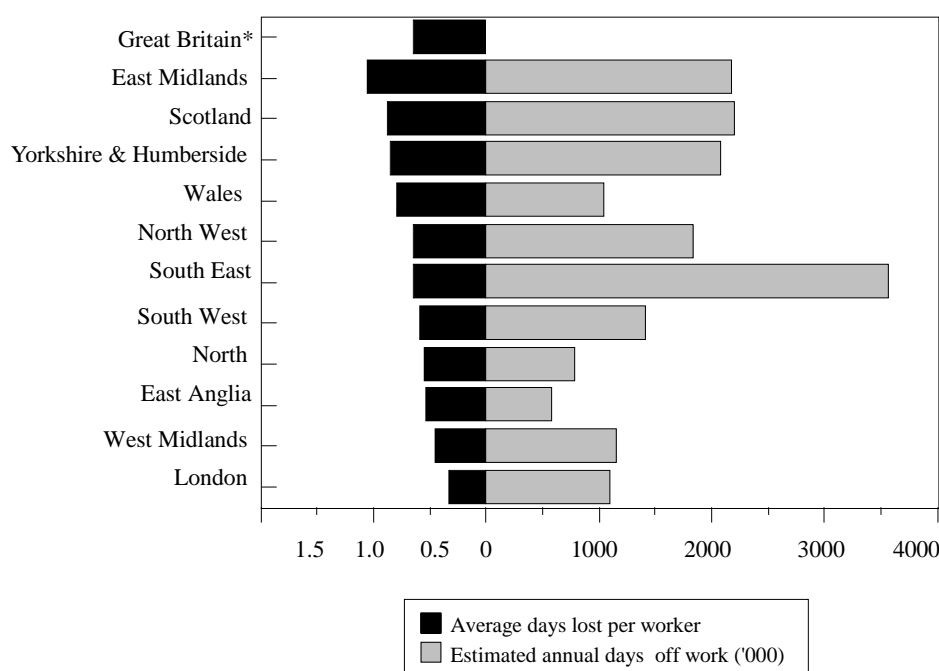
The number of days lost for Scotland have been revised downwards which has resulted in it no longer being the region with the highest central estimate of average days lost. However, the revised figures for Scotland are within the 95% confidence interval of the original central estimates.

The following is a full set of revised tables and the corresponding revised commentary.

ECONOMIC IMPACT

Table 85 summarises the economic status and the amount of time taken off work due to a work-related illness. An estimated 721 000 (CI: 647 000 to 794 000) individuals did not work in the last 12 months but continued to suffer from an illness related to a previously held job. An estimated 672 000 (CI: 605 000 to 738 000) individuals suffered from some illness in the previous year but not to the extent of needing to take time off work, whereas an estimated 624 000 (CI: 560 000 to 689 000) individuals took some time off work in the previous year and an estimated 34 000 (CI: 18 000 to 49 000) took more than six months off work due to a work-related illness.

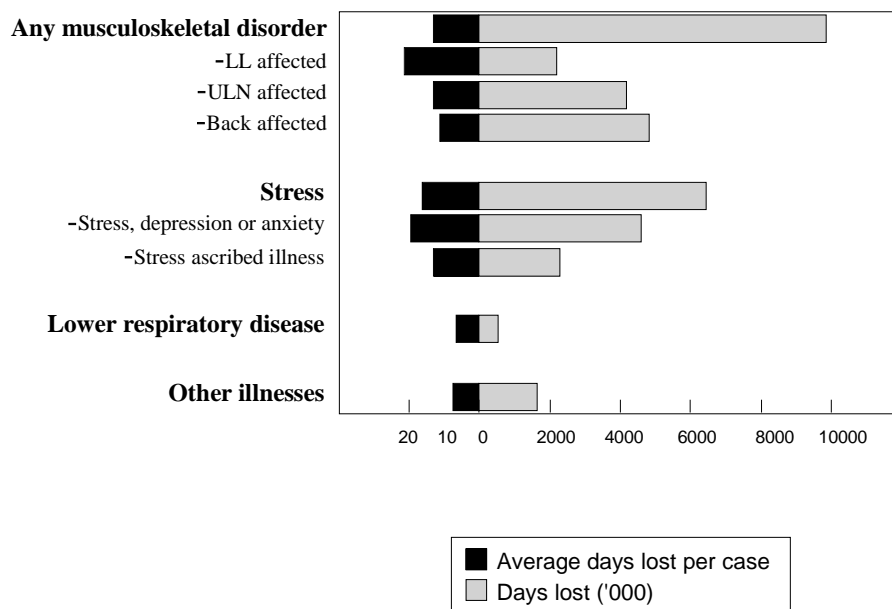
Figure 10: Estimated annual days off work due to a work-related illness and average days lost per worker, by region



* The estimated annual days off work is too large (18 million) to be conveniently shown in this figure

The regional distribution of the estimated number of days lost, along with the average number of days lost per worker are given in Table 86 and Figure 10. The table and graph include all those people who worked in the last 12 months. Days lost per worker is the number of days lost per person who has worked in the last 12 months, including people without a work-related illness. An estimated 624 000 (CI: 560 000 to 689 000) individuals took an estimated total of 18 million (CI: 14.5 million to 21.4 million) days off work. Overall, workers on average, took 0.65 (CI: 0.53 to 0.77) days off work due to a work-related illness. People in the East Midlands took more time off work per worker, 1.05 days (CI: 0.35 to 1.75), and people in three other regions took more time off work than the national average. These regions were: Scotland 0.88 days per worker (CI: 0.39 to 1.37), Yorkshire and Humberside 0.85 days per worker (CI: 0.21 to 1.49) and Wales 0.80 days per worker (CI: 0.20 to 1.40), however none of these rates are, statistically significantly higher than the rate for Great Britain. The total number of days lost was largest in the South East (excluding London) where an estimated 3.6 million days (CI: 2.1 million to 5.1 million) were lost in the last 12 months due to a work-related illness.

Figure 11: Estimated annual days off work due to a work-related illness and average days lost per case, by disease group



NB Some individuals had more than one type of illness or had a musculoskeletal disorder affecting more than one site. The days lost for these sample cases have been counted in all the relevant illness groups that resulted in the individual taking time off work.

The estimated number of days lost in the last 12 months and the average number of days lost per case (people with a work-related illness), by disease group, are shown in Table 87 and Figure 11. Individuals who took time off (the same time period) because of two different types of illnesses are counted in both illness categories. Musculoskeletal disorders were responsible for the largest number of days lost, 9.9 million (CI: 7.2 million to 12.5 million), followed by stress, 6.5 million (CI: 4.4 million to 8.5 million). On average, each individual took an estimated 13.86 days (CI: 11.40 to 16.32) off work because of their condition or conditions. Individuals suffering from a musculoskeletal disorder that affected their lower limbs, took the most number of days off work per case, taking on average 21 days per case (CI: 8.40 to 33.98). Individuals suffering from stress, depression or anxiety also took a higher than average number of days off per case but neither of these rates are, statistically, significantly higher than the overall average. The 'other illness' category includes the following disease groups which were shown separately in the SWI 95 report: 'deafness, tinnitus or other ear conditions'; 'skin disease'; 'headache or eyestrain'; 'vibration white finger'; 'pneumoconiosis'; 'trauma' and 'other diseases'. Individuals suffering from a skin disease took a similar average number of days off per case as was reported in the 1990 SWI survey^[3]. Based on this average number of days off per case and the prevalence estimate of the number of people who worked in the last year and had suffered from a skin disease an estimated half million days were lost due to skin disease in 1995 (a more specific estimate can not be provided as the sample numbers in the 1995 survey are too small). Individuals suffering from: 'deafness, tinnitus or other ear conditions', 'headache or eyestrain' or pneumoconiosis tended to take a lower than average number of days off work per case but the sample size for each of these individual disease groups is too small to give precise estimates for the individual disease groups.

The amount of time individuals took off work by occupation is shown in Table 88. The occupation relates to the respondent's current or most recent job held in the previous 12 months and may be a different job to the one that caused their illness. The table also shows the average number of days lost

due to a work-related illness, per worker and includes everybody who worked in the last 12 months, regardless of whether they had a work-related illness. On average, every worker lost an estimated 0.65 (CI: 0.53 to 0.77) of a day's work due to a work-related illness, in the 12 month period. Occupations have been ordered by the days lost rate and combined into groups so that the average rate for the groups of occupations are statistically different (see annex two for a full description of how occupations have been grouped). The occupation rates fall into six groups, with the average days lost per worker ranging from 0.05 days (CI: 0 to 0.1) to 1.87 days (CI: 1 to 2.74). Almost two thirds of the days lost were taken by workers in the first two occupation groups. The group with the highest average number of days lost per worker is made up of coal miners; nurses; security and protective services (excluding armed forces); construction and farming fishing and forestry.

Table 89 shows the number of people who were forced to change their job because of their work-related illness, by their current economic status. Half of those who were forced to change their job in the last year are now in employment compared to only 14% of those who were forced to change their job more than a year ago. Of those who left their job more than a year ago, half are now long term sick/disabled and more than a quarter have retired.

Tables 90 and 91 show the number of people who were forced to change their job in the last year by disease group and by occupation. A lot of the proportions in these two tables are based on small numbers of sample cases and should be regarded with caution when making comparisons. The diseases with the highest proportion of sample cases resulting in a forced job change were musculoskeletal disorders affecting two or more sites; lower respiratory diseases; trauma; stress, depression or anxiety and skin disease. Overall 8% of the individuals with a work-related illness who had worked in the last year have been forced to change their job. In Table 91 the percentages given are not true percentages since the occupations given in columns (a) and (b) are slightly different. In column (a) the occupation given is for the current/most recent job for all cases who worked in the last year. In column (b) the occupation is the occupation that caused the illness for all cases who had a forced job change in the last year. For most cases with a forced job change these two occupations will be the same but for some they will have moved into a different occupation since they left the job causing the complaint. Although the percentages can not be interpreted as the true percentage in the population they do indicate the occupations that had the greatest risk of resulting in a forced job change in the last year. Occupations with the highest proportion of cases forced to change their job in the last year tended to be occupations involving female workers such as 'hair and beauty', textile processing, nursing, care work and cleaning.

Tables 92 and 93 show the percentage of people who have ever had to change their job due to a work related illness by disease and occupation. Over a fifth of people with a work-related illness have been forced to leave the job that caused the complaint. Over two thirds of people with a musculoskeletal disorder affecting the 'back and upper limbs or neck, lower limbs or whole body' have been forced to change their job. Three disease groups that had a lower than average proportion of cases that were forced to change their job in the last year (Table 90) have a higher than average proportion of cases who have ever had to change their job. These diseases are: stress ascribed heart disease hypertension and stroke (39%); pneumoconiosis (35%) and stress ascribed other conditions (26%). This reflects the longer duration of these diseases showing that people are still suffering from these conditions even though they have changed their job.

Table 93 shows the percentage of people who have ever been forced to change their job by occupation. Manual occupations tend to have a higher proportion of people who have ever been forced to change their job with the main exception of nursing which is classed as non manual but has the highest proportion of people (40%) who have ever been forced to change their jobs. Other occupations with a high proportion of people who have left their job because of their work related illness are: security and protective services (excluding armed forces) (35%); road transport operatives (34%); care workers (33%) and cleaners (32%).

Table 85: Prevalence of work-related illness by economic activity and working days lost

Economic impact category	Prevalence estimate (thousands)			Percentage change to the published central estimate
	central	95% C.I.		
		lower	upper	
No job in last 12 months				
Retired	313	265	361	1
Inactive	408	353	462	2
With job in last 12 months				
Nil days lost	672	605	738	17
1 day or less	37	20	53	<i>n/a</i>
2-5 days lost	154	122	186	<i>n/a</i>
6-10 days lost	112	85	140	5
11-20 days lost	95	72	119	15
21-40 days lost	108	83	134	<i>n/a</i>
41-65 days lost	42	26	57	<i>n/a</i>
66-130 days lost	42	26	58	-12
131-260 days lost	34	18	49	-21
All persons	2017	1897	2136	0

Note: Figures in italics are estimates based on 30 or fewer sample cases

n/a: Not applicable

Table 86: Estimated annual days off work due to a work-related illness and average days lost per worker, by region

Region	Days lost (thousands)			Average days lost per worker*			Percentage change to the published central estimates for days lost
	95% C.I.			95% C.I.			
	central	lower	upper	central	lower	upper	
North	792	268	1315	0.55	0.19	0.91	1
Yorkshire and Humberside	2087	506	3668	0.85	0.21	1.49	-17
North West	1840	926	2755	0.64	0.32	0.95	-11
West Midlands	1155	435	1876	0.45	0.17	0.72	-9
East Midlands	2177	722	3633	1.05	0.35	1.75	0
South West	1414	648	2179	0.59	0.27	0.90	-7
East Anglia	589	199	979	0.53	0.18	0.88	12
South East (excluding London)	3565	2055	5075	0.64	0.37	0.91	1
London	1103	379	1827	0.33	0.12	0.55	31
Wales	1043	259	1827	0.80	0.20	1.40	-4
Scotland	2202	967	3438	0.88	0.39	1.37	-31
Great Britain (All persons)	17967	14500	21400	0.65	0.53	0.77	-8

* Working population in last 12 months

Table 87: Estimated annual days off work due to work-related illness, by disease group

Disease group	Days lost (thousands)			Average days lost per case+		
	95% C.I.			95% C.I.		
	central	lower	upper	central	lower	upper
Stress	6465	4418	8512	16.16	11.49	20.82
Stress, depression or anxiety	4593	2724	6462	19.57	12.39	26.76
Stress ascribed illness	2284	1287	3281	13.02	7.81	18.23
Lower respiratory disease	535	136	933	6.74	2.05	11.43
Musculoskeletal disorders	9862	7224	12500	13.08	9.80	16.35
Back affected	4820	3085	6555	11.39	7.54	15.24
ULN affected	4162	2565	5758	13.25	8.49	18.00
LL affected	2204	741	3668	21.19	8.40	33.98
Other illnesses #	1654	778	2529	7.29	3.67	10.92
All persons *	17967	14500	21400	13.86	11.40	16.32

* Days lost sum to more than 17967 thousand because individuals who took the same time off due to more than one type of illness or due to a musculoskeletal disorder affecting more than one site are counted in each illness group.

+ "case" refers to persons suffering from a particular type of work-related illness.

The "Other illnesses" category includes the following disease groups which were used in the SWI95 report: Deafness, tinnitus or other ear conditions; skin disease; headache or eyestrain; vibration white finger; pneumoconiosis; trauma and other diseases.

Cases reporting: deafness, tinnitus or other ear conditions; headache and eyestrain or pneumoconiosis take a lower number of days off work than the overall average but numbers are too small to give a precise estimate.

Cases reporting skin disease take a similar average number of days off work to the estimate reported in the 1990 SWI survey. Based on these results sufferers of skin disease took around half million days off work in 1995 (a more specific estimate can not be provided as the sample numbers in the 1995 survey are too small).

Table 88: Annual days off work due to work-related illness, by occupation group

Occupation group	Days lost (thousands)			Average days lost per worker +			Workforce : Estimated number of people who worked at some time in the last year (thousands)		
	95% C.I.			95% C.I.			central	lower	upper
	central	lower	upper	central	lower	upper			
Coal mining							14	4	24
Nursing							704	647	760
Security & protective services (excl. armed forces)	5128	2724	7533	1.87	1.00	2.74	461	414	509
Construction							943	875	1010
Farming, fishing & forestry							621	561	682
Material moving and storing							503	454	553
Other personal services							232	198	266
Other processing							1275	1197	1353
Road transport operatives	6576	4486	8667	0.85	0.58	1.12	800	738	861
Metal processing							1328	1249	1407
Electrical processing							546	495	597
Clerical							3077	2958	3196
Care workers							1142	1072	1212
Literary, artistic & sports							485	435	536
Miscellaneous	1827	1139	2516	0.53	0.34	0.73	116	92	139
Repetitive assembly, inspection							639	583	694
Teaching							1037	964	1110

continued

Table 88: continued

Occupation group	Days lost (thousands)			Average days lost per worker +			Workforce : Estimated number of people who worked at some time in the last year (thousands)		
	95% C.I.			95% C.I.			central	lower	upper
	central	lower	upper	central	lower	upper			
Other transport and machinery operatives							240	206	274
Other education & welfare							904	838	971
Selling							2023	1926	2120
Managerial	3259	2234	4284	0.37	0.26	0.49	2812	2696	2928
Secretarial							1253	1181	1325
Science & engineering							1462	1380	1544
Armed forces							137	111	163
Professional & related supporting management							2203	2100	2306
Cleaners	1151	694	1609	0.26	0.16	0.36	1003	936	1069
Catering							1114	1043	1186
Hair & beauty	24	0	50	0.05	0.00	0.10	180	151	210
Textile processing							331	291	372
All persons	17967	14500	21400	0.65	0.53	0.77	27640	27300	28000

+ Working population in last 12 months. Average days lost given for groupings of occupations chosen so that the group rates are significantly different (see annex 2 for a full description of how occupations have been grouped).

Table 89: Cases leading to forced job change by current economic activity status

Current economic activity status	Cases in sample		Percentage change to the published number of cases
	Number	Percentage	
With job in last 12 months			
In work or training	32	52	-11
Unemployed:			
temporarily sick	1	2	-50
other	9	15	-18
Long term sick/disabled	13	23	0
Retired and other inactive (not seeking work)	5	9	0
Total	60		-10
No job in last 12 months			
In work or training	30	14	-6
Unemployed:			
temporarily sick	4	2	0
other	10	5	0
Long term sick/disabled	100	50	-22
Retired and other inactive (not seeking work)	59	28	-11
Total	203		-15

Note: Percentage of cases in the sample are based on weighted data

Table 90: Cases leading to forced job change in last year by disease group

Disease	Sample cases			Percentage change to the published estimate of the percentage of cases forced to change job
	Total who worked at some time in last year (a)	Number forced to change job (b)	Percentage (b)/(a)	
Individual disease groups (mutually exclusive)				
ULN & LL	9	2	23	0
Back & ULN & LL or whole body	5	1	22	16
Trauma	17	3	20	5
Other lower respiratory disease or unspecified*	18	3	18	0
Asthma & chronic bronchitis symptoms	9	1	15	0
Stress, depression or anxiety	145	18	13	1
Back & ULN	21	3	13	0
Back & LL	12	1	10	0
Asthma symptoms only	14	1	10	0
Skin disease	26	2	9	0
ALL PERSONS	771	60	8	-8
Back	212	16	8	0
Stress ascribed diseases of the digestive system	29	1	6	0
Stress ascribed other conditions	51	3	5	0
Upper limbs or neck (ULN)	158	9	5	1
Stress ascribed heart disease, hypertension or stroke	34	2	5	0
Lower limbs (LL)	34	2	5	2
Internal	18	1	5	0
"Other" diseases	27	1	5	0
Headache or "eyestrain"	26	1	3	0
Deafness, tinnitus or other ear conditions	32	-	-	0
Vibration white finger	12	-	-	0
Pneumoconiosis	-	-	-	0
Combinations of lower respiratory categories				
Any lower respiratory	41	5	14	0
Chronic bronchitis symptoms	10	1	14	0
Asthma symptoms	23	2	12	0
Combinations of musculoskeletal conditions				
Any musculoskeletal disorders	450	35	8	1
LL affected	60	6	10	2
Back affected	249	21	9	0
ULN affected	193	15	7	1

Note: Percentages are based on weighted data

A lot of proportions in this table are based on small sample numbers and should be regarded with caution when making comparisons

* Includes 2 sample cases reporting chronic bronchitis symptoms

Table 91: Cases leading to forced job change in last year by occupation group to which illness was ascribed

Occupation groups*	Sample cases		Percentage (b)/(a)	Percentage change to the published estimate of the percentage of cases forced to change job
	Total who worked at some time in last year (a)	Number forced to change job (b)		
Armed Forces	3	1	38	0
Hair & beauty	5	1	23	0
Textile processing	7	1	21	10
Nursing	33	7	19	-20
Care workers	41	7	18	-11
Cleaners	24	4	17	-20
Other processing	47	7	16	0
Construction	40	5	14	-12
Other transport & machinery operatives	6	1	14	0
Security & protective services (excl. Armed Forces)	16	2	13	0
Metal processing	41	4	11	0
ALL PERSONS	771	60	8	-8
Teaching	49	4	7	0
Farming, fishing & forestry	27	2	7	0
Professional	49	3	7	2
Literary, artistic & sports	12	1	6	-50
Catering	16	1	5	-6
Material moving & storing	16	1	5	0
Clerical	80	4	5	1
Managerial	67	3	4	-22
Secretarial	26	1	4	0
Selling	40	-	-	0
Science & Engineering	30	-	-	0
Other education & welfare	30	-	-	0
Road transport operatives	22	-	-	0
Repetitive assembly, inspection	18	-	-	0
Electrical processing	14	-	-	0
Other personal services	6	-	-	0
Miscellaneous	4	-	-	0
Coal mining	2	-	-	0

Note:

Percentages are based on weighted data

A lot of proportions in this table are based on small sample numbers and should be regarded with caution when making comparisons

** If same job caused more than one illness, case only counted once*

(a) current / most recent job for all cases who worked in the last year

(b) occupation that caused the complaint

Table 92: Cases leading to forced job change by disease group

Disease	Sample cases		Percentage change to the published estimate of the percentage of cases forced to change job	
	Total (a)	Number forced to change job (b)		Percentage (b)/(a)
Individual disease groups (mutually exclusive)				
Back & ULN & LL or whole body	27	17	68	0
Stress ascribed heart disease, hypertension or stroke	63	24	39	0
Pneumoconiosis	13	4	35	0
Asthma & chronic bronchitis symptoms	42	14	35	0
Back & ULN	38	15	34	0
Asthma symptoms only	40	11	29	0
Trauma	21	5	26	0
Stress ascribed other conditions	69	19	26	0
Back & LL	24	5	25	0
Back	293	69	24	0
Stress, depression or anxiety	171	38	23	0
ALL PERSONS	1188	263	22	-14
Upper limbs or neck (ULN)	225	48	21	-2
"Other" diseases	49	9	20	0
ULN & LL	21	4	18	0
Skin disease	35	5	17	0
Other lower respiratory disease or unspecified*	31	4	14	0
Stress ascribed diseases of the digestive system	33	3	11	0
Lower limbs (LL)	58	7	11	0
Internal	23	2	9	0
Vibration white finger	19	1	6	0
Deafness, tinnitus or other ear conditions	99	5	5	0
Headache or "eyestrain"	30	1	3	0
Combinations of lower respiratory categories				
Any lower respiratory	113	29	27	0
Chronic bronchitis symptoms	44	14	34	0
Asthma symptoms	82	25	32	0
Combinations of musculoskeletal conditions				
Any musculoskeletal disorders	679	161	24	-4
Back affected	372	99	27	-2
ULN affected	302	80	26	0
LL affected	124	28	23	0

Note:

Percentages are based on weighted data

Some proportions in this table are based on small sample numbers and should be regarded with caution when making comparisons

** Includes 2 sample cases reporting chronic bronchitis symptoms*

Table 93: Cases leading to forced job change by occupation group to which illness was ascribed

Occupation groups*	Sample cases		Percentage (b)/(a)	Percentage change to the published estimate of the percentage of cases forced to change job
	Total (a)	Number forced to change job (b)		
Nursing	63	26	40	-9
Security & protective services (excl. Armed Forces)	21	7	35	0
Road transport operatives	38	13	34	-16
Care workers	54	17	33	-14
Cleaners	37	12	32	-19
Textile processing	25	7	29	-32
Other processing	92	24	28	-10
Literary, artistic & sport	17	5	27	-14
Construction	69	17	26	-19
Coal mining	33	8	22	-20
Teaching	60	14	22	-15
ALL PERSONS+	1188	263	22	-14
Catering	21	5	21	0
Material moving & storing	28	6	20	-26
Miscellaneous	10	2	20	0
Metal processing	100	19	20	-16
Farming, fishing & forestry	35	7	19	0
Repetitive assembly, inspection	31	6	18	-12
Armed Forces	26	5	18	0
Clerical	93	17	18	-3
Professional	58	9	17	-19
Managerial	87	13	16	-14
Other transport & machinery operatives	13	2	15	-34
Hair & beauty	7	1	15	0
Other personal services	6	1	14	-50
Secretarial	39	5	14	-21
Other education & welfare	30	4	14	-22
Electrical processing	27	3	11	-23
Selling	47	3	6	0
Science & engineering	37	2	5	-30

*Note:**Percentages are based on weighted data**Some proportions in this table are based on small sample numbers and should be regarded with caution when making comparisons.*** If same job caused more than one illness, case only counted once**+ Includes cases whose occupational group is missing*

ANNEX 1

REVISIONS TO THE SWI95 DAYS LOST TABLES

The following sections describe the four amendments that have been made to the days lost figures and why it was necessary to make these amendments:

1. Sample cases who have not worked in the last year

Three sample cases who were asked the days lost questions were originally counted as having worked in the last year. A closer examination of these cases revealed that they had given contradictory responses when questioned about whether they had worked in the last year in the SWI survey and the Labour Force Survey (the survey from which sample cases of work-related illness were identified). After a re-examination of all the data for these three sample cases it was felt that they had probably not worked in the last year and they were excluded from all the relevant tables.

The net effect of this revision was a **fall** in the days lost figure of **687,000**.

2. Converting calendar days into working days

Sample cases were asked how much time they had taken off work and to state what units the time was measured in i.e. days, week, months or years. For anyone who responded in weeks, months or years the time was converted to the number of working days. It was assumed that anyone who had responded in days had actually given working days. After closer examination of the data we found that 6 sample cases had actually said that they had taken 365 days off work i.e. a full calendar year. For all other cases we have used a working year of 260 days (i.e. 52 weeks x 5 days). The days lost for these six sample cases have now been adjusted to working days.

The net effect of this revision was a **fall** in the days lost figure of **994,000**.

3. Sample cases not asked the days lost questions

94 sample cases were not asked the days lost questions when they should have been. This was due to a routing error in the questionnaire. All those sample cases who were not asked the questions were sample cases who had worked at some time in the last year but were not working at the time of the interview and had NOT left their last job in 1994.

A further seven sample cases did not respond when asked the days lost questions.

In the published SWI report these 101 sample cases have been treated as “unclassified” and it was assumed that they did not take any time off work because they had not responded to the questions.

Imputed values have now been introduced for these sample cases in the revised estimates, providing a better estimate of the time taken off work by these individuals. The imputation process is described below: Imputation

The estimated number of days lost which each of these “unclassified” sample cases took off work has been based on the average days lost for each disease group. This imputed estimate was further adjusted to account for:

i) the amount of time worked in the year prior to the interview. For example if a sample case had a skin disease which on average led to 10 days off work and they only worked for 6 months of the previous year then their imputed value would be 5 days.

ii) “unclassified” sample cases who were forced to leave their job, in the last year, because of their illness and reported being long term sick (at interview). It was assumed that these cases took more time off work than other sample cases. Therefore, for all these sample cases the imputed value has been taken as double the average number of days lost.

This imputation process results in treating all “unclassified” sample cases as taking time off work. From the original published estimates (table 85 in the SWI95 report^[1]) we know that around half of the people suffering from a work-related illness, who had worked at some time in the last year, did not take any time off work. If we had asked the “unclassified” sample cases the days lost questions we would expect around half of them to have said that they had not taken any time off work. Since the imputation process allocates an average number of days lost (depending on the disease type) to each “unclassified” sample case, none of them will have zero imputed days lost. We would also expect that if we had asked the “unclassified” sample cases the days lost questions a proportion of them would have said that they had taken more days off work than the average number of days lost which has been imputed. Therefore, the prevalence estimates for the “unclassified” sample cases needs to be redistributed across a range of days lost in order to produce the estimates shown in the revised table 85.

This has been achieved by redistributing the prevalence estimate for “unclassified” sample cases between 0 days lost and the number of days lost which when weighted results in the originally imputed number of days lost.

For example: an “unclassified” sample case with a back complaint had, say, 20 imputed days lost and a weight of 1000, resulting in a weighted estimate of 20,000 days lost. The proportion of people who took no time off for a back complaint was, say, 50%. The weighted value for this sample case is then distributed across the range of days lost by applying a weight of 500 (50% of the original weight) to 0 days lost and a weight of 500 to 40 days lost, which results in a combined estimate of 20,000 days lost.

The net effect of this revision was a **rise** in the days lost figure of **2,675,000**.

4. Adjusting for part-time workers

In the original report part-time workers have been treated exactly the same as full-time workers eg. if they reported taking a week off work they were assumed to have taken five days off work. HSE economists needed to adjust the days lost to account for the shorter hours worked by part timers. The adjustment for part-timers that they used has been incorporated into the figures presented in this paper.

The adjustment for part timers is based on their usual working hours. For every sample case in the SWI who took time off work and reported working part-time (in their current/most recent job) an adjustment was made to the days they reported taking off work. The adjustment consisted of multiplying the number of reported days off work by the ratio:

usual hours the individual worked per week / average number of hours worked per week for all full-time workers.

The average hours worked per week for full-time workers was calculated using the Labour Force Survey and was estimated to be 40.7.

The net effect of this revision was a **fall** in the days lost figure of **2,542,000**.

SUMMARY OF AMENDMENTS TO THE TOTAL NUMBER OF DAYS LOST:

Published days lost estimated:	19,515,000
Increase due to imputed days lost:	+2,675,000
Decrease due to cases who had not worked in last year:	- 687,000
Decrease due to converting calendar days to working days:	- 994,000
Decrease due to adjustment for part timers:	- 2,542,000
Revised days lost estimate:	17,967,000

ANNEX 2

OCCUPATIONAL GROUPINGS USED IN THE DAYS LOST TABLES

The average number of days lost per worker is not shown for individual occupations, but the occupations are ordered by the days lost rate and combined into groups so that the average rates for the groups of occupations are significantly different. The groupings were identified by CHAID^[4], and represent, in a statistical sense, the best available grouping of the occupations. No occupation in a group has a rate that is significantly different from the group average rate; and moving any occupation from its assigned group to another group will increase the variability of its new group by more than it decreases the variability of its original group.

The resulting groupings represent a statistically stable picture of the range of rates of days lost in question across different occupations. The makeup of the groups is less certain, although they represent the best grouping of the particular observations made in the present survey, a repeat of the survey on a different sample might well provide a different grouping in detail, particularly for the smaller occupations.

ANNEX 3

REVISIONS TO THE SWI95 FORCED JOB CHANGE TABLES

Two amendments have been made to the tables showing the proportion of people with a work-related illness who were forced to change their job because of their illness (tables 89 to 93). Tables 90 and 91 show only sample cases who have been forced to change their job in the last year and tables 92 and 93 show all sample cases who have been forced to change job. The following is a description of the two amendments and why they have been made.

1. Duplicates

Forty four sample cases were counted twice in the forced job change tables when they should not have been. The sample cases that were double counted were people who had two illnesses, both of which resulted in the individual leaving their job. These duplicates have now been removed. Within the tables broken down by illness, these sample cases are counted in both relevant illness categories, but only once in the total. Of these sample cases which have been double counted, seven had worked in the last year and have been removed from tables 90 and 91.

2. Cases who have not worked in the last year

Five sample cases (three of who were asked the days lost questions - see annex 1 section 1) were originally counted as having worked in the last year. After closer examination of the data these sample cases have now been classified as not working in the last year

References:

- [1] Jones J R et al. Self-reported work-related illness in 1995. HSE books 1998 ISBN 0-7176-1509-X.
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- [3] Hodgson J T et al. Self-reported work-related illness. RP33 HSE books 1993 ISBN 0-7176-0607-4.
- [4] SPSS inc. Answer tree 2.0 users guide. 1998 ISBN 1-56827-254-5.

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