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Cancer and occupation in Sweden 1971-1989

Marina Pollán[1,2] & Per Gustavsson[1,3]

1. Department of Occupational Health, Stockholm County Council, Karolinska Hospital, S-171 76 Stockholm, Sweden
2. Cancer Epidemiology Unit, National Center of Epidemiology, Sinesio Delgado 6, ES-28029 Madrid, Spain
3. Division of Occupational Health, Department of Public Health Sciences, Karolinska Institute, Stockholm, Sweden

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Foreword

For many years there has been a large interest for environmental factors in the causation of cancer. The Cancer Environment Registry (CER) is based on notifications of cancer from the national cancer register and occupational titles from two censuses. The aim of the CER is to meet the need for a registry to enable research on the association between type of work and cancer.

The purpose of the present project, based on the CER and additional data from the censuses, is to describe the risk of cancer associated with occupation as such, and not to use the occupational titles as a surrogate for specific chemical or physical exposures.

Marina Pollán and Per Gustavsson, Department of Occupational Health, Karolinska Hospital, Stockholm has written the report. Dr Pollán is currently with the Cancer Epidemiology Unit, National Centre for Epidemiology, Health Institute "Carlos III", Madrid, Spain. The National Board of Health and Welfare has chosen to publish these data as a help to people studying the causes of cancer. It can also be of help to those who are involved in the evaluation of cancer clusters at local work places.

The text of the report and tables 1-4 are printed in the present volume, whereas table 5, due to its large size, is made available on the internet:
http://www.socialstyrelsen.se

For questions concerning the database, please contact Lotti Barlow at the Centre for Epidemiology.

Kerstin Wigzell
Director General
The National Board of
Health and Welfare

Måns Rosén
Professor/Director
Centre for Epidemiology

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Table 5 (260 pages) can be found on the internet: http://www.sos.se/fulltext/9918-001/tabell5.rtf .

Summary

Background and aims. Computerised Swedish population registers hold data on occupational titles, cancer notifications and deaths. We have used recently formed databases to calculate standardised cancer incidence ratios per occupation, based on person-years. This report is intended for (1) surveillance of cancer risk in different occupations, by national as well as local occupational health authorities, (2) evaluations of local cancer clusters at work-places, (3) effective targeting of work-site health promotion programs, (4) generation of hypotheses regarding occupationally induced cancer (5) testing of specific etiological hypotheses by linking of exposure data from national job exposure matrices, (6) studies of inequities in cancer risk between socio-economic groups, and (7) for international comparisons.

Methods. The Swedish national cancer register was established in 1958 and records all cases of malignant tumours among persons with residence in Sweden. Occupational titles, obtained from the census of 1960 and 1970, have been linked to the cancer notifications, the Cancer Environment Register 6070 (CMR 6070). All gainfully employed persons living in Sweden in 1970 formed a historical cohort study. Person-years in each of 295 occupations were accumulated from 1971 until the date of death or up to 1989. Standardised Incidence ratios, SIR, were calculated for 38 cancer sites for males and females in these 295 occupations, stratifying for five-year age-classes and five-year calendar-year periods, and using the cancer incidence among all gainfully employed persons to calculate expected numbers of cancers. Separate risks were calculated for those in the occupation in 1970, and those in the occupation in both 1960 and 1970, in order to evaluate if persons staying longer in the occupation are at a higher risk.

Results. Tables of SIRs and 95% confidence intervals are presented for 38 cancer sites among men and women in 295 occupations. Tables are also presented of occupations with statistically significantly increased SIRs, per cancer site.

The total cancer incidence varied between occupations, and notably low cancer rates were observed among university teachers and priests (10-15 % lower than among gainfully employed in general). The risk of cancer at any site was considerably increased among male cooks and waiters, who were at a 50 % greater risk of cancer than those gainfully employed. A high cancer risk was also noted among ship officers and crew (about 30 % higher than among gainfully employed). Female policemen and reformatory officials had a cancer risk that was 80 % higher than for gainfully employed women in general.

Some well-known associations of specific occupations and certain types of cancer were confirmed, for example the risk excess for lip cancer in outdoor occupations, the association between asbestos exposure and pleural, lung and peritoneal tumours, the relationship between wood dust exposure and nose and sino-nasal cancer, the risk ex-

cess for lung and laryngeal cancer in occupations with a high proportion of tobacco smokers, and the higher incidence of breast cancer, malignant melanoma and some haematological tumours in more affluent occupational groups. Other associations reported in the literature have not been detected here, for instance the reported association between agricultural work and non-Hodgkin's lymphomas. Finally, some new findings, like the higher risk of breast cancer among telephone and telegraph female operators, the relationship between brain cancer and job codes with a higher exposure to electromagnetic fields, and the excess risk of different kinds of cancer among hairdressers and beauticians, deserve further attention. This study also showed an unexpected risk excess of non-melanoma skin cancer in a number of indoor occupations associated with a high socio-economic status.

Interpretation. The presented risks reflect contributions from a number of factors that may differ between individual occupational groups and gainfully employed persons in general. These factors may be chemical or physical occupational exposures, lifestyle factors like tobacco smoking and alcohol consumption, geographical variations in background cancer rate, and other potential confounding factors. In the absence of information on several of these factors the results should not be used for (1) definite evaluations of the presence and especially not the absence of specific chemical or physical cancerogenic exposures in occupational groups, (2) calculation of etiological fractions due to specific exposures.

Svensk sammanfattning

Bakgrund och syfte. Datoriserade register över den svenska befolkningen innehåller uppgifter om bland annat yrkestitlar, canceranmälningar och dödsfall. Vi har använt nyligen bildade databaser för att beräkna standardiserade incidensrater för cancer inom olika yrkesgrupper, baserat på personårsmetoden. Rapporten har följande tänkbara användningsområden: (1) övervakning av cancerrisken inom olika yrken, av såväl nationella som lokala arbetshälsoaktörer, (2) för hjälp vid utvärdering av lokala anhopningar av cancerfall vid arbetsplatser, (3) effektiv inriktning av hälsoprogram vid arbetsplatser, (4) skapa nya hypoteser om orsaker till yrkesbetingad cancer, (5) genom att koppla resultaten till s k nationella jobb-exponeringsmatriser kan specifika hypoteser om samband mellan enskilda arbetsmiljöfaktorer och olika cancerformer testas, (6) undersökningar av olikheter i cancersjuklighet mellan olika socio-ekonomiska grupper, och (7) för internationella jämförelser.

Metoder. Det svenska cancerregistret bildades 1958 och innehåller uppgifter om cancerfall bland personer bosatta i Sverige. Yrkestitlar från folk- och bostadsräkningarna 1960 och 1970 har kopplats till canceranmälningarna, det s.k. Cancer-Miljöregistret 6070 (CMR6070). En retrospektiv kohortundersökning har genomförts genom att alla personer som var yrkesaktiva 1970 har följts beträffande cancerförekomst fram till 1989. Standardiserade incidensrater (SIR) beräknades för 38 olika former av cancer bland män och kvinnor i 295 yrken, med justering för ålder (fem-års-klasser), kalenderår (fem-års-klasser). Cancerförekomsten bland yrkesaktiva användes för att beräkna förväntade antal cancerfall. Risken beräknades separat för personer med ett visst yrke 1970, och de med samma yrke 1960 och 1970, för att undersöka om personer med längre tid i yrket har en högre cancerrisk.

Resultat. Tabeller presenteras med SIR och 95% konfidensintervall för 38 former av cancer bland män och kvinnor i 295 yrken. Tabeller med yrken med statistiskt säkerställd ökning av någon cancerform presenteras också.

Det förelåg påtagliga skillnader i total cancerincidens mellan olika yrken, med särskilt låga risker bland universitetslärare och präster (10-15 % lägre risk än bland yrkesaktiva i allmänhet). Risken för cancer var påtagligt ökad bland manliga kockar och servitörer, med ca 50% högre risk än bland yrkesaktiva i allmänhet. En hög cancerrisk förelåg också bland fartygsbefäl och fartygsmanskap (50% högre än bland yrkesaktiva i allmänhet). Bland kvinnliga poliser och fångvårdare var cancerrisken 80% högre än bland yrkesaktiva i allmänhet.

Några redan väletablerade samband mellan yrke och cancer återfanns även i detta material, till exempel en överrisk för läppcancer inom utomhusyrken, en ökad risk för cancer i lungsäck, lunga och bukhinna inom yrken där asbestexponering är vanlig, ökad risk för näs- och bihålecancer vid trädammexponering, en ökad risk för lung- och struphuvudcancer i yrken med hög andel tobaksrökare, samt en ökad frekvens av bröstcancer hos kvinnor, maligna melanom och vissa lymfatiska tumörer i högre socioekonomiska grupper. Andra samband som rapporterats i den vetenskapliga litteraturen har inte återfunnits i detta material, som t ex en ökad risk för non-Hodgkin lymfom bland jord- och skogsbruksarbetare. Några nya fynd som föranleder ytterligare utvärderingar är t ex den ökade risken för bröstcancer bland kontors- och växeltelefonister, relationen mellan hjärntumörer och exponering för elektromagnetiska fält, samt överskottet av olika former av cancer bland frisörer och kosmetologer. Undersökningen visade också ett oväntat överskott av hudcancer av skivepiteltyp i ett flertal inomhusyrken i högre socioekonomiska grupper.

Tolkningar. De riskmått som presenteras utgör summan av en rad olika faktorer, vilka kan skilja mellan varje individuell yrkesgrupp och gruppen av yrkesaktiva som helhet. Dessa faktorer kan vara: kemiska eller fysikaliska exponeringar i yrket, skillnader i rökvanor och alkoholkonsumtion, geografiska skillnader i frekvens av olika cancerformer, och även andra, delvis okända förväxlingsfaktorer. Vi vill varna för användning av resultaten för (1) definitiva slutsatser om närvaron eller särskilt frånvaron av kemiska eller fysikaliska cancerframkallande exponeringar i yrkesgrupper, (2) beräkning av hur stor andel av inträffade cancerfall som kan hänföras till yrkesexponeringar.

Introduction

Background

The Swedish national cancer register was established in 1958 and records all cases of malignant tumours among persons with residence in Sweden. The cancer register holds information on tumour sites and types, and demographic variables including age and residency. Occupation or smoking habits are not registered, but occupational titles at the time of the census in 1970 and 1960 have been linked by means of the 10-digit unique personal identification numbers, to form the Cancer environment register 1960 and 1970 (CMR60 and CMR70), respectively. These registers have been used by a number of researchers for studies of the associations between cancer and occupation (Ahlbom et al 1990, Eklund et al 1988).

Recently, a new register has been made available by the Centre for Epidemiology at the National Board of Health and Welfare, based on record linkage from the cancer register to the censuses in both 1960 and 1970 (Centre for Epidemiology 1994b). This new register is called CMR 6070. In the present report, the CMR6070 was used together with data from the censuses of 1960 and 1970, and information on mortality from the register of causes of deaths, to calculate site-specific Standardised Incidence Rates (SIRs) of cancer in all occupations according to the Nordic classification of occupations (Centre for Epidemiology 1994b). Briefly, a historical cohort was formed by those in each occupation in the census of 1970, and the Standardised Incidence Ratio (SIR) was calculated for the period 1971-1989 by the person-year method. The linkage process and calculation methods are described below.

The present material differs from earlier reports based on the CMR60 or CMR70 in two ways. First, this report uses both censuses to classify the occupation. This makes it possible to study cancer risks among those staying in the occupation for at least ten years. We calculated SIRs both for those being in the occupation for at least ten years and those in the occupation according to census 70 only, disregarding the occupation in 1960. Secondly, we used the dates of death for all individuals in the background population files, making it possible to calculate exact person-years for all occupational groups, avoiding approximation of person-years. In addition, the follow-up period has been extended, giving better precision in the risk estimates, and better opportunities to study female workers and rare tumours. Occupational cancer hazards have been studied much less for females than for males.

Aims

The purpose of the present project is to describe the risk of cancer associated with occupation as such, and not to use the occupational titles as a surrogate for specific chemical or physical exposures. The presented risks will, in addition to effects from occupational exposures, also reflect other differences between occupations due to life-style habits, as well as chance.

The purpose is to make a database in tabulated form publicly available, presenting the observed and expected number of cancer cases per occupation according to the three-digit level of the occupational code, for most cancer sites according to the seventh revision of the International classification of diseases.

Aims and target groups

1. Surveillance of cancer risk in occupations with known or suspected excess risks of cancer, by national as well as local occupational health authorities.

2. Evaluations of local cancer clusters at workplaces, by occupational medicine units and occupational health service units.

3. For effective targeting of work-site health promotion and cancer prevention programs.

4. For generation of hypotheses regarding cancer caused by occupational exposures, for planning of etiological studies. Specific etiological hypotheses may be further investigated by linking exposure data from national job exposure matrices.

5. For studies of inequities in health regarding cancer risk between occupational groups, as a reflection of socio-economic differences.

6. For international comparisons. When associations between occupation and cancer are found in similar registries in other countries, this report may be used to check if the hypothesis is supported by findings in Sweden.

The database is not suitable for

1. Definite evaluations on the presence and especially not the absence of specific chemical or physical exposures in occupational groups.

2. Estimation of the specific risk ascribable to a particular occupational exposure.

3. For quantification of differences in risk between two specific occupations.

4. Calculation of etiological fractions, i. e. how much of the cancer incidence could be eliminated by withdrawal of one or several exposures.

Material and methods

Base population

The base population of this cohort study comprises the Swedish population in 1970, restricted to persons gainfully employed in 1970, also included in the census in 1960, still alive on January 1, 1971, and aged 25-64 in 1971. The study included 1 779 646 men and 1 066 346 women.

Data sources

Two data sets were used:

- CMR6070, providing information on cases of cancer 1971-1989, and information on occupation, residency and a number of demographic variables, from the censuses of 1960 and 1970. This register was used to calculate the numbers of cancer cases per site, gender, age group and time period in each occupational group.
- A background population register including all individuals in census 1970, holding information on occupation and residency in 1970, occupation in 1960, and date of death. This register was used to calculate the number of person-years per occupation, gender, age group and time period.

The formation process for these registers has been described in detail earlier (Centre for Epidemiology 1994b, Barlow & Eklund 1995). The numbers of individuals that were reported to the cancer register but could not be identified in the census of 1970 and 1960 were very low, 0.9%.

Follow-up

The occupational cohorts were followed from 1971 until the end of 1989. Death was the only cause of censoring considered, and the date of death was obtained from the background population register. Persons not reported as dead during the follow-up were considered to be alive at the end of the follow-up. This leads to a slight over-estimation of the expected numbers, since persons emigrating during the follow-up will not be withdrawn from the accumulation of person-years, although the individual is no longer at risk of getting cancer with a report to the cancer register. The annual emigration rate for Swedish citizens is low, about 1/1000 (Statistics Sweden 1981, 1982/83, 1991), giving a proportion of emigrants of around 2% over the 19-year study period. Emigrations are equally distributed over the follow-up period, and the expected number would be over-estimated only by around 1% because of this.

The Swedish cancer registry allows multiple cancer registrations for the same person, and we did not stop the accumulation of person-years when a non-fatal cancer occurred. This approach leads to a slight over-estimation of expected numbers, since a person surviving a first-time cancer is at risk of contracting another type of cancer, but not the same type of cancer again, which would be considered as a recurrence not reflected in a new notification to the register. On the other hand, truncation of person-years at the first occurrence of cancer would lead to an underestimation of expected numbers, since the cancer rates that were used for calculation of expected numbers allowed multiple tumours per person.

Data on occupation

The censuses use the occupational code according to the National Swedish Classification of Occupations (NYK) at a 3-digit level. Almost exactly the same coding schemes were used in the censuses of 1960 and 1970, table 1. A few codes have been added to the coding scheme used in 1970, to reflect new occupations. For every occupational code, two groups were studied: 1) people reporting that occupation in 1970, and 2) people reporting that occupation in both censuses 1970 and 1960. Changes in occupation during the follow-up were not considered.

Tumours studied

Table 2 displays the list of tumours studied and their corresponding ICD-codes. The Swedish cancer register records cases of malignant tumours by mandatory notification from both pathologists and clinicians. The reporting rate is high, studies based on comparison with the registry of causes of deaths indicate that around 95%-98% of all tumours are reported to the register (Mattsson 1984, Centre for Epidemiology 1994a). Data losses in the linkage processes due to errors in personal identification numbers are small, below 1% (Centre for Epidemiology 1994b). Neither of these sources of error would be expected to be differential with respect to occupation, and affects the results only to a small degree. Tumour site codes according to the seventh revision of the International Classifications of Diseases (ICD-7) were used. For hematopoietic malignancies, the coding scheme was changed in 1975 (Centre for Epidemiology 1994b). This shift has been taken into consideration in the calculations. It was not possible to separate the acute leukaemias before 1975, and the period 1971-1975 was omitted from the analysis for this tumour type.

Calculation of person-years

The exact number of persons-years per gender, occupation, age group and calendar period was calculated. The follow-up period was divided into four calendar-year strata: 1971-1975, 1976-1980, 1981-1985 and 1986-1989, and 5-year age groups. All persons were entered into the study at the same time (Jan 1, 1971), and no newcomers were allowed (fixed cohort). Therefore, cohort members grew older with time, changing the observed age range per 5-year period. Thus, in 1971-1975 the youngest group was 25-29 and the oldest 60-64, while in 1986-1989 these groups were 40-44 and 75-79, respectively.

The overall time that every worker remained in the study was allocated into the corresponding cells of person-years. Gender and occupation are fixed during the study, but the other two variables (age and 5-year period) are time-dependent, which means that people moved through them during the follow-up. Clayton's exact algorithm was used for the allocation of person-years (Breslow & Day 1987).

Standardisation of rates

For each gender, standardised incidence ratios (SIRs) were calculated for every occupation and type of cancer. The SIR compares the observed number of cases in each occupational group with the expected number of cases. The expected numbers were calculated from the observed cancer incidence in the overall cohort.

d_{ij} is the number of cases in the i age-group and the j period for this particular occupation

$$SIR = \frac{\sum_j \sum_i d_{ij}}{\sum_j \sum_i n_{ij} * r_{ij}} * 100 \qquad \text{eq. 1}$$

n_{ij} is the person-years account in the i age-group and the j period for this particular occupation
r_{ij} is the specific incidence rate for the i age-group in the j period in the cohort

Males and females were studied separately, with their corresponding standard populations. We used gainfully employed males or females as a reference population rather than the Swedish general population in order to increase the comparability between groups. Different reference populations were used for those reporting a certain occupation in 1970, or the same occupation in both 1960 and 1970. For those reporting an occupation in 1970 (regardless if an occupation was held in 1960 or what it was) we used all persons gainfully employed in 1970 as a reference. When calculating the risk among person holding the same occupation in 1960 and 1970 we used all persons that were gainfully employed in the same occupation in 1960 as in 1970. These sub-cohorts of occupationally stable individuals comprised 693 497 males and 231 855 females

For rare tumours, only few cases would appear in each stratum of calendar year and age group. Thus, we calculated SIRs instead of direct-adjusted rates for all cancer

sites, since the latter are strongly influenced by instabilities due to cells with small numbers (Breslow & Day 1987). However, SIRs are not strictly comparable between sub-groups even when the same reference-rates are used. The number of expected cases depends also on n_{ij} (eq 1 above), and differences between SIRs could be caused by different distributions of person-years over age and period between the occupations studied. Consequently, SIRs must be considered only a means to evaluate whether an occupation is associated with an excess risk for a particular type of cancer, and no comparisons between different occupations should be made. From a statistical point of view, SIRs are weighted averages of the specific rate ratios per each age group and period combination (Breslow & Day 1987). Hence, every SIR represents an overall estimate of the relative increase in the cancer rate for this occupational group.

Confidence intervals for SIRs were computed under the Poisson distribution using Byar's approximation, which has proved to be sufficiently accurate (Breslow & Day 1987).

Results and comments

Results are presented in two ways, per cancer site and per occupation. Table 3 presents occupations with increased cancer risks per cancer site among men, and table 4 gives the corresponding data for women**.** All occupations with statistically significant excess risk either among those in the occupation in 1970 or among those in the occupation in both 1960 and 1970 were included in the tables.

It is not possible to discuss all of the findings. We will comment on some well-known associations of cancer and occupation and also discuss some new results. Table 5 presents the incidence of 38 types of cancer in all 259 occupations, regardless of statistical significance. Table 5 is to be considered as a database and we make no comments about the findings.

Cancer incidence by site (table 3 and 4)

All cancer sites

The over-all cancer rate varies considerably between occupations, mainly due to different exposure to so-called life-style factors like smoking and alcohol habits as well as occupational exposures. For example, university teachers and priests have a risk of cancer that is about 10-15 % lower than the one for gainfully employed persons in general, probably due to a healthy life-style and absence of occupational exposure to carcinogens. The risk of cancer at any site was considerably increased among male cooks and waiters, who were at a 50% greater risk of cancer than those gainfully employed in general. A high cancer risk was also noted among ship officers and crew (about 30 % higher than among gainfully employed). For female policemen and reformatory officials, the cancer risk was 80% higher than among gainfully employed women in general.

Lip cancer

Exposure to sunlight in outdoor occupations is a well-established risk factor for lip cancer, and tobacco smoking also increases the risk of cancer at this site (Scotto et al 1996). Excess risks were confirmed in this material for farmers, agricultural and horticultural workers, fishermen and lighthouse and lock operators. The excess among concrete and construction workers and dock and freight handlers may possibly also be caused by exposure to sunlight. There are no apparent differences in the SIR for those in the occupation in 1970 and those in the occupation in both 1960 and 1970. The cases for females are too few to be used in an evaluation of risk differences between genders.

Pleural and peritoneal tumours

Asbestos is the only known occupational exposure associated with mesothelioma of the pleura and the peritoneum, and at least for the pleura, exposure to asbestos seems to be a prerequisite for development of the tumour (Doll & Peto 1985). The increased risk among insulators, bricklayers, mechanical engineers, ship engineers, machinery fitters, machinery repairers, plumbers and pipe fitters, construction smiths, electrical fitters and wiremen, rubber products workers, sheet metal workers, and operators of cranes and stationary engines are all probably caused by asbestos exposure, which is possibly also the cause of the excess among painters.

Stomach cancer

The major risk factors associated with the occurrence of gastric cancer are diet and lifestyle factors. Tobacco smoking and alcohol seem to play some role in the aetiology, although epidemiological evidence are contradicting and insufficient (Nomura 1996). Several studies have evaluated occupational associations with these tumours, and excess gastric cancer risks have been reported among miners, quarrymen, farmers, fishermen, construction workers, machine operators and chemical workers (Chow et al 1994, Swaen et al 1995, Pearce & Howard 1986). In most parts of the world, stomach cancer rates seem to be strongly correlated to social class, with a higher rate in areas and occupations with low socio-economic status.

In Sweden, the gastric cancer rate is higher in northern than in southern Sweden, and dietary habits are suspected to play a major role (Centre for Epidemiology 1995). In the present material, miners show an increased SIR for this cancer type. A number of occupations characterised by manual work also appear in the list, like unskilled manual workers, workers in the construction industry, fishermen, butchers and meat preparers, truck and conveyor operators. Dietary habits could explain some of these excess risks but this has, to our knowledge, not been scientifically investigated.

Nose and nasal sinuses

Occupational exposure to fine particulate wood dust is a well-known cause of cancer of the nose and sinuses, and wood dust has been classified as carcinogenic to humans by the International Agency for Research on Cancer (IARC 1995). The evidence seems to be strongest for exposure to hardwood dust and adenocarcinoma of the nose and sinuses; and fine particulate dust generated by grinding seems to be more carcinogenic than coarse dust generated by sawing. Tobacco smoking and other life-style factors seem to play a minor role, if any, in the aetiology of nose and sino-nasal cancer (Roush 1996).

In this material, increased risk was observed for bench carpenters and cabinet makers, who are exposed to fine particulate dust generated by grinding, but also among construction carpenters and joiners, who mainly are exposed to coarse dust from soft wood. The minor role of tobacco smoking is reflected by the absence of increased risk in occupations with high rates of smokers. The present findings corroborate the hypothesis that coarse softwood is carcinogenic to humans as well as fine particulate hard wood.

Larynx

Tobacco smoking and alcohol are well-known risk factors far laryngeal cancer. Asbestos, welding fumes, metal dust, and acid mist have been proposed as occupational carcinogens for this cancer site (Austin & Reynolds 1996). Exposure to asbestos and welding fumes were both risk factors for laryngeal cancer in a Swedish population-based case-referent study, which also took tobacco smoking and alcohol habits into account (Gustavsson et al 1998).

Lifestyle factors are the most probable explanation for the increased SIRs among male journalists and editors and female waitresses, although environmental tobacco smoke may play a role for the latter group. Asbestos may possibly explain the excess among rubber product workers and gold and silver smiths, but other occupations that certainly are associated with exposure to asbestos, like insulators and machinery operators, do not appear in the list of statistically significantly increased SIRs.

Lung

Tobacco smoking is such a strong cause of lung cancer that occupational hazards are difficult to evaluate when tobacco habits are not known. This is clearly illustrated by the fact that the SIR for lung cancer among waiters (exposed to their own and others' tobacco smoke) was increased to the same magnitude as among insulators, which is the occupational group most obviously exposed to asbestos. The SIR among waitresses was also increased. The SIR for waiters was about 3, for those in the occupation in both 1960 and 1970. To explain this excess by tobacco habits, a smoking frequency close to 100% in the occupation must be assumed. However, their exposure to smoke from others in the job, as well as an over-representation of non-occupational risk factors other than smoking may also have contributed.

A number of occupations that are associated with exposure to known lung carcinogens like asbestos (plumbers, insulators, machinery repairers), radon (miners and mining engineers), and combustion products (metal casters and moulders, furnacemen) appear on the list, but, taking the strong possible confounding effect from tobacco into account, nothing can be said about aetiology from these data.

Breast

The risk of breast cancer in women is mainly determined by the cumulative exposure of the breast epithelium to oestrogen and progesterone. The most important risks factors, related to the cyclic ovarian activity, are: early menarche, late menopause, age when giving birth the first time and parity. Other less clearly established factors include alcohol consumption, physical inactivity, diet rich in fat, and over-weight. In this study, most of the occupations with a significant risk excess are in the major occupational groups 0, 1 and 2 (comprising academic and administrative occupations and office workers), probably reflecting the association between lifestyle and sexual and reproductive pattern and the socio-economic status. It has been suggested that the relative excess of cancer of the breast, ovary, and uterine body in professional and clerical workers probably is a reflection of a high proportion of nulliparous women in these groups (Roman et al 1985). High risks for physicians, dentists, registered

nurses, pharmacists, teachers and religious workers have been reported in other studies (Roman et al 1985, Morton 1995, Goldberg & Labreche 1996, Habel et al 1995). The highest SIR among professional and technical workers was that of system analysts and programmers (SIR = 179). Even though other socio-economic factors could act as confounders, a causal relationship cannot be ruled out**.** As far as other occupational groups are concerned, it is worthwhile to highlight the increased risk for telephone operators, office telephonists and telegraph and radio operators, that has also been found in a previous study (Dosemeci & Blair 1994).

Little is known about the role of occupation in male breast cancer, although an association to occupational exposure to electromagnetic fields has been reported in some studies (Demers et al 1991, Tynes et al 1992, Loomis 1992). In our study, the excess of breast cancer among male machinery repairers is of special interest, due to the exposure to electromagnetic fields during electric arc welding**.**

Bladder

Tobacco smoking increases the risk of bladder cancer, although not to the same extent as for lung cancer. Increased risks due to occupational exposure have been reported among dye and rubber workers (probably at least partly caused by exposure to aromatic amines), and also in some occupations with a high exposure to polycyclic aromatic hydrocarbons like chimney sweeps and aluminium smelter workers (Silverman et al 1996, Steineck et al 1990).

An excess was noted in three occupations with a potential exposure to dyes: tailor and dress makers, upholsterers and sculptors, painters and photographic artists. An excess risk among chimney sweeps was also present in this material; also noteworthy is an excess risk among both male and female chemical process workers.

Malignant melanoma

Malignant melanoma has attracted much attention as a result of the rapidly increasing incidence of this tumour over time, especially among whites of both sexes in Europe and North America. The rate is much higher among whites than coloured people, and those with a fair complexion are at an especially high risk. Unlike most other tumours, the incidence is higher among persons with high socio-economic status. Intermittent exposure of untanned skin to intense sunlight seems to be a strong risk factor whereas no increased risk is usually seen in out-door occupations (Armstrong & English 1996).

Most of the above findings seem to be corroborated by the present study; increased SIRs were observed for architects and building engineers, dentists, university and class teachers, ministers and priests, judges, librarians and psychologists. There are two occupations in the list for which occupational rather than leisure time exposure to sunlight could play a role, lighthouse and lock operators and military personnel.

Non-melanoma skin cancer (NMSC)

NMSC include squamous cell carcinoma and basal cell carcinoma, but the latter form is not reported to the Swedish cancer register. Exposure to sunlight seems to be an important cause of NMSC, although the risk seems to be more related to the cumulative dose of solar radiation rather than the complex dose-response relationship reported for malignant melanomas. Whites and especially those with a fair complexion are at a higher risk also for this skin cancer type. Occupations with increased risk include groups exposed to outdoor work, polyaromatic hydrocarbons and arsenic (Scotto et al 1996).

As noted above, the incidence of malignant melanoma of the skin is higher among persons with a high socio-economic status, but a similar relation has not been obvious regarding NMSC. On the contrary, occupational exposure to sunlight seemed to be a risk factor for squamous cell carcinoma of the skin both in England and Wales (Beral & Robinson 1981) and in the Montreal area in Canada (Aubry & MacGibbon 1985). However, it is striking that a number of indoor-occupations in the present material like physicians, pharmacists, formal school teachers, priests, economists & statisticians, bank employees and insurance raters are at an increased risk of NMSC. A number of out-door occupations also appear on the list, as would be expected from earlier knowledge. A previous Swedish study regarding skin cancer in 1961-79 indicated a slightly higher rate of NMSC in office workers and outdoor workers than among indoor blue collar workers (Vågerö et al 1986).

Brain

Ionising radiation is the only well-established environmental risk factor for brain cancer, but numerous other agents, like N-nitrocompounds, hydrocarbons, electromagnetic fields and pesticides, have been repeatedly implicated. A number of occupations and industries have been associated with these tumours, the most important being petrochemical industries, rubber industries, health professionals, electrical workers and agriculture workers (Preston-Martin & Mack 1996). A recent Swedish case-control study indicated an increased risk of brain cancer in men occupationally exposed to solvents, pesticides and plastic materials (Rodvall et al 1996).

Among male health professionals, our results showed a statistically significant excess risk for veterinarians and for those who reported to be dentists in both censuses. Farm supervisors also presented an elevated and significant risk, and other related occupations, such as forestry supervisors, horticultural workers and livestock workers, also had high SIRs. These risks could possibly be related to their pesticide exposure (Rodvall et al 1996). Other significantly increased SIRs among men included other mining and quarrying workers, road traffic supervisors, post office clerks, frame and circular sawyers and planers and paper pulp workers. Among females, only two job-codes showed a significant risk excess, goods delivery workers and aircraft pilots. The later result was based only on 1 single case, but also men showed a high SIR, and an elevated risk for this occupation has been previously communicated (Preston-Martin 1989). Finally, even though electrical workers did not show a significantly increased risk in this study, people reporting to work as line workers, as other electrical and electronic workers, and as radio and TV assemblers and repairmen in both censuses

presented SIRs higher than 120. The same was true for plastic product workers. These results seemed to support the repeatedly reported increased risk for these industries (Preston-Martin & Mack 1996).

Soft tissue sarcoma

Soft tissue sarcomas have been related to herbicide exposure, particularly to phenoxy herbicides and/or their dioxin contaminants (Hardell & Eriksson 1988, Zahm et al 1996). This could explain the increased risk found for agricultural male researchers, and the high, though non-significant, SIRs for females working in agricultural-related jobs. The excess risk found for fur-bearing animal farmers might be connected to their exposure to zoological viruses. A viral aetiology of sarcomas has been hypothesised based on animal models, and has been recently supported by the association between Kaposi sarcoma and AIDS (Zahm et al 1996). Among men, gold and silver smiths and glaziers also presented a significantly high SIR. Results for females were significant only for bookkeeping and cashier workers and for other workers in the service sector. We do not find a clear explanation for these findings. Finally, an elevated risk among hairdressers and beauticians was found in both sexes and the excess was almost significant among females. There are convincing evidence about the relationship between occupational or personal exposure to hair dyes and bladder cancer and lymphomas, but no association with soft tissues sarcomas has been established (La Vecchia & Tavani 1995).

Hemato-lymphatic organs

Leukaemias

The number of recognised leukaemia subtypes hampers the evaluation of the association between occupation and leukaemias in general, which may be associated with chemical exposures in different ways and to a different extent. Chronic lymphocytic leukaemia does not share the epidemiological and clinical characteristics of the other tumours in this group and is now considered as a type of non-Hodgkin lymphoma. The most common leukaemia subtype is the acute myeloid leukaemia, which accounts for almost 95% of the incidence of acute leukaemias in adults.

Acute leukaemias were found to have an excess risk among mechanical engineers in men and computer operators in women, which might be related to electromagnetic exposure (Floderus et al 1993). Construction carpenters and joiners and other building and construction workers also showed a significantly high SIR. Finally, female medical technicians and dental technicians presented excess risks for acute leukaemias, perhaps reflecting their exposure to ionising radiation (Linet & Cartwright 1996), and possibly also to the ethylene oxide (Shore et al 1993) used for sterilisation of medical equipment.

For chronic myeloid leukaemias an increased risk was observed among industrial spray painters, who have been heavily exposed to mixtures of organic solvents. Theoretically, some of these solvents may in the 1950´s have been contaminated with benzene, a well-known risk factor for leukaemia (Wong 1995, Rinsky et al 1987). How-

ever, the etiological relation is rather speculative. Among females, cleaners were the main occupation related with these tumours.

For chronic lymphocytic leukaemias (CLL) the statistically significant excess risk for electrical fitters is in agreement with the results from a Swedish study and may be linked to electromagnetic exposure (Floderus 1993). The excess of CLL for miners and quarrymen has also been previously communicated and may possibly be connected with a chronic immunological stimulation produced by dust (Gilman et al 1985). This study, as well as other previous Swedish studies (Linet & Cartwright 1996, Wiklund & Dich 1995), fails to find an excess risk for leukaemias among farmers. The only exception is the association found between CLL and livestock breeders, which might be due to their exposure to a leukaemogenic virus.

Hodgkin's disease

Few analytical epidemiological studies on Hodgkin's disease have addressed issues other than those related to viral exposure. Among occupational exposures, there is some evidence about an increased risk for wood-related industries and exposure to different chemicals such as phenoxy acids, chlorophenols and organic solvents (Müller 1996).

Very few occupational groups reached statistical significance in this study, and all of these associations are based on a very low number of cases. In men, we can particularly observe an excess risk for forestry supervisors, while other job-codes for agricultural and forest work presented high, though not significant, SIRs (see agricultural workers and forest workers and log-drivers). This high risk corroborates previous studies (Franceschi et al 1991) and may be related to exposure to chlorophenols and organic solvents, which have shown a strong association with Hodgkin's disease in a Swedish study (Hardell & Bengtsson 1983). In females, the excess risk for nursemaids is very intriguing, due to the prolonged exposure to human viral infections in this occupation.

Non-Hodgkin lymphomas

Non-Hodgkin lymphomas (NHL) are a heterogeneous collection of lympho-proliferative malignancies with different behaviour and response to treatment, and according to the International Classification of Diseases-9th revision (ICD-9), comprise lymphosarcoma, reticulosarcoma, Burkitt's lymphoma (ICD-9 200) and other malignant neoplasms of lymphoid tissue (ICD-9 202), including mycosis fungoides. In general, rates for NHL increase with the level of socio-economic status, and occupations of somewhat higher social class are associated with a higher risk (Pearce & Bethwaite 1992). Occupational exposure to chlorinated organic solvents seems to be linked to an excess of NHL (IARC 1995). Occupations dealing with chemicals and agricultural work also repeatedly appear related to NHL. There is growing evidence suggesting that exposure to phenoxy herbicides may cause NHL, but the evidence is still not conclusive (Scherr & Müller 1996).

In this study, no relation with presumed exposure to phenoxy herbicides was noted, which is in accordance with a previous Swedish study based on CMR60 (Wiklund et

al 1988), although positive associations have also been reported (Hardell 1981). In men, metallurgists and mining engineers, accountants and auditors, bookkeeping and cashier workers, secretaries, rolling-mill workers, other metal processing workers and launderers and dry-cleaners, presented a statistically significant excess risk. Increased risks for cleaners and for work dealing with metals and metal products have been previously reported (Blair et al 1993, Balier et al 1993, Scherr et al 1992). In this regard, toolmakers also presented a high SIR. The excess among launderers is in correspondence with earlier reports of excess in this occupation and may be due to chlorinated solvents used in dry cleaning (IARC 1995). We should mention two other occupations that have an almost statistically significantly increased risk: electrical fitters and wiremen, whose risk could be attributed to electromagnetic field exposure (Pearce & Bethwaite 1992), and physicians. A high risk for these professionals has been previously reported (Scherr et al 1992), also in a Swedish study (Ericsson et al 1992), and in our study female physicians and nurses also showed high SIRs. For women there was a significantly increased risk for NHL among livestock workers, packers and store and warehouse workers. The SIR for livestock workers is in agreement with the published high risk for farm breeders (Amadori et al 1995).

Multiple myeloma

Since these tumours have a very low incidence, the number of cases per occupation is in general very small and few of them reached statistical significance. In males, there was an excess risk for farmers, wood and horticultural enterprisers. Other related jobcodes also presented high SIRs. This risks are in agreement with the previously reported increased risk for agricultural workers, and can possibly be caused by exposure to a variety of substances such as pesticides, engine exhausts, solvents, dusts and zoonotic microbes (Blair & Zahm 1995, Eriksson & Karlsson 1992, Herrinton et al 1996). A statistically significantly increased risk was found for leather goods workers, and shoemakers and shoe-repairers also presented a high SIR. Other studies have communicated a similar finding (Walrath et al 1987, Fu et al 1996). Dental technicians also appeared to be a risk profession, and in females, the most striking finding was the statistically significant SIR for bakers and pastry cooks, which was also supported by a similar and almost significant SIR in males with the same occupation.

Cancer incidence by occupation (table 5)

All results, regardless of statistical significance are presented in table 5, which presents the risk of site-specific cancer among men and women per occupational group. The table presents the observed and expected number of cases per occupation, SIRs and 95% confidence intervals for all considered cancer sites, for all occupations with at least five cancer cases. Results taking into account workers with the same occupation in both censuses are on the right side of the table, and to the left are those SIR and confidence intervals for which only the occupation reported in 1970 was considered.

The table can be found on the internet: http://www.sos.se/fulltext/9918-001/tabell5.rtf.

Discussion

We will here discuss the principles for how the findings should be interpreted, as well as some methodological issues.

Life-style factors

The presented SIRs reflect a combination of contributions from occupational exposures as well as other factors associated with the occupation, like tobacco smoking, diet, and alcohol habits, which are important risk factor for some, but not all, types of cancer. Conclusions on aetiology with regard to occupational exposures and cancer may be confounded by these coexisting risk factors to a varying degree.

Whether a factor is a confounder or not depends not only on causality and correlation of exposures, but also on the hypotheses to be tested. E. g., for investigation of the potential of welding fumes to induce lung cancer, detailed data on smoking habits among welders would be necessary. In this context, the present data seem to be more useful for evaluation of cancer types that are not strongly affected by tobacco. However, to identify occupations or environments with a high risk of cancer as a basis for preventive action, this lack of smoking and other lifestyle data poses no problem. In this context, for preventable tumours, specific educational programs should be targeted to those occupational groups with an increased risk.

Social class

Social class is in Sweden generally defined by occupation and length of education, and an adjustment of the SIRs with regard to social class would often attenuate the SIRs towards 100. It is not social class per se that has an influence on the cancer risk, but a number of differences in lifestyle factors like smoking, alcohol habits and diet, between socio-economic groups. The present SIRs were not adjusted for socio-economic group, which must be considered in the interpretation.

The findings of increased risks of malignant melanoma skin cancer, and non-Hodgkin lymphoma in higher social classes is striking in this material as well as in other studies. The risk of breast cancer and colon cancer is also reported to be higher in higher socio-economic groups, while the risk of cancer of the lung, larynx, stomach, oropharynx, and oesophagus is higher in lower socio-economic groups.

Geographic region

There are geographical variations in the incidence of most cancer types in Sweden. These differences may partly be explained by different distribution of known risk factors. For example, tobacco smoke, occupational carcinogens and environmental air pollution may all contribute to the increased lung cancer rate in urban areas of

Sweden. The higher rate of gastric cancer in rural than in urban areas may reflect differences in dietary habits. In addition, diagnostic precision may vary in different parts of the country, and finally, factors like ground radon may also play a role for geographical trends.

Ideally we would standardise for geographical differences caused by imprecision in cancer diagnoses, but it would not be possible to completely disentangle the contributions from these different causes in a record linkage study.

Standardisation of the SIRs with regard to geographic area e.g. county, is also technically problematic since the number of new cancer cases in each stratum of calendar year and age may be very small or even zero for small counties and rare tumours, which would make the calculation of SIRs unreliable. We have calculated risk estimates for cancer of the breast and stomach, also standardising for geographic area (county) and town size, which gave almost identical results (not shown), but confirmed that the number of cases in each cell were too low to give stable reference rates.

This would be possible to overcome by assumptions on similarities in trends over age and calendar year in a regression model. However, this has not been feasible due to the very large number of associations studied. Detailed analyses on specific associations will be used to explore some of the findings further.

The mass-significance phenomenon

Publication of this large material makes it possible to evaluate all associations between occupation and cancer, regardless of a priori hypotheses of occupations and sites. A major problem is that the very large number of studied associations produces many spurious significant results, the so-called mass-significance phenomenon. The present material includes 259 occupations and 38 cancer sites for men and women, among those in census 70 and in both 60 and 70, theoretically giving 259*38*2*2= 39 368 SIRs and confidence intervals. However, there are a number of occupations without cases, leaving 19 265 SIRs based on at least one case. 95% confidence intervals were used, and it is thus expected that 2.5% of these SIRs, 482, will indicate an increased risk, even if there are no associations between occupation and cancer risk in the material at all. Actually 952 SIRs were found that were statistically significantly raised.

Thus, all tables must be interpreted with great caution, both using comparisons between men and women, between similar occupations, and a priori know-ledge, to evaluate the biological significance of any apparent association. In this regard, any association between the occupation in 1970 and a particular cancer site should be confirmed in the cohort of people with the same occupation in both censuses. Unfortunately, for rare tumours and for women, this subcohort failed to be large enough to provide conclusive results. The database gives opportunities to further testing of consistency through an investigation of time-trends etc., but this has not been possible to include in the tabulations presented here.

Misclassification of exposure

Occupational title is often used as a surrogate for occupational exposure. However considerable misclassification is introduced, since it is common that only a fraction of those in an occupation with potential exposure to a cancerogenic agent actually are exposed to the substance, giving underestimations of the true RRs. In addition, occupational titles do not reflect variations of the exposure for one and the same individual over time and between individuals in the same occupation. Job-exposure matrices developed for population data attempt to describe the exposure to specific chemicals in certain occupations. It is possible to use the present data in combination with job-exposure matrices to study the cancer risk in relation to specific chemicals, although this is beyond the scope of the present report.

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Table 1 – 5

Table 1. Occupational codes in English and Swedish according to the Nordic classification of occupation (NYK) used in census 1970.

NYK-code	English title	Swedish title
001	Architects, building and construction engineers and technicians	Arkitekter, ingenjörer och tekniker med byggnads- och anläggningstekniskt arbete
002	Electrical, electronics and telecommunications engineers and technicians	Ingenjörer och tekniker med elkrafttekniker och teletekniskt arbete
003	Mechanical engineers and technicians	Ingenjörer och tekniker med mekaniskt arbete
004	Chemical engineers and technicians	Ingenjörer och tekniker med kemitekniskt. arbete
005	Metallurgist and mining engineers and technicians	Ingenjörer och tekniker med gruvtekniskt. och metallurgiskt arbete
006	Engineers and technicians non-specified	Ingenjörer och tekniker inom andra tekn. verksamhetsområden
007	Surveyors, measurers, cartographers	Lantmätare, mätningstekniker, kartografer
008	Technical assistants	Tekniska biträden
011	Chemists	Kemister
012	Physicists	Fysiker
013	Geologists, meteorologists	Geologer, meteorologer m.fl.
014	Laboratory technicians and assistants	Laboranter, laboratoriebiträden
021	Veterinarians	Veterinärer
022	Biologists	Biologer
023	Agricultural and horticultural researchers/advisors	Jordbruks- och trädgårdsforskare/ -rådgivare
024	Forestry researchers/advisors	Skogsbruksforskare, skogsbruksrådgiv.
031	Physicians and surgeons	Läkare
032	Dentists	Tandläkare
040	Registered nurses	Sjuksköterskor
041	Midwives	Barnmorskor
042	Attendants in psychiatric care	Skötare inom mentalvård
043	Practical nurses and hospital orderlies	Sjukvårdsbiträden
044	Dental nurses	Tandsköterskor
045	Medical technicians	Röntgenbehandlingsbiträden, laboratriser m.fl.
046	Pharmacists	Farmaceuter
047	Physiotherapists, occupational therapists	Sjukgymnaster, massörer m.fl.
048	Health inspectors	Hälsovårdsinspektörer m.fl.
050	Principals, headmasters	Skolledare
051	University, higher education teachers	Universitets- och högskolelärare
052	Teachers in theoretical subjects	Lärare i läroämnen
053	Class teacher	Klasslärare
054	Teachers of music arts or crafts	Lärare i övningsämnen
055	Vocational studies teachers	Yrkeslärare
056	Pre-school teachers	Förskollärare

057	Educational methods advisors	Utbildningskonsulenter m.fl.
058	Other educational workers	Övrigt pedagogiskt arbete
061	Ministers, priests	Präster och predikanter
068	Other religious workers	Övrigt religiöst arbete
071	Judges and other lawyers in courts of law	Domstolsjurister
072	Prosecutors and senior police officers	Åklagare och högre polistjänstemän
073	Lawyers in private practice	Praktiserande jurister m.fl.
074	Corporation and organisation lawyers	Juridiska ombudsmän
078	Other legal work	Övrigt juridiskt arbete
081	Sculptors, painters, photographers and commercial artists	Bildkonstnärer
082	Designers	Formgivare
083	Display artists	Dekoratörer
084	Authors	Författare
085	Journalists, editors	Journalister, förlagsredaktörer
086	Performing artists	Scenkonstnärer
087	Composers and musicians	Musiker
088	Other literary and artistic work	Övrigt litterärt och konstnärligt arbete
091	Accountants and auditors	Revisions- och redovisningsexperter
092	Social workers	Socialtjänstemän
093	Librarians, archivists and curators	Bibliotekarier, arkivarier, museitjänstemän
094	Economists, statisticians	Ekonomer, statistiker
095	Psychologists	Psykologer
096	Staff officers	Personalmän m.fl.
097	System analysts, programmers	Systemmän, programmerare m.fl.
098	Other professional, technical and related work	Övrigt tekniskt eller naturvetenskapligt arbete
101	Government legislative and administrative work	Allmänt samhällsadministrativt arbete
111	Managing directors	Företagsledare
118	Other business managers, including managers of specific functions	Övriga företagsadministratörer och administratörer för speciella funktioner
201	Bookkeepers and office cashiers	Bokförare och kontorskassörer
203	Bank tellers	Bankkassörer
204	Cashiers in retail stores and restaurants	Butiks- och restaurangkassörer
208	Debt collectors	Inkasserare m.fl.
290	Secretaries, typists and related workers	Sekreterare, stenografer, maskinskrivare
291	Computer operators	Datamaskinoperatörer
292	Bank employees (general bank work)	Banktjänstemän (allmänt bankarbete)
293	Travel agency employees	Resebyråtjänstemän
294	Forwarding and shipping agents	Speditörer, skeppsklarerare m.fl.
295	Property managers, store managers	Förvaltare av fast och lös egendom
296	Insurance raters, claims adjusters	Tarifferare, skadereglerare m.fl. (försäkringstjänstemän)

297	Employees in national insurance offices	Försäkringskassetjänstemän
298	Cost-accountants, estimating clerks	Kalkylatorer, orderbehandlare
301	Working proprietors, wholesale trade	Partihandlare
302	Working proprietor, retail trade	Detaljhandlare
311	Insurance representatives and agents	Försäkringssäljare
312	Brokers, valuers	Egendoms- och värdepappersmäklare
313	Advertising salesmen	Reklammän
318	Auctionists	Värderingsmän, auktionister
321	Travelling agents	Handelsresande, agenter
331	Commercial travellers, buyers, dealers	Inköpare, kontorsförsäljare
332	Shop managers	Affärsföreståndare
333	Shop assistants	Övrig affärspersonal
334	Travelling salesmen	Ambulerande försäljare
338	Filling station attendants, demonstrators	Bensinförsäljare, demonstratörer m.fl.
401	Working proprietors, agricultural, horticultural and forestry enterprisers	Lantbrukare, skogsbrukare och trädgårdsbrukare
402	Farm managers and supervisors	Lantbruksbefäl
403	Forestry managers and supervisors	Skogsbefäl
404	Horticultural managers and supervisors	Trädgårdsbefäl
405	Livestock breeders	Husdjursuppfödare
406	Breeders of fur-bearing animals	Pälsdjursuppfödare
407	Reindeer owners	Renägare
411	Agricultural workers	Lantarbetare
412	Horticultural workers	Trädgårdsarbetare
413	Livestock workers	Husdjursskötare
414	Fur-bearing animal farm workers	Pälsdjursskötare
415	Reindeer herdsmen	Renskötare
418	Other agricultural, horticultural and livestock work	Övrigt jordbruks- och trädgårdsarbete m.m.
421	Game-keepers and hunters	Jaktvårdare och jägare
431	Fishermen	Fiskare
432	Fish-breeders	Fiskodlare
441	Forest workers and log-drivers	Skogs- och flottningsarbetare
501	Miners, quarrymen	Gruvbrytare, bergsprängare m.fl.
502	Well drillers, diamond drillers	Brunnsborrare, diamantborrare
503	Ore dressers	Anrikningsarbetare
504	Other mining and quarrying work	Övriga gruv- och stenbrytningsarbetare
601	Ship deck officers	Fartygsbefäl
602	Ship pilots	Lotsar
603	Ship engineers	Maskinbefäl
611	Ship deck and engine-room crew	Däcks- och maskinmanskap
621	Aircraft pilots, navigators and flight engineers	Flygförare, flygmaskinister m.fl.

631	Railway engine drivers and assistants	Lokförare, lokbiträden
632	Railway guards	Järnvägskonduktörer, trafikbiträden
633	Motor-vehicle drivers, tramdrivers	Motorfordonsförare, spårvagnsförare
634	Horse chariot drivers	Kuskar
635	Delivery men	Varubud m.fl.
636	Bus and tram conductors, traffic assistants	Buss- och spårvagnskonduktörer, spärrvakter
641	Harbour masters	Hamntrafikbefäl m.fl.
642	Air traffic controllers and flight dispatchers	Flygtrafikbefäl, flygklarerare m.fl.
643	Railway station masters and train dispatchers	Trafikbefäl vid järnväg
644	Road traffic supervisors	Vägtrafikbefäl
651	Post-office clerks	Postassistenter, postexpeditörer m.fl.
652	Telecommunications traffic officers	Teleassistenter m.fl.
653	Telephone operators	Telefonister (televerket)
654	Office telephonists	Kontorstelefonister
655	Telegraph and radio operators	Telegrafexpeditörer, radioexpeditörer
661	Sorting clerks and postmen	Postiljoner
662	Messengers	Expeditionsvakter, kontorsbud m.fl.
671	Lighthouse and lock operators, ferry and harbour service assistants	Fyrvaktare, sluss-, färj- och hamnvakter m.fl.
678	Railway linesmen	Banbiträden i banvaktstjänst
701	Spinners, weavers, knitters and dyers	Textilarbetare
711	Tailors and dressmakers	Skräddare, ateljésömmerskor m.fl.
712	Fur tailors	Körsnärer
713	Hatmakers and milliners	Modister och hattmakare
714	Upholsterers	Tapetserare
715	Patternmakers and cutters	Tillskärare
716	Industrial confectionists	Konfektionssömmerskor
718	Other sewing work	Övrigt sömnadsarbete
721	Shoemakers and shoerepairers	Skomakare
722	Shoe cutters, lasters and sewers	Skoarbetare
726	Leather goods makers	Sadelmakare, lädersömmare m.fl.
731	Furnacemen	Hytt- och metallugnsarbetare
732	Metal annealers, temperers and case-hardeners	Härdare, glödgare m.fl.
733	Rolling-mill workers	Varmvalsare, kallvalsare
735	Black smiths and forgers	Smeder
736	Metal casters and moulders	Gjuteriarbetare
737	Wire and tube drawers	Tråddragare, rördragare
738	Other metal processing work	Övrigt järnbruks-, metallverks-, smides- och gjuteriarbete
741	Precision toolmakers	Finmekaniker
742	Watchmakers	Urmakare

743	Opticians	Optiker
744	Dental technicians	Tandtekniker
745	Gold and silver smiths	Guld- och silversmeder
750	Toolmakers, machine-tool setters and operators	Verkstadsmekaniker (bänk- och maskinarbetare)
751	Machinery fitters, machinery assemblers	Montörer - maskinuppsättare
752	Machinery repairers	Maskin- och motorreparatörer
753	Sheet metal workers	Tunnplåtslagare
754	Plumbers and pipe fitters	Rörarbetare
755	Welders and flame cutters	Svetsare, gasskärare
756	Construction smiths	Grovplåtslagare och stålkonstruktionsarbetare
757	Metal platers and coaters	Metalliserare m.fl.
758	Other engineering and building metal work	Övrigt verkstads- och metallindustriarbetare
761	Electrical fitters and wiremen	Installations-, drifts- och maskinelektriker
764	Radio and television assemblers and repairmen	Tele-, radio- och TV-reparatörer
766	Telephone and telegraph installers and repairmen	Telefonreparatörer - installatörer
767	Line workers	Linjearbetare
768	Other electrical and electronic work	Övrigt elektroarbete
771	Construction carpenters and joiners	Byggnadsträarbetare
772	Bench carpenters and cabinet makers	Bänk- och maskinsnickare, möbelsnickare m.fl.
774	Frame and circular sawyers and planers	Ram- och cirkelsågare, hyvlare m.fl.
778	Other wood work	Övrigt träarbete
781	Painters	Målare
782	Industrial spray painters	Lackerare
791	Bricklayers	Murare, rappare, putsare
792	Masons	Stenmontörer
793	Concrete and construction workers	Betongarbetare, byggarbetare m.fl.
794	Insulators	Isoleringsmontör
795	Glaziers	Glasmästeriarbete
798	Other brick and concrete work	Övrigt mureri- och betongarbete
801	Typographers, lithographers	Typografer
806	Bookbinders	Bokbinderiarbetare
808	Other printing work	Övrigt grafiskt arbete
811	Glass formers and cutters	Glashyttarbetare
812	Potters	Formare (keramiska produkter)
813	Glass and ceramics kilnmen	Ugnsskötare (glas och keramisk tillverkning)
814	Glass, china and ceramic painters and decorators	Dekoratörer, glaserare (glas, porslin, keramik)
818	Other glass, pottery and tile work	Övrigt glas-, porslins-, keramik- och tegelarbete
821	Grain mill and oil press workers	Kvarnarbetare
822	Bakers and pastry cooks	Bagare och konditorer
823	Chocolate and confectionery workers	Choklad- och sötvaruarbetare
824	Brewery, distillery and other beverage plant workers	Bryggeri-, vattenfabriks- och bränneriarbetare m.fl.

825	Canning workers	Konservarbetare
826	Butchers and meat preparers	Slakteri- och charkuteriarbetare
827	Dairy workers	Mejeriarbetare
828	Other food processing work	Övrigt livsmedelsarbete
831	Chemical process workers	Kemiska processarbetare
834	Paper pulp workers	Trämasseslipare, cellulosaarbetare
836	Paper and paperboard workers	Pappers-, papp- och fiberplattarbetare
838	Other chemical and cellulose processing work	Övrigt kemiskt- och cellulosatekniskt arbete
841	Tobacco workers	Tobaksarbetare
850	Basketry weavers	Korgmakeriarbetare
851	Rubber products workers	Gummivaruarbetare
852	Plastic products workers	Plastvaruarbetare
853	Tanners and fur dressers	Garvare och skinnberedare
854	Photographic laboratory workers	Fotolaboratoriearbetare
855	Musical instrument makers and tuners	Musikinstrumentmakare
856	Stone cutters and carvers	Stenhuggeriarbetare
857	Paper and paperboard product workers	Pappersvaruarbetare
858	Other production and related work	Övrigt tillverkningsarbete
861	Unskilled manual workers	Grov- och diversearbetare
871	Stationary engine and related equipment operators	Landmaskinister
872	Crane and hoist operators	Kran- och traversförare
873	Riggers and cable splicers	Riggare
874	Construction machine operators	Anläggningsmaskinförare
875	Truck and conveyor operators	Truckförare, transportskötare m.fl.
876	Greasers	Smörjare
881	Packers	Paketerare och emballerare
882	Dockers and freight handlers	Stuveriarbetare samt andra lastnings- och lossningsarbetare
883	Store and warehouse workers	Lager- och förrådsarbetare
888	Furniture removers, porters	Flyttkarlar m.fl.
899	Non-specified manufacturing work	Ej specificerbart tillverkningsarbete
901	Fire-fighters	Brandmän
902	Policemen	Polismän
903	Customs officials	Tullbevakningspersonal
904	Prison and reformatory officials	Vaktkonstaplar m.fl.
908	Other civilian protective service work	Övrigt bevaknings- och skyddsarbete
911	Catering supervisors	Storköksföreståndare m.fl.
912	Cooks	Kockar och kallskänkor
913	Kitchen maids	Köksbiträden
914	Nursemaids	Hembiträden och barnsköterskor
915	Housekeeping service workers	Hemvårdarinnor m.fl.

916	Hotel receptionists	Hotellportierer
917	Pursers, stewards, stewardesses	Pursers, trafikvärdinnor m.fl.
918	Other housekeeping and related service work	Övrigt husligt arbete
921	Waiters and waitresses	Hovmästare, servitörer
931	Building caretakers	Fastighetsarbetare m.fl.
932	Cleaners	Städare
933	Chimney sweeps	Skorstensfejare
941	Hairdressers, beauticians	Frisörer, skönhetsvårdare m.fl.
942	Bath attendants	Badpersonal
943	Launderers and dry-cleaners	Tvättare
944	Pressers	Pressare
945	Coaches, horse trainers	Sportledare, travtränare m.fl.
946	Photographers	Fotografer
947	Undertakers	Begravningsbyråföreståndare m.fl.
948	Other service work	Övrigt servicearbete
981	Members of the armed forces	Militärt arbete
999	Workers reporting occupations unidentifiable or inadequately described	Personer med ej identifierbara yrken el. med ej angiven yrkestillhörighet

Table 2: Cancer sites studied and their coding number under ICD-7.

Site	ICD-7 code	
ALL SITES	140-209	
Lip	141	
Oral cavity	143-144	
Pharynx	145-148	
Oesophagus	150	
Stomach	151	
Colon	153	
Rectum and anus	154	
Liver primary	155.0	
Biliary system	rest of 155	
Pancreas	157	
Peritoneum	158	
Nose and sinuses	160	
Larynx	161	
Bronchus and lung primary	162.1	
Pleura	162.2	
Breast	170	
Cervix	171	
Uterus	172-174	
Ovary	175	
Other female sexual organs	176	
Prostate	177	
Testis	178	
Penis	179	
Kidney	180	
Bladder	181.0	
Melanoma	190	
Other skin tumours	191	
Brain	193.0	
Thyroid	194	
Soft tissues	197	
Unspecified or unknown site	199	
	1971-74	1975-1989
Hematopoietic tumours	200-205	200-209
Non-Hodgkin lymphoma	200	200
Hodgkin's lymphoma	201	201
Multiple myeloma	203	203
Chronic lymphocytic leukaemia	204.0	204.1
Chronic myeloid leukaemia	204.1	205.1
Acute leukemias[1]	-	204.0+205.0+206.0+207.0

[1] the study period was 1976-1989.

Table 3. Occupations with increased risk of cancer, per cancer site. Males. Occupations with significantly increased risk in either 1970 or in 1960 and 1970 are shown

All cancer sites

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
085 Journalist, editor	506	427.0	118.5	108.4	129.3	318	255.1	124.7	111.3	139.1
088 Other literary and artistic work	87	73.1	119.1	95.4	146.9	32	21.9	146.4	100.1	206.7
091 Accountant, auditor	333	308.4	108.0	96.7	120.2	181	149.7	120.9	103.9	139.8
096 Staff officer	912	842.9	108.2	101.3	115.5	-	-	-	-	-
111 General manager	2504	2398.0	104.4	100.4	108.6	1185	1074.0	110.3	104.1	116.8
292 Bank employee	302	262.7	114.9	102.3	128.7	91	89.7	101.4	81.7	124.5
294 Forwarding & shipping agent	392	323.7	121.1	109.4	133.7	154	124.6	123.6	104.8	144.7
295 Property & store manager	2120	1988.0	106.7	102.2	111.3	680	646.7	105.2	97.4	113.4
299 Non-specif. clerical work	2151	1982.0	108.6	104.0	113.2	110	110.9	99.2	81.5	119.6
301 Working proprietor, wholesale	557	478.5	116.4	106.9	126.5	204	164.0	124.4	107.9	142.7
311 Insurance representative & agent	231	207.4	111.4	97.5	126.7	135	110.2	122.5	102.7	145.0
318 Auctionist	37	29.1	127.1	89.5	175.3	10	4.4	228.6	109.4	420.4
321 Travelling agent	1281	1142.0	112.1	106.1	118.5	618	525.8	117.5	108.4	127.2
331 Commer. traveller, buyer, dealer	3691	3405.0	108.4	104.9	112.0	1194	1127.0	105.9	100.0	112.1
334 Travelling salesman	44	29.2	150.6	109.4	202.1	5	5.3	93.5	30.1	218.1
501 Miner, quarryman	615	564.5	109.0	100.5	117.9	332	273.5	121.4	108.7	135.2
504 Other mining & quarrying work	190	189.1	100.5	86.7	115.8	41	26.2	156.7	112.4	212.6
601 Ship deck officer	351	290.6	120.8	108.5	134.1	252	214.4	117.5	103.5	133.0
603 Ship engineer	181	136.6	132.5	113.9	153.2	124	82.7	149.9	124.7	178.8
611 Ship deck & engine room crew	269	211.5	127.2	112.5	143.4	140	97.7	143.2	120.5	169.0
621 Aircraft pilot, navig, flig eng.	77	69.3	111.1	87.7	138.9	67	51.6	129.9	100.6	164.9
633 Motor-vehicle driver, tram driver	7047	6595.0	106.9	104.4	109.4	4716	4370.0	107.9	104.9	111.0
635 Delivery men	104	84.7	122.8	100.3	148.7	13	10.1	129.3	68.8	221.2
639 Non-specf. rail & road transport	76	56.3	135.0	106.4	169.0	12	10.4	115.8	59.7	202.2
641 Harbour master	78	60.2	129.5	102.3	161.6	37	26.1	141.9	99.9	195.6
655 Telegraph & radio operator	73	54.0	135.2	105.9	170.0	49	34.6	141.8	104.9	187.5
662 Messenger	764	631.9	120.9	112.5	129.8	131	110.3	118.8	99.3	140.9
671 Lighthouse & lock operator	114	93.5	122.0	100.6	146.5	48	45.6	105.2	77.6	139.5
722 Shoe cutter, laster or sewer	161	135.7	118.6	101.0	138.4	103	93.0	110.7	90.4	134.3
741 Precision-tool maker	467	423.4	110.3	100.5	120.8	163	138.5	117.7	100.3	137.2
751 Machinery fitter, assembler	1337	1237.0	108.1	102.4	114.1	349	338.8	103.0	92.5	114.4
752 Machinery repairer	4460	4301.0	103.7	100.7	106.8	2167	2083.0	104.0	99.7	108.5
753 Sheet metal worker	1092	987.2	110.6	104.2	117.4	673	573.0	117.5	108.7	126.7
754 Plumber & pipe fitter	1598	1525.0	104.8	99.7	110.1	1123	1047.0	107.3	101.1	113.7
755 Welder & flame cutter	1768	1684.0	105.0	100.2	110.0	985	922.1	106.8	100.2	113.7
756 Construction smith	619	562.7	110.0	101.5	119.0	278	240.1	115.8	102.6	130.2
761 Electrical fitter & wireman	2689	2587.0	103.9	100.1	107.9	1856	1746.0	106.3	101.5	111.3

All cancer sites

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
766 Telephone-telegraph instal repair	387	336.5	115.0	103.8	127.1	60	53.6	112.0	85.4	144.1
768 Other electrical & electronic w.	374	335.2	111.6	100.5	123.5	65	62.7	103.7	80.0	132.2
794 Insulator	131	103.2	126.9	106.1	150.6	87	54.8	158.7	127.1	195.8
795 Glazier	195	164.3	118.7	102.6	136.6	147	113.9	129.1	109.1	151.7
801 Typographer, lithographer	1398	1216.0	115.0	109.0	121.1	1042	909.8	114.5	107.7	121.7
822 Baker & pastry cook	828	746.5	110.9	103.5	118.7	674	631.6	106.7	98.8	115.1
826 Butcher & meet preparer	695	641.1	108.4	100.5	116.8	368	338.0	108.9	98.0	120.6
850 Basketry weaver	19	10.9	173.8	104.6	271.4	10	7.1	140.5	67.3	258.4
851 Rubber products worker	413	385.1	107.2	97.1	118.1	227	189.1	120.0	104.9	136.7
872 Crane & hoist operator	600	537.4	111.6	102.9	120.9	247	208.7	118.4	104.1	134.1
882 Docker & freight handler	714	606.8	117.7	109.2	126.6	337	271.4	124.2	111.3	138.2
883 Store & warehouse worker	4384	4048.0	108.3	105.1	111.6	1370	1267.0	108.1	102.5	114.0
902 Policeman	914	822.4	111.1	104.0	118.6	803	714.4	112.4	104.8	120.5
904 Prison & reformatory official	227	188.7	120.3	105.2	137.0	111	83.4	133.1	109.5	160.3
908 Other civilian protect. service	805	710.3	113.3	105.6	121.4	146	133.4	109.5	92.4	128.7
911 Catering supervisor	350	279.7	125.1	112.4	138.9	112	82.3	136.1	112.1	163.8
912 Cook	134	85.8	156.3	130.9	185.1	55	35.7	154.3	116.2	200.8
921 Waiter & waitress	238	162.7	146.3	128.3	166.1	145	94.3	153.8	129.8	181.0
932 Cleaner	484	452.5	107.0	97.6	116.9	96	73.5	130.6	105.8	159.5
933 Chimney sweeps	137	107.6	127.4	106.9	150.6	122	94.0	129.8	107.8	155.0
941 Hairdresser, beautician	532	473.3	112.4	103.0	122.4	506	444.4	113.9	104.1	124.2
948 Other service work	135	108.4	124.5	104.4	147.4	44	30.9	142.6	103.6	191.5
999 Non-specif. worker	231	198.7	116.3	101.8	132.3	0	0.3	0.0	0.0	1131.0

Lip

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
401 Farmer, wood & horticul. enterpr	223	119.5	186.5	162.9	212.7	191	100.4	190.2	164.2	219.2
411 Agricultural worker	56	15.9	352.6	266.3	457.9	37	10.2	363.4	255.8	500.9
412 Horticultural worker	21	12.3	170.1	105.2	260.0	7	4.4	158.7	63.6	327.0
431 Fisherman	21	4.5	470.5	291.1	719.2	19	3.7	511.2	307.6	798.4
633 Motor-vehicle driver, tram driver	87	65.4	133.1	106.6	164.1	65	44.2	147.1	113.5	187.5
671 Lighthouse & lock operator	4	0.9	423.1	113.8	1083.2	4	0.5	859.6	231.3	2200.7
767 Line worker	14	5.8	242.0	132.2	406.1	9	2.8	326.3	148.9	619.5
779 Non-specif. wood work	17	7.6	223.6	130.2	358.1	4	1.2	331.5	89.2	848.8
793 Concrete & construction worker	74	43.8	168.9	132.6	212.1	32	21.7	147.8	101.0	208.6
836 Paper & paperboard worker	15	7.4	201.6	112.8	332.6	6	2.9	208.7	76.2	454.3
839 Non-specif. chemic. cellulose w.	8	3.0	262.4	113.0	517.1	0	0.5	0.0	0.0	730.5
853 Tanner & fur dresser	4	1.0	404.1	108.7	1034.5	2	0.6	323.7	36.4	1168.7
861 Unskilled manual worker	54	33.1	163.1	122.5	212.8	18	10.7	168.8	100.0	266.7
874 Construction machine operator	20	10.4	191.6	117.0	295.9	8	4.2	190.5	82.0	375.3
882 Docker & freight handler	13	6.1	211.6	112.6	361.9	4	2.8	143.6	38.6	367.5

Oral cavity

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
081 Sculptor, painter, photograph art	7	3.1	226.9	90.9	467.5	6	1.8	335.8	122.6	730.8
208 Debt collector	4	0.8	487.0	131.0	1246.9	0	0.0	0.0	0.0	12132.0
331 Commer. traveller, buyer, dealer	44	34.5	127.4	92.6	171.1	18	10.4	172.5	102.2	272.6
334 Travelling salesman	7	0.3	2632.6	1054.7	5424.5	1	0.0	2264.4	29.6	12599.0
611 Ships deck & engine room crew	6	2.1	282.8	103.3	615.6	5	1.0	513.8	165.6	1199.0
633 Motor-vehicle driver, tram driver	77	66.0	116.7	92.1	145.9	55	40.6	135.6	102.2	176.5
635 Delivery men	4	0.8	516.0	138.8	1321.2	1	0.1	1140.7	14.9	6346.6
639 Non-specif. rail & road transport	5	0.5	933.4	300.8	2178.1	0	0.1	0.0	0.0	4124.0
655 Telegraph & radio operator	3	0.6	518.9	104.3	1516.1	2	0.4	555.0	62.3	2003.7
662 Messenger	11	5.4	203.8	101.6	364.6	2	0.9	224.3	25.2	809.9
735 Smith, forger	11	5.0	219.3	109.3	392.4	11	2.7	414.1	206.5	741.1
753 Sheet metal worker	19	9.7	194.9	117.3	304.4	12	5.4	223.2	115.2	389.9
801 Typographer, lithographer	24	12.0	200.6	128.5	298.5	19	8.8	217.1	130.7	339.1
813 Glass & ceramics kilnman	4	0.6	691.0	185.9	1769.2	0	0.2	0.0	0.0	2429.2
826 Butcher & meat preparer	13	6.1	214.3	114.0	366.5	6	3.0	198.8	72.6	432.8
888 Furniture remover	3	0.1	2015.5	405.1	5889.0	0	0.0	0.0	0.0	122048.0
912 Cook	6	0.9	665.1	242.9	1447.6	3	0.4	765.0	153.8	2235.2
921 Waiter & waitress	12	1.7	717.2	370.2	1252.9	8	0.9	852.1	366.9	1679.2
946 Photographer	7	2.0	346.8	138.9	714.6	4	1.3	306.6	82.5	784.9
948 Other service work	5	1.0	504.4	162.6	1177.1	3	0.3	1195.6	240.3	3493.4
999 Non-specif. worker	7	1.9	359.9	144.2	741.6	0	0.0	0.0	0.0	125785.0

Pharynx

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
111 General manager	26	19.0	137.0	89.5	200.8	15	7.0	213.9	119.6	352.8
333 Shop assistant	20	12.6	158.6	96.8	245.0	13	4.6	285.3	151.8	488.0
412 Horticultural worker	18	9.0	199.7	118.3	315.7	2	2.9	68.3	7.7	246.6
639 Non-specif. rail & road transport	3	0.5	657.3	132.1	1920.5	0	0.1	0.0	0.0	5034.4
782 Industrial spray painter	11	3.8	291.9	145.5	522.4	4	1.7	241.2	64.9	617.4
792 Mason	3	0.1	2205.6	443.3	6444.4	1	0.0	2288.9	29.9	12735.0
795 Glazier	4	1.4	293.6	79.0	751.8	4	0.9	447.8	120.5	1146.3
801 Typographer, lithographer	24	9.9	241.5	154.7	359.4	18	7.1	253.3	150.1	400.4
806 Bookbinder	6	1.3	449.8	164.2	979.0	3	0.6	467.9	94.0	1367.2
824 Brewery, distillery, beverage w.	4	0.9	422.3	113.6	1081.1	1	0.3	342.9	4.5	1907.9
861 Unskilled manual worker	37	24.1	153.4	108.0	211.4	6	6.8	88.7	32.4	193.1
883 Store & warehouse worker	46	29.9	153.9	112.7	205.4	14	8.5	164.3	89.7	275.7
888 Furniture remover	2	0.1	1582.1	177.7	5712.1	0	0.0	0.0	0.0	146952.0
913 Kitchen maid	3	0.3	949.0	190.7	2773.0	0	0.0	0.0	0.0	13295.0
921 Waiter & waitress	8	1.4	563.7	242.7	1110.7	6	0.8	764.2	279.0	1663.4
932 Cleaner	10	3.2	315.4	151.0	580.1	3	0.5	590.9	118.8	1726.6
941 Hairdresser, beautician	9	3.5	253.9	115.9	482.1	8	3.1	259.7	111.8	511.7
946 Photographer	4	1.7	236.0	63.5	604.1	4	1.1	372.0	100.1	952.3

Oesophagus

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
086 Performing artist	3	0.6	522.6	105.0	1527.0	1	0.4	260.0	3.4	1446.8
087 Composer, musician	7	2.0	347.6	139.3	716.3	7	1.4	514.6	206.1	1060.2
333 Shop assistant	30	18.2	164.5	111.0	234.9	15	6.7	225.1	125.9	371.2
635 Delivery men	4	1.1	378.0	101.7	967.7	0	0.1	0.0	0.0	3050.7
639 non-specif. rail & road transport	4	0.7	554.0	149.1	1418.5	0	0.1	0.0	0.0	2872.3
662 Messenger	17	8.0	212.2	123.6	339.8	1	1.3	74.5	1.0	414.4
721 Shoemaker, shoerepairer	5	2.0	252.5	81.4	589.3	5	1.4	346.3	111.6	808.1
741 Precision-tool maker	9	5.2	172.2	78.6	326.9	6	1.7	356.8	130.3	776.7
753 Sheet metal worker	21	12.0	174.3	107.8	266.4	13	6.9	188.3	100.2	322.0
861 Unskilled manual worker	72	41.3	174.4	136.4	219.6	23	12.7	181.3	114.9	272.1
871 Stationary engine operator	16	8.1	198.6	113.4	322.5	5	2.3	214.1	69.0	499.7
883 Store & warehouse worker	82	51.1	160.4	127.6	199.2	24	15.4	156.0	99.9	232.2
911 Catering supervisor	6	3.5	169.2	61.8	368.3	5	1.0	495.9	159.8	1157.2
912 Cook	6	1.0	595.4	217.4	1296.0	2	0.4	470.6	52.9	1699.2
921 Waiter & waitress	6	2.0	298.9	109.2	650.7	5	1.2	433.9	139.8	1012.7
931 Building caretaker	44	30.5	144.5	105.0	194.0	16	8.3	193.8	110.7	314.8
945 Coach, horse trainer	4	0.8	510.7	137.4	1307.6	1	0.2	402.2	5.3	2237.9
948 Other service work	5	1.4	364.6	117.5	850.9	2	0.4	531.2	59.7	1917.9

Stomach

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
431 Fisherman	37	25.1	147.4	103.7	203.1	30	20.9	143.9	97.1	205.4
501 Miner, quarryman	59	31.7	186.3	141.8	240.3	32	15.6	204.8	140.1	289.2
633 Motor-vehicle driver, tram driver	399	353.6	112.8	102.0	124.5	271	241.4	112.3	99.3	126.4
671 Lighthouse & lock operator	11	5.4	205.2	102.3	367.2	4	2.6	151.0	40.6	386.7
793 Concrete & construction worker	321	246.2	130.4	116.5	145.5	170	123.1	138.1	118.1	160.5
798 Other brick & concrete work	66	36.1	182.7	141.3	232.5	19	8.7	219.4	132.1	342.7
814 Glass, ceramic painter and decor	4	0.9	432.0	116.2	1106.0	2	0.5	377.3	42.4	1362.4
826 Butcher & meet preparer	47	35.7	131.6	96.7	175.0	29	19.0	152.7	102.3	219.4
858 Other production and related w.	68	47.0	144.7	112.4	183.5	19	13.1	145.5	87.6	227.3
861 Unskilled manual worker	230	187.4	122.8	107.4	139.7	66	60.8	108.6	84.0	138.1
875 Truck & conveyor operator	94	74.7	125.9	101.7	154.0	19	17.2	110.6	66.6	172.7
882 Docker & freight handler	61	34.4	177.2	135.5	227.6	36	15.8	227.6	159.4	315.0
943 Launderer & dry-cleaner	19	10.7	177.3	106.7	277.0	12	5.7	210.8	108.8	368.2

Colon

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
006 Engineer & technician other	143	119.9	119.2	100.5	140.5	55	42.2	130.2	98.1	169.5
052 Teacher in theoretical subjects	85	67.2	126.4	101.0	156.3	40	32.2	124.3	88.8	169.2
085 Journalist, editor	47	29.4	160.1	117.6	212.9	31	18.4	168.4	114.4	239.0
092 Social worker	24	16.5	145.5	93.2	216.5	10	4.6	218.0	104.4	400.9
101 Government legislat. & administ.	128	87.7	145.9	121.7	173.5	45	31.0	145.2	105.9	194.3
111 General manager	199	166.9	119.2	103.2	137.0	89	77.2	115.3	92.6	141.9
118 Other business manager	214	180.4	118.6	103.3	135.7	76	56.9	133.6	105.3	167.3
294 Forwarding & shipping agent	35	22.2	157.9	109.9	219.6	7	9.0	78.0	31.2	160.6
298 Cost account., estimating clerk	29	24.8	116.8	78.2	167.7	14	7.3	190.7	104.2	320.0
299 Non-specif. clerical work	161	137.0	117.5	100.1	137.1	11	7.9	139.0	69.3	248.7
321 Travelling agent	87	78.5	110.8	88.8	136.7	54	37.8	142.8	107.3	186.4
421 Game-keeper and hunter	3	0.7	435.3	87.5	1272.0	3	0.4	712.3	143.2	2081.3
644 Road traffic supervisor	42	29.8	141.1	101.7	190.8	13	7.2	180.2	95.9	308.2
714 Upholsterer	35	25.2	139.1	96.9	193.5	27	17.5	154.1	101.5	224.2
801 Typographer, lithographer	102	83.4	122.3	99.7	148.4	82	65.2	125.8	100.1	156.2
824 Brewery, distillery, beverage w.	17	9.0	188.1	109.5	301.1	8	3.2	251.9	108.5	496.3
838 Other chemic. cellulose proc. w.	13	5.9	219.6	116.8	375.5	1	0.9	108.3	1.4	602.5
850 Basketry weaver	4	0.8	522.3	140.5	1337.2	2	0.5	390.3	43.8	1409.3
902 Policeman	74	55.9	132.3	103.9	166.1	67	51.5	130.2	100.9	165.3

Rectum-anus

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
006 Engineer & technician other	98	87.8	111.6	90.6	136.0	43	30.6	140.4	101.6	189.2
040 Registered nurse	1	0.2	424.3	5.5	2360.7	1	0.0	8134.0	106.3	45256.0
095 Psychologist	2	0.7	271.8	30.5	981.2	2	0.2	953.7	107.1	3443.3
101 Government legislat. & administ.	75	64.3	116.6	91.7	146.2	38	22.4	169.5	120.0	232.7
203 Bank teller	5	1.1	440.0	141.8	1026.8	2	0.3	587.1	65.9	2119.7
301 Working proprietor, wholesale	36	24.4	147.3	103.1	203.9	14	8.6	163.6	89.4	274.5
406 Breeder of fur-bearing animals	8	3.2	250.2	107.8	493.1	4	1.7	229.2	61.6	586.7
781 Painter	142	111.6	127.2	107.1	149.9	124	96.0	129.2	107.5	154.1
822 Baker & pastry cook	51	37.6	135.5	100.9	178.2	41	32.6	125.8	90.2	170.6
857 Paper & paperboard product work	16	8.9	179.0	102.2	290.7	2	2.3	88.4	9.9	319.0
883 Store & warehouse worker	242	205.8	117.6	103.2	133.4	65	65.9	98.6	76.1	125.7
904 Prison & reformatory official	15	9.4	159.9	89.4	263.7	10	4.3	230.9	110.5	424.7
912 Cook	11	4.1	265.9	132.6	475.9	3	1.8	164.8	33.1	481.4
913 Kitchen maid	5	2.1	241.0	77.7	562.4	2	0.2	979.3	110.0	3535.6
916 Hotel receptionist	9	2.8	317.5	144.9	602.8	4	1.2	343.7	92.5	880.0

Liver primary

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
032 Dentist	8	3.5	227.0	97.7	447.3	8	3.1	255.4	110.0	503.3
085 Journalist, editor	17	5.3	320.7	186.7	513.5	14	3.2	436.0	238.2	731.6
313 Advertising salesman	9	3.9	230.0	104.9	436.6	3	1.1	277.9	55.9	812.0
321 Travelling agent	24	14.1	170.3	109.1	253.3	15	6.7	224.6	125.6	370.5
331 Commer. traveller, buyer, dealer	63	41.6	151.3	116.3	193.6	23	13.9	164.9	104.5	247.4
603 Ship engineer	7	1.7	416.8	167.0	858.7	7	1.0	672.0	269.2	1384.7
633 Motor-vehicle driver, tram driver	102	80.9	126.0	102.7	153.0	71	54.4	130.6	102.0	164.7
766 Telephone-telegraph instal repair	11	4.0	273.3	136.3	489.1	2	0.7	293.2	32.9	1058.5
822 Baker & pastry cook	19	9.5	199.9	120.3	312.1	14	7.8	180.0	98.3	302.0
861 Unskilled manual worker	60	43.7	137.4	104.8	176.8	15	13.9	108.0	60.4	178.2
883 Store & warehouse worker	76	54.0	140.7	110.8	176.1	29	16.6	174.5	116.8	250.6
911 Catering supervisor	15	3.6	418.1	233.9	689.7	5	1.1	468.8	151.1	1094.1
917 Purser, steward, stewardess	3	0.5	639.4	128.5	1868.3	2	0.3	745.6	83.7	2691.9
921 Waiter & waitress	8	2.0	408.2	175.8	804.4	6	1.1	535.2	195.4	1165.0
948 Other service work	9	1.4	628.7	286.9	1193.6	5	0.4	1219.8	393.1	2846.6

Biliary system

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
057 Educational methods advisor	6	2.1	284.5	103.9	619.2	0	0.2	0.0	0.0	07.8
208 Debt collector	4	0.9	431.2	116.0	103.8	0	0.0	0.0	0.0	9178.9
294 Forwarding & shipping agent	8	3.4	237.0	102.0	467.0	3	1.3	226.2	45.5	660.8
295 Property & store manager	33	21.4	153.9	105.9	216.2	10	6.9	145.2	69.5	267.1
636 Bus tram conductor, traffic asst	3	0.4	746.8	150.1	2182.1	1	0.2	643.5	8.4	3580.2
652 Telecommunicat. traffic officer	3	0.3	963.4	193.6	2814.8	0	0.0	0.0	0.0	42728.0
755 Welder & flame cutter	27	17.4	155.3	102.3	225.9	17	9.8	173.9	101.2	278.4

Pancreas

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
301 Working proprietor, wholesale	23	17.3	133.1	84.4	199.7	12	5.9	202.8	104.6	354.2
321 Travelling agent	65	40.1	162.2	125.2	206.7	33	18.8	175.8	121.0	246.9
633 Motor-vehicle driver, tram driver	261	29.4	113.8	100.4	128.5	162	54.8	104.7	89.2	122.1
753 Sheet metal worker	40	34.2	117.0	83.6	159.3	30	20.1	149.3	100.7	213.2
826 Butcher & meet preparer	34	22.7	149.6	103.6	209.0	17	12.0	141.7	82.5	226.9
872 Crane & hoist operator	22	18.8	117.1	73.4	177.3	15	7.4	201.9	112.9	333.0
882 Docker & freight handler	32	21.8	147.0	100.5	207.5	19	9.8	194.0	116.8	303.0
883 Store & warehouse worker	166	45.5	114.1	97.4	132.8	61	45.4	134.4	102.8	172.7
902 Policeman	37	28.3	130.7	92.0	180.2	36	25.1	143.5	100.5	198.6
908 Other civilian protect. service	42	25.5	164.7	118.7	222.7	5	4.8	103.6	33.4	241.8
921 Waiter & waitress	12	5.7	212.2	109.5	370.7	6	3.3	181.1	66.1	394.1

Peritoneum

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
055 Vocational studies teachers	2	0.2	922.6	103.6	3331.1	0	0.1	0.0	0.0	3907.9
632 Railway guard	2	0.3	727.2	81.7	2625.4	2	0.2	919.3	103.2	3319.0
791 Bricklayer	4	0.4	1097.7	295.3	2810.5	4	0.3	1249.8	336.2	3199.7
794 Insulator	4	0.0	11573.0	3113.5	29629.0	4	0.0	20174.0	5427.3	51649.0

Nose-sinuses

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
651 Post-office clerk	4	0.8	471.8	126.9	1208.0	1	0.4	236.5	3.1	1315.6
652 Telecommunicat. traffic officer	1	0.1	412.1	18.5	7857.0	1	0.0	41744.0	545.6	232260.0
741 Precision-tool maker	5	1.1	450.1	145.0	1050.3	1	0.4	252.6	3.3	1405.3
771 Construction carpenter & joiner	23	12.8	180.0	114.0	270.0	13	7.8	167.3	89.0	286.2
772 Bench carpenter & cabinet maker	25	7.3	343.0	221.9	506.4	21	4.0	521.4	322.6	797.0
871 Stationary engine operator	3	1.6	190.3	38.3	556.1	3	0.5	578.9	116.4	1691.5

Larynx

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
085 Journalist, editor	12	5.5	219.0	113.1	382.7	8	3.3	243.5	104.8	479.8
111 General manager	41	30.9	132.9	95.4	180.3	23	13.0	177.4	112.4	266.2
294 Forwarding & shipping agent	10	4.1	242.7	116.2	446.3	8	1.6	492.9	212.2	971.2
299 Non-specif. clerical work	42	24.8	169.4	122.1	229.0	0	1.4	0.0	0.0	260.4
338 Filling stat. attend., demonstr.	9	5.9	152.3	69.5	289.1	7	2.4	290.5	116.4	598.6
504 Other mining & quarrying work	3	2.4	124.7	25.1	364.4	3	0.3	893.4	179.6	2610.5
601 Ship deck officer	9	3.6	247.4	112.9	469.7	6	2.7	223.4	81.6	486.2
611 Ship deck & engine room crew	5	2.6	190.0	61.2	443.4	5	1.3	392.1	126.3	915.0
721 Shoemaker, shoerepairer	7	1.9	373.9	149.8	770.4	6	1.4	429.8	157.0	935.6
745 Gold & silver smith	4	1.4	295.6	79.5	756.8	4	1.0	399.0	107.3	1021.5
801 Typographer, lithographer	23	15.3	150.6	95.4	226.0	20	11.6	173.1	105.7	267.3
818 Other glass, pottery, tile work	2	0.7	290.2	32.6	1047.9	2	0.2	992.7	111.5	3584.1
851 Rubber products worker	10	4.8	206.2	98.7	379.3	7	2.4	295.2	118.3	608.2
932 Cleaner	14	5.5	256.2	140.0	430.0	3	0.9	330.1	66.3	964.4

Bronchus-lung

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
005 Metallurgist & mining engineer	78	64.5	121.0	95.6	151.0	34	22.5	151.4	104.9	211.6
085 Journalist, editor	59	46.5	126.9	96.6	163.7	39	26.9	144.9	103.0	198.1
295 Property & store manager	256	220.9	115.9	102.1	131.0	91	68.9	132.2	106.4	162.3
299 Non-specif. clerical work	255	216.4	117.8	103.8	133.2	11	11.4	96.1	47.9	172.0
301 Working proprietor, wholesale	71	53.2	133.4	104.2	168.3	30	17.5	171.5	115.7	244.8
321 Travelling agent	156	124.8	125.0	106.1	146.2	70	56.0	124.9	97.4	157.9
333 Shop assistant	195	160.5	121.5	105.0	139.8	73	57.1	127.9	100.3	160.8

Bronchus-lung	Job code in 1970	Job code in 1960 and 1970

	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
501 Miner, quarryman	116	62.2	186.5	154.1	223.7	65	29.0	224.2	173.0	285.8
601 Ship deck officer	48	31.7	151.6	111.8	201.0	30	22.7	132.2	89.2	188.7
603 Ship engineer	30	14.8	202.6	136.7	289.3	21	8.8	238.3	147.4	364.2
611 Ship deck & engine room crew	49	22.3	220.0	162.8	290.9	26	10.1	257.7	168.3	377.6
633 Motor-vehicle driver, tram driver	930	712.5	130.5	122.3	139.2	635	459.2	138.3	127.7	149.5
635 Delivery men	20	9.2	216.4	132.1	334.3	4	1.0	381.3	102.6	976.3
662 Messenger	95	69.6	136.4	110.4	166.8	12	11.7	102.5	52.9	179.1
731 Furnaceman	103	72.7	141.6	115.6	171.8	42	24.1	174.1	125.5	235.3
736 Metal caster & moulder	82	62.8	130.6	103.8	162.1	50	33.6	148.8	110.5	196.2
742 Watchmaker	25	15.3	163.9	106.0	241.9	23	12.5	184.7	117.0	277.2
750 Toolmaker, setter and operator	641	550.3	116.5	107.6	125.9	299	241.8	123.6	110.0	138.5
751 Machinery fitter, assembler	177	133.5	132.6	113.8	153.7	56	35.7	156.7	118.4	203.5
752 Machinery repairer	570	467.1	122.0	112.2	132.5	273	217.3	125.6	111.2	141.5
753 Sheet metal worker	157	106.2	147.8	125.6	172.8	110	59.7	184.4	151.5	222.2
754 Plumber & pipe fitter	208	165.9	125.4	108.9	143.6	147	109.1	134.7	113.8	158.3
755 Welder & flame cutter	221	182.0	121.4	105.9	138.5	122	96.9	125.9	104.6	150.3
756 Construction smith	94	61.2	153.6	124.1	188.0	39	25.2	154.7	110.0	211.5
757 Metal plater & coater	32	19.8	161.6	110.5	228.1	18	7.4	241.7	143.2	382.0
781 Painter	275	241.6	113.8	100.8	128.1	223	194.5	114.7	100.1	130.7
782 Industrial spray painter	70	49.8	140.6	109.6	177.6	36	21.9	164.7	115.4	228.1
793 Concrete & construction worker	554	479.1	115.6	106.2	125.7	272	224.9	120.9	107.0	136.2
794 Insulator	28	11.2	250.2	166.2	361.6	19	5.8	328.9	197.9	513.7
795 Glazier	24	17.6	136.0	87.1	202.4	21	11.8	177.9	110.1	272.0
801 Typographer, lithographer	169	130.7	129.3	110.5	150.3	132	93.5	141.2	118.1	167.4
826 Butcher & meet preparer	96	70.0	137.2	111.1	167.6	49	35.3	138.7	102.6	183.4
839 Non-specif. chemic. cellulose w.	49	33.2	147.7	109.3	195.3	9	5.2	173.9	79.4	330.2
871 Stationary engine operator	88	70.1	125.5	100.7	154.7	29	20.3	142.6	95.5	204.7
872 Crane & hoist operator	89	58.5	152.2	122.2	187.3	45	22.1	203.2	148.2	272.0
881 Packer	74	53.8	137.6	108.0	172.7	21	9.6	219.6	135.9	335.6
882 Docker & freight handler	92	66.9	137.5	110.8	168.6	42	28.9	145.5	104.9	196.7
883 Store & warehouse worker	593	445.5	133.1	122.6	144.3	169	133.6	126.5	108.1	147.0
911 Catering supervisor	47	31.0	151.8	111.5	201.8	15	8.8	170.8	95.6	281.8
912 Cook	21	9.0	234.0	144.8	357.8	9	3.6	248.9	113.6	472.4
916 Hotel receptionist	13	6.2	210.1	111.8	359.4	7	2.4	293.1	117.4	603.8
921 Waiter & waitress	44	17.6	249.5	181.3	335.0	33	9.9	334.0	229.9	469.1
931 Building caretaker	303	264.3	114.6	102.1	128.3	76	72.1	105.5	83.1	132.0
932 Cleaner	67	49.7	134.9	104.5	171.3	16	7.8	205.6	117.5	334.0
941 Hairdresser, beautician	69	52.3	132.1	102.7	167.1	66	46.8	141.0	109.1	179.4
948 Other service work	20	11.9	167.5	102.3	258.7	6	3.3	182.8	66.8	398.0
999 Non-specif. worker	32	21.6	148.4	101.5	209.5	0	0.0	0.0	0.0	11200

Pleura

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
003 Mechanical engineer	43	20.9	206.1	149.2	277.7	27	9.9	272.6	179.6	396.6
203 Bank teller	2	0.1	2224.4	249.8	8031.3	0	0.0	0.0	0.0	15513.0
432 Fish-breeder	1	0.0	3538.2	46.2	19686.0	1	0.0	11098.0	145.1	61750.0
603 Ship engineer	3	0.5	563.7	113.3	1647.1	2	0.3	653.7	73.4	2360.3
751 Machinery fitter, assembler	11	4.9	224.7	112.0	402.1	2	1.3	155.3	17.4	560.8
752 Machinery repairer	30	16.6	180.2	121.6	257.2	12	8.1	148.6	76.7	259.6
753 Sheet metal worker	18	3.9	463.4	274.5	732.5	10	2.2	449.2	215.0	826.1
754 Plumber & pipe fitter	30	5.9	510.3	344.2	728.5	20	4.0	496.1	302.9	766.2
756 Construction smith	17	2.2	788.5	459.1	1262.6	10	0.9	1105.2	529.1	2032.7
761 Electrical fitter & wireman	21	10.2	205.3	127.1	313.9	17	6.9	247.5	144.1	396.3
781 Painter	15	8.2	183.6	102.7	302.9	13	6.9	188.3	100.1	321.9
794 Insulator	6	0.4	1483.3	541.6	3228.7	5	0.2	2394.5	771.6	5587.8
851 Rubber products worker	5	1.4	348.3	112.2	812.8	5	0.7	711.5	229.3	1660.4
871 Stationary engine operator	10	2.3	434.9	208.2	799.9	3	0.7	437.9	88.0	1279.5
872 Crane & hoist operator	6	2.1	286.0	104.4	622.4	2	0.8	258.5	29.0	933.3

Breast

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
093 Librarian, archivist, curator	3	0.3	993.5	199.7	2902.9	1	0.1	1048.3	13.7	5832.5
111 General manager	6	3.7	160.4	58.6	349.2	6	1.6	386.2	141.0	840.6
292 Bank employee	3	0.4	721.9	145.1	2109.3	1	0.1	749.4	9.8	4169.6
752 Machinery repairer	14	6.9	202.2	110.4	339.3	7	3.2	220.8	88.4	454.9
768 Other electrical & electronic w.	2	0.5	365.7	41.1	1320.4	2	0.1	2031.0	228.1	7332.9
853 Tanner & fur dresser	2	0.1	1349.1	151.5	4871.0	0	0.1	0.0	0.0	4164.7

Prostate

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
001 Architect & building engineer	719	623.9	115.2	107.0	124.0	460	406.5	113.2	103.1	124.0
002 Electrical engineer	459	415.3	110.5	100.6	121.1	258	212.1	121.7	107.3	137.4
048 Health inspector	21	13.0	162.1	100.3	247.9	10	8.0	125.3	60.0	230.5
111 General manager	517	477.7	108.2	99.1	118.0	280	237.1	118.1	104.7	132.8
118 Other business manager	538	479.9	112.1	102.8	122.0	193	163.6	118.0	101.9	135.9
331 Commer. traveller, buyer, dealer	688	585.9	117.4	108.8	126.5	233	216.2	107.8	94.4	122.5
404 Horticultural supervisor	62	44.7	138.8	106.4	177.9	27	21.0	128.8	84.9	187.5
602 Ship pilot	17	10.2	167.1	97.3	267.6	17	9.5	178.8	104.1	286.3
603 Ship engineer	36	23.8	151.3	105.9	209.4	29	16.4	177.3	118.7	254.6
632 Railway guard	167	136.5	122.3	104.5	142.4	139	107.8	129.0	108.4	152.3
655 Telegraph & radio operator	15	8.3	180.1	100.8	297.1	12	5.6	213.1	110.0	372.2
912 Cook	21	12.9	162.6	100.6	248.5	8	5.3	151.6	65.3	298.8
945 Coach, horse trainer	16	10.7	149.3	85.3	242.5	9	3.9	230.3	105.1	437.2

Testis

Job code in 1970	Job code in 1960 and 1970

	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
085 Journalist, editor	9	3.9	228.4	104.2	433.5	1	1.2	83.9	1.1	466.6
088 Other literary and artistic work	4	0.9	462.8	124.5	1184.8	1	0.1	940.2	12.3	5231.3
118 Other business manager	29	17.8	163.0	109.1	234.1	4	2.5	159.7	43.0	409.0
201 Bookkeeping and cashier work	15	8.0	186.8	104.5	308.1	2	1.7	117.0	13.1	422.6
732 Metal annealer, temperer	4	0.8	476.4	128.2	1219.7	3	0.2	1449.8	291.4	4236.1
742 Watchmaker	4	0.8	525.5	141.4	1345.4	3	0.6	542.3	109.0	1584.4
764 Radio & TV assembler & repairmen	8	7.0	114.5	49.3	225.7	5	1.5	331.6	106.9	773.8
947 Undertaker	3	0.2	1478.6	297.2	4320.3	1	0.0	2067.8	27.0	11505.0

Penis

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
058 Other educational work	2	0.1	1995.6	224.1	7205.2	0	0.0	0.0	0.0	102167.0
634 Horse chariot driver	1	0.0	9534.4	124.6	53048.0	0	0.0	0.0	0.0	889987.0
735 Smith, forger	6	2.0	293.4	107.2	638.7	3	1.2	257.4	51.7	752.2
751 Machinery fitter, assembler	11	5.1	216.4	107.9	387.2	3	1.3	234.6	47.2	685.5
912 Cook	3	0.4	807.0	162.2	2357.9	0	0.1	0.0	0.0	2562.7

Kidney

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
331 Commer. traveller, buyer, dealer	211	168.1	125.5	109.1	143.6	78	56.1	139.2	110.0	173.7
501 Miner, quarryman	35	26.5	132.2	92.0	183.8	24	12.8	187.0	119.8	278.2
735 Smith, forger	40	25.2	158.8	113.4	216.3	25	14.7	170.6	110.4	251.9
755 Welder & flame cutter	104	82.7	125.8	102.8	152.4	62	45.9	135.0	103.5	173.0
902 Policeman	54	40.6	132.8	99.8	173.3	49	36.2	135.4	100.1	179.0
945 Coach, horse trainer	9	3.1	286.0	130.5	543.0	2	1.0	201.6	22.6	727.8

Bladder

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
002 Electrical engineer	200	172.1	116.2	100.7	133.5	97	78.6	123.4	100.0	150.5
006 Engineer & technician other	148	123.4	119.9	101.3	140.8	53	42.0	126.1	94.5	165.0
031 Physician	56	39.8	140.6	106.2	182.6	48	33.1	145.1	107.0	192.4
043 Practical nurse	8	8.7	91.9	39.6	181.0	3	0.5	560.5	112.6	1637.6
081 Sculptor, painter, photograp art	38	22.3	170.2	120.4	233.6	27	14.1	191.5	126.2	278.7
111 General manager	206	172.2	119.6	103.8	137.1	96	76.8	125.1	101.3	152.7
118 Other business manager	227	186.0	122.1	106.7	139.0	82	56.7	144.6	115.0	179.5
291 Computer operator	13	6.5	199.7	106.2	341.6	3	1.3	223.7	45.0	653.5
312 Broker, valuer	18	10.4	172.5	102.2	272.6	4	2.5	162.6	43.7	416.2
331 Commer. traveller, buyer, dealer	302	241.7	124.9	111.2	139.8	98	81.1	120.8	98.1	147.3
332 Shop manager	114	91.5	124.6	102.8	149.7	43	35.7	120.3	87.1	162.1
621 Aircraft pilot, navig, flig eng.	9	4.9	182.3	83.2	346.1	9	3.7	240.2	109.6	456.0
633 Motor-vehicle driver, tram driver	540	464.2	116.3	106.7	126.6	367	312.9	117.3	105.6	129.9

Bladder

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
662 Messenger	60	44.9	133.7	102.0	172.1	11	7.9	140.0	69.8	250.4
711 Tailor, dressmaker	25	15.5	161.1	104.2	237.8	20	11.5	173.2	105.8	267.5
714 Upholsterer	42	25.9	162.2	116.9	219.3	33	17.4	189.4	130.4	266.0
761 Electrical fitter & wireman	228	181.8	125.4	109.6	142.8	155	124.6	124.4	105.6	145.7
823 Chocolate & confectionery worker	8	3.0	262.4	113.0	517.1	2	1.0	200.8	22.6	725.1
831 Chemical process worker	38	26.7	142.2	100.6	195.1	12	7.4	161.4	83.3	281.9
883 Store & warehouse worker	297	287.2	103.4	92.0	115.9	113	90.2	125.3	103.2	150.6
921 Waiter & waitress	20	11.5	174.4	106.5	269.4	11	6.8	162.6	81.1	291.0
933 Chimney sweep	15	7.5	198.9	111.2	328.1	15	6.7	224.1	125.3	369.6
944 Presser	13	6.7	195.1	103.8	333.7	10	4.9	204.8	98.1	376.7

Malignant melanoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
001 Architect & building engineer	196	151.0	129.8	112.2	149.3	94	75.1	125.2	101.1	153.2
003 Mechanical engineer	256	217.5	117.7	103.7	133.0	109	91.1	119.6	98.2	144.3
023 Agricult. horticult. researcher	10	5.8	172.7	82.7	317.6	7	2.5	279.9	112.1	576.7
032 Dentist	22	11.8	186.0	116.5	281.6	18	8.8	203.4	120.5	321.5
047 Physiotherapist, occup therapist	5	2.7	183.0	59.0	427.2	3	0.6	529.6	106.4	1547.4
051 University, higher educ. teacher	38	18.6	204.1	144.4	280.2	8	4.2	192.2	82.7	378.7
052 Teacher in theoretical subjects	76	47.9	158.5	124.9	198.4	24	16.3	147.4	94.4	219.4
053 Class teachers	35	22.7	154.5	107.6	214.8	26	14.6	177.6	116.0	260.2
061 Minister, priest	24	14.8	161.6	103.5	240.5	19	11.3	168.9	101.6	263.7
071 Judge, other lawyer in courts	10	4.9	204.7	98.0	376.5	7	2.7	258.0	103.4	531.7
085 Journalist, editor	29	16.9	171.2	114.6	245.9	16	8.8	182.1	104.0	295.8
087 Composer, musician	14	6.8	207.0	113.1	347.3	12	4.0	297.6	153.6	519.8
092 Social worker	21	11.7	179.8	111.2	274.8	5	2.3	218.7	70.5	510.4
093 Librarian, archivist, curator	8	6.1	131.5	56.6	259.2	7	1.8	381.2	152.7	785.5
095 Psychologist	2	1.1	187.6	21.1	677.3	2	0.2	1014.6	113.9	3663.2
096 Staff officer	53	30.6	173.2	129.8	226.6	.	.	.	.	.
111 General manager	112	76.2	147.0	121.0	176.8	54	29.3	184.4	138.5	240.7
118 Other business manager	144	96.2	149.6	126.2	176.1	41	24.5	167.4	120.1	227.2
290 Secretary, typist	15	8.0	186.8	104.5	308.1	3	0.8	371.7	74.7	1086.0
292 Bank employee	22	13.5	162.5	101.8	246.0	7	3.9	179.1	71.8	369.1
294 Forwarding & shipping agent	33	13.2	249.6	171.8	350.5	13	4.8	272.4	144.9	465.8
296 Insurance rater, claims adjuster	20	10.2	196.7	120.1	303.9	9	3.4	266.8	121.8	506.6
311 Insurance representative & agent	16	7.9	203.8	116.4	330.9	10	3.8	264.6	126.7	486.7
321 Travelling agent	65	46.0	141.4	109.1	180.3	23	17.1	134.7	85.4	202.2
331 Commer. traveller, buyer, dealer	199	140.2	142.0	122.9	163.1	54	40.0	135.1	101.5	176.3
671 Lighthouse & lock operator	7	2.8	254.1	101.8	523.5	3	1.3	238.6	48.0	697.1
712 Fur tailor	8	2.5	316.7	136.4	624.1	7	1.9	361.2	144.7	744.2
801 Typographer, lithographer	67	49.5	135.3	104.9	171.8	50	36.7	136.2	101.1	179.6

Malignant melanoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
904 Prison & reformatory official	18	8.1	221.4	131.1	349.9	4	3.1	129.3	34.8	331.1
911 Catering supervisor	17	9.9	171.5	99.9	274.7	7	2.5	279.0	111.8	574.9
981 Member of the armed forces	68	45.0	151.0	117.3	191.5	48	34.6	138.7	102.3	183.9

Non-melanoma skin cancer

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
031 Physician	46	17.7	259.9	190.2	346.6	31	15.5	199.7	135.7	283.5
046 Pharmacist	6	2.4	247.0	90.2	537.7	6	2.1	279.5	102.1	608.3
053 Class teachers	24	15.2	158.0	101.2	235.1	23	12.5	184.0	116.6	276.1
057 Educational methods advisor	12	6.1	197.3	101.8	344.6	1	0.7	145.0	1.9	806.9
061 Minister, priest	24	16.4	146.4	93.8	217.8	23	14.5	158.5	100.4	237.8
081 Sculptor, painter, photograp art	20	9.9	202.5	123.6	312.8	13	6.5	199.3	106.0	340.8
094 Economist, statistician	8	2.7	295.3	127.1	581.9	0	0.3	0.0	0.0	1190.4
101 Government legislat. & administ.	66	41.0	160.9	124.4	204.6	25	15.1	165.3	106.9	244.0
111 General manager	94	78.2	120.2	97.1	147.1	56	38.4	146.0	110.3	189.6
118 Other business manager	111	82.2	135.1	111.1	162.7	29	27.0	107.5	72.0	154.3
292 Bank employee	16	7.9	202.2	115.5	328.3	5	2.8	176.2	56.8	411.2
296 Insurance rater, claims adjuster	15	8.1	185.1	103.5	305.3	8	2.9	279.2	120.2	550.2
509 Non-specif. mining & quarrying	2	0.1	1670.1	187.6	6029.7	-	-	-	-	-
601 Ship deck officer	17	9.4	181.3	105.5	290.3	13	7.3	177.0	94.1	302.6
603 Ship engineer	9	4.2	214.3	97.8	406.9	7	2.7	255.9	102.5	527.4
621 Aircraft pilot, navig, flig eng.	5	1.9	257.4	82.9	600.6	5	1.5	330.6	106.5	771.4
643 Railway st. master and dispatch.	35	26.5	132.2	92.1	183.8	14	7.1	198.2	108.3	332.6
655 Telegraph & radio operator	5	1.5	327.3	105.5	763.9	3	1.0	299.6	60.2	875.3
798 Other brick & concrete work	32	20.9	153.0	104.6	216.0	4	5.2	76.6	20.6	196.2
822 Baker & pastry cook	35	23.7	147.5	102.7	205.1	30	20.6	145.7	98.3	208.0
854 Photographic laboratory worker	4	0.7	570.2	153.4	1459.7	0	0.1	0.0	0.0	3356.9
882 Docker & freight handler	30	19.9	150.5	101.5	214.9	18	9.6	188.3	111.5	297.6
902 Policeman	40	24.7	162.0	115.7	220.6	35	22.5	155.8	108.5	216.7
941 Hairdresser, beautician	24	15.8	152.2	97.5	226.5	24	15.3	156.6	100.3	233.0
981 Member of the armed forces	52	30.6	169.7	126.8	222.6	46	25.3	182.0	133.2	242.7

Brain

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
021 Veterinarian	6	2.1	282.9	103.3	615.7	3	1.6	182.7	36.7	534.0
032 Dentist	17	10.7	159.0	92.6	254.7	16	8.2	195.4	111.6	317.3
318 Auctionist	2	1.0	201.0	22.6	725.6	2	0.1	1481.7	166.4	5349.5
402 Farm supervisor	10	3.6	280.6	134.3	516.1	4	1.8	227.8	61.3	583.3
504 Other mining & quarrying work	11	7.0	157.4	78.5	281.6	4	0.9	466.0	125.4	1193.0
641 Harbour master	6	1.8	324.9	118.6	707.1	3	0.7	446.6	89.8	1304.8
644 Road traffic supervisor	23	14.0	163.9	103.8	245.9	3	2.7	109.7	22.0	320.6
651 Post-office clerk	19	11.1	170.6	102.7	266.5	6	4.6	130.3	47.6	283.6
774 Frame, circular sawyer & planer	31	21.3	145.5	98.8	206.5	9	4.0	222.6	101.6	422.6
834 Paper pulp worker	26	16.2	160.1	104.6	234.7	5	5.2	95.3	30.7	222.4

Thyroid

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
048 Health inspector	2	0.4	475.3	53.4	1716.2	2	0.2	909.1	102.1	3282.2
054 Teacher of music, arts or crafts	5	3.0	165.4	53.3	385.9	5	1.6	317.4	102.3	740.7
204 Cashier retail store & restaur.	1	0.1	831.4	10.9	4625.9	1	0.0	12532.0	163.8	69725.0
902 Policeman	13	6.1	212.7	113.2	363.8	6	4.7	128.2	46.8	279.1
904 Prison & reformatory official	5	1.4	367.9	118.6	858.6	3	0.5	566.5	113.9	1655.3

Soft tissue sarcoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
023 Agricult. horticult. researcher	3	1.3	238.3	47.9	696.2	3	0.6	499.6	100.4	1459.8
414 Fur-bearing animal farm worker	2	0.2	831.1	93.3	3000.5	2	0.1	2019.2	226.8	7290.2
745 Gold & silver smith	5	0.9	564.9	182.0	1318.3	3	0.6	465.0	93.5	1358.7
795 Glazier	5	1.5	340.8	109.8	795.3	2	1.0	199.6	22.4	720.6

Hemato-lymphatic organs

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
054 Teacher of music, arts or crafts	54	40.5	133.2	100.1	173.8	33	22.9	143.9	99.0	202.1
290 Secretary, typist	29	18.5	156.3	104.7	224.5	2	2.3	86.9	9.8	313.7
301 Working proprietor, wholesale	56	41.8	134.1	101.3	174.1	16	14.0	114.5	65.4	186.0
318 Auctionist	10	2.6	379.3	181.6	697.6	4	0.4	1036.6	278.9	2653.9
501 Miner, quarryman	54	50.4	107.1	80.4	139.7	36	23.9	150.7	105.6	208.7
633 Motor-vehicle driver, tram driver	674	624.5	107.9	99.9	116.4	437	395.1	110.6	100.5	121.5
726 Leather goods maker	10	7.9	126.4	60.5	232.5	9	4.1	220.3	100.5	418.2
738 Other metal processing work	22	23.1	95.2	59.6	144.1	11	5.2	209.6	104.5	375.0
827 Dairy worker	35	24.2	144.9	100.9	201.5	26	16.1	161.0	105.1	235.9
904 Prison & reformatory official	21	18.0	116.4	72.0	178.0	14	7.6	184.2	100.6	309.0

Non-Hodgkin lymphoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
005 Metallurgist & mining engineer	20	19.0	105.4	64.4	162.8	13	6.6	196.9	104.8	336.8
078 Other legal work	2	0.2	972.9	109.3	3512.5	1	0.0	4860.3	63.5	27042.0
091 Accountant, auditor	19	10.5	181.5	109.2	283.5	9	4.9	185.5	84.7	352.2
201 Bookkeeping and cashier work	46	33.4	137.7	100.8	183.7	21	12.6	167.2	103.4	255.6
290 Secretary, typist	14	6.7	209.2	114.3	351.0	2	0.8	241.9	27.2	873.5
318 Auctionist	4	1.0	419.6	112.9	1074.4	2	0.1	1439.9	161.7	5198.9
733 Rolling-mill worker	17	11.5	147.9	86.1	236.8	9	4.0	227.4	103.8	431.8
738 Other metal processing work	8	8.2	97.9	42.1	192.8	6	1.9	319.8	116.8	696.1
858 Other production and related w.	39	26.6	146.5	104.1	200.2	13	7.0	184.9	98.4	316.2
943 Launderer & dry-cleaner	12	6.0	201.4	103.9	351.7	6	3.2	189.9	69.3	413.3

Hodgkin's lymphoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
082 Designer	4	0.9	430.5	115.8	1102.1	1	0.3	361.1	4.7	2009.3
403 Forestry supervisor	7	4.2	168.2	67.4	346.6	7	2.7	263.2	105.4	542.3
406 Breeder of fur-bearing animals	2	0.4	531.0	59.6	1917.1	2	0.2	1099.5	123.5	3969.8
749 Non-specif. precision-toll work	1	0.0	18113	236.7	100778.0	-	-	-	-	-
818 Other glass, pottery, tile work	3	0.3	924.4	185.8	2700.9	1	0.1	1142.0	14.9	6353.7
903 Custom official	4	1.4	282.5	76.0	723.3	4	1.1	380.8	102.5	975.0

Multiple myeloma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
312 Broker, valuer	4	2.4	164.7	44.3	421.7	3	0.6	517.6	104.0	1512.3
401 Farmer, wood & horticul. enterpr	236	196.6	120.0	105.2	136.4	188	167.1	112.5	97.0	129.8
726 Leather goods maker	4	1.5	264.7	71.2	677.7	4	0.8	509.6	137.1	1304.7
744 Dental technician	6	1.6	366.9	134.0	798.6	6	1.5	403.1	147.2	877.4
904 Prison & reformatory official	6	3.1	193.0	70.5	420.2	5	1.4	351.2	113.2	819.7

Chronic lymphatic leukaemia

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
083 Display artist	3	0.7	417.7	84.0	1220.5	3	0.5	579.8	116.5	1694.1
301 Working proprietor, wholesale	14	5.8	243.1	132.8	407.9	5	2.0	251.5	81.0	586.8
405 Livestock breeder	5	0.9	531.0	171.1	1239.1	2	0.3	699.1	78.5	2523.9
501 Miner, quarryman	14	6.7	207.9	113.6	348.9	9	3.3	271.8	124.0	515.9
741 Precision-tool maker	11	5.0	221.2	110.2	395.7	5	1.7	298.3	96.1	696.0
761 Electrical fitter & wireman	41	30.2	135.9	97.5	184.4	35	21.1	166.2	115.7	231.2
838 Other chemic. cellulose proc. w.	2	1.0	195.5	22.0	705.8	2	0.2	1282.7	144.1	4631.1
873 Rigger & cable splicer	3	0.3	1114.8	224.1	3257.2	1	0.1	1109.2	14.5	6171.7

Chronic myeloid leukaemia

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
334 Travelling salesman	2	0.1	2086.2	234.3	7532.3	0	0.0	0.0	0.0	23131.0
699 Non specif. transport and commun	3	0.4	721.8	145.1	2109.1	0	0.0	0.0	0.0	13473.0
782 Industrial spray painter	7	1.9	377.3	151.2	777.5	2	0.8	243.8	27.4	880.1

Acute leukaemia

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
003 Mechanical engineer	57	48.2	118.2	89.6	153.2	33	21.7	151.9	104.6	213.4
053 Formal school master	9	4.8	187.1	85.4	355.2	8	3.3	239.4	103.1	471.7
719 Non-specif. sewing work	2	0.2	1091.6	122.6	3941.3	0	0.0	0.0	0.0	10296.0
771 Construction carpenter & joiner	56	43.3	129.4	97.7	168.0	37	22.9	161.3	113.5	222.3
798 Other brick & concrete work	12	5.8	205.2	105.9	358.5	3	1.2	244.2	49.1	713.4
852 Plastic products worker	9	4.0	222.8	101.7	423.0	3	0.6	540.6	108.7	1579.6

Table 4. Occupations with increased risk of cancer, per cancer site. Females. Occupations with significantly increased risk in either 1970 or in 1960 and 1970 are shown

All cancer sites

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
085 Journalist, editor	215	190.6	112.8	98.2	129.0	75	57.3	130.8	102.9	164.0
086 Performing artist	83	65.7	126.4	100.7	156.7	38	31.9	119.2	84.3	163.6
093 Librarian, archivist, curator	463	407.9	113.5	103.4	124.3	110	103.0	106.8	87.8	128.7
096 Staff officer	286	240.4	119.0	105.6	133.6	-	-	-	-	-
101 Government legislat. & administ.	462	401.8	115.0	104.7	126.0	65	54.6	119.0	91.9	151.7
118 Other business manager	678	616.6	110.0	101.8	118.6	72	65.5	109.9	86.0	138.4
201 Bookkeeping and cashier work	3403	3106.0	109.6	105.9	113.3	1056	960.5	109.9	103.4	116.8
290 Secretary, typist	4102	3794.0	108.1	104.8	111.5	1385	1271.0	109.0	103.3	114.9
291 Computer operator	521	468.0	111.3	102.0	121.3	98	91.6	107.0	86.9	130.4
298 Cost account., estimating clerk	76	60.5	125.7	99.0	157.3	25	13.9	180.1	116.5	265.9
299 Non-specif. clerical work	8010	7653.0	104.7	102.4	107.0	893	906.2	98.5	92.2	105.2
402 Farm supervisor	6	2.0	301.8	110.2	657.0	0	0.0	-	-	-
653 Telephone operator	464	403.9	114.9	104.7	125.8	370	337.0	109.8	98.9	121.6
655 Telegraph & radio operator	109	94.5	115.3	94.7	139.1	61	45.1	135.1	103.4	173.6
806 Bookbinder	371	335.4	110.6	99.6	122.4	163	133.7	121.9	103.9	142.1
813 Glass & ceramics kilnman	4	2.5	163.0	43.8	417.3	2	0.0	8480.2	952.4	30618.0
861 Unskilled manual worker	178	160.0	111.2	95.5	128.8	16	9.0	177.9	101.6	289.0
902 Policeman	22	12.1	181.1	113.4	274.2	4	5.5	72.1	19.4	184.7
904 Prison & reformatory official	30	17.0	176.2	118.9	251.5	6	3.3	183.9	67.1	400.2
912 Cook	1326	1254.0	105.8	100.1	111.6	450	416.7	108.0	98.2	118.4
918 Other housekeeping & related w.	101	82.0	123.2	100.3	149.7	19	11.8	161.7	97.3	252.5
946 Photographer	76	57.3	132.7	104.6	166.1	41	26.1	157.4	112.9	213.5

Lip

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
611 Ship deck & engine room crew	1	0.0	40890.0	534.4	227504.0					
818 Other glass, pottery, tile work	1	0.0	2048.6	26.8	11398.0	1	0.0	12255	160.2	68183.0
943 Launderer & dry-cleaner	5	1.0	525.7	169.4	1226.7	2	0.2	827.6	93.0	2988.2

Oral cavity

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
014 Laboratory technician	5	1.5	343.3	110.6	801.0	-	-	-	-	-
041 Midwife	3	0.6	535.3	107.6	1564.1	0	0.4	0.0	0.0	999.6
782 Industrial spray painter	2	0.2	1031.3	115.8	3723.5	0	0.0	0.0	0.0	11239.0
831 Chemical process worker	2	0.2	1287.8	144.6	4649.4	0	0.0	0.0	0.0	16558.0
921 Waiter & waitress	21	13.4	156.9	97.1	239.8	10	4.1	241.2	115.5	443.7

Pharynx

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
086 Performing artist	2	0.2	1231.4	138.3	4446.0	1	0.1	1353.5	17.7	7530.4
941 Hairdresser, beautician	7	2.1	327.8	131.3	675.5	4	1.5	260.9	70.2	668.1

Oesophagus

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
085 Journalist, editor	2	0.6	358.2	40.2	1293.3	2	0.2	1077.0	121.0	3888.5
299 Non-specif. clerical work	30	22.9	130.9	88.3	186.9	7	2.8	252.3	101.1	519.9
932 Cleaner	35	28.8	121.7	84.7	169.2	12	5.9	203.8	105.2	356.0

Stomach

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
043 Practical nurse	193	174.0	110.9	95.8	127.7	62	44.8	138.3	106.0	177.3
083 Display artist	2	0.6	315.9	35.5	1140.6	2	0.2	939.3	105.5	3391.4
421 Game-keeper and hunter	1	0.0	30174	394.4	167881.0	1	0.0	44954	587.6	250118.0
758 Other engin. & building metal	30	17.7	169.4	114.2	241.8	5	3.3	152.1	49.0	354.9
768 Other electrical & electronic w.	26	16.6	156.2	102.0	228.8	5	4.2	119.7	38.6	279.3
852 Plastic products worker	17	9.5	178.9	104.1	286.4	0	0.7	0.0	0.0	491.2
912 Cook	48	38.3	125.3	92.4	166.2	23	12.7	180.7	114.5	271.2
913 Kitchen maid	121	99.2	122.0	101.3	145.8	16	12.3	129.6	74.0	210.5
932 Cleaner	281	236.7	118.7	105.3	133.5	59	48.4	121.9	92.8	157.3

Colon

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
074 Corporat. and organizat. lawyer	3	0.3	912.5	183.4	2666.2	0	0.1	0.0	0.0	3498.6
711 Tailor, dressmaker	47	33.2	141.5	104.0	188.2	20	12.4	161.5	98.6	249.4
791 Bricklayer	1	0.0	19339	252.8	107600.0	-	-	-	-	-

Rectum-anus

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
056 Pre-school teachers	20	11.4	175.0	106.9	270.4	5	4.2	117.9	38.0	275.2
313 Advertising salesman	6	2.1	290.0	105.9	631.2	3	0.3	1180.9	237.3	3450.4
653 Telephone operator	24	13.4	179.8	115.1	267.5	21	11.7	179.7	111.2	274.7
712 Fur tailor	3	0.5	587.7	118.1	1717.2	0	0.1	0.0	0.0	3246.9
713 Hatmaker & milliner	11	4.4	247.5	123.4	442.8	6	2.5	243.8	89.0	530.6
721 Shoemaker, shoerepairer	3	0.3	906.2	182.1	2647.8	0	0.0	0.0	0.0	17205.0
813 Glass & ceramics kilnman	1	0.1	1098.4	14.4	6111.5	1	0.0	181751.0	2375.5	1011238.0
825 Canning worker	17	11.8	143.9	83.8	230.4	9	3.7	246.5	112.5	468.1

Liver primary

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
082 Designer	4	0.5	740.6	199.2	1896.1	1	0.1	732.8	9.6	4077.0
824 Brewery, distillery, beverage w.	3	0.5	584.9	117.6	1709.1	2	0.2	1208.6	135.7	4363.6

Biliary system

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
333 Shop assistant	227	195.4	116.2	101.6	132.3	80	69.1	115.8	91.8	144.2
774 Frame, circular sawyer & planer	2	0.2	1230.9	138.2	4444.3	0	0.0	0.0	0.0	128060.0
839 Non-specif. chemic. cellulose w.	9	2.4	372.3	169.9	706.8	1	0.4	242.7	3.2	1350.2
932 Cleaner	199	160.8	123.7	107.1	142.2	39	34.0	114.8	81.7	157.0

Pancreas

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
057 Educational methods advisors	8	3.1	257.8	111.0	508.0	1	0.3	289.8	3.8	1612.5
204 Cashier retail store & restaur.	42	28.7	146.4	105.5	197.9	7	5.3	132.7	53.2	273.5
712 Fur tailor	2	0.4	506.1	56.8	1827.1	2	0.1	2200.5	247.1	7944.7
733 Rolling-mill worker	3	0.5	647.4	130.1	1891.7	0	0.0	0.0	0.0	209091.0
768 Other electrical & electronic w.	27	16.0	169.2	111.5	246.2	6	4.3	141.0	51.5	306.8
812 Potter	4	1.1	380.6	102.4	974.3	0	0.3	0.0	0.0	1410.1
917 Purser, steward, stewardess	6	1.4	431.8	157.7	939.8	1	0.1	748.2	9.8	4163.1
932 Cleaner	252	236.3	106.6	93.9	120.7	69	50.4	136.8	106.4	173.1

Peritoneum

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
003 Mechanical engineer	1	0.0	7998.8	104.5	44504	0	0.0	0.0	0.0	373629.0
098 Other profes. technic & related	1	0.0	3076.2	40.2	17116	1	0.0	48403.0	632.6	269309.0
831 Chemical process worker	1	0.0	9886.2	129.2	55006	0	0.0	0.0	0.0	258061.0

Nose-sinuses

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
201 Bookkeeping and cashier work	9	3.4	268.5	122.5	509.7	1	0.9	105.7	1.4	588.1
293 Travel agency employee	1	0.1	1944.5	25.4	10819	1	0.0	7891.5	103.1	43907.0
852 Plastic products worker	3	0.4	755.2	151.8	2206.7	0	0.0	0.0	0.0	11981.0
857 Paper & paperboard product work	2	0.2	977.4	109.8	3528.8	0	0.1	0.0	0.0	6200.5

Larynx

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
047 Physiotherapist, occup therapist	3	0.7	417.7	84.0	1220.5	2	0.1	1733.5	194.7	6258.7
098 Other profes. technic & related	2	0.2	1117.1	125.5	4033.4	0	0.0	0.0	0.0	40556.0
758 Other engin. & building metal	4	1.1	372.1	100.1	952.8	0	0.1	0.0	0.0	2554.3
782 Industrial spray painter	2	0.1	2885.2	324.0	10417.0	0	0.0	0.0	0.0	38380.0
908 Other civilian protect. service	2	0.2	1183.5	132.9	4272.9	2	0.0	39538.0	4440.4	142751.0
921 Waiter & waitress	10	4.4	225.4	107.9	414.5	2	1.0	200.9	22.6	725.3

Bronchus-lung

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
079 Non-specif. legal work	1	0.0	57080	746.0	317586.0	-	-	-	-	-
084 Author	3	0.6	526.4	105.8	1538.1	2	0.1	1792.6	201.3	6472.1
085 Journalist, editor	14	7.5	187.7	102.5	314.9	9	2.3	386.0	176.1	732.7
291 Computer operator	29	16.8	172.4	115.5	247.7	6	3.1	193.3	70.6	420.7
298 Cost account., estimating clerk	7	2.4	289.4	115.9	596.3	3	0.6	524.6	105.4	1532.7
299 Non-specif. clerical work	345	304.4	113.3	101.7	125.9	33	34.4	95.9	66.0	134.7
758 Other engin. & building metal	42	27.4	153.2	110.4	207.1	10	5.0	200.2	95.8	368.2
768 Other electrical & electronic w.	41	26.3	155.8	111.8	211.3	12	6.5	183.2	94.6	320.1
812 Potter	5	1.6	321.9	103.7	751.2	2	0.4	499.1	56.1	1802.2
826 Butcher & meat preparer	16	6.4	250.5	143.1	406.8	2	1.0	191.2	21.5	690.5
834 Paper pulp worker	3	0.8	353.1	71.0	1031.7	1	0.0	84297.0	1101.8	469015.0
841 Tobacco worker	5	1.2	416.6	134.2	972.1	1	0.5	182.0	2.4	1012.6
872 Crane & hoist operator	7	2.9	241.2	96.6	497.0	3	0.6	499.8	100.5	1460.3
875 Truck & conveyor operator	5	1.3	380.5	122.6	887.9	0	0.0	0.0	0.0	19702.0
881 Packer	61	43.2	141.2	108.0	181.4	8	6.7	119.0	51.3	234.6
883 Store & warehouse worker	52	34.2	151.9	113.4	199.2	11	4.9	226.5	112.9	405.3
918 Other housekeeping & related w.	9	3.5	259.2	118.3	492.1	1	0.5	193.0	2.5	1074.0
921 Waiter & waitress	155	120.7	128.4	109.0	150.3	59	36.0	164.1	124.9	211.6
932 Cleaner	387	341.1	113.5	102.4	125.3	76	67.8	112.0	88.3	140.2

Pleura

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
716 Industrial confection	6	1.7	362.2	132.3	788.3	5	1.0	519.1	167.3	1211.3

Breast

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
008 Technical assistant	109	90.4	120.6	99.0	145.4	51	36.7	139.0	103.5	182.8
031 Physician	59	40.0	147.4	112.2	190.1	39	24.5	159.5	113.4	218.0
032 Dentist	52	37.1	140.2	104.7	183.8	36	28.5	126.4	88.5	175.0
040 Registered nurse	754	643.3	117.2	109.0	125.9	398	358.6	111.0	100.3	122.4
045 Medical technician	122	99.4	122.8	101.9	146.6	19	22.4	84.6	50.9	132.2
046 Pharmacist	83	55.2	150.3	119.7	186.3	47	32.6	144.2	106.0	191.8

Breast

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
051 University, higher educ. teacher	46	33.5	137.1	100.4	182.9	3	3.0	100.5	20.2	293.5
052 Teacher in theoretical subjects	409	314.5	130.0	117.7	143.3	142	116.2	122.2	102.9	144.0
053 Class teachers	827	650.5	127.1	118.6	136.1	563	478.4	117.7	108.2	127.8
054 Teacher of music, arts or crafts	292	249.1	117.2	104.2	131.5	145	118.9	121.9	102.9	143.4
055 Vocational studies teachers	131	99.9	131.2	109.7	155.7	20	19.4	102.9	62.9	159.0
068 Other religious work	22	14.7	149.2	93.5	226.0	11	5.3	208.2	103.8	372.6
086 Performing artist	32	20.4	157.1	107.5	221.8	13	10.2	127.6	67.9	218.3
092 Social worker	281	226.4	124.1	110.0	139.5	85	65.0	130.7	104.4	161.6
093 Librarian, archivist, curator	144	117.7	122.3	103.2	144.0	40	29.9	133.7	95.5	182.1
096 Staff officer	97	71.1	136.5	110.7	166.5	-	-	-	-	-
097 System analyst, programmer	24	13.4	179.3	114.9	266.8	-	-	-	-	-
101 Government legislat. & administ.	165	115.8	142.5	121.5	165.9	19	15.6	121.7	73.3	190.1
118 Other business manager	216	178.3	121.1	105.5	138.4	21	17.7	118.6	73.4	181.3
201 Bookkeeping and cashier work	1084	929.3	116.6	109.8	123.8	334	291.5	114.6	102.6	127.6
290 Secretary, typist	1416	1172	120.9	114.7	127.3	497	408.4	121.7	111.2	132.9
296 Insurance rater, claims adjuster	135	99.8	135.3	113.4	160.1	54	42.3	127.7	95.9	166.6
298 Cost account., estimating clerk	26	17.7	146.9	96.0	215.3	10	4.0	248.5	119.0	457.1
299 Non-specif. clerical work	2517	2268	111.0	106.7	115.4	286	286.4	99.8	88.6	112.1
653 Telephone operator	157	122.6	128.1	108.8	149.7	130	109.4	118.8	99.3	141.1
654 Office telephonist	347	302.8	114.6	102.9	127.3	113	95.8	117.9	97.2	141.7
655 Telegraph & radio operator	43	29.3	146.6	106.1	197.4	25	14.8	169.5	109.6	250.2
757 Metal plater & coater	12	5.9	203.7	105.2	355.9	1	0.5	206.2	2.7	1147.2
813 Glass & ceramics kilnman	2	0.7	290.3	32.6	1048.0	1	0.0	10054	131.4	55939.0
904 Prison & reformatory official	11	4.9	225.0	112.2	402.6	1	0.9	115.6	1.5	643.3

Cervix

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
003 Mechanical engineer	5	2.6	195.6	63.0	456.4	2	0.1	1585.0	178.0	5722.5
086 Performing artist	8	3.2	247.4	106.5	487.5	6	1.2	500.0	182.6	1088.4
118 Other business manager	36	24.6	146.2	102.4	202.5	0	2.1	0.0	0.0	178.8
204 Cashier retail store & restaur.	79	52.7	149.8	118.6	186.7	11	6.2	176.5	88.0	315.9
333 Shop assistant	488	436.0	111.9	102.2	122.3	161	137.0	117.5	100.1	137.2
806 Bookbinder	26	13.7	189.7	123.9	277.9	8	4.6	172.2	74.1	339.3
824 Brewery, distillery, beverage w.	7	2.6	272.8	109.3	562.2	2	0.6	321.9	36.	1162.2
827 Dairy worker	8	2.2	368.1	158.5	725.3	2	0.4	494.2	55.5	1784.2
831 Chemical process worker	5	1.4	365.1	117.6	852.0	0	0.1	0.0	0.0	2495.4
841 Tobacco worker	5	1.4	365.5	117.8	852.9	0	0.5	0.0	0.0	722.8
913 Kitchen maid	157	127.8	122.8	104.4	143.6	17	13.9	122.5	71.3	196.2
932 Cleaner	440	306.8	143.4	130.3	157.4	89	47.4	187.6	150.6	230.8
941 Hairdresser, beautician	69	43.5	158.8	123.5	200.9	27	25.5	106.0	69.8	154.2
943 Launderer & dry-cleaner	38	24.9	152.5	107.9	209.4	8	6.6	120.7	52.0	237.8
999 Non-specif. worker	13	6.4	201.6	107.2	344.7	0	0.0	0.0	0.0	31800.0

Uterus

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
003 Mechanical engineer	5	2.6	195.6	63.0	456.4	2	0.1	1585.0	178.0	5722.5
086 Performing artist	8	3.2	247.4	106.5	487.5	6	1.2	500.0	182.6	1088.4
118 Other business manager	36	24.6	146.2	102.4	202.5	0	2.1	0.0	0.0	178.8
204 Cashier retail store & restaur.	79	52.7	149.8	118.6	186.7	11	6.2	176.5	88.0	315.9
333 Shop assistant	488	436.0	111.9	102.2	122.3	161	137.0	117.5	100.1	137.2
806 Bookbinder	26	13.7	189.7	123.9	277.9	8	4.6	172.2	74.1	339.3
824 Brewery, distillery, beverage w.	7	2.6	272.8	109.3	562.2	2	0.6	321.9	36.2	1162.2
827 Dairy worker	8	2.2	368.1	158.5	725.3	2	0.4	494.2	55.5	1784.2
831 Chemical process worker	5	1.4	365.1	117.6	852.0	0	0.1	0.0	0.0	2495.4
841 Tobacco worker	5	1.4	365.5	117.8	852.9	0	0.5	0.0	0.0	722.8
913 Kitchen maid	157	127.8	122.8	104.4	143.6	17	13.9	122.5	71.3	196.2
932 Cleaner	440	306.8	143.4	130.3	157.4	89	47.4	187.6	150.6	230.8
941 Hairdresser, beautician	69	43.5	158.8	123.5	200.9	27	25.5	106.0	69.8	154.2
943 Launderer & dry-cleaner	38	24.9	152.5	107.9	209.4	8	6.6	120.7	52.0	237.8
999 Non-specif. worker	13	6.4	201.6	107.2	344.7	0	0.0	0.0	0.0	31800.0

Ovary

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
068 Other religious work	9	3.7	242.0	110.4	459.3	2	1.3	148.4	16.7	535.8
292 Bank employee	48	40.7	117.8	86.9	156.2	15	8.3	179.9	100.6	296.7
701 Textile workers	71	54.2	131.0	102.3	165.3	42	27.6	152.3	109.8	205.9
902 Policeman	4	0.9	448.7	120.7	1148.7	0	0.4	0.0	0.0	874.3
912 Cook	110	87.4	125.9	103.5	151.7	39	29.2	133.6	95.0	182.6

Other female sexual organs

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
088 Other literary and artistic work	2	0.2	1020.6	114.6	3684.7	0	0.0	0.0	0.0	12845.0
651 Post-office clerk	11	5.8	189.7	94.6	339.5	7	2.3	306.2	122.7	631.0
857 Paper & paperboard product work	5	1.3	390.9	126.0	912.3	1	0.3	308.3	4.0	1715.1
932 Cleaner	78	59.8	130.4	103.0	162.7	12	10.2	117.7	60.7	205.6
946 Photographer	2	0.4	502.4	56.4	1814.1	2	0.2	1298.0	145.8	4686.5

Kidney

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
768 Other electrical & electronic w.	21	16.5	127.1	78.7	194.3	10	4.1	244.9	117.3	450.5
942 Bath attendant	9	4.7	190.9	87.1	362.3	5	1.5	338.0	108.9	788.8

Bladder

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
096 Staff officer	10	4.6	219.4	105.1	403.6	-	-	-	-	-
118 Other business manager	25	12.3	203.5	131.7	300.4	5	1.6	321.7	103.7	750.7
654 Office telephonist	30	18.5	162.5	109.6	231.9	7	6.3	111.4	44.6	229.6
758 Other engin. & building metal	23	13.1	175.1	111.0	262.8	0	2.6	0.0	0.0	140.4
811 Glass former & cutter	3	0.6	531.7	106.9	1553.7	0	0.1	0.0	0.0	3045.3
831 Chemical process worker	4	0.7	563.8	151.7	1443.4	1	0.1	951.1	12.4	5292.0
921 Waiter & waitress	81	62.3	130.1	103.3	161.7	35	19.6	178.9	124.6	248.8
999 Non-specif. worker	9	3.1	289.3	132.0	549.3	0	0.0	0.0	0.0	92980.0

Malignant melanoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
044 Dental nurse	32	18.3	174.6	119.4	246.5	10	8.6	116.9	56.0	215.0
050 Principal, headmaster	6	1.8	332.8	121.5	724.5	1	0.3	359.7	4.7	2001.6
052 Teacher in theoretical subjects	63	41.6	151.6	116.5	194.0	17	11.9	142.8	83.2	228.7
053 Class teachers	125	88.1	141.9	118.1	169.0	65	50.7	128.3	99.0	163.6
084 Author	3	0.4	703.3	141.4	2054.9	0	0.1	0.0	0.0	5093.3
201 Bookkeeping and cashier work	139	115.2	120.7	101.5	142.5	34	30.9	109.9	76.1	153.6
203 Bank teller	20	10.6	188.4	115.0	291.0	2	1.9	106.7	12.0	385.2
290 Secretary, typist	210	163.8	128.2	111.5	146.8	62	46.9	132.1	101.3	169.3
713 Hatmaker & milliner	9	3.3	273.0	124.6	518.2	6	1.8	338.7	123.7	737.2

Non-melanoma skin cancer

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
032 Dentist	6	1.7	349.1	127.5	759.8	5	1.6	313.7	101.1	732.2
302 Working proprietor, retail trade	23	16.4	140.4	89.0	210.7	15	7.2	209.5	117.2	345.6
858 Other production and related w.	4	2.8	142.8	38.4	365.5	3	0.6	525.1	105.5	1534.3
944 Presser	10	3.6	277.4	132.8	510.1	5	1.8	272.6	87.9	636.2

Brain

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
621 Aircraft pilot, navig, flig eng.	1	0.0	17553	229.4	97662.0	1	0.0	28185	368.4	156819.0
635 Delivery men	21	10.9	192.5	119.1	294.2	3	0.7	405.3	81.5	1184.2

Thyroid

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
083 Display artist	2	0.6	355.3	39.9	1282.7	2	0.1	1390.7	156.2	5021.2
331 Commer. traveller, buyer, dealer	10	8.0	125.5	60.1	230.8	3	0.5	644.3	129.5	1882.4
722 Shoe cutter, laster or sewer	6	2.4	250.5	91.5	545.2	4	1.0	414.7	111.6	1061.8

Soft tissue sarcoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
094 Economist, statistician	1	0.1	699.0	9.1	3889.2	1	0.0	9796.9	128.0	54508.0
201 Bookkeeping and cashier work	29	19.3	150.6	100.9	216.3	5	5.9	85.4	27.5	199.3
793 Concrete & construction worker	1	0.0	15770	206.1	87741.0	-	-	-	-	-
948 Other service work	6	1.6	379.2	138.5	825.5	0	0.0	0.0	0.0	7477.4

Unspecified-unknown

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
301 Working proprietor, wholesale	3	0.6	544.0	109.3	1589.5	0	0.0	0.0	0.0	9331.9
503 Ore dresser	2	0.2	958.8	107.7	3461.7	-	-	-	-	-
635 Delivery men	16	8.1	197.2	112.6	320.3	1	0.7	149.9	2.0	834.1
750 Toolmaker, setter and operator	24	14.4	166.1	106.4	247.2	1	1.0	102.2	1.3	568.6
782 Industrial spray painter	2	1.1	182.6	20.5	659.2	2	0.2	1142.3	128.3	4124.4
836 Paper & paperboard worker	14	5.2	270.2	147.6	453.5	5	2.1	243.3	78.4	567.8
932 Cleaner	252	220.7	114.2	100.5	129.2	44	42.4	103.8	75.4	139.4

Hemato-lymphatic organs

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
045 Medical technician	24	18.1	132.3	84.7	196.9	9	4.1	221.2	100.9	419.9
111 General manager	7	5.6	124.1	49.7	255.6	4	1.0	406.1	109.3	1039.8
413 Livestock worker	36	37.8	95.1	66.6	131.7	8	1.7	475.4	204.7	936.7
738 Other metal processing work	8	2.3	345.6	148.8	681.1	2	0.4	511.5	57.4	1846.6
822 Baker & pastry cook	37	25.1	147.6	103.9	203.5	14	9.0	156.2	85.3	262.1
826 Butcher & meat preparer	13	9.1	142.9	76.0	244.4	5	1.5	332.4	107.1	775.6
883 Store & warehouse worker	67	48.5	138.1	107.1	175.4	11	7.1	156.0	77.7	279.1
902 Policeman	4	0.7	591.0	159.0	1513.2	0	0.3	0.0	0.0	1195.3

Non-Hodgkin lymphoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
413 Livestock worker	11	14.0	78.8	39.3	141.0	3	0.6	517.8	104.1	1513.0
757 Metal plater & coater	3	0.5	657.8	132.2	1921.9	0	0.0	0.0	0.0	10524.0
881 Packer	25	22.5	111.0	71.8	163.9	9	3.3	269.9	123.1	512.3
883 Store & warehouse worker	28	17.8	157.0	104.3	226.9	4	2.4	164.3	44.2	420.6

Hodgkin's lymphoma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
091 Accountant, auditor	2	0.2	925.5	103.9	3341.7	0	0.0	0.0	0.0	19822.0
881 Packer	9	3.8	236.5	107.9	449.0	1	0.5	197.9	2.6	1101.1
914 Nursemaid	13	9.7	133.7	71.1	228.7	5	1.6	318.2	102.5	742.5

Multiple myeloma

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
057 Educational methods advisors	3	1.3	228.3	45.9	667.0	2	0.1	1362.7	153.0	4920.2
111 General manager	3	1.2	258.7	52.0	755.9	2	0.2	962.5	108.1	3475.1
738 Other metal processing work	4	0.4	929.5	250.1	2379.7	1	0.1	1261.4	16.5	7018.2
822 Baker & pastry cook	11	5.1	214.1	106.7	383.1	4	1.9	212.1	57.1	543.1
902 Policeman	2	0.1	1932.8	217.1	6978.4	0	0.1	0.0	0.0	6350.8

Chronic lymphatic leukaemia

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
735 Smith, forger	1	0.0	7993.1	104.5	44473.0	-	-	-	-	-
883 Store & warehouse worker	8	4.4	182.5	78.6	359.7	4	0.8	517.3	139.2	1324.5

Chronic myeloid leukaemia

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
651 Post-office clerk	5	2.5	202.7	65.3	473.1	4	1.0	388.6	104.6	995.0
823 Chocolate & confectionery worker	2	0.3	730.2	82.0	2636.4	2	0.1	3407.2	382.6	12302.0
826 Butcher & meat preparer	3	0.4	675.2	135.7	1972.8	1	0.1	1681.0	22.0	9352.7
932 Cleaner	33	22.6	146.1	100.5	205.2	5	3.5	144.9	46.7	338.1

Acute leukaemia

	Job code in 1970					Job code in 1960 and 1970				
	obs	exp	SIR	95% ci		obs	exp	SIR	95% ci	
002 Electrical engineer	1	0.3	374.1	4.9	2081.6	1	0.0	7866.1	102.8	43766.0
045 Medical technician	5	2.4	207.0	66.7	483.0	3	0.5	649.9	130.6	1899.0
101 Government legislat. & administ.	7	2.7	256.0	102.5	527.4	0	0.4	0.0	0.0	1001.5
291 Computer operator	4	3.4	119.2	32.1	305.1	3	0.5	579.2	116.4	1692.4
302 Working proprietor, retail trade	13	6.9	188.7	100.4	322.7	5	2.6	194.3	62.6	453.4
744 Dental technician	3	0.4	849.5	170.7	2482.0	3	0.2	1265.4	254.3	3697.3