

# Are environmental medicine problems relevant in Switzerland?

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## Summary

**Background and aim:** In Switzerland, the prevalence of health problems attributed to environmental exposures is unknown, and views differ regarding its magnitude. In the present study we investigated the frequency of environmentally related health problems amongst the patients of Swiss sentinel physicians and assessed symptoms and suspected environmental exposures.

**Methods:** During 2002, nearly 250 “Swiss Sentinel Surveillance Network” physicians were asked to record the number of patients presenting with environmental health problems and to complete a questionnaire inquiring about suspected environmental exposures and health problems. Physicians offering “alternative” medical therapies also participated in the study. The results were compared with the experience of a Basel University pilot project which evaluated patients with environment-related health problems simultaneously from the medical, psychiatric and environmental viewpoint.

**Results:** 354 environment-related consultations were reported by 72 physicians, corresponding to 0.03% of all sentinel-physician consultations. There were considerable differences both within the group of Sentinella physicians, and between physicians offering “alternative” medical therapies and the Sentinella physicians, in the frequency of environmentally-related consultations, the character of the reported symptoms and the suspected environmental exposures.

**Conclusion:** Overall, environmental medicine consultations in general practice were rare. However, experience of the environmental medicine pilot project showed that concerned persons seek help from various health care providers and from environmental agencies. Effective treatment should include counselling by medical, psychiatric and environmental professionals.

**Key words:** *Sentinella; environmental medicine; counselling*

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## Introduction

In Switzerland, the prevalence of persons with health problems attributed to environmental exposures is unknown. No peer-reviewed studies have been published, but according to some of the self-help pages for “multiple chemical sensitivities” (MCS) groups ([www.mcs-liga.ch](http://www.mcs-liga.ch)) or persons who ascribe their health problems to electromagnetic fields ([www.gigahertz.ch](http://www.gigahertz.ch)), for example, there are thousands of individuals in Switzerland who are concerned. These figures suggest that health problems due to environmental exposure are an important issue in the health sector. US studies have reported that 3.9% of the population in a cross-sectional study in California had daily symptoms of chemical sensitivity [1]. A study in North Carolina reported 6.3% of the population with doctor-diagnosed “environmental illness” or “MCS” [2].

What do people do when they feel that their health problems are caused by environmental exposures? In contrast to other countries [3–5], Switzerland does not offer environmental medicine counselling within an institutional structure. While some people see their doctor about such conditions, others may seek advice from an environmental agency, e.g. agencies responsible for chemical safety or air hygiene.

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The first aim of this study was to estimate the scale of environmental medicine counselling in Switzerland.

For this estimation we had two different data sources. The main source was the frequency of medical consultations due to environmental exposures in general practice. In collaboration with the "Swiss Sentinel Surveillance Network" ("Sentinella"), physicians' case notifications for medical problems ascribed to environmental exposure were recorded during one year. The need for environmental medical advice was also assessed in a one-year environmental medicine pilot project conducted at the University of Basel. This pilot

project evaluated patients who attributed their health problems on environmental exposure using medical, psychological and environmental tools [6]. The results of this pilot project were added as a second information source.

A second aim of the study was to analyse whether health problems and suspected environmental exposures differed between groups of physicians and the complainants of the environmental medicine pilot project.

Finally, plausibility ratings concerning a causal relation between the symptoms and the suspected exposures conducted by the physicians and the project research team were compared.

## Methods

### Sentinel network: Assessment of consultations due to environment-related medical problems

The Swiss "Sentinella" network is a joint project of the Swiss Federal Office of Public Health and the University of Berne. 150–250 general practitioners (GPs), internists and paediatricians in private practice have been reporting weekly morbidity data since 1986. In 2002 the physicians taking part represented 3.37%, 2.76% and 6.25% respectively of all GPs, internists and paediatricians. These percentages refer to practitioners aged less than 65 years. Nearly all Swiss Cantons are represented by at least one regularly reporting physician ([www.bag.admin.ch/sentinella/](http://www.bag.admin.ch/sentinella/)). The main reporting topics are infectious diseases such as influenza-like illness, measles, mumps, rubella, chickenpox, etc. Where one patient has seen the doctor several times for the same health problem, only one consultation is recorded. Physicians record the number of consultations on a weekly basis.

The Swiss sentinel physicians agreed to record the frequency of environmentally related problems during the year 2002 on the official questionnaire of the Swiss Federal Office of Public Health, and to supplement the information recorded with an additional environmental medicine questionnaire.

Data concerning the Swiss sentinel physicians (e.g. age, sex, region) was obtained from the Swiss Federal Office of Public Health.

It has been suggested that people with environmental sensitivities use the health care system more often [7] and are more likely to seek help outside the traditional medical sector. We had found evidence of this in the Basel environmental medicine pilot project [6], and therefore invited additional general practitioners offering "alternative" therapeutic methods (e.g. homoeopathy) to participate in the present study. Four out of ten physicians contacted agreed to participate.

The main inclusion criterion for an environmental medical consultation was that either the patient or physician or both suspected environmental exposures as the cause of the health problem. Environmental exposures perceived, but not necessarily verified, as the cause of health problems, such as food additives, electromagnetic fields or amalgam, were included as environmental exposures. For brevity, we excluded "classic allergens" such as animal dander, pollen, mites or medication from the list of environmental exposures.

### Additional environmental questionnaire

In the environmental medicine questionnaire, physicians could tick up to 22 symptoms and 25 exposure items, or provide information in free text. Health problems were

classified into nine groups: (a) unspecific symptoms, (b) general symptoms, (c) respiratory symptoms or irritations of eye, nose or throat, (d) cutaneous symptoms or allergies, (e) cardiac or circulatory problems, (f) gastrointestinal symptoms, (g) infections, (h) muscular or joint problems or rheumatological symptoms, or (i) "other". Environmental exposure was divided into: indoor exposures, radiation (with the subgroup electromagnetic fields), outdoor exposures, noise, amalgam, food additives and "other".

Further questions were included to gather demographic data and information on the duration of symptoms. Physicians were asked to indicate whether a causal relationship between the reported illness and the suspected exposure seemed "unlikely", "possible" or "likely". Information on the patient's treatment (counselling, therapy, provision of further information from environmental agencies, etc) was assessed.

### Data analysis

To estimate the scale of environmental medical problems, we assessed the number of environment-related case notifications as a percentage of all consultations, the analyses being confined to physicians who reported the total number of consultations per week.

As a next step, patients' demographic data, health problems and suspected exposures were compared. Group differences were assessed by Kruskal-Wallis or  $\chi^2$  test. The prevalence of reported symptoms and suspected exposure was calculated from proportions of ticked items within the symptom or exposure categories. Mantel-Haenszel odds ratios were calculated for the reported symptom and exposure groups, where patients reported at least one item of the respective groups.

Physicians reporting cases were compared with physicians who reported no cases with respect to demographic data, region and type of area, using Fisher's exact,  $\chi^2$  or Wilcoxon tests. The mean number of cases per physician and year was compared between specialties, region and type of area using the Kruskal-Wallis test.

To estimate the prevalence of annual environment-related medical consultations in Switzerland we assessed the proportion of each physician's environment-related consultations. We averaged these estimates across physicians in the separate specialties and weighted them using the mean number of consultations (per physician and year) within the speciality as well as the number of physicians in the speciality in Switzerland. Finally, the physicians' assessment of the causality rating of health symptoms and environmental exposures are presented. All calculations were performed using STATA 8.

## Results

### Frequency of environment-related medical problems

Of the 223 sentinel physicians who reported consultation numbers (92% of all Sentinella physicians), 64 (29%) reported at least one environment-related case in a one-year period.

One of the four "alternative" physicians did not report weekly consultations, and thus a total of 226 physicians reported total physician-patient encounters, amounting to nearly a million. These physicians reported a total of 331 environment-related consultations, representing 0.03% of all consultations. Among the "alternative" physicians the proportion was 0.29% (28/9660 consultations). One of the sentinel physicians reported 158 cases, a yield of 4.2% (158/3727 consultations, "frequently reporting physician"). The proportion among the rest of the sentinel physicians who reported environment-related cases was 0.054%.

During the year 2002, 63 persons participated in the Basel environmental medicine pilot project [8] serving a target population of some 450,000 residents (consultation frequency approx. 0.014%).

### Characteristics of physicians reporting cases

Of all the physicians who reported patients with environment-related medical problems, 98% returned a questionnaire. Of a total of 354 questionnaires returned, 315 (89%) were sent back by the sentinel physicians and 39 (11%) by the "alternative" physicians.

The median age of physicians reporting cases was the same as that of non-reporting physicians (50 years,  $p = 0.8$ ). The percentage of female physi-

cians was 13% vs. 18% ( $p = 0.3$ ). Table 1 shows the percentage distribution of reporting physicians between specialities, Swiss regions and type of region. Except for GPs, who reported cases significantly more often than physicians in the other specialities ( $p = 0.01$ ), none of these factors differ to a statistically significant degree. The mean number of cases per physician and year within a speciality, region or type of area also differs significantly only by the physician's specialisation ( $p = 0.005$ ).

### Characteristics of patients with environment-related problems

Table 2 compares patients' demographic data, reported symptoms and suspected types of exposure between the sentinel physicians, the "alternative" physicians and the environmental medicine pilot project. The frequently reporting sentinel physician is considered separately from the rest of the sentinel physicians. The sex distribution of the patients differed slightly between the four groups ( $p = 0.1$ ), with more women in the "alternative" physicians group. Among patients over 18, participants in the environmental medicine project were significantly older than the rest (group difference  $p = 0.0003$ ) and youngest in the "frequently reporting physician" group. Patients of the "alternative" physician group reported significantly more symptoms (3.6 per patient) than patients of the other two physician groups (2.4 sentinel, 2.6 "alternative" physician patients). Participants in the environmental medicine project reported 3.2 symptoms per participant (group difference  $p = 0.0001$ ). All patients of the environmental medicine pilot project reported symptom durations

**Table 1**

Number of physicians reporting any case and mean number of cases per physician and year, by specialty, region and type of area.

Sentinella physicians ...	n	reported any case, n (%)	mean number of cases per physician and year <sup>a</sup>
Total		64 (29)	0.82
Speciality			
GPs	132	46 (35)	1.2
Internists	60	15 (25)	0.5
Paediatricians	31	3 (10)	0.13*
Region			
West incl. Geneva	52	13 (25)	1.0
Berne and Jura	47	17 (36)	0.67
Northwest	32	10 (31)	0.7
Central	19	4 (21)	1.1
Northeast incl. Zurich	58	15 (26)	0.76
Ticino and southeast	15	5 (33)	0.6
Type of area			
Urban	40	8 (20)	0.85
Residential	66	19 (29)	0.72
Industrial	76	24 (32)	0.9
Agricultural/ touristic	41	13 (32)	0.7

<sup>a</sup> Excluding a physician who reported a total of 158 cases in one year,

\* group difference between specialities,  $p = 0.005$

**Table 2**

Comparison between patients of the Sentinella physicians, "alternative" physicians and the environmental medicine pilot project: demographics, reported symptoms and suspected environmental exposures.

Patients (n) of the ...	Sentinella physicians (157)	Alternative physicians (39)	Frequently reporting physician (158)	Environmental medicine pilot project (63)
<b>Demographics</b>				
% of female patients	54	74	61	60
Median age of adult patients	43.5	43	27	55
% of patients with symptom duration of months or years (in contrast to days or weeks)	54	79	99	100
<b>Reported health problems in%, (n)</b>				
Mean number of symptoms	2.4	3.6	2.6	3.2
Unspecific, general symptoms	34.1% (126)	52.2% (71)	58.3% (240)	38.6% (78)
Irritations of eye, nose, throat	37.8% (140)	24.3% (33)	7.8% (32)	25.7% (52)
Cutaneous symptoms/allergies	10.8% (40)	9.6% (13)	6.3% (26)	6.9% (14)
Cardiac, circulatory problems	2.4% (9)	0.7% (1)	1.0% (4)	3.5% (7)
Infections	2.4% (9)	2.2% (3)	2.7% (11)	2.5% (5)
Gastrointestinal symptoms	1.9% (7)	5.1% (7)	2.9% (12)	7.9% (16)
Muscular, rheumatological problems	2.7% (10)	1.5% (2)	8.3% (34)	3.0% (6)
Other symptoms	8.1% (30)	4.4% (6)	12.9% (53)	11.9% (24)
<b>Suspected exposures, % (n)</b>				
Mean number of suspected exposures	1.4	1.6	1.1	2.0
Indoor exposures	26.6% (58)	27.0% (17)	4.0% (7)	35.6% (47)
Radiation (incl. EMF)	11.9% (26)	7.9% (5)	2.3% (4)	22.0% (29)
Exposures from outdoor source	34.9% (76)	23.8% (15)	4.6% (8)	12.1% (16)
Noise	1.8% (4)	1.6% (1)	1.1% (2)	5.3% (7)
Amalgam	2.8% (6)	23.8% (15)	87.4% (153)	0.0% (0)
Food additives	1.4% (3)	11.1% (7)	0.6% (1)	3.0% (4)
Other exposures	22.5% (49)	6.3% (4)	1.1% (2)	22.0% (29)

**Table 3**

Comparison between patients of the Sentinella physicians, 'alternative' physicians and the environmental medicine pilot project: 5 of the patients for whom the environmental medical problem was the main reason for consultation, person who suspected environmental exposure and physicians' estimate of a likelihood of a relationship between the exposure and the health complaints.

	Env. medical problem was main reason for consultation	Environmental exposure suspected by (%)			Physician's estimation of causal relationship (%)		
		physic.	patient	both	unlikely	possib.	likely
Sentinella physician patients (157)	61%	15.3	47.3	37.3	19.6	33.8	46.6
Alternative physician patients (39)	48%	42.8	53.6	3.6	13.5	13.5	73.0
Frequently reporting physician pat. (158)	99%	9.5	1.3	89.2	1.3	54.3	44.4

of months and years, whereas 46% of the patients visiting a sentinel physician indicated symptom durations of days or weeks.

Respiratory problems (especially cough) and irritation of eyes, nose and throat were the most common symptoms among the patients of the sentinel physicians and the environmental medicine project. Patients of the "alternative" GPs reported general symptoms as the most prevalent, especially fatigue, which was reported by more than half. The patients of the "frequently reporting physician" group complained most often of fatigue and headache. Participants in the environmental medicine project tended to suspect more environmental exposures as the cause of their health problems than the other physicians' patients (see table 3). The least number of environmental exposures per

patient was suspected by patients of the "frequently reporting physician". Exposure to an outdoor source, in particular ozone and particulate matter, but also electromagnetic fields, was most often suspected of causing health problems in the sentinel physicians' patient group. Patients of the "alternative" physicians reported indoor and outdoor exposure forms and amalgam in about equal proportions. The "frequently reporting" physician chiefly reported amalgam exposure in his patient group, while the environmental medicine project group listed indoor exposures and radiation (mainly electromagnetic fields) as the main exposure sources.

Some exposure types were reported significantly more often in connection with specific symptom groups. Outdoor and indoor forms of ex-

posure were usually suspected in association with irritation of eyes, nose and throat, whereas food additives were most often listed in conjunction with skin problems/allergies, infections or gastrointestinal symptoms. Amalgam was suspected of causing rheumatological and muscular, general or unspecific symptoms. Radiation exposure (usually electromagnetic fields) was usually matched with cardiac/ circulatory problems, unspecific or general symptoms.

Table 3 shows how often the environmental problem was the main reason for consultations, whether the physician and/or the patient suspected the environmental exposure to be related to the patient's symptoms, and what was the physicians' rating of the likelihood of a causal relation between the suspected environmental exposure and the health problem.

For nearly half the "alternative" physicians' patients, some 60% of the Sentinella physicians' patients and practically all those of the "frequently reporting physician", environmental problems were the main motive for the consultation.

In the Sentinella physicians' group environmental exposures were suspected by either the patient or both physician and patient, whereas among "alternative" physicians either the physician or the patient suspected the environmental exposure to be related to the health problem. The "frequently

reporting physician" and his patients usually agreed on the suspected exposure.

The "sentinel" physicians were most sceptical about a causal relationship between environmental exposure and the health problem. "Alternative" physicians and the "frequently reporting physician" were more inclined to rate environmental exposure as the likely cause of the patient's symptoms.

Sentinella physicians rated ozone, traffic exhaust and particulate matter a "likely" cause of health problems, whereas electromagnetic fields, indoor exposure to e.g. paint, varnish or solvents and amalgam were more often rated unlikely. These ratings were not affected by the Sentinella physicians' demographic characteristics.

The "alternative" physicians identified most often amalgam, ozone and insecticides as the "likely" cause. The "frequently reporting physician" suspected amalgam to be a likely or possible cause for 95% of the patients who consulted him for environment-related symptoms.

In only 11 cases (3%) did the physicians indicate on the questionnaire that they needed further background information for adequate management of the patient. Seven of the Sentinella patients and one patient of the "alternative" physicians were recommended to seek help from an environmental agency.

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## Discussion

In our study, environment-related medical counselling in general practice was relatively rare, with some 70% of physicians reporting no case during the year. Physicians who offer "alternative" therapies reported more cases than most of the Sentinella physicians. However, the ratio of environment-related consultations to all consultations was not very high and exceeded 0.3%, or some 10 patients per year, only once in our sample of nearly 250 physicians.

The four "alternative" physicians who participated in our sentinel study counselled approximately 10 patients a year, which corresponds closely to a German study reporting 11 environment-related consultations per year in a group of physicians who expressed explicit interest in contributing to research in environmental medicine [9]. The "alternative" physicians in our study may also represent a sample of physicians interested in environmental medicine and thus be comparable to the German sample. 15 physicians in the Sentinella group, including the "frequently reporting physician", reported training in homoeopathy or traditional Chinese medicine (TCM). If the "frequently reporting physician" is excluded, these "alternative" sentinel physicians did not report more cases than the other Sentinella physicians. However, we cannot assess whether we were able to identify all "alternative" physicians in the Sen-

tinella group. In addition, the sample is too small and the data are too heterogeneous to allow more general conclusions on this group.

A rate of 0.03% of all consultations seems low. However, when the case notifications of the 3.6% of family doctors participating in the Sentinella system are extrapolated to all GPs and internists in Switzerland, the result would be 5707 (95% C.I. 4260–7150) environment-related consultations within one year. This is a conservative estimate which excludes the "frequently reporting physician", since it may have been pure chance to have one physician in the group reporting so many cases. On the other hand, the "frequently reporting physician" may represent a rare group of physicians specialised for environmental medicine problems. Including this physician in the estimate yields an additional 5812 cases per year.

Moreover, there may be reasons for underreporting. Among others, not all concerned persons necessarily consult a GP, since they may suspect the physician of lacking environmental background knowledge. In the environmental medicine project only 69% of participants reported having seen their GP. Some patients may turn to an environmental agency for advice.

One may speculate that reporting of environment-related cases is linked to the fact that specific physicians are more aware of the problem and thus

report cases more often. For example, older physicians may be less likely to consider environmental exposures as causes of health problems than their younger colleagues. However, this is not supported by our data. If GPs report more cases this may be because they have different patients from internists or paediatricians.

Sentinella physicians tended to relate health problems to environmental exposures such as outdoor air pollution, for which a context to respiratory symptoms has been shown in a range of publications [10–15]. Health effects from indoor pollution sources are more controversial, especially at low levels, and have only been clearly demonstrated for some specific exposures (e.g. formaldehyde). Health effects of electromagnetic fields or amalgam are even more controversial. It may be speculated that the heterogeneity in the scientific community's and the media's discussion of causality is mirrored in the physicians' reporting of environmental cases in our study: Apparently the "alternative" physicians participating in our study were less likely than the other physicians to reject a connection between such environmental exposures and their putative adverse health effects. This may account for a larger number of reported cases and higher attendance by concerned persons in such practices.

Similarly, the environmental medicine project participants relied significantly more often on services of the "alternative" health care sector than a representative symptomatic group in the Swiss population [6], an observation that has also been reported in other studies [7].

The physicians participating in this study had to judge whether the relationship between the patients' symptoms and environmental exposure was probably or possibly causal. Sentinella physicians were more sceptical about a causal relationship than "alternative" physicians but they did not differ in their estimate of a "possibly" causal relationship which they reported for more than 80% of their patients. In the Basel environmental medicine project, where patients underwent a detailed medical, psychological and environmental assessment, the interdisciplinary project team consid-

ered the health symptoms of only 40% of the participants to be possibly linked to environmental exposure. 46% of the symptoms could be explained by psychological-psychiatric factors alone [6]. The high proportion of a possible causal relationship estimated by the physicians in the present study may reflect physicians' preferentially reporting an "environmental medicine case" when they consider the association to be real. This would, on the other hand, imply that only those cases were reported.

The prevalence of environmentally-related medical consultations in general practice is rather low. However, experience of the Basel pilot project suggests that many of these patients suffer from long-standing and complex health problems, need much consultation time, have sought help from various health care providers, thus producing additional costs, and could, at least in part, profit from an interdisciplinary assessment of their health problems [6, 8]. Successful implementation of the project team's recommendations was not restricted to participants whose symptoms were plausibly related to environmental exposure [8] but also included medical and psychiatric advice. Combining medical, psychiatric and environmental expertise to provide a structured intervention in the health sector would offer the best means of effectively counselling and treating patients with environmentally-related diseases.

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## Annex: Environmental medicine questionnaire

Doctor code:   
 Week:   
 Date of birth:  Month  Year  
 Sex:  m = 1, f = 2

Environmental problem main reason for seeing doctor = 1, subsidiary reason = 2  
 Environmental exposure suspected by doctor = 1, by patient = 2, both = 3

### 1. Nature of symptom(s) *(Several may be mentioned, please underline main symptom)*

<input type="checkbox"/> Fatigue/loss of energy	<input type="checkbox"/> Memory/concentration lapses	<input type="checkbox"/> Eye irritation	<input type="checkbox"/> Back/neck pain
<input type="checkbox"/> Insomnia	<input type="checkbox"/> Vertigo/giddiness	<input type="checkbox"/> Nose, pharynx, throat irritation	<input type="checkbox"/> Rheumatic symptoms
<input type="checkbox"/> Depressive mood	<input type="checkbox"/> Headache	<input type="checkbox"/> Cough	<input type="checkbox"/> Cardiovascular symptoms
<input type="checkbox"/> Anxiety	<input type="checkbox"/> Sensory disturbance	<input type="checkbox"/> Asthmatic symptoms	<input type="checkbox"/> Dysmenorrhoea, menstrual disorders
<input type="checkbox"/> Aggressivity/irritability	<input type="checkbox"/> Diarrhoea, constipation, intestinal cramps	<input type="checkbox"/> Cutaneous rash	<input type="checkbox"/> Other: .....
<input type="checkbox"/> Autonomic nervous system disorders	<input type="checkbox"/> Susceptibility to infection	<input type="checkbox"/> Itching	

More detailed description if any:

### 2. Suspected cause *(Several causes may be mentioned)*

<b>Substances/substance groups:</b> <input type="checkbox"/> Food additives <input type="checkbox"/> Odours/perfume <input type="checkbox"/> Insecticides <input type="checkbox"/> Wood preservatives <input type="checkbox"/> Paints, varnishes, solvents <input type="checkbox"/> Carpet <input type="checkbox"/> Glue <input type="checkbox"/> Amalgam <input type="checkbox"/> Formaldehyde	<input type="checkbox"/> Asbestos <input type="checkbox"/> Passive smoking <input type="checkbox"/> Ventilation/air conditioning <input type="checkbox"/> Other <input type="checkbox"/> Mould/damp <b>Air pollutants outdoor:</b> <input type="checkbox"/> Ozone <input type="checkbox"/> Traffic exhaust <input type="checkbox"/> Particulate matter <input type="checkbox"/> Other air pollutants	<b>Radiation:</b> <input type="checkbox"/> UV radiation <input type="checkbox"/> "Electromog" <input type="checkbox"/> Radioactive radiation/radon <input type="checkbox"/> Water veins/ground radiation <b>Noise:</b> <input type="checkbox"/> Aircraft <input type="checkbox"/> Traffic <input type="checkbox"/> Leisure <input type="checkbox"/> <b>Other causes:</b> .....
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### 3. Since when has the problem existed? *(Main symptom only)*

Days: .....  
 Weeks: .....  
 Months: .....  
 Years: .....

### 4. Place of exposure *(Several places may be mentioned)*

Interior of dwelling  
 Vicinity of dwelling  
 Workplace/school  
 Other

### 5. Relation of symptoms to environmental exposure

	According to patient	According to doctor
Unlikely:	<input type="checkbox"/>	<input type="checkbox"/>
Possible:	<input type="checkbox"/>	<input type="checkbox"/>
Probable:	<input type="checkbox"/>	<input type="checkbox"/>
Highly probable:	<input type="checkbox"/>	<input type="checkbox"/>
Not assessable:	<input type="checkbox"/>	<input type="checkbox"/>

### 6. Who or what made the patient aware of the problem? *(Several replies possible)*

Patient found out him/herself  
 Family, friends, colleagues  
 Press  
 TV/radio  
 Doctor  
 Other: .....

### 7. Action: measures concerning environment-related medical problem *(Several replies possible)*

<input type="checkbox"/> Counselling by doctor sufficient	<input type="checkbox"/> Further diagnosis/treatment by doctor
<input type="checkbox"/> Inquiries/obtaining of background information from (environmental) agency by doctor necessary/desirable	<input type="checkbox"/> Referral to (environmental) agency
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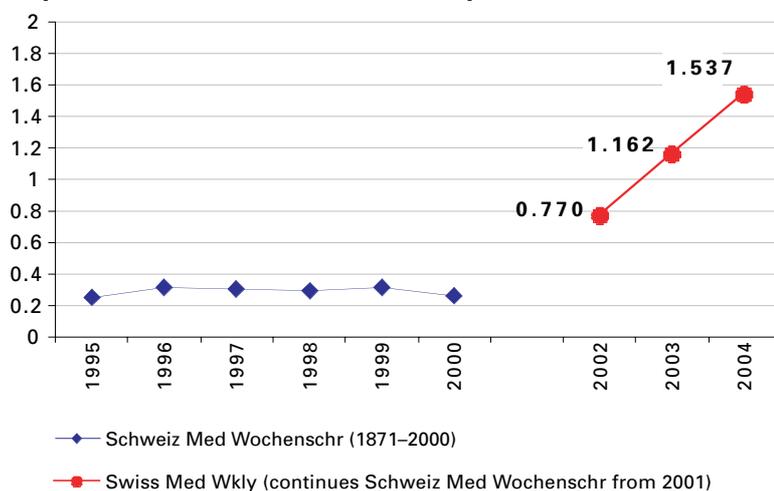
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