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A survey of institutional influenza vaccination in Switzerland

Summary

In June 1998, a questionnaire was sent to evaluate the influenza vaccination practices in Switzerland: 429 health care institutions were to assess the level of influenza vaccination and the coverage of specific groups; each institution was required to specify whether vaccination coverage was known precisely (based on recorded data) or estimated. The response rate was 42.4%. Among institutions which responded, the mean accurate vaccination coverage rate for all patients was 40% and the estimated rate was 29%; these rates were slightly higher for people older than 65 years. For the entire staff, the accurate vaccination rate was 16% (14% estimated) whilst for the medical staff, the mean coverage was higher at 30% (measured) and 16% (estimated). The mean vaccination rate for patients and residents was 59% in the French speaking region of Switzerland, 54% in the Italian speaking canton, but only 37% in the German speaking region. The same ranking was found for vaccination coverage of medical staff: 21% in the French speaking region, 15% in the Italian speaking canton, and 13% in German speaking areas. These results suggest that cultural differences could play an important role in the attitudes and behaviour of the population regarding influenza vaccination programmes among the linguistic regions in Switzerland.

In Switzerland, the mortality rate due to influenza infection has been estimated at more than 1000 deaths a year based on death certificates^{1,2}. The average mortality rate due to influenza is underreported and it might be assumed to be four times higher than the official death declarations [Claude Hannoun, personal communication] as the death certificates document only

the major causes of death and not any underlying conditions³. Influenza vaccination has been shown to be efficacious and efficient in preventing infection in the population, providing considerable financial savings due to fewer episodes of upper respiratory tract infection and fewer visits to the physician. For high risk groups, the vaccination reduces the frequency

of hospitalizations and the mortality⁴⁻⁶. Nevertheless, there is no uniformity in the definitions of risk groups and recommendations on who should receive the vaccine vary between different countries⁷.

Within Western Europe, there are differences in the recommendations for the elderly⁷; in Belgium it is recommended for people over 60 years, in Switzerland for those over 65 years, in France for those more than 70 years of age whereas the United Kingdom decided for the first time in 1998 to recommend vaccination for elderly people who are more than 75 years old⁸. In all countries there are recommendations to vaccinate persons at high risk for influenza such as those with chronic heart, lung or kidney disease, diabetes or other serious illnesses⁹.

Within Western Europe, Switzerland has one of the lowest influenza vaccination coverage rates with an estimated 75 doses of vaccine distributed per 1000 total population in 1997, and 100 doses in 1998. This figure does not mean that all doses of vaccine distributed are actually administered, nor does it mean that all doses given are received by persons for whom vaccination is specifically recommended.

The Swiss Federal Office of Public Health (SFOPH) publishes annual

recommendations on the vaccination against influenza¹. However, the health authorities of the 23 cantons are free to organize and promote vaccination programmes locally. This leads to an inconsistent promotion within the country. In 1997/98, influenza vaccination was recommended for individuals older than 65 years, for adults and children with cardiac or pulmonary pathologies, for residents of homes and health institutions, and for patients with chronic diseases; for all persons in these groups the medical insurance companies guarantee reimbursement for the cost of vaccination. The medical staff and personnel of health care institutions as well as family and contacts of individuals at risk are also recommended for vaccination but no reimbursement is provided by the insurance companies.

This study was conducted in June 1998 to collect information on influenza vaccination coverage and promotion practices. Another objective was to discover which promotional support would be most effective in encouraging the application of influenza vaccination within health care institutions (not shown here).

Material and Methods

Institutions

In June 1998 a questionnaire was sent to 429 Swiss health care institutions. They were selected through a private association which provides statistical and accounting services to the major health care providers in the country. All members of this association were contacted for the survey. This systematic sampling included university and general hospitals (51%), maternity and children's hospitals (8%), rehabilitation clinics (10%), retirement and nursing homes (21%) and psychiatric clinics (10%) (Table 1). These enrolled institutions account for 15% (429/2882) of all health care institutions in Switzerland.

Questionnaire

The questionnaire was sent to each institution itself, not to a specific addressee. It was first written in French and then translated into German and Italian. Overall, 299 institutions received the questionnaire in German, 101 in French and 29 in Italian. The analysis separates the data collected in the three lin-

guistic regions. The cut-off time for reply was one month, no reminders were issued.

The first part of the questionnaire concerned the level of influenza vaccination within the institution with emphasis on the vaccination coverage within specified groups (total residents/patients; patients older than 65 years; all staff, including paramedical and administrative as well as technical staff, and medical staff alone). The respondent was requested to specify whether vaccination coverage had been measured using records of doses administered, or whether a less precise method of estimation had been used.

The second part of the questionnaire dealt with specific actions to promote influenza vaccination within an institution. The respondent's opinions on the most useful means and support required to promote influenza vaccination in case of a national campaign, and who should play the principal role in a vaccination programme were also requested (results not shown here). The questionnaire was pilot-tested on a small group of professionals selected from public and private health institutions.

Type of institution	Number of institutions contacted	Number of replies received	Response rate (%)
Hospital with > 124 beds	87	45	51.7
Psychiatric clinic	44	22	50.0
Clinics for re-education, rehabilitation, allergology	41	20	48.8
Retirement home, geriatric clinic	92	37	40.2
Hospital with < 125 beds	132	48	36.4
Children's hospital, maternity clinic	33	10	30.3
Total	429	182	42.4

Table 1. Health institutions involved in the survey and response rates, Switzerland, 1998 (ranked by response rate).

Statistics

The analysis of data was performed at the Institute of Social and Preventive Medicine in Geneva using SPSS software version 6.0 for Windows. Data is summarized using means and ranges. Means were calculated without weighting by size of institution.

Results

429 (14.9%) of the existing 2882 Swiss health care institutions were included in this survey. The response rate was 42.4% (182/429) and varied according to the type of institution (Table 1).

Respondents from all institutions were asked to provide the precise rate of vaccination coverage of the different risk groups, if known. Otherwise, they were asked to provide an estimate or to state that no reply was possible (Table 2). This information was obtained for each of the four groups: all patients/residents; elderly residents; all institution staff; and medical staff. Overall, 40% of all institutions were unable to provide any data on the vaccination rates of their patients, residents or employees.

The precise vaccination coverage rates for all patients and residents ranged from 0 to 100% with a mean of 40%; where the rate was estimated the mean was 29% (Table 3). These rates were slightly higher for elderly people (47% known and 37% estimated coverage). With regard to the entire institution staff, the mean precisely known immunization rate was 16% (0–100%) but only 14% (0–80%) where estimated. These numbers were slightly higher for medical staff, where 30% (0–100%) were known to have been vaccinated against influenza and 16% (0–80%) were estimated to have been vaccinated.

Risk group	Proportion of health institutions which provide		
	measured %	estimated %	no data %
All patients and residents	15	40	45
Elderly residents (>65 years)	15	35	51
All staff	29	49	23
Medical staff only	20	41	39

Table 2. Proportion of health institutions providing measured, estimated or no data on vaccination coverage of risk groups (N = 182), Switzerland, 1998.

Group	Vaccination coverage %	
	measured	estimated
All patients and residents	40 (1)	29 (1)
Elderly residents (>65 years)	47 (1)	37 (1)
All staff	16 (1)	14 (2)
Medical staff only	30 (1)	16 (2)

NB: The mean is the unweighted mean of the responses reported by each institutions.
 1) the range varies from 0 to 100%.
 2) the range varies from 0 to 80%.

Table 3. Measured and estimated vaccination coverage rate (mean and range) of risk groups, Switzerland, 1998.

	Vaccination coverage %			
	French	Italian	German	Total
All patients and residents	59	54	37	40
Number of institutions	7	3	17	27
Range	0–100	20–95	0–100	0–100
Median	69	46	26	29
Entire institution staff	21	15	13	16
Number of institutions	17	7	28	52
Range	10–45	0–46	0–100	0–100
Median	20	12	10	13

Table 4. Vaccination coverage (mean and range) for institution returning measured data, for two risk groups, according to the linguistic regions of Switzerland, 1998.

The responses were also evaluated according to the three major linguistic regions of Switzerland (Table 4). The mean vaccination rate for patients and residents was highest in the French speaking region (59%), and almost as high as in the Italian speaking canton (54%), whereas in the German speaking region it was lower (37%). Similar findings were obtained for vaccination coverage of the medical staff: 21% in the French speaking region, 15% in the Italian speaking canton and 13% in the German speaking region.

Discussion

The relatively low response rate of 42.4% may be explained by the facts that no reminder was sent, questionnaires were sent outside the vaccination period, shortly before a holiday period, and without a specific addressee. No information is available concerning the non-respondents. The lower response rates in the children's and mothercare clinics may be due to the fact that the management of such institutions has little concern about this vaccination^{1,9}. The high response rates in large hospitals and psychiatric clinics may reflect a concern with influenza vaccination due to the presence in these institutions of patients of all risk groups.

The mean estimated rates for vaccination coverage were generally lower than the precisely known rates. The differences varied between 14% for the medical staff, 11% for the residents and 10% for the elderly; but this was not true for the entire staff where the mean estimated rate was only 2% lower than the measured rates (Table 3). This difference may be related to a reputation of uselessness and lack of efficiency of the influenza vaccination within the medical institutional environment. The highest precisely known mean

vaccination rates were found for the elderly (47%) and the residents-patients (40%). The SFOPH recommends vaccination for these groups, while the staff is eligible for vaccination but not considered a risk group. The cost of the vaccine is not reimbursed by the medical insurance for the employees of health institutions, a fact which might contribute to the underestimation of the coverage as well as the low vaccination rate. Nevertheless, these rates are low in comparison with studies in other countries. Nichol found that immunization rates in the United States among high risk patients can be increased from 58% to 84% with a good vaccination program¹⁰.

In comparison, vaccination coverage for the elderly with high risk conditions discharged from hospitals is reported to be at 68% in the United Kingdom¹¹ and about 70% in France¹².

For patients and residents, the mean rates were very low, particularly as it has been shown that the vaccination of health care workers had important beneficial effects on patient mortality and frequency of influenza-like illness¹³. Other studies confirmed that the vaccination of health workers reduces febrile respiratory illness and reported days of work absence^{14,15}.

With regard to the staff, either all employees or only medical personnel, the measured and estimated rates for influenza vaccination coverage were much lower than for the other groups, potentially reflecting little interest in protecting the staff or a possible resistance toward this preventive measure.

The results also demonstrate that the perception of public health measures differs between the three linguistic regions. The differences among the three regions appeared strongly also in the Swiss Health Survey. For the total population the number of persons vaccinated within the last two years preceding the survey (vaccinated in 1996

and/or 1997) are 17.8% in the French speaking area, 11.2% in the Italian speaking canton, and 9.7% for German speaking Switzerland¹⁶. The 1996 coverage in Switzerland is 6.1%, for comparison in the neighbouring countries based on the number of sold doses, the rates are 15.0% for Italy, 13.4% for France, 9.2% for Germany and 6.1% for Austria [David Fedson, Fred Ambrosch, personal communication]. One can suggest that this may be due to a tendency for a similar identity as well as cultural influence from the neighbouring country speaking the same language. France has been very active in promoting influenza vaccination for nearly 20 years and the impact of this media campaign has been felt throughout the French speaking part of Switzerland. Germany and Austria show a low vaccination coverage, and some German speaking cantons are the home for anti-vaccination activist movements; especially the Swiss Germans seem to favour more natural preventive measures and tend to reject immunisations. The coverage rate for the Italian speaking canton cannot be compared with the Italian national rate, unfortunately specific data for the Italian autonomous regions bordering Ticino are not available.

Conclusion

This study has shown that in Switzerland, where no national influenza vaccination programme exists, knowledge of health institutions on vaccination rates either of their patients or their employees is sparse and uncertain. When precisely known vaccination coverage mean rates for the patients-residents, the elderly and the medical staff are higher than the rates given when they are estimated. Overall, Swiss immunization rates are generally well below those of other European countries and the

United States. The SFOPH recommends the vaccination for specific risk groups but each canton is free to decide whether to organize the promotion locally. Cultural differences appear to play an important role with regard to the perception of influenza vaccination programmes and their promotion and monitoring, as shown by the differences in immunization rates in the French, Italian and German speaking regions. The question arises whether vaccination programmes should continue to be delegated to the cantons but with an increased assistance and support by the federal health authorities, or be better conducted entirely by the SFOPH with a promotion adapted to the local sensibilities and cultural identities within the country. Both options would increase protection against influenza and achieve a better cultural balance in the promotion of this important preventive intervention.

Zusammenfassung

Eine Befragung zur Grippeimpfung in Institutionen des Pflegebereichs in der Schweiz

Im Juni 1998 führten wir eine Studie zur Grippeimpfung in der Schweiz durch. 429 medizinische Institutionen erhielten einen Fragebogen um die Rate der Grippeimpfung unter Einbeziehung spezifischer Risikogruppen zu evaluieren. Jede Institution musste angeben, ob die Impfquote genau bekannt (aufgrund der existierenden Daten) oder geschätzt war. Die Antwortrate lag bei 42,4%. Die generelle Impfquote in den befragten Institutionen lag für alle Patienten bei 40% und die geschätzte Rate bei 29%; diese Impfquoten waren etwas höher für Personen über 65 Jahre. Was das gesamte Personal jeder Institution betrifft, lag die Impfquote bei 16%, während die Impfquote für das medizinische und paramedizinische Personal bei 30% lag. In französisch sprechenden Regionen der Schweiz lag die Impfquote für die Patienten bei 59%, in italienisch sprechenden Regionen bei 54%, in deutschsprachigen Regionen jedoch bei nur 37%. Die gleichen regionalen Unterschiede fanden sich auch bei den Impfquoten des medizinischen und paramedizinischen Personals. Aufgrund dieser Ergebnisse kann man annehmen, dass kulturelle Unterschiede in den Sprachregionen eine wichtige Rolle spielen bezüglich des Verhaltens der Bevölkerung gegenüber der Grippeimpfung.

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Résumé

Une enquête sur la vaccination contre la grippe en Suisse dans les institutions de soins

En juin 1998, un questionnaire est envoyé pour évaluer les pratiques de vaccination contre la grippe en Suisse: 429 établissements de soins ont évalué le taux de vaccination contre la grippe de certains groupes. Chaque institution devait spécifier si le taux était précisément connu (basé sur les données existantes) ou estimé. Le taux de réponse est de 42,4%. La couverture vaccinale moyenne connue des patients-résidents est de 40%, alors que l'estimation est à 29%; ces taux sont légèrement supérieurs pour les personnes de plus de 65 ans. Pour l'ensemble du personnel, le taux de vaccination connu s'élève à 16% (estimation 14%); pour le personnel médical, la couverture mesurée est de 30% et l'estimation à 16%. Le taux moyen de couverture des patients-résidents est de 59% en Romandie, 54% au Tessin, 37% en Suisse alémanique. Ces différences se retrouvent dans le taux de couverture du personnel médical: 21% en Suisse romande, 15% en Suisse italienne, 13% en Suisse alémanique. Ces résultats suggèrent que les différences culturelles inhérentes aux régions linguistiques peuvent jouer un rôle important dans les attitudes et comportements de la population face aux programmes de vaccination contre la grippe.

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