Increasing the coverage of vaccination against influenza by general practitioners
Rom J. M. Perenboom and Wim Davidse

Abstract

Background To increase the coverage of influenza vaccination in groups of patients at risk, an experiment was conducted in 1993, aimed at logistic support of general practitioners (GPs).

Methods Support was given to 56 GPs with 133 000 patients to select and invite patients at risk. The coverage of vaccination as a result of this experiment has been compared with the results obtained from the Health Interview Survey, in The Netherlands as a total.

Results About 15 000 patients at risk were invited for vaccination, of whom 75.5 per cent were vaccinated. In The Netherlands as a total, the coverage of patients at risk was 43 per cent.

Conclusion Because the selection and invitation of patients at risk is still a problem for many GPs, owing to the lack of computerization, logistic support can ease these tasks and thus help increase the coverage of vaccination against influenza in groups of patients at risk.

Keywords: influenza, vaccination, population, general practitioners

Introduction

In The Netherlands, as well as in other Western countries, mortality owing to the complications of influenza is relatively high. For The Netherlands, estimates range from 2000 deaths a year for the age-groups of 60 years and over to 4000 a year for all age-groups. Also, many people have to be admitted to hospital because of complications caused by influenza, such as pneumonia. In particular, patients with cardiovascular diseases, lung and bronchia diseases or diabetes mellitus are at risk. Vaccination of high-risk patients against influenza diminishes the chance of complications or death. In The Netherlands, vaccination caused a 50 per cent reduction in the incidence of influenza amongst older persons. The level of protection by the vaccine depends on age. The protection in young adults is about 70–90 per cent; in older persons it is much less. It is also known that vaccination against influenza reduces the costs of health care.

In The Netherlands, about 12 per cent of the population living independently belongs to the population at risk, as mentioned in earlier studies. The vaccination coverage in The Netherlands is relatively low, compared with countries such as France, the United Kingdom and Canada. In 1991, about 28 per cent of the population at risk was vaccinated, as can be derived from figures of the National Health Interview Survey (NHIS). In 1992, the coverage was almost 40 per cent, and in 1993, 42 per cent.

Results from some small experiments in The Netherlands show that it is possible to increase the coverage in a small population. Personal invitation by the general practitioner (GP) seems to be an important factor in this increase.

To check if it is possible to increase the vaccination coverage in a large population, TNO (the Netherlands organization for applied scientific research) Prevention and Health (TNO-PG, an independent research institute) carried out an experiment (total cost about 700 000 Dutch guilders) in a region in the south of The Netherlands (the city of Tilburg and surroundings). This urbanized region can be considered as more or less representative of the densely populated Netherlands.

Before elaborating on the methods and results, we first have to explain something about the Dutch health care system and prevention, because the experiment relies on the existing institutions and procedures in the health care system.

Dutch health care system

In the Dutch health care system, most prevention programmes are carried out by special public health

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methods
pharmacists, 62 per cent are at risk. The predictive value of the medicine list is thus 62 per cent. The GPs have added about 2500 patients. From the final list of patients to be invited, 83 per cent originated from the list of the pharmacists. From the total of almost 15 000 patients invited (about 12 per cent of the population covered by the participating GPs), 75·5 per cent were vaccinated.

Table 2 gives the results for different risk groups. Information about medication does not automatically provide information about the risk group to which the patients belong. In some cases, a medicine refers to a particular disease (for instance, insulin and diabetes), in other cases to more than one disease (beta-blockers). The situation becomes even more complicated when a patient has medication for more than one disease. Therefore, in Table 2, patients who have only one type of medication or belong to only one risk group are presented under ‘single indication’. The heading ‘other medical indication’ refers mainly to patients who had an influenza vaccination in the year before the experiment, without any other known medical indication. Patients with more than one type of medication are presented under the heading ‘multiple indication’. The heading ‘non-medical indication’ refers to patients who have been added to the list because of other factors, for instance age. The heading ‘indication unknown’ refers to the group for which no information was available. In some cases the GPs judged patients to belong to more than one risk group, so these patients are counted more than once. Therefore, the total number of vaccinated patients in Table 2 is higher than in Table 1.

From Table 2, it can be seen that vaccination is highest in the groups ‘other medical indication’ and ‘non-medical indication’. The high coverage in the group ‘other medical indication’ might be due to the fact that this group contains persons who have had vaccinations before and who therefore might be used to being vaccinated against influenza.

The lowest percentage of vaccination is found in the group ‘lung and bronchia diseases’. This might be due to the fact that these patients do not judge themselves as being at risk and therefore see no need for vaccination.

Vaccination coverage is also high in the group of patients with a multiple indication. Although a multiple indication does not automatically implicate a multiple risk group, it can be assumed that most patients do belong to more than one risk group. For this type of patient, vaccination is very important, because the presence of more underlying diseases leads to a greater chance of suffering from complications.

Table 3 shows the increase in the vaccination coverage between 1992 and 1993. This increase is calculated in two different ways. The first calculation is based on the sales figures of the pharmacists over the years 1992 and 1993. These figures are available for both those GPs who participated in the experiment and those who did not. The second calculation is based on the figures produced by the GPs themselves. Over the year 1992 they estimated the number of vaccinated patients. Over the year 1993 we have the exact number of patients vaccinated. The information on The
TABLE 3 Increase of the vaccination coverage between 1992 and 1993 in the experimental region, calculated in two different ways, and in The Netherlands in total

<table>
<thead>
<tr>
<th></th>
<th>Region</th>
<th>The Netherlands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculation based on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>information from:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharmacists on:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>participating GPs</td>
<td>+56%</td>
<td></td>
</tr>
<tr>
<td>non-participating GPs</td>
<td>+18%</td>
<td></td>
</tr>
<tr>
<td>Participating GPs</td>
<td>+51%</td>
<td></td>
</tr>
<tr>
<td>Patients*</td>
<td></td>
<td>+8%</td>
</tr>
</tbody>
</table>

* Source: Ref. 11.

Netherlands in total is based on the Health Interview Surveys.

In 1993, compared with 1992, the pharmacists sold 56 per cent more influenza vaccines to patients of participating GPs. The increase in sales to patients of non-participating GPs was only 18 per cent. The participating GPs themselves report an overall increase of 51 per cent. The small difference between the figures of the pharmacists and the GPs might be due to the fact that the GPs had to estimate the number of patients vaccinated in 1992 and that the figures from the pharmacists include patients who are not at risk, not invited, but vaccinated at their own request. In The Netherlands as a total, the increase was about 8 per cent. In 1993 about 42 per cent of the population at risk was vaccinated, which is much below the percentage of 75-5 per cent that was found in the experimental region. That is why the main conclusion from this experiment is that the vaccination coverage has greatly increased, thanks to the interventions undertaken.

Discussion

This experiment was set up to see what is feasible in the vaccination against influenza and to learn what is possible in a large-scale implementation. It is not clear what the limit of the vaccination coverage will be, but we are convinced that the 76 per cent of the patients at risk vaccinated in this experiment can be increased further, because some participating GPs have added only a few patients. The coverage can be improved by better opportunities for the selection of patients, for instance by means of the current computerization of medical data in the practice.

In our study, we compared the coverage in the region with the coverage as reported from the NHIS. Some remarks have to be made on this comparison. The results from the NHIS are based on reports of the respondents themselves. It is known that these reports sometimes differ from the diagnosis made by professionals. These differences are most prominently present in lung and bronchia diseases. However, the total percentage of patients at risk found in the NHIS equals that found in our study.

The main conclusion of our study is that it is possible to increase the vaccination coverage in a large population by a programmatic approach of vaccination against influenza. In The Netherlands as a whole, this coverage is about 42 per cent, which is much lower than the 76 per cent reached in the experimental region. The way the logistic problems are handled in this experiment leads to an increase in the vaccination coverage, but it is rather time consuming and also complex. We think that implementation on a national scale requires that the GPs themselves (or their assistants) carry out the tasks of selecting and in particular inviting the patients at risk, for we think that the personal, written invitation is essential for a high response. However, if we rely only on the GPs for this upscaling, it is not inconceivable that only the enthusiastic GPs will be able to handle the procedure of selection and invitation on their own. For many practitioners this will remain a problem. From a public health viewpoint, this is unsatisfactory because a part of the population at risk is not given the opportunity to be vaccinated. Upscaling this experiment will therefore still require logistic support in one form or another. When the computerization of the medical databases within the practices continues, selection and invitation will become easier, but this requires another kind of support: teaching the proper use of computerized medical databases.

Acknowledgement

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References


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