

Short communication

Surveillance of influenza immunisation uptake in people aged under 65 years with chronic disease

Daniel Rh. Thomas^a, Brendan W. Mason^{a,*}, Laura Beer^b,
Simon Scourfield^b, Helen James-Hatherill^b, Sara Hayes^c

^a National Public Health Service for Wales Communicable Disease Surveillance Centre,
Abton House, Wedal Road, Cardiff CF14 3QX, UK

^b Welsh Assembly Government ICT Foundation Programme, Swansea, UK

^c National Public Health Service Mid and West Wales Health Protection Team, Swansea, UK

Received 1 September 2005; received in revised form 21 June 2006; accepted 26 June 2006

Available online 12 July 2006

Abstract

Historically, it has been difficult to obtain population based data on the uptake of influenza immunisation in people aged under 65 years who are at risk of serious illness or death from influenza and its complications. Data obtained electronically from 96% of all practices in Wales demonstrated that uptake in this group is low, with only a quarter of eligible patients immunised. Uptake varies considerably between patient groups and between geographical areas. This suggests an opportunity for significant health gain from targeted interventions to improve uptake.

© 2006 Elsevier Ltd. All rights reserved.

Keywords: Influenza immunisation; Vaccine uptake; Under 65 years of age

1. Introduction

During a normal inter-pandemic winter, immunisation is the primary intervention for preventing influenza. During winter 2004/2005, in Wales immunisation was offered to all those aged 65 years and over, those living in long-stay care homes, and those under 65 who have a chronic illness that might put them at risk of serious illness or death from influenza and its complications. This latter group included those known by their general practitioner to have: chronic heart disease, chronic respiratory disease, chronic renal disease, diabetes mellitus or immunosuppression due to disease or treatment [1].

It is relatively easy for general practitioners with a registered practice population to provide data on the number of people in their practice aged 65 and over, and the number of those that have been immunised against influenza. These data

are available for many countries [2]. However, until now it has been difficult to obtain accurate estimates of the size of the population under 65 years eligible for immunisation and the number of those immunised.

2. Methods

Through the Welsh Assembly Government's Information and Communication Technology Foundation Programme for General Medical Practice (ICT Foundation Programme) 'Data Quality Initiative' [3] 98% of the 501 general practices in Wales have been supplied with a MSD Informatics [4] software product designed to support delivery of the new General Medical Service Contract 'Quality and Outcomes Framework'. In Wales, data on selected performance measures and on prevalence of selected diseases are sent monthly by all practices in an anonymised format for analysis by local health boards (LHBs). These data can subsequently be aggregated centrally to provide national data.

* Corresponding author. Tel.: +44 2920 521997; fax: +44 2920 521987.
E-mail address: brendan.mason@nphs.wales.nhs.uk (B.W. Mason).

Table 1
Uptake of influenza immunisation in Welsh general practice populations under 65 years by risk category, winter 2004/2005

	Number of patients ^a	% of all registered patients aged <65 years ^b	Number immunised	% immunised (95% CI)	Local health board range (%)
Total registered patients aged <65 years in any risk group	516603	21.3	130531	25.3 (25.1–25.4)	20.1–33.3
Specific risk groups					
Chronic heart disease or related conditions	192504	7.9	58700	30.5 (30.3–30.7)	24.2–36.8
Chronic renal disease	7008	0.3	2287	32.6 (31.5–33.7)	26.5–40.7
Chronic respiratory disease	289534	11.9	69009	23.8 (23.7–24.0)	17.8–31.0
Diabetes	52925	2.2	31926	60.3 (59.9–60.7)	52.0–67.9
Immunosuppression due to disease or treatment	52484	2.2	11176	21.3 (20.9–21.6)	16.0–34.0

^a The sum of patients in specific risk groups is greater than the total number of patients in any risk group because patients can have multiple pathologies.

^b There were a total of 2,428,516 registered patients aged <65 years in participating practices.

The National Public Health Service has collaborated with the ICT Foundation Programme and MSD Informatics to add read-code based searches within the practice and LHB versions of the software to capture data on influenza immunisation uptake, both in patients aged 65 and over and in those aged 6 months to 64 years ‘at risk’ of serious illness or death. After testing at pilot practices in two LHBs, data were collected as a one-off survey in March 2005.

Percentage uptake was calculated for specific chronic disease groups and 95% binomial confidence intervals were calculated by the Agresti–Coull method using Stata 9.

3. Results

Ninety-six percent of the 501 practices in Wales provided data. Twenty-one percent of the 2,428,516 patients aged under 65 years and registered in participating practices were in chronic disease groups eligible for influenza immunisation. The largest risk group was those with chronic respiratory disease (11.9% of the population aged less than 65 years).

During 2004/2005, only a quarter of those eligible were vaccinated and uptake varied significantly between specific patient groups, from 21% in those immunosuppressed due to disease or treatment to 60% in individuals with diabetes (Table 1). Significant geographical variation occurred (LHB range 20–33%).

4. Discussion

We present total population surveillance data on influenza immunisation uptake in people under 65 years with chronic disease. We plan to repeat this survey annually in Wales and if possible use this methodology to also provide within-season estimates of uptake.

Whilst we are confident that doctors are accurately recording influenza immunisations given, the quality of the denominator data should be further validated. Some morbidities,

for example: chronic heart disease, are routinely surveyed by LHBs for performance management purposes, and are therefore probably accurately recorded, others, notably ‘immunosuppression’ are not, and are probably more open to between-practice variation in recording. Although recorded levels of morbidity were relatively high, this is indeed the cases in many parts of Wales, and rates are broadly similar to that determined by other surveys, such as the Welsh Health Survey [5].

Variation in uptake between chronic disease groups and between local health board areas are likely to be real and warrant further exploration. Uptake in specific chronic disease groups may be determined by a range of factors, some may be organisational, for example: identification of need through practice disease registers, access to patients through special clinics, others may be behavioural or demographic, for example: consulting behaviour or mobility. It is possible that age may act as a confounding factor with different chronic disease groups having different age profiles. Unfortunately, uptake by age group was not collected so information on age-specific vaccination rates in the under 65s are not available. Variation in vaccination rates by local health board also warrants further investigation with some of the areas of Wales with the highest rates of chronic disease, and also the highest rates of deprivation, having the lowest immunisation rates.

A proportion of the population surveyed may have received immunisation for reasons other than their chronic disease status, for example: some may have been living in long-stay residential care and others may have been health care workers. No attempt was made to collect data on uptake specifically in people in long-stay residential care. Data on this target group would need to be collected by a different method as residence in a care home is not easily identified through general practice computer systems. In 2005/2006, the Welsh Assembly Government added ‘carers’ to the list of people who should receive influenza immunisation. Like patients in long-stay residential care, a patient’s carer status is rarely recorded by GPs and uptake in this group would need to be assessed by alternative methods.

In Wales, immunisation of health and social care staff is recommended by the Welsh Assembly Government but responsibility for immunisation of these staff rests with employers and not with general practice. Immunisation is generally carried out through an occupational health service and NPHS is currently developing surveillance of immunisation uptake in National Health Service (NHS) staff in conjunction with NHS Trusts in Wales.

The continued collection of influenza immunisation uptake data are essential to assist the Welsh Assembly Government, the National Public Health Service and the NHS in Wales in monitoring the success of annual influenza immunisation campaigns. Surveillance data on people under 65 years with chronic disease indicate that work is required both to improve uptake overall, and to reduce inequalities in uptake.

Acknowledgements

The authors wish to thank MSD Informatics and all participating general practitioners and local health boards in Wales.

References

- [1] Welsh Assembly Government, Welsh Health Circular WHC (2004) 63. 2004–2005 Influenza Immunisation Programme. Cardiff: WAG; 2004.
- [2] European Influenza Surveillance Scheme, http://www.eiss.org/html/vacc_uptake.html.
- [3] Information and Communication Technology Foundation Programme for General Practices, <http://www.wales.nhs.uk/sites/home.cfm?orgid=319>.
- [4] MSD Informatics, <http://www.msdinformatics.co.uk>.
- [5] Welsh Assembly Government. Health Status Wales 2004–2005. Chief Medical Officer's Report Series 1. Cardiff: WAG; 2005.