

# Barriers and facilitators to influenza vaccination among high-risk groups aged less than 65 years – views from general practitioners and practice nurses

## Abstract

**Objectives:** To explore the views of general practitioners and practice nurses about barriers to influenza vaccination among under 65 high-risk patients and strategies to overcome those barriers.

**Methods:** Focus group discussions with general practitioners and practice nurses.

**Results:** Barriers identified included: lack of awareness among patients about influenza vaccination; GP workload; poor GP motivation; lack of practice nurses; lack of patient recall systems; cost of vaccine; and lack of media campaign. Strategies proposed included: public education campaigns; free supply of vaccine; dissemination of evidence to motivate GPs; incentives to establish recall systems; and greater involvement of practice nurses in the process.

**Conclusion:** Influenza vaccination has not been well accepted by people aged less than 65 years. Implementation of proposed strategies has the potential to improve the vaccination coverage.

**Implications:** An improvement in influenza vaccination coverage among people less than 65 years who are in high-risk groups has the potential to reduce hospitalisation and health care costs.

**Key words:** Influenza vaccination; adult and middle aged; health knowledge, attitude and practice.

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Low uptake of influenza vaccination among high-risk groups, particularly those aged less than 65 years with chronic illnesses, is an important evidence-to-practice gap that has been highlighted by the National Institute of Clinical Studies.<sup>1</sup> The 2004 Influenza Vaccination Survey showed that, in 2003, 79.1% of Australians aged 65 years and over were vaccinated against influenza, in contrast to only 41.6% of those under 65 in high-risk groups.<sup>2</sup> During influenza epidemics, individuals of any age with chronic medical conditions are particularly at risk for complications, hospitalisations and death.<sup>3</sup>

Poor influenza vaccination coverage among the high-risk groups under 65 years of age has significant public health implications. The 2006 disease notification data revealed that of the 3,096 laboratory confirmed influenza cases that year, approximately 85% were aged under 65.<sup>4</sup> Hospital morbidity data shows that around 80% of people who are hospitalised with influenza as the principal diagnosis are under 65 years of age.<sup>5</sup> The cost of influenza in high-risk groups aged 18-64 years is estimated to be around \$130 million a year.<sup>6</sup>

Despite this, present Australian policy responses to influenza vaccination, such as mass media campaigns and subsidised vaccine provision, are predominantly directed at the 65 plus age group. In order to understand the evidence-practice gaps and identify strategies to support vaccination, the National Institute for Clinical Studies

(NICS) undertook a program of work exploring influenza vaccination in high-risk groups aged 18-64 years. As part of that program we sought to explore barriers to influenza vaccination among this group as perceived by general practitioners (GPs) and practice nurses (PNs) and potential strategies to address the issues identified.

## Methods

A qualitative study was conducted using focus groups methods.<sup>7</sup> A purposive sampling approach was undertaken to recruit participants from both urban and rural practice setting. Six focus group discussions were conducted in the period between September and November 2005.

Participants were identified and invited through their respective Division of General Practice. Table 1 summarises the recruitment process.

## Focus groups

All the focus groups were facilitated by one of the chief investigators (NZ, MH) and the project officer (IH) collected field notes. Before the discussion started the facilitator provided a brief preamble as to the purpose of the session and obtained permission from the participants to audio tape the session. The facilitators encouraged the participants to actively participate in the discussion. The flow of discussion was free and a focus group guide was used to ensure that the major issues were covered during the course of the

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conversations. All the focus groups were conducted in the evening after working hours and dinner was provided. The participants were remunerated for their time as per the standard rate suggested by the Divisions of General Practice.

### Ethics approval

Ethics approval for the study was obtained from the University of New South Wales Human Research Ethics Committee.

### Data analysis

Tapes from the focus group discussions were transcribed by a professional transcriber. The transcripts were cross-checked with the project officer's field-notes to ensure their completeness. A qualitative content analysis<sup>8</sup> was undertaken to identify and explore key themes arising from the discussions. An initial broad coding framework was used to code the transcripts and guide thematic analysis. Throughout the analysis process, emergent themes were added to the coding framework to ensure completeness. Qualitative computer software QSR N6 was used during the process of analysis.

## Results

Two major issues were explored in the analysis of the focus groups:

- Barriers to influenza vaccination among high-risk groups less than 65 years of age.
- Strategies to improve influenza vaccination rate among high-risk groups less than 65 years of age.

Findings were generally similar between GP and PN focus groups; however, participating PNs put more emphasis on system issues in general practices such as patient waiting time and inconvenience as well as the roles of PNs in the vaccination process. Key barriers and strategies proposed by focus group participants are summarised in Table 2.

## Discussion

GPs and PNs had similar views about the factors that affected influenza vaccination among high-risk patients less than 65 years. Key patient barriers identified included: misconceptions among people about influenza and its associated complications; lack of awareness among the high-risk groups that they required the

vaccine; and costs associated with the vaccination. Misconceptions about vaccine efficacy and safety were also highlighted. The barriers identified are consistent with research done elsewhere. For instance, a study in Scotland<sup>9</sup> found that lack of awareness among high-risk groups about their high-risk status was a barrier. A Dutch study<sup>10</sup> reported patient barriers to include: a belief of resistance to influenza; not perceiving influenza as a serious disease; bad past experiences with vaccination; and negative views about vaccination in general. Studies in New South Wales<sup>11</sup> and in the United Kingdom<sup>12</sup> showed that doubts about the vaccine's effectiveness influenced people's motivation to take up vaccination. Other research<sup>9,12</sup> reported that fear of adverse effects from the vaccine negatively influenced influenza vaccination uptake.

There was a strong view among the participants that a public information and media campaign was needed to overcome common patient barriers. National public education campaigns have been found to be effective in other countries, such as the United Kingdom (UK).<sup>13</sup> Suggestions were made that public education campaigns should focus on defining influenza and its associated complications, how it differed from the common cold, availability and the need for the annual vaccination, and vaccine safety and efficacy. Studies in the UK<sup>13,14</sup> have shown that information campaigns that emphasised vaccine efficacy and safety produced positive outcomes. It was also suggested that posters and brochures in workplaces and in GP practices would be an effective strategy to promote influenza vaccination. This method has been tested and found to be effective in the UK.<sup>15</sup> A further suggestion was that mass media campaigns should be reinforced through local information provision by individual health professionals. This could be an effective strategy as there is evidence that education provided by health care providers and their endorsement of vaccination increases uptake by patients.<sup>11,16</sup>

The focus groups suggested that patient education could be reinforced through annual reminders from GPs and practices. There is evidence<sup>14,16-18</sup> that a personalised reminder letter to patients increases vaccination rate. Participants supported the notion of using a computerised patient recall system to facilitate influenza vaccination uptake. This suggestion is supported by evidence that a recall system facilitates the process of identifying target patients.<sup>19</sup> Financial incentives from Medicare may encourage practices to establish patient recall systems.

**Table 1: Summary of the recruitment process.**

Division	Division State/type	No. of GPs/PNs contacted	No. of GPs/PNs consented	No. of GPs/PNs participated
Adelaide Southern	SA/urban	GP=350	GP=14 (4.0%)	GP=13 (male=7)
Fairfield	NSW/urban	GP=204	GP=12 (5.9%)	GP=12 (male=8)
Southern Highlands	NSW/rural	GP=51	GP=16 (31.4%)	GP=16 (male=13)
Barossa	SA/rural	GP=35	GP=11 (31.4%)	GP=10 (male=7)
South Eastern Sydney	NSW/urban	GP=220, PN=19	GP=7 (3.2%), PN=2 (10.5%)	GP=6 (male=3) <sup>a</sup>
Riverina	NSW/rural	GP=82, PN=59	GP=3 (3.7%), PN= 9 (15.3%)	PN=8 (all female) <sup>b</sup>
Total		GP=942, PN=78	GP=63 (6.7%), PN= 11 (14.1%)	GP=57 (male=38), PN=8

Notes:

(a) PN focus group was not conducted because of insufficient number of PNs consenting to participate.

(b) GP focus group was not conducted because of insufficient number of GPs consenting to participate.

Note: our cut-off number of participants for a possible focus group was four, as suggested by Dawson et al.<sup>7</sup>

Our results indicated that a GP education campaign is needed to promote influenza vaccination among high-risk patients less than 65 years old. Such a campaign could be supported by better promotion of national guidelines and policies that clearly define high-risk groups as specified in the *Australian Immunisation Handbook*.<sup>20</sup>

Participants highlighted the need for clear and concise evidence on the effectiveness of vaccine to reduce morbidity, hospitalisation and mortality from influenza-related complications. The authors of a study conducted in Sydney<sup>11</sup> made similar observations. Such a summary would provide an evidence base to support the efforts of health professionals to motivate high-risk patients to get vaccinated. This summary could be provided by bodies such as the National Institute of Clinical Studies and/or the Influenza Advisory Group in collaboration with the Divisions of General Practice.

Participants overwhelmingly supported free influenza vaccine for high-risk patients less than 65 years old. The availability of free vaccination has increased the rate of vaccination in other countries.<sup>17</sup> Provision of free vaccine has cost implications for the health system, but would be offset by savings in GP consultations and hospitalisations. Economic modelling in the UK<sup>21</sup> suggests that free vaccine for people aged 50-64 years is cost-effective for health systems.

The role of the practice nurse was seen as very valuable by both practice nurses and GPs in improving vaccination rates through making vaccination more accessible and reducing the

workload on GPs. A study<sup>18</sup> in Queensland showed that a nurse-led immunisation clinic was time saving for GPs. However, the lack of nurses in many practices, in part related to workforce shortages, was seen as a barrier to greater use of this strategy.

### Limitations of the study

Only one focus group discussion was conducted with practice nurses compared with five with GPs. Although the findings from these groups were similar, further research is needed with practice nurses to confirm these findings.

### Conclusion

Patient and health professional education and free vaccine seem to be the key to facilitate influenza vaccination in high-risk groups aged less than 65 years. Patients' and health professionals' education could be implemented through public information campaigns and through information dissemination. GPs need clear evidence on the beneficial effects of influenza vaccination to motivate both themselves and their patients. Free supply of vaccine will facilitate uptake through both reducing costs to patients and increasing the convenience of vaccination process. Patient recall systems and reminders can facilitate uptake of vaccination and incentives to practices to establish such systems could be beneficial. Practice nurses need to be supported to become more involved in identifying and administering influenza vaccination to high-risk patients aged less than 65 years.

**Table 2: Summary of the results.**

Barriers identified	Proposed strategy to overcome barrier
<b>Patient related</b>	
<ul style="list-style-type: none"> <li>• Lack of knowledge and misconceptions about influenza as a disease</li> <li>• Lack of awareness of the need for vaccination among high-risk groups</li> <li>• Cost of vaccine and vaccination-related GP consultations</li> <li>• Beliefs that the vaccine itself can cause influenza</li> <li>• Fear of adverse affects from vaccination</li> </ul>	<ul style="list-style-type: none"> <li>• Mass media campaign through TV, radio, newspaper focusing on the definition and consequences of influenza in high-risk groups, the role of vaccine in prevention and adverse effects of vaccination</li> <li>• Distribution of leaflets and poster displays at workplaces, hospitals and GP practices</li> <li>• Making the vaccine free for high-risk groups and incentives to GPs to encourage them to bulk-bill vaccination-related patient visits</li> </ul>
<b>Practice related</b>	
<ul style="list-style-type: none"> <li>• Lack of practice nurses to alleviate GP workload</li> <li>• Lack of systems to identify and recall under-65 high-risk patients</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage practices to employ practice nurse</li> <li>• Permit practice nurses to do the vaccination</li> <li>• Incentives for practices to implement and utilise patient recall system</li> </ul>
<b>GP related</b>	
<ul style="list-style-type: none"> <li>• Lack of knowledge among GPs that influenza vaccination is indicated in younger patients with high risk factors</li> <li>• GP workload and the complexity of consultations with patients with chronic conditions</li> <li>• GP uncertainty about the evidence to support vaccination in under-65 high-risk patients</li> </ul>	<ul style="list-style-type: none"> <li>• GP education that clearly defines high-risk groups and benefits of vaccination in these groups</li> <li>• Financial incentives to GPs to encourage them to vaccinate their high-risk patients</li> <li>• Motivating GPs as to the beneficial effects of influenza vaccination among younger high-risk patients through dissemination of empirical evidence</li> </ul>
<b>Health system related</b>	
<ul style="list-style-type: none"> <li>• Lack of information campaigns to raise public and professional awareness of the need for vaccination in under-65 high-risk groups</li> <li>• Not supplying free vaccine for the patients aged less than 65 years who have high risk factors</li> </ul>	<ul style="list-style-type: none"> <li>• Mass media campaign targeting under-65 high-risk groups and promoting influenza vaccination</li> <li>• Supply of free vaccine for under-65 high-risk groups allowing GPs to do vaccination opportunistically</li> </ul>

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 Riverina Division of General Practice  
 Barossa Division of General Practice  
 Adelaide Southern Division of General Practice  
 Fairfield Division of General Practice  
 Southern Highlands Division of General Practice

## References

- National Institute of Clinical Studies. *Evidence-Practice Gap Reports*. Vol 2. Melbourne (AUST): NICS; 2005.
- Australian Institute of Health and Welfare. *2004 Adult Vaccination Survey: Summary Results*. Canberra (AUST): AIHW; 2005. Catalogue No.: PHE 56.
- Neuzil KM, Mellen BG, Wright PF, Mitchell EF jnr, et al. The effect of influenza on hospitalisations, outpatient visits, and courses of antibiotics in children. *N Engl J Med*. 2000;342:225-31.
- Communicable Diseases Australia [homepage on the Internet]. Canberra (AUST): Department of Health and Ageing; 2006 [cited 2007 May 10]. *National Notifiable Disease Surveillance System: Number of Notifications of Influenza (laboratory confirmed), Australia, 2006 by Age Group and Sex*. Available from: [http://www9.health.gov.au/cda/Source/Rpt\\_5.cfm](http://www9.health.gov.au/cda/Source/Rpt_5.cfm)
- Australian Institute of Health and Welfare. *Interactive National Hospital Morbidity Data. Separation, Patient Day and Average Length of Stay Statistics by Principal Diagnosis in ICD-10-AM, Australia; 2004-05*. Canberra (AUST): AIHW; 2006.
- Colgan S, Tay-Teo K, Shih S, Carter R. *Influenza Vaccination for At-risk Australian Adults Aged Between 18 to 64*. Canberra (AUST): National Institute of Clinical Studies; NHMRC; 2006. Influenza Evidence Report No.: 3 Part 2.
- Dawson S, Manderson L, Tallo V. *A Manual for the Use of Focus Groups*. Boston (MA): International Nutrition Foundation for Developing Countries; 1993.
- Miles MB, Huberman AM. *Qualitative Data Analysis: An Expanded Sourcebook*. 2nd ed. Thousand Oaks (CA): Sage; 1994.
- Barlow G, Kirk J, Nathwani D. Uptake of influenza vaccination and the reasons for non-vaccination in the high-risk patients of Angus, Scotland. *Health Bull (Edinb)*. 2000;58(6):505-8.
- Kroneman MW, van Essen GA, Tacken MA, Verheij R. Does a population survey provide reliable influenza vaccine uptake rates among high-risk groups? A case-study of the Netherlands. *Vaccine*. 2004;22(17-18):2163-70.
- Horby PW, Williams A, Burgess MA, Wang H. Prevalence and determinants of influenza vaccination in Australians aged 40 years and over – a national survey. *Aust N Z J Public Health*. 2005;26(1):35-7.
- Gosney M. Factors affecting influenza vaccination rates in older people admitted to hospital with acute medical problems. *J Adv Nurs*. 2000;32(4):892.
- Burns V, Ring C, Carroll D. Factors influencing influenza vaccination uptake in an elderly, community-based sample. *Vaccine*. 2004;23(27):3604-8.
- Evans MR, Watson PA. Why do older people get immunised against influenza? A community survey. *Vaccine*. 2003;21(19-20):2421-7.
- Qureshi AM, Hughes NJ, Murphy E, Primrose WR. Factors influencing uptake of influenza vaccination among hospital-based health care workers. *J Occup Health*. 2004;54(3):197-201.
- Zimmerman RK, Nowalk MP, Bardella JJ, Fine MJ, et al. Physician and practice factors related to influenza vaccination among the elderly. *Am J Prev Med*. 2004;26(1):1-10.
- Danish Institute for Health Technology Assessment. *Influenza Vaccination of the Elderly* (in Danish). Copenhagen DIHTA. 2000;2(1).
- Byrnes P, Fulton B, Crawford M. An audit of influenza vaccination rates. *Aust Fam Physician*. 2006;35(7):551-2.
- Hak E, van Esen GA, Stalman, de Melker RA. Improving influenza vaccination coverage among high risk patients: a role for computer supported prevention strategy. *Fam Pract*. 1998;15(2):138-43.
- National Health and Medical Research Council. *The Australian Immunisation Handbook*. Canberra (AUST): Department of Health and Ageing; 2003.
- Turner DA, Wailoo AJ, Cooper NJ, Sutton AJ, et al. The cost-effectiveness of influenza vaccination of healthy adults 50-64 years of age. *Vaccine*. 2006;24:1035-43.