

Improving Population Influenza Vaccine Coverage Through Provider Feedback and Best Practice Identification

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Vaccination is the best method for reducing influenza morbidity and mortality in the elderly. However, increasing population coverage can be challenging. We describe a process used to improve population coverage among the elderly in a rural Alberta Regional Health Authority (RHA). Historically, the vast majority of influenza vaccine administered in this RHA is given in the interval October 1 - December 1 and is delivered directly by five geographically based public health nursing teams. Physicians are sent a letter and asked to indicate the size of the initial order of influenza vaccine they require to vaccinate their patients, and must account for this vaccine when further vaccine orders are placed with public health. Prior to 1999, the majority of efforts to improve influenza vaccine coverage among the elderly had focused on public education. However as elder population coverage had plateaued between 1997 and 1998, we decided that new strategies were needed and chose to implement a provider assessment and feedback process in addition to public education.

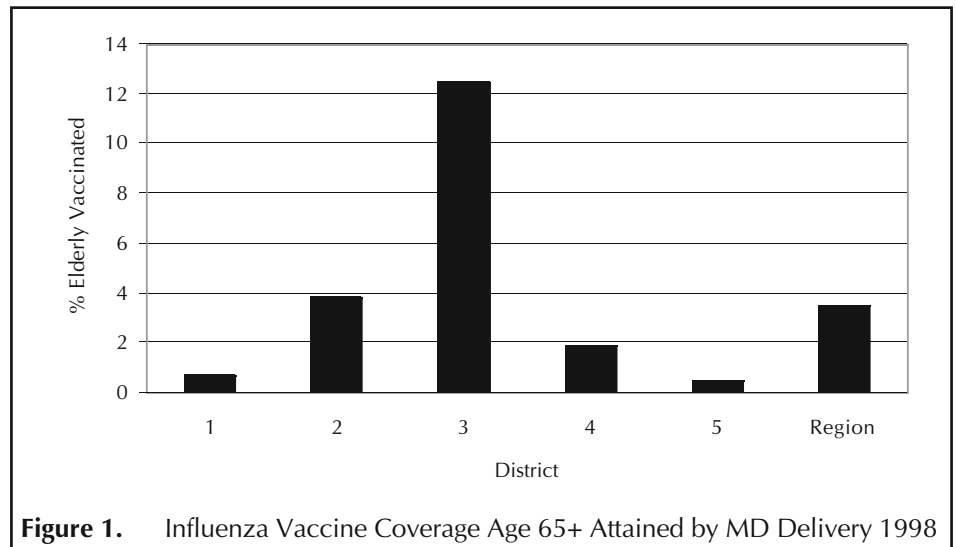
METHODS

In February 1999, the number of doses of influenza vaccine that had been administered in the 1998-vaccination campaign to persons aged 65 years and older was

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obtained from the Regional population-based immunization database for each district by provider type (i.e., public health nurse vs. community physician). This provided numerators to estimate the influenza vaccine coverage attained for the elderly by each type of provider for both the RHA as a whole and for each district. Denominators were estimated from district and Regional census population projections. We repeated this analysis in February 2000, capturing the effects of the 1999 fall vaccination campaign in a simple before and after study design.

Our intervention took place in September 1999 and comprised audit, feedback and best practice identification for public health nurses, and a mixture of audit and feedback plus education for community doctors. At a meeting of all of the nursing teams, total and district-specific vaccine coverage attained by nurse-delivered vaccine was displayed. Each nursing team presented a detailed report on the 1998 campaign as they had conducted it

and the group as a whole then identified best practices and applied them to the planning of the 1999 vaccination campaign. The changes included: an increase in the number of drop-in clinics offered in all five districts, an increase in the number of clinics with booked appointments offered in the two districts with the lowest vaccine coverage, an increase in the number of evening clinics offered in one of the districts with the lowest vaccine coverage; and an increase in the frequency of newspaper articles and advertisements in four districts.

The Medical Officer of Health sent a letter to all community physicians soliciting their help in improving vaccine coverage rate, and providing the target for vaccine coverage among the elderly, and data on vaccine coverage from 1998. The data (presented graphically) were:

- the proportion of the target population vaccinated by physicians collectively for the region as a whole and for each district (Figure 1), and

- total vaccine coverage distinguishing between physician-delivered vaccine coverage and public health nurse-delivered vaccine coverage for the region as a whole and for each district (Figure 2).

Included with the letter was a listing of the population groups for which the National Advisory Committee on Immunization recommends influenza vaccination and information on how to order vaccine from public health.

Coverage rates by provider type and district were measured again in February 1999.

RESULTS

In 1998, nurses attained 56.5% population coverage and doctors 3.4% (59.9% overall for the region). In 1999, the overall regional coverage rate increased to 65.6%. The number of doses of vaccine delivered by physicians increased two-fold (from 230 to 470 doses) and increases were noted in four of five districts. Nurse-attained improvements in district-specific population coverage were greatest in the districts that had the lowest coverage in 1998. (Table I).

DISCUSSION

Although the before and after study design was weak relative to a randomized design and we cannot rule out a Hawthorne effect, it was the only design that was feasible for the purpose, given our setting and timelines, and our findings are consistent with an intervention effect. Audit and feedback has been defined as the provision of any summary of clinical performance of health care over a specified period of time. It may be most effective in situations where “the behavior of interest is complex or when naturally occurring feedback is inadequate... such as preventive care,”¹ and has been shown to be effective in increasing immunization rates.^{1,2} Although the effects of audit and feedback

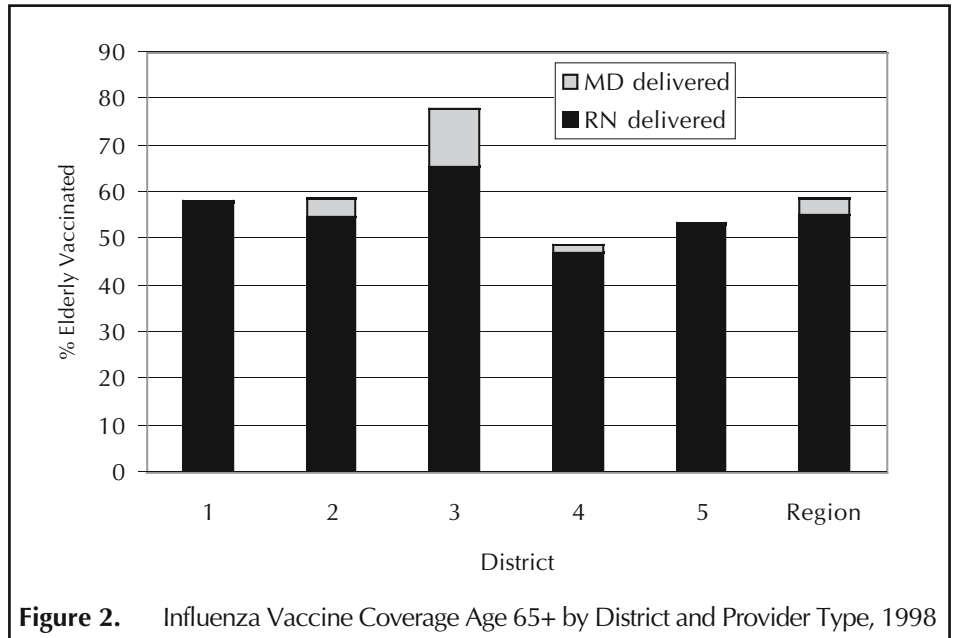


Figure 2. Influenza Vaccine Coverage Age 65+ by District and Provider Type, 1998

TABLE I
Changes in Elder Coverage Attained by Nurse-Delivered Vaccine, 1998-1999

District	% Elders Vaccinated by Nurses, 1998	% Elders Vaccinated by Nurses, 1999	Absolute Increase in Vaccine Coverage	Relative Increase in Vaccine Coverage
1	57.7	59.5	1.8	3.1
2	54.9	58.7	3.8	6.5
3	65.7	68.8	3.1	4.7
4	47.0	51.1	4.1	8.7
5	53.1	58.1	5.0	9.4

when used alone may be small as observed by us, even small effects may be worthwhile if the costs of the intervention are small relative to the benefits gained. We did not do any formal cost analysis; however, our “costs” were one to two hours of an already planned day of meeting time, and the approximately one hour of time for the Medical Officer of Health to prepare the graphs and explanations that accompanied the routinely sent letters to Regional doctors. The audit and feedback process led the nurses to devise and to implement multi-component strategies: improvements in access plus improvements in education and awareness. These strategies incorporated existing best practice and were advanced within the normal scope of practice. It is not surprising that this was effective, as mixed interventions to

improve vaccination rates are known to be more effective than single interventions (such as education) when used alone.²

In summary, provider audit and feedback can be a useful component of a mixed methods intervention to increase vaccine coverage.

REFERENCES

- Thomson O'Brien M, Oxman AD, Davis DA, et al. Audit and feedback: Effects on professional practice and health care outcomes (Cochrane Review). In: The Cochrane Library, Issue 4, 2000. Oxford: Update Software.
- Shefer A, Briss P, Rodewald L, et al. Improving immunization coverage rates: An evidence-based review of the literature. *Epidemiol Rev* 1999;21(1):96-142.

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