Pneumococcal vaccine in general practice

A practice nurse discusses the need for pneumococcal vaccine for at risk patients, and charts the innovation of the vaccine programme in her practice.

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Streptococcus pneumoniae is responsible for considerable morbidity and mortality in the UK and its incidence appears to be on the increase (Azkenazy et al 1995). It is responsible for a wide range of infections, ranging from minor upper respiratory tract infections to serious lower respiratory tract infections, bacteraemia and meningitis. Serious illness and hospitalisation are common in older people and in those with immunity-reducing conditions.

A vaccine against the 23 most common strains of the pneumoccus, which account for 90 per cent of community-acquired pneumonias, has been available for some time, but uptake in the UK has been patchy (Crawford 1994).

The Department of Health (DoH) (1996) recommends targeting specific risk groups for immunisation. Under its guidance, pneumococcal vaccine is recommended for all those aged two years and over in whom pneumococcal infection is likely to be more common or more dangerous - those with:
- Asplenia or severe dysfunction of the spleen
- Chronic renal disease
- Immunodeficiency or immunosuppression due to disease or treatment, including HIV infection
- Chronic heart disease
- Chronic lung disease
- Chronic liver disease
- Diabetes mellitus.

As these risk groups are similar to those requiring influenza vaccination, it is suggested that the two vaccines could be administered simultaneously, in different arms, as the annual influenza campaign (DoH 1996).

However, while the influenza vaccine is given annually, pneumococcal vaccine is generally given only once and re-immunisation may cause adverse reactions.

The author’s practice population is heavily weighted towards older people, with 27 per cent over the age of 65. Many of these have chronic conditions which place them at greater risk from pneumococcus. The practice decided to run a pneumococcal campaign in 1996 in conjunction with an annual influenza campaign.

ETHICAL ISSUES

The vaccine was specifically targeted to the groups at special risk. They were offered the vaccine on an individual basis with a full discussion of risks and benefits, thus respecting their autonomy (Beauchamp and Childress 1994). For a few people, consent was discussed with a relative who had specifically requested vaccination on behalf of a relative who was mentally incapable of giving consent (Faden and Beauchamp 1986). The author is aware that there is presently no facility in English law for anyone to decide on behalf of an incompetent adult, although this is under review (The Law Commission 1995), and every effort was made to respect the individual’s autonomy whilst acting in their ‘best interests’ (Lord Goff in Re F, 1989).

Non-maleficence Side effects of the pneumococcal vaccine are generally mild and self-limiting, consisting of soreness at the injection site and occasional mild fever.

Beneficence The effectiveness of the vaccine is believed to be between 60 and 70 per cent (DoH 1996) which, while low, is acceptable given the good side effect profile. This may save substantial suffering and, with the pneumococcus becoming more resistant to antibiotics (George et al 1992), the vaccination campaign may mean that fewer antibiotics are used in the community.

Justice The principle of justice demands that the distribution of resources be governed by fairness and equity (Beauchamp and Childress 1994). This was adhered to by targeting the vaccine to those most likely to benefit. The campaign maximised available resources as it ran concurrently with the influenza campaign, incurring minimal extra cost. The vaccine was free to those requiring it.

Veracity Patients were made aware of the potential side effects and possible limitations of the vaccine. Some of the older patients sought a more paternalistic approach: ‘I don’t need to know about all that, nurse. If you think I should have it, then I will.’ Extra care was taken to ensure that these individuals were giving informed consent and to avoid any temptation to coerce them, especially as time was short in the busy clinics.
The author was confident that this innovation was ethically based.

RESEARCH UTILISATION
Although the pneumococcal vaccine has been available for some time, GPs have been reluctant to use it widely. Crawford (1994) suggested that they may lack information on the associated risks, benefits and a clear cost benefit analysis.

Studies from the US and Finland suggest that hospital admissions can be reduced and significant savings made by appropriate use of the vaccine (Gable et al 1990, Maleka 1995, Sisk and Riegelman 1986). In the US, the vaccine is offered routinely to all older people, but the Finnish study suggested that considerable benefits could be gained by targeting high risk groups.

Rogers (1983) described three stages of research utilisation:

- **Knowledge** – information received from a pharmaceutical representative was supplemented by reading further articles in the medical and nursing journals, DoH guidelines (1996) and locally produced immunisation recommendations. These persuaded the practice team that the innovation was worth adopting.
- **Decision** – the practice ran a trial period in which the vaccine was offered to patients in chronic disease clinics and evaluated it for patient acceptability and likely uptake. The vaccine proved to be very popular.
- **Implementation** – the vaccine was offered at the time of an annual influenza campaign. As this was a one-off campaign, it is difficult to evaluate whether the innovation has been confirmed as usual practice.

Although many high risk patients were reached, some were not. The vaccine is still being offered to patients who might benefit – unlike the influenza vaccine it can be given at any time of the year. However, this is proving difficult to remember – it may be better to confirm the innovation by running another campaign next year to specifically target high risk patients who have not yet benefited.

PUBLICITY
Significant publicity was given to the ‘pneumonia vaccine’ in the local and national media for the first time last year. This has had a positive effect on vaccine uptake. Many patients enquiring about the vaccine have heard of it through friends who have already been vaccinated. The media and word of mouth may be far more effective than health professionals in selling the idea of a vaccine to patients. It is possible that the media could be used to greater positive effect in this way.

CHANGE STRATEGIES
In this innovation, the author acted as change agent within the practice and was intimately involved with it at every stage – from the original suggestion to the actual administration of the vaccine. This probably made the change easier to execute, as the author did not have to work on motivating others to make the change.

Ottoway (1980) described three different types of change agent:

- **Generators**, often in a position of power, who inspire change ‘from the top’
- **Implementers**, who work alongside others to bring about change
- **Adopters**, who take up the change on a day-to-day basis within the organisation.

The author’s role encompassed elements of both implementer and adopter, as she was responsible for working within the practice team on a day-to-day basis throughout the various stages of implementation. The change was not imposed in a power-coercive manner (Bennis et al 1976).

A rational-empirical approach of explaining the risks and benefits of the vaccine proved adequate for the staff who were affected by the change and the patients who were being offered something new and different. It is possible that the media and the patients’ peer group had already done some normative re-educative work, as most people were very keen to be immunised, and there was little resistance.

Within the practice, the communication styles adopted can be identified as a mixture of selling, participating and delegating (Hersey and Blanchard 1982). These apply equally to introducing the innovation to the practice, and introducing it to the patients. In the practice, the author had to sell the idea to the doctors and staff, who were invited to participate in the process of change. Some of the work involved was delegated to other members of staff, and apart from one or two concerns about cost and administration issues, everyone was keen to be involved.

It was necessary to sell the idea of the vaccine to the patients and invite them to participate in the campaign, and important that the final decision was left to them and that they were not coerced.

TEAMWORK
Many general practice nurses are in an ideal position to innovate. GPs often regard them as partners in health care and are happy to allow them to develop their role. Problems of procedures and protocols are often more easily overcome in a small practice than they would be in a larger organisation. This project met little resistance, perhaps because it demanded little of the doctors and other team members, as the author did most of the work.

The economic viability of the project had to be shown to the practice. The reimbursement structure of the prescriptions pricing authority made it possible to buy the vaccines in bulk at a discount, in order to make a profit for the practice. The practice manager had...
some initial reservations as the original outlay was considerable. However, the pilot study showed the economic viability of the project as well as the clinical acceptability of the vaccine. The practice team was then able to liaise closely over the appropriate numbers of vaccines to be bought.

As an accountable practitioner, the author followed the policy of giving the vaccine under a group protocol. This has become established practice in general practice, with practice nurses frequently administering prescription-only drugs without an individual prescription for each patient. Although this has never been tested in law, it is backed by the RCN and described by the UKCC (1992). This area of nursing responsibility is in urgent need of clarification and is extensively discussed in the recent Review of Prescribing, Supply and Administration of Medicines (Crown 1998), which contains important guidance for the future.

In this case, it was necessary to adapt and review the practice's protocol to include the pneumococcal vaccine. As the author would be responsible for assessing patient suitability for the vaccine, she had a responsibility to update herself with the risks and contraindications (UKCC 1992). Administering the vaccines at the same time as the influenza vaccines was efficient and effective, but brought extra work for all staff at a busy time — the practice needed to be tolerant and to work well together.

**ACTION RESEARCH**

In many ways, the innovation met the criteria for an action research project, as described by Street (1995). There was a primary investigation in which the research about the pneumococcal vaccine was researched. It was then asked whether the research could be applied in the practice's situation, and decided that it could. An action plan was devised, initially in the form of a pilot project, where 20 vaccines were purchased to assess the implications both for clinical acceptability and financial viability.

An analysis of this stage of the project revealed that no major problems had been encountered, and it was decided to proceed on to the next stage — ordering a further 50 vaccines and advertising the availability of the pneumococcal vaccine alongside our usual influenza campaign. Part way through, need was re-evaluated and further vaccine ordered, so that by the end of the campaign 146 pneumococcal vaccines had been administered.

The success of the project is difficult to evaluate fully. The practice has only recently been computised, and the disease registers are not yet complete. At first it was thought that this would mean that the criteria for action research could not be fulfilled, but on reflection, this fact can be incorporated into the process. The new action plan will include establishing up-to-date disease registers. It will then be possible to find out which 'at risk' patients have not yet benefited from the vaccine and target these people effectively in the future.

**CONCLUSION**

When this innovation was undertaken, the author was unaware of the various change theories. Analysing the change following the action research model was particularly useful — it is now possible to follow the innovation still further, to the added benefit of patients. Further reflection and analysis may generate more change, which will translate into greater professional fulfilment and further benefit the practice population.