

Project based approach to increasing uptake of influenza vaccine in an under-achieving GP practice

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Enquiry 1a

Literature Review

Introduction

In this project the purpose of doing a form of systematic review of the literature was to provide evidence to a low achieving General Practitioner (GP) practice that there are proven intervention strategies, which have been shown to increase the uptake of influenza vaccination in the target population. Additionally it was hoped to identify any barriers to vaccination such as myths and misconceptions held by older people about influenza as a disease and the vaccine so that these can be taken into account during the implementation stage of the project.

A search of the electronic databases including Medline, Cinahl, Embase, Bandolier, Centre for reviews and dissemination, and references from literature already identified was made. The Department of Health Internet pages were also searched to provide supporting evidence for the project.

Key terms used

The key terms used to identify literature in the electronic databases were: influenza, vaccination, older people, health promotion, influence, and health professionals.

Discussions also took place with colleagues within the Primary Care Trust and with other Trusts and organisations to verify if all relevant information has been sourced within the time and word limitations available.

Background

Influenza, commonly called 'flu' is an acute respiratory illness that affects the upper and/or lower parts of the respiratory tract and is caused by an influenza virus usually type A or B (Rivetti et al 2005). Influenza is highly infectious with a short incubation period of 1-3 days. It is characterised by fever; headache, myalgia, coryza, sore throat and non-productive cough (Chin 2000). Influenza derives its importance because of the rapidity with which epidemics evolve the widespread morbidity and the seriousness of complications, notably viral and bacterial pneumonia (Chin 2000).

Even in years when the incidence of influenza is low, deaths attributed to influenza in the United Kingdom (UK) can be significant, making it one of the leading causes of respiratory infection (Wiselka 1994; Nicholson et al 1997; DH 2005a). As preparations are being made world wide for a potential pandemic the significance of influenza as a major health risk are becoming more apparent as has the importance of prevention by vaccination.

Influenza virus

Viruses belonging to the family Orthomyxoviridae cause influenza. Influenza virus has three main types: A, B and C. Influenza virus type C causes mild disease, occurs sporadically and has not been associated with widespread outbreaks therefore giving little cause for concern. Influenza strains type A and B cause significant morbidity, with influenza virus A being more frequent and infective. The influenza strain is determined through its internal proteins and biological origin.

A is found in the intestine of aquatic birds while B and C are unique to humans (Crofts 2003). Influenza type A viruses are divided into subtypes, based on differences in two surface glycoprotein's: haemagglutinin (H) and neuraminidase (N) 15 haemagglutinin subtypes (H1-H15) and nine neuraminidase subtypes (N1-N9) have been identified for influenza A viruses (Nicholson et al 2003). Only one subtype of haemagglutinin and one of neuraminidase are recognised for influenza B viruses.

Influenza prevalence and incidence

The World Health Organisation (WHO) monitors the prevalent influenza subtypes across 82 countries and recommends the virus strains to be incorporated into the vaccine for that year (Pursell 2003). In the UK, laboratory surveillance is coordinated by the Health Protection Agency. Clinical data is obtained from nominated surveillance groups and this information is used to ensure that the vaccine matches the virus in circulation.

Symptoms of influenza

The symptoms of influenza vary widely in severity, and while some people have minimal or no symptoms (Elder *et al*, 1996), others have a severe debilitating illness with complications or death (Nicholson *et al*, 1997; Govaert *et al*, 1998). Complications following influenza are seen in all age groups but are more likely in the very young, the elderly and those with chronic medical conditions. The highest rates of serious morbidity and mortality are found in those people aged 65 years and over and in specific high-risk groups. Mortality in people over the age of 65 years becomes 20 to 30 fold greater in the presence of underlying chronic medical condition (WHO, 2002; Govaert *et al*, 1998).

Public health approach

A public health approach emphasises disease prevention, where the use of preventative measures have benefit for individuals, populations, and health service provision (Naidoo and Wills, 2000). One such public health intervention has been the use of vaccines in national vaccination programmes, delivering some of the greatest improvements in infectious disease prevention and ranking amongst the most significant and important contributions to public health (WHO 2004; DH 2002). Influenza vaccination is the primary method for preventing influenza and its complications (Centres for Disease Control and Prevention 2004; Gross *et al*, 1995; Valley and Blue, 2002).

Influenza vaccine

In the UK, the main option for reducing the impact of influenza is to offer immunoprophylaxis with inactivated vaccine before the influenza season starts.

Current influenza vaccines available are of three different types, whole virion vaccines, subunit virion vaccines and split virion vaccines. In the UK subunit vaccines that are made up of surface antigens (Haemagglutinin and Neuraminidase) are used (Rivetti *et al* 2005). Govaert *et al* (1994) found that vaccination may halve the incidence of influenza among older people where there is a good match between the vaccine strain and the influenza virus circulating. In addition studies by

Crocetti *et al* (2001) Gross *et al* (1995) found that the influenza vaccine has the capacity to dramatically reduce hospitalisation and influenza related deaths.

Older people currently represent one-fifth of the population of the UK (McMurdo 2000) a substantial body of people. In an attempt to meet their specific health needs, the Department of Health (DH, 2001) has introduced a national service framework for older people that identify standards aimed at improving the health of the older population and reducing the risks affecting their health. Influenza is identified as one such risk and every year results in disruption to the lives of that affected and increased use of healthcare services (Nichol *et al* 1999).

Vaccination uptake rates

In the past, influenza vaccination rates among those aged 75 years and over have been approximately 50% (DoH PL/CMO/2000/3). Prior to the winter of 2000/01 and in response to two consecutive winters of high level of influenza activity (Whiting *et al* 1999) the DH lowered the age limit of those recommended to receive the influenza vaccine from 75 to 65 years (DoH PL/CMO/2000/3). In addition a minimum target of 60% uptake was set which has meant that practices are now being encouraged to be much more proactive in their influenza immunisation programmes instead of relying on older people coming forward to receive the influenza vaccine.

Influenza programme

The current Influenza Programme (DH PL/CMO/2005/2) in the UK offers selective vaccination to the target population that comprises of all those aged 65 years and over, in addition, adults and children over 6 months of age in 'high-risk' groups. The DH has set a target for General Practices to meet of 70% uptake for people registered with the Practice and who are aged 65 years and over. Targets for those in 'high-risk' groups are not currently set.

The influenza programme in the UK differs in many aspects of scope, complexity and organisation when compared with other immunisation programmes. In the first instance unlike universal policies based on age, the influenza immunisation programme requires general practices and health services to identify and deliver the vaccine only to those patients for whom it is recommended. Secondly, the vaccine has to be administered every year to the same patients because it is reformulated annually to take account of the antigenic changes in the influenza virus strains that circulate each year. Thirdly, rapid assessments of vaccine uptake are required during the winter months, in order to target and promote additional uptake elsewhere (Joseph 2004).

Health targets for influenza were set in response to the increasing burden of disease and in recognition of the fact that intervention in the form of vaccination and the use of antiviral drugs are two effective and efficient interventions that would assist in decreasing premature death and avoidable ill health.

Influenza vaccination uptake among target groups appears to be steadily increasing, influenced perhaps by Government targets. Average uptake in previous campaigns has gradually increased: 68% in 2001/2, 69% in the 2002/03 season (HPA, 2003) and 71.5% in the 2004/05 (Joint Committee on Vaccination and Immunisation, 2005).

Aim of the literature review.

To conduct a literature review mirroring an established form of systematic review, taking account of the limited resources available i.e. 6-8000 words. According to Greenhalgh (2001) a systematic review is an overview of primary studies that used explicit and reproducible methods.

Objectives.

- i) To identify relevant literature using an appropriate search strategy
- ii) Critically appraise the evidence
- iii) Use findings from the literature review to inform recommendations to the identified practice.

Questions considered in the literature review.

- i) What initiatives have been successful in improving uptake of influenza vaccine in people aged 65+ in the primary care context in the last 10-15 years?
- ii) What is known about the values and beliefs on influenza/influenza vaccine amongst older people?
- iii) What are the barriers to and facilitators of vaccination uptake
- iv) What outcome measures were identified?
- v) Were any appropriate biases and confounders identified?
- vi) Are these initiatives relevant to the population of the local Practice?

Inclusion criteria

- Literature from peer reviewed journals since 1990
- Any type of formal primary research study
- Studies including subjects aged 65 years and over
- Studies including influenza/other vaccines in older people
- Influence of health professionals in uptake of vaccine in older people

Exclusion criteria

- Studies published prior to 1990 unless frequently identified

- Languages other than English
- Studies concerned with issues other than improving uptake of vaccine or factors influencing decision making of healthcare issues.

Search terms

The following search terms were used in different combinations to identify relevant studies:

- Influenza (and/or Flu) vaccine (and/or jab or immunisation or immunization) > uptake (and /or health promotion or increase) > over 65 (and/or elderly or older people or aged)
- Influenza (or Flu) vaccine (or jab or immunisation or immunization) > uptake (or health promotion or increase) > over 65 (or elderly or older people or aged)
- Influenza (or Flu) vaccine (or jab or immunisation or immunization) > (and/or Flu) uptake (or health promotion or increase) > over 65 (and/or elderly or older people or aged) > influence > health professionals.

Sources of evidence

Table 1: Sources of evidence

The following databases were searched:

Source	Yield	Fulfilled inclusion criteria	Selected for review and not identified somewhere else
Medline www.bmj.com	25	7	7
Cochrane www.nelh.uk/cochrane.asp	10	1	0
Cinahl www.nhs.dialog.com	5	3	3
Embase www.nhs.dialog.com	14	2	
Bandolier www.jr2.ox.ac.uk	9	0	0
Centre for reviews and dissemination www.nhs.crdd.york.ac.uk	2	1	1
References from literature already identified.	323	9	5

Criteria used for judging the quality of the studies.

Eccles, Freemantle and Mason (1998) adapted categories of evidence from the classification of the United States Agency for Health Care, Policy and Research. The following table identifies the criterion that has been used to assess the quality of the evidence.

Table 2: Levels of evidence

	Quality of Evidence
I-a	Meta analysis of randomised controlled trial
I-b	Evidence from at least one randomised controlled trial
II-a	Evidence from at least one controlled study without randomisation
II-b	Evidence from at least one other type of quasi-experimental study
III	Evidence from non experimental descriptive studies, such as comparative studies and case control studies
IV	Evidence from expert committee reports or clinical experience of respected authorities

Grading recommendations

Recommendations are graded according to the level of evidence (National Institute of Clinical Excellence, NICE 2004). The grading does not reflect the importance of recommendations, but refers to the strength of supporting evidence.

Table 3: Recommendation grades

Grade	Evidence
A	Directly based on category I evidence
B	Directly based on category II evidence or extrapolated recommendation from category I evidence
C	Directly based on category III evidence or extrapolated recommendation from category I or II evidence
D	Directly based on category IV evidence or extrapolated recommendation from category I, II or III evidence

The White Paper on the NHS for England: *The New NHS: Modern, Dependable* (DoH1997) stresses that everyone working within the NHS must take responsibility for improving quality. The document emphasised that all patients are entitled to high-quality care wherever they live and that ‘clinical decisions should be based on the best possible evidence of effectiveness’. Clinical effectiveness is concerned with clinical interventions that are based on the best possible evidence.

According to Collins (1995) a definition of evidence is ‘something which provides ground for belief or disbelief’. Evidence-based health care has been defined by Sackett *et al* 1997 as a thorough, clear and well thought out way of using the current best evidence when making decisions about the care of individual patients.

Another important policy paper, *A First Class Service* (DoH 1998) outlined the principles concerned with quality and states that the NHS is now required to adopt a planned and coherent approach to clinical quality, placing duties and expectations on local healthcare organisations as well as individuals.

Discussion of results of literature search

According to research by Nguyen-Van-Tam and Nicholson (1993) almost all influenza vaccination is done within general practice. However myths and misconceptions about influenza and the vaccine may deter uptake in this vulnerable sector of the community. Previous research suggests a number of reasons for ‘non-compliance’ with influenza vaccination (Honkanen *et al* 1996, Van Essen *et al*, 1997; Pregliasco *et al.*, 1999, Cornford and Morgan 1999, Findlay *et al* 2000, Gosney 2000). These include fear of side effects, lack of confidence in effectiveness of the vaccine, fear of needles, disbelief in the seriousness of flu and personal susceptibility.

Evans and Watson (2003) surveyed 1468 older people, and found that of those who refused immunisations, 23% were concerned about side effects and 16% felt that the vaccine would not prevent or ameliorate influenza.

Insightful though this research is it is likely to provide only part of the picture as to what influences the uptake of the vaccine amongst elderly people. Personal experience and knowledge has been shown to be central to the understanding and acceptance of health promotion, advice and interventions in relation to other conditions (Pill *et al* 1985, Davison *et al* 1991).

Qualitative research into uptake of childhood vaccination (Rogers and Pilgrim 1995, Marshall and Swerissen 1999) has highlighted the relevance of exploring in-depth peoples’ understanding of the cause of the illness, and the subjective assessment of the risks and benefits of the immunisation for vaccine uptake. Some of the influences that are relevant to the acceptability and uptake of childhood immunisation programme are likely to be applicable to the uptake of the influenza vaccination programme. The author was able to find one small similar quantitative study in relation to influenza vaccine uptake in the elderly (Telford and Rogers 2003). Three specific influences, trust or mistrust in modern medicine, prior experience of vaccination and perceived risk from influenza were identified as having the most salience for decision making about vaccine uptake.

One of the aims of the critical review of the published literature was to identify what are the most effective method/s of promoting the immunisation to the identified population whilst considering the practicality of implementing the findings in terms of time, expense and sustainability. What can be done to address the myths and misconceptions around influenza and the vaccine? What is known about older peoples' own subjective assessments, understandings and experiences of influenza and the vaccine?

A few general theories have been developed to explain health behaviour. One model, the Health Belief Model (Rosenstock 1974) provides a theoretical framework for measuring the probability that an individual will make use of offers within the health service. According to the model an individual will take action to avoid a disease if the individual a) thinks that s/he is personally susceptible b) that the occurrence of the disease will have at least moderate severity on some component of life c) that by taking a particular action it will be beneficial, d) that the action does not entail overcoming important barriers (cost, pain, inconvenience or embarrassment). In addition Nexoe et al (1998) found a cue to appropriate action appears to be essential.

The literature regarding barriers to and facilitators of vaccination uptake emphasises four themes.

- Financial and economic status
- Systems of vaccination
- Vaccine mistrust and fear of side-effects
- Health Beliefs and health behaviours

Results

Influences, attitudes and beliefs about influenza vaccine in people aged 65+

Eleven studies were identified in this category (see Table 1) these were based on surveys/interviews and questionnaires presenting both qualitative and quantitative data, categorised as evidence level 3. Although evidence at this level is not strong the studies do give some indication of the values and beliefs held by older people in the UK, where information is obtained from and who or what influences this sector of the community.

Age or gender did not significantly predict vaccination uptake. The factors associated with vaccine uptake include a belief in the effectiveness of the vaccine, previous vaccination, and no concerns about side effects, personal recommendation by a health professional.

While many older people value their health (Forbes *et al*, 2002) research by Davidhizar *et al* (2002) found that many older people accept their poorer health believing that old age is an era of decline, dissatisfaction and social isolation. Cremin (1992) found that the elderly do not think of themselves as old, they acknowledge that that they may have medical disorders but these are separate from the image that they have of themselves as being independent.

Individuals appear to make decisions regarding vaccination based on a number of factors; these include the influence of the beliefs of those around them. Advice from friends had a negative influence on respondents' attitude to vaccination.

Evans and Watson (2003) and Telford and Rogers (2003) found that uptake was low because older and vulnerable people did not actually see themselves in this way. Viewing their health more positively with others than would seem justified not perceiving themselves to be at risk and so not seeing the need for vaccination.

Humair *et al's* (2002) study in Switzerland demonstrated the effect of a complex intervention to improve vaccination uptake, comprising of patient information, and a walk-in clinic, reminders and health professional feedback on vaccination performance.

Burns *et al* (2005) study found that the predictors of vaccination uptake were having a doctor or nurse who explained why the vaccination was important and possible side effects. The results of their study further suggest that future campaigns by the DH should be more informational and focus on the evidence that the vaccine is efficacious and that side effects are limited. The study also found that older people who were of higher socio-economic status and those who were able to travel privately and independently to the GP practice were more likely to have been vaccinated. This implies that greater input should be put into areas of low socio-economic status and ensuring the vaccine is available in the immediate locality.

Studies by Evans and Watson (2003) Lewis-Paramar and McCann (2002) found that health professionals play a key role in influencing the decision to have the influenza vaccine. Gosney (2000) found that patients were more likely to be vaccinated if they received the information from the practice nurse. McCaul *et al* 2002, Zimmerman *et al* 2003 found that a GP's or doctor's recommendation could be one of the strongest predictors to behaviour.

Evans and Watson (2003) and Findlay *et al* (2000) studies showed that friends were significant as a negative influence and that concerns about vaccine safety/efficacy was an influential factor in those unvaccinated.

Cornford and Morgan (1999) found that recommendations to vaccinate according to individual risk status are not in keeping with lay beliefs. The study showed evidence that vaccination reduces morbidity from influenza and does not cause colds and influenza needs stressing. Cornford and Morgan (1999) and Gosney (2000) found that those people eligible for the influenza vaccine were not always made aware and invited to attend.

(Evidence grade: C)

Interventions targeted at improving uptake in general practice.

We live in an era of increasing complexity of immunisation schedules and it is not surprising that patients become confused about what they should receive, when, and the benefits of the vaccines. It is important to have some understanding of people's beliefs and health behaviours when promoting those interventions that have been shown to work in general practice or primary care settings.

One Randomised Control Trial (RCT) was identified; Niroshan *et al* (2002) and six other studies graded as level Ib or III evidence. Evidence at RCT level (Ib) is considered to be strong.

The RCT showed that the impact of educational outreach visits to practices resulted in significantly greater improvements in uptake in patients with chronic heart disease and diabetes for pneumococcal disease but not for influenza vaccine. This may be attributed to the fact that baseline rates in practices were lower for pneumococcal than that for influenza vaccine.

Willis (1998) found that reaching patients who persistently refuse the vaccine could be difficult. Whilst Clayton *et al* (1999) suggests that patient reminders are more effective in Practices where the background rate of immunisation is low.

(Evidence grade: A)

The costs of the intervention were not analysed. Potential confounders in these studies include ongoing local and national publicity campaigns.

Six studies audited structures and processes in general practice. Key themes were identified: Practice organisation around patient identification and invitation was related to uptake. Use of 'READ' codes, identification of 'at risk' patients via disease registers and prescribing, early planning, invitation letters and dedicated clinics were all identified as good organisational practice and related to improvements in vaccine uptake.

Significant increase in influenza vaccine uptake among people with Chronic Heart Disease (CHD) (10.8% CI = 5.3 to 16.1) diabetes (8.6% CI= 1.5 to 15.7) and splenectomy (17.3% CI = 4.8 to 29.8) were observed after interventions to create organisational change took place in practices. Interventions implemented included audit, feedback and written advice. However data in this study was not analysed by age so the impact in people aged 65+ was not assessed.

Practice audit revealed that patients with chronic disease were more likely to be vaccinated but that uptake declined with age, particularly after 85 years. Patients living in postcodes with a residential or nursing home were less likely to be vaccinated.

(Evidence grade: B/C)

Interventions targeted at older people

Two Randomised Control Trials (RCTs) were identified, Hull *et al* (2002) and Arthur *et al* (2002) and one other quasi-experimental study, Arthur (2001).

Telephone interventions were used as an intervention in one RCT, which found that uptake could be increased in the low risk population over 65 years by up to 6% using telephone invitations to nurse led clinics. The number of telephone calls needed to achieve one additional immunisation was 17. The cost of this practice-based intervention was analysed showing that telephone calls can be used to increase uptake whilst still making a profit. Comparisons with the cost of postal invitations were not undertaken. The study also took place against a backdrop of other local/national initiatives. The effect of these was not analysed, allowing for potential confounding.

(Evidence grade: A)

The study by Arthur *et al* (2002) found that when the offer of a health check was made alongside the influenza vaccine, those who received the health check were four times more likely to be vaccinated than those who did not (OR 4.1 CI = 1.7-9.9, P=0.001). Those who accepted the health check were found to be slightly older in age and more likely to have been vaccinated the previous year. It is not known whether those patients who accepted the health check would have come forward independently for the vaccination. This study led to a RCT comparing letters to a nurse led clinic with the offer of a home visit by the practice nurse and an over 75-health check. This study was conducted in rural Lincolnshire and found a 6.4% (CI=2.2% to 10.4%) difference between patients offered the nurse led clinic by letter (67.9%) and those offered the vaccination at home (74.3%). The effect of the health check on vaccination uptake was greater in those who had failed to attend in the previous year. However, the intervention was not analysed for cost, it would be expensive to facilitate and was conducted via one general practice in a rural area making the results less applicable to an inner city area. The positive response from previous non-responders is an aspect of the study that could potentially be explored in inner city Practices to increase uptake.

Conclusions

Reviewing the available literature has identified that if the Practice wants to improve their current uptake rate there are a number of evidence based intervention strategies that could be implemented that have been shown to achieve a measured increase in uptake of influenza vaccine. In order to achieve a measured increase the Practice staff need to be willing to implement some of these interventions and change the current system of working. Consideration should also be given by the Practice to those who are residents in nursing/ residential care homes as the literature indicated that this sector of the population could have a low uptake.

Financial incentives for GPs will have played a part in raising vaccination levels but Joseph and Goddard (2003) and Breeze *et al* (2004) recommend that additional financial incentives should be offered to practices serving disadvantaged

socio-economic groups. This would then allow for practices to be more pro-active in engaging this sector of the community.

Financial incentives to the Practice if an increase in the uptake of influenza vaccine is achieved are beneficial and allow for additional Practice resources to be purchased which will enhance the services offered. It could be argued that financial incentives for practices should not be necessary but the reality is that most practices require these incentives to employ sufficient skilled staff to fulfil the programme outcomes.

The goals set by the Department of Health for uptake of influenza vaccine are in keeping with the principles set out in the NHS Plan (DoH 2000) which aims to reduce inequality and keep older people healthy and at home whenever possible. The National Service Frameworks for Older People (NSF) estimates that between 1995 and 2025 the number of people over the age of 80 is set to increase by almost a half and the number of people over 90 will double. Interventions such as influenza vaccine assist in reducing illness and hospitalisation amongst this vulnerable sector of the population and achieving the programmes aims of 70% uptake rate are achievable if sufficient priority is given in planning and executing the programme

: 1: Summary of papers exploring older people's attitudes and beliefs about influenza and vaccine

<u>Author (year) country</u>	<u>Title</u>	<u>Study design</u>	<u>Outcome measure</u>	<u>Subjects and Settings</u>	<u>Results</u>	<u>Evidence level</u>	<u>Comment</u>
Burns VE, et al 2005, UK	Factors influencing influenza vaccination uptake in an elderly, community-based sample	Cross-sectional structured interview to determine vaccination uptake; demographic and socio-economic factors; health status and behaviours; sources of information and attitudes to the vaccine.	Influenza vaccine uptake	444 participants living in the community	82% of participants reported receiving the influenza vaccine. Predictors of uptake were having a doctor or nurse explaining importance of vaccine and possible side-effects, living with others, higher occupational status, ease of available transport.	III	? Sample of participants' representative as recruited in public area, excludes those less active. Highlighted influenza campaigns need to focus on evidence that the vaccine is efficacious and side effects limited.
Cornford CS, Morgan M, 1999, UK.	Elderly people's beliefs about influenza vaccination	A qualitative study using semi-structured interviews with 50 randomly selected patients, equally divided between vaccinated and non-vaccinated groups.	Qualitative information on beliefs	50 people aged 75+. Most of the subjects lived in their own homes, 3 in sheltered accommodation and 1 in a nursing home.	Most of the respondents do not perceive them-selves at severe risk (even though they are at medical risk) Decisions to have the vaccine or not were based on beliefs about whether it was understood to prevent or cause morbidity from colds/influenza and concerns about side effects.	III	Emphasis on lay beliefs among elderly people about influenza vaccination.
Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
Curnock E, Wynne HA. 2002, UK	Older people's views on the treatment and prevention of influenza in older people	Structured questionnaire	Coverage of influenza vaccine.	60 people aged 65+ living in the community, residential and community care.	87% had been advised to have the vaccine, 66% had actually had the vaccine in the last 6 months. Reasons given for not having the vaccine if offered were perceived good health (65%) and concern that the vaccine caused illness (33%)	III	
Evans M, Watson PA. 2003, UK	Why do older people not get immunised against influenza? A community survey.	Structured Questionnaire	Coverage of Influenza vaccine.	Random sample of 2,600 people aged 65 + living in the community excluding people who are in residential homes.	Reasons for refusing vaccine included 23% of people worried about side effects, 16% of people had a lack of confidence in the vaccine. Vaccine uptake was found to be significantly higher in people with chronic illness (65% CI = 61-69%) than in healthy people.	III	Influenza vaccine uptake was validated for a stratified random sample of 5% of responders against medical records. Only advice from a doctor or nurse had a significant impact, although advice from friends was significant as a negative influence.
Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
Findlay P, et al, 1999, UK	Influenza and pneumococcal vaccination: patient perceptions.	Interviews	Qualitative information on patients beliefs	46 patients admitted to an acute geriatric unit.	Study found that there was greater awareness of influenza vaccine than of pneumococcal vaccine. Decision not to have the vaccine was affected by friends and relatives influence.	III	This was a very small study based upon general observations. The study was consistent with the findings of more robust studies. Study conducted prior to the item of service fee was introduced.
Gosney, M 2000, UK	Factors affecting	Questionnaire administered by a	Vaccine uptake	279 patients aged 75-97 in	61% of the sample patients had not been vaccinated. 16%	III	Vulnerable patients were

	influenza vaccination in older people admitted to hospital with acute medical problems.	nurse.		hospital	of the patients had refused the vaccine. Patients at high risk of influenza were more likely to have been vaccinated but the questionnaire found that many were not.		excluded and the study therefore does not reflect their views or experiences.
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Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
Gupta A et al 2000, UK	Influenza vaccination coverage in old people's homes in Carmarthens hire, UK, during the winter of 1998/99.	Questionnaire based interview	Coverage of influenza vaccine	443 patients aged 65+ in a hospital setting	48% of patients eligible had received the vaccine. Reasons given for refusal included 26% Lack of information by GP 21% Concerns about side effects 16% Perceived good health 11% Concerns re vaccine efficacy.	III	No confidence intervals
Lewis-Paramar H, McCann R. 2002. UK	Achieving national influenza vaccine targets – an investigation of the factors affecting influenza vaccine uptake in older people and people with diabetes.	Survey by postal questionnaire.	Influenza vaccine uptake	Random sample of 384 Health Authority in residents over 75 years of age	Factors significantly affecting vaccine uptake in people over 75 years include belief that the vaccine protects against flu (OR 23 CI =8.4 to 69.4), history of previous vaccination (OR 10 CI = 3.0 to 28.3) and not being concerned about side-effects (OR 4 CI+ 2.1 to 7.9)	III	Information given by health professionals was the only source of information found to significantly increase uptake.

Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
Nexoe J, et al 1998, Denmark	Decision on influenza vaccine among the elderly. <i>A questionnaire study based on the Health Belief Model and the Multidimensional Locus of Control Theory.</i>	Epidemiological study with two coupled questionnaires. The first questionnaire comprised of questions about health, drug consumption and vaccination in the preceding year. 2 nd questionnaire asked whether vaccinated against flu on the last season.	Influenza vaccination rates	Random sample of 2077 people aged 65 or older.	In the high-risk group 51% (95% CI 46-55%) were vaccinated compared to 29% (CI 26-32%) in the low risk group. The Health Belief Model dimensions “perceived barriers”, “perceived benefits” and “perceived severity” were found to be significant predictors of acceptance of influenza vaccinations.	III	The participants own perception of health and medication was used for evaluating risk status related to influenza rather than a doctor.
Telford R, Rogers A, 2003, UK.	What influences elderly peoples' decisions about whether to accept the influenza vaccination?	A qualitative study. Purposeful sampling strategy of 20 patients interviewed, in-depth. 10 who had accepted influenza vaccine and 10 patients who had refused.	Emergent themes.	216 patients in GP practice. Sample of 118 after exclusion because of severe mental health problems, poor physical health, and poor	3 themes identified. Trust and mistrust of modern medicine, prior experience of vaccination and perceived risk from influenza.		Small study in a practice situated in a deprived inner city. Additional studies needed to confirm if similar findings found in 65+ in different localities.

	A qualitative study.			command of English. Participants recruited by personalised letter of invitation.			
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Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
Watkins J, 1997, UK	Effectiveness of influenza vaccination policy at targeting patients at high risk of complications during the winter 1994-95	Cross sectional survey. Interviews with patients presenting for vaccination.	Uptake of vaccine in high-risk groups.	64 general practices and patient interviews.	Less than 4% of patients contacted by proactive methods. Personal advice from a GP or nurse was greatest stimulus to vaccine uptake.	III	This study looked at patient views and practice organisation.

Table 2: Summary of interventions/studies to improve uptake of influenza vaccine targeted at general practice.

Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
Booth, LV et al. 2000 UK	Implementation of influenza policy in general practice: 1997 to 1998	Postal questionnaire	Implementation of 1997 guidelines and policy.	441 general practices in rural areas	82% had a practice policy. 90% reported that vaccination was offered in nursing and residential care homes. Factors likely to improve provision: Improved patient education, increased staffing, funding and better administrative systems	III	This study was carried out prior to the aged-based policy being introduced in the UK.
Doran T and McCann R. 2001 UK	Obstacles to influenza immunisation in primary care	Semi-structured questionnaire survey.	Study of attitudes, methods and obstacles to delivery	104 general practice groups	Practices were found to not always using the most effective methods of contacting patients, primarily relying on posters (97.3%) opportunistic contact (95.9%) rather than letters (39.7%) and telephone calls (39.7%)	III	Main obstacles identified were expense, admin difficulties, and identification of high-risk patients and patient beliefs. Anticipating and ordering vaccine was also problematic.

Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
Furey A <i>et al</i> 2001. UK	Improving influenza immunisation coverage in 2000-2001: a baseline survey, review of the evidence and sharing of best practice.	Postal survey	Influenza immunisation coverage in people >75 years	General practice staff in 123 South London practices	Practices achieving immunisation uptake >75% used Read codes, prescribing data and/or disease registers to identify patients. Invited patients by marking repeat prescriptions, personalised letter and offered walk in clinics or appointments	III	

Niroshan Siriwardena A <i>et al</i> 2002. UK	Cluster randomised controlled trial of an educational outreach visit to improve influenza and pneumococcal immunisation rates in primary care	RCT of 30 general practices. 15 randomised to intervention and 15 to control groups. Intervention practices received an educational outreach visit. Controls received audit and written feedback	Improvement in pneumococcal and influenza vaccination rates in people aged 65 years and over 6 months after the educational intervention	General practice staff using a multidisciplinary team approach	Improvements in influenza vaccination rates were greater in intervention practices but did not reach statistical significance. Improvements in pneumococcal vaccination rates were significantly greater.	Ib	Baseline uptake was lower for pneumococcal vaccine than for influenza vaccine. National and local campaigns may have had an impact on the educational visit
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	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
P Mangtani, J Roberts. 2000. UK	Influenza vaccination: Shot down.	Interviews in 9 general practices	Organisational systems in place.	Nurses, practice managers and GPs.	Identified critical points in practices including vaccine orders, staff availability and patient recruitment.	III	The majority of practices were relying on patients presenting themselves for vaccination. Computer systems were not being used effectively to identify 'at risk' groups. No uptake figures for practices were given.
Niroshan Siriwardena A <i>et al</i> 2003. UK	Improving influenza and pneumococcal vaccination uptake in high-risk groups in Lincolnshire: a quality improvement report from a large rural county.	Two stage multi-practice audit of influenza and pneumococcal vaccination rates in high-risk groups before and after graphical anonymised feedback and written advice on improving vaccination rates.	Influenza and pneumococcal vaccination rates in high-risk groups.	22 practices in Lincolnshire targeting vaccine at patients with chronic heart disease, diabetes and splenectomy.	In practices participating in both phases of the audit, mean annual influenza uptake increased by 10.8% (CI=5.3% to 16.1%. P = 0.001)	Iib	Improvements occurred prior to the national programme for influenza vaccine for patients aged 65 years and over was introduced in 2000/01. The data in this study was not analysed by age.
Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
O'Reilly D <i>et al</i> 2002. UK	Influenza vaccinations in Northern Ireland: are older patients missing out?	Audit in 12 practices	Influenza vaccination	General Practice. Patient notes for people aged 65 + were studied for vaccination rates of 10,427 patients aged 65+ to identify systematic variations in uptake.	Gradual decline in uptake with age from 65.2% at 65 years to just over half of those aged 90+. The presence of risk factors increased likelihood of vaccination.	III	Various reasons for decreased uptake in older aged groups are discussed, but none have been tested. The practices included may not be representative because of high levels of computerisation and disease recording.

Table 3: Summary of interventions to improve uptake of influenza vaccine targeted at general practice.

Author (year)	Title	Study design	Outcome measure	Subjects and	Results	Evidence	Comment
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country				Settings		level	
Arthur AJ 2001. UK	The effects of health assessments by practice nurses on uptake of influenza vaccination among older people in the UK.	Intervention with 389 patients at home, to examine the effect on influenza vaccine uptake by combining over 75-health assessment carried out by practice nurse at home with the offer of the influenza vaccine.	Uptake of influenza vaccine.	389 patients aged 75+ at home in rural Leicestershire.	83 (21.3%) of the 389 declined the offer. 138 (35.5%) had already been vaccinated. Uptake increased by 19.3% in this group. Those people receiving the visit were 4 times more likely to be vaccinated than those who did not. (OR 4. CI=1.7 to 9, P=0.001)	II-b	Rural community. Patients 75+ may have difficulty in getting to the surgery. Those accepting the assessment were significantly more likely to have received the influenza vaccine one year previously.
Arthur J <i>et al</i> 2002 UK	Improving uptake of influenza vaccination among older people: a randomised controlled trial.	RCT 1/3 offered influenza vaccine as part of over 75-health check administered by the practice nurse at home. 2/3 received a personal letter to attend vaccine clinic at surgery.	Uptake of influenza vaccine	2052 patients aged 75+ identified from one rural practice- not living in residential, nursing home or sheltered accommodation	Difference in influenza uptake between intervention and control groups was 6.4% (CI=2.25 to 10.4%)	I-b	Significant effect observed but the intervention is costly. Difference in uptake is greater amongst those who do not routinely come forward. Potential confounders not identified or explored.
Author (year) country	Title	Study design	Outcome measure	Subjects and Settings	Results	Evidence level	Comment
Hull S <i>et al</i> 2002, UK	Boosting uptake of influenza immunisation: a randomised controlled trial of telephone appointing in general practice.	RCT in three general practices in East London/Essex. Intervention group received a telephone call from practice receptionist inviting the person to nurse-run clinic.	Numbers in each group receiving immunisation. Practice costs of telephone appointing programme..	1,261 people aged 65-74 not previously in a practice recall system for influenza vaccine.	Immunisation in control group: 44%. Immunisation in Intervention group: 50% (OR =1.29, 95% CI=1.03 to 1.63) NNT=17. Uptake in a low risk population in an inner city can be boosted by around 6%. In total, 75% of eligible people were successfully contacted by telephone. 1:4 made an appointment at the time if contact.		Although rates of telephone ownership are very high in the UK those without a telephone cannot be followed up in this way. It is not clear from the study what people in the control group received. The intervention was part of a multi-intervention campaign and coincided with a Health Authority mail shot and a national TV campaign therefore difficult to say what exact effect the intervention had.

Project Report

Executive Summary

In the UK, the policy of encouraging influenza uptake in the elderly is seen as a central tenet of managing winter pressures in the National Health Service and preventing ill health amongst older people. The current Influenza Programme (DH PL/CMO/2005/2) offers selective vaccination to the target population that comprises of all those aged 65 years and over, in addition, adults and children over 6 months of age in 'high-risk' groups. The DH has set a target for General Practices to meet of 70% uptake for people registered with the Practice and who are aged 65 years and over. Targets for those in 'high-risk' groups are not currently set but are strongly recommended and encouraged.

Meeting the set target is a priority for Primary Care Trusts (PCTs) both from a public health aspect in reducing morbidity and mortality and improving the quality of life and sense of well being of the people who live in the town. In addition the target is a key indicator under the Performance and Planning Framework, resulting in PCT 'star ratings' (Healthcare Commission 2004). The PCT in the town of the project was awarded '3 star' status for the first time in 2004, a status which the PCT is very eager to keep.

The influenza campaign in the town is successful in that the PCT reaches and exceeds the target of vaccinating 70% of people aged 65 years and over (DH 2005b). The PCT actual uptake of influenza vaccine in 2004 was 74.85%. In order for the PCT to continue being successful and for all sectors of the community to have an equal opportunity to access the vaccine it is important that all practices meet the recommended target rather than high achieving practices negating the effect of those who do not.

A project management approach has been used to evaluate the current organisational practice within a low achieving single-handed GP Practice who has to date been unable to meet the DH target. An influenza stepwise process has been implemented into the Practice to provide a clearly defined structure to the influenza programme, which will be embedded into the Practice for future campaigns. In addition some proactive intervention strategies have been implemented that evidence-based research has shown act as 'triggers' to prompt individuals to attend for vaccine and so increase the uptake. Additional training for all staff members on the importance of influenza as a disease and the safety and efficacy of the vaccine has been provided. Staff have reported that the training has given all sectors of staff but particularly the reception staff the confidence to answer patients questions honestly and whilst acknowledging their individual beliefs, challenging some of the myths and misconceptions that some patients have about influenza and the vaccine. The Practice has moved from a position of underachieving to one that now is able to meet and exceed the DH recommended target for influenza vaccination. Anecdotal evidence is that staff morale has improved considerably.

Using the project management approach has assisted the project leader in identifying the risks to the project and what measures need to be put into place to achieve the desired outcome. The application of whole systems development principles has led to the delivery of a short-term improvement but has also brought about cultural changes that should enable the Practice to make the improvements sustainable in the long term.

The project has been successful in the short term in that the Practice achieved an influenza vaccine uptake rate of 77.20% in the target group that comprises of those people aged 65 years and over. In the previous campaign of 2004 the uptake of influenza vaccine for the Practice was 56.53%. The project therefore has exceeded the expectations, as the aim was to show a measured increase in those receiving the vaccine believing that an increase to 70% was unrealistic to achieve in one campaign. An overall increase of 35.71% in the population uptake has been achieved. However it must be acknowledged that the base population of those eligible for the vaccine decreased due to the removal from the Practice system of 'ghost' patients and if the base population had remained unchanged from the previous year then the uptake of vaccine would have been 65.49%.

Now that the project has been completed it is important to ensure that it is embedded into mainstream activity. One-way of ensuring the activities are continued is to compile a log of the activities undertaken, when and how, so that it is available for existing and new members of staff to follow.

Regular contact with the Practice will need to continue for at least a further influenza campaign so that support can be given when and as needed and assistance offered in the early identification of any further problems/difficulties.

Introduction

Within my role as Health Protection Nurse Specialist I work closely with the Consultant in Communicable Disease Control (CCDC) in organising the Influenza Campaign for the town. The aim of the Campaign is to ensure the DH target of vaccinating 70% of those people aged 65 years and over with influenza vaccine is met. This report describes the process of identifying the reasons for the low uptake of influenza vaccine within one single-handed GP Practice using a project management approach and whole systems development. Also discussed are the issues faced, the stepwise process and strategies implemented to assist the Practice in increasing the current uptake of influenza vaccine. The project was undertaken as the final part of a Master of Science programme of study.

Background.

In May 2000, the Chief Medical Officer recommended for the first time that all individuals over the age of 65 in the UK should be targeted for influenza vaccination, with a target of 60% in the first year and 70% thereafter (Donaldson 2000). In line with this recommendation, free vaccinations were provided and national campaigns

were conducted to encourage this sector of the population to be vaccinated. The Department of Health has set targets for GP practices to meet in recognition that influenza is an important public health problem in the industrialised world and is associated with increased general practice consultation rates, hospital admissions and excess deaths (Fleming 2000).

Influenza is of importance because NHS resources can be seriously overstretched by excess consultations and hospital admissions because of flu related illnesses. The elderly in the community and people who have chronic disease are the sectors most likely to have repeated primary healthcare contacts, hospital admissions and deaths if they contract influenza (NICE, 2003).

A public health approach emphasises disease prevention, where the use of preventative measures have benefit for individuals, populations, and health service provision (Naidoo and Wills, 2000).

One of the main reasons why influenza virus causes problems is because the virus surface antigens are constantly making small mutations. This is called 'antigenic drift,' new strain of virus evolve by accumulation of point mutations in the surface glycoprotein's and explains why getting vaccinated or being ill with influenza one year won't necessarily stop a person being re-infected the next year. 'Antigenic shift' occurs when the surface proteins make a dramatic change, with the emergence of a "new", potentially pandemic, influenza A virus. The new virus is antigenically distinct from earlier viruses and could not have arisen from them by mutation. It is often as a result of human strains incorporating genes from animal or avian strains, leaving the human population with no immunity. Antigenic shift may result in a pandemic; this is the concern about the H5N1 avian influenza in the Far East.

The aim of vaccination is eradication, elimination, or containment. Influenza cannot be eradicated or eliminated due to the virus's ability to make a dramatic change (i.e. 'shift'). Annual vaccination is the best means of prevention, reducing the risk of hospital admission and death. Improving the uptake of influenza vaccine will potentially improve health in older people in the town and it also has the potential to make savings to the local health economy. Evidence to support vaccination is provided amongst others by Edwards *et al* (1994) and Gross *et al* (1995) whose studies showed that the protective efficacy of the vaccine is such that it significantly reduces morbidity and mortality.

The main option for reducing the impact of influenza is therefore to offer immunoprophylaxis with inactivated vaccine before the influenza season starts to the targeted population.

Influenza vaccine is a proven, cost-effective way of preventing or ameliorating influenza in that it reduces both complications and mortality (DoH 2001, 2002). Anecdotal evidence from GP practices and the Foundation

Trust has been that high uptake of vaccine results in less patients reporting to the surgery for flu-like illnesses and fewer patients being admitted because of exacerbation of existing conditions or complications resulting from influenza.

Influenza vaccine

The World Health Organisation (WHO) monitors the prevalent influenza subtypes across 82 countries, predicts the strains most likely to cause disease outbreaks and recommends the strains to be contained in the vaccine each year (Pursell 2003). The influenza vaccine is a trivalent, subunit vaccine containing two A viruses and 1 B virus. When the vaccine is closely matched with circulating viral strains, it affords in excess of 50% protection against infection (Govaert *et al* 1994) and reduces hospitalisations in the elderly by 40% and death by 60% (Nichol *et al* 1994, Nguyen-Van-Tam and Nicholson 1993).

Vaccine Production

The influenza vaccine is only manufactured to supply the expected demand for each season and is ordered by GP practices early in the year. Vaccine companies manufacture according to demand as any vaccine that is not sold or used cannot be kept for subsequent years due to the vaccine changing each year. If the companies have vaccine left at the end of the current campaign it is destroyed. In addition, vaccine manufacture is complex and conducted to a tight schedule with little time between the WHO recommendations for the components of the vaccine for that year and the actual start of the vaccination programme. Two new additions to the DH recommended programme have been made this year (chronic liver disease and main carer of an elderly or disabled person). The changes were made after Practices have placed influenza vaccine orders for the coming influenza vaccination programme. This coupled with an unexpected increase in demand for vaccine from members of the public brought about because of increased public awareness of the threat of avian influenza has in the authors' opinion led to a shortage in the availability of the vaccine.

The threat of an influenza pandemic with avian influenza H5N1 reported via the media (Daily Mail 23/11/05) has heightened the public's perception of influenza as a disease. Although the influenza vaccine available for this year is not effective against H5N1, anecdotal evidence from GP practices is that public demand for the current vaccine increased. Two practices in the town had held clinics where appointments were not necessary and such was the demand there were queues for several yards outside the practice and vaccine supply was exhausted and patients had to be turned away.

National Background

The DH (PL/CMO/2005/2) document dictates the national influenza programme and campaign. National policy for 2005/06 states that influenza immunisation should be offered to:

- All those aged 65 years and over;
- All those aged over 6 months in the following clinical risk groups:
chronic respiratory disease, including asthma, chronic heart disease,
chronic renal disease, chronic liver disease, diabetes, immunosuppression
- Those living in long-stay residential care homes or other long-stay facilities where rapid spread is likely to follow introduction of infection and cause high morbidity and mortality (this does not include prisons, young offender institutions, university halls of residence etc).
- Those who are the main carer for an elderly or disabled person whose welfare may be at risk if the carer falls ill. Vaccination should be given at the GP's discretion.

Influenza vaccinations for those with chronic liver disease and for those who are the main carer of an elderly or disabled person are two new additions to the programme in 2005.

Local Background

The town has one Primary Care Trust (PCT) and according to the 2001 population census has a population of 284,528 people. In 2004 the number of people 65 years and over in the town was according to the annual Influenza Report 25,629 (Stockport Influenza Report 2004/05).

The local PCT currently has 55 General Practices; this is a decrease on the previous year due to GP retirement and the amalgamation of smaller practices into larger ones. In 2004 51 of 57 Practices met or exceeded the DH recommendations, 4 Practices were just under the DH recommendations and 1 Practice was significantly below and hence is the Practice identified for the project. The Practice were approached by the health protection nurse and offered assistance to improve their current vaccine uptake, which they readily accepted.

The project

Projects grow out of problems or opportunities. Small projects can be undertaken by one person and as the person responsible for working with practices in meeting influenza targets I was asked to be the project manager. The identified Practice had a problem in that it was unable to achieve the influenza target and was also underachieving in other targets, staff morale was observed by the PCT to be low. The PCT via Clinical Governance committee had advised the GP that surgery performance in achieving all DH set targets is low and cause for great concern. The Practice GP and staff were requesting assistance in increasing their uptake of influenza vaccine.

Project aim

The overall aim of the project was to show a measured increase in the number of people taking up the influenza vaccination in the 65 years and over age group in the defined Practice within a target period i.e. one influenza campaign. The aim was a conservative one than can be achieved rather than setting an unrealistic target which may not. Achieving the DH target of 70% would require a considerable increase in uptake of vaccine that was thought might not be achievable within one influenza campaign.

Target Group.

Within the project, the target groups were the staff of the Practice and the registered patients who are aged 65 years and over situated in the PCT. The DH targets are specifically for those aged 65 years and over although it is strongly recommended that those people who are in a 'at risk' category should also be offered influenza vaccine. Implementing strategies aiming to increase uptake in those aged 65 years and over should also have some effect on those under 65 years but in an 'at risk' category.

The Practice is situated in an inner town area, it is small and the Practice staff consists of a single General Practitioner (GP), a part-time practice nurse, a practice manager and two part-time receptionists. Health visitor and district nurse teams are employed by the PCT and assist the practice within their workload.

The tables below are reproduced from evidence gathered by the public health information analyst at the PCT (Banister 2005) As can be seen from the tables the Practice has a small number of ethnic minority patients registered and is of a mixed socio-economic group although the number of lower income older people is substantially above that seen in the town as a whole.

2001 Estimated Ethnicity for Practice Area based on geography.

The town is divided into wards. Using ward-level information from the 2001 Census (Office of National Statistics and Information Services) (ONSI) the ethnicity of the GP practice resident population can be estimated. The December 2003 population for the GP practice was structured by the ward of residence then multiplied by the 2001 ethnic proportions for the ward to give an overall estimate of ethnicity for the practice.

	Practice	Stockport	England
White	96.2%	95.7%	90.9%
Black	0.4%	0.4%	2.3%
Asian	1.75%	2.1%	4.6%
Mixed	1.0%	1.1%	1.3%
Chinese & Other	0.7%	0.7%	0.9%

The chart shows the Practice has a small amount of patients from ethnic minorities.

Estimated Superprofiles for Practice Area based in geography

Super profiles have been developed to provide lifestyle information for small areas within the UK. Using information from the 1991 Census, electoral roles and credit and market research data the system allocates neighbourhoods to one of ten lifestyle groups. The December 2003 population for the practice was structured by the enumeration district of residence, and then allocated to the relevant Super profile group. These were totalled up to give an overall estimate of the lifestyle structure of the practice population. Sources: Super profiles and Exeter Registration System via AIS. (E. Banister Public Health Information Analyst, Stockport PCT)

	Practice	Stockport
Affluent Professionals	4.3%	20.3%
Better-Off Older People	5.0%	11.0%
Settled Suburbia	14.7%	20.3%
Better-off Young Families	23.1%	20.5%
Younger/Mobile	2.1%	1.1%
Rural Communities	0.2%	0.3%
Lower income Older People	22.7%	6.9%
Blue Collar Workers	10.6%	9.1%
Lower Income Households	5.6%	5.0%
Lowest Income Households	11.7%	5.4%

The chart above indicates that the practice has an above average of lowest income households and low income older people when compared against the town average. This indicates that there is some social deprivation amongst the practice population.

Project objectives

The objectives of the project were:

- To gain knowledge and understanding of the current situation
- To identify the reason/s if any, as to why the practice is having a low uptake of influenza vaccination
- To raise awareness of the scale of the problem of influenza infections and the related morbidity and mortality
- To help achieve best clinical practice for patients who are most susceptible to influenza infections by finding the evidence demonstrating good practice or standards. This involved a literature review looking at older people's attitudes and beliefs about influenza and vaccine, evidence based immunisation interventions that have been proved to be successful in improving uptake in general practice and interventions to improve uptake of influenza vaccine targeted at people aged 65 years and over.
- To facilitate identification and vaccination of these high-risk patients

- To facilitate the practice to obtain a convenient system for maintaining an up-to-date, long term register of the influenza vaccination status of these high-risk patients
- To facilitate the annual collection of data on the uptake of influenza vaccination in those patients registered with the practice-aged 65 years and over as an index of potential health improvement in the community.

Identifying the reasons for the low uptake rate was the key to success and assisted when exploring what measures needed to be implemented within the Practice. A review of the available literature reinforced the fact that there were evidence-based interventions that can increase the uptake of vaccine if implemented. The literature also identified some of the barriers to and facilitators of vaccination, which were taken into account when implementing some of the initiatives into the Practice.

Initial meeting with General Practitioner

An initial meeting with the GP in the Practice took place to engage him in the introduction of the project. As a single-handed Practice the project could not take place without the co-operation of the GP. At the meeting the GP recognised that changes to the current system of working were needed and he assisted the project by allowing staff protected time as well as actively participating in discussions and training. These actions reiterated to the staff his support of and the importance of the project. Once the GP was in agreement a further meeting was held with all Practice staff with the purpose of assuring them that the project was not a 'top down' approach being imposed upon them but rather one of working with them to analyse the cause of the problems they were experiencing and looking at possible solutions. In addition assistance and support was available if needed when requesting additional equipment from the PCT and facilitating discussions as to how the current uptake could be improved and what measures could be implemented.

Identification of key stake holders

Key stakeholders were identified from within the PCT and the Practice and included all those who have an interest in ensuring that the Practice was able to fulfil its role of offering influenza vaccine to all eligible patients and move towards the goal of being able to achieve the DH target of 70%. Some of the stakeholders had a keen interest as they had a performance management role and influenza vaccination uptake was a key indicator under the Performance and Planning Framework (Healthcare Commission 2004), resulting in PCT 'star ratings'.

Approach to stakeholder analysis.

According to Ramirez (1999) stakeholder analysis can be defined as an approach to identify and describe the stakeholders on their basis of their attributes, interrelationships, and interests related to a given issue or

resource. In order for the project to be successful it was important to identify the stakeholders and the extent of their power and relationship.

Stakeholder analysis is a set of analytical tools that can be used in the process of planning collaborative projects. According to Burgoyne (1994) Grimble and Wellard (1996) stakeholder analysis becomes central as a method when it is used to plan an intervention/s or to understand and analyse a complex situation. The analysis provided a way in which to better understand the current situation and assisted in improving the overall performance of the project by highlighting the conflicts that existed and assisted by identifying ways in which to resolve them. The successful completion of the project required thoughtful management of the relationships with the people within the team and the external stakeholders.

Stakeholder table

Stakeholder	Importance	Influence
GP	10	10
Practice Manager	10	8
Practice Nurse	10	7
Receptionist 1	7	4
Receptionist 2	7	4
Health Visitor	4	2
District Nurse	8	6
PCT Director	6	10
Clinical Governance Lead	7	10
District Immunisation Coordinator	7	9
Quality and Outcomes Manager	4	8
Professional Development Nurse (Practice Nursing)	5	7
Health Protection Nurse	9	9
Patients	10	5

The stakeholder table demonstrates the importance and influence of those involved with the project. The scoring was used as a way of identifying where the power and influence within the Practice and the stakeholders lie and was of significance when identifying problems that could develop whilst implementing the project.

Using the table identified that the GP was of high importance and influence because as a single-handed GP Practice he employs the staff, pays their salaries and has overall charge of the Practice. If the GP was not willing to be involved or let the staff be involved in the project and implement the interventions that the literature review identified then the project

could not take place. Similarly, the practice manager was of high importance as she takes the lead on the clerical work and was involved with inviting patients to attend for influenza vaccine, she is second in command next to the GP and was influential in ensuring that the clerical staff had the time to undertake the part of the project for which they were responsible.

The practice nurse was of high importance because as the only nurse in the Practice she was the one who did the majority of the immunising of patients. If the practice nurse was not willing to be involved with the project and support the interventions then the success of the project was in jeopardy. The influence of the nurse was scored at seven because it was the GP who had the most influence on the staff being the employer. The nurse can be influential in encouraging the clerical staff to be proactive and positively promoting influenza vaccine when talking to patients either in person or on the telephone.

The two receptionists were of importance to the project and scored at seven because they are often the first point of contact for patients. The scoring for influence was low, as they had limited influence on the way in which decisions were made within the Practice.

The health visitor was scored low in influence and was of low/moderate importance because she has limited involvement with the GP and staff in the Practice in regard to the 65 + year old adult vaccinations having few elderly on her caseload. She can however influence young parents at home visits that in turn can influence their parents. The health visitor was invited to meetings with the aim of involving her more with the work of the Practice and elderly clients, identifying anyone on her caseload with chronic ill health conditions and encouraging them to attend for vaccination.

The district nurse was of high importance because it is the district nurse team who assists the Practice by vaccinating patients that are in housebound/residential care homes therefore contributing to the uptake of vaccine. Low on influence because they are employed by the PCT and although the GP needs to engage with the staff and gain co-operation they have little influence on the decisions he makes within the Practice.

The PCT director was rated of high influence because if the GP does not reach targets then the contract between the GP and the PCT can cease. Importance was rated lower because he is not directly involved in the project but would be needed to assist if there were conflicts that could not be resolved.

The remaining members identified in the stakeholder table were graded in the same manner according to influence and power.

Methodology

The influenza vaccination programme includes all individuals aged 65 years and over and those under 65 years who have a chronic health condition that puts them at increased risk if they were to develop influenza. Any change to the Practice process of working, implementation of intervention strategies therefore needs to be in place before September. This is because the vaccine programme commences from the middle of September when vaccine becomes available and continues until the end of January. The aim being to protect as many vulnerable people as possible before the influenza virus circulates. The vaccine can theoretically be given until the vaccine expiry date but as the incidence of influenza infection increases over the winter months vaccination usually ceases at the end of January so that symptoms of influenza as a disease are not confused with any supposed side effects from the vaccine.

In order to bring about change successfully a soft systems methodology (SSM) (Checkland 1981) was used. Checkland and Scholes (1999) described soft systems as a method by which to interpret systems rather than describing the rules and characteristics of the system itself. SSM make available a means of articulating complex social structures processes in a participatory way by allowing peoples viewpoints and assumptions to be highlighted, challenged and tested.

The Practice had never been able to meet the DH target since the introduction of the influenza programme in 2000. Staffs initial impression was that this was because patients registered with the practice were reluctant to have the vaccination coupled with organisational difficulties within the practice.

A meeting with all of the Practice staff was arranged with the aim of identifying what organisational problems the Practice had and what could be done to assist them. It was at this meeting that the identified problems were put onto a problem tree (Appendix 1). How these problems affected the work of the Practice and how these issues could be addressed were discussed and also the Practice current way of delivering the programme and whether this presented any challenges.

One major problem that the Practice identified was the lack of a documented structured programme of events for delivering the influenza programme. The Practice felt that this was needed and would act as a checklist to assess if they were on target for designated tasks. The Practice way of organising the programme was haphazard i.e. the practice manager ordered what vaccine she thought would be needed based on uptake of vaccine in the previous year rather than a systematic approach? The ideal method would be to do a search on the computer of the numbers of patients aged 65 years and over registered with the Practice. A similar computer search should be done on those patients who are eligible because of the previously listed existing chronic conditions that put them at increased risk if they were to develop influenza. Prior to the project the patients who attended the Practice for influenza vaccination tended to be those who always came on a yearly basis. To assist the Practice in the structure of the influenza programme a stepwise process was produced in order to clearly identify which steps staff needed to take and in what order in an attempt to improve the uptake of vaccine. Introducing the stepwise process early was to enable staff time to look at the process, become familiar with the structure of the process and engage staff in how this process could be implemented into the Practice. In addition

to see whether they envisioned any difficulties in implementing the process. It was planned to leave the Practice to implement the stepwise process so that they could have ownership of the process and would contact the project leader if the Practice were unable to resolve any difficulties encountered.

Change management in the workplace

Introducing the stepwise process would need a change to the current practice. Change is the adaptation that an organisation has to make to progress and survive in a world that puts different demands on it. With any change project it is important to have a clear set of both organisational and personal objectives. Handy (1993) defined an organisation as communities of people who compete amongst themselves for power and resources; there are differences in opinions and values, conflict of priorities and goals. There are those who want to change things and those who are willing to settle for a quiet life.

Any project that aims to bring about change needs an awareness of how it will affect individuals, as change can create anxiety, uncertainty and stress. Kirkpatrick (1985) and De Vries and Miller (1984) found that change which has a significant impact on the work that people do, will have a significant effect on their self-esteem and that coping with the process of change places demands on the individuals involved. It was therefore important to offer support and training where necessary so that new skills could be developed.

Carnall (2003 p122) found that people in change need empathy, information, ideas, milestones and feedback. As project manager awareness that change management is stressful for staff and that the pace of change needs careful planning was essential as the benefits of change may be slow to achieve and intangible whilst the costs to the individual are more tangible and immediate. It was important that people understood why the change was needed and what the benefits to the change were whilst managing the stress that was induced by the change. The staff were given assistance to cope with the change by initiating training appropriate to their needs, offering support and assistance where required and using or adapting existing systems and procedures where ever possible.

It was recognised that the influenza campaign was only one aspect of a Practice function and one that needs to be undertaken in addition to normal practice duties at a busy time of the year. Resistance to change amongst the Practice staff can occur because increasing uptake of influenza vaccination may not be viewed as important amongst the other competing pressures of day-to-day work. Meeting with the staff and engaging with them was crucial so that all staff could be made aware of the importance of the programme and the benefits that could be gained from a public health perspective in a reduction in morbidity and mortality. The influenza programme can from a Practice perspective be beneficial. Firstly, as an income generator as each influenza vaccine given generates payments to the Practice (e.g. an item of service fee). This income can be used to fund additional resources or equipment that the Practice needs or purchase more staff secondly, in a decrease in patients attending the surgery because of flu related illnesses.

Resistance to change can take many forms and can be difficult to identify; forces against change in the NHS are often due to lack of information for staff, ignoring the needs and expectations of staff and an inability to see the need for the change (Lamb and Cox 1999 p290). This is often the cause for resistance at an operational level as staff will be anxious about the demands that will be made on them. Conversely they may believe that there is little research evidence to support the change or that the cost of the change in time and resources outweigh the benefits (Baldwin 1994, Hackett et al 1999).

Orlikowski (1996) believes that knowledge of the different approaches assists project managers when planning change, so an allowance can be made for a degree of flexibility in order to accommodate and experiment with the everyday contingencies, opportunities and the unintended consequences that occur.

Initial meeting.

An initial meeting with all practice staff, community staff working with the practice and interested stakeholders was arranged at a mutually convenient time, the 16th May 2005. In order to ensure that all aspects of the programme were covered in the meeting any stakeholders who could not attend were contacted and asked if they had any items for the agenda and the agenda was produced to encompass all of the issues raised. Staff subsequently agreed that monthly meetings should be held in order that any difficulties encountered could be addressed and progress could be monitored. Stakeholders who could not attend were kept informed by sending the minutes of all meetings. Carnall (2003) believes that by involving people in the change process it has advantages in that they will understand the aims of the change at the outset. Involvement creates a feeling of ownership, redirecting energy in support of change rather than against it, it also allows for experimentation and builds a better understanding of change and how to achieve it.

As the project manager the present programme, rationale, target uptake of vaccine advised by the DH and the Practice current position were outlined. Staffs from the Practice and stakeholders present were then encouraged to become involved in the 'brainstorm' of ideas and to identify any problem/s they thought were associated with the Practice low uptake rate. The issues raised by the Practice staff and other stakeholders were documented and the identified problems put onto a problem tree. The problems identified were listed and possible solutions sought.

Problems/issues identified

The problems/issues identified by Practice staff included:

- Shortages of computers, at the start of the project there were only 2 computers in the Practice. These had to be shared by all of the staff; resulting in staff having to wait for an opportunity to use a computer, in addition the computers were dated, slow and unable to produce the complex searches that were required to identify all those who should be offered influenza vaccine.

- The need for a structured programme identifying the systematic steps to be taken, time scales. The lack of a co-ordinated system or stepwise process for inviting eligible patients for influenza vaccine meant that there were missed opportunities for inviting individuals and giving of vaccine.
- Practice patients who are in 'at risk' groups because of existing chronic health conditions are not always 'READ' (NHS 2000) coded on the computer. This has meant that staff could not readily identify who should be offered the vaccine and had had to rely on searching individuals' paper records as a source of information. This was very time consuming but if it was not done it would lead to missed opportunities for inviting patients for vaccination.
- A shortage of staff and hours available for the influenza campaign. The staff employed by the Practice has specific designated roles and tasks within a time frame for which they are responsible. These tasks take up that entire individual's time and results in tasks for the influenza campaign being an extra chore with no time available for carrying out this work.
- Training, all disciplines of staff felt that they would benefit from additional training on influenza and the vaccine. Reception staff in particular felt that they needed some basic training. Receptionists in surgeries are the first point of contact with members of the public and can be asked questions about influenza and the vaccine that they feel unable to answer. The project manager had offered training for reception staff on four occasions in the previous year at different localities in the town when it became apparent that this would be beneficial in improving uptake. The staff at this Practice reported that they had been unable to attend any of the sessions due to time constraints.

All nursing staff employed in the PCT are required to attend a mandatory three-day immunisation and vaccination course offered on four occasions during the year. Once the three-day course is completed all staff attends a two yearly one-day updates that include management of anaphylaxis and CPR. Additional updates and training sessions are offered to GP's.

Project Management Plan

The plan was developed so that all staff had a clear understanding of the tasks that were required to increase the uptake of influenza vaccine. The tasks were documented and discussions took place about who would be responsible for the task, what was a realistic time frame for completion of the task and whether any difficulties were envisioned. At subsequent meetings all members of staff reported on progress so that any difficulties encountered could be continually monitored.

Project Aim: To show a measured increase in the number of people taking up influenza vaccination in the 65 years and over age group in the defined Practice within a target period i.e. one influenza campaign.

<u>What</u>	<u>How</u>	<u>Who</u>
<u>Objectives</u>		
1. To gain knowledge and understanding of the current situation	1. Practice meeting – share knowledge/ brainstorm ideas.	Health Protection Nurse Practice Staff
2. Identify any reasons for low uptake. Document and look at possible solutions	2. Practice meeting – share knowledge/ brainstorm ideas.	Practice Staff/ Health Protection Nurse
3. Review the practice present influenza plan.	3. Is it comprehensive or need changing?	Practice Staff
4. Identify what are the reasons for the low uptake of vaccine	4. Attempt to resolve the identified problems by implementing strategies/training.	Health Protection Nurse/ Practice staff
5. Identify what strategies/ interventions increase uptake of influenza vaccine	5. Literature review on evidence based interventions shown to increase uptake. Implement as appropriate	Health Protection Nurse
6. Implement Influenza stepwise process for primary care	6. Follow the stepwise process plan to invite patients by letter. Use reminders on repeat scripts. Invite patients at routine reviews /appointments.	All practice staff
7. Build a team to raise morale/esteem of practice team	7. Implement team meetings. Share ideas/invite suggestions	Health Protection Nurse/Practice staff/PCT
8. See how the process worked and plan for the next year	8. Discuss stepwise process identify any problems	Health Protection Nurse/Practice staff/PCT
<u>Possible Constraints</u>		
Information Technology – surgery is known to have a dated computer system, reliance on paper records. Small team who may be resistant to change. Time shortage	Identify to relevant bodies in PCT of the need for new computers and training for the staff on the system. Involve staff in the change; invite discussions on how to proceed. Keep staff informed of developments	PCT, Practice staff Health Protection Nurse

<p><u>Option Development</u></p> <p>Team working Development of team in this project may increase motivation to look at other areas.</p>	<p>Tasks delegated to individual members with date for completion. Individual sense of identity within the team. Feedback on successes</p>	<p>Health Protection Nurse/ Practice team</p>
<p><u>Option Appraisal</u></p> <p>Do nothing</p>	<p>Current uptake of 55% will be compared with uptake after introduction of stepwise process tool and evidence based interventions on completion of project</p>	
<p><u>Review</u></p> <p>Project worth doing - no introduction and implementation of a stepwise process will result in no increase in performance. No literature review of evidence-based interventions none implemented</p>	<p>Implement stepwise process Provide training for staff Support bid for new IT equipment Provide Practice with evidence-based research for increasing uptake of vaccine. Provide support and advice</p>	<p>Health Protection Nurse/Practice staff</p>

‘Brainstorming’ was one way of engaging all disciplines of staff and stakeholders to identify what were the difficulties experienced in achieving the target and to encourage participation in possible solutions on the way forward.

As project manager it was important to observe that all staff were participating in the discussions and had the opportunity to add their comments and thoughts. Those members of the group who had more power and influence can overpower or intimidate some of the Practice staff and to ensure that all those present could articulate their views any member who had not had an opportunity to speak was asked for their opinion before any final decisions were made. Where disagreements occurred a discussion took place until an agreement was reached or an alternative solution sought.

Meetings with all staff present assisted in building a team approach in identifying the problems, possible solutions and suggestions for moving the project forward. All Practice staff present at the meeting stated that they were committed to improving performance and felt that the stakeholders attending the meeting had been sympathetic to the difficulties the Practice were experiencing and had acknowledged the need for new computer equipment and training. Support at top level was crucial to success and as additional resources were required e.g. such as new computer systems the support of senior management was vital.

Planning the project by splitting it up into manageable tasks and stages.

The issues raised by the practice were documented and the problems identified were put on the problem tree (Appendix 1). The problems identified were listed on the table and possible solutions sought.

Computers and information technology for patient records.

The GP, practice manager and the health protection nurse as project manager approached the PCT about the shortage and age of computers available at the Practice. The outcome of the discussions that took place was that the PCT agreed to fund four new computers and their installation into the practice. Once the computers were installed the Practice paid for a programmer to come into the Practice and 'READ Code' (NHS 2000) all patients whose records showed they had existing chronic health conditions. The ICD-10 classification is used for the recording of diseases and health related problems i.e. the diagnosis or reason for a patient episode of care. Once all of the patients who have chronic health conditions are 'READ' coded according to their condition it is simpler to identify those patients and record whether health targets for that sector of patients are being met.

'READ' coding identified to the Practice that the paper records currently kept were not up to date when recording chronic ill health conditions. The computer programmer was unable to identify from the information available whether individual patients had a chronic condition or not. The practice nurse was able to facilitate the programmer by both liaising with the GP and by looking at the individual records for any information that had been written in the notes from previous surgery visits. This was time consuming but very essential work if patients are to be offered good quality care and was the best method to identify and invite all those patients eligible for influenza vaccines.

Training

Training for all staff was considered a priority prior to implementing the stepwise process so that they understood the importance of programme and the programme aims. The health protection nurse as project manager and as one of the trainers for immunisation agreed to address the need for training on influenza and the vaccine for all staff. A date for the training was arranged within the practice-protected time. Prior to the training commencing all staff were asked to complete an anonymous pre-training questionnaire (Appendix 2) this was compared with a post-training questionnaire and was done in order to evaluate whether the training was informative and met the needs of the participants. (Pre and post training questionnaires were identical and numbered so that like could be compared with like) Prior to completing the questionnaire the staff were reassured that the questionnaire was not a test but simply a tool to ensure that the training being offered met the needs of all the different disciplines of staff. The pre-training questionnaire identified that there were gaps in knowledge amongst the staff on the significance of influenza as a disease, the type of influenza vaccine used and which client groups should receive the vaccine. The planned training was able to address all of those needs.

How people learn is a complex area of study. It can be broadly described as the “doers” those who are driven by challenges and positively search for better ways of doing things and “thinkers” who consider all angles and work things through step by step (Kolb 1974, Honey and Mumford 1992 & 1996). Wilson (2000) reminds that individuals rarely fall neatly into one category but that people tend to have a dominant learning style that is dependant on their previous experience and preference. As project manager knowledge that people learn in different ways influenced the way in which the training was developed and by combining different teaching methods and audio visual aids, a rich menu for learning was achieved which was beneficial for all disciplines of staff.

The training arranged consisted of showing a locally produced short video, which was available to all GP practices. The video is a short 12-minute production and addresses the importance and impact of influenza as a disease, information about the type of vaccine used and interviews with local people as to why they had the vaccine or why they did not. In this way some of the common myths and misconceptions held by the general public about influenza and the vaccine were identified. The video then features some of the UK’s experts on influenza and the vaccine used and they explain why the myths expressed are incorrect. This was followed by a power point presentation by the health protection nurse giving more specific and detailed information; showing staff the available literature and concluded with an open forum where staff could ask any questions.

Post training evaluation was very good and the questionnaire revealed that all staff had a good knowledge base. Staff expressed the view that they felt confident that they would be able to answer patients’ questions correctly and the reception staff felt that they were much better prepared for their role as first point of contact with patients. As all staff attended the training it was felt that patients would benefit from this co-ordinated approach of staff all giving the same consistent information.

Implementing the stepwise process plan

The influenza audit (Appendix 3) devised by a pharmaceutical company was produced and modified into a stepwise process in order to suit the Practice needs. The stepwise process was used to identify the tasks that needed to be taken, in what order and when. A vaccination schedule of available times when influenza vaccination clinics could be held in the Practice was drawn up, some of the clinics were by appointment, and others were ‘open clinics’ where no appointment was necessary. The aim of the schedule being to have sufficient clinics on offer to suit the needs of the patients and to be able to vaccinate the majority of patients eligible during the period October – December.

The tasks identified as urgent were generating the computer searches so that those patients who are aged 65 years and over and those who have ‘at risk’ conditions which are ‘READ’ coded could be correctly identified. Once the lists of patients were generated staff could invite patients by letter to attend the surgery at the designated influenza vaccine clinics. The Practice was found to have no standard format letters to suit the purpose and to facilitate the process a high

achieving practice in the town was contacted by the project manager to ask what format their letters of invitation took. The practice supplied copies of their letters and these were amended to suit the project Practice. Three different letters of invitation (to meet the needs of the different patient groups) were produced (Appendix 4).

Once the search for all patients 65 years and over had been completed a search was made for as many as was possible of those patients who were under 65 years with ‘at risk’ conditions. The next task was to estimate the amount of vaccine required to vaccinate a minimum of 70% of those eligible. The numbers of patients eligible for the vaccine was checked against the amount of vaccine ordered. It is essential to have an accurate number of those patients eligible and to have sufficient vaccine ordered so that the Practice can aim to meet the DH target of 70% and have some vaccine on reserve if demand should exceed expectations. Vaccine companies do allow practices to have a small amount of vaccine (50-100 doses) on reserve but this must be claimed before the end of December. The aim of the project was to vaccinate as many patients as possible that are eligible for the vaccine and if insufficient vaccine is available it could lead to patients attending the surgery and being turned away. A deficient in vaccine ordering was noticed and negotiations were made with the vaccine manufacturer to increase supply and to have some vaccine in reserve if required.

A discussion took place with all staff about the tasks that needed to be undertaken. An agreement was reached with the staff of who would take responsibility for the tasks and the named person/s responsible for that task was written alongside together with a date for completion of the task. Staff that had particular skills which were useful to the project were utilised where possible as were requests to be responsible for certain aspects as this is one way of getting the staff to own a part of the project and take responsibility towards moving the project forward.

A constraint to the project was if key members of staff left and tasks allocated to that person were not completed. Regular meetings with the Practice staff assisted in the early identification of any such problems.

Influenza Project Plan

Team Members Responsible	Process	Completion Date
Health Protection Nurse, GP, Practice Manager, Practice Nurse	Following the stepwise process draw up a programme of vaccination schedule and aim to immunise the >65 years and those <65 who are ‘at risk’.	August 05
Computer programmer/Practice nurse	READ code each identified patient’s details so that they	Ongoing throughout campaign

	can be identified by disease. Check paper records if unsure of status	
Practice staff District Nurse	Identify housebound patients, those in residential care. Prepare list and give to the District Nurse team who will vaccinate, record name, site, date and batch number Data returns to practice on weekly basis	September 05 December 31 st 05
GP, Practice Nurse	Identify sessions for influenza vaccination; give dates and times of clinics to reception staff.	September 05
Practice Manager, reception staff	Send out letters for >65 with clinic dates and times. Letters to <65 with clinic dates and times + Offer opportunistically	November 05
Reception staff	Reminder on repeat prescriptions	Throughout campaign
GP, Practice Nurse	Flag each eligible patients notes using an influenza sticker	At consultations and clinic reviews
GP, Practice Nurse	Vaccinate opportunistically at reviews, appointments.	September 05 – January 31 st 06.
Practice Manager, Reception staff	Practice display – leaflets, posters, badges, stickers etc.	September 05
Practice Nurse, Practice Manager, Reception staff	Telephone reminders to patients not attended for vaccination	Dec 1 st – 15th January 06
All staff	Record all influenza vaccine given, date, batch, site	Throughout campaign
Practice staff/Health Protection Nurse	Calculate on monthly basis, number of vaccines given to >65 group	End of each month

Evidence based interventions implemented

The literature review had identified interventions that have been found to be successful in raising the uptake of influenza vaccine. Furey *et al* (2001) found that practices achieving immunisation uptake >75% invited patients by marking repeat prescriptions, personalised letters and offering walk in clinics or appointments. The Practice decided that all of the above approaches would be implemented.

Sending letters to patients had cost implications both in time for staff and cost of postage. The GP was shown the research literature and agreed to fund sending out letters all patients eligible for influenza vaccination. To facilitate the Practice the

Health Protection Nurse amended three letters for practice use (Appendix 4). The letters were sent out at the beginning of September and included a DH leaflet, dates and times of the specific influenza clinic sessions being held at the surgery. Research by Burns *et al* (2005) found that a reminder combined with information-increased the uptake of vaccination. Patients who failed to contact the Practice a month after the letters were sent out were contacted by telephone any concerns were addressed and the person was encouraged to take up the offer of vaccine.

The Practice Nurse and the GP agreed to offer opportunistic influenza vaccine if the patient was well at all routine appointments and treatment reviews. The reception staff when printing repeat prescriptions printed a reminder that influenza vaccine was in stock on the bottom of the script and that they should contact the surgery to book an appointment. The practice manager with assistance from reception staff did a display in the waiting room about influenza, which people should have the vaccine, provided information leaflets for people to take and details of dedicated clinics when the vaccine was available. The display also advised that if any patients had ill health conditions, which made it difficult to get to the surgery to telephone the surgery so that alternative arrangements could be made.

Forbes *et al* (2002) found that older adults may consider themselves to be housebound for many reasons including physical disabilities, immobility, loss of interest and confidence in world outside of home, restricted transport availability and social issues such as fear of crime. Such fatalistic views and the genuine inability of some older people to attend vaccination clinics can pose significant barriers to vaccination uptake in this target population. In recognition that some sectors of the community will have difficulty in attending clinics the District Immunisation Co-ordinator and the health protection nurse negotiates with the PCT on a yearly basis for a budget with which to organise the influenza campaign. A part of this budget is delegated to be used to purchase extra district nurse time so that they can assist GP practices by giving housebound patients and those in residential care homes influenza vaccine.

The district nurse team was given a list by the Practice of all their known housebound patients and those in residential care so that they could visit and offer the vaccine. Once the patients were vaccinated by the district nurse team the information was given to the Practice on a weekly basis so that accurate documentation of date vaccination given, the batch number of the vaccine, site of injection could be kept. The practice nurse gave any patients who did not meet the district nurse criteria as a housebound patient the vaccine at a home visit.

Research by Lorant *et al*, (2002) found that individuals of lower socio-economic status seek information only when it is needed rather than for prevention. In an attempt to address this 'health days' have been held in the town for 3-4 years. Initially these days were held in areas of the town where unemployment rates are high and residents are of low socio-economic status but as they have proved very popular with local residents they have been extended to other areas. The 'health days' comprise of a number of voluntary and statutory agencies getting together and organising stalls where information and advice on a range of services can be obtained. Free samples are available of low energy light bulbs, smoke detectors, room and refrigerator temperature gauges. Taster sessions of classes or services are held, such as

aromatherapy massage, reflexology, exercise classes, computer technology. The GP practices in the locality provide staff and equipment so that influenza vaccine can be offered and have found that the uptake of influenza vaccine is good and many of the residents prefer to have the vaccine in this way. These events are very well published and attended and have become a social occasion for local residents with free refreshments available and details of these days and the venues where held were advertised on the Practice notice board.

A new community initiative to raise awareness of influenza and to encourage people to have the influenza vaccine, involved giving all community staff a badge with the slogan 'Ask me about flu' which they were encouraged to wear. Staff that had received the vaccine were given a badge saying 'I've had my flu Jab, have you?'

Unexpected constraints to the Project.

Loss of computer equipment

A major constraint to the success of the project occurred when 3 weeks after delivery of the new computers, the Practice was burgled and all of the new equipment was stolen. All work that had needed to be done ceased whilst the police investigated the theft and made recommendations as to how to make the Practice more secure. The Practice was found not have an alarm and this has been strongly recommended by the police. The Practice subsequently arranged for an alarm to be fitted which if set off notified a local security firm who would attend immediately. The rear door of the practice where the thieves had gained entry was no longer secure and a new door needed to be fitted, once this was done the PCT arranged for replacement computers to be fitted. This put added pressure onto the Practice, in dealing with the issues associated with the burglary and in the shorter time that was now available for completion of the designated tasks.

Loss of key staff member

Another unexpected constraint occurred just prior to the campaign starting when the GP suddenly dismissed the practice nurse and the Practice was left with no nurse. This was acknowledged by the GP as irreconcilable differences in opinion between himself and the practice nurse as to how the Practice should be operated and managed. This had huge implications for the success of the project as the practice nurse was a key player and this was a major concern. The stakeholders at the PCT were informed and clinical governance facilitated the GP in identifying sources where an advertisement could be placed. The GP advertised for a replacement and was fortunate in that an experienced practice nurse applied and was successful in gaining the position. Once the nurse was appointed into the Practice a meeting was arranged in conjunction with the practice nurse facilitator. The aims and objectives of the project were outlined and the issues that had led to the previous low uptake. The nurse had come from a successful practice and was used to working proactively and agreed to take over the tasks designated to the previous nurse. If a nurse had not been found and appointed it would have meant that the Practice would only have available locum nurses on an ad hoc basis, this would have made planning clinics extremely difficult. It was very fortunate that the new practice nurse appointed was able to be

rapidly incorporated into the audit plans, was very willing to be involved in the project and was committed to improving the uptake of influenza vaccine.

Vaccine production

Difficulties in vaccine production this year meant that the programme was delayed. The delay in vaccine production was due to a late notification of change in one of the virus constituents of the vaccine by the World Health Organisation (WHO) and partly to manufacturing difficulties. The influenza vaccine is only protective if the WHO correctly identify the circulating influenza viruses, if a new or different virus is circulating after the vaccine has been manufactured then it will not be protective. The WHO had seen a change to one of the viruses circulating and considered it was prudent to make a change even though it led to a later than normal production.

Late delivery of vaccine meant that all of the practices in the town could not start to vaccinate towards the end of September as planned and scheduled clinics had to be cancelled. This involved additional work for the Practice in contacting individuals and making further clinic dates available. The vaccine became available in the second week of October but was delivered in small batches, this meant that the Practice along with others in the area quickly ran out of vaccine and had to wait until further supplies were available before re-arranging clinics. The delays and shortage in availability of vaccine occurred when avian influenza was of media interest and patients were very motivated to attend for the vaccine. Delays in the supply of vaccine meant that individuals who attended 'open' clinics had had to be turned away when supplies were exhausted and these individuals may not have attended when supplies of vaccine did become available.

Questionnaire implemented

The questionnaire that was given to patients attending the Practice for influenza vaccine was a service evaluation. The questionnaire was submitted to the PCT Research and Development Unit and after discussion with Clinical Governance they decided that submission of the questionnaire to the PCT ethics committee was not required.

Questionnaire trial

The questionnaire was given to colleagues, clerical staff and attendees at a local church luncheon club in order to see whether the questionnaire was understandable and would give the information required. The questionnaire was amended in response to some of the queries that were raised.

The patient questionnaire (Appendix 5) was devised specifically in order to gain some insight into patient behaviour. For example, what had prompted them to attend for the vaccine this year, when had they last attended for vaccine, what sources of information was used, how they would like informing about influenza

vaccine and whether the threat of avian influenza had any influence on their decision to attend the surgery this year?

The Practice staff were requested to offer the questionnaire to all patients who attended the surgery for the influenza vaccine and to advise all patients that that completion of the questionnaire was optional and would have no influence on their treatment. The aim of the questionnaire was to find out what prompts were useful in reminding patients of the need to attend for the influenza vaccine and what methods of contact were preferred so that these could be taken into consideration when planning future campaigns. No guarantees that the preferred contact would be the carried out were made. Anonymity of patients was guaranteed as the questionnaire did not ask for any personal details other than their sex and whether they were 65 years or more, or less than 65 years so there was no way of identifying any individual patient. All staff was advised that no pressure was to be put on any patients if they declined to complete the questionnaire. At the end of each day any questionnaires that had been completed were put into a filing cabinet until collected by the project manager.

Bias

Possible biases to the questionnaire were identified although these were unlikely as staff were aware of the importance of the information being collected. The practice staff could have made alterations or made additional comments, patient views could have been influenced.

The information obtained from the questionnaire was a means by which patients could anonymously articulate their views and opinions on which methods of contact they would prefer from the Practice when advising about the influenza programme and the clinics being held. It was only after completion of the influenza programme and collection of the questionnaires that the project manager realised that the district nurse team had not been given copies of the questionnaire to give to housebound patients or to the residents of nursing/residential care homes. This sector of patients views are not represented in the project and this is an omission that will need to be rectified if the project is repeated. The reasons why some patients eligible for vaccine did not attend are not known and this could only be sought by adding additional questions and posting the questionnaire to see if a response could be gained. Posting the questionnaire to non-attendees was considered but because of the cost and limited time frame available for the completion of the project this was not done. If the project was repeated in another Practice posting the questionnaire to get a wider view of all eligible individuals would be considered.

Individuals were asked to complete the questionnaire either whilst waiting for their appointment or during the post vaccine period when patients should remain on the premises for twenty minutes after having received the vaccine. Pens were available for use on the reception desk. Completing the questionnaire on surgery premises was an attempt to

improve response rate but this could mean that people attending together could collaborate on the questions and the answers could be a collective decision rather than an individual decision. The questionnaires were collected at the end of the programme and each questionnaire was numbered consecutively and data was entered into an access database and analysed using access queries.

Results of the patient questionnaire.

The total number of questionnaires completed and entered onto an access database was 330. 336 patients aged 65 years or over attended the surgery for influenza vaccine of which 220 completed the questionnaire (see Table 1). The numbers of patients completing the questionnaire could possibly have been increased if patients in residential/nursing care or those who are housebound had been included. As mentioned above it was only after analysing the data that it was realised that the Practice had not given the district nurses any questionnaires for this sector of patients. Some of the questions on the questionnaire would not have been applicable as patients are not written to as an individual, arrangements to raise awareness and vaccinate are done via the nursing/residential home. The possibility of giving the questionnaire retrospectively was considered but as the identified Practice is small, does not have a large amount of housebound patients and short time schedule available this was not done.

Questions asked

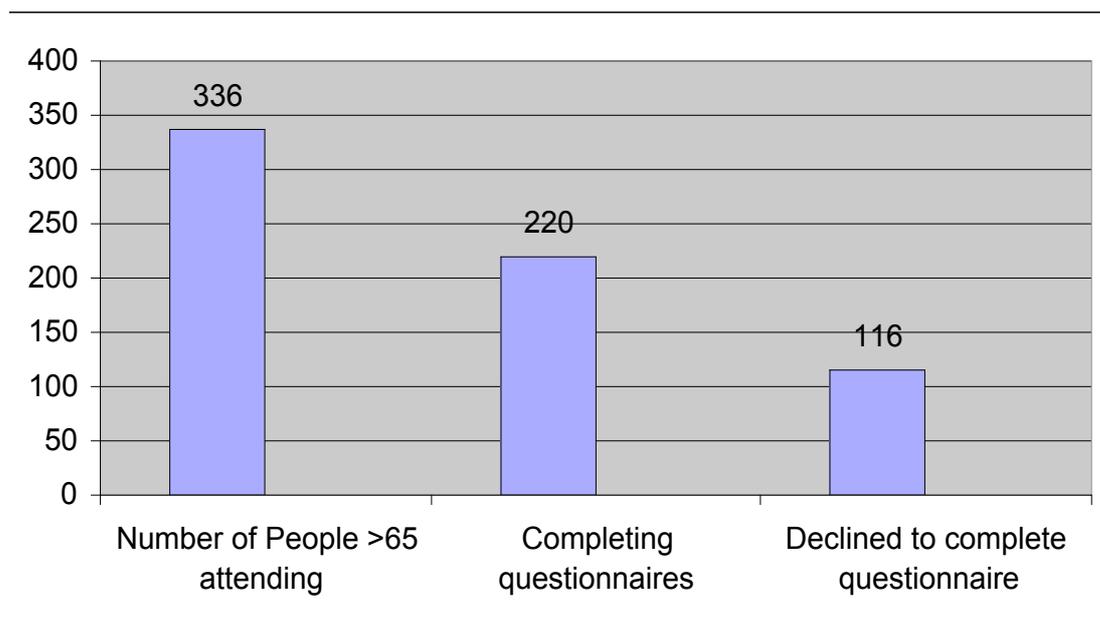
Question 1 Are you age 65 years or over?

220 patients stated that they were 65 years or over. This meant that 65.47% of people receiving the influenza vaccine completed the questionnaire. 116 people less than 65 years 34.53% either declined to complete the questionnaire or the questionnaire was not offered to them.

Question 2. Are you under 65 years but have a chronic health condition?

74 people said they were less than 65 years of age. 34 did not indicate an age but the information given indicated that they were less than 65 years. The Practice has not being able to give a total number of those less than 65 years that have been vaccinated and therefore it is not possible to say what percentage of people completed the questionnaire.

Table 1: Bar chart showing numbers of people completing questionnaires



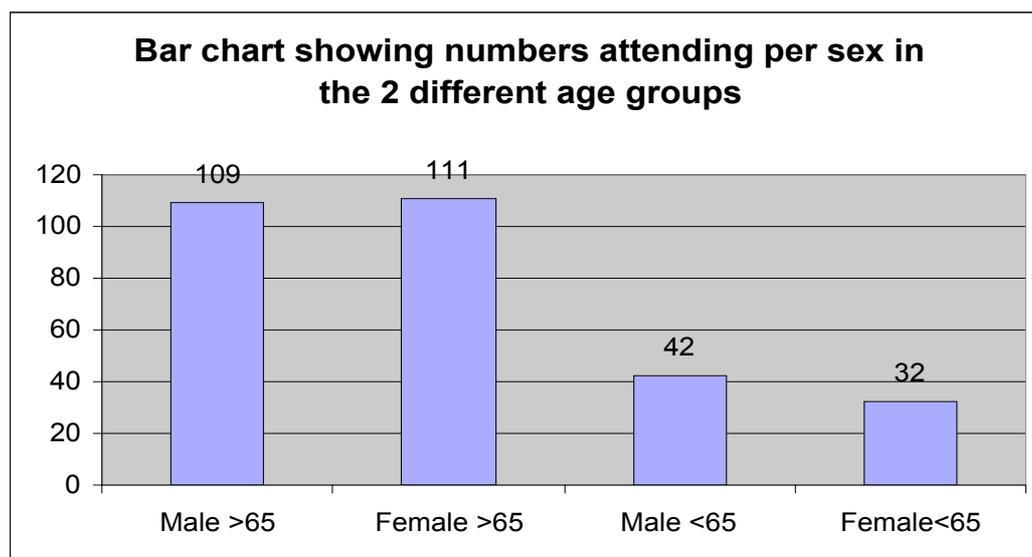
Question 3. What sex are you? (see Table 2)

Over 65 years of age 109 Male and 111 Female

Less than 65 years of age 42 Male and 32 Female

The following bar chart indicates similar numbers of people attending for both sexes in the two different age groups.

Table 2: Bar chart



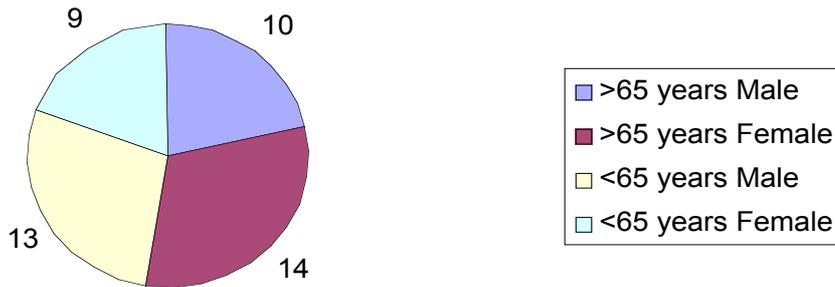
Question 4 Is this the first time you have had the influenza vaccine? (see Table 3)

10 Males >65 years and 14 Females received the vaccine for the first time.

13 Males <65 years and 9 Females received the vaccine for the first time

Table 3: Pie Chart

Number of people receiving vaccine for first time



Question 5. When did you last have the flu vaccine?

Had the vaccine last year (see Table 4)

Male 65 years or more = 91 Female 65 years or more = 86 Total of 177 people.

Male less than 65 = 32 Female less than 65 = 24 Total number of people = 56

The reasons given for not attending for the vaccine previously ranged from forgotten, ill at the time or family member ill and could not attend, did not feel the need to attend as fit and healthy.

Had the vaccine more than 1 year but less than 5 years (see Table 5)

Male 65 years or more = 4 Female 65 years or more = 5 or more Male less than 65 years = 4 Female less than 65 years = 5

Had the vaccine more than 5 years but less than 10 years (see Table 6)

Male >65 = 1 Female >65 = 2

Male <65 = 2 Female <65 = 4

Table 4: Bar Chart

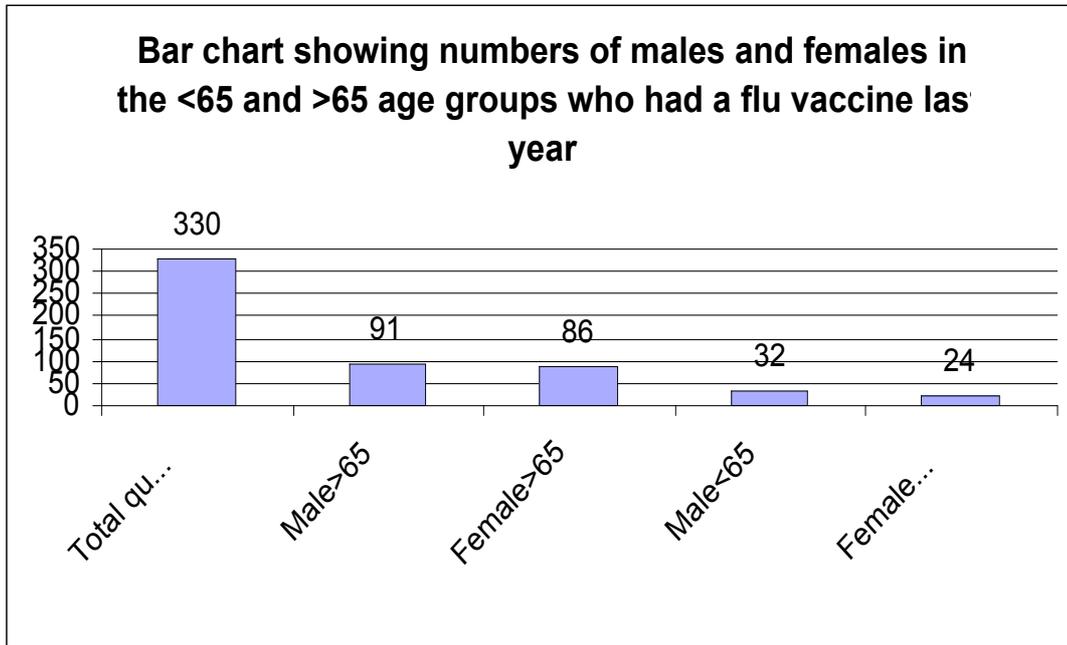
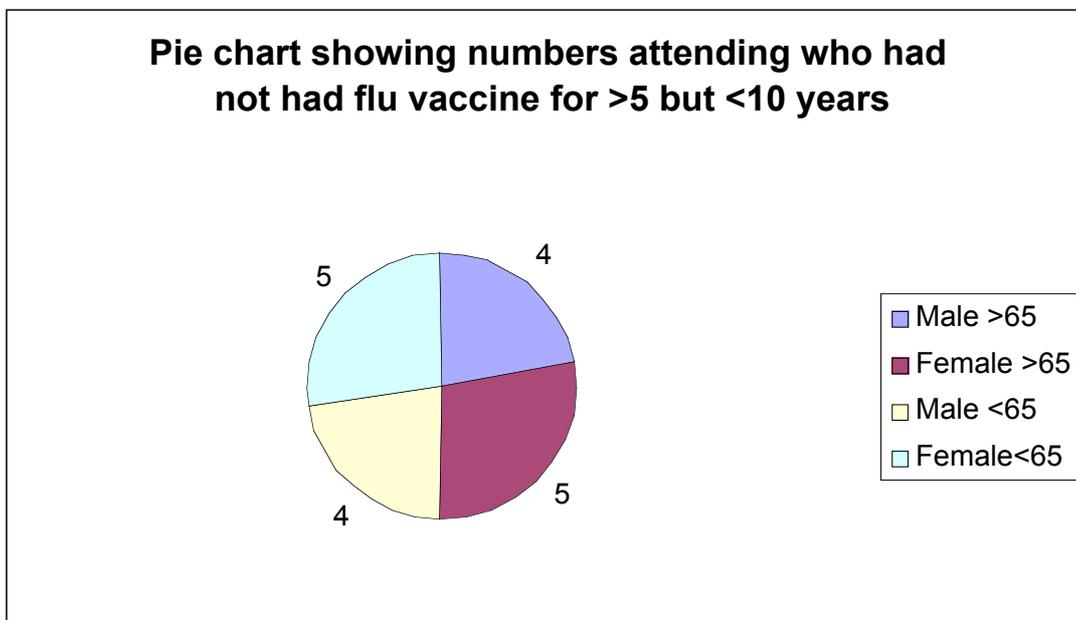
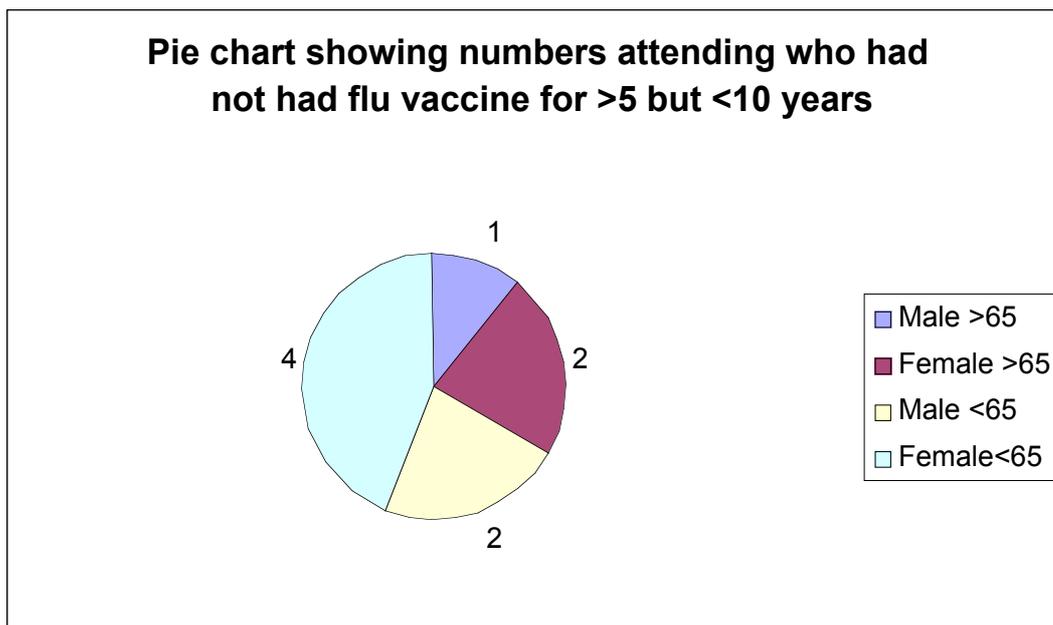


Table 5: Pie chart Numbers attending who had not had vaccine for more the 1 year but less than 5 years.



The questionnaire revealed that there are people registered with the Practice who have not had the influenza vaccine on a yearly basis as recommended by the DH. This may be due a number of factors, such as, individual choice in not accepting the vaccine, lack of confidence in the vaccine, lack of structure within the Practice in that patients were not contacted and made aware that the vaccination is available and due. Some respondents stated that they had attended this year for influenza vaccination after being advised by the Practice Nurse, GP or reception staff showing that staff can be a major influence on a patients' decision to attend.

Table 6: Pie chart



Question 6: Why have you come for your flu vaccine?

A: Letter from Practice (see Table 7)

34 Males and 10 Females aged 65 years or more attended the surgery because of invite letter. This amounted to a total of 44 people.

23 Males and 16 Females less than 65 years attended surgery because of invite letter. This amounted to a total 39 people.

B. Phone call from Practice (see Table 8)

5 Males and 12 Females 65 years or more attended the surgery because of phone call received. A total of 17 people.

5 Males and 2 Females aged less than 65 years attended the surgery because of phone call received. A total of 7 people.

Table 7: Bar chart

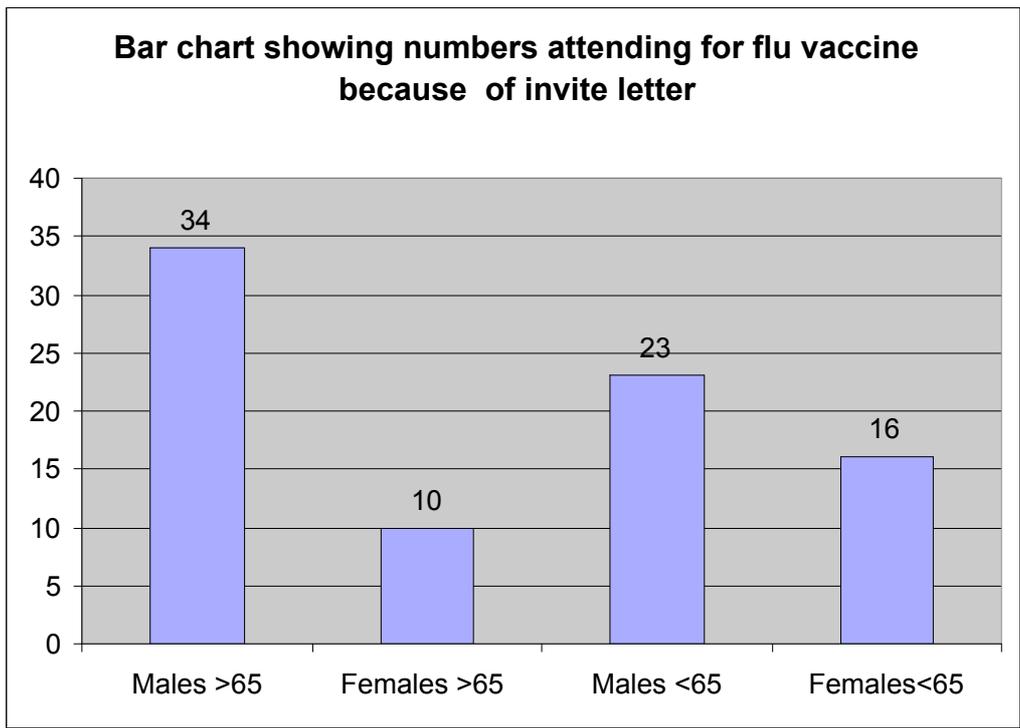
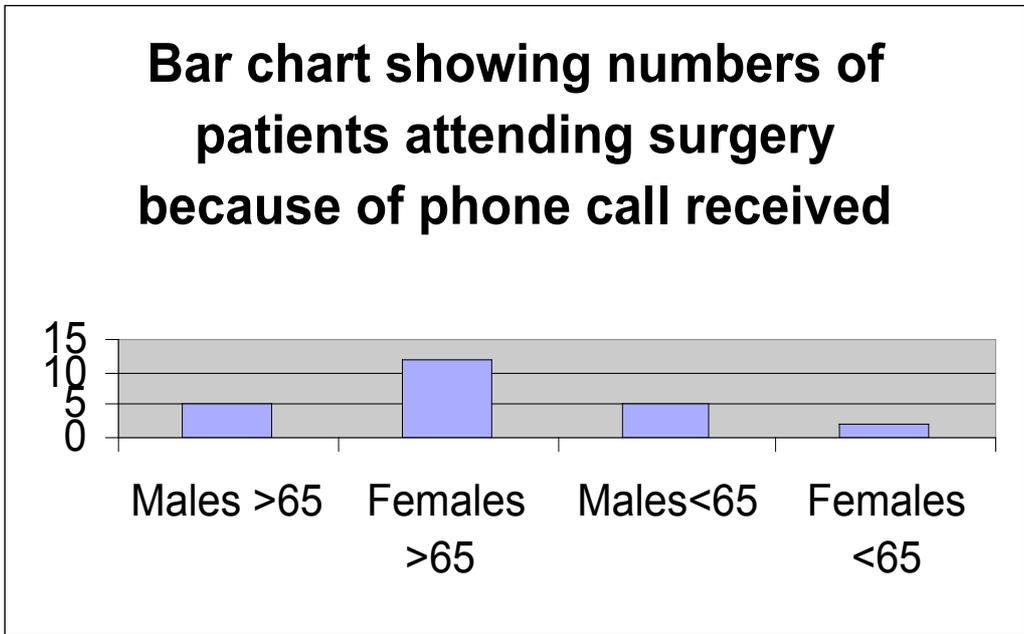


Table 8: Bar chart



Question 7 - What made you aware of flu vaccination? (see Table 9)

The following categories were listed:

Newspaper advert

Male 65 years or more = 8 Female 65 years or more = 5 A total of 13

Practice display

Male 65 years or more = 41 Female 65 years or more = 46 A total of 87

Reminder on repeat prescription

Male 65 years or more = 32 Female 65 years or more = 36. A total of 68

Information leaflet

Male 65 years or more =3 Female 65 years or more = 5. A total of 8

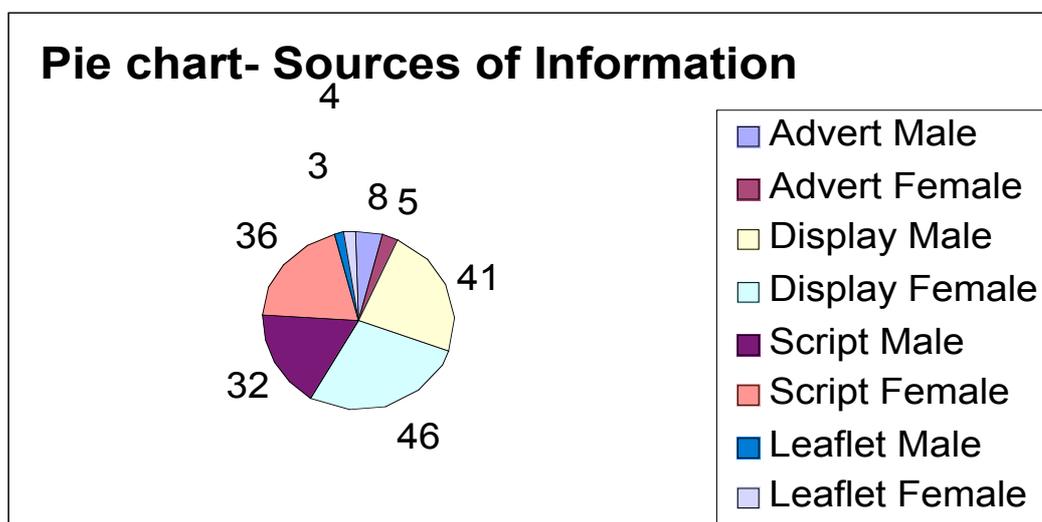
TV advert

Male 65 years or more =6 Female 65 years or more = 4 A total of 10

Radio = Nil

Other – practice staff >65 =15

Table 9: Pie chart



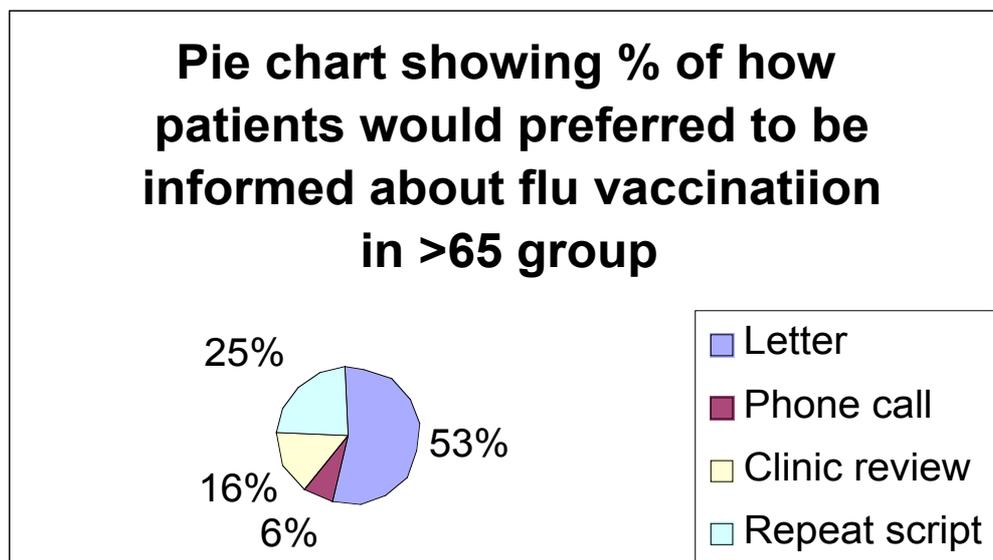
Triggers raising awareness of the need for influenza vaccine

Some respondents stated that the practice display raised their awareness of the need for influenza vaccination. This could be a false positive result as although displays are useful they would only be seen if patients or their relatives attended the surgery for some other reason and consequently displays are not the best method of informing patients although they can and do act as a useful reminder. The questionnaire was completed at the surgery where respondents could see the display and this may have strongly influenced them into believing that was how they were made aware.

Reminders on repeat prescriptions were the next influential trigger and do seem an efficient and cost effective way of highlighting to individuals that they are eligible for the influenza vaccine.

The DH spends considerable sums each year on TV advertisements and information leaflets highlighting the need for influenza vaccine so the numbers listing these sources as making them aware of influenza and the vaccine is disappointing and may not be representative of other areas or practices.

Table 10: Pie Chart



Question 8. In your opinion, how should the practice inform you about the flu vaccination? (see Table10)

This question required the respondent to rank in order of importance how they would like informing about the flu vaccination, this question lead to some confusion and if the questionnaire was repeated, this question would need to be simplified or rewritten. An example of how to rank in order of preference should have been given so that respondents have a clearer view of what is required of them. A small number of respondents correctly ranked them in order of importance and some only ranked the one most important .An assortment of other responses were written i.e. some respondents ticked all of the boxes available and some ticked only one box.

In order to get a broad picture of how people would like to be informed all those who ticked the box or ranked that category were counted.

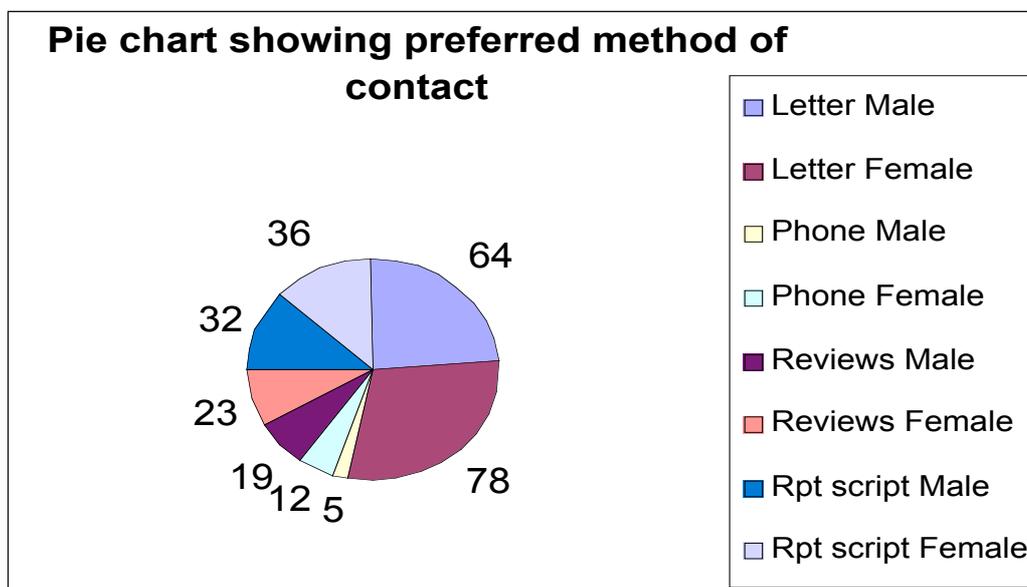
Letter Male 65 years or more = 64 Female 65 years or more = 78

Phone call Male 65 years or more = 5 Female 65 years or more =12

At clinic reviews Male 65 years or more =19 Female 65 years or more =23

On repeat prescriptions Male 65 years or more =32 Female 65 years or more =36

Table 11: Pie chart



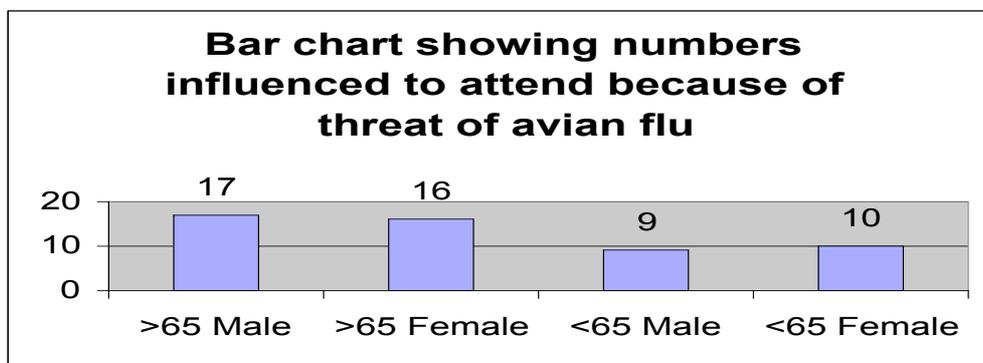
The questionnaire showed that patients preferred method of contact was via a letter followed by a reminder on repeat prescriptions and at reviews of treatment/condition. Telephone contact was the least popular method for contact.

Question 9 Did the threat of avian influenza have any influence on your decision to attend for flu vaccine? (see Table 12)

Yes Female under 65 years of age =10. Yes Male under 65 years of age = 9.

Yes Female 65 years or over =16. Yes Male 65 years or over = 17.

Table 12: Bar chart



The results to this question showed that some people had attended because of the risk of avian influenza but the numbers were less than was anticipated given the media interest in avian influenza. Anecdotal evidence from other practices in the town did indicate that there was an increase in numbers of people requesting influenza vaccine both in those aged 65 years and over eligible and for those under 65 years but who have existing chronic conditions. Many practices reported requests from people for the vaccine who did not have any risk factors or who were not eligible because of age. Once vulnerable and 'at risk' patients have been vaccinated some practices will give the vaccine to such people if any vaccine remains as vaccine that is not used would otherwise be discarded being only of use for that one year.

Inputting the data onto an access database and analysing the information obtained in the questionnaire has been time-consuming but has been very worthwhile, as a substantial amount of information has been gained. The questionnaire was useful in gaining insight into when patients last had influenza vaccine, whether there was any significant difference between the sexes and where information is obtained about influenza and the vaccine. When looking at how patients preferred to be contacted to attend for influenza vaccine, letter was the most popular method followed by reminders at review appointments and on repeat prescriptions. Least popular was phone calls.

Confounding issue

Avian influenza

During the latter part of 2005 the threat of avian influenza and the possibility of an influenza pandemic occurring were widely reported via the media. This may well have had some influence on an individual's decision to accept the vaccine when they may have previously refused even though it was correctly reported via the media that the vaccine was not effective against avian 'flu'.

The Practice questionnaire revealed that there were 33 people aged 65 years and over and 19 people who were under 65 years who completed the questionnaire who stated that the threat of avian influenza had influenced their decision to attend. How strongly people who attended the Practice for vaccination felt about avian influenza is not known and it would have been of value to know if these people would have attended for the vaccine if avian influenza had not been a factor in their decision making. This project may well be repeated in other low achieving practices and if the threat of avian influenza were still an issue this question would be explored in greater detail.

Identification of reasons for low uptake

The reasons for the Practice previous continuous low uptake of influenza vaccine were because of a number of different reasons.

The main problem identified was a lack of a structured programme which was corrected by the implementation of the stepwise process and poor documentation of records. Other issues included insufficient time, shortage of computers, lack of knowledge about influenza and the vaccine.

Programme structure

The lack of a structured programme to influenza vaccination meant that tasks were done on an ad hoc basis or omitted depending on the time available. Planning did not take place other than placing an order with the pharmaceutical company for the vaccine early in the year and identifying times when some dedicated influenza clinics could be held. The amount of vaccine ordered was not based on figures of patients eligible but rather one of a similar amount to that which had been ordered in the previous year. The practice manager works part-time and was not given sufficient support from the GP who had largely left the organising of the programme to that individual. The GP underestimated the amount of work and planning needed in order to meet influenza vaccination targets.

Documentation

Documentation of records was found to be poor with a reliance on paper records rather than electronic records. There was no efficient system for identifying those patients eligible under the programme criteria because of poor coding of individual patient records in regard to chronic conditions. Identification of patients meeting the DH criteria for influenza vaccination is relatively easy for those in the 65 year and over group as all are eligible. However the information held by the practice needs constantly updating as patients move house, change GP practice and die, this was not done. Identifying eligible patients less than 65 years is extremely difficult when the information is not 'READ' coded according to the specific chronic conditions such as diabetes, chronic heart disease, chronic lung disease etc. There are computer programmes available which enable complex searches on patient data to be done when all information held on the computer is correctly coded. To rectify this it was necessary for clinical practice staff to systematically go through all of the patients' paper records and identify all those with existing chronic conditions and correctly 'READ' code. The information is then given to the computer programmer so that this can be added to the electronic record for the patient. The process is very time consuming and is still ongoing but once done it will assist the Practice in correctly identifying all those eligible. All staff now sees the importance of assessing all patients at new patient medical 'READ' coding' those with chronic conditions and entering all data promptly onto the computer.

It was during the hand searching of paper records that a number of 'ghost' patients were found i.e. those patients no longer registered with the practice because of removal to another area or because they were

deceased. Removing these from the system reduced the size of the practice population but meant that when patients were contacted a response was more likely to occur. The number of people registered with the practice aged 65 years or over in 2004 was 513 compared with 435 in 2005. Some increase or decrease in the number of patients registered with a Practice is expected to change on a yearly basis but for a small single-handed GP practice the decrease noted was significant. The PCT do recommend that practices check that the information held on patients registered is correct and up to date but the project highlighted that for some practices this is not robust.

Time

Insufficient staff time was allotted to the programme by the GP. This could imply to staff that the value of the influenza programme was not significant therefore tasks associated with the programme were given low priority.

Computers

A shortage of computers available for staff use further complicated the reasons identified.

Training needs

A difference was found in the knowledge and skills of the staff employed at the surgery, particularly amongst reception staffs that are largely excluded from clinical training. The project highlighted the importance of including reception staff as they are often the first point of contact for patients and if reception staffs are poorly informed this could mean that patients are wrongly advised. Greater knowledge was needed amongst all sectors of staff about the severity of influenza as a disease and the safety and efficacy of the vaccine.

Conclusion.

The project has been successful in achieving the aim of increasing the percentage of people aged 65 years and over receiving the influenza vaccine within the identified Practice. The increase achieved was from 56.53% in 2004/05 (when 513 patients were registered of which 290 were vaccinated) to 77.20% in 2005/06 (435 patients registered of which 336 vaccinated) an overall gain of 35.71%. If the base population had not decreased but had remained the same as the previous year the percentage uptake achieved would have been 65.49%.

The results exceed those expected, as the aim of the project was to show a measured increase in the numbers of patients receiving the vaccine. This was above the Practice and the project managers' expectations and all staff involved in the project felt that their efforts had been worthwhile. Regular contact with the Practice has continued since the conclusion of

the project to continue to offer support and assistance when required. The stepwise process implemented has now become embedded into the influenza programme. A similar format for inviting patients to attend for vaccination will be undertaken in the 2006/07 influenza programme but in addition the Practice are in the process of looking at other innovative ways to encourage patients to attend and further improve their target uptake.

References

- Arthur AJ, Matthews RJ, Jagger C, Clarke M, Hipkin A, Bennison DP. (2002) *Improving uptake of influenza vaccination among older people: a randomised controlled trial*. British Journal of General Practice. 2002; 52, 717 – 721.
- Arthur AJ. (2001) *The effect of health assessments by practice nurses on uptake of influenza vaccination among older people in the UK*. Journal of Clinical Nursing. 2001; 10: 716-717.
- Baldwin R (1994) Training for the Management of Major Emergencies Education and Training Vol 39 No 9:p344-348.
- Bannister E (2005) Estimated Super profiles Source: Super profiles and Exeter Registration System via AIS. Estimated Ethnicity Source: Exeter Patient Registration System via AIS.
- Booth LV, Coppin R, Dupleavy J, Smith H. (2000) *Implementation of influenza immunisation policy in general practice: 1997-98*. Communicable Disease and Public Health. March 2000; 3; 1: 39-42.
- Breeze E, Mangtani P, Fletcher AE, Price GM, Kovats S, Roberts J (2004) *Trends in influenza vaccination uptake among people aged over 74 years, Survey of 73 general practices in Britain*. BMC Family Practice, 5, 2004.
- Burgoyne JG, (1994) Stakeholder analysis. In Cassell C, Symon G, ed. *Qualitative methods in organizational research: a practical guide*. Sage. New Delhi, India.
- Burns VE, Ring C, Carroll D (2005) Factors influencing influenza vaccination uptake in an elderly, community-based sample. Vaccine 23 (2005) 3604-3608. Available on www.elsevier.com/locate/vaccine
- Carnall CA, (2003) Managing Change in Organizations. 4th edition. Prentice Hall
- Centre for Disease Control and Prevention. (2000) Prevention and control of influenza: recommendations of the Advisory Committee on Immunisation Practices. MMWR **49(RR-3)**: 1-38.
- Checkland P, (1981) Systems Thinking, Systems Practice. New York. Wiley.
- Checkland P and Scholes J (1999) Soft Systems Methodology in Action. Chichester: Wiley.
- Chin, J (2000) Control of Communicable Diseases Manual. 17th Edition 2000
- Clayton AE, McNutt LA, Homestead HL (1999) *Public health in managed care: a randomised control trial of the effectiveness of postcard reminders*. American Journal of Public Health 1999; **89(8)**: 1235-1237.
- Collins Compact English Dictionary. 3rd ed. (1995) Harper Collins Publishers, Glasgow.
- Cornford PS, Morgan M (1999) *Elderly people's beliefs about influenza vaccination*. British Journal of General Practice, 1999, **49**, 281-84.
- Cowie G (2003) The importance of people skills for project managers. Industrial and Commercial Training: Vol. 35 No.6 p256-258.
- Cremin MC, (1992) *Feeling old versus being old: views of troubled ageing*. Social Science Medicine 1992; **34**. 1305-1315
- Crocetti, E, Arniani S, Bordini F, Maciocco G, Zappa M, Buiatti E (2001) *Effectiveness of influenza vaccination in the elderly in Italy*. European Journal of Epidemiology **17** (2): 163-8.

Crofts J, Goddard N, Joseph C (2002) Influenza surveillance in the United Kingdom: October 2001-May 2002. (http://www.hpa.org.uk/infections/topics_az?influenza/activity0203/text/flu2002pdf. Accessed 31/3/06

Curnock E, Wynne HA. (2000) *Older people's views on the treatment and prevention of influenza in older people*. Age and Aging. May 2000; (3) 211-213.

Daily Mail available on www.dailymail.co.uk

Davidhizar R, Eshleman J, Moody M (2002) Health Promotion for ageing adults. *Geriatric Nurse* **23**(1): p28-35.

Davison C, Davey Smith G, Frankel S. (1991) *Lay epidemiology and prevention paradox: the implications of coronary candidacy for health education*. *Sociology of Health and Illness*, **1**, 1-17.

Dawson SJND, (1996) Analysing Organisations. Hampshire: Macmillan.

Department of Health (2005a) *Pandemic flu – important information for you and your family*. HMSO: London.

Department of Health (2005b) The Influenza Immunisation Programme PL/CMO/2005/2, PL/CNO/2005/2, PL/CPHO/2005/2 London.

Department of Health (2002) *Getting ahead of the curve: a strategy for combating infectious diseases*. HMSO: London.

Department of Health (2001) *National Service Framework for Older People*. DH, London.

Department of Health (2000a) *Influenza immunisation*. PL/CMO/2000/3. Department of Health: London.

Department of Health (2000b) *The NHS Plan: A plan for investment, A plan for reform*. DH, London.

Department of Health (1998) *A First Class Service: quality in the new NHS*. The Stationery Office, London.

Department of Health (1997) *The New NHS: Modern, Dependable*. DH. 1997, London.

De Vries, K. and Miller, D. (1984) The Neurotic Organization, New York: Jossey-Bass.

Donaldson L (2000) *Clinical Medical Officer's Update* 1-2, 2000, 26.

Doran T, McCann R. *Obstacles to influenza immunisation in general practice*. Journal of Public Health Medicine, 2001; **23**; 4: 329-334.

Eccles M, Freemantle N, Mason J, *North of England evidence based guidelines development project: methods of developing guidelines for efficient drug use in primary care*. British Medical Journal. 1998; **316**: 1232-1235

Edwards KM, Dupont WD, Westrich MK, Plummer WD, Palmer PS, Wright PF (1994) A randomised control trial of cold-adapted and inactivated vaccines for the prevention of influenza A disease. Journal of Infectious Disease 1994; **169**: 68-76.

Elder AG, O'Donnell b, McCrudden B, Symington IS, Carman WF. (1996) Incidence and recall of influenza in a cohort of Glasgow healthcare workers during the 1993-4 epidemic: results of serum testing and questionnaire. British Medical Journal **313**: 1241-2.

EPA (2003) Project design. Environmental Protection Agency. New South Wales Government Australia.
www.epa.nsw.gov.au/community/edproject accessed February 2006.

Evans M, Watson PA. (2003) *Why do older people not get immunised against influenza? A community survey.* Vaccine. 2003; **21**: (19-20) 2421-2427.

Findley PF, Gibbons YM, Primrose WR, Ellis G, Downie G. (2000) Influenza and pneumococcal vaccination: patient perceptions. Postgraduate Medical Journal, **766**. 2000; 76: 215-217.

Fleming DM, (2000) The contribution of influenza to combined acute respiratory infections, hospital admissions, and death in winter. Communicable Disease and Public Health, **3**, 32-38.

Forbes A, Berry J, While A, Hitman G, Sinclair A (2002) Issues and methodological challenges in developing and evaluating health care interventions for older people with diabetes mellitus, part 1. Pract. Diabet Int **19** (2): 55-9.

Furey A, Robinson E, Young Y. (2001) *Improving influenza immunisation coverage in 2000-2001: a baseline survey, review of the evidence and sharing best practice.* Communicable Disease and Public Health, 2001; 4; 3: 183-187.

Gosney M. (2000) Factors affecting influenza vaccination rates in older people admitted to hospital with acute medical problems. Journal of Advanced Nursing. 2000; **32** (4), 892-897.

Govaert TM, Dinant GJ, Aretz K, Knottnerus JA. (1998) *The predictive value of influenza symptomology in elderly people.* Family Practice **15**(1): 16-22.

Govaert TME, Thijs CTMCN, Mausurel N, Sprenger MJW, Dinant GJ, Knottnerus JA. (1994) *The efficacy of influenza vaccination in the elderly individuals: a randomised double-blind placebo-controlled trial.* JAMA 1994; **272**: 1661-1665.

Greater Manchester Workforce Confederation (2003) Information Pack for Project Managers. Greater Manchester Workforce confederation. Accessed February 2006. <http://www.gmwfconfed.org.uk/core/developments/modernisation/index.htm>

Greenhalgh, T (2001) *How to read a Paper. The basics of evidence based medicine*. 2nd Edition. BMJ Books

Grimble R, Wellard K, (1996) Stakeholder methodologies in natural resource management: a review of principles, contexts, experiences and opportunities. OAD. London.

Gross PA, Hermogenes AW, Sacks HS, Lau J, Levandoeski RA. (1995) The efficacy of influenza vaccine in elderly persons: a meta-analysis and review of the literature. Annals of Internal Medicine **123**: 518-27.

Gupta A, Makinde K, Morris G, Thomas P, Mujtaba H. (2000) *Influenza immunisation coverage in older hospitalised patients during winter 1998-99 in Carmarthenshire, UK.* Age and Aging. May 2000; 29; 3: 211-213.

Health Protection Agency (2003) Seasonal diseases winter infection – winter 2003-2004.
(http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/influenza_0304.htm)
Accessed 10 Jan. 06

Hackett M, Lilford R, Jordan J (1999) Clinical Governance: Culture, Leadership and Power the key to changing attitudes and behaviour in Trusts. International Journal of Healthcare Assurance. Vol. 12 No. 3 p98-104.

Handy C, (1993) Understanding Organisations. Fourth Edition. Penguin.

Healthcare Commission. Performance Ratings. 2004. www.healthcarecommission.org.uk.

Honey P and Mumford A (1992) The Manual of Learning Opportunities. Peter Honey, Ardingly House, 10 Linden Ave, Maidenhead.

Honey P and Mumford A (1986) Using Your Learning Styles. 2nd ed. Peter Honey, Ardingly House, 10 Linden Ave, Maidenhead.

Honkanen PO, Keistinen T, Kivela SI. (1996) *Factors associated with influenza vaccination coverage among the elderly: role of healthcare personnel*. Public Health; 1996; **110**: 163 – 168.

Hull S, Hagdrup N, Griffiths C, Hart B. Griffiths C, Hennessy E. (2002) *Boosting uptake of influenza immunisation: a randomised controlled trial of telephone appointing in general practice*. British Journal of General Practice, 2002; **52**, 712-16.

Humair J, Buchs C, Stalder H (2002) Promoting influenza vaccination of elderly patient in primary care. Family Practice **19**(4): p383-9.

Iles V, Sutherland K, (2001) Managing Change in the NHS. Organisational Change, a review for health care managers, professionals and researchers. NCCSDO. London.

Joint Committee on Vaccination and Immunisation (2005) Influenza subgroup meeting on the 13th April 2004. Minutes. (<http://www.advisorybodies.doh.gov.uk/jvvi/mins-flu-130405.htm>. Accessed 9 Aug 2005).

Joseph C (2004) Implementing the national influenza vaccine uptake monitoring programme, England. British Journal of Infection Control Vol. 5 No 6 p31-32.

Joseph C, Goddard N (2003) Influenza uptake in the elderly: results from a rapid assessment of the effectiveness of new government policy in England for the winters 2000/2001 and 2001/2002. Vaccine 2003; 21 (11-12) 1137-48.

Kirkpatrick D, (1985) How to Manage Change Effectively, New York: Jossey-Bass.

Kolb DA (1976) Learning Style Inventory technical Manual, McBerre Company. Boston MA.

Lamb MC, Cox MAA, (1999) Implementing change in the National Health Service. Journal of Management in Medicine. Vol. 13. No5 1999 p288-297.

Lewin K, (1951) Field Theory in Social Science. New York: Harper Row.

Lewis-Paramar H, McCann R. (2002) *Achieving national influenza vaccine targets – an investigation of the factors affecting influenza vaccine uptake in older people and people with diabetes*. Communicable Disease and Public Health. June 2002; (5); 2: 119-126.

Lorant V, Boland B, Humblet P, Deliege D (2002) Equity in prevention and health care. Journal of Epidemiology of Community Health, **56** (7): 510-6.

Magtani P, Roberts J. (2000) Influenza vaccination: Shot down Health Service Journal, November 2000; 26-29.

Manchester Metro News 21/10/05 Flu Queue.

Marshall S, Swerissen H. (1999) A qualitative analysis of parental decision making for childhood immunisation. Australia and New Zealand Journal of Public Health, **23**, 543-45.

McCaul K, Johnson R, Rothman A (2002) The effects of framing and action instructions on whether older adults obtain flu shots. Health Psychology **21**(6): 624-8.

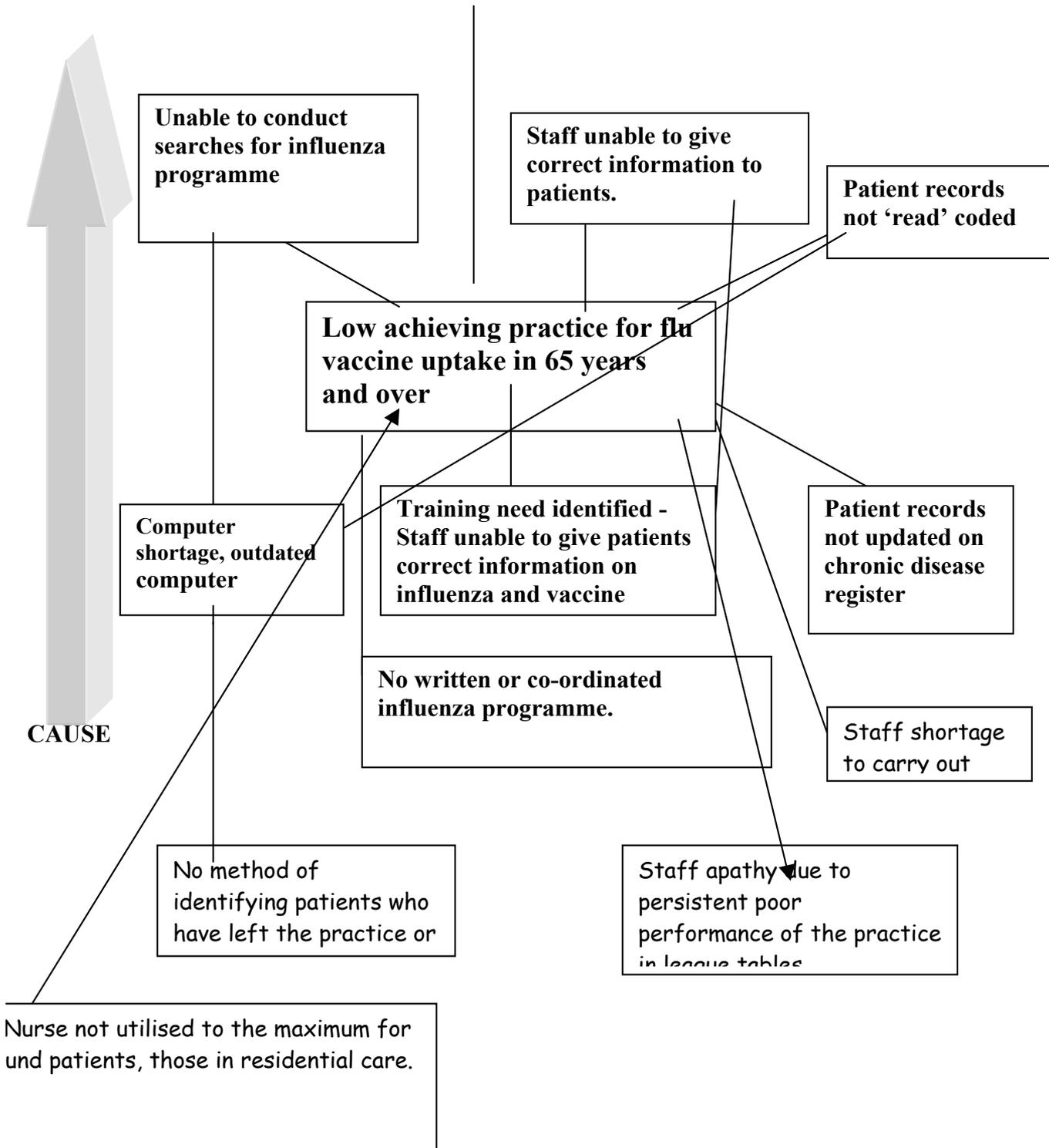
- McMurdo ME (2000) *A healthy old age: realistic or futile goal?* British Medical Journal **321** (7269): 1149-51.
- Naidoo J, Wills J. (2000) *Health promotion: foundations for practice (second edition)*. Balliere Tindall: London.
- National Health Service (2000) International Statistical Classification of Disease and Related Health Problems. 10th Revision (ICD-10) www.connectingforhealth.nhs.uk/clinicalcoding/classifications/icd_10 accessed 25th April 2006.
- National Institute of Allergy and Infectious Diseases (2004) Flu. National Institutes of Health, Baltimore, MD. www.niaid.nih.gov/factsheets/flu.htm (accessed 10th October 2005).
- National Institute for Clinical Excellence. *Guideline Development Methods*. NICE. www.nice.org.uk.
- Nexoe J, Kragstrup J, Sogaard J, (1999) Decision on influenza vaccination among the elderly. *A questionnaire study based on the Health Belief Model and the Multidimensional Locus of Control Theory*. Scandinavian Journal of Primary Health Care. 1999; 17: 105-110.
- Nichol KL, Mendelman PM, Mallon KP (1999) *Effectiveness of live, attenuated intranasal influenza virus vaccine in healthy, working adults: a randomised controlled trial*. JAMA **282** (2): 137- 44.
- Nichol KL, Margolis KL, Wuorenma J, Sternberg Tv. (1994) The efficacy and cost effectiveness of vaccination against influenza among elderly persons living in the community. New England Journal of Medicine 1994; 331; 778-84.
- Nicholson KG, Kent J, Hammersley V, Cancioi E (1997) Acute viral infection of upper respiratory tract in elderly people living in the community: comparative prospective, population based study of disease burden. British Medical Journal. **315**: 1060-4.
- Nicholson KG, Wood JM, Zambon M, (2003) Influenza. Lancet Vol. **362** 1733 - 45.
- Niroshan Siriwardena A, Rashod A, Johnson M, Dewey ME. (2003) *Improving influenza and pneumococcal vaccination uptake in high-risk groups in Lincolnshire: a quality improvement report from a large rural county*. Quality in Primary Care, 2003; 11: 19-28.
- Niroshan Siriwardena A, Rashod A, Johnson M, Dewey ME. (2002) Cluster randomised controlled trial of an educational outreach visit to improve influenza and pneumococcal immunisation rates in primary care. British Journal of General Practice, 2002; 52, 735 – 740.
- Nguyen-Van-Tam JS (1998) Epidemiology of influenza. In: Nicholson KG, Webster RG, Hay AJ (editors). *Textbook of influenza*. Oxford: Blackwell, 1998.
- Nguyen-Van-Tam JS, Nicholson KG, *Influenza immunisation; vaccine offer, request and uptake in high-risk patients during the 191/2 season*. Epidemiology of Infection 1993; **111**: (2) 347-55.
- Orlikowski W, (1996) Improvising organisational transformation over time: a situated change perspective. Information Systems Research 7(1): 63-92.
- Pill R, Scott NCH. (1985) Choice or Chance: further evidence on ideas of illness and responsibility for health. Social Science and Medicine, **20**, 981-91.
- Pregliasco F, Sodano L, Mensi C, Selvaggi MT, Adamo B, D'Argenio P, Guissani F, Simonetti A, Carosella MR, Simeone R, Dentizi C, Montanaro C, Ponzio G. (1999) Influenza vaccination among the elderly in Italy. Bulletin of the WHO, **77**, 127-31.

- Purssell E (2003) Treating and preventing influenza: epidemiology and vaccination. *Nurse Prescribing* **1**(4): 165-9.
- Ramirez R, (1999) Concept: society, Chapter 5, Stakeholder analysis and conflict management. In Buckles, D. ed. *Cultivating Peace, conflict and collaboration in natural resource management*. 1999 IDRC/World Bank Canada.
- Rivetti D, Demicheli V, Di Pietrantonj C, Jefferson TO, Thomas R. *Vaccines for preventing influenza in the elderly*. (Protocol) *The Cochrane Database of Systematic Reviews* 2005, Issue ` . Art. No: CD004876. DOI: 10.1002/14651858: CD004876.
- Rogers A, Pilgrim D. (1995) The risk of resistance: perspectives of mass childhood immunisation programme. In Gabe J, (ed.), *Sociology of Health and Illness Monograph Series. Health, Medicine and Risk: Sociological Approach*. Blackwell, Oxford, 84-96.
- Rosenau MD, Jr. (1992) Successful Project Management. A Step-by-Step Approach with Practical Examples. New York: Van Nostrand Reinhold.
- Rosenstock IM, (1974) The Health Belief Model and preventative health behaviour. In: Becker MH editor. *The Health Belief Model and personal health behaviour*. Thorofare, New Jersey: Charles B Slack Inc. 1974: 27-59.
- Sackett DG, Richardson WS, Rosenburg W, Haynes RB, (1997) Evidence –based Medicine. How to Practice and Teach Evidence-based Medicine. London: Churchill Livingstone.
- Stockport Influenza Report (2004/05) Stockport PCT.
- Telford R, Rogers A. (2003) What influences elderly peoples' decisions about whether to accept the influenza vaccination? A qualitative study. *Health Education Research*; 2003; Vol.18, (6): 743-53. Oxford University Press.
- Valley J, Blue CL. (2002) Influenza: overview and recommendations for control. *Topics in Advanced Practice Nursing ejournal* **2**(1): see: www.medscape.com/viewarticle/421478 [print](#) (accessed 11/12/05).
- Van Essen GA, Kuyvenhoven MM, De Melker RA. (1997) Why do healthy elderly people fail to comply with influenza vaccination? *Age and Ageing*, **26**, 275-79.
- Watkins J. (1997) Effectiveness of influenza vaccination policy at targeting patients at high risk of complications during winter 1994-5; cross sectional survey. *British Medical Journal*; 315: 1069-1070.
- Whiting P, Joseph CA, Zambon M et al. *Influenza activity in England and Wales: October 1998 to June 1999*. *Communicable Disease and Public Health* 1999; **2**: 273-79.
- Willis E (1998) Influenza vaccination policy and high-risk subjects. *British Medical Journal*. 1998; 317: 349.
- Wilson HC (2000) Emergency response preparedness: small group trainings. Part 1 training and learning styles. *Disaster prevention and Management*. Vol. 9 No2 p105-116.
- Wiselka M, (1994) Influenza: diagnosis, management and prophylaxis. *British Medical Journal* **308**: 1341-5.
- World Health Organization. (2002) Influenza Vaccines: World Health Organization position paper. *Weekly Epidemiological Record* **28**(77): 229-40.
- World Health Organization (2004) The history of vaccination. See: www.who.int/vaccines-diseases/history/history.shtml (accessed 9/2/06).

Zimmerman R, Santibanex T, Jonosky J, (2003 what effects influenza vaccination rates among older patients? An analysis from inner-city, surbuban, rural and veterans affairs practices. American Journal of Medicine. **114**(1): p31-8.

Appendix 1- Problem Tree

EFFECT



Appendix 5 – Patient questionnaire **Influenza Vaccination Questionnaire**

As a Practice we are trying to find which are the best methods of informing patients about who should have the influenza vaccine and the most effective method of prompting patients to come and have the flu vaccine.

As you have come for a flu injection this year we would be very grateful if you could answer the following questions and tick the box that applies to you. For some of the questions you may want to tick more than one box.

1. Are you age 65 years or over? Yes No
2. Are you under 65 years of age but have a chronic health condition? Yes No
3. What sex are you? Male Female
4. Is this the first time you have had the influenza vaccine? Yes No
(Go to question 6) (Go to question 5)

5. When did you last have the flu vaccine?
(Please tick the appropriate box)

Last Year More than 1 year ago but less than 5 ye More than 5 years ago but less th 10 years

6. Why have you come for your flu vaccination?

A. Letter from Practice

B. Phone Call from Practice

I am 65 this year

I am 65 this year

I have a health condition requiring flu vaccination

I have a health condition requiring flu vaccination

I have previously missed having a Flu vaccination
If so, why?.....

I have previously missed havin
Flu vaccination
If so, why?.....

Other (Please state).....

7. What made you aware of the flu vaccination?

Newspaper Advert Practice Display On repeat prescr ons

Information leaflet TV advert Radio
If so which?.....

Magazine advert/article Other (please state).....

8. In you opinion, how should your practice inform you about the flu vaccination?
(Please rank in order of importance i.e. 1 most important 4 least important)

Letter Phone Call At clinic reviews On repeat prescr ons

9. Has the threat or fear of avian flu (bird flu) had any effect on your decision to have the flu vaccine?

Yes No

Thank you for your time.

Journal Article for submission to British Journal of Infection Control

Project based approach to increasing uptake of influenza vaccine in an Underachieving GP practice.

Key Words:

Influenza, vaccination, uptake, health promotion, health professional, older people, project.

Abstract:

Influenza is a major cause of morbidity and mortality (Nicholson et al 1997). In the United Kingdom (UK), the policy of encouraging influenza vaccine uptake in the elderly is a central tenet of managing winter pressures in the National Health Service (NHS) and preventing ill health amongst older people in the community. A project based management approach was used to evaluate the current organisational practice within a single-handed General Practitioner (GP) practice. The project highlighted a number of problems such as a poor structured programme, insufficient knowledge about the severity of influenza or the efficacy of the vaccine, insufficient computer technology. A stepwise process was implemented and a number of evidence based interventions with the aim of increasing the uptake of influenza vaccine in the target population. The overall aim of the project was to show a measured practice increase in the number of older people defined as 65 years and over taking up influenza vaccine within one influenza campaign. An increase of 35.71% was achieved. The findings of this project have the potential to inform and enhance the design and implementation of the influenza programme in other practices that are experiencing difficulties in reaching the Department of Health (DH) target.

Introduction

Influenza causes an acute respiratory illness, which affects all age groups. Older people and those with chronic disease are most at risk of complications, including increased mortality (Wiselka 1994, DoH 1996). Influenza immunisation is an effective intervention that reduces severity of disease, hospitalisation for pneumonia, and death from both respiratory and all other causes among the elderly (Ahmed et al 1995, Nicholson 1990).

The aim of the influenza vaccination programme worldwide and nationally is to reduce morbidity and mortality from influenza although it is difficult to give an accurate picture of morbidity and mortality outcomes for influenza because many people with influenza do not access medical services and/or laboratory testing is not always carried out. Influenza may also be under-reported in death certificates, death being attributed to exacerbation of existing chronic conditions. Nguyen-Van-Tam (1998) estimated that there are in excess of 12,000 deaths a year due to influenza in the UK.

The aim of vaccination is eradication, elimination or containment. Influenza cannot be eradicated or eliminated due to the virus's ability to make a dramatic change (i.e. 'shift'). Annual vaccination is the best means of prevention reducing the risk of hospital admission and death. Evidence to support vaccination is provided amongst others by Edwards *et al* (1994)

and Gross *et al* (1995) whose studies showed that the protective efficacy of the vaccine is such that it significantly reduces morbidity and mortality.

The influenza programme in the UK differs in many aspects of scope, complexity and organisation when compared with other immunisation programmes. In the first instance unlike universal policies based on age, the influenza immunisation programme requires general practices and health services to identify and deliver the vaccine only to those patients for whom it is recommended. Secondly, the vaccine has to be administered every year to the same patients because it is reformulated annually to take account of the antigenic changes in the influenza virus strains that circulate each year. Thirdly, rapid assessments of vaccine uptake are required during the winter months, in order to target and promote additional uptake elsewhere (Joseph 2004)

In May 2000, the Chief Medical Officer (CMO) recommended that all individuals 65 years and over in the UK should be targeted for influenza vaccination, with a target to meet of 60% in the first year and 70% thereafter (Donaldson 2000). In line with this recommendation, free vaccinations were provided and national campaigns were conducted to encourage this sector of the community to be vaccinated. The DH set targets for GP practices to meet in recognition that influenza is an important health problem in the industrialised world and is associated with increased general practice consultation rates, hospital admissions and excess deaths (Fleming 2000).

The current Influenza Programme (DH/PL/CMO/2005/2) offers selective vaccination to the target population, which comprises of all those aged 65 years and over, in addition, adults and children over 6 months of age in 'high-risk' groups. The DH (2000) has set a target of 70% vaccine uptake for people aged 65 years and over and meeting the target is a priority for PCT's both from a public health aspect in improving quality of life and sense of well being in individuals and because it is a key indicator under the Performance and Planning Framework, resulting in PCT 'star ratings' (Healthcare Commission 2004)

Influenza vaccination uptake among target groups appears to be steadily increasing, influenced perhaps by Government targets. Average uptake in previous campaigns has gradually increased: 68% in 2001/2, 69% in the 2002/03 season (HPA, 2003) and 71.5% in the 2004/05 (Joint Committee on Vaccination and Immunisation, 2005). In spite of this there are still practices that are unable to meet the targets and the project focussed on facilitating one such practice to identify what if anything is hindering the practice and whether anything can be done to improve the current uptake rates.

Background information

The town of Stockport has one Primary Care Trust (PCT) and according to the 2001 census has a population of 284,528 people. The PCT currently has 55 GP practices. In 2004 the PCT had 57 practices of which 52 met or exceeded the DH target recommendations for influenza vaccine. 4 practices were just under the DH

recommendations and 1 practice was significantly below at 56.53%, hence the reason the Practice was identified for the project.

Project aim

The project aim was to find if there were any reasons for the low uptake of vaccine in the practice, to facilitate the practice to improve performance and to implement evidence based interventions that have been proven to increase uptake of influenza vaccine. The overall aim was to show a measured increase in the vaccine uptake rate amongst those aged 65 years and over within a target period i.e. one influenza campaign. It was thought to be unrealistic to achieve the DH target of 70% in one influenza campaign and with staff morale in mind a measured increase was a more realistic aim.

Methodology

The target population was identified as the staff of the Practice and the patients aged 65 years and over. The objectives of the project were to gain knowledge and understanding of the current situation, to identify the reason/s for the low uptake, to raise awareness of the morbidity and mortality of influenza and to help achieve best clinical practice for those who are most susceptible to influenza. Although the project concentrated mainly on those patients who are aged 65 years and over consideration was given to those patients who were less than 65 years but who were eligible for the vaccine because of chronic health conditions. Attempts were made to assist the Practice in increasing both sectors of patients but because of the difficulties encountered in 'READ' coding and chronic conditions this work is ongoing. A combined quantitative-qualitative questionnaire was used to evaluate the Practice influenza service. A multi-choice questionnaire was used to evaluate staff knowledge on influenza and the vaccine.

Initial meeting

An initial meeting with the Practice established that staff had a willingness to improve uptake but needed a project leader to assist the process. As a health protection nurse who is heavily involved in the organisation of the towns' influenza campaign I agreed to facilitate. A subsequent meeting took place with all staff to identify key stakeholders and the extent of their power and relationship to the project. The stakeholders could then be invited to any subsequent meetings and non-attendees kept abreast of the issues by sending them minutes of meetings. It was considered important to keep stakeholders informed so that if assistance was needed in the form of resources the stakeholder understood the importance of their response to the project.

As a result of the meetings the factors that contributed to the low uptake of influenza vaccine was a lack of structure to the programme, insufficient out-of-date computers, poor documentation of records with a reliance on paper records rather than electronic records, patients with chronic conditions were not 'READ' coded (NHS 2000) leading to difficulties in identifying those who have 'at risk' conditions. Training needs for staff, particularly the reception/clerical staff so that they understood the importance of the programme and were fully aware of the severity of influenza as a disease and the

safety and efficacy of the vaccine. Information technology training to accurately input data and perform complex searches to identify all those eligible for the vaccine.

A project-based approach and the implementation of an adapted influenza audit devised by a pharmaceutical company into a stepwise process has been used together with evidence based research interventions that have been shown to be useful as a 'trigger' in increasing uptake of influenza vaccination.

Organisational structure

The introduction of the stepwise process gave organisational structure to the programme with a logical process of steps to be taken. This included identification of patients eligible for the vaccine, ordering sufficient vaccine to meet the defined target of 70%, sending letters of invitation to attend the surgery, identifying clinic times available. Staff members were asked to volunteer for designated tasks with a time frame for completion. These tasks were their responsibility creating ownership of the project, which is important if it is to become embedded into mainstream care.

Training

Training was arranged for all staff and delivered by the project manager as a trainer for immunisation. A numbered but anonymous pre-training questionnaire assisted in identifying the gaps in staff knowledge and a training package was devised and delivered to address these gaps. A post-training questionnaire (same questionnaire numbered so that like could be compared with like) showed that following the training there were no gaps in staff knowledge. Although immunisation training for all clinical staff is addressed through the PCT it has been recognised that clerical and reception staff are not included in this. Reception staffs are often the first point of contact with members of the public and opinions may be sought on whether to have the influenza vaccine. If all members of staff have the correct knowledge it can assist in addressing popular myths and misconceptions about influenza and the vaccine, namely not susceptible to influenza, the vaccine gives you influenza and has side effects.

Computers

Approaches were made by the Practice to the PCT for assistance with the purchase of new computers and the bid was successful.

The practice GP paid and arranged for a computer programmer to come to the surgery and work with practice staff in identifying and 'READ' coding patients with 'at risk' conditions. This has been very time consuming as is still ongoing but strides have been made and the practice should be in a position for the next campaign to correctly identify all those 'at risk'.

It was during the hand searching of records that a number of 'ghost' patients i.e. those patients no longer with the practice were identified. Removing these from the system reduced the practice population but meant that when patients were contacted a response was more likely to occur. The number of people registered with the practice aged 65 years and over

in 2004 was 513 compared with 435 in 2005. Some of this can be attributed to people moving from the practice or who have since died but these 'ghost' patients meant that targets were unattainable as these people were no longer contactable.

Literature review

A literature review undertaken by the project manager identified that interventions successful in raising the uptake of influenza vaccine included inviting patients by printing reminders on repeat prescriptions, offering walk in clinics, personalised letters (Furey *et al* 2001). Personalised letters were sent to all eligible patients together with an information leaflet as Burns *et al* (2005) found that this further increased uptake. Patients who had never previously attended for influenza vaccine were sent a letter signed by the GP advising them that this was in their best interests as research by Honkanen, Keistinen and Kivela (1996) showed that information from a health professional does encourage older people to have the vaccine. The biggest predictor of accepting the influenza vaccine was contact with a doctor or nurse (Robinson 1999, Duclos and Hatcher 1993) and so opportunistic vaccine was offered at review appointments, health checks and surgery visits. Clinics were arranged with pre-arranged appointments and 'open' walk-in clinics. Forbes *et al* (2002) found that older adults may consider themselves housebound for a number of reasons including physical disabilities, immobility, restricted transport availability and social issues such as crime. The alternative to clinics is to take the vaccine to the person in the home as research by Dixon-Woods *et al* (2004) found a small (though small statistically significant) increase in the uptake associated with being offered the vaccine at home as part of a routine health check.

The genuine inability of some older people to attend vaccination clinics poses significant barriers to vaccination uptake rates and to mitigate this arrangement was made with the district nursing service for them to vaccinate any housebound person whom they were visiting and who wanted the vaccine. The Practice produced a list of all housebound patients registered and all those who were residents of a residential care home and following liaison with the district nurse team and the senior nurse manager arrangements were made for the team to vaccinate all those who were agreeable to having the vaccine.

Immunisation and vaccination training is offered on a yearly basis to staff in nursing homes so that they can vaccinate their residents. The practice nurse arranged a supply of vaccine to be delivered to the home and the staff administered the vaccine. The vaccine can only be administered with the consent of the patient or in an incapable patient's best interests in which case it is the GP who makes the decision.

Patients living in their own home who did not attend in a month of receiving the invitation letter were contacted by phone and reminded of the need for the vaccine. Enquiries were made to see if transport was a problem in which case volunteer drivers from a voluntary scheme were made available and the person was offered an appointment.

Service Evaluation

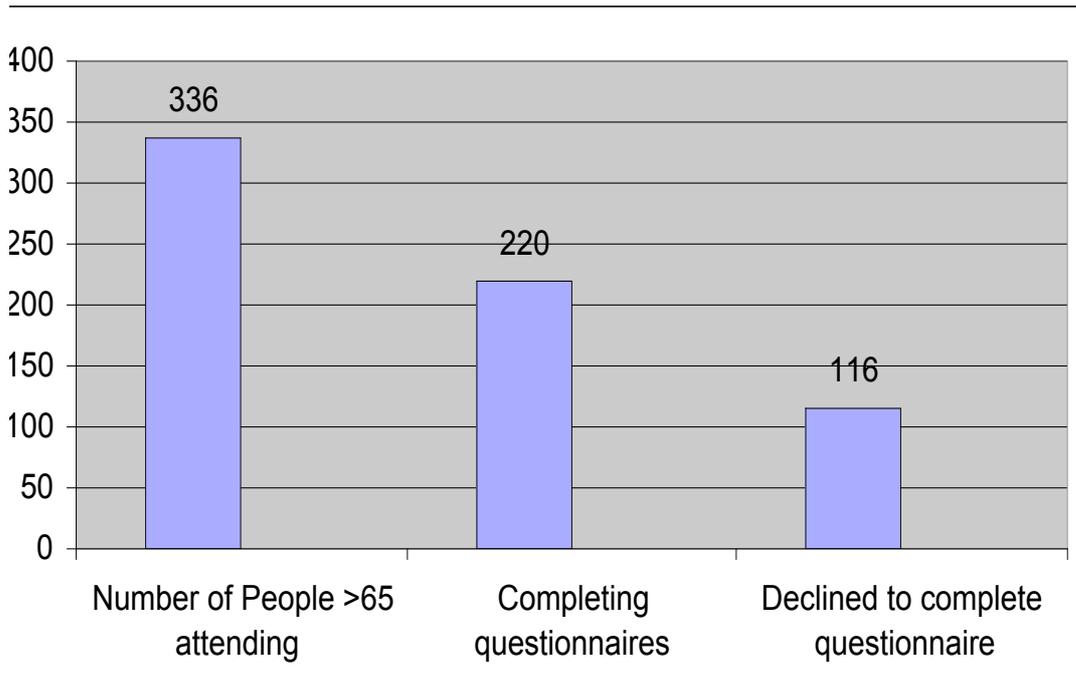
A questionnaire was devised and offered to all patients attending the Practice for influenza vaccine in order to gain some insight into patient behaviour such as what had prompted them to attend for the vaccine this year, sources of information, how they would like informing about the vaccine and preferred method of contact.

Consideration was given to the current threat of an avian influenza pandemic as this was featured prominently in the media and respondents were asked if the threat of avian influenza had influenced their decision to attend.

Results and discussion

The data obtained from the questionnaire was put onto an access database and analysed using access queries. 336 patients 65 years or over had the vaccine. 220 of those attending completed the questionnaire. 116 declined to complete.

Table 1 Bar chart showing numbers of people >65 attending the surgery



The following pie chart shows where patients got their sources of information about the vaccine. The Practice display was where most people got their information from however this could only be seen if people had visited the surgery. This may be a confounding factor as the majority of people completing the questionnaire did so in the Practice waiting room where

the influenza display was a prominent feature and respondents stated an obvious source. Information printed on repeat prescriptions was the next highest source followed by information leaflets.

Table 2 – Pie chart

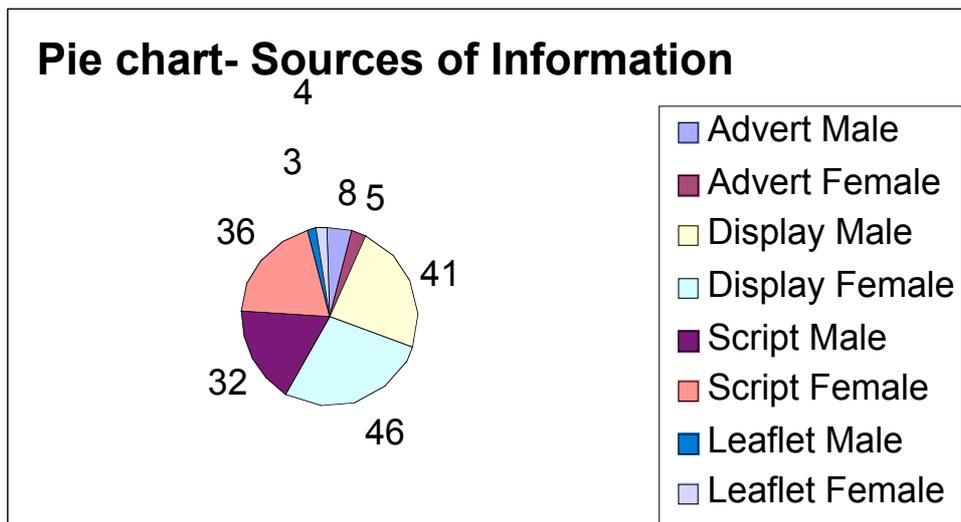
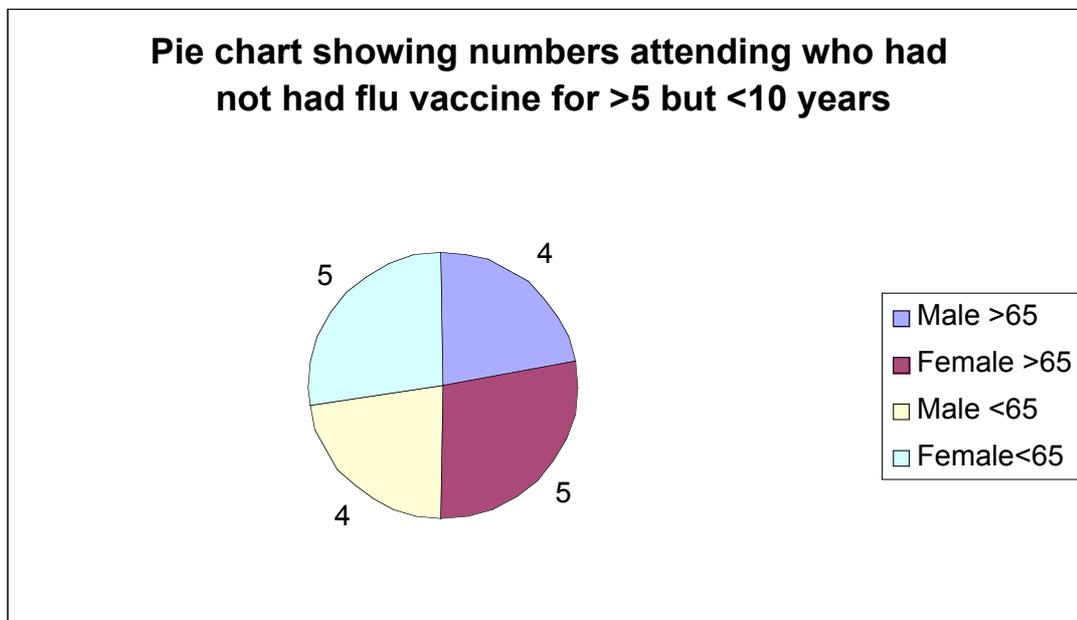


Table 3 – Pie chart



Although the numbers shown in the above pie chart are small, getting people to attend for the vaccine when they had previously not attended for more than five years but less than ten years is a significant achievement.

The following bar chart shows that 34 males and 10 females, a total of 44 patients attended the surgery because of the invite letter received. Whether these patients would have attended without the invite letter is not known. 23 males and 16 females, a total of 39 patients less than 65 years attended because of invite letter

Table 4: Bar chart showing attendance because of invite letter.

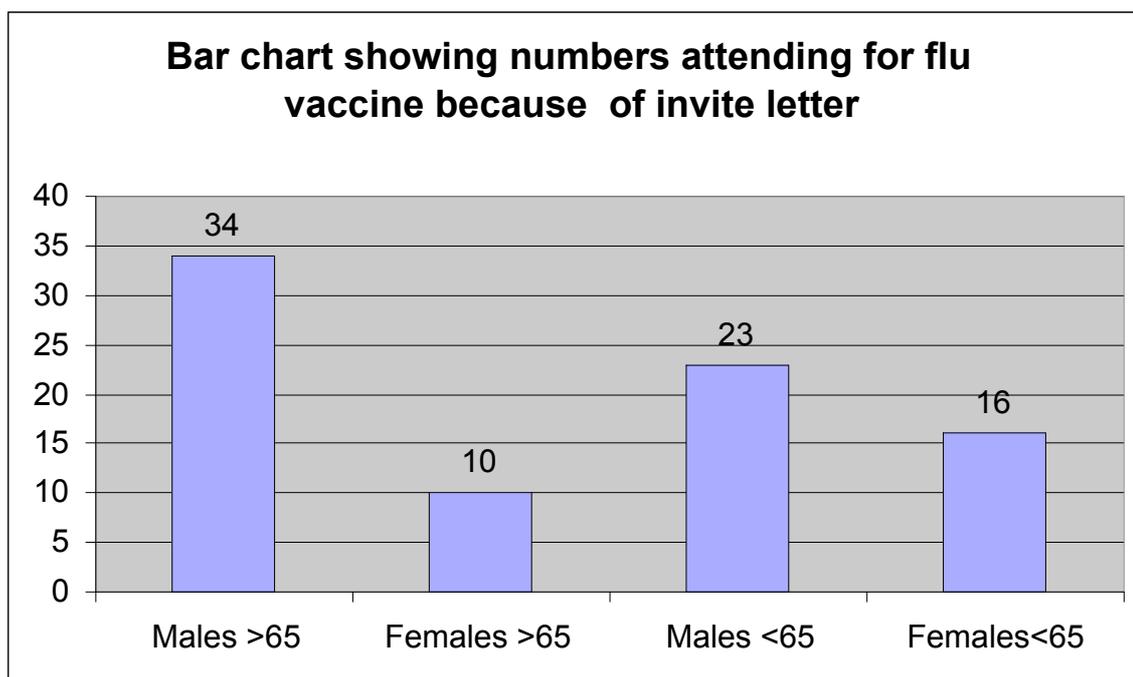
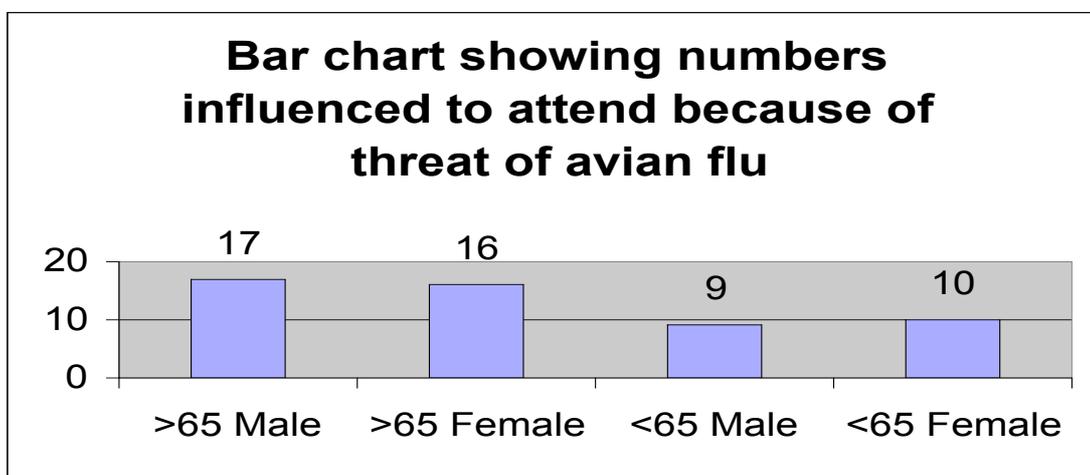
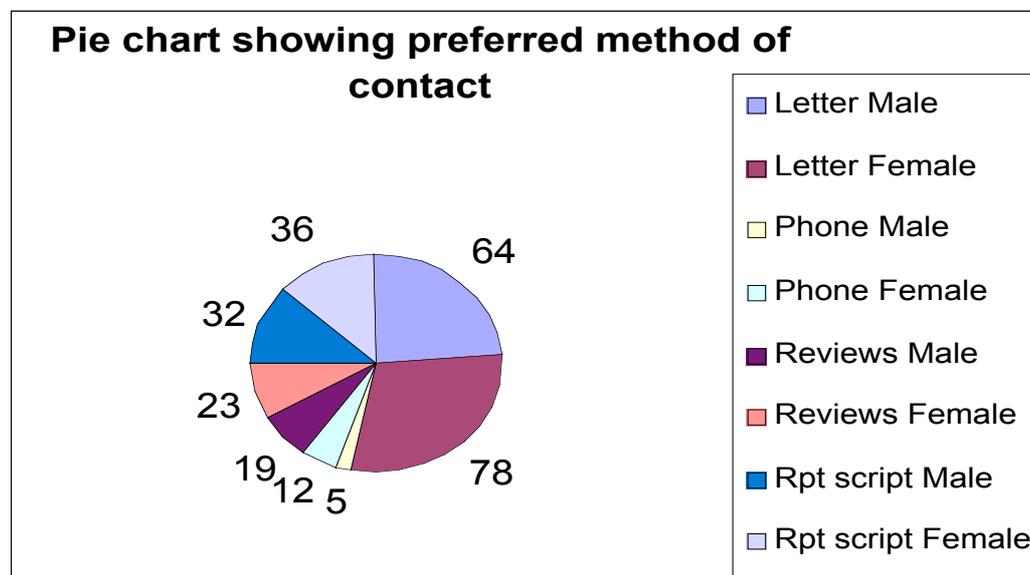


Table 5: Bar chart showing numbers of people influenced to attend because of avian influenza



The above bar chart shows that similar numbers of people of both sexes and ages groups had attended because of the influence or risk of avian influenza but these numbers were less than anticipated given the media interest at the time.

Table 6: Pie chart showing preferred methods of contact



As can be seen from the chart the preferred method of contact was by letter, followed by reminder on repeat prescriptions and at reviews. Least popular method was by phone call.

The answers to the questionnaire were entered onto an access database and analysed by access queries. The data was entered and analysed by the project manager.

Bias

It was only when entering the data that it was realised that the questionnaire had not been given to housebound patients receiving the vaccine or those in residential care. This was an omission but as these individuals do not live in their own home, do not have to make an appointment to have the vaccine or attend the surgery and are made aware of the need to have the vaccine as an individual many of the questions in the questionnaire was irrelevant.

Pre-trial of questionnaire

The questionnaire devised for the project was given a trial but some questions were not clear to some respondents for example, rank in order of preference. The questionnaire would need rewording if repeated.

Conclusions:

The aim of the project was to show a measured increase in a low achieving Practice in the number of older people defined as 65 years and over taking up influenza vaccine within a single influenza campaign. The project was successful in increasing the uptake of vaccine from 56.53% in 2004/05 to 77.20% in 2005/06, an overall increase of 35.71%.

The lessons learnt from the project were the importance of allowing sufficient time for the planning of the influenza campaign, having a structured approach to planning, efficient systems of recording, knowledgeable staff, team work within the different disciplines of staff and the implementation of evidence based intervention 'triggers' to invite patients to attend for vaccination. Knowledge of some of the barriers to and facilitators for vaccination can assist GP practices in achieving the DH vaccination target.

The ability to generalise the results achieved in the project is limited to some extent as the project took place in a town with a small single-handed GP Practice where there is only a small ethnic minority population. The Practice is easily accessible by public transport, has parking facilities and wheel chair access. Larger practices and those in rural settings may identify different reasons for low uptake such as difficulties in travelling to the surgery due to distance or limited transport available. Practices with large ethnic populations may find that religious festivals or pilgrimages coincide with the timing of the influenza programme.

In this project the ethnicity of patients accepting the vaccine is not known and it would be useful to conduct some further study into whether there are any barriers or cultural differences that prevent those people from ethnic minorities in the community accepting the vaccine.

However the project did identify some issues about organisation and planning that other practices could benefit from, for example, Practice organisation around patient identification and invitation was related to uptake. Use of READ codes, identification of 'at risk' patients via disease registers and prescribing, early planning, invitation letters, reminders on repeat prescriptions/patient reviews and dedicated clinics were all identified as good organisational practice and related to improvements in vaccine uptake.

Finally, consideration should be given as to how many housebound patients the practice has and what are the barriers that are making it difficult for them to attend for vaccination. It may be that additional resources such as district nurse service, practice nurse doing health checks at home visits combined with giving the vaccine are required to encourage uptake in this vulnerable sector of patients.

References

- Ahmed AE, Nicholson KG, Nguyen-Van-Tam JS. (1995) Reduction in mortality associated with influenza vaccine during the 1989-1990 epidemic. *Lancet* 1995; **346**: 591-595.
- Burns VE, Ring C, Carroll D, (2005) Factors influencing influenza vaccination uptake in an elderly, community-based sample. *Vaccine* 23 (2005) 3604-3608.
- Chief Medical Officer: Influenza immunizations. 1st August 2000, **PL/CMO/2000/3**:
- Department of Health (2005b) *The Influenza Immunisation Programme* PL/CMO/2005/2, PL/CNO/2005/2, PL/CPHO/2005/2 London.
- Department of Health (1996) Immunisation against infectious diseases. London: DoH, 1996: 120-133.
- Dixon-Woods M, Brown H, Arthur A, Matthews R, Jagger C (2004) Organising Services for Influenza Vaccination for Older People. *Journal of Health Services Research and Policy*. Vol 9 (2) p85-90. Edinburgh 2004.
- Donaldson L (2000) CMO's Update 1-2, 2000, 26.
- Duclos P, Hatcher J (1993) Epidemiology of influenza vaccination in Canada. *Canadian Journal of Public Health* 1993; **84**: 311-315.
- Edwards KM, Dupont WD, Westrich MK, Plummer WD, Palmer PS, Wright PF (1994) A randomised control trial of cold-adapted and inactivated vaccines for the prevention of influenza A disease. *Journal of Infectious Disease* 1994; **169**: 68-76.
- Fleming DM, (2000) The contribution of influenza to combined acute respiratory infections, hospital admissions, and death in winter. *Communicable Disease and Public Health*, **3**, 32-38.
- Forbes A, Berry J, While A, Hitman G, Sinclair A (2002) Issues and methodological challenges in developing and evaluating health care interventions for older people with diabetes mellitus, part 1. *Pract. Diabet Int* **19** (2): 55-9.
- Furey A, Robinson E, Young Y. (2001) *Improving influenza immunisation coverage in 2000-2001: a baseline survey, review of the evidence and sharing best practice*. *Communicable Disease and Public Health*, 2001; 4, 3: 183-187.
- Gross PA, Hermogenes AW, Sacks HS, Lau J, Levandowski RA. (1995) The efficacy of influenza vaccine in elderly persons: a meta-analysis and review of the literature. *Annals of Internal Medicine* **123**: 518-27.
- Health Protection Agency North West (2003) Seasonal diseases winter infections – winter 2003-04. http://www.hpa.org.uk/infections/topics_az/influenza/seasonal/influenza_0304.htm.
- Healthcare Commission. Performance Ratings. 2004. www.healthcarecommission.org.uk.
- Honkanen PO, Keistinen T, Kivela SI. (1996) *Factors associated with influenza vaccination coverage among the elderly: role of healthcare personnel*. *Public Health*; 1996; **110**: 163 – 168.
- Joint Committee on Vaccination and Immunisation (2005) Influenza subgroup meeting on 13th April 2005. Minutes. (<http://www.advisorybodies.doh.gov.uk/jcvi/mins-flu130405.htm>. Accessed 9 Aug. 05

Joseph C (2004) Implementing the national influenza vaccine uptake monitoring programme, England.. British Journal of Infection Control Vol 5 No6 p31-32.

Lorant V, Boland B, Humblet P, Deliege D (2002) Equity in prevention and health care. Journal of Epidemiology of Community Health, **56** (7): 510-6.

National Health Service (2000) International Statistical Classification of Disease and Related Health Problems. 10th Revision (ICD-10) www.connectingforhealth.nhs.uk/clinicalcoding/classifications/icd_10 accessed 25th April 2006.

Nguyen-Van-Tam JS (1998) Epidemiology of influenza. In: Nicholson KG, Webster RG, Hay AJ (editors). Textbook of influenza. Oxford: Blackwell, 1998.

Nicholson KG, (1990) Influenza vaccine and the elderly. British Medical Journal, **30**, 617-618.

Robinson E. (1999) Be aware of the implications of influenza. Practice Nurse **18** (6): 378-384.

Wiselka M. (1994) Influenza: diagnosis, management and prophylaxis. British Medical Journal 1994; **308**: 1341-1345.

Enquiry 2b

Implications if the project for further personal practice and personal practice development.

Introduction

The DH (PL/CMO/2005/2) nationally sets a target for uptake of influenza vaccine at 70%. The identified Practice was one that had previously never been able to achieve the target but with the implementation of a stepwise process and proven evidence based intervention strategies the Practice now meets and exceeds the DH recommended target. Presenting the evidence of the factors which were preventing the Practice from increasing the uptake and detailing which interventions were implemented could be beneficial to other practices and PCT's that are experiencing problems in achieving the national target. It could also assist other practices in identifying which areas of practice need investigating and which interventions could potentially improve their uptake.

At personal level new skills in people management, and project management were gained. The project management approach has proved extremely useful and has assisted in identifying what the potential risks to the project were and what measures needed to be taken to achieve the desired outcome. The application of whole systems development principles has led to the delivery of a short-term improvement but has also brought about cultural changes that should enable the Practice to make the improvements sustainable in the long term. The stakeholder table was found to be particularly valuable in the identification of key stakeholders and highlighted those individuals who are essential to the project and those who are of high importance and influence. This information proved useful in identifying whom to approach for additional resources such as new computers.

The final result of the project is that the Practice now meets and exceeds the recommended national target of 70%. The results exceed those expected and are very encouraging and all practices within the PCT will be informed of the findings of the project. The areas identified that were found to increase uptake of vaccine were:

- Practice registrations systems – looking at the system and ensuring reviews are done on a regular basis (3 monthly) to remove all 'ghost patients'. In addition ensuring that all new patients registered with 'at risk' conditions are 'REAL coded (NHS 2000).
- Sending a written invite and an information leaflet to all patients eligible for the vaccine. Include information on available clinics and encourage them to contact the practice to book an appointment.
- Producing a list of all patients in residential care homes/housebound and liaising with the district nurse team asking them to arrange for the vaccine to be administered.
- Identifying nursing home patients registered with the practice and liaise with the home to supply the vaccine so that the nursing staff can administer the vaccine.

- Print reminder on repeat prescriptions.
- Offer opportunistic vaccination at surgery visits.
- Encourage all clinical staff to have a cool box on their desk with supply of vaccine to facilitate vaccination.
- Health Promotion displays on influenza in waiting areas.
- Training for all staff including reception staff assists in giving consistent and knowledgeable information to patients.

One possible confounding issue to the project was the impact that the threat of avian influenza had together with media influence. The questionnaire given to patients found that avian influenza did have some influence on their decision to attend. Whether patients would have attended without this threat is not known.

Project issues for consideration

Although the project was successful in achieving the aim there are a number of cost implications that must be taken into account when planning any future projects. These include time factors, additional training, change management and development and use of questionnaires.

Time

Time management in planning and implementing the project against other day-to-day pressures was at times stressful. The time that would be required to complete the project was estimated but it was no easy task to anticipate all of the problems that can occur which add to the overall length of the project. Time factors cannot be underestimated, as they are costly in terms of the numbers of people involved in the project who would otherwise be employed in other aspects of their work.

Project Manager Time

As project manager the time factors involved included reviewing and identifying the appropriate literature and intervention that would be cost effective and beneficial to implement. Additional time was needed to prepare pre-training questionnaire, analyse the questionnaires and identify any gaps in knowledge. Once this information was obtained it assisted in decision making as to what information needed to be given the Practice staff in the planned training session on influenza and the vaccine. Time was taken to prepare and deliver the teaching session and evaluating whether the post-training questionnaire showed good levels of knowledge, facilitate at practice and stakeholder influenza meetings.

Practice Staff Time

Practice time taken consisted of identifying the problems they were experiencing and how these could be overcome and checking information held in patients paper records. The time involved in change management, implementing the

interventions and stepwise process of working, completing pre- training questionnaire, attendance at the training session on influenza and the vaccine.

Stakeholder Time

Time involved for the stakeholders in attending the meetings/reading minutes and any assistance given.

Training

The need for training was identified via the pre-training questionnaire and evaluated with a post-training questionnaire. All sectors of the Practice staff but particularly the reception staff needed either knowledge or updating. No or insufficient knowledge about influenza and the vaccine amongst some sectors of staff meant that any questions patients may have were not answered or answered incorrectly. For example, concerns about vaccine side effects, myths about the vaccine, believing the vaccine gave you a mild dose of flu, efficacy of the vaccine etc. The questionnaire identified that clerical/reception staff needed to be included in some basic immunisation training.

Patient Questionnaire

A combined quantitative-qualitative approach was adopted for this service evaluation. The questionnaire (Appendix 5) devised and given to patients was found to present some difficulties when entering data onto the access database because of patients misunderstanding or not reading the questions properly. One question, which required the person to rank in order of preference, was one that a substantial amount of people did not seem to understand but this was not found to be a problem at the pre-trial.

The questionnaire was given a pre-trial by giving it to a selection of colleagues, receptionists and a small group of people in the 65 years and over age group attending a luncheon club to ascertain if the questions were understandable and whether they would be able to complete as requested. Some changes to the original questionnaire were made because of comments received. In retrospect a larger pre-trial should have been conducted as after implementing the questionnaire it was found that a large number of the respondents did not understand ranking and tended to tick either one or all of the boxes rather than number in order of preference. An example of the type of response required for each question would have been of assistance and will be incorporated if the project is repeated. It would also have been useful to have some additional information for some of the questions e.g. why and in what way avian flu influenced their decision to attend. Data of this description would probably require an information analyst to correctly input and interpret the data findings. In any future projects

person who is not involved directly with the project would be preferable to input and analyse any data to exclude any bias. This would be a recommendation made to the PCT if any future projects were undertaken.

In this project the views of patients who are residents of residential care homes/nursing homes is not known. This sector of people are in a different situation to those living in their home as the vaccine is made available to them by the staff of the home, no appointment was necessary and patients were given personal reminders of the need for the vaccine.

Change management

The lessons learnt whilst conducting the project were on the practicalities of engaging both general practice staff and the PCT in the project. I learnt to be honest about the costs to the individual in changing current systems of practice whilst stating the benefits of change both for themselves and for the patients. I found that by being honest with individuals about the time and effort that would be needed to complete the project there was a good degree of trust between me and the Practice staff and that the outcomes would be beneficial to all concerned.

Media Influence

The 2005 influenza programme has been conducted at a time when media interest in influenza has been increasing because of the continued threat of avian influenza and the potential for a pandemic if the H5N1 virus is able to mutate and have the ability to spread from person-to-person. The local media (Manchester Metro News 21/10/05) reported 'The flu queue' and demand for the vaccine amongst the general public increased. This may well have had some influence on an individual's decision to have the influenza vaccine when they may have previously refused. This was despite members of the public being told that the vaccine offered by the current programme does not give any protection against avian influenza. Anecdotal evidence from practices is that there has been an increase in uptake across the town. The project questionnaire showed that 3 people aged 65 years and over and 19 people who were under 65 years attended the surgery and said that the threat of avian influenza had influenced their decision to attend but it is not known whether these people would have attended the surgery and had the vaccine without this threat.

Heightened public awareness of the significance of influenza as a disease was compounded by the additional problem of the later than normal delivery time for vaccine which increased patients' anxiety as the availability of clinic appointments was limited and quickly became full and practices could not book additional clinics until they were sure of the next delivery of vaccine.

Issues identified

The reasons for the previous low uptake of influenza vaccine was because of a lack of structure and planning of the programme, insufficient knowledge of severity of influenza as a disease and the efficacy of the vaccine, a shortage of computers and efficient systems for identifying those patients eligible under the programmes criteria and insufficient staff time allotted to the programme. The staff who are employed in the Practice were motivated and wanted to improve on current performance but the problems identified were stifling progress and the project was means for them to articulate their difficulties and engage others in the PCT to assist them in improving performance.

Lack of structure to the influenza programme meant that tasks were done on an ad hoc basis or omitted depending on the time available. Planning did not take place other than placing an order with the pharmaceutical company for the vaccine early in the year. The amount of vaccine ordered was not based on figures of patients eligible but rather one of a similar amount to that which had been ordered in the previous year. The practice manager was not given sufficient support from the GP who largely left the planning of the programme to that individual. The lack of planning and identification meant that patients were not informed or invited to attend for influenza vaccine. Some proactive patients made inquiries and subsequently attended having seen television or newspaper adverts on influenza. Some of the previous attendees for vaccination were regular patients at the surgery because of treatment reviews and the need for repeat prescriptions and were reminded in this way.

Identification of patients meeting the DH criteria for influenza vaccination was relatively easy for those 65 years or older when the information available on the computer is correct and programmes are available to facilitate searches. It is extremely difficult to identify those who under 65 years of age with chronic health conditions who should receive the vaccine when the information is not 'READ' (NHS 2000) coded appropriately. The project identified that many of the patients who had conditions such as diabetes were not appropriately coded so there was no method available to identify those eligible. The only way to rectify this was for staff to systematically look through all of the patients paper records and READ code those with 'at risk' conditions.

Although the focus of the project was on people aged 65 years or older in order to meet the specified target it is also important for the Practice to offer vaccine to those people who are under 65 years but 'at risk' because of existing health conditions which make them more vulnerable to influenza. The Practice has continued to work to rectify this problem and it is anticipated that 'READ' coding will be completed in time for the next influenza

programme. All staff are now aware of the importance of assessing all patients at new patient medicals 'READ coding those with chronic ill health conditions and entering all data promptly onto the computer.

It was during the hand searching of records that a number of 'ghost' patients i.e. those patients no longer with the practice were identified. Removing these from the system reduced the practice population but meant that when patients were contacted a response was more likely to occur. The number of people registered with the practice aged more than 65 in 2006 was 513 compared with 435 in 2005. Some of this can be attributed to people moving from the practice or who have since died but these 'ghost' patients meant that targets were unattainable as these people were no longer contactable. This problem is one that must occur in all practices and one, which will require regular monitoring.

Limitations of the study

The ability to generalise the results achieved in the project is limited to some extent as the project took place in a town with a small single-handed GP Practice where there is only a small ethnic minority population. The Practice is easily accessible by public transport, has parking facilities and wheel chair access. Larger practices and those in rural settings may identify different reasons for low uptake such as difficulties in travelling to the surgery due to distance or limited transport available. Practices with large ethnic populations may find that religious festivals or pilgrimages coincide with the timing of the influenza programme.

In this project the ethnicity of patients accepting the vaccine is not known and it would be useful to conduct some further study into whether there are any barriers or cultural differences that prevent the ethnic sector of the community accepting the vaccine.

Conclusions

The project aim of increasing the percentage of people who are aged 65 years or over receiving the influenza vaccine was successful. The Practice population who received influenza vaccine increased from 56.53% to 77.20%, an overall gain of 35.71%. The practice population however did go down from the previous year mainly because of removing 'ghost' patients from the practice system. If the base population had not decreased but had remained the same as the previous year the percentage uptake achieved would have been 65.49%.

As project manager I have gained knowledge and expertise on a wide range of skills including organisational, motivation and leadership skills to plan and implement the work, resulting in real change, which were beneficial, both to staff and patients.

The lessons learnt whilst doing this project could and will be applied to other practices within the PCT that are struggling to achieve immunisation targets. One Practice in the PCT has been identified as having a decrease in uptake of influenza vaccine compared with the previous year, despite the threat of avian influenza and it is planned to present the findings of the project to the GPs and see if they would like to implement a similar project into their Practice.

The findings of this project could be of interest to other PCT's who have practices that are under achieving in their influenza target and a wider audience could be reached if the results of this project are published in a relevant journal and this will be considered.