Get the Injection not the Infection!

Interventions to increase the influenza vaccination rates in those over the age of sixty-five, in an Irish General Practice setting during the 2018/2019 influenza season.

An Audit on Influenza vaccination

Abstract

Influenza is a serious infection, which leads to increased hospitalizations and deaths every winter (Prati, Pietrantoni, and Zani 2012). The World Health Organization and EU recommend that 75% of those over the age of sixty-five receive the influenza vaccine annually (Tsolova & Nicholl, 2008). Despite this, the influenza vaccine uptake rate, in those over the age of sixty-five, is falling year on year in Ireland, with an uptake rate of 55% for the 2016/2017 influenza season (Health Protection Surveillance Centre, 2017).

The overall aim of the audit was to increase the number of patients, over the age of sixty-five, who receive the influenza vaccine in our practice during the 2018/2019 influenza season to 75% or above.

The intervention was focused around the introduction of a programme which included both passive and active interventions to increase the uptake of the influenza vaccine in the practice. The HSE's 2008 change model was used as a framework on which this intervention based.

The percentage of patients who received the influenza vaccine in our practice during the 2017/2018 influenza season was 53%. Following the intervention this increased to 68% during the 2018/2019 influenza season, and the total number of patients vaccinated in the practice was 81%.

This audit demonstrated that the introduction of a programme to increase influenza vaccination rates in a General Practice setting can be successful.

Similar programmes could be replicated across the country if the required resource were provided by the health service.

This programme can also be used for other vaccine preventable diseases.

Reason for carrying out the audit

The current situation surrounding influenza vaccination in Ireland

Currently, no formal structure or programme exists around influenza vaccination for patients over the age of sixty-five in General Practices in Ireland. Vaccination occurs on an ad-hoc basis. For the most part, a register of these patients does not exist within practices, and active vaccination, whereby patients are contacted or formally advised to get the influenza vaccine, does not occur.

This has resulted in a suboptimal influenza vaccination coverage rate of 55% in those over the age of sixty-five in Ireland (Health Protection Surveillance Centre, 2017) significantly below the recommended 75% uptake rate recommended by the European Council (HPSC, 2017).

The European center for disease prevention and control (ECDC) identified patients over the age of sixty-five as “at risk” patients, who should be vaccinated annually (Tsolova & Nicholl, 2008).

90% of all influenza-related deaths occur in those over the age of sixty-five (Prati et al 2012) and in the 2016/2017 influenza season, 95 people died as a result of influenza, or influenza-related complications (HPSC, 2016). Influenza vaccination reduces both the risk of developing influenza and influenza-related complications including death (Mbbs et al., 2018).

The GP Practice

The practice in which the audit took place is a four doctor, one nurse, two secretary, General Practice in suburban Dublin, with 1200 patients. These are a mixture of private and general medical service card patients. A large cohort

of our patients are in the over sixty-five-year-old category and are therefore considered “at risk” for influenza.

The practice is fully computerized and patients have consented to both having their data stored by the practice and receiving communication from the practice as required as per GDPR guidelines.

Rationale for carrying out the audit

As stated previously, the influenza vaccination rate in those over the age of sixty-five in Ireland is significantly below what is recommended (HPSC, 2016).This rate is declining annually in Ireland (HPSC 2015), and it is, therefore, becoming a critically important public health issue, as influenza vaccination is associated with reduced rates of influenza-related illness, attendance at GP’s and hospitalizations (Kristin L. et al 1998).

This audit firstly established the vaccination rate in our patient’s over the age of sixty-five and then examined the effect that a vaccination programme had on influenza vaccination rates in a General Practice setting, which may assist in increasing influenza vaccination levels nationally. Prior to this we did not audit the influenza vaccination uptake rates in our practice and therefore it is unclear how our practice compares nationally.

A Cochrane review carried out by Thomas et al in 2010 reviewed 61 randomized control trials on the effectiveness of various interventions in increasing influenza uptake rates in those over the age of 60 (Thomas, et al 2010). It showed that interventions to increase influenza vaccination rates are effective (Thomas et al. 2010). It concluded that improving access for patients to influenza vaccination, and both education and reminder-recall systems for both doctors and patients were effective at increasing influenza vaccination rates in this cohort (Thomas at al. 2010). It also found that putting dedicated

protocols and structures in place such as chart review and audit were effective at increasing vaccination uptake rates in this cohort (Thomas, et al. 2010)

A second recent Cochrane review by Vann et al of 75 studies of patient vaccination recall-reminder interventions concluded that such methods increased vaccination uptake rates in those over the age of sixty (Vann et al. 2018)

lead Our patients over the age of sixty-five would benefit from an increased uptake in influenza vaccination as this would lead to a reduction in both cases of influenza and influenza-related complications leading to a reduction in both morbidity and mortality in this patient cohort. The “herd effect” accrued by increased vaccination rates within our practice may also benefit our entire patient population. Furthermore, our practice would benefit, as the reduction in influenza-related morbidity would to a reduction in patient attendances and practice workload. The practice would also receive increased revenue from the increased number of vaccines administered (Monto, Hornbuckle, & Ohmit, 2001).

Finally, if the audit can show that a programme to increase vaccination of patients over the age of sixty-five achieves an increase in influenza vaccination rates, this information can be used to advocate for increased resources for GPs, to allow similar programmes become standard in Irish General Practice.

On a national level, a reduction in both influenza cases and complications would save the health service money, through reduced attendances at primary care and hospital admissions (Nichol et al. 2012). Nichol et al estimated the saving per patient for the health service at one hundred and

seventeen dollars per patient per annum (Nichol, Margolis, Wuorenma, & Von Sternberg, 2012)

Interventions to increase influenza vaccination uptake rates

Interventions to increase influenza vaccination uptake rates can occur at both management level and at the front-line (Thomas et al. 2010). A Cochrane review by Thomas et al concluded that active forms of vaccination, where patients are directly and personally contacted, are more effective than passive forms of vacciantion, where generic, impersonal methods are used (Thomas et al., 2010). Berkhout et al found similar results in a community setting of seventy-five GP Practices, where passively promoting influenza vaccination through postering and leaflets in the waiting room yielded no increase in vaccination rates in the “at risk” population, versus no intervention at all (Berkhout et al., 2018).

A study by Reports et al, into the efficacy of mass communication methods further support these findings (Reports, Maglione, Stone, & Shekelle, 2002). Mass communication methods are passive interventions, where all “at risk” patients receive a generic letter, telephone call or text. Their systematic review of postal reminders to patients aged over sixty-five to increase influenza vaccination failed to show any statistically significant increase in vaccine uptake rates (Reports et al., 2002). These finding were consistent independent of method used, with Hurley et al finding an increase of 2% with the use of automated telephone calls (Hurley et al., 2018), and Herrett et al finding a similar result with the use of text messages (Herrett et al., 2016).

Minor et al compared the efficacy of passive versus active interventions to increase influenza vaccination rates, by reviewing the efficacy of reminders by telephone and by mail versus no intervention at all. They found that 44% of their “at risk” population was vaccinated, with a breakdown of 56% coverage in the group that received a telephone call, the active intervention group, 46%

in those that received a letter, the passive intervention group, and 33% in those that received neither, the control group (Minor et al., 2010). The active intervention of a telephone reminder tripled the likelihood of influenza vaccination versus no intervention at all in this cohort (Minor et al., 2010). The findings by Minor et al further support the conclusion reached by Thomas et al.

Aside from directly communicating with patients, interventions to remind both doctors and patients are also important in increasing vaccination rates (Vann et al. 2018). A Cochrane review by Vann et al, which looked at patient recall, and reminder interventions to improve vaccination rates found that reminding patients of their need for vaccination increased uptake rates by 8% (Vann et al. 2018). Measures reminding doctors to ask patients about their influenza vaccination status have also proven to be effective in increasing overall vaccination rates, with Grivas et al showing a 56% increase in overall influenza vaccination uptake in patients as a result of such interventions (Grivas et al., 2017). This would suggest that reminding doctors to discuss vaccination status with patients is more effective than reminding patients to get vaccinated, and this is likely due to the conversation between the doctor and patient, that the reminder instigates (Johnson et al. 2008).

Stinchfield et al supported these findings (Stinchfield, 2008), They found that performing an audit of influenza vaccination uptake rates in the practice is in of itself, an independent motivating factor to achieving higher vaccination rates in the practice (Stinchfield 2008). Wilburn et al estimated this increase in vaccination rates at 24% in the over sixty-five year old age group, in a UK setting, where no other measures took place (Wilburn & Hazelwood, 2003). This effect has been attributed to the increased awareness of vaccination rates within the practice that the audit creates (Stinchfield, 2008).

Improved access through dedicated “influenza vaccination clinics” can lead to an increase in vaccine uptake rates by as much as 50% (Britto, Schoettker, Pandzik, Weiland, & Mandel, 2007). These vaccination clinics have been reported as being the single most effective management step in improving vaccine uptake rates in community settings (Britto, 2007).

Standard Set

The standard set was 75% influenza vaccination coverage in patients over the age of sixty five years old, as advised by the WHO. This correlates with the aim of the audit.

Criteria to be measured

Similarly the criteria to be measures correlated with the associated objectives of the audit

1. To establish the percentage of our over 65-year-old patient cohort who received the influenza vaccination in the 2017/2018-influenza season by November 1st, 2018.
2. To commence the “passive stage” of the intervention to increase the proportion of our “over 65-year-old” cohort who are vaccinated by 1st October 2018 and complete this by 1st December 2018
3. To commence the “active stage” of the intervention to increase the proportion of our “over 65 years old” cohort who are vaccinated by 1st December 2018, and to complete this by 1st March 2019.

4. To re-audit our “over sixty-five-year-old” vaccine uptake rates by 1st March 2019.

Details of the intervention undertaken during the Audit

A dedicated practice influenza vaccination programme was established in our practice. This involved the identification of all patients over the age of sixty-five within the practice using the practice software. A dedicated walk-in clinic was established in the practice where individuals could get vaccinated without an appointment as part of this programme.

A staff education programme was designed and implemented to educate staff on influenza, influenza vaccination and on which patients are considered “at risk” using HSE guidelines (HSE, 2017). A campaign was undertaken to raise awareness amongst patients using posters and pamphlets from the annual HSE influenza vaccination awareness campaign.

The Practice also increased awareness of both influenza and influenza vaccination through local and national media outlets as well as increasing awareness in the local community. This was done via local and national radio and also via distribution of leaflets and posters in the local community. This complemented the national influenza vaccination awareness campaign that encourages “at risk” groups to be vaccinated and increases awareness that is run in the national and local media,and is supported by the Health Service Executive (HSE).

All patients over the age of sixty-five who had not been vaccinated by the time of the commencement of the project were contacted, by phone by me as project lead, outlining why they had been contacted, were provided with information regards influenza and influenza vaccination and advised of the walk-in clinic or offered a dedicated appointment. They were also asked to

inform the practice if they had received the influenza vaccine outside of the practice, and this was documented in the patient's file.

Those patients who had not availed of the service after one month were contacted again by phone, by me, and subsequently by letter from me.

Patients continued to be vaccinated on an ad hoc basis by the doctors and nurses in the clinic. The vaccination programme ceased once the influenza season finished as advised by the Department of health.

Aims and Objectives of the Audit

Aim

The overall aim of the Audit was to increase the number of patients, over the age of sixty-five, who receive the influenza vaccination in our practice during the 2018/2019 influenza season to 75% or above, as set out by the WHO.

Objectives

1. To perform an audit to establish the percentage of our over 65 year old patient cohort who received the influenza vaccination in the 2017/2018-influenza season by November 1st, 2018.
2. To commence the “passive stage” of the intervention to increase the proportion of our “over 65-year-old” cohort who are vaccinated by 1st October 2018 and complete this by 1st December 2018
3. To commence the “active stage” of the intervention to increase the proportion of our “over 65 years old” cohort who are vaccinated by 1st December 2018, and to complete this by 1st March 2019.
4. To re-audit our “over sixty-five-year-old” vaccine uptake rates by 1st March 2019.

Audit Cycle 1 Results of initial data collection

An audit was carried out on the tenth of September using the practice software (Results – table 1). All patients over the age of sixty-five were identified. STC (special type consultation) forms from the 2017/2018 season were used to identify those who had received the vaccine. The results were compared to the standard as set out by the WHO which was a figure of a 75% uptake rate in those over the age of sixty-five.

The initial search of records revealed that there were 359 patients over the age of sixty-five within our practice with a medical card for the influenza season 2017/2018. This figure was corrected to exclude patients who had not visited the practice for over a year.

Through a review of STC's it showed that 192 or 53% of patients had received the influenza vaccine in the 2017/2018 season (Figure 1). This is in keeping with influenza vaccination uptake rate nationally in this group which was 55% in the 2016/2017 influenza season (HPSC, 2017).

Number of patients > 65 in 2017/2018	359
Number of patients vaccinated in 2017/2018	192
Parentage of patients over 65 years old vaccinated	53%

Table 1: Number of patients vaccinated in the 2017/2018 influenza season

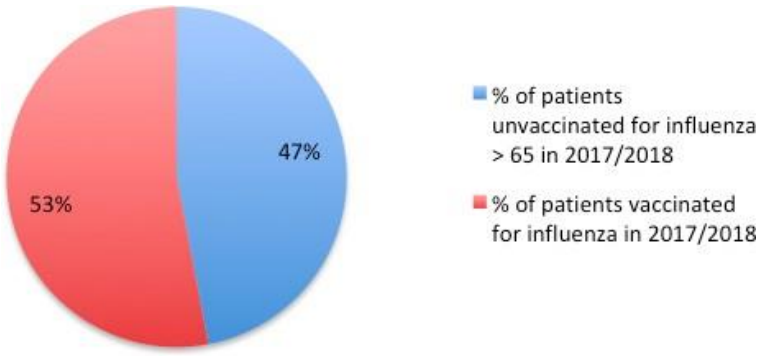


Figure 1. Percentage of patients vaccinated for influenza in 2017/2018 influenza season

The Intervention

The First step to the intervention was analyzing what was currently happening in the practice with regards to influenza vaccination. I created a process map, with input from all staff, outlining the current situation with regards to influenza vaccination (Process Map 1). What it revealed was there was no formal practice protocol around influenza vaccination in the practice. It was done on an ad-hoc basis by the clinical members of staff only, with no involvement of non-clinical staff members. There was no “active vaccination” of patients, and vaccination status was not commonly documented.

I discussed my vision to increase the influenza vaccination rate in those over the age of sixty-five with the practice team. I designed a second process map, with input from all staff members, illustrating what the new process should look like (Process Map 2).

From then there were three stages to the intervention.

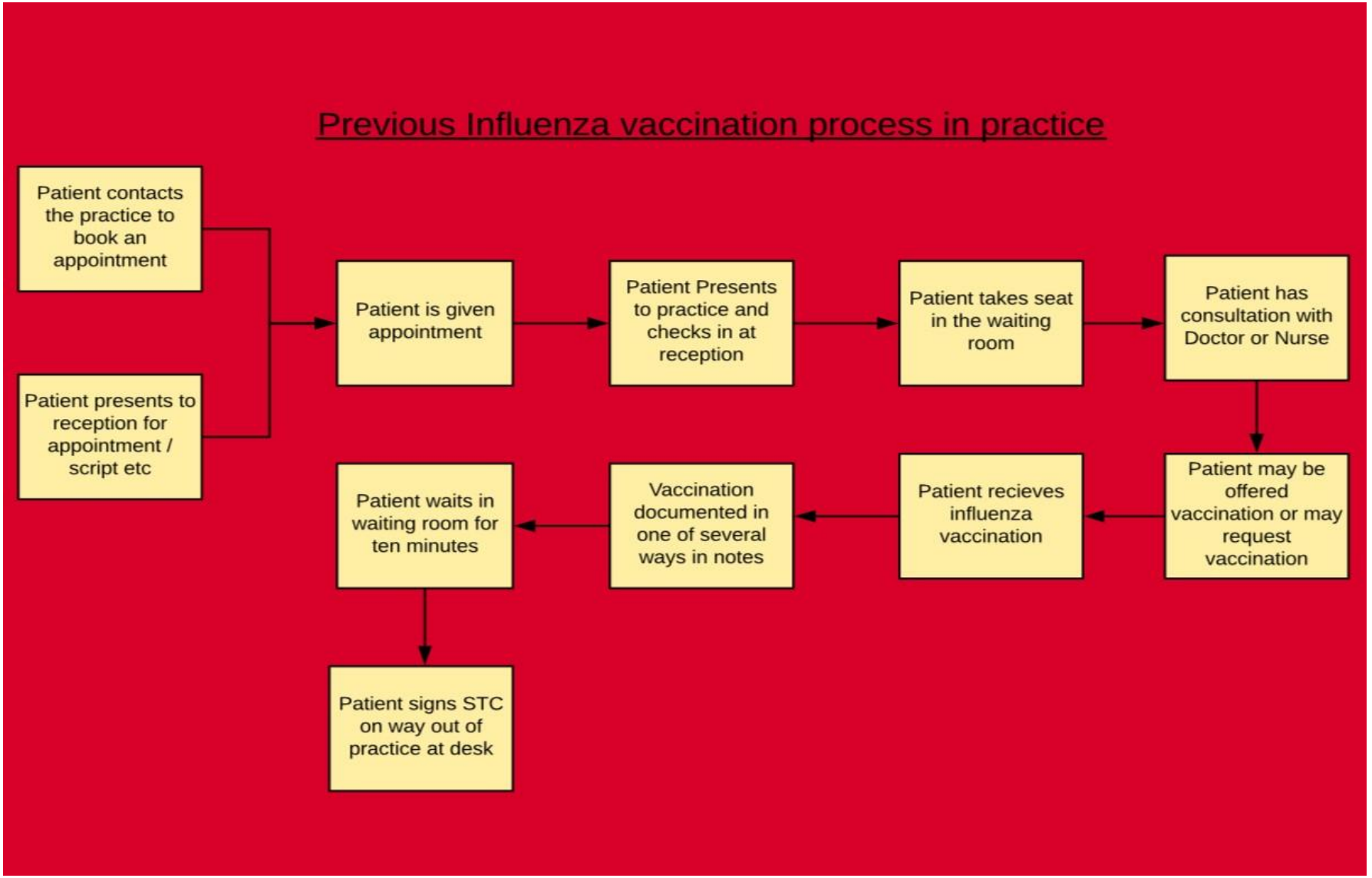
The first stage was raising awareness of influenza and influenza vaccination amongst patients and staff. This commenced on time in September. Posters and leaflets were distributed throughout the surgery and the local shops and community center. I was also a guest on local and national radio shows such as the Marian Finnucane show where I discussed both influenza and the benefits of influenza vaccination.

The second stage involved the passive vaccination stage, where all staff members were involved in identifying patients over the age of sixty-five and

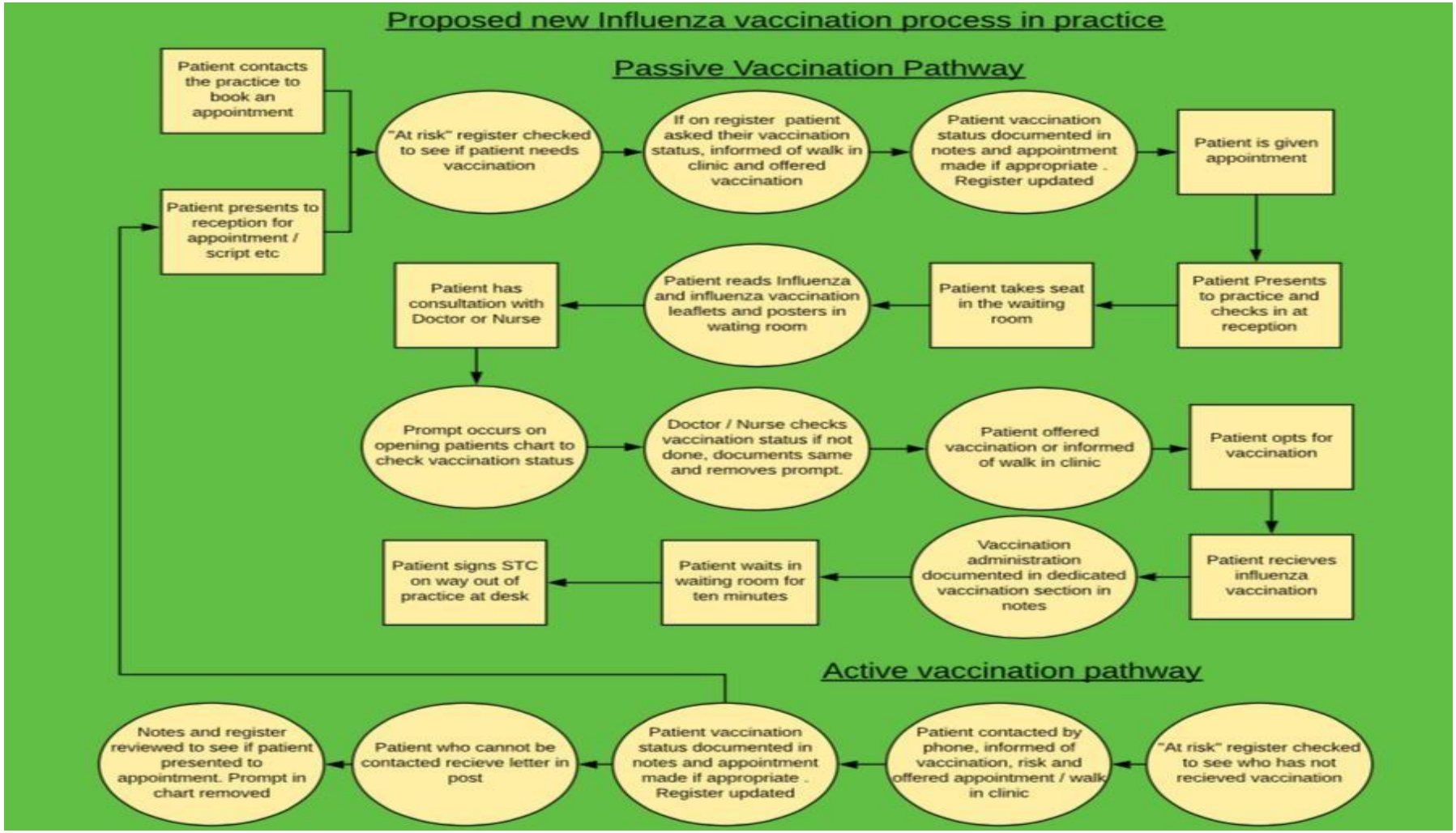
offering them vaccination and establishing their vaccination status as they made contact with the practice. This also involved the setting up of the walk-in clinic..

The third stage was the active vaccination of patients, that is, contacting those over the age of sixty-five, who had not been vaccinated and offering them vaccination.

Improved documentation of vaccination administration by all staff members was seen, immediately. A matching of influenza administration and STC submission was performed on a monthly basis. The overall goal of maximizing the vaccination rates in those over the age of sixty-five was communicated consistently via practice meetings.



Process Map 1



Process Map 2

Audit Cycle 2 Results of the data collection after the intervention

The overall aim of the project was to increase the number of patients, over the age of sixty-five, who receive the influenza vaccination in our practice during the 2018/2019 influenza season to 75% or above, as set out by the WHO.

Method: This was ascertained by comparing the results of the first audit cycle and the second audit cycle. The overall aim of the audit was achieved, in that the percentage of patients in our practice vaccinated against influenza increased from 53% during the 2017/2018 season to 81% in the 2018/2019 influenza season (Figure 1)

The overall results of the audit can be seen in table 2.

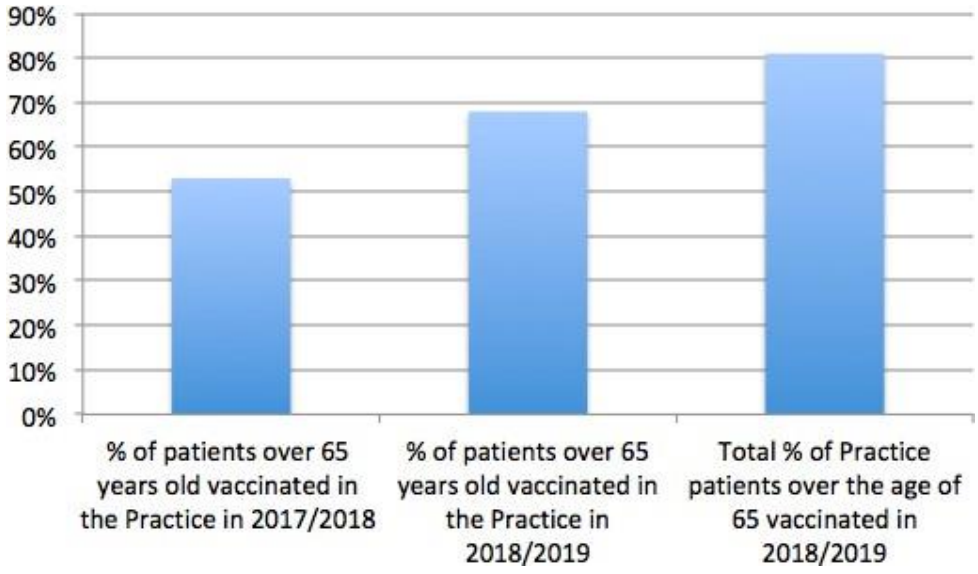


Figure 1 Percentage of patients vaccinated in the 2017/2018 and 2018/2019 influenza seasons.

Number of patients > 65 in 2017/2018	359
Number of patients vaccinated in 2017/2018	192
Percentage of patients over 65 years old vaccinated in 2017/2018	53%
Number of patients over 65 in the practice in 2018/2019	372
Number of patients vaccinated in 2018/2019	254
% of patients over the age of 65 vaccinated by the practice in 2018/2019	68%
% of total number of patients vaccinated in the practice over the age of 65 in 2018/2019	81%

Table 2: Overall results of the project

Methods & Measures : Further evaluation of Aims and Objectives

The overall aim of the assessment was to ascertain whether the aims and objectives of the audit were met. The evaluation also allowed assessment of the effect that various interventions during the project had on achieving the overall aim.

Aim: The overall aim of the project was to increase the number of patients, over the age of sixty-five, who receive the influenza vaccination in our practice during the 2018/2019 influenza season to 75% or above as set out by the WHO.

Method: This was ascertained by comparing the results of the first audit cycle and the second audit cycle. The overall aim of the audit was achieved, in that the percentage of patients in our practice vaccinated against influenza increased from 53% during the 2017/2018 season to 81% in the 2018/2019 influenza season (Figure 1)

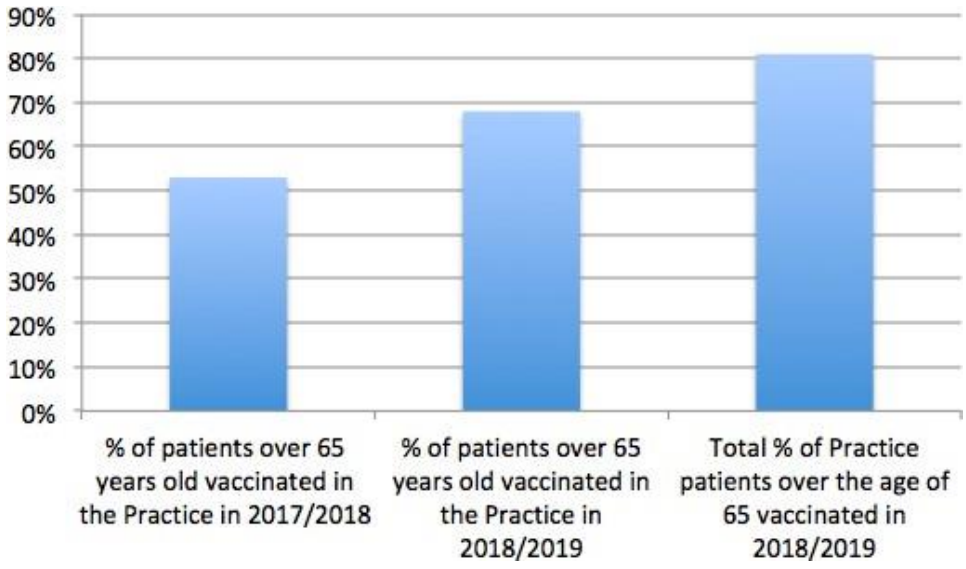


Figure 1 Percentage of patients vaccinated in the 2017/2018 and 2018/2019 influenza seasons.

Objective 1: To perform an audit to establish the percentage of our “over sixty-five-year-old” patient cohort, with a medical card, who received the influenza vaccination in the 2017/2018-influenza season by November 1[s,t] 2018.

This outlines the results of the initial data collection

Method: An Audit was carried out on the tenth of September using the practice software (Results – table 2). All patients over the age of sixty-five were identified. STC (special type consultation) forms from the 2017/2018 season were used to identify those who had received the vaccine. The results were compared to the standard as set out by the WHO which was a figure of a 75% uptake rate in those over the age of sixty-five.

The initial search of records revealed that there were 359 patients over the age of sixty-five within our practice with a medical card for the influenza season 2017/2018. This figure was corrected to exclude patients who had not visited the practice for over a year. Through a review of STC’s it showed that 192 or 53% of patients had received the influenza vaccine in the 2017/2018 season (Figure 6). This is in keeping with influenza vaccination uptake rate nationally in this group which was 55% in the 2016/2017 influenza season (HPSC, 2017).

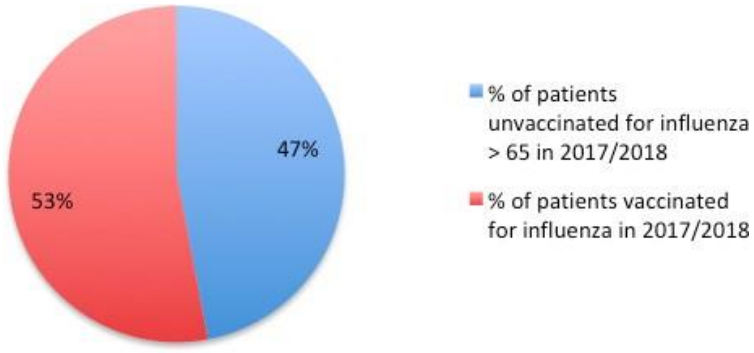


Figure 2. Percentage of patients vaccinated for influenza in 2017/2018 influenza season

Objective 2. To commence the first stage, the “passive stage”, of intervention to increase the proportion of our “over sixty-five-year old” cohort who are vaccinated by 1st December. 2019 (Results – table 3)

Method: There were three parts to this objective, with three different timelines (Results – Table 3 – Assessment of the passive intervention stage). The results were displayed with a run chart, which allowed a review of the number of patients who were vaccinated across the study period (Figure 3 – *Run chart displaying results PDSA cycle).*

1. Creating a dedicated practice influenza programme by the 15th September 2018. This involved producing a process map which highlighted the new influenza vaccination programme for the practice. It also involved creating a register of patients over the age of sixty-five who were eligible for the influenza vaccination in the practice. Finally, it involved creating a reminder system for staff members to establish the patients influenza vaccination status when those patients interacted with the practice. All these steps had occurred by the 15th September 2018.

2. The second stage involved educating and raising awareness amongst patients and staff on influenza and influenza vaccination by the 15th October 2018. Information was raised amongst staff at the monthly practice meetings. Awareness of influenza amongst patients was considered to have occurred once the influenza vaccination information literature was distributed throughout the practice and local community. The national and local media

work to raise awareness also contributed to this. These actions had occurred by the 15th October 2018

3. Improving availability of the influenza vaccine by the 15th November 2018. This was achieved by establishing a dedicated influenza vaccination clinic where patients could receive the influenza vaccination without appointment. This was established by the 15th November 2018.

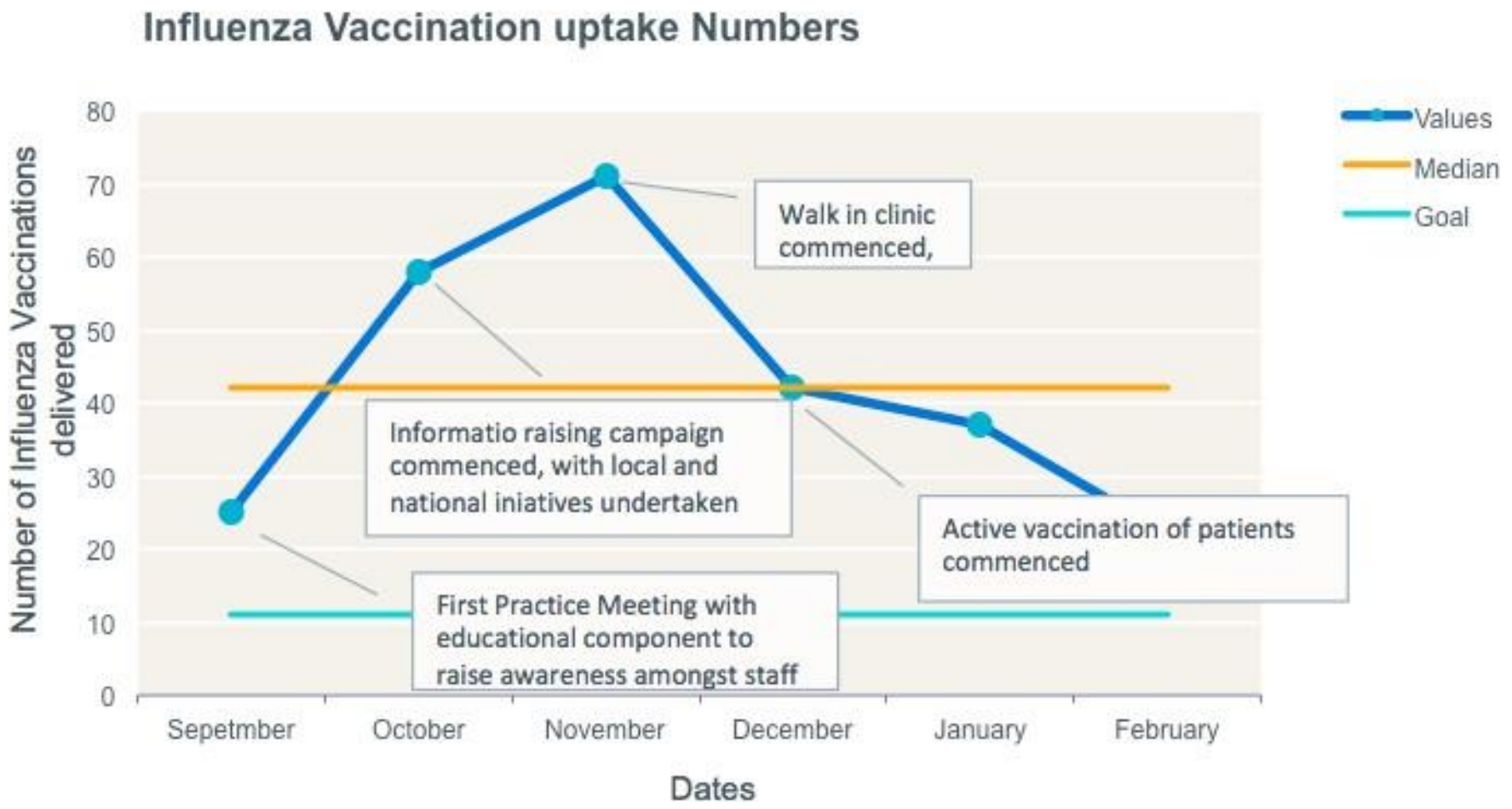


Figure 3: Run chart displaying results PDSA cycle

Objective 3. To commence the “active stage” of the intervention and increase the proportion of our “over sixty-five year old” cohort who are vaccinated by 1st December 2019, and to complete this by 1st March 2019.

This involved contacting 100% of our ”over sixty-five-year old” patients, establishing their influenza vaccination status and offering to vaccinate them at our practice by 1st March 2019. These patients received information regarding why they had been contacted, on influenza and on the vaccination programme and they were offered an appointment or informed of the walk-in clinic.

Method: As of the 15th December, there were 155 patients whose influenza vaccination status had not been identified on our “at risk” register of patients over the age of sixty-five (Results – Table 5).

One hundred and twenty-five patients were contacted by phone initially (Results – Table 6). The time spent contacting these patients was one to two hours per evening for two weeks, circa fifteen hours in total. Following one month an attempt was made to contact patients with whom contact could not be made at the first attempt.

Following this, there were twenty-five patients with whom contact could not be made via telephone. These were contacted by post. Of this 25, 12 subsequently contacted the practice, on receipt of our letter, and their vaccination status was established, and they were offered vaccination.

Thirteen patients did not contact the practice, and so it is unclear if they received our correspondence or not, and their vaccination status could therefore not be established. Therefore 142 patients out of a population of 155

were contacted, which equates to 92% success rate a contacting patients.

Objective 4: To re-audit our “over sixty-five-year-old” vaccine uptake rates by 1st March 2019. This objective allowed assessment of the effect the combined passive and active vaccinations programmes had on the practices influenza vaccination rates.

This represents the results following the intervention was Implemented.

Method: On the 1st March a repeat audit cycle was performed (Results - *Table 7: The results of “active vaccination”).* The initial search of practice database revealed that there were 372 patients over the age of 65 within our practice with a medical card for the 2018/2019 influenza season an increase of 13 patients. This figure was also corrected to exclude patients who had not visited the practice for over a year. Through a review of STC’s it showed that 254 or 68% of patients had received the influenza vaccine in our practice by the 1st of March 2019.

Further revealed that 33 patients had been vaccinated in the pharmacy, and 13 patients had been vaccinated in the hospital. Furthermore, 59 patients declined vaccination. This revealed a 33% increase in the number of patients vaccinated in the practice and allowed us to establish that 81% of our over 65 years old cohort received the influenza vaccination in the 2018/2019 influenza season.

Resources and costs

The financial impact the project had on the practice was assessed (Results - *Table 8: Estimated costs of the project*). The additional 62 vaccinations delivered to patients yielded an additional revenue of €930.As previously described a research and educational grant of €200 euro was supplied by the ICGP towards the costs of the project. One hundred and fifty-five patients were contacted by phone initially. A further twenty-five patients received letters in the post at a cost of €25.

The practice's telephone provider "Eir" charges these calls at 9c per minute for local calls and 29c per minute for mobile calls (Eir, 2018). Review of available data revealed that 24% of patients reviewed had mobile numbers only, 47% having landline numbers only and 29% having both mobile and telephone numbers. Each call lasted an estimated three minutes. The total cost of the telephone bills related to the project was estimated at €77 A summary of the estimated costs of the projects is outlined in table eight in the results section. It was difficult to estimate staff costs for the project. GP locums are currently paid €250 for a session, which on average last four hours, putting the rate per hour for the work of a locum General Practitioner at €62 euro per hour. Therefore the staff costs of contacting these patients was estimated at €930. This did not include administrative time spent by the author as a project leader.

There were no additional secretarial or nursing costs in the project. The secretaries' workload was not negatively impacted upon by the project. The numbers of patients who availed of our walk-in clinic was three to four daily. This allowed the time allocated by the nurse for the walk-in clinic to be also used for administrative purposes, and therefore it did not increase her workload. The remaining doctors in the practice did not notice additional workload caused by the project, and so there were no additional costs sustained on the medical side. The practice meetings occurred at lunchtime,

and therefore there were no additional working hours required to attend these.

A summary of the economic impact of the project on the practice is outlined in table nine of the results section (T*able 9: Estimated economic impact of the project on the practice)*

Results

The subsequent tables and charts outline the results of the evaluation as previously outlined in the methodology section.

Number of patients > 65 in 2017/2018	359
Number of patients vaccinated in 2017/2018	192
Percentage of patients over 65 years old vaccinated in 2017/2018	53%
Number of patients over 65 in the practice in 2018/2019	372
Number of patients vaccinated in 2018/2019	254
% of patients over the age of 65 vaccinated by the practice in 2018/2019	68%
% of total number of patients vaccinated in the practice over the age of 65 in 2018/2019	81%

Table 1: Overall results of the project

Number of patients > 65 in 2017/2018	359
Number of patients vaccinated in 2017/2018	192
Parentage of patients over 65 years old vaccinated	53%

Table 2: Number of patients vaccinated in the 2017/2018 influenza season

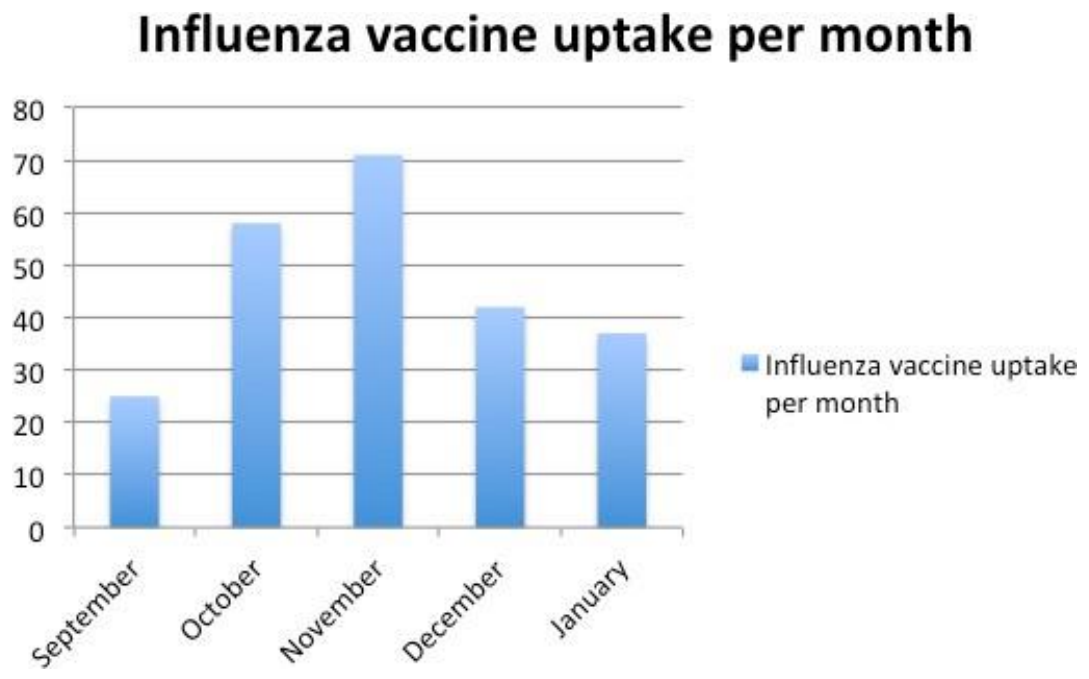


Figure 8: Monthly Vaccination update rates

Stage	Implementation date	Achieved
Practice influenza established by 15/9/18	15/9/18	Yes
Education and awareness programme implemented in the practice by 15/10/18	12/10/18	Yes
Walk in clinic established by 15/11/18	1/11/18	Yes

Table 3: Assessment of the "passive" intervention stage

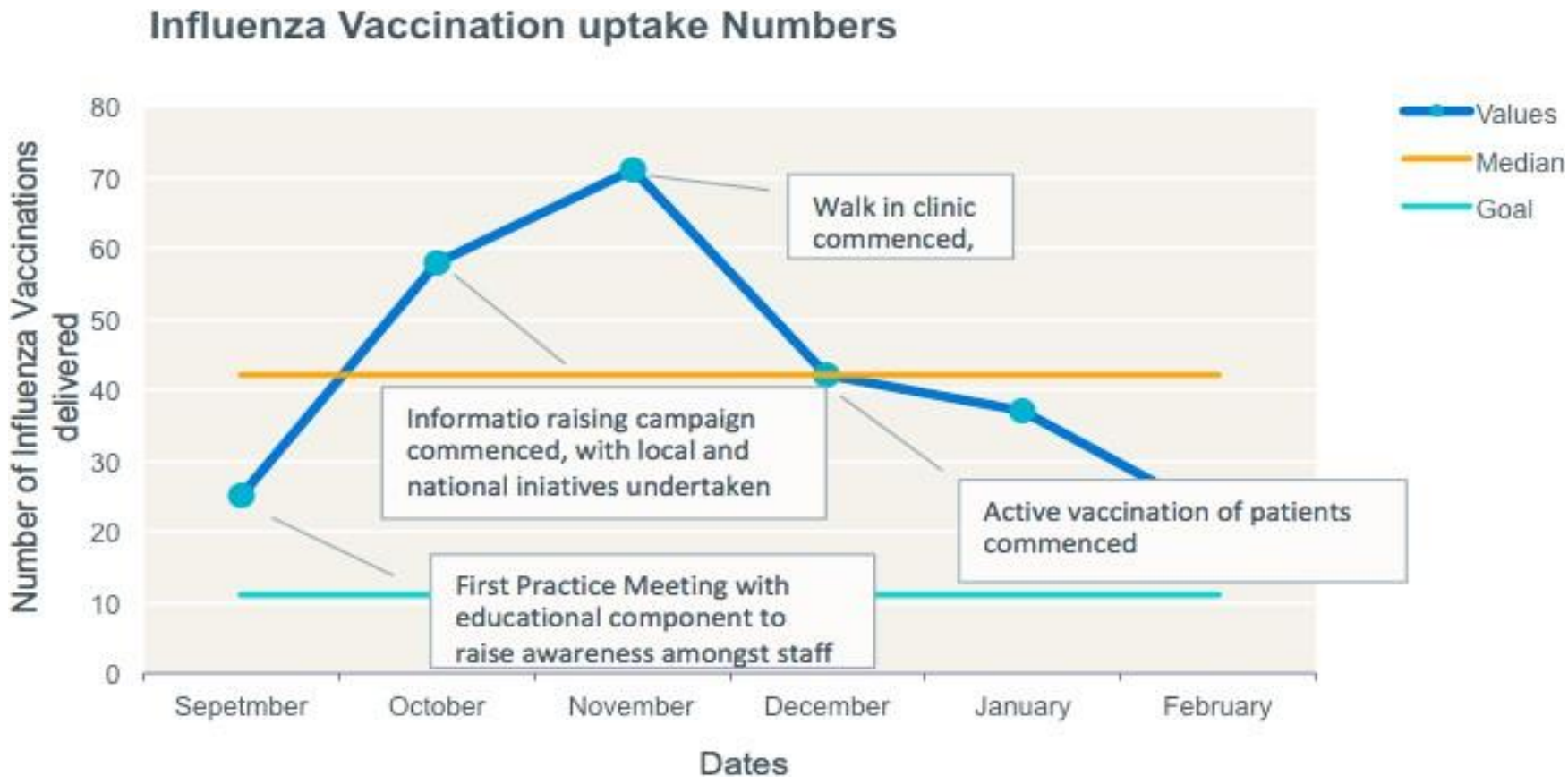


Figure : Run chart displaying results PDSA cycle

Stage	Completed dates	Achieved
Commence active vaccination by 15/12/18	15/12/18	YES
To complete active vaccination by 1/3/19	1/3/19	YES
To contact 100% of patients by 1/3/19	1/3/19	YES

Table 5 Assessment of the "Active stage" of the project

Total Number of patients to be contacted	155
Total Number of patients who were not contactable by phone	25
Number of patients who were uncontactable	13
% of patients who were contacted	92%

Table 6: The number of patients contacted

Number of patients > 65 in 2018/2019	372
Number of patients vaccinated in 2018/2019	254
Number of patients contacted	155
Vaccine received in Pharmacy	33
Vaccine received in hospital	13
Declined	59
Unable to contact	13
Total Number of patients vaccinated in 2018/2019	81%
% of patients over the age of 65 vaccinated by the Practice	68%
% of practice patients over the age of 65 vaccinated	81%
% increase in patients vaccinated in the practice	33%

Table 7: Results of "active vaccination"

Type of Telephone call	Estimated cost at 3 minutes estimated average time
Mobile phone call X 38	€33
Landline call X 72	€19
Landline or telephone X 45 50:50 split	€19 €6.21
Estimated total call of contacting patients	€ 77

Table 8: Estimated costs of the project

Net income with Bursary	€1130
Net income without Bursary	€930
Total estimated costs of project	€1007
Net cost to practice without bursary	€77
Net profit to practice with bursary	€123

Table 9: Estimated economic impact of the project on the practice

Summary and Conclusion

The reason for performing the audit was to firstly ascertain the percentage of our GMS patients who had received the influenza vaccination during the 2017/2018 Influenza season and secondly ascertain whether the introduction of a practice influenza vaccination programme would increase the number of patients, over the age of sixty-five, who received the influenza vaccination in our practice during the 2018/2019 the influenza season to 75% or above, as recommended by the WHO.

The evaluation showed that the vaccine uptake rate in the practice during the 2018/2019 influenza season was 81%, versus an estimated uptake rate of 53% in the 2017/2018 season. Moreover, there was a 33% increase in the influenza vaccine uptake rate as a direct result of the project.

The evaluation methods used, accurately reflected the situation within the practice as it occurred. It also highlighted the beneficial effect that both “passive vaccination” and “active vaccination” had on the influenza vaccine uptake figures.

Ethical Considerations

Ethical approval was sought and granted by the Irish College of General Practitioners. They advised that they had no ethical concerns, as the project was a quality improvement project, which aimed to ensure best practice, with no negative impact on patient care.

Discussion

The audit demonstrated that through the introduction of changes in work practice, a significant change could be achieved in a General Practice setting. In our practice, an introduction of a programme around influenza vaccination, led to an increase in the influenza vaccination uptake rate in patients over the age of sixty-five in our practice. It revealed that the proportion of our patients vaccinated with the influenza vaccine increased from 53% to 68% overall. This represents a 33% increase in the percentage of patients vaccinated within the practice during the influenza season 2018/2019 when compared with the 2017/2018 influenza season.

An additional sixty-two patients were vaccinated in total. Further analysis of the data reveals that fifteen additional patients were vaccinated as a direct result of active vaccination, and forty-seven additional patients were vaccinated as a result of the changes that occurred within the practice. This reveals that the influenza vaccination programme that was introduced within the practice surrounding passive influenza vaccination was, significantly, as important as the active vaccination itself. This finding which demonstrated that activities such as audit and education, as undertaken within our practice, can lead to an increase in vaccine uptake rates as well as contacting patients directly.

The project also revealed that 16% of our patient population declined vaccination. The reasons for this were not formally documented as part of the audit, but as the sole person contacting the patient's, it was evident that fear of perceived side effects was the greatest deterrent to vaccination. This is also consistent with the findings in the literature (Johnson at al, 2008) (Poland et al, 2008).

Aside from these major findings, the audit also revealed that 9% of the practice's patient population had received their influenza vaccine at the pharmacist. This provides some data in an Irish context on the percentage of patients that receive the

influenza vaccine in the pharmacy versus those that receive it at their General Practitioner. This population would otherwise have been documented as not having received the influenza vaccine. This also illustrates the problem of poor communication between General Practice and pharmacy, and importantly, the problems that arise when unique patient identifiers and integrated Information technology systems do not exist.

Finally, the audit also revealed that only 3.5% of the study population had received the influenza vaccine in the hospital, reinforcing the important role that General Practice plays in influenza vaccination in Ireland.

Conclusions

The audit involved the introduction of a porgramme around influenza vaccination in our practice, with the aim of increasing the proportion of our over sixty-five-year old patient population who were vaccinated against influenza to 75% or over as recommended by the WHO.

The findings showed that as a result of the intervention introduced as part of the audit the percentage of patients over the age of sixty-five vaccinated against influenza in the practice rose from 53% in the 2017/2018 influenza season to 68% in the 2018/2019 influenza season. Moreover, it established that 81% of this patient cohort was vaccinated against influenza.

The influenza vaccination programme introduced and the audit could be used as a template nationally to increase the uptake rate for all non-infant vaccinations. Furthermore, it has shown that addressing the economic and administrative burden associated with active vaccination can lead to a practice achieving national vaccination targets. This has implications for public health and the resourcing of General Practice.

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