NEEDLE-FREE JET INJECTION IN WORKPLACE INFLUENZA CLINICS

Here, Tara Miller, MS, Clinical Affairs Manager, PharmaJet; Chris Galloway, MD, Medical Director, Aspyrian Therapeutics; and William E Gannon Jr, MD, CSO/Medical Director, Capital City Consulting, evaluate an unmet need for increasing immunisation coverage in workplace influenza clinics by offering needle-free injection technology as an alternative to needle and syringe delivery.

INTRODUCTION

Needle-free Injection System (NFIS) technology has evolved significantly over the last 50 years and has been accepted in many routine immunisation settings as a safe and effective vaccine delivery method.

Company-hosted influenza (flu) clinics are an effective way to make getting a flu shot easy and convenient for employees. Therefore, flu shots can be administered to employees at their place of work by trained healthcare professionals as part of workplace health influenza clinics. The benefits of needle-free injection technology in such clinics are significant.

It is safe:

- No needle, therefore no risk of needle stick
- Auto-disabling syringe which means no re-use
- Accurate and consistent injections
- Reduces sharps disposal which reduces cost and waste
- Delivers vaccines to the desired tissue depth.

> "Surveys were completed by patients, caregivers, and event co-ordinators to collect feedback regarding the acceptability and usability of the device, whether it should be an option for next year, the potential to increase influenza immunisation coverage at a particular site, as well as information on the event itself."

It is fast:

- Delivers the vaccine into the muscle in about one-tenth of a second
- Most healthcare providers are self-trained within 20 minutes.

It is easy:

- 95% of patients would choose it again for their next vaccination[1]
- Minimises injection associated fear and anxiety for the patient and provider resulting in a better experience.

BACKGROUND ON INFLUENZA

Influenza is one of the most common preventable infectious diseases. In the US alone, approximately 10-20% of the population contracts influenza each year, which accounts for about 226,000 hospitalisations and 36,000 deaths annually. While morbidity and mortality affect mostly the young and old, all age groups are affected. This includes the more than half of adults aged 20-64 years that are employed, and results in about 111 million lost working days every year.[2-4]

Workplace health influenza immunisation programmes are an important factor to consider for addressing decreased productivity, when a simple flu shot could decrease work absenteeism[3] and significantly reduce the risk of spread of influenza to others. According to the US National Institute for Occupational Safety and Health (NIOSH), the costs associated with sick days and lost productivity are approximately US$7 billion (£5.5 billion) in the US annually.[4,7] In spite of the potential benefits of vaccination, one study showed that only about 20% of healthy working

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age adults aged 18-49 years receive an annual flu shot.[5]

In addition to improving employee productivity and decreasing absenteeism, there are strategies to immunisation practices that can influence the success of influenza vaccination programs such as:

- Obtaining upper management and employee buy-in
- Providing incentives to employees for getting vaccinated
- Offering convenient times and locations
- Educating employees about influenza vaccination
- Offering a needle-free option as a safe and effective alternative to needle and syringe.

The measures above could increase compliance of influenza vaccination in the workplace. Increased vaccination rates will reduce employee absenteeism, increase productivity and reduce healthcare utilisation and expenditures.

WORKPLACE INFLUENZA VACCINE SURVEYS

During the 2016-17 influenza season, the PharmaJet Stratis® Needle-free Injection System was used in multiple workplace health influenza clinics. Immunisations were administered by either Affiliated Physicians (New York, NY, US) nurses, Sam's Club (Bentonville, AR, US) pharmacists, or occupational health nurses employed by a particular company or organisation. There were 35 vaccination events, which included employees from BP Oil, Cargill, Denver International Airport, Ernst & Young, Morgan Stanley, Terumo BCT, TriNet, and Xerox, among others.

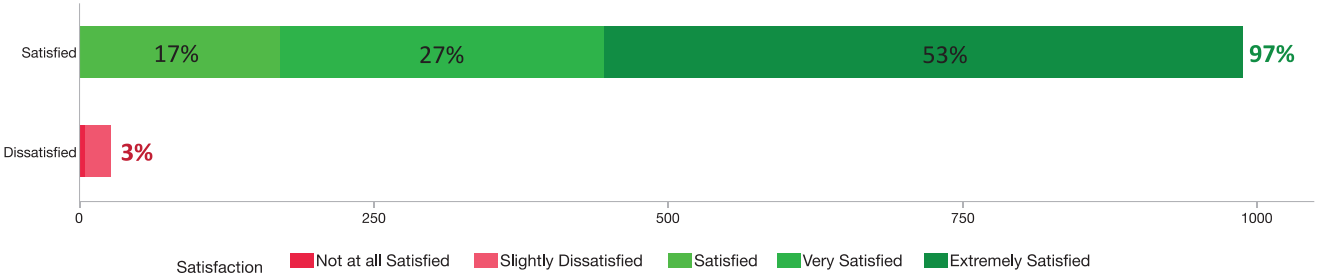
Surveys were completed by patients, caregivers, and event co-ordinators to collect feedback regarding the acceptability and usability of the device, whether it should be an option for next year, the potential to increase influenza immunisation coverage at a particular site, as well as information on the event itself.

The results of these surveys by audience are summarised in the following text and in Figures 1 and 2.

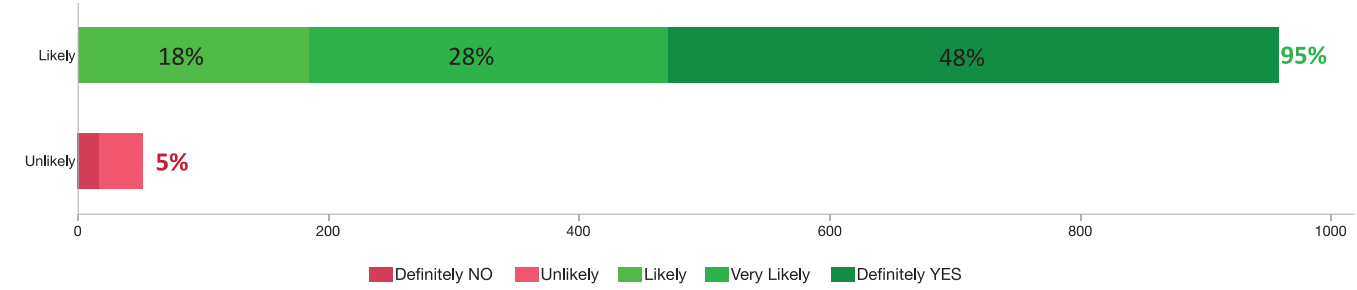
Patient Surveys

Overall, 1,018 surveys were completed by working individuals, 18-64 years of age, who received a needle-free flu shot at one of the influenza vaccination events. Figure 1 shows results for each of the three key questions regarding satisfaction, likelihood of choosing a needle-free injection next year, and likelihood of

a) How satisfied were you with today's needle-free flu shot?



b) For next year's flu vaccination, will you choose to receive your flu shot with a needle-free injection?



c) How likely are you to recommend a needle-free flu shot to your family and friends?

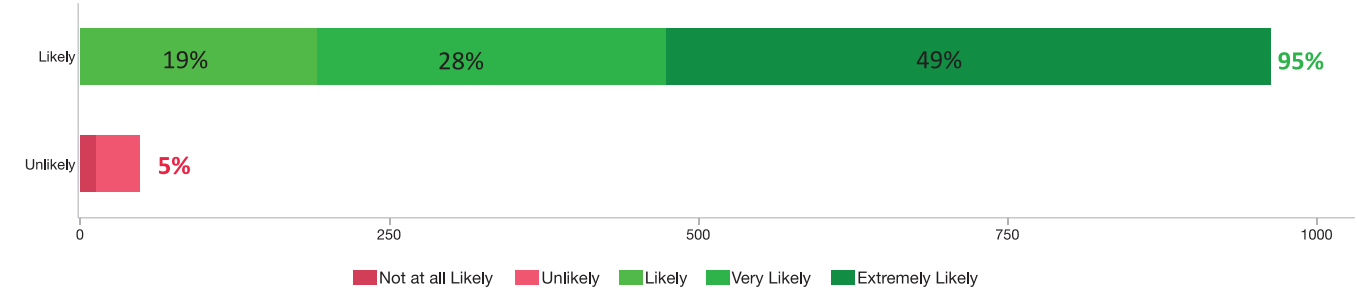
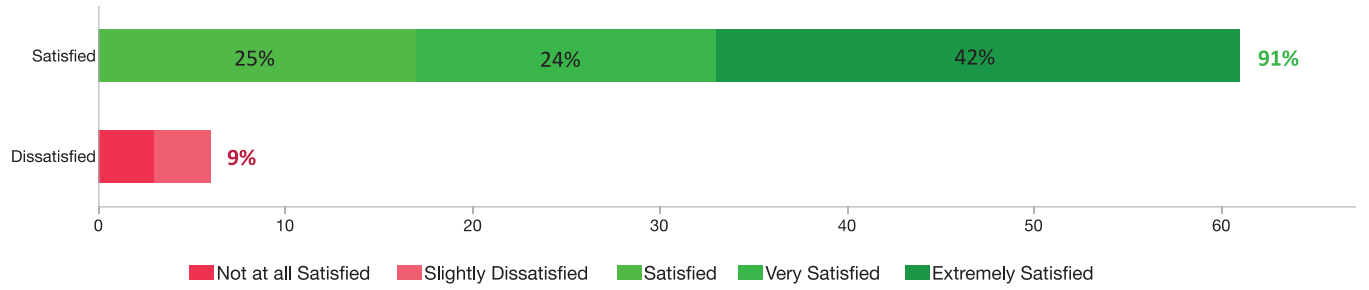
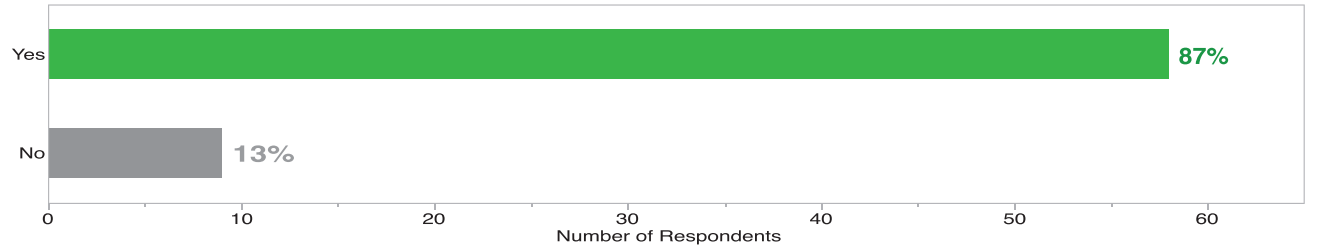


Figure 1: Patient survey results regarding: a) satisfaction with the needle-free injection they had just received; b) likelihood of choosing a needle-free injection next year; and c) likelihood of recommending a needle-free injection to family or friends.

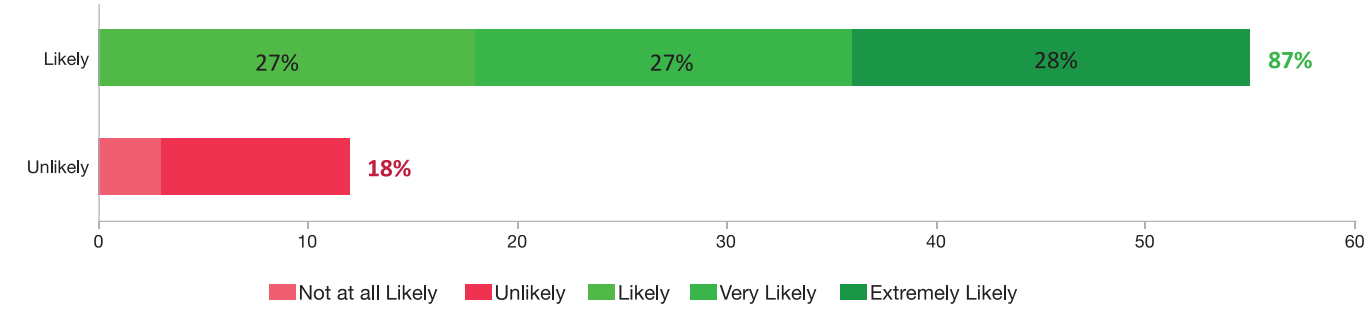
a) How satisfied were you with the ease of use?



b) For next year's flu vaccinations, would you like the option of needle-free shots at your facility?



c) How likely are you to recommend needle-free flu shots to your colleagues?



d) How much could your flu vaccinations increase next year by offering the option of a needle-free flu shots?

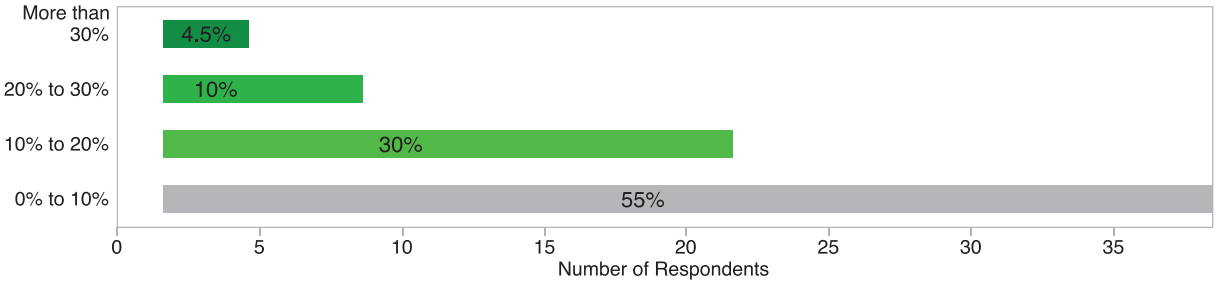


Figure 2: Healthcare provider survey results regarding: a) satisfaction with ease of use; b) needle-free option for next year; c) likelihood to recommend to colleagues; and d) how much vaccination could be increased by offering needle-free.

recommending a needle-free injection to friends and family.[1] In summary:

- The majority of patients (97%) were satisfied with the needle-free shot[1]
- 95% of patients responded that they would choose needle-free again next year[1]
- 95% said they were likely to recommend needle-free to friends and family.[1]

Healthcare Provider Surveys

PharmaJet has been collecting healthcare provider feedback from those administering needle-free vaccinations with Stratis® in retail and workplace health clinics for several years. The providers of needle-free influenza vaccinations have included contract nurses, pharmacists, and occupational health nurses employed full time at some organisations. For the 2016-17 workplace health clinics, six surveys were completed by healthcare providers following flu clinic events.

All (100%) of the healthcare providers surveyed were both satisfied with the ease of use of the device and all indicated that they would like to have needle-free delivery as an option in their workplace

health clinic next year. Additionally, 33% thought having a needle-free option would increase immunisation coverage in their workplace immunisation programs. Of those that responded to the immunisation coverage question, two-thirds (67%) answered needle-free could potentially increase immunisation rates in their workplace immunisation program by greater than 10%.[1]

The 2016-17 workplace health immunisation clinic results are consistent with the results obtained in previous flu clinics where the PharmaJet needle-free system was used to give influenza vaccinations. Additionally, healthcare providers that participated in vaccinations during this flu season came from similar backgrounds as the providers that performed influenza vaccinations in previous years.

Healthcare provider results from previous flu clinics are summarised below. There were 67 healthcare providers that completed the survey in total:

- 91% of healthcare providers were satisfied with Ease of Use[6]
- 87% would like the option of Needle-free next year[6]
- 82% said they would be likely to recommend Needle-free flu shots to their colleagues[6]
- 45% of respondents from previous vaccination events thought that offering a Needle-free option could increase flu vaccinations by more than 10% at their facility.[6]

The healthcare provider survey results are shown in Figure 2.

Event Co-ordinator Surveys

Event co-ordinators also completed surveys regarding their overall experience with the workplace health immunisation event, and the potential for increasing immunisation coverage for their site. Overall, 91% thought the event met the expectations for their location and 73% responded they would like to participate in an event again next year. Additionally, several respondents said that including a needle-free delivery option had the potential to increase influenza vaccinations in their workplace health programme by greater than 10% next year.[1]

CONCLUSION

There are approximately 216.5 million healthy working adults in the US aged 20-64 years.[2] However, only about 20% aged 18-49 years receive an annual influenza immunisation.[4] Only a small percentage of individuals of working age receive a flu shot each year. Based on the numbers of sick days and lost productivity reported annually, it is clear there is an unmet need for increasing vaccination rates in the workplace. Offering needle-free technology in a workplace influenza immunisation programme has the potential to help meet this need and could be beneficial to the overall health of the employees and the productivity of the organisation.

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ABOUT THE AUTHORS

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