Implementation of an Adult Pneumococcal **Disease and Influenza Vaccination Program** in a Community Hospital

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ST. ANDREW'S COMMUNITY HOSPITAL

Introduction

Pneumococcal disease (PD) and influenza are common respiratory diseases preventable with vaccination.

Their burden of healthcare in Singapore is substantial, with pneumonia the 2nd most common cause of mortality and up to 3500 people with flu-like symptoms per week.¹⁻² Both types of vaccines have been shown to be cost effective and reduce hospitalization and mortality.³⁻⁴

Workflow Summary

Pharmacist to screen for eligibility of newly admitted patients using screening form and make recommendations. Input information in excel sheet.





Despite the benefits, vaccination rates remain low, both nationally and within the hospital.⁵⁻⁶ We thus identified a need to develop a screening and administration program to improve rates in our hospital.

Aims

- Develop and implement a structured protocol for screening, ordering and administration of pneumococcal (PV) and influenza vaccines of adult patients in St. Andrew's Community Hospital.
- Evaluate the impact of this protocol on vaccination rates.
- **Determine** and evaluate reasons for the rejection of vaccination from both patients and healthcare providers.
- Monitor the incidences and types of adverse drug reactions (ADRs).

Survey – Barriers to Vaccinations



Within 1 week of admission, send the form to ward.

Within 1 to 2 weeks of receiving form, doctor to review, interview patient and obtain consent.



Within one week of administration, nurse to record ADRs that may be caused by the vaccines .

On discharge, completed form to be sent back to pharmacy. Outcome, reasons for rejection and ADRs to be entered in excel sheet



Results





A survey was done with healthcare professionals and patients in the hospital to determine the barriers to vaccination. The top 3 barriers were:

- Lack of awareness of the vaccines for both healthcare professionals and patients.
- Lack of standardised protocol and confusion to vaccination schedule. 2.
- **Increased workload for healthcare professionals.** 3.

Interventions to Mitigate Barriers

5						Pharmacist's Recommendation	Dr's Vaccination Order (Note: Send form to Pharmacy if outcome of recommendation is not
AXC	ST. ANDREW'S COMMUNITY HOSPITAL (A service of St. Andrew's Mission Hospitel)			Pneumococcal	ccal		Yes / No* / Pending
				influenza			Yes / No* / Pending
-				Date			
Adult P	neumococcal	and Influenza	Vaccine Scree	ning and	Rec	ommendatio	on Tool for Pharmacist
Serial No	o. :	IC:	Gender:	Rac	ce:		Bed No.:
Admissio	on Date:	Name:		Age	e:	Allergies:	
	cardiomyopathies) Chronic liver disease Chronic lung disease Cigarette smoking	and asthma)	Generalized malignancy HIV infection Hodgkin disease latrogenic immunosuppression (On immunosuppressin drugs, long-term systemic corticosteroids or radiation				
	Diabetes mellitus		drug	drugs, long-term systemic corticosteroids or radiation			
mmunocompetent 2: (HIGH RISK Group B)					ther	apy)	
	Cochlear implants				Lym	phoma	
	CSF leaks			<u> </u>	Mult	tiple myeloma	
Persons with functional or anatomic asplenia: (HIGH RISK				H	Solid	nrotic syndrome	
Group C)					30110	organ transplant	
	Congenital or acquir	red asplenia				THE ABOVE	
	Sickle cell disease/or	ckle cell disease/other hemoglobinopathies			ONE		
Persons v Group C) C C I If patien A. Fo ap	with functional or Congenital or acquir Sickle cell disease/o at has multiple co r AGES 65 AND propriate regim	r anatomic asplenia red asplenia ther hemoglobinopat nditions in differen <u>ABOVE, use the fo</u> te.	: <u>(HIGH RISK</u> hies t groups, CHOOSE / ollowing algorithm	ANY OF TH	Nepl Solid	hrotic syndrome I organ transplant DF THE ABOVE H RISK GROUP IN ecommendatio	I SCM when ordering

 Conducted talks doctors, nurses for and pharmacists on vaccines and workflow before implementation of program to create awareness.

• Devised standardised screening and monitoring form using guidelines from the Advisory Committee on Immunisation Practices (ACIP) and the National Adult Immunisation Schedule (NAIS).⁷⁻⁸

INPATIENT VACCINATION	DATE ORDERED:	
Vaccine:	EPCV 13	CIPPSV23
Pneumococcal Vaccine Follow Up:		
PCV13/PPSV23 (delete accordingly)	at leastmonths later	O None
Counselling provided on potential	side effects e.g. fever, sorenes	s, letha

- A total of **1112** patients were screened from the period of September 2018 to March 2019. 900 were eligible for PV and 915 for influenza. 377 were administered with PV and 337 with influenza vaccines, with rates of 41.9% and 36.8% respectively.
- **Reasons for rejection of the pharmacists' recommendations by doctors include** infection and/or fever during stay, low platelet count, increased aPTT, poor



insure there is at least twelve months between PPSV23 and PCV13. For patient Groups B, C and D, space at least 8 w



• Devised standardized workflow for pharmacists, doctors and nurses to streamline workload. Created a stamp to minimise documentation in case notes.

prognosis with limited lifespan and early discharge of patients.

- Reasons for rejection by the patients or their caregivers include concerns of costs and **ADRs**, skepticism of effectiveness and fear of injections.
- Incidences of ADRs were low and non-serious, with 7 systemic and 9 localized ones reported.

Conclusion and Future Directions

- This structured program has allowed our patients to be offered appropriate vaccines during their stay in the ward with vaccine education and ADR monitoring, consequentially leading to reduced hospitalization and mortality. Reasons for declining the vaccines, if any, were documented to allow evaluation on how to improve the acceptance rates and hopefully achieve herd immunity.
- Following the success of this program, other vaccines such as varicella vaccine may be included as well.

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