Prescribing Rate of Influenza Vaccine among Internal Medicine Residents for Outpatient Continuum Care

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Background: *Annual epidemics of influenza viruses remain a substantial cause of morbidity and mortality worldwide particularly among vulnerable groups. Immunization is another way to reduce the infection and mortality rates, especially in high-risk groups; however, the data concerning prescription rates and possible influencing factors on decisions associated with influenza prescription of Thai internal medicine residents were limited.*

Objective: *Siriraj internal medicine residency training has provided outpatient continuum care practice for all 1st year residents since 2008. A part of the curriculum was to prepare each trainee to be an effective vaccinator. This study aims to examine the competency of those residents who had completed the training, particularly about prescribing influenza vaccine.*

Material and Method: *The authors retrospectively reviewed medical records of the patients that indicated need for influenza vaccine encountered by 2nd and 3rd year residents during June 2011 and May 2012. The 20-item questionnaire was also sent out in order to study possible factors associated on prescribing the vaccine.*

Results: *Three hundred and seventy-three medical records were included and reviewed. The prescription rate of influenza vaccine was 8.0 percent. Comparing vaccine receiving and non-receiving groups, the authors found having respiratory problems (26.7% vs. 4.4%; odds ratio 8.0 [3.0-20.8]; p<0.001) and being self-paying (16.7% vs. 5.8%; odds ratio 3.2 [1.1-9.3]; p = 0.023) were the only two significant differences. Only 5.7 percent of total residents were an effective vaccinator. One hundred and five residents returned the questionnaire. Residents who had further plans for fellowship trainings had reported a higher influenza vaccine prescription rate than those who will be general internists (45.2% vs. 8.1%; adjusted odds ratio 14.04 [1.6-125.8]; p = 0.018). The authors also found that the rate of vaccine recognition, general knowledge of vaccination, and vaccine coverage remained 61.9%, 29.5%, and 21.0% among medicine residents.*

Conclusion: *Prescribing rate of influenza vaccine remained low due to multifactor aspects, including doctor capability, attitude, patient recognition as well as reimbursement issues. In order to improve the rate of influenza vaccine prescriptions, a system-designed approach would be needed.*

Keywords: *Influenza vaccine, Prescription, Internal medicine resident, Outpatient, Continuum care*

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The influenza virus is a major cause of acute respiratory tract infections and common in people of all age groups. Although most persons who become influenza victims will recover without complication, influenza can cause serious illness and death, especially among persons aged more than 65 years and less than 2 years and for patients with medical conditions[1-3]. During 1976-2006, estimated influenza-associated deaths ranged from 3,000 to 49,000 case annually[2]. Deaths associated with influenza were also most frequent among older adults. From the 1976-1977 season through the 2006-2007 season, an estimated yearly average of 21,098 influenza-related deaths occurred among adults aged 65 years or more, comprising approximately 90% of estimated annual average deaths across all age groups. In comparison, the average annual mortality was estimated to be 124 deaths among persons aged less than 19 years and 2,385 deaths among persons aged 19 through 64 years[2]. Of surveillance data and epidemiological studies in Thailand, the estimated number of influenza-documented cases has 700,000 to 900,000 cases per year. Influenza patients hospitalized due to pneumonia were estimated about 12,575 to 75,801 cases per year. Moreover, fatality rates of influenza were 2.5 percent. This might lead to an economic burden in the amount of 913 to 2,453 million baht per year[4].

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Immunization is another way to reduce the infection and mortality rate of the whole population, especially among vulnerable groups[1,5]. At least three of the following groups were indicated[3,6]. First, groups at high-risk of potential complications or symptoms of influenza severity include persons with at least one of the following factors, being 65-year-old or more, having chronic obstructive pulmonary disease (COPD) or asthma, having chronic diseases, immune disorders including those receiving immunosuppressant, in the second quarter of pregnancy or later and children or teenagers (6 months-18 years) who were treated with aspirin regularly for a long time. Secondly, any person can spread influenza to high-risk groups, including health care professionals and laboratories. Finally, low-risk persons who travel abroad frequently, such as by air or any persons acting as a public service postman, public transit bus driver, and police officer are candidates for immunization[7]. In previous study, influenza vaccine prescriptions in the elderly, Thai community can reduce not only incident rates of influenza-like illness by half[8], but it is also reported that it can decrease expenses in Thai health care service for influenza disease[9].

Siriraj internal medicine residency training for all 1st year residents since 2008 has provided outpatient continuum care, which is the outpatient training curriculum based on continuity of care concepts ranged from prevention to curative treatment. A part of this curriculum was to prepare each trainee to be an effective vaccinator. This study aims to examine the competency of those residents who had completed the training particularly on prescribing influenza vaccine. Moreover, we also studied the factors, such as vaccine knowledge, attitude, experience, recognition, general preventive awareness scores and other possible influencing factors on making decisions associated with medicine regarding resident behavior for influenza vaccine prescriptions among high-risk elderly patients.

Material and Method

The authors designed a descriptive study, using retrospective structured chart reviews from patient's medical records at outpatient medicine department, Siriraj Hospital, between June 2011 and May 2012. First, medical records of the patients who have been followed up more than three visits by 2nd and 3rd year internal medicine residents were selected. Secondly, the authors recruited medical records of elderly patients (age ≥65 years) that have been recorded in the Diagnosis Related Group (DRG) with any of the following conditions: type 2 DM, thalassemia, chronic kidney disease (CKD) stage 3 or more, asthma, chronic obstructive pulmonary disease (COPD), heart disease, morbid obesity (BMI >40 kg/m^2) and immunocompromised host. Finally, we randomly selected at least three or more of these medical records for each medical resident by hospital number up to 400 charts. The authors assessed the quality of all charts and excluded incomplete medical records.

The authors developed a questionnaire and conducted a cross-sectional study among approximately 122 medicine residents. Baseline characteristics and possible associating factors for outcomes of interest were obtained using a 20-item questionnaire (Appendix 1). The authors first developed a questionnaire which was adapted partially from the validated Thai questionnaires of awareness, factors influencing willingness to receive vaccine, healthy living habits and general preventive awareness scores by Pandejpong et al[10] and by Luszcynska et al 2005[11]. The questionnaires were then validated and adjusted to be appropriate for the present study by the four experts. The present study was approved by the Siriraj Institutional Review Board.

The proportion of patients receiving influenza vaccine in high-risk groups across the country in 2009 was 50.8%[12]; the formula was a reasonable sample size. The estimate of the proportion of the population by setting the error tolerance was 10% of the proportion of the influenza vaccine in patients at risk across the country in 2009 was 0.05 and the standard and Z on the table equal to 1.96 at 95% confidence level. The calculation of the sample size used in the present study, the medical records to collect data for at least 385 people, so the sample size used in this study was 400.

The primary outcome was the compliance rates of internal medicine residents on prescribing influenza vaccine to high-risk patients at the outpatient internal medicine department between June 2011 and May 2012. Moreover, secondary outcome was the factors such as baseline characteristics, knowledge, recognition, and attitude influencing decisions prescribing influenza vaccine. By herd immunity threshold, the vaccines can prevent transmission of the disease to people who are likely to be infected and are not vaccinated or refers to a class of people who have immunized in the group. Herd immunity level data showed that 33-50% of influenza-vaccinated groups were effective in preventing transmission of disease to approximately 70 to 90 percent[13,14].

Therefore, an effective vaccinator in the present study was defined as the one who prescribes influenza vaccine to at least 33 percent of vulnerable patients.

All the parameters that affected the appropriate prescription of vaccines by 2nd and 3rd year internal medicine residents were evaluated. The score for general knowledge of influenza was assessed by asking about all indications of this vaccine and necessity of immunization for a specific group. The knowledge was categorized into high and low vaccine knowledge groups by scores with a cutoff of more than 80 percent and lower, respectively. Influenza experience was defined as the residents who have one of the following: yourself or your relative having influenza experience and influenza-fatal cases in caring. Recognition of adult vaccination is classified as two of the following elements: belief in vaccine effectiveness, previous vaccination, and willingness for vaccination. Good vaccine attitude components are determined by possession of three or more of the following components: current self-vaccination, parent's immunization, belief in vaccination efficacy, paying attention to vaccine, and no effect of right to vaccine prescription. Overall, proper screening was defined as the residents who designed appropriate screening programs according to standard guidelines with at least three out of five of the following: mammogram, stool occult blood test, pap smear, lipid profile and fasting blood glucose screening

Respondents and medical records were described. The qualitative variables were presented as frequencies and percentages. Continuous data were expressed as mean ± SD or median according to the distributions. For continuous data, Student's t-test and Mann-Whitney U test were used to compare differences between groups. Categorical data, such as factors associating the prescription of appropriate vaccines by 2nd and 3rd year internal medicine residents, were compared using Chi-square test or Fisher's exact test if the element is an enumeration data point. Odds ratios of prescription factors were assessed using univariate and multivariate binary logistic regression analyses. All statistical analyses were performed using SPSS software (version 18.0). For all analyses, a *p*-value of less than 0.05 was considered to be of statistical significance.

Results

Four hundred medical records of high-risk patients from out-patient medicine department and one hundred and twenty-two questionnaires were collected. Twenty-seven charts and seventeen questionnaires were excluded due to incomplete data according to the exclusion criteria. Therefore, three hundred and seventy-three charts of high-risk medical patients and one hundred and five questionnaires were recruited. The patient's mean age was 74.6±6.4 years. The sampling population was 55.2% female and 44.8% male. All patients followed up with 2nd and 3rd year residents at the general internal medicine outpatient clinic Siriraj Hospital. Two hundred and fifty-five patients (68.4%) were diagnosed as diabetes. Other diseases were chronic kidney disease (34%), heart disease (30.6%), obesity (7.2%), chest disease (6.2%), thalassemia (2.9%), and immunodeficiency (1.9%). The study showed that only thirty vulnerable patients (8.0%) were prescribed influenza vaccine [95% confidence interval [CI] 5.7%-11.3%]. Self-payment patients were significantly higher in the influenza vaccine receiving group than the non-receiving group (16.7% vs. 5.8%; $p = 0.023$). Odds ratio (OR) for vaccine prescription in self-payment patients was 3.23; [95% CI 1.12-9.33]. Respiratory diseases including asthma and COPD were significantly higher in influenza the vaccine-receiving group than the non-receiving group when compared with other diseases (26.7% vs. 4.4%, OR 8.0 [3.0-20.8]; $p<0.001$). The characteristics of all high-risk medical patients and patients who received and did not receive influenza vaccine are shown in Table 1.

According to this study, 20 residents prescribed influenza vaccine, which accounted for 19.1% of total residents; moreover, only six residents were effective vaccinators, which accounted for only 5.7% of total residents. Characteristics of 105 respondents, prescription rate, knowledge, experience, and their attitudes regarding influenza vaccine among residents are summarized in Table 2. Most (60-90%) of the residents in both groups not only had influenza exposure experience, positive attitude, recognition for influenza vaccine, and high preventive mind score for other diseases, but 75% of them also had been vaccinated with influenza vaccine. However, only 29.5% of all residents had sufficient knowledge about the indication of this vaccine and only 21.0% of them had been vaccinated in the present year. The main reasons of internal medicine residents who were not prescribing influenza vaccine were: forgot (80%), cost of vaccine (52.4%), and inadequate time for vaccine recommendation (34.3%). In resident perspective, a few main reasons for patients to refuse influenza vaccination were vaccine expense (71.4%), fearing

Table 1. The characteristics of all high risk medical patients and comparison between the patients who received and did not receive influenza vaccine

	All high risk patients n = 373	Influenza vaccine receiving group n = 30	Influenza vaccine non-receiving group n = 343	*p*-value
Age (years)				
Mean ± SD	74.6±6.4	75.6±5.1	74.5±6.5	0.23
Median (range)	74 (50-96)	76 (68-85)	74 (50-96)	0.11
Gender: female, n (%)	206 (55.2)	21 (70.0)	185 (53.9)	0.90
Health privilege, n (%)				0.09
Self-payment	25 (6.7)	5 (16.7)	20 (5.8)	
Reimbursement	278 (74.5)	18 (60.0)	260 (75.8)	
Universal coverage	67 (18.0)	7 (23.3)	60 (17.5)	
Social security	3 (0.8)	0	3 (0.9)	
Occupation, n (%)				0.13
Steward/housewife	186 (49.9)	20 (66.7)	166 (48.4)	
Official government	106 (28.4)	4 (13.3)	102 (29.7)	
Employee/agriculturist	51 (13.7)	5 (16.7)	46 (13.4)	
Trader	30 (8.0)	1 (3.3)	29 (8.5)	
Home town, n (%)				0.32
Bangkok	241 (70.3)	21 (73.3)	219 (63.8)	
No. of resident visit, n (%)				0.36
3 times/year	126 (33.8)	6 (20.0)	120 (35.0)	
4-5 times/year	139 (37.3)	12 (40.0)	127 (37.0)	
More than 5 times/year	108 (29.0)	12 (40.0)	96 (28.0)	
Comorbidity, n (%)				
T2DM	255 (68.4)	18 (60.0)	237 (69.0)	0.30
Chronic kidney disease	127 (34.0)	11 (36.7)	116 (33.8)	0.75
Heart disease	114 (30.6)	7 (23.3)	107 (31.2)	0.30
Morbid obesity	27 (7.2)	4 (13.3)	23 (6.7)	0.18
Chest disease	23 (6.2)	8 (26.7)	15 (4.4)	<0.001
Thalassemia	11 (2.9)	11 (3.2)	0	0.32
Immunocompromised	7 (1.9)	0	7 (2.0)	0.43
Vaccine advise record, n (%)	7 (1.9)	0	7 (2.0)	1.00
Other screening and prevention, n (%)				
Overall proper screening	373 (49.3)	11 (36.7)	173 (50.4)	0.15

SD = standard deviation; T2DM = type 2 diabetes mellitus

pain (48.6%) and concern about side effects (36.2%). The results of factors associated with internal medicine resident behavior for influenza prescription are shown in Table 3. The mean of prescription rate in effective vaccinators was 44.9%±13.3%, whereas the mean rate in non-effective vaccinators was 2.45%±6.25%. The fellowship training plan and vaccine recognition were significantly higher in effective vaccinators when compared with non-effective vaccinator group (83.3% vs. 26.3%; $p = 0.003$ and 100% vs. 59.6%; $p = 0.048$, respectively). Other factors were not significantly different in either group. The group of residents who planned for fellowship training had significant higher influenza vaccine, prescription rates than the general internists group (45.2% vs. 8.1%; OR 9.3 [95% CI 3.1-27.9]; $p<0.001$). Other characteristics and factors among residents who had further plans for fellowship training and who will be general internists are summarized in Table 2. In multivariate binary logistic, planning to subspecialty study factors only associated independently with effective vaccinators (adjusted OR 14.04 [1.57-125.84]; $p = 0.018$).

Discussion

World Health Organization (WHO), Center of disease control and prevention (CDC), and CDC's

Table 2. Characteristics of 105 physician respondents, prescription rate, knowledge, experience, and their attitudes regarding influenza immunization among planning general internist and subspecialty training groups

Factors	Total	General internist planning	Subspecialty planning	*p*-value
Age (range)				
20-25 years, n (%)	10 (9.5)	3 (4.1)	7 (22.6)	0.003
26-30 years, n (%)	82 (78.1)	60 (81.1)	22 (71.0)	0.25
31-35 years, n (%)	13 (12.4)	11 (14.9)	2 (6.5)	0.23
Gender: female, n (%)	70 (66.3)	50 (67.6)	20 (64.5)	0.76
Grade point average (GPA) >3.4, n (%)	62 (52.4)	45 (60.8)	17 (54.8)	0.51
Self-estimated prescription rate				
Mean ± SD	17.5±15.1	15.9±15.5	21.3±13.5	0.099
Median (range)	12.5 (5-100)	12.5 (5-100)	16.7 (6.7-60)	0.008
Prescription, n (%)	20 (4.9)	6 (8.1)	14 (45.2)	<0.001
Prescription rate (%)				<0.001
Mean ± SD	4.9±12.0	1.7±6.2	12.4±17.9	<0.001
Median (range)	0 (0-62.5)	0 (0-33.3)	0 (0-62.5)	
Effective vaccinator, n (%)	6 (5.7)	1 (1.4)	5 (16.1)	0.003
Previous influenza experience, n (%)	62 (59.0)	45 (60.8)	17 (54.8)	0.57
High vaccination knowledge (>80%), n (%)	31 (29.5)	24 (32.4)	7 (22.6)	0.31
Physician vaccine recognition, n (%)	65 (61.9)	44 (59.5)	21 (67.7)	0.43
Good vaccine attitude, n (%)	68 (64.8)	44 (59.5)	24 (77.4)	0.79
Current influenza vaccine injection, n (%)	22 (21.0)	13 (17.6)	9 (29.0)	0.19
Ever influenza injection, n (%)	79 (75.2)	59 (79.7)	20 (64.6)	0.10
High preventive mind score, n (%)	78 (74.3)	53 (71.6)	25 (80.6)	0.46
Right affected vaccine prescription, n (%)	69 (65.7)	50 (67.6)	19 (61.3)	0.54
Cost influenced with physician influenza prescription, n (%)	95 (90.5)	67 (90.5)	28 (90.4)	1.0

SD = standard deviation

Table 3. Factors associated with medicine resident behavior for influenza prescription among high risk elderly patients

Factors	Effective vaccinator	Non-effective vaccinator	*p*-value
Female, n (%)	5 (83.3)	65 (65.7)	0.372
Planning subspecialty study group, n (%)	5 (83.3)	26 (26.3)	0.003
Grade point average (GPA) >3.4, n (%)	4 (66.7)	58 (58.6)	0.70
Previous influenza experience, n (%)	2 (33.3)	60 (60.6)	0.19
High vaccination knowledge (>80%), n (%)	1 (16.7)	30 (30.3)	0.48
High vaccine recognition, n (%)	6 (100)	59 (59.6)	0.048
Good vaccine attitude, n (%)	6 (100)	62 (62.6)	0.063
Current influenza vaccine injection, n (%)	1 (16.7)	21 (21.2)	0.79
High preventive mind score, n (%)	4 (66.7)	74 (74.7)	0.66

SD = standard deviation

Advisory Committee on Immunization Practices (ACIP) recommended influenza vaccine for patients at risk of developing complications of influenza and caregivers living near high-risk patients. Because flu strains change easily and often, influenza vaccination should be done every year[3]. This study's results indicate that although mean self-estimated rates of influenza vaccine prescription were 17.5% (median

12.5%), mean rates of influenza vaccine prescriptions in clinical practice by internal medicine residents was 4.9%. Both vaccination rates were still extremely low when compared with vaccination rate among high-risk groups in the United State (62.1%)[15]. Moreover, residents who were defined as effective vaccinator were found in minimal proportion (5.7%) of all residents despite the fact that internal medicine residents are supposed to be the first of the priority persons to be prescribed. Furthermore, only 21.0% of all residents have received influenza vaccines in current years, whereas the other studies reported vaccination rates at approximate 50% for physicians[16]. Overall, the rate of prescriptions, effective vaccinators and current physician influenza vaccine injections were still low when compared with the previous studies[17-19] and insufficient to achieve influenza herd immunity (33-50%)[13,14].

Regarding medical records, we found that asthma and COPD were the diseases for which influenza vaccine had been ordered, more than the other disease groups. These finding were similar to previous studies which reported the strongest predictors of influenza vaccination were the diagnosis of renal disease, diabetes, or asthma[15].

Resident perception (52%) also was concerned with costs and universal coverage of their patients. However, self-payment participants were more significantly immunized than others (Odds ratio 3.2; [1.1-9.3]; $p = 0.023$). This may only be one possible explanation for low compliance rates.

A group of residents who had further plans for fellowship or subspecialty training have had significantly higher influenza vaccine prescriptions than groups of residents who will be general internists (45.2% vs. 8.1%; $p<0.001$, respectively). This finding may be different from previous studies that general internist physicians were more likely than subspecialties to use each of the vaccination strategies and to recommend influenza vaccine strongly[19]. There are a few reasons that explained this finding: because these subjects were in internal medicine residency training. Conversely, the subjects in the previous studies were specialists. According to these studies, the subspecialty training, planning group more likely had higher vaccine reliability, good vaccine attitude, other preventive mind scores, and current rate of influenza vaccine injection than general internist planning group did; however, these differences were not significant. This study showed, first, high vaccine knowledge and current vaccinated physicians were still extremely low. Secondly, approximate only 60% of all residents have high vaccine reliability. Thirdly, vaccine recognition of physicians was significantly higher in effective vaccinator when compared with non-effective vaccinator group. Finally, the reason for more than 80% internal medicine residents did not prescribe influenza vaccine was they forgot. These four major reasons can be possible contributing factors for lack of vaccination by residents and the low rate of vaccination in their patients while free vaccine campaigns for all health care workers and high-risk patients were provided. These findings have a correlation with previous review studies that a lack of knowledge about vaccine, previous receivers of influenza vaccine, belief in vaccine's effectiveness and a lack of convenient access to vaccine were the major reasons for unvaccinated physicians[20,21]. Previous study also demonstrated that unvaccinated physicians were less concerned about infecting patients and had more doubts about the severity of annual influenza epidemics in high-risk patients and the prevention of complications by means of the influenza vaccination[22].

The present study had several limitations. A retrospective review, which is not as strong as a prospective randomized trial, was conducted. These medical records may be incomplete, especially with regard to the advice or recommendation part. Moreover, the authors could not know about any influenza vaccine prescriptions outside Siriraj Hospital. This may lead to underestimation of vaccination rates in these patients. In addition, neither patient's factors nor the vaccine system, as well as public health policy, which may influence the prescription rates, were included in the present study.

Conclusion

The prescribing rate of influenza vaccine remained low due to multifactorial aspects including doctor capability, attitude toward vaccine, and vaccine recognition, as well as the reimbursement issue; therefore, curriculum training for residents may be only one of several components. In order to improve the rate of influenza vaccine prescriptions, a system-designed approach would be needed concurrent with curriculum training. The system-designed program that implemented of strategies to improve knowledge, attitude, and vaccine reliability of internal medicine residents, and use of the intervention facilitating prescription, will undoubtedly improve this rate. Physicians continue to play a critical role in the delivery of influenza vaccination to their high-risk patients.

They should also incorporate these strategies into their clinical practices and curriculums to ensure effective vaccination systems in high-risk patients.

What is already known on this topic?

We are already known that influenza immunization is important way to reduce infection and mortality rate, especially in high risk group.

What this study adds?

The prescription rate of influenza vaccine remained low (about 8%) in medicine residents due to multiple factors.

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Potential conflicts of interest

None.

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Appendix 1. The 20-item questionnaire for medicine resident[10,11]

Items	Questionnaire
1	Which of the following conditions are appropriate for influenza vaccine administration for you?
2	Which of the following medical conditions are appropriate for influenza vaccine administration?
3	Do you have confidence in the effectiveness of vaccines and what extent?
4	Do you recommend the administration of vaccine for your parents?
5	In your view, the right to medical treatment has influence for vaccine Prescription?
6	If your patients at risk have to pay the cost of vaccine, you decide to send them to vaccinate or not?
7	In case of free of charge for vaccine you decide to send your patients at risk to vaccinate or not?
8	Have you ever had the experience of influenza fatal cases caring?
9	Have you ever had the influenza experience?
10	Have you ever had the influenza experience in your relative?
11	Have you ever received influenza vaccine or other vaccine before? What type? What indications? When do you vaccinate last time?
12	Have you ever been attended in vaccine training curriculum?
13	How many OPD patients per hour are you responsible for?
14	How many of your patients per day have been followed up more than three visits? How many of your patients at risk per day are you responsible for?
15	How often do you prescribe influenza vaccine per day?
16	What the following lists are your main reasons for influenza prescription?
17	What are following lists are your main reasons against influenza prescription?
18	What are following lists are your patient's reasons against influenza prescription?
19	Questionnaire items for general preventive awareness scores.
20	Questionnaire items for The participant's healthy living habits.

อัตราการสั่งจ่ายวัคซีนไข้หวัดใหญ่ของแพทย์ประจำบ้านอายุรศาสตร์สำหรับการดูแลผู้ป่วยนอกต่อเนื่อง

วีรชัย ศรีวณิชชากร, กานต์ชนา อัศวทิตานนท์, ชัยวัฒน์ วชิรศักดิ์ศิริ, ธเนศ ชัยสถาผล, เจริญ ฉั่วริยะกุล, พจมาน พิศาลประภา, เด่นหล้า ปาลเดชพงศ์

ภูมิหลัง: *การระบาดประจำปีของเชื้อไวรัสไข้หวัดใหญ่ยังคงเป็นสาเหตุที่สำคัญของการทุพพลภาพและการเสียชีวิตทั่วโลก โดยเฉพาะอย่างยิ่งในผู้ป่วยกลุ่มเสี่ยงสูง การเสริมสร้างภูมิคุ้มกันโดยการฉีดวัคซีนจัดเป็นวิธีการหนึ่งที่จะลดการติดเชื้อ ทุพพลภาพ หรือเสียชีวิตในผู้ป่วยกลุ่มเสี่ยงสูงได้ อย่างไรก็ตามข้อมูลในการสั่งการรักษาและปัจจัยที่เกี่ยวข้องกับการสั่งจ่ายวัคซีนไข้หวัดใหญ่ในแพทย์ประจำบ้านอายุรศาสตร์ในประเทศไทยยังจำกัด*

วัตถุประสงค์: *การฝึกอบรมแพทย์ประจำบ้านอายุรศาสตร์ศิริราชชั้นปีที่ 1 ตั้งแต่ปี พ.ศ. 2551 มีการเรียนการสอนและฝึกอบรมเกี่ยวกับการดูแลผู้ป่วยอย่างต่อเนื่อง ซึ่งส่วนหนึ่งของหลักสูตรเป็นการเตรียมตัวให้แพทย์เป็นผู้ให้วัคซีนได้อย่างมีประสิทธิภาพ ดังนั้นในการศึกษานี้มีจุดมุ่งหมายเพื่อศึกษาสมรรถนะของแพทย์ประจำบ้านหลังผ่านหลักสูตรนี้ในการสั่งจ่ายวัคซีนไข้หวัดใหญ่โดยเฉพาะสำหรับผู้ป่วยกลุ่มที่มีความเสี่ยงสูง*

วัสดุและวิธีการ: *การศึกษานี้เป็นการศึกษาแบบพรรณนาย้อนหลังจากเวชระเบียนของผู้ป่วยที่มีการติดตามการรักษาต่อเนื่อง และมีความจำเป็นต้องได้รับวัคซีนไข้หวัดใหญ่ ระหว่างเดือนมิถุนายน พ.ศ. 2554 ถึง พฤษภาคม พ.ศ. 2555 นอกจากนี้ยังดำเนินการสำรวจเชิงวิเคราะห์ ณ จุดเวลาใดเวลาหนึ่ง ในแพทย์ประจำบ้านอายุรศาสตร์โดยใช้แบบสอบถามจำนวน 20 ข้อ เพื่อเก็บข้อมูลพื้นฐานและหาปัจจัยที่เกี่ยวข้องกับการสั่งจ่ายวัคซีนไข้หวัดใหญ่*

ผลการศึกษา: *เวชระเบียนของผู้ป่วยกลุ่มเสี่ยงจำนวน 373 เวชระเบียนถูกสุ่มเข้าการศึกษา อัตราการสั่งจ่ายวัคซีนไข้หวัดใหญ่พบเพียงร้อยละ 8.0 เมื่อเปรียบเทียบระหว่างกลุ่มที่ได้รับและไม่ได้รับวัคซีน พบว่าผู้ป่วยที่เป็นโรคระบบทางเดินหายใจ (ร้อยละ 26.7 เทียบกับ 4.4; odds ratio เท่ากับ 8.0 [3.0-20.8]; p<0.001) และจ่ายค่ารักษาพยาบาลเอง (ร้อยละ 16.7 เทียบกับ 5.8; odds ratio เท่ากับ 3.2 [1.1-9.3]; p = 0.023) มีความแตกต่างอย่างมีนัยสำคัญทางสถิติ และมีเพียงร้อยละ 5.7 ของแพทย์ประจำบ้านทั้งหมดที่สั่งจ่ายวัคซีนไข้หวัดใหญ่ได้อย่างมีประสิทธิภาพ นอกจากนี้แบบสอบถามจำนวน 105 คน ได้ถูกคัดเลือกเข้าร่วมการศึกษา พบว่าแพทย์ประจำบ้านที่วางแผนที่จะเรียนต่อแพทย์ประจำบ้านต่อยอด มีอัตราการสั่งจ่ายวัคซีนสูงกว่ากลุ่มที่วางแผนจะเป็นอายุรแพทย์ทั่วไป (ร้อยละ 45.2 เทียบกับ 8.1; adjusted odds ratio 14.04 [1.6-125.8]; p = 0.018) ในการศึกษานี้ยังพบว่าความตระหนักรู้ถึงความสำคัญ ระดับความรู้และความเชื่อถือเกี่ยวกับวัคซีน และอัตราการได้รับวัคซีนไข้หวัดใหญ่ในแพทย์ประจำบ้านอยู่ในระดับต่ำมาก (ร้อยละ 61.9, 29.5, และ 21.0 ตามลำดับ)*

สรุป: *อัตราการสั่งจ่ายวัคซีนไข้หวัดใหญ่ในผู้ป่วยที่มีความเสี่ยงสูงอยู่ในระดับที่ต่ำมาก ซึ่งเป็นผลจากหลายปัจจัยไม่ว่าจะเป็นระดับความรู้ ทัศนคติ ระดับการยอมรับเกี่ยวกับวัคซีน และระบบการเบิกจ่าย ดังนั้นการหากลยุทธ์อย่างเป็นระบบ แล้วนำไปพัฒนาและแก้ไขปัจจัยดังกล่าวเป็นสิ่งจำเป็น เพื่อที่จะนำไปสู่การสั่งจ่ายวัคซีนไข้หวัดใหญ่ที่เพิ่มขึ้นในอนาคต*