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Importance of Reasons for Stocking Adult Vaccines

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Abstract

Objectives: Identify the most important reasons underlying decisions to stock or not stock adult vaccines.

Study Design & Methods: US physicians, nurses, pharmacists, and administrators of internal medicine, family medicine, obstetrics/gynecology, and multi-specialty practices involved in vaccine stocking decisions (n=125) completed a best-worst scaling survey online. Sixteen potential factors influencing stocking decisions were developed based on key informant interviews and focus groups. Respondents selected factors that were most and least important in vaccine stocking decisions. Relative importance scores for the best-worst scaling factors were calculated. Survey respondents described which vaccines their practice stocks and reasons for not stocking specific vaccines. Subgroup analyses were performed based on the respondent's involvement in vaccine decision-making, role in the organization, specialty, and affiliation status; and practice characteristics such as practice size, insurance mix, and patient age mix.

Results: Relative importance scores for stocking vaccines were highest for "cost of purchasing vaccine stock", "expense of maintaining vaccine inventory", and "lack of adequate reimbursement for vaccine acquisition and administration". Most respondents (97%) stocked influenza vaccines, but stocking rates of other vaccines varied from 39% (meningococcal B) to 83% (Tdap) Best-worst scaling results were consistent across respondent subgroups, while the range of vaccine types stocked differed by practice type.

Conclusions: Economic factors associated with the purchase and maintenance of vaccine inventory and inadequate reimbursement for vaccination services were the most important to decision-makers when considering whether to stock or not stock vaccines for adults.

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Keywords

Vaccines; vaccination; decision-making; vaccine stocking; vaccine purchasing; barriers; implementation

Objectives/Introduction

Although vaccination rates for childhood vaccines are high in the United States, rates are lower for adult vaccines. The US has achieved the Healthy People 2020 (HP2020) target of 30% for shingles vaccine, but not the adult influenza or pneumococcal immunization targets[1]. The HP2020 target is for 70% of noninstitutionalized adults to be vaccinated for influenza [2], yet only 43.3% of adults were immunized at the end of the 2016-2017 season[3]. The HP2020 target for pneumococcal vaccination of high risk adults 18-64 years is 60% and for non-institutionalized adults 65 years and older is 90%[2], yet coverage is stagnant at 24% for high risk adults 18-64 years and 67% for adults 65 years and older[4]. Medicare claims data estimates even lower pneumococcal vaccine coverage for adults 65 years and older at 59% for any pneumococcal vaccine and only 24% of Medicare patients having had both the pneumococcal polysaccharide vaccine PPSV23 and the pneumococcal conjugate vaccine (PCV13) [5].

Provider recommendations are a key predictor of adult vaccination; however, providers are less likely to recommend vaccines that they do not stock.[6,7]. A 2009 survey of family practice and internal medicine physicians found that many do not stock all adult vaccines and that reimbursement was a barrier to stocking adult vaccines[8]. A 2012 survey of primary care providers found that financial barriers were important to decisions about recommending and stocking vaccines for adults[9]. Subsequent surveys of providers have reported dissatisfaction with reimbursement levels in relation to their costs and profitability varying widely between payers[10,11]. A 2015 survey of obstetricians and gynecologists found many adult vaccines were not stocked and financial barriers were most important to stocking decisions[12]. Most of these studies have focused on general internal medicine and family medicine providers and several have asked about how these barriers affect both recommending and stocking vaccines. Most of these studies also relied on a Likert scale to understand how providers feel about the barriers. Since those studies have been reported, there have been changes in insurance reimbursement for vaccines with the Affordable Care Act, vaccination has expanded in pharmacies, and pharmacists are able to administer vaccines in all 50 states[13].

In this study, we seek to identify the most important reasons underlying decisions to stock adult vaccines. We focus on provider stocking decisions and we expand the pool of providers beyond those studied in the past to include pharmacists. We also expand beyond general internal medicine and family medicine physicians to survey obstetricians and gynecologists (ob-gyns), and other specialties. This study utilizes an innovative best-worst scaling methodology from the field of marketing to quantify the ranking of importance of these barriers[14].

Methods

Best-worst scaling is a survey approach used to identify the relative values associated with objects[14]. It does so by repeatedly asking respondents to identify the most important and least important objects from different lists of objects. Best-worst scaling has been shown to be more reliable than Likert rating scales[15] and can be used to avoid scale biases[16,17]. In this analysis, the objects we are interested in ranking are the factors that may influence vaccine stocking decisions.

Survey development, design and administration

We used qualitative data from three focus groups (n=12 participants) and key informant interviews (n=9 key informants) along with relevant literature to identify 16 factors potentially influencing vaccine stocking decisions (Table 1). The focus groups and key informant interviews involved vaccine stocking decision makers in medical practices and pharmacies and were conducted from January to October 2017 using a standardized interview guide to identify potential factors influencing stocking decisions.

Based on the results from the focus groups and key informant interviews, we developed a survey to assess the importance of factors in stocking vaccines. The survey included an introduction to the factors and their definitions, as shown in Table 1. Each respondent was asked to assess 4 sets of 6 factors selected from the overall 16 that were developed using a balanced incomplete block design methodology to ensure balanced representation of factors across survey versions (Figure 1)[18]. For each question, respondents were asked to select the factors that were most and least important in the decision to stock vaccines in general. Respondents were randomized to one of four versions of the survey. Finally, survey respondents were presented with a list of 11 commonly-used adult vaccines and asked which vaccines their practice stocks and reasons for not stocking specific vaccines. We also collected respondents' role in their organization, practice type, organization affiliation, characteristics of practice, and at what organizational level are the decisions to stock vaccines made.

The survey underwent cognitive pretesting to ensure respondents understood the questions as intended. In April 2018, the survey was administered online to a standing panel (Qualtrics, Seattle, WA) of US physicians, nurses, pharmacists, and administrators involved in vaccine stocking decisions from. While this was a convenience sample, respondents represented regions across the United States.

Analysis

We calculated relative importance scores for each of the 16 factors that influence vaccine decision-making. For each factor, we obtained the number of times it was chosen as most important and the number of times it was chosen as least important. We subtracted the number of times a factor was chosen as least important from the number of times chosen as most important. We then divided this difference by the number of times each factor was available to be chosen as least or most important. The availability adjusted relative

importance scores were then ranked from the highest to the lowest to assess the relative importance of each of the 16 factors on vaccine decision making.[19] (Figure 2).

Subgroup Analyses

Subgroup analyses were performed based on the respondent's involvement in vaccine decision-making, role in the organization, specialty, and affiliation status; and practice characteristics, i.e., practice size, insurance mix, and patient age mix. We also performed stratified analysis by type of vaccine stocked to identify the factors that are important for stocking decisions.

Regression Analysis

In order to examine the overall relationships between factors and stocking of specific vaccines, we conducted a set logistic regressions evaluating the probability of stocking individual vaccines based on respondent characteristics and the respondent relative importance scores of the factors determined to be most important from the best-worst scaling analysis. Since we conducted multiple regressions, we used the Bonferroni correction to assess statistical significance.

Results

One hundred twenty-five providers completed the survey. Most respondents (56%) were physicians, but 19% were pharmacists, 12% were nurses, and 10% were practice managers or administrators (Table 2). Many were in private, independent organizations (44.0%) and/or hospital/academic medical centers (37.8%). There were a wide variety of specialties represented, with most in obstetrics/gynecology (36.0%), pharmacy (19.2%), family medicine (17.6%), and internal medicine (14.4%).

Physician office respondents were from a broad array of practice sizes, with 13% in a solo practice and 29% in organizations with 13 or more providers (Table 2). Of pharmacists, 29% were in organizations that filled fewer than 100,000 prescriptions per year and 25% were in organizations that filled more than 250,000 per year. Additional respondent characteristics can be found in Appendix Table 1.

Vaccine Stocking

Most respondents' organizations stocked at least one type of vaccine. The most common vaccine stocked was influenza, with 97% stocking the vaccine. However, other vaccines such as serogroup B meningococcal vaccine were stocked by fewer than 50% of organizations.

Some respondent characteristics were associated with higher stocking rates. Pharmacists were more likely to stock pneumococcal and zoster vaccines than physicians. Internal medicine/family medicine physicians were more likely to stock all vaccines (except influenza and tetanus-diphtheria-pertussis) than obstetricians-gynecologists. Clinics with affiliations with hospitals and/or academic medical centers were more likely to stock all vaccines (except influenza, Tdap, and hepatitis A&B) than private, independent clinics.

And, larger practices with 6 or more physicians were more likely to stock pneumococcal conjugate, zoster, hepatitis A, hepatitis A&B, and meningococcal vaccines than smaller practices.

Of those respondents who replied that they did not stock a specific vaccine, we asked for reasons why they did not stock that vaccine. By far, the most common reason across all vaccines was that stocking this vaccine was “not a priority for our practice/organization” (between 54% and 80% of responses). The second most common response for not stocking influenza, PCV13, PPSV23, Tdap, Td, and hepatitis B vaccines was that it was “challenging to keep up with the changes to recommendations for this vaccine” (between 8%-25% of responses). For other vaccines (zoster, hepatitis A, hepatitis A &B, meningococcal ACWY; and meningococcal B), the second most common response was that the “vaccine is too costly/purchase & inventory management costs” (between 9% and 22% of responses). Details can be found in Appendix Figure 1.

Importance of Barriers to Stocking Vaccines

The best-worst scaling analysis revealed that the most important reasons were the cost of purchasing vaccine stock, lack of adequate reimbursement for vaccine acquisition and administration, and the expense of maintaining vaccine inventory (Figure 2). Other insurance-related issues were of medium or lower importance: “Patients not having consistent insurance coverage” was more likely to be listed as most important than least important, while “problems with vaccine claims getting rejected”, “prior authorization needed for some or all vaccines”, and “time required interacting with insurance concerning vaccine claims” were about equally likely to be listed as most important or least important. “Patient insurance coverage out-of-network for vaccines” was more likely to be chosen as least important than most important. Of non-insurance-related issues, “patient attitudes toward vaccination”, “patient out-of-pocket costs for some vaccines”, and “losses due to expired vaccines” were about as likely to be listed as most important or least important. Other issues were more likely to be ranked as least important.

Subgroup Analyses

We examined the best-worst rankings by characteristics of the respondents as well as whether they stocked specific vaccines. Although the rankings of medium- or lower-importance factors changed, the top three factors remained the “cost of purchasing vaccine stock”, “lack of adequate reimbursement for vaccine acquisition and administration”, and the “expense of maintaining vaccine inventory” regardless of subgroup analyzed (Appendix Figure 2).

The best-worst scaling of barriers are also not different based on whether the respondents stocked or did not stock specific vaccines. (Appendix Figure 3).

Patient demand and patient attitudes about vaccines were generally either of minor importance or the least important barriers to stocking, suggesting that patient interest is sufficiently high across the various specialties to not adversely impact stocking decisions. The potential exception to this are pharmacists, practice managers, and administrators, for whom “patient demand” and “patient attitudes toward vaccination” were of moderate

importance. Also, of potential interest, practices with more than 50% of their patients aged 65 and older ranked “patient demand” as being the least concern.

Regression Analysis

We evaluated ten logistic regressions for each vaccine (except for the influenza vaccine since variation in stocking was so low). The most important relative importance factors included in the regression were cost of purchasing, expense of maintaining inventory, and inadequate reimbursement.

In these regressions, some factors were associated with stocking of particular vaccines (Appendix Table 2). The obstetricians-gynecologist group did have lower stocking of both pneumococcal vaccines, tetanus-diphtheria, hepatitis A, hepatitis B, and both meningococcal vaccines. Hospitals/academic medical centers were also more likely to stock tetanus-diphtheria and meningococcal B vaccines. And, providers with 51-100% of their patients aged 19-64 were less likely to stock the Zoster vaccine.

Discussion

Using novel best-worst scaling survey methods and surveying a wide range of providers, we find that issues directly related to the revenue and expenses associated with vaccination were the most important barriers to stocking adult vaccines. The overall reimbursement level compared to the costs of purchasing and maintaining inventory were consistently rated as the most important factors, regardless of subgroup analyzed. Challenges dealing with insurance companies, lack of patient demand, and difficulty understanding recommendations were not as important barriers to deciding to stock vaccines for adults.

These results are similar to those in other studies[8-12]. Those studies found general internal medicine, family medicine, and obstetrician/gynecologist practices identified financial barriers were the most important barriers to recommending and stocking vaccines. We found this to be the case when focusing on just stocking vaccines, but also surveying a broader set of providers, including pharmacists. The best-worst scaling methodology seems to give similar results as the Likert scale questions used in other studies. We also find that issues such as patients refusing vaccines or lack of vaccine demand are of low importance as barriers. This is consistent with other publications that demonstrated that adults are interested in vaccines in general, but often report their provider did not mention vaccines during their visit[20].

Although influenza vaccines were stocked by almost all providers, other adult vaccines were stocked to varying extent. Pharmacists had high rates of stocking most vaccines but were particularly more likely to stock pneumococcal and zoster vaccines, both of which are recommended for older adults. In our sample, pharmacists were the group with the highest proportion of patients over 65 (Appendix Table 3). The live zoster vaccine is recommended at age 60 years and older but is covered under Medicare Part D (a pharmacy benefit) which may be challenging for medical providers to bill but can be billed with less difficulty by pharmacists. In 2018, the ACIP recommended a new inactivated zoster vaccine for persons age 50 years and older[21]. This new recommendation may result in more adults being

vaccinated at a younger age and before they are on Medicare, which may impact stocking of zoster vaccines by practices that are less able to bill Medicare Part D. While ob-gyns were less likely to stock most vaccines, they frequently reported stocking influenza and Tdap vaccines, the only two vaccines routinely recommended during pregnancy[22,23].

We found some slight differences with the prior literature. The prior studies in 2012 and 2015 found that about 60% of providers listed “difficulty determining if a patient’s insurance will reimburse for a vaccine” and “patients not having insurance coverage for vaccines” as being “major barriers” or “moderate barriers”. We did not ask the exact same questions used in prior studies, but we find that “patients not having consistent insurance coverage” was somewhat more likely to be listed as most important than least important and that “time required interacting with insurance concerning vaccine claims” was about equally likely to be listed as most important as least important than in prior studies. It is possible that as time has passed since the passage of Affordable Care Act, some of those issues have become less important as health insurers and non-grandfathered health plans must cover immunizations recommended by the ACIP. However, issues of claims rejection and inadequate payment appeared to be highest among respondents that reported having >25% of their patients on Medicaid. Medicaid payments for vaccines and vaccination vary widely by state and may be more of a barrier in some areas[24].

It is challenging to compare respondent reasons for not stocking specific vaccines with their answers to the best-worst scaling responses about barriers in general. When answering about not stocking specific vaccines, between 54% and 80% of respondents noted the vaccine was not a priority. Between 4% and 25% of respondents noted that it was challenging to keep up with changes to recommendations for that specific vaccine. In addition, between 4% and 22% of respondents noted that payment was insufficient or the vaccine was too costly. However, when responding to the best-worst scaling questions about barriers in general, financial barriers were most important and difficulty interpreting guidelines was not ranked highly. This apparent contradiction is possibly because respondents may have subsumed financial considerations into the “not a priority” category when answering about specific vaccines.

Implications for Practice

This study can shed some light on actions to encourage stocking of vaccines for adults. From our results, arrangements that mitigate the upfront and maintenance costs of vaccine inventories could result in increased stocking of adult vaccines by providers. Higher insurance reimbursement levels for both the vaccine and vaccine administration, or reduced costs to administer vaccines, may reduce financial barriers to stocking adult vaccines. Reimbursement levels vary by payer and costs to vaccinate vary by provider, so appropriate solutions for a given practice likely depend on payer mix and type of vaccination provider.

Problems with claims being rejected was listed as a moderate concern. More accurate claims submission and processing (potentially assisted by third party vaccine billing solutions for provider offices that require such assistance) may help. In addition, better knowledge about reasons for and rates of vaccine nonpayment may help providers to make better decisions about stocking vaccines and improve billing accuracy.

Other strategies may not be as effective at encouraging stocking of vaccines. Healthcare Effectiveness Data and Information Set (HEDIS) measures are commonly used in the insurance industry and can be used to incentivize providers[25]. Although there are several HEDIS measures that pertain to vaccination, in this provider population surveyed, lacking rewards for meeting immunization targets was not perceived to be an important barrier to stocking vaccines. However, at the time of the survey, only influenza and pneumococcal vaccination HEDIS measures were available for adults. HEDIS 2019 will include additional adult vaccination measures (a pre-natal composite vaccination measure with Tdap and influenza, and an adult composite measure for influenza, pneumococcal, Td/Tdap and zoster vaccines)[26]. It may be that some of the factors we found to be less important, contribute indirectly to adult vaccination. For example, rewards or penalties for meeting immunization targets may encourage providers to recommend vaccines.

There may be some barriers that are insurmountable for certain medical providers. In those cases, there are benefits of having places like a local pharmacy available to refer patients for immunizations. Continuing efforts should be made to ensure those referral processes are seamless.

Limitations

Our survey used a convenience sample of physicians, nurses, pharmacists and administrators from an existing internet panel. Therefore, responses may not be representative of all vaccination providers in the US. With that said, rates of stocking were similar to those reported in Hurley[9], which used quota sampling of family medicine and internal medicine physicians.

This study only focused on stocking vaccines. There may be other important provider-related barriers to patient immunization even if their providers stock required vaccines. These could include incorporation of patient vaccine needs assessment and recommendations into patient flow and adequate staff time to implement vaccination services[27]. Additional barriers not closely related to providers may include mistaken assumptions by patients (e.g., healthy people do not need immunizations), fear of side effects, and infrequent provider visits.[20]

Our best-worst scaling questions were asked about vaccines in general. To minimize survey burden, we did not ask these questions about each vaccine individually. This makes it more difficult to make conclusions about barriers for specific vaccines. However, patterns of vaccine stocking were consistent with likely greatest use of vaccines based on ACIP vaccine recommendations and insurance coverage.

Conclusions

Not all adult vaccines are stocked by providers who care for adults. This new study finds that financial barriers are reported as the most important issues influencing decisions about which vaccines to stock among a wide range of providers including pharmacists and obstetrics/gynecology. Efforts to reduce the actual and perceived risks of insurance claim rejection and address issues of vaccine and vaccine payment adequacy might help encourage

more providers to stock the full complement of routinely-recommended vaccines for their adult patients.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Most Important	Factor	Least Important
	Expense of maintaining vaccine inventory	
	Loss due to expired vaccines	
	Lack of adequate reimbursement for vaccine acquisition and administration	
	Time required interacting with insurance concerning vaccine claims	
	Time required for vaccination assessment and counseling with patients	
	Little demand for vaccines from patients	

Figure 1.

Sample survey question on best worse scaling

Please select which one factor is the most important and which one is the least important in your decision to stock adult vaccines.

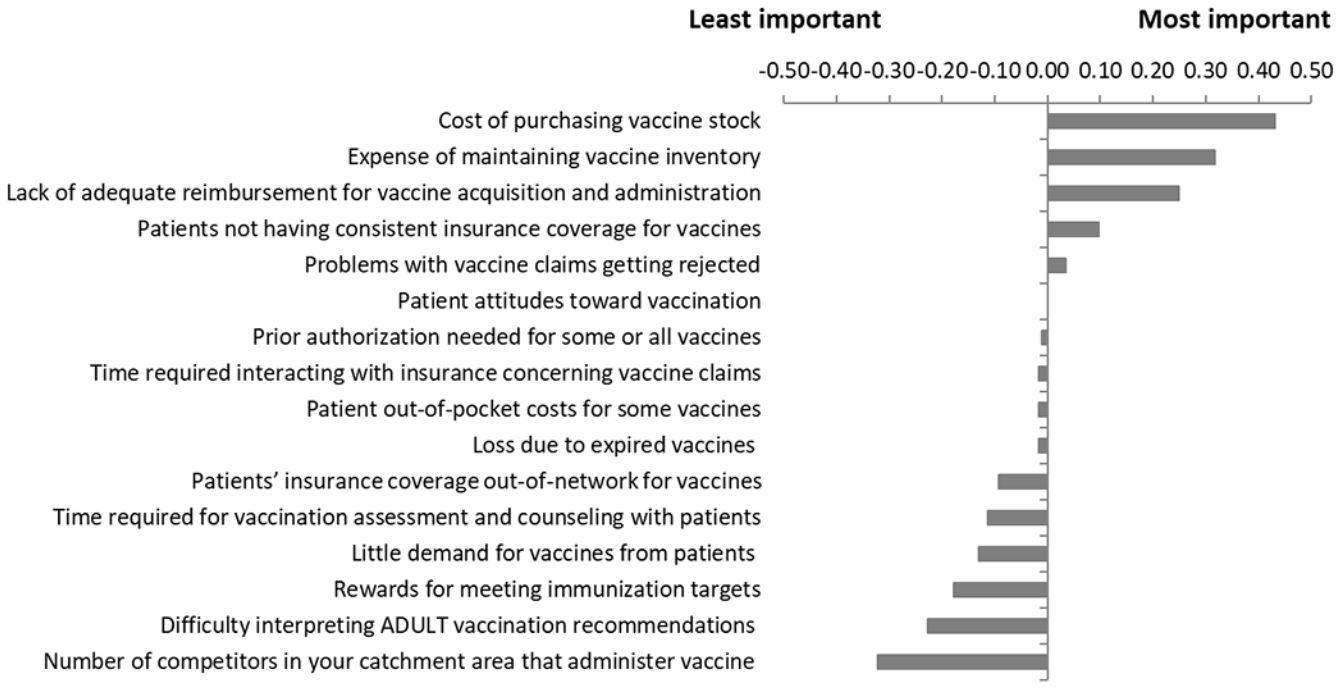

Figure 2.
Most and least important factors in deciding to stock adult vaccines

Table 1.

Best worst scaling factor definitions

Factor	Definition
1. Cost of purchasing vaccine stock	The upfront costs associated with buying vaccines.
2. Expense of maintaining vaccine inventory	The costs associated with stocking and managing vaccine supplies including the cost of refrigeration and alarms and personnel time to manage inventory.
3. Loss due to expired vaccines	The cost of vaccines that must be discarded because they are expired because of overestimated demand or because of the requirement to buy in bulk.
4. Lack of adequate reimbursement for vaccine acquisition and administration	Providers are not paid or partially paid by insurance for the full cost of the vaccines they purchase and administer.
5. Number of competitors in your catchment area that administer vaccine	The number of organizations that give a vaccine in your area (including pharmacies, minute clinics, etc.).
6. Rewards for meeting immunization targets	Bonuses providers receive for a certain percentage of their patients getting immunizations.
7. Prior authorization needed for some or all vaccines	Requirement to obtain permission from the insurance company before administering a vaccine.
8. Time required interacting with insurance concerning vaccine claims	The amount of time it takes to communicate with insurance about reimbursement policies.
9. Problems with vaccine claims getting rejected	Insurance declining to pay for vaccines administered. For example, the claim might be denied because the vaccine wasn't covered by their insurance, the vaccine had been given previously by another provider, or the vaccine-related insurance claim was not filed correctly.
10. Patients not having consistent insurance coverage for vaccines	Some vaccines are covered by a patient's insurance plan while other vaccines are not.
11. Patients' insurance coverage out-of-network for vaccines	Insurance will not pay or will only partially pay for the vaccine because the patient is visiting a provider that is not in the insurance company's network for vaccines.
12. Difficulty interpreting adult vaccination recommendations	Having a hard time understanding when and when not to give some adult vaccines.
13. Time required for vaccination assessment and counseling with patients	The amount of time it takes for a clinician to determine what vaccines patients may or may not need including the time it takes to determine when or if a patient was last vaccinated and to educate the patient on vaccines.
14. Patient out-of-pocket costs for some vaccines	Patients must pay some or all of the vaccine cost.
15. Patient attitudes toward vaccination	Negative attitudes toward vaccination in the patient population
16. Little demand for vaccines from patients	Low patient interest in vaccines

Table 2.

Characteristics of Respondents (n=125)

	No.	%
Level of Involvement in Stocking Decisions		
Directly Involved	60	48.0
Indirectly Involved	65	52.0
Role within Organization		
Physician	70	56.0
Practice Manager	6	4.8
Health System Administrator	6	4.8
Nurse	15	12.0
Pharmacist	24	19.2
Other	4	3.2
Specialty		
Pharmacy	24	19.2
Internal Medicine	18	14.4
Family Medicine	22	17.6
Obstetrics/Gynecology	45	36.0
Multi-Specialty	6	4.8
Other	10	8.0
Type of Organization *		
Retail clinic or pharmacy	11	8.8
Private, independent organization	55	44.0
Hospital/academic medical center	47	37.6
Practice network/Independent practice association	2	1.6
Health maintenance organization (staff or group model)	2	1.6
Federally Qualified Health Center/Rural Health Clinic/Community Health Center	11	8.8
Other	1	0.8
Practice Size (non-pharmacists)		
1	13	13.4
2-5	34	35.1
6-12	19	19.6
13 or more	28	28.9
Unsure	3	3.1
Number of Prescriptions filled Annually (pharmacists)		
25,001 – 100,000	7	29.2
100,001 – 250,000	6	25.0
>250,000	6	25.0
Unsure	5	20.8
Patient Insurance		
% of Patients with Medicare		
0	5	4.0

	No.	%
1-25	61	48.8
26-50	43	34.4
51-100	14	11.2
Unsure	2	1.6
% of Patients with Medicaid		
0	9	7.2
1-25	59	47.2
26-50	44	35.2
51-100	11	8.8
Unsure	2	1.6
% of Patients with Private Insurance		
0	1	0.8
1-25	41	32.8
26-50	42	33.6
51-100	39	31.2
Unsure	2	1.6
% of Patients Uninsured		
0	19	15.2
1-25	81	64.8
26-50	10	8.0
51-100	4	3.2
Unsure	11	8.8
Patient Demographics		
% of Patients 18 or younger		
0	7	5.6
1-25	101	80.8
26-50	11	8.8
51-100	4	3.2
Unsure	2	1.6
% of Patients 19-64		
0	2	1.6
1-25	8	6.4
26-50	61	48.8
51-100	52	41.6
Unsure	2	1.6
% of Patients 65 or older		
0	7	5.6
1-25	36	28.8
26-50	49	39.2
51-100	31	24.8
Unsure	2	1.6
Type of Vaccine Stocked		

	No.	%
Influenza	113	96.6
Tetanus-diphtheria-pertussis (Tdap)	97	82.9
Pneumococcal polysaccharide: PPSV23	82	70.1
Hepatitis B	76	65.0
Pneumococcal conjugate: PCV 13	71	60.7
Zoster	66	56.4
Tetanus-diphtheria (Td)	65	55.6
Hepatitis A	63	53.8
Hepatitis A and B	56	47.9
Meningococcal ACWY	53	45.3
Meningococcal B	45	38.5
Other	37	31.6

* Respondents could respond to more than one of type of organization, so the percentage does not add up to 100%.

Table 3.

Percent of Respondents Stocking Specific Vaccines by Respondent Characteristic

		Influenza	PCV13	PPSV23	Tdap	Td	Zoster	Hepatitis A	Hepatitis B	Hepatitis A&B	Meningococcal ACWY	Meningococcal B
Involvement in Stocking Decisions	**Directly involved**	97	60	70	75	51	53	56	61	46	40	39
	Indirectly involved	97	62	70	90	60	60	52	68	50	50	38
Role	**Physicians**	97	55[a]	58[a]	88	51	46[a]	45	55	43	43	33
	Pharmacist	100	95	95	86	62	81	71	81	57	57	38
	Nurses	93	57	79	79	50	64	57	79	50	50	43
	Manages/ Admin/ Other	93	40	80	60	73	60	67	73	53	33	60
Specialty	**Internal Med/Family Med**	100	83[b]	95[b]	80	75[b]	68[b]	73[b]	80[b]	63[b]	70[b]	60[b]
	Ob-Gyn	95	26	31	83	29	31	26	38	26	19	17
Affiliation	**Private, Independent**	96	44[c]	56[c]	78	42[c]	44	42[c]	52[c]	36	30[c]	24[c]
	Hospital/ Academic Medical Center	96	68	77	86	71	57	64	75	52	52	52
Number of Physicians	**1-5**	98	36[d]	55	74	43	38[d]	38[d]	50	26[d]	29[d]	17[d]
	6 or more	96	70	72	87	62	62	60	66	64	57	57
Insurance Distribution	**>25% Medicare**	96	69	82[e]	80	62	66[e]	62	73	51	58[e]	46
	>25% Medicaid	96	57	65	88	53	53	55	61	49	47	39
	>25% Private	95	55	62[e]	84	50	49[e]	49	59	42	45	34
	>25% Uninsured	93	71	93[e]	86	79	64	86[e]	79	71[e]	57	43
Patient Age Distribution	**>50% 0-18**	100	50	100	50	50	50	50	50	50	50	50
	>50% 19-64	94	43[f]	53[f]	86	39[f]	35[f]	45	55	37	37	16[f]
	>50% 65+	97	71	84[f]	84	77[f]	55	71[f]	71	68[f]	61[f]	61[f]

[a]Significant ($p<0.05$) difference in percent stocking the vaccine between physicians and pharmacists

[b]Significant ($p=0.001$) difference in percent stocking the vaccine between internal medicine/family medicine physicians and Ob-Gyn physicians

[c]Significant ($p<0.05$) difference in percent stocking the vaccine between private, independent providers and hospital/academic medical center affiliated providers

[d]Significant ($p<0.05$) difference in percent stocking the vaccine between practices with 1-5 physicians and 6+ physicians

[e] Significant ($p<0.05$) difference in percent stocking the vaccine in each line compared to ≤25%

[f] Significant ($p<0.05$) difference in percent stocking the vaccine in each line compared to ≤50%