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General influenza infection control policies and practices during the 2009 H1N1 influenza pandemic: A survey of women's health, obstetric, and neonatal nurses

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Abstract

Background—An evaluation of infection control practices was conducted following the release of the Centers for Disease Control and Prevention (CDC) guidance regarding the care of pregnant women during the 2009 H1N1 influenza pandemic. This paper describes 9 general hospital practices.

Methods—A questionnaire was distributed electronically to 12,612 members of the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN). Respondents (N = 2,304) who reported working in obstetric or neonatal settings during the pandemic completed the questionnaire.

Results—Most (73%) respondents considered the Centers for Disease Control and Prevention's guidance very useful. Significantly more reported a written hospital policy for each practice during versus before the pandemic. Six of the 9 practices were implemented most of the time by at least 70% of respondents; the practices least often implemented were mandatory vaccination of health care personnel involved (52%) and not involved (34%) in direct patient care and offering vaccination to close contacts of newborns prior to discharge (22%). The most consistent factor associated with implementation was the presence of a written policy supporting the practice at the respondent's hospital.

Conclusion—We offer a descriptive account of general hospital infection control policies and practices during the 2009 H1N1 pandemic. Factors associated with reported implementation may be useful to inform planning to protect women and children for future public health emergencies.

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Keywords

Hospital policy and practice; H1N1 pandemic; Labor and delivery; Hospital nursery; CDC guidance

The first identified cases of novel 2009 influenza A (H1N1) were reported in April 2009.¹ The Department of Health and Human Services declared a national public health emergency on April 26, 2009; this emergency was in place through June 2010. During the 2009 H1N1 influenza pandemic, the Centers for Disease Control and Prevention (CDC) released guidance regarding the care of pregnant women who entered hospital settings ill with suspected or confirmed influenza; this guidance supported the management of these women from labor and delivery through postpartum and newborn care.^{2,3} The specific guidance was necessary because pregnant and early postpartum women were identified as a high-risk group, experiencing increased morbidity and mortality because of pandemic (H1N1) 2009 influenza.⁴⁻⁸ Public health and medical professionals were concerned about the health of pregnant and early postpartum women; possible transmission of the virus to immunologically vulnerable newborns; and general transmission to other individuals in the hospital including health care personnel, visitors, and other hospitalized patients. The guidance was based on proceedings from a meeting of experts convened by the CDC in April 2008 to develop a comprehensive public health approach for pregnant women in preparation for a future influenza pandemic⁹ and a literature review conducted early in the pandemic that considered the potential burden of disease and routes of transmission affecting newborns.¹⁰

Because the CDC guidance was released quickly in response to the public health emergency, there was no time to assess feasibility prior to its release. Anecdotally, during the pandemic, some hospitals disputed specific recommendations, and others reported challenges with implementation. Following the pandemic, the CDC, in collaboration with the American Academy of Pediatrics (AAP) and the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN), initiated a retrospective, cross-sectional assessment of the levels of and difficulty with implementation of select CDC recommended practices in hospitals in the United States. This report is one of a series of 3 summarizing the findings of that assessment completed by obstetric and neonatal nurses regarding infection control practices at their hospitals during the pandemic; the other reports have been published elsewhere.^{11,12} The specific focus of this report is hospital visitation, discharge, personnel, and nonpersonnel vaccination policies and practices.

METHODS

We conducted a cross-sectional, online survey from March through April 2011 with members of the AWHONN. We sought to limit our sample to nurses who worked in inpatient settings during the pandemic and thus excluded those who worked in academia, ambulatory care, home health care or public health; those who were self-employed or not working; and those who spent the majority of their time conducting research. After these exclusions, an invitation to participate in the survey was sent via e-mail to 12,612 AWHONN members with listed e-mail addresses. The initial survey question asked whether

the potential respondent provided or planned for inpatient care in obstetric or neonatal settings during the 2009 H1N1 pandemic, defined as April 2009 to June 2010 for purposes of this survey. Respondents who answered “no” were not eligible to participate and were skipped to the end of the survey where they were thanked for their time. Up to 3 follow-up invitations to participate in the survey were sent to nonrespondents via e-mail. Potential respondents were offered a small incentive in the form of entry into a drawing for 1 of 20 registration waivers to the upcoming 2011 annual AWHONN national conference. Of 12,612 AWHONN members who received invitations to participate, 767 were identified as ineligible (ie, did not provide or plan for inpatient care in obstetric or neonatal settings during the pandemic) and thus excluded, and 2,641 eligible nurses completed the online survey, for a final response rate of 22% (2,641/11,845).

The survey instrument was developed collaboratively by representatives from the AAP, the AWHONN, and the CDC and piloted prior to implementation. Questions were asked on nurse and inpatient facility characteristics; usefulness of various sources of infection control guidance during the pandemic; existence of hospital written policies before, during, and after the pandemic that aligned with the CDC guidance; implementation of practices during the pandemic; as well as level of difficulty with implementation. For questions on existence of hospital written policies, implementation of practices, and level of difficulty with implementation, the survey queried about labor and delivery practices, postpartum and newborn care practices, and general hospital practices.

This paper summarizes findings related to 2 sets of general hospital practices (ie, visitation and discharge practices and personnel and nonpersonnel vaccination practices). Because we were interested in comparing the existence of hospital policies at multiple time points, the analysis was restricted to 2,304 respondents who had not changed institutions since April 2009. The following practices are examined in the present paper: visitation practices, both limiting visitors to healthy adults who are necessary for the patient’s emotional well-being and care, and prohibiting visitation of children; discharge practices, composed of informing/instructing mothers on ways to prevent transmission of influenza and other viral infections and on how to monitor infants for signs of influenza; personnel practices, including institution of sick leave policy that discourages health care personnel from reporting to work with symptoms of influenza and mandatory influenza vaccination(s) of health care personnel involved in direct patient care and/or not involved in direct patient care; and, finally, nonpersonnel vaccination practices, offering recommended influenza vaccination(s) to unvaccinated healthy postpartum mothers and to unvaccinated healthy family members and other close contacts of infants, prior to hospital discharge.

To assess existence of hospital policies, respondents were asked if their hospital had a written policy supporting these practices before, during, and after the 2009 H1N1 influenza pandemic, defined as between April 2009 and June 2010 for the purposes of the survey. To assess practices of care, respondents were asked how often they implemented these practices (“most of the time,” “sometimes,” “rarely,” “never,” or “unsure”). To assess difficulty with implementation, respondents were asked how difficult it was to implement the practices (“very difficult,” “moderately difficult,” “somewhat difficult,” “not difficult,” or “not applicable”). Respondents were not asked about difficulty with implementation for the

personnel practices for which they were unlikely to be responsible, ie, sick leave policy and mandatory influenza vaccination of health care personnel.

Data analysis utilized *t* tests, χ^2 tests, or Fischer exact tests as appropriate. In all data tables, percentages were estimated excluding missing data. All data were analyzed using SPSS 18 (SPSS Inc, Chicago, IL). Because the primary purpose of the survey was to evaluate public health practice, the assessment was determined exempt from Institutional Review Board review by the Centers for Disease Control and Prevention.

RESULTS

Characteristics of respondents

Survey respondents were almost all female (99.7%, data not shown) and, on average, highly experienced, with a majority (57%) reporting 21 years or more in clinical practice and another 23% reporting 11 to 20 years (Table 1). Almost one quarter (24%) reported master's level preparation. A majority (52%) reported their position during the pandemic as "staff nurse," and 28% reported "nurse manager or executive." Most nurses worked during the pandemic in intrapartum (44%) or combined (33%) units. Nearly half of respondents reported working in a hospital with a level 3 neonatal intensive care unit, and most worked in hospitals with 20 or fewer labor and delivery beds. The majority worked in settings in which care was organized with a separate mother/baby postpartum unit with a separate normal newborn nursery, and the vast majority (91%) reported that their hospitals had a certified lactation specialist available.

Perceived usefulness of guidance

Nearly all respondents perceived the CDC as providing useful information for infection control during the pandemic, with 73% indicating that CDC guidance was "very useful" (Table 1). A majority (63%) also thought that their own hospitals provided very useful information. Generally, significantly higher proportions of those with more experience, higher levels of training, and more responsibility for planning and management of care reported that the CDC guidance was "very useful." Among the hospital characteristics examined, only type of hospital was associated with perceived usefulness of CDC guidance; differences were modest (data not shown).

Hospital written policies

Table 2 summarizes the presence of hospital written policies for each of the practices examined before, during, and after the pandemic. For every practice, the proportion of respondents reporting a written policy was significantly higher during the pandemic than before the pandemic. For each practice, the presence of a written policy dropped after the pandemic, but levels were still significantly higher than before the pandemic. The presence of policies supporting 3 practices—informing/instructing mothers on ways to prevent transmission of influenza and other viral infections, institution of sick leave policy that discourages health care personnel from reporting to work with symptoms of influenza, and offering recommended influenza vaccinations to unvaccinated healthy postpartum mothers prior to hospital discharge—increased to high levels (>80%) during the pandemic and were

sustained at relatively high levels (>70%) afterward, although significantly lower than during the pandemic. The practices least often endorsed by hospitals during the pandemic via written policies included mandatory influenza vaccination(s) of health care personnel not involved in direct patient care (eg, custodial staff, administration, support staff) (32.9%) and offering recommended influenza vaccination(s) to unvaccinated healthy family member and other close contacts of infants prior to hospital discharge (20.8%).

Implementation of practices during the pandemic

Six of the 9 practices examined in this paper were reported as implemented “most of the time” by at least 70% of respondents (data not shown). The practices with lower levels of implementation included vaccination of health care personnel and close contacts of newborns. Specifically, mandatory influenza vaccination of health care personnel was less frequently implemented, particularly for those not involved in direct patient care (34%); the rate was 52% for those involved in direct patient care. In addition, only 22% of respondents reported that their hospitals offered recommended influenza vaccinations to unvaccinated healthy family members and other close contacts of infants prior to hospital discharge “most of the time.”

To explore frequency of implementation further, we examined selected respondent and hospital characteristics associated with implementing the practices “most of the time”; reported relationships were statistically significant at $P < .05$. Perceiving the CDC guidance as “very useful” was associated with implementing all but 1 practice “most of the time.” The exception was offering recommended influenza vaccination(s) to unvaccinated healthy family members and other close contacts prior to hospital discharge. This practice was associated with no respondent and few hospital characteristics. The most consistent and significant factor associated with implementation of all 9 practices “most of the time” was the presence of a hospital written policy supporting the practice at the respondent’s hospital. In addition, respondents who worked in for-profit hospitals reported a distinctly different pattern of implementation than respondents who worked in other hospital types. Lower proportions of respondents at for-profit hospitals reported implementation “most of the time” of the 4 visitation and hospital discharge practices, but higher proportions reported implementation “most of the time” of the 2 mandatory personnel vaccination practices (ie, for those with and without direct patient contact).

Difficulty implementing practices

For all practices, the perception that implementation was “very difficult” increased as the frequency of implementation decreased. When examining implementation difficulty among only those who reported implementing the practices “most of the time,” for each of the practices, with the exception of the 2 visitation practices, the majority (>65%) reported no difficulty (Table 3). For the visitation practices however, among respondents implementing the practices “most of the time,” two thirds (67.0%) found it moderately or very difficult to implement limitation of adult visitors, and nearly three quarters (73.7%) found it moderately or very difficult to prohibit visitation of children.

DISCUSSION

This analysis sought to summarize influenza infection control policies and practices related to hospital visitation, discharge, personnel, and nonpersonnel vaccination policies and practices during the 2009 H1N1 influenza pandemic to understand the degree to which the CDC-recommended practices were supported and implemented by hospitals. In general, the survey findings support the feasibility of instituting policy and implementing enhanced infection control practices during an influenza pandemic. For each of the 9 practices examined, significantly more respondents reported the presence of written hospital policies supporting the infection control practices during versus before the pandemic. Moreover, nurses reported that the policies were sustained above prepandemic levels after the pandemic, although rates were lower than during the pandemic. The adoption of hospital policies supporting CDC-recommended practices during the pandemic, and the fact that nearly 3 out of 4 respondents rated the CDC guidance on infection control during the pandemic as very useful, suggests that CDC guidance was a valued and utilized source of information on infection control during the pandemic. In fact, the Web site containing the guidance on considerations regarding 2009 H1N1 influenza in intrapartum and postpartum hospital settings received 124,574 hits during the pandemic.²

Three practices remained supported via written hospital policies after the pandemic at particularly high levels, indicating acceptance as good infection control practices irrespective of a pandemic situation. These included informing/instructing mothers on ways to prevent transmission of influenza and other viral infections, institution of sick leave policy that discourages health care personnel from reporting to work with symptoms of influenza, and offering recommended influenza vaccinations to unvaccinated healthy postpartum mothers prior to hospital discharge. Mothers are often instructed as part of routine discharge processes on a number of newborn care topics such as feeding, umbilical cord care, and prevention of sudden infant death syndrome.¹³ Integrating instructions on infection control practices such as proper cough etiquette and hand hygiene into existing discharge protocols is a low-cost strategy hospitals can implement to protect newborn health. Data from our analysis suggest that this practice is also relatively easy to implement because this practice was most frequently implemented by respondents (ie, implemented most of the time by 85% of respondents) and had the lowest levels of being perceived as difficult to implement among those implementing the practice frequently (ie, only 9% reported the practice being somewhat, moderately, or very difficult to implement).

Related to hospital sick leave policy that discourages health care personnel from reporting to work with symptoms of influenza, prior research has found that health care workers often continue working during influenza infections, especially if symptoms are mild.¹⁴ This creates a potential nosocomial transmission risk to patients, other staff, and hospital visitors. During the 2009 H1N1 influenza pandemic, health care workers were vulnerable to infection,^{15–19} and ill health care workers were suspected as possible sources of nosocomial infections.^{20,21} Although discouraging ill health care workers from reporting to work during a pandemic situation when the demand for health care is likely heightened may be difficult, results from this analysis revealed that the practice was implemented most of the time by nearly 8 out of 10 nurses during the pandemic and thus feasible for hospitals to implement.

Furthermore, a study from Brazil compared the effectiveness and cost of 2 sick leave policies for health care workers and found that a policy instituting 7 days of sick leave for workers with suspected pandemic influenza was more costly and not more effective in preventing transmission to patients than a policy instituting 2 days of sick leave followed by reassessment every 2 days.¹⁸

Related to maternal vaccination, it is well established that one of the most important strategies to protect newborns from influenza infection until they are old enough to receive vaccination is vaccination of mothers and other household contacts.^{10,22} Perhaps this is why so many respondents in our analysis reported frequently offering vaccination to unvaccinated healthy postpartum mothers prior to hospital discharge, implemented most of the time by 3 out of 4 nurses. However, offering vaccination to unvaccinated family members and other close contacts of newborns prior to discharge was less frequently practiced, implemented most of the time by only 2 out of 10 nurses. This may be due to concerns about vaccine shortages in hospitals or less ability to offer these services to individuals not admitted as patients.

Two additional vaccination practices were implemented less frequently during the pandemic: mandatory influenza vaccination of health care personnel involved in direct patient care (reported most of the time by 52% of nurses) and mandatory influenza vaccination of health care personnel not involved in direct patient care (reported most of the time by 34% of nurses). Although the benefit of influenza vaccination of health care workers has been described,^{23,24} and the World Health Organization and the CDC recommended that all health care workers be vaccinated against influenza during the 2009 H1N1 pandemic, findings from a population-based national sample found that only 34% of health care workers were vaccinated against 2009 H1N1 influenza during the pandemic.²⁵ Reasons given by health care workers for refusing the 2009 H1N1 influenza vaccine documented in a descriptive study conducted at a children's hospital included not having time or forgetting to get vaccinated (11%), the potential for influenza vaccines to have rare but serious adverse effects (20%), and influenza vaccination not being mandatory at their institution (30%).²⁶ Although mandatory vaccination policies remain a strong predictor of health care worker vaccination coverage,^{27–29} those opposing mandatory vaccination policies have voiced concerns over violation of freedom of choice and personal autonomy.²⁶ Nevertheless, results from at least 1 study of health care workers, including physicians, nurses, and other hospital employees, found high (70%) approval of mandatory influenza vaccination for health care workers without a medical contraindication.³⁰ Perhaps the ethical and legal challenges of mandating health care worker vaccination against influenza explains the lower levels of mandatory vaccination of health care workers involved and not involved in direct patient care documented in our findings. To note, 67% of health care personnel received the seasonal influenza vaccine during the 2011–2012 influenza season.³¹

Although the 2 visitation practices examined in this analysis were frequently implemented by nurses during the pandemic—limiting visitors to healthy adults who are necessary for the patient's emotional well-being and care and prohibiting visitation of children—these practices were rated by nurses as the most difficult to implement. This is not surprising because limiting visitors and prohibiting visitation by children is in clear opposition to the

family-centered maternity care model largely supported in the United States today. Nevertheless, restriction on visitors is a recommended prevention strategy to protect immunologically naïve newborns¹⁰ and other high-risk children including those with underlying medical conditions.³² Findings from at least 1 survey conducted among neonatal intensive care unit directors during the pandemic found high levels of restricted access of children to postpartum units during the influenza season,³³ in line with our findings.

When we examined characteristics associated with frequently implementing each of the practices, the most consistent and significant factor associated with implementation most of the time was presence of a hospital written policy supporting the practice. This was the only characteristic examined that was significantly associated with each of the 9 practices.

This assessment is not without limitations. Our low response rate (22%) threatens the validity and generalizability of findings. In addition, data were not available allowing us to examine differences between respondents and nonrespondents or to compare respondents with AWHONN members generally. It is possible that those who responded may have systematically differed from those who did not related to our outcomes of interest. For example, in the event that nurses more familiar with the CDC infection control recommendations were more likely to participate in the survey, our findings may overestimate certain outcomes (eg, perceived usefulness of the guidance). However, it is not expected that this situation would have influenced queries about specific practices, such as presence of hospital policies, implementation of practices, and perceived difficulty with implementation. Although low, our response rate was within the range of other survey efforts conducted among US clinicians during the pandemic.^{33,34} Data were also based on self-report and, therefore, subject to recall and social desirability bias. Last, for the information collected on the presence of hospital written policies, those included in our assessment may not have been the most informative hospital staff to respond to such questions.

In conclusion, despite limitations described above, our report provides valuable information on infection control policies and practices related to a wide range of visitation, discharge, and personnel and nonpersonnel vaccination practices before, during, and after the pandemic. To our knowledge, no other survey on this topic has been conducted with women's health, obstetric, and neonatal nurses, those providing the bulk of obstetric care in hospital settings during the pandemic. Information learned may be useful to inform public health planning to protect newborns for future pandemics or influenza outbreaks and may also be useful to inform planning for other public health emergency responses.

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Table 1

Characteristics of respondents and hospitals and perceived usefulness of CDC guidance on infection control during the 2009 H1N1 influenza pandemic: N = 2,304

	Total	
	n	%
Respondent characteristics		
Perceived usefulness of CDC guidance		
Very useful	1,628	72.7
Somewhat useful	540	24.1
Not useful	24	1.1
Not used	46	2.1
Years in clinical practice		
1–10	469	20.4
11–20	528	23.0
21	1,303	56.7
Earned degree *		
Associate in nursing	1,593	69.1
Bachelor of science in nursing	1,434	62.2
Master of science in nursing	552	24.0
Primary position during pandemic		
Staff nurse	1,192	51.7
Nurse manager or executive	633	27.5
Nurse educator	238	10.3
Other [†]	241	10.5
How most time was spent during pandemic		
Administrative planning for patient care	716	31.2
Providing direct patient care	1,257	54.8
Time was equally split	321	14.0
Primary unit during the pandemic		
Antepartum	100	4.4
Intrapartum (LDR/LDRP and labor and delivery)	1,006	44.1
Postpartum/mother-baby	292	12.8
Normal newborn nursery	33	1.4
High-risk/transitional nursery/NICU	88	3.9
Combined units	760	33.3
Hospital characteristics		
Type of hospital *		
Community hospital	1,284	55.7
Not-for-profit hospital	938	40.7
University teaching hospital	338	14.7
County/city hospital	276	12.0
For-profit hospital	231	10.0

	Total	
	n	%
Highest NICU level designation		
Level 1	367	16.2
Level 2	726	32.0
Level 3	1,124	49.5
Do not know	52	2.3
Labor and delivery beds		
1–10	880	38.7
11–20	1,028	45.2
21	343	15.1
Do not know	22	1.0
Organization of care		
LDR with separate mother/baby postpartum unit with a separate normal newborn nursery	1,252	55.0
LDR with separate mother/baby postpartum unit but without a separate normal newborn nursery	433	19.0
LDRP care in a single room/unit with a separate normal newborn nursery	284	12.5
LDRP care in a single room/unit without a separate normal newborn nursery	240	10.5
Other	66	2.9
Availability of certified lactation specialist		
Yes	2,070	91.0
No	205	9.0

LDR, labor, delivery and recovery; *LDRP*, labor, delivery, recovery, and postpartum; *NICU*, neonatal intensive care unit.

* Multiple responses were permitted.

† Includes lactation consultants, nurse practitioners, nurse midwives, infection prevention specialists.

Table 2

Presence of hospital written policies supporting selected general hospital practices recommended by CDC guidance before, during, and after the pandemic: N = 2,304

	Had a written hospital policy*					
	Before the pandemic		During the pandemic		After the pandemic	
	n	%	n	%	n	%
Practices recommended by CDC during the pandemic						
Visitation and hospital discharge practices						
1. Limiting visitors to healthy adults who are necessary for the patient's emotional well-being and care	707	38.0	1,599	84.6	1,067	58.1
2. Prohibiting visitation of children	438	23.6	1,528	80.7	685	37.2
3. Informing/instructing mothers on ways to prevent transmission of influenza and other viral infections	1,082	58.3	1,537	81.8	1,378	75.3
4. Informing/instructing mothers on how to monitor infants for signs of influenza	688	37.2	1,185	63.0	974	53.3
Personnel and nonpersonnel vaccination practices						
5. Institution of sick leave policy that discourages health care personnel from reporting to work with symptoms of influenza	988	52.6	1,592	84.8	1,356	73.8
6. Mandatory influenza vaccination(s) of health care personnel involved in direct patient care	514	27.3	960	50.9	861	46.5
7. Mandatory influenza vaccination(s) of health care personnel not involved in direct patient care (eg, custodial staff, administration, support staff)	291	15.5	617	32.9	543	29.4
8. Offering recommended influenza vaccination(s) to unvaccinated healthy postpartum mothers prior to hospital discharge	915	48.6	1,521	80.6	1,403	75.9
9. Offering recommended influenza vaccination(s) to unvaccinated healthy family members and other close contacts of infants prior to hospital discharge	169	9.0	392	20.8	279	15.1

* All paired *t* tests assessing differences in the presence of hospital written policies between time periods (ie, before vs during, during vs after, and before vs after) are statistically significant at $P < .001$.

Table 3

Level of difficulty implementing selected general hospital practices recommended by CDC guidance among those who reported implementing the practice “most of the time,” “sometimes,” and “rarely”

	Frequency of implementation*	Level of difficulty					
		Very difficult		Moderately or somewhat difficult		Not difficult	
		n	%	n	%	n	%
Practices recommended by CDC during the pandemic							
Limiting visitors to healthy adults who are necessary for the patient’s emotional well-being and care [†]	“most of the time” (n = 1,498) “sometimes” (n = 123) “rarely” (n = 33)	240 41 16	16.0 33.3 48.5	764 70 8	51.0 56.9 24.2	494 12 9	33.0 9.8 27.3
Prohibiting visitation of children [‡]	“most of the time” (n = 1,402) “sometimes” (n = 147) “rarely” (n = 58)	386 45 27	27.5 30.6 46.6	647 86 20	46.2 58.5 34.4	369 16 11	26.3 10.9 19.0
Informing/instructing mothers on ways to prevent transmission of influenza and other viral infections	“most of the time” (n = 1,491) “sometimes” (n = 139) “rarely” (n = 25)	15 7 3	1.0 5.0 12.0	113 32 13	7.6 23.0 52.0	1,363 100 9	91.4 71.9 36.0
Informing/instructing mothers on how to monitor infants for signs of influenza [‡]	“most of the time” (n = 1,227) “sometimes” (n = 166) “rarely” (n = 50)	10 6 2	0.8 3.6 4.0	102 48 28	8.3 28.9 56.0	1,115 112 20	90.9 67.5 40.0
Offering recommended influenza vaccination(s) to unvaccinated healthy postpartum mothers prior to hospital discharge	“most of the time” (n = 1,279) “sometimes” (n = 138) “rarely” (n = 30)	9 4 6	0.7 2.9 20.0	149 52 18	11.6 37.7 60.0	1,121 82 6	87.6 59.4 20.0
Offering recommended influenza vaccination(s) to unvaccinated healthy family members and other close contacts of infants prior to hospital discharge [‡]	“most of the time” (n = 346) “sometimes” (n = 90) “rarely” (n = 73)	18 8 26	5.2 8.9 35.6	90 48 37	26.0 53.3 50.7	238 34 10	68.8 37.8 13.7

* Includes those who indicated implementing the practice “most of the time,” “sometimes,” or “rarely”; excluded those who reported “never” or “unsure.”

[†] χ^2 Tests comparing the distribution of level of difficulty with implementation by frequency of implementation were statistically significant at $P < .001$.