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Billing Practices of Local Health Departments Providing 2009 Pandemic Influenza A (H1N1) Vaccine

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Abstract

Context—In June 2009, the World Health Organization officially declared an influenza pandemic. In the United States, the federal government supplied 2009 H1N1 vaccine at no cost and provided funding for states to implement vaccination programs. Vaccine providers including health departments were permitted to bill insurance plans for administering 2009 H1N1 vaccine.

Objective—To determine the extent to which local health departments (LHDs) billed for administering 2009 H1N1 vaccine, specific billing practices of LHDs, and factors associated with LHD billing.

Design—Cross-sectional study using an Internet-based survey, and semistructured interviews.

Participants and Setting—Nationally representative stratified random sample of 527 LHDs in the United States. Interviews were conducted among a convenience sample of LHDs.

Main Outcome Measure—Proportion of LHDs reporting billing for administering 2009 H1N1 vaccine.

Results—A total of 308 health departments (58%) provided responses complete enough for analysis. Most LHDs (82%) had previous experience billing for seasonal influenza vaccination, but only 20% ($n = 57$) billed for administration of 2009 H1N1 vaccine. Medicare (74%) and Medicaid (80%) were the most commonly billed health care payers; more than half (55%) of LHDs billing for 2009 H1N1 vaccine administration sought reimbursement from one or more private insurance plans. Billing for 2009 H1N1 vaccine administration was more common among LHDs that previously offered seasonal influenza vaccination ($P = .003$), previously billed for seasonal influenza vaccination ($P = .04$), and conducted school-located influenza vaccination clinics prior to the 2009–2010 influenza season ($P = .002$).

Conclusions—Most LHDs elected not to bill for 2009 H1N1 vaccine administration despite prior experience billing for influenza vaccination. It is important to understand barriers to billing and resources needed by LHDs to facilitate billing for vaccination. Developing public health billing capacity will allow LHDs to recoup the costs of providing vaccines to insured persons and

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may also prepare them to conduct billing activities for other services or during future public health emergencies.

Keywords

human influenza; pandemic; public health practice; vaccination

In April 2009, 2 cases of respiratory illness reported to the Centers for Disease Control and Prevention (CDC) were determined to be caused by a novel influenza virus.¹ By May 6, 2009, 1487 probable and confirmed cases of 2009 pandemic influenza A (H1N1) (pH1N1) infection had been reported in the United States²; on June 11, 2009, the World Health Organization officially declared a pandemic. The Food and Drug Administration approved vaccines against pH1N1 virus for use in the United States on September 15, 2009.³

Beginning in June 2009, state and local health departments (LHDs) worked with the federal government to implement a pandemic response based, in part, on previously developed pandemic response plans. The 2009 H1N1 vaccination program was a public-private partnership: The federal government provided vaccine to states at no cost, so providers were not permitted to bill third-party payers for the vaccine itself; however, private providers could bill for vaccine administration.⁴ Government health programs including Medicare, Medicaid, TRICARE, and the Veterans' Administration, and many private health insurers, covered the cost of 2009 H1N1 vaccine administration for beneficiaries.

Initially, it was unclear whether public providers like LHDs would be permitted to bill administration fees. Multiple rounds of the CDC's Public Health Emergency Response (PHER) funding were made available to states to support implementation of H1N1 vaccination programs; states could allocate PHER funds to LHDs at their discretion. Because PHER funding amounts were initially unknown, some LHDs expressed concern about having adequate funds for H1N1 vaccination programs if they could not bill for vaccine administration. Ultimately billing of third-party payers was permitted, although LHDs were required to vaccinate all persons regardless of ability to pay.⁵

The National Association of County and City Health Officials, in collaboration with the CDC, conducted a survey to understand policies and strategies used by LHDs during the pandemic response. This report describes the prevalence of billing and factors associated with billing for 2009 H1N1 vaccine administration.

Methods

Survey

A nationally representative sample was selected from all US LHDs (N = 2794) using stratified random sampling with replacement from 7 strata based on service population size. Local health departments in the largest population stratum (serving 1 million people) were oversampled; 527 LHDs were selected. The self-administered Internet-based questionnaire included allocation, distribution, and management of 2009 H1N1 vaccine supply; communication between LHDs, providers, and state health departments; use of school-

located clinics to administer 2009 H1N1 vaccine; and practices related to billing for 2009 H1N1 vaccine administration. The survey was fielded from June to August 2010.

Data presented later focus on LHD billing practices for 2009 H1N1 vaccine administration. Analysis was performed using SAS 9.2 (SAS Institute, Cary, North Carolina) and SUDAAN 10.0.1. Cochran-Mantel-Haenszel χ^2 analysis was used to test associations between LHD characteristics and the decision to bill for 2009 H1N1 vaccine administration.

Of 527 sampled LHDs, 336 (64%) responded. Of these, 28 LHDs were excluded for high item nonresponse, leaving 308 surveys (58%) for analysis. Responding LHDs represented 45 states, with 1 to 20 LHDs per state. Results were weighted to account for sampling scheme and differences in nonresponse by stratum. Unweighted frequencies and weighted proportions are presented.

Interviews

Independent of the survey, the CDC contacted a convenience sample of LHDs known to have billed for 2009 H1N1 vaccine administration. Between February and November 2010, the author conducted semistructured telephone interviews with 9 LHDs using a standardized list of questions, including which payers were billed and in which settings, prior experience billing for vaccinations and how this informed billing activities for 2009 H1N1 vaccine, how insurance information was collected and processed, estimated proportions of vaccinations billed for which claims were paid, and barriers and facilitators to billing for 2009 H1N1 vaccine administration. After each interview, the author provided a written summary to the LHD for review. Common themes are presented later.

Results

Survey

Prior to the 2009–2010 influenza pandemic, most (82%) responding LHDs offering seasonal influenza vaccine had billed third-party payers for influenza vaccine administration. However, only 20% ($n = 57$) of the 297 respondents that offered 2009 H1N1 vaccine reported billing for its administration (the Table). Among those 57 LHDs, the most commonly billed payers were Medicare (74%) and Medicaid (80%); 55% billed one or more private insurance plans. A majority of LHDs billing for 2009 H1N1 vaccine administration billed for vaccines given at public health department clinics (80%) and community mass vaccination events (51%); nearly half (46%) also billed for administering vaccines at school-located vaccination clinics (the Table). Roster billing—submitting a single claim for multiple beneficiaries—was reported by only 37% of billing LHDs, primarily for Medicare billing. Nearly one-third of LHDs billing for 2009 H1N1 vaccine administration did not know whether roster billing was used.

In bivariate analysis, billing for 2009 H1N1 vaccine administration was more common among LHDs that previously offered seasonal influenza vaccination (21% vs 3%, $P = .003$), previously billed for seasonal influenza vaccination (23% vs 11%, $P = .04$), and previously conducted school-located influenza vaccination clinics (30% vs 14%, $P = .002$). No difference in 2009 H1N1 billing practices was observed among LHDs serving different

population sizes. Local health departments serving fewer than 50 000 people were more likely than those serving midsize populations to have billed Medicare for seasonal influenza vaccination prior to the 2009–2010 season (97% vs 87%, $P = .01$).

Interviews

All LHDs interviewed had prior billing experience. 2009 H1N1 billing practices varied; some LHDs billed only insurance plans with which billing arrangements already existed, others established relationships with additional plans to bill for 2009 H1N1 vaccine administration. Methods for collecting and processing insurance information also varied, although several LHDs described using existing electronic systems to facilitate creation and submission of insurance claims. Most LHDs estimated 70% to 90% of claims submitted for 2009 H1N1 vaccine administration were paid, although some claims had yet to be processed by the insurance plans billed. Factors cited as facilitating billing for 2009 H1N1 vaccine administration included prior billing experience, contracting with organizations familiar with insurance billing or hiring staff specifically for billing, and providing billing training to existing staff. Factors cited as barriers included variable benefits coverage and billing practices among private insurers, the need to revise existing systems to accommodate 2009 H1N1 vaccine billing, and difficulty understanding the CDC's billing guidance.

Comment

Overall, 20% of LHDs responding to the survey reported billing for 2009 H1N1 vaccine administration. Medicare and Medicaid were most commonly billed; more than half of LHDs that billed for 2009 H1N1 vaccine administration reported billing at least 1 private insurance plan. Although the majority of LHDs responding to the survey reported prior experience billing for seasonal influenza vaccination, most did not bill for 2009 H1N1 vaccine administration.

There are several reasons LHDs may have elected not to bill for 2009 H1N1 vaccine administration. First, for some LHDs, PHER funds may have been adequate to cover the costs of implementing mass 2009 H1N1 vaccination programs. Second, the CDC did not distribute guidance on financing and billing for 2009 H1N1 vaccination until October 1, 2009 (M.C.L., written communication, October 1, 2009). Although LHDs were not yet vaccinating, the delayed guidance may have limited their ability to plan for billing before beginning vaccination efforts. Finally, billing for 2009 H1N1 administration may have been too resource intensive for LHDs to undertake during the early pandemic response, particularly if new contracts between LHDs and insurance plans needed to be established. Interviewed LHDs indicated hiring additional staff and providing training were important factors contributing to successful billing; resources for such activities may not have been available at all LHDs.

Among LHDs that did bill for 2009 H1N1 vaccine administration, billing was broadly implemented, with many LHDs reporting in the survey and interviews billing both public and private payers and billing in a variety of settings. Interviews with LHDs that billed for 2009 H1N1 vaccine administration indicated systems used to collect and process insurance information were generally successful, and most LHDs felt billing efforts had been

worthwhile. These findings suggest that, once established, billing practices may be used for a variety of insurers and settings. However, some LHDs interviewed were unsure whether they would continue additional billing efforts in the 2010–2011 influenza season, primarily due to resource concerns.

Study results are subject to certain limitations and may not be generalizable to LHDs nationally. Local health departments responding to the survey may differ from nonresponders in ways that were unmeasured. Nonresponse weighting can reduce but not eliminate potential bias. Second, interview data were gathered only from a small number of LHDs. Finally, the extent of private insurance billing cannot be fully quantified as survey respondents were asked whether they billed private insurance but not the number of plans billed.

During the 2009–2010 influenza season, survey data indicate LHDs that billed for 2009 H1N1 vaccination utilized billing processes across a variety of insurance plans and settings. However, few LHDs responding to the survey chose to bill for 2009 H1N1 vaccine administration despite prior experience. Previous billing experience may reduce the level of effort needed to establish or amend billing relationships with insurance plans, but billing remains a challenge for LHDs.⁶ Beginning with the American Recovery and Reinvestment Act of 2009, several states have received funding for planning and developing vaccination billing processes in state and LHDs.⁷ Continuing to develop public health billing capacity for influenza vaccination and other vaccines for children and adults will allow LHDs to recoup the costs of vaccinating insured persons,⁸ and may also prepare them to bill for routine services and during future public health emergencies.

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TABLE

Billing Practices of Local Health Departments Related to 2009 H1N1 Vaccine Administration (n = 308)^a

	% (n)
LHD provided 2009 H1N1 vaccine	
Yes	96.5 (297)
No	3.5 (11)
LHD billed third-party payers for 2009 H1N1 vaccine administration ^b	
Yes	20.0 (57)
No	80.0 (240)
Which third-party payers did LHDs bill for 2009 H1N1 vaccine administration? ^c	
Medicare	73.8 (44)
Medicaid	79.8 (46)
TRICARE	10.8 (7)
1 private insurance plans	55.0 (33)
Other	4.8 (3)
Don't know	6.9 (4)
In which types of clinics did LHDs bill third-party payers? ^c	
Routine public health clinics	80.0 (45)
School-located clinics	45.9 (26)
Mass vaccination clinics	51.0 (30)
Other	11.6 (6)
Don't know	10.1 (5)
Did LHDs use roster billing with any third-party payers? ^c	
Yes	37.2 (19)
No	32.4 (20)
Don't know	30.5 (18)
Third-party payers for which LHDs used roster billing ^d	
Medicare	85.3 (16)
Medicaid	33.4 (6)
1 private insurance plans	13.1 (3)
LHD provided seasonal influenza vaccine prior to 2009–2010	
Yes	92.8 (284)
No	7.2 (22)
LHD billed third-party payers for seasonal influenza vaccine administration prior to 2009–2010 ^e	
Yes	82.4 (230)
No	17.6 (52)
Which third-party payers did LHDs bill for seasonal influenza vaccine administration? ^f	
Medicare	93.7 (211)
Medicaid	69.9 (162)
TRICARE	8.9 (20)
1 private insurance plans	39.4 (92)

	% (n)
Other	6.9 (15)
Don't know	0.7 (3)

Abbreviation: LHD, local health department.

^aThe table presents unweighted Ns and weighted proportions. "Don't know" responses are combined with "no" responses for all yes/no questions where fewer than 10% of respondents selected "don't know." One respondent did not respond to the question about in which types of clinics did LHDs bill, and 2 did not respond to the questions about providing influenza vaccine and billing for influenza vaccination prior to the 2009–2010 influenza season.

^bAnalysis restricted to the 297 LHDs that provided 2009 H1N1 vaccine in any clinic during the 2009–2010 influenza season.

^cAnalysis restricted to the 57 LHDs that reported billing third-party payers for 2009 H1N1 vaccination. Multiple responses to questions about payers and clinic types were possible, so proportions for these questions may sum to greater than 100%.

^dAnalysis restricted to the 19 LHDs that reported using roster billing for 2009 H1N1 vaccination. Multiple responses to this question were possible, so proportions may sum to greater than 100%.

^eAnalysis restricted to the 284 LHDs that reported providing seasonal influenza vaccination prior to the 2009–2010 influenza season.

^fAnalysis restricted to the 230 LHDs that reported billing third-party payers for seasonal influenza vaccination prior to the 2009–2010 season.