ORIGINAL RESEARCH

Disaster Preparedness and Pandemic Plans: A Survey of Nebraska Home Health Agencies

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ABSTRACT

Objective: To develop a tool that assesses disaster-planning strategies used by Home Health Agencies (HHAs) throughout Nebraska.

Methods: A survey of HHAs in Nebraska was created, distributed, and analyzed to assess and gain information about their written disaster plans. Part 1 of this 2-part survey identified agencies with written disaster plans and collected basic information about plan and structure. Part 2 identified detailed characteristics of the HHA and their pandemic influenza plans. Also, pandemic influenza preparedness of HHAs was assessed and compared to other health care institutions.

Results: More than 90% of the HHAs that responded to the survey reported that they have written disaster plans; almost half of the plans address strategies for surge capacity. The majority of HHAs with plans also have disaster-specific plans for pandemic influenza preparedness. Our findings suggest that Nebraska HHAs have taken substantial steps toward preparedness, although individual plans may vary considerably.

Conclusions: This survey provides a first step at evaluating HHA disaster preparedness plans. It also demonstrates that Nebraska HHAs have taken substantial steps toward being prepared, although individual plans vary widely. (*Disaster Med Public Health Preparedness*. 2013;7:182-190)

Key Words: home health, emergency preparedness, disaster plan

Natural and man-made disasters are common occurrences, and emphasize the need for disaster preparedness planning. Knowing that disasters can happen and planning for reacting to them are the first critical steps in preparing for a disaster situation.

When disasters occur and people are injured, they turn first to the hospitals. For this reason, hospitals plan for an increase of injured and/or infected patients (surge).[1] They are able to increase the number of beds available in the hospital for disaster victims, partly by discharging noncritically ill patients early.[2] This action creates a simultaneous need for Home Health Agencies (HHAs) and other receiving facilities or agencies, such as long-term care facilities, to increase their client load.[2] Hospital surge plans rely on the HHAs to assume responsibility for the care of the patients who are discharged early.[2,3] Although patient acuity differs between HHAs and hospitals, HHAs are important in community planning because, on average, 3 times as many clients are cared for in the home care system compared to patients in the hospital.[4,5] Planning can assist HHAs to care for their clients more efficiently.

Not only does the volume of home care clients surge during a disaster, but other factors create additional challenges. In home care settings, a response can be difficult to manage because home health care workers may be ill or physically unable to respond during a disaster.[6] Also, response to clients' homes during a disaster can be very difficult if roads are damaged or the homes are destroyed. Moreover, the location and status of clients may be unknown due to their forced displacement to emergency shelters or homes.

Currently, few published studies address home health care and its involvement in disasters. Some studies contain information about pandemic preparedness among HHAs,[4,7,8] and a few articles include very general guidelines for HHA preparedness.[6,9] To enhance the available information in this area, we examined disaster preparedness in Nebraska HHAs by performing a survey of their disaster plans. The survey asked if the plan had been practiced, modified, or used in an actual disaster; the majority of questions elicited details within each agency's plan.

METHODS

Nebraska HHAs were identified through the Nebraska Association of Home and Community Health Agencies (NAHCHA) and from the State of Nebraska Roster of

Home Health Agencies reported by the Department of Health and Human Services of Nebraska.[10] HHA members of NAHCHA (66 agencies) were sent an e-mail with a link to the preliminary survey, and non-HHA members of NAHCHA were contacted and invited to participate in the web-based survey via telephone and/or e-mail (23 agencies). All HHAs were considered for participation, and an attempt was made to contact each agency. The individual responsible for maintaining the agency's disaster plan was asked to complete the survey. All Nebraska HHAs were eligible, and the total number of agencies contacted was 89.

The authors at the Center for Preparedness Education in Omaha, Nebraska, developed a 2-part survey to assess disaster and pandemic preparedness plans among HHAs in in the state. Information from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO), Homeland Security, and relevant literature was used to create the surveys.[11,12] Both surveys were reviewed by experts in the field of home health care, hospital preparedness, nursing home preparedness, and public health preparedness. In addition, several questions were modified and borrowed from a survey created for long-term care facilities.[13] The survey had a few electronic branching features that allowed participants to skip questions that did not pertain to their agency, as based on previous responses. The survey was created in an electronic document, then it was transferred to an online survey (Zoomerang.com) for easy completion and tracking of responses.

The first part of the web-based survey consisted of 20 questions to determine which HHAs currently have a disaster plan, to gather demographic information, and to ask a few basic questions about their existing disaster plans. The second part of the web-based survey of 57 questions was sent only to agency participants who completed the preliminary survey and indicated that they had an existing disaster plan. Multiple plan and planning characteristics were included in the survey, such as hazard vulnerability assessment, planning authority, and influenza vaccination (see Tables 1-3). Most response options in the second survey were categorical (yes, no, or unsure). Both survey parts were approved by the University of Nebraska Medical Center's Institutional Review Board. The survey was designed to collect information about HHAs, and not about individual staff or clients cared for by these agencies.

Definitions of key terms were included in the survey. The agency disaster plan was defined as belonging to the agency, and was not part of the overall community plan. An all-hazards plan was defined as a comprehensive plan that could be applied to any disaster situation. A functional exercise was defined as one that simulates deployment of resources and tests command centers, whereas a full-scale exercise occurs when resources are actually deployed and the exercise is as close to reality as possible. A drill is an exercise focused on a particular skill set, for example, a tornado drill. The number

of preparedness full-time employees (FTEs) represents the number of FTEs spent on preparedness planning, exercises, education, and related activities.

Respondents completed the web-based survey using Zoomerang, a website dedicated to the administration of web-based surveys, which provides survey administrators and researchers with tables of survey-response values. Tables of raw survey data were exported to an electronic spreadsheet (Microsoft Excel) before analysis. A data integrity check was conducted to ensure that each agency was represented only once in the results. We calculated descriptive statistics to provide profiles of the respondent samples for each survey, and then tabulated results for all survey items.

After collection and analysis, some of the results from the pandemic influenza section were compared to results from previous surveys in a table. The cross-institutional comparison was among hospitals, nursing homes, assisted-living facilities, and HHAs in Nebraska.

RESULTS
Of 89 HHAs, 34 completed the preliminary survey in its entirety (response rate of 38%). Of the 34 HHAs, 31 stated that they had a disaster plan, and were then asked to participate in the second, more detailed survey. Of these 31 agencies, 23 completed the second survey (response rate of 74%). All submitted surveys were complete.

The 34 HHA respondents to the first screening survey who represented their respective agency consisted of 15 directors, 5 managers, 4 coordinators, 2 administrators, 2 supervisors, and 6 who listed their job title as something else. The majority of facilities were certified by Medicare or Medicaid (28 of 34; 84%). Half of the HHAs (18 of 34; 50%) indicated that the population of the community they served was greater than 10 000 people; 3 of 34 facilities indicated that their community populations were between 0 and 2000 people.

The median daily number of home care clients who received care from each agency was 24 (range: 3-500), and the median for maximum daily number of home care clients who could receive care in a surge was 32 (range 5-550). The median total number of home care provider FTEs for the group of HHA respondents was 6.3, with a range from 1 to 150; a median of 0.5 FTE per agency was dedicated to emergency planning. To optimize surge activities, the majority of HHAs (16 of 31 HHAs) would have staff remain with the HHA during a disaster, while 6 agencies would allow some of their own staff members to assist a local hospital.

Regarding preparedness education for staff, all HHAs reviewed the emergency plan, 19 of 23 (83%) covered personal protective equipment compliance, 15 of 23 (65%) provided instructions on how to develop a personal/family

emergency plan, and 8 of 23 (35%) provided refresher skills for tasks not performed daily but within the scope of practice. Also, preparedness topics were discussed with clients. About three-fourths of the HHAs (74%; 17 or 23) provided clients with education on actions the agency will take during a disaster. Furthermore, 14 of 23 (61%) gave instructions to clients on how to develop a personal/family emergency plan, and 10 of 23 (43%) provided education on actions the agency will take during a pandemic.

Results from the first screening survey regarding the HHA preparedness plan and its application (how the plan is carried out) are in Table 1, where details on the number and percentage of agencies and their responses are listed. Table 1 also describes types of disasters addressed in the plan and those encountered by HHAs in the past 5 years.

Only agencies identified as having a disaster plan in the first survey were invited to participate in the second, more detailed survey. Responses to categorical questions that focus on preparedness characteristics (Table 2) included elements of the general plan, surge, communication, training, recovery, and pandemic influenza preparedness.

The second survey asked if the pandemic planning was a separate plan or was included within the overall disaster plan. In addition, several questions specifically asked about pandemic influenza planning; these results are in Table 3.

A comparison among 4 different health care institutions (hospitals, nursing homes, assisted-living facilities, and HHAs) is shown in Table 4[14,15]. All institutions are in Nebraska and all have participated in pandemic influenza preparedness surveys.

DISCUSSION

Although much attention has been given to preparedness, particularly at the hospital level, much less attention has been focused on disaster planning in HHAs. We conducted a survey of HHAs in Nebraska to assess their level of preparation for a disaster. The general findings of the study indicated that HHAs have undertaken significant planning; in fact, more than 90% of respondents have a disaster plan. Although many agencies (11 of 34; 32%) use a plan written by their parent corporation, 13 of 34 (38%) have developed their own incident-specific response plan, and an additional 7 of 34 (21%) have developed their own all-hazards response plan. There are emergency management standards required for HHAs accredited by JCAHO,[12] although only 28.1% (25 of 89) of Nebraska HHAs are accredited by the organization.[16] This finding may be because HHAs in the state of Nebraska are not *required* but elect to be accredited by the JCAHO.

It is important not only to have a disaster plan but also to test the plan before an actual disaster. The survey asked Nebraska HHAs about the most common emergency affecting their agency within the past 5 years. An ice storm was the most common emergency, affecting 14 of the 31 participating agencies (45%). Twelve of the 14 affected indicated that they used their plan during the ice storm. It was interesting that 44 emergency situations affecting HHAs were encountered overall within the previous 5 years, yet disaster plans were activated in only 32 of them. This finding may indicate a gap in understanding the appropriate time and situation to activate a disaster plan.

HHAs need to identify disasters likely to pose the greatest threat to staff members and clients,[17] which naturally varies geographically, and HHAs should use this information to perform an appropriate hazard vulnerability assessment. Most plans (17 of 23; 74%) included a hazard vulnerability assessment that defined essential agency functions and the most likely disasters to occur. For example, all agencies with a plan included provisions for a tornado event, a common disaster threat in Nebraska. Table 1 includes other disasters for which agencies have a plan.

Table 2 details some structural questions regarding HHA preparedness among those with a plan. Of the 31 that responded, 28 (90%) have an individual responsible for preparedness planning, which facilitates the maintenance and upkeep of planning strategies. In addition, 27 of 31 (87%) have an incident command structure. This basic element of disaster response was created initially to ensure consistent and effective disaster response through a well-defined chain of command.[18]

Frequent and diverse exercises strengthen an individual's understanding of the plan, and provide the best way to gain experience with a disaster plan, short of an actual disaster. Results in Table 2 indicate that 19 of 31 agencies (61%) have held at least 1 exercise to test their plan. Tabletop exercises (a discussion of roles and plans) were the most common type of exercise conducted, (19 of 23 HHAs; 83%). Drills were conducted by 16 of 23 (70%) agencies; 7 of 23 (30%) conducted functional exercises; and 6 of 23 (26%) conducted full-scale exercises involving a major institutional commitment. These findings provide evidence that exercises are being used but that opportunity exists for future growth in carrying out preparedness exercises with HHAs.

Surge Preparedness

HHA plans should include surge contingencies.[7] Practice through exercises improves the agency's ability to care for an increased number of clients. The median number of home health care clients for which an HHA provides care increases from an average of 24 to 32 possible clients per agency during a surge event, which is a 33% increase. In addition, 11 of the 23 agency plans (48%) address the ability to deal with a surge of clients during a disaster. The ability to expand the capacity for surge clients is important, because of the increase in

TABLE 1

Home Health Agency (HHA) Preparedness Plan and Application		
Type of disaster plan (survey 1) N = 34	**No.**	**%**
Total with a plan	31	91
Agency's own incident- specific response plan (eg, fire, flood)	13	38
Corporate all-hazards disaster response plan	10	29
Agency's own all-hazards disaster response plan	7	21
Corporate incident-specific response plan (eg, fire, flood)	1	3
Do NOT have a plan	3	9
Those *with* a disaster plan (survey 1) N = 31		
Type of disasters addressed in plan (may be multiple per agency)		
Tornado	31	100
Ice storm	30	97
Fire	30	97
Electrical/power	27	87
Flood	26	84
Pandemic influenza	24	77
Chemical/hazardous material spill	22	71
Water failure	20	65
Mass casualty/surge event	18	58
Active shooter	14	45
Other	5	16
Type of actual emergency situation encountered in last 5 y (may be multiple per agency)		
Ice storm	14	45
Flood	9	29
Tornado	8	26
Electrical/power failure	5	16
Other (blizzard listed for all 3)	3	10
Fire	2	6
Pandemic influenza	1	3
Chemical/hazardous material spill	1	3
Mass casualty/surge event	1	3
None	11[a]	35
Emergencies in the last 5 y for which agencies used their plan (N = 16)[b] (may be multiple per agency)		
Ice storm	12	75
Tornado	6	38
Flood	5	31
Electrical/power failure	5	31
Other	3	19
Chemical/hazardous material spill	1	6

Plan structure and practice questions for those *with* a disaster plan (survey 1) N = 31	Yes (%)	No (%)	Unsure (%)
1. Has the agency appointed an individual to be responsible for emergency preparedness planning?	28 (90)	1 (3)	2 (6)
2. Has the plan has been used during an emergency within the last 5 y? (N = 20)[c]	14 (70)	4 (20)	2 (10)
3. Has an evaluation of the plan after use, activation, or an emergency been performed?	17 (55)	7 (22)	7 (22)
3a. Was the plan modified as a result of the evaluation? (N = 17)[d]	8 (47)	8 (47)	1 (6)
4. Was an exercise held to test the plan?	19 (61)	12 (39)	0 (0)
5. Does the agency have an incident command structure (organizational structure that integrates facilities, equipment, personnel, procedures, and communications) that can be activated in an emergency?	27 (87)	3 (10)	1 (3)
6. Does the plan address an expected shortage of home health care providers in a disaster or pandemic?	17 (55)	9 (29)	5 (16)
7. Does the agency offer continuing preparedness education to all personnel?	27 (87)	1 (3)	3 (10)

[a] These HHAs were excluded from the subsequent question.

[b] Only HHAs indicating that they were involved in an emergency and who used their plans were able to answer this question. More than 1 incident per agency is possible.

[c] Excludes HHAs indicating that they had no disaster situation in the past 5 years.

[d] Includes only HHAs indicating that they have performed an evaluation after use, activation, or an emergency.

HHA demand and the fact that hospitals consider sending more patients home under HHA care to free up beds in a disaster.

In addition to an increased client volume, staff attrition is a major concern in estimating surge capacity. The first survey indicated that 17 of 31 agencies (55%) expected a shortage of

TABLE 2

Home Health Agency Analysis of Disaster Plan Characteristics			
Disaster Plan Questions (Survey 2) N = 23	**Yes (%)**	**No (%)**	**Unsure (%)**
General plan questions			
1. Has the agency performed a hazard vulnerability assessment (eg, an assessment of disaster risks)?	17 (74)	4 (17)	2 (9)
2. Does your agency have an alternate location designated for administration purposes in case the primary building is nonfunctioning?	17 (74)	5 (22)	1 (4)
3. Was a report identifying strengths and weaknesses generated after most exercises (ie, after action report)?	11 (48)	7 (30)	5 (22)
4. Does your plan identify who is in charge during a disaster (ie, incident commander)?	18 (78)	3 (13)	2 (9)
5. Does your plan establish who activates the agency's all-hazards or incident-specific plan?	21 (91)	2 (9)	0
6. Does your plan list your agency's critical functions (ie, essential functions)?	19 (83)	2 (9)	2 (9)
7. Does your plan designate someone to be responsible for updating the disaster plan?	19 (83)	2 (9)	2 (9)
8. Does your agency's plan have a mechanism to track the agency's costs during an emergency?	9 (39)	7 (30)	7 (30)
Communication questions			
9. Does your plan describe the staff notification process in an emergency?	22 (96)	0	1 (23)
10. Does your plan describe how field staff will communicate with supervisors during an emergency?	19 (83)	3 (13)	1 (4)
11. Does your plan have a current list of staff emergency contact numbers?	23 (100)	0	0
12. Does the plan establish a backup or alternate communication process to communicate essential information in case primary methods (ie, cell phones) are nonfunctioning?	15 (65)	3 (13)	5 (22)
13. Does your plan describe how staff will communicate with clients during an emergency?	19 (83)	3 (13)	1 (4)
14. Does your plan describe how the agency will communicate with outside entities during an emergency?	18 (78)	1 (4)	4 (17)
15. Has the agency performed joint planning with other neighboring or local organizations?	11 (48)	10 (43)	2 (9)
Surge (increased client workload): staffing questions			
16. Does the plan address the agency's ability to deal with a surge (increased load) of clients?	11 (48)	8 (35)	4 (17)
17. Does the plan identify where staff should report in an emergency?	18 (78)	5 (22)	0
18. Does the plan address where to obtain additional staff in an emergency to make up for a shortage?	9 (39)	12 (52)	2 (9)
19. Does the plan include signed agreements (MOUs) with organizations such as a temporary agency for substitute staff?	4 (17)	16 (70)	3 (13)
20. Does the plan designate or identify someone to prioritize client care if staff is unable to meet the needs of all clients in a disaster?	12 (74)	6 (26)	0
Surge: supplies and stockpiling questions			
21. Does the plan address the stockpiling of equipment, medications, and supplies before a disaster?	10 (43)	9 (39)	4 (17)
22. Does the plan address who will distribute equipment, medications, and supplies to those who need them?	8 (35)	10 (43)	5 (22)
23. Does the agency store all stockpiled items in a centralized location (eg, administration building)?	15 (65)	5 (22)	3 (13)
24. Does the plan discuss the reuse of disposable equipment (eg, N95, respirators) in an emergency?	3 (13)	14 (61)	6 (26)
Education and training questions			
25. Does the agency have a designated person for coordinating emergency preparedness training to employees?	20 (87)	1 (4)	2 (9)
26. Does your agency provide clients with language and reading level-appropriate educational materials (eg, face-to-face, newsletter, e-mail)?	21 (91)	1 (4)	1 (4)
Transportation and recovery questions			
27. Does your plan address whether staff should visit clients in shelters?	5 (22)	16 (70)	2 (9)
28. Does your plan describe any mental health services that would be provided after a disaster?	2 (9)	15 (65)	6 (26)

home health care providers during a disaster or pandemic. Several studies have discussed the willingness of workers to respond during a disaster, and many factors have determined whether a person will report to work.[4,17,19] The fact that half of the HHAs do not address responding to a surge within their plan may indicate the need for the development of further details in this area.

Planning for client surge among HHAs highlights the need to acquire additional supplies, medications, and equipment.[5]

TABLE 3

Pandemic Influenza Plan Characteristics			
Type of pandemic influenza plan (survey 2) N = 23[a]		**No.**	**%**
Total with pandemic influenza plan		21	91
Corporate pandemic Influenza response plan		7	30
Corporate all-hazards disaster plan that includes a pandemic influenza response plan		8	35
Agency's own all-hazards plan that includes a pandemic influenza response plan		4	7
Agency's own pandemic Influenza response plan		2	9
Do NOT have a pandemic Influenza plan incorporated with any plan		2	9
Pandemic influenza planning questions (N = 21)[b]			
	Yes (%)	**No (%)**	**Unsure (%)**
29. Has the agency selected an individual responsible for pandemic influenza planning?	13 (62)	6 (29)	2 (10)
30. Does the agency have a multidisciplinary pandemic influenza planning committee?	8 (38)	11 (52)	2 (10)
31. Are staff members required to get the seasonal flu vaccine?	10 (48)	11 (52)	0
32. Is there a system established for tracking influenza vaccinations among employees?	20 (95)	1 (5)	0
33. Is it determined which care givers should receive the vaccine first in the event of a vaccine shortage?	15 (71)	4 (19)	2 (10)
34. Does the plan address human resources policies (PTO, sick leave, compensation) for employees who are ill with pandemic influenza?	7 (33)	7 (33)	7 (33)
35. Is there a tracking system in place to monitor employees with influenza during a pandemic?	13 (62)	6 (29)	2 (10)
36. Does the plan include recommendations about when ill employees can return to work?	14 (67)	3 (14)	4 (19)
37. Does the plan include a list of equipment and supplies that would be needed in a pandemic?	13 (62)	6 (29)	2 (10)
38. Does the agency fit test employees with N95 respirators?	13 (62)	7 (33)	1 (5)
39. Does the plan address what to do if there is a shortage of PPE?	7 (33)	7 (33)	7 (33)
40. Does the plan address how to distribute antiviral drugs to staff?	12 (57)	5 (24)	4 (19)
41. Does the plan address the acquisition of antiviral drugs for use in a pandemic?	9 (43)	6 (29)	6 (29)
42. Does the plan prioritize antiviral drug distribution for staff?	10 (48)	6 (29)	5 (24)
43. Does the plan identify the individual responsible for distributing antiviral drugs?	12 (57)	6 (29)	3 (14)

Abbreviations: PPE, personal protective equipment; PTO, personal time off.

[a] Number of HHAs indicating that they have a disaster plan and that completed survey 2.

[b] Excludes HHAs indicating that they did not have a plan specifically for pandemic influenza.

Stockpiling before a disaster event is very important.[20] However, many times planning for backup and additional supplies is overlooked.[3] Ten of 23 HHAs (43%) address stockpiling equipment, medications, and supplies in anticipation of a surge event. In either case, the use of memoranda of understanding (MOUs) with suppliers to bring additional supplies to a disaster may be very useful. Few HHAs in our survey had signed MOUs (4 of 23; 17%). These agreements are important to outline collaborations with partner agencies before a disaster. In a widespread disaster involving many organizations, suppliers may be unable to deliver supplies due to shortages and redundant commitments. In spite of the rare occurrence, MOUs to replenish supplies are a vital part of disaster planning and provide an opportunity for communication between HHAs and suppliers beforehand.

Communication also requires practice and planning, and methods can often change for agencies responding to a disaster. The HHA should be able to communicate with not only staff and clients (internally), but also with outside organizations such as hospitals (externally) to coordinate joint preparedness efforts.[21,22] The collaboration with other health care professionals is important, because it can facilitate more outcomes for clients that are positive.[23] During past disasters, it has been reported that cell phones have

been unreliable, but text messages were more likely to be transmitted.[24] This finding reiterates the need for backup communication systems such as those with cell phone texting capabilities or other modes of communication.[25] Involving information technology as soon as possible can also help manage communication and tracking issues.[24] These specific elements should be addressed explicitly in a disaster plan. We were pleased to note that a large majority of our surveyed HHAs had addressed key communication issues (Table 2) such as backup communication, communication with supervisors, and client communication. In addition, most agencies (22 of 23, 96%) described a staff notification process within their plan. A calling tree was the initial method used for contacting staff members involved in the response to the Joplin, Missouri, tornadoes.[24]

Over 80% of the HHAs surveyed had a person designated to oversee training of staff in emergency preparedness, and provided relevant educational materials for clients. A study by Slepski found that basic clinical care and triage were 2 of the most important reported skills to know for emergency preparedness.[26] Our survey found that only 35% (8 of 23) of HHAs actually included refreshing basic skills within the scope of practice during preparedness training for staff, which serves as a reminder that staff may be called on to perform unfamiliar tasks during an emergency. However, 74%

TABLE 4

Cross-Institutional Comparison of Pandemic Influenza Planning in Nebraska[a]

Question	Hospital[21]	Nursing Home[14]	Assisted Living[15]	Home Health Agency
Year survey completed	2008	2007	2007	2011
Pandemic influenza plan present	85%	47%	33%	81%
The plan is part of current plan	54%	53%	76%	57%
The plan is a separate plan	46%	47%	24%	43%
Person in charge of pandemic planning	NA	77%	71%	62%
Stockpiling supplies	Majority	50%	45%	43%
Personal protective equipment (PPE)	66% gloves 62% masks	38% gloves 34% masks	33% gloves 25% masks	87% gloves and masks
N95 masks	85%	11%	7%	48%
Antiviral drugs	23%	NA	NA	22%
Prioritizing distribution vaccines and/or antiviral drugs	67%	49%	41%	39%
Mental health services available	NA	61%	53%	9%
Address surge capacity	70% (overflow)	37%	55%	55%

[a] NA indicates an answer that was not asked in that survey.

(12 of 23) of HHAs designated or identified in their plan someone to prioritize client care during a disaster, which was consistent with the importance of triage previously noted.

Pandemic Preparedness

Pandemic preparedness is especially important for HHAs, because workers go directly into clients' homes. The influenza H1N1 pandemic resulted in an increased interest in planning for pandemic influenza. The survey inquired specifically about the agencies' plans for pandemic influenza (Table 3). This situation was addressed by the HHAs surveyed. Of the 23 agencies from the second survey, 21 (91%) stated that they have a pandemic influenza plan. Of those, 13 (62%) have an individual responsible for influenza planning, and 8 (38%) have a multidisciplinary pandemic influenza planning committee. When resources are exhausted during a surge from pandemic influenza, infection control issues can develop, making plans for vaccination, personal protective equipment (PPE), and antiviral agents essential. The literature supports annual seasonal influenza vaccination among health care workers.[27,28] This recommendation is even more important in pandemic events to reduce overall infections and to more easily identify and track illnesses from pandemic strains. Only a few hospitals have implemented *mandatory* annual influenza vaccination as a condition of employment.[27,28] It is encouraging to note that 10 of 23 (48%) agencies require employees to receive the influenza vaccine.[29]

Supply issues are a major concern during an influenza pandemic, and 7 of 23 (33%) HHA plans address what to do if a shortage of PPE occurs. Twelve of 23 agencies (57%) have a plan for distributing antiviral drugs to staff and have addressed tracking and prioritizing the influenza vaccine. Staffing shortages become a major issue during an influenza pandemic due to employee illness and failure to report to work because of fear of acquiring an infection. Most agencies had not addressed the key issue of human resource policies for ill employees (Table 3), which could be an area for further inquiries.

Due to past surveys conducted in Nebraska, we could compare HHA pandemic influenza responses to those of hospitals, nursing homes, and assisted-living facilities. Although the questions were similar, this survey of HHAs was most recent (2011); 3 other studies were published between 2008 and 2009. In spite of the different time frames, data should still be comparable across institutions (Table 4). One would expect hospitals (with highest patient acuity and more resources) to have accomplished the most pandemic influenza planning. When similar questions were matched, HHAs were comparable to hospitals in terms of having a pandemic plan (over 80%), and to nursing homes in terms of stockpiling of supplies and having a person in charge of pandemic planning. However, mental health services were less often addressed in HHAs than in any other type of facility.

Limitations

This study was limited by the potential for responder bias, because agencies that did not have disaster plans would have been less likely to respond to the first survey. Therefore, our study may have overestimated the degree of preparedness. We obtained input from subject matter experts in the survey; but the survey was not validated. We were unable to directly assess the characteristics of responders and nonresponders; because Nebraska is a rural state, the results may not apply as well to nonrural states.[21] From this survey, half of the participating HHAs served populations less than 10 000, suggesting that the results may be more generalizable to states with large rural populations. Also, a relatively small number of respondents (34) participated in the survey. A previous study reported that nearly 90% of responding HHAs (San Diego County) surveyed had a disaster plan. This finding was consistent with the 91% of respondents reporting a disaster plan in this study, which provides some confidence in our study findings. This study, in spite of its limitations, contributed to the overall knowledge in the area of HHA and disaster preparedness, an area with limited existing literature.

CONCLUSIONS

Our findings, which provided evidence of HHA disaster planning, can be used with additional information from more HHAs to identify gaps in preparedness planning and training among the HHA sector of health care. Most disasters will result in a surge on the health care system, and HHAs will be expected to assume care for the patients discharged early from hospitals to free up acute care hospital beds. Although some Nebraska HHAs have considered this issue in their planning, our study findings suggest that half of HHAs in Nebraska have not addressed surge planning.

Communication is almost always listed in the improvement plans of after-action reports from health care agency exercises, and may be more of an issue because client care occurs at multiple locations. According to our findings, most Nebraska HHAs have provisions for communication in their plans.

Regarding pandemic influenza plans, responding HHAs were comparable to hospitals, nursing homes, and assisted-living facilities for most aspects of their pandemic planning. Due to the vulnerability to influenza outbreaks of patients using HHA services, specific planning for communicable infectious diseases is likely to be particularly beneficial.

In addition, the best process to test a plan is through well-designed drills and exercises. Conducting annual exercises is a common component of preparedness guidelines and a requirement of accrediting agencies. These simulations are considered complex processes, and HHAs are beginning to use drills and tabletop exercises more frequently, but evidence shows a need to expand the scope to functional and full-scale exercise.

In summary, disaster preparedness and planning in HHAs is a relatively new area of study, and our findings indicate that substantial plans exist for Nebraska HHAs. Further development and study, including integration with other health care facilities, could prove very beneficial to health care in particular and the community as a whole.

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