

**Results of
Industry Survey**

**Preparation for a
Potential HPAI Outbreak**

Fall 2015

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Introduction

APHIS distributed a survey directly to stakeholders who participated in the weekly HPAI industry call and through poultry associations to poultry integrators and growers/producers on August 7, 2015. The survey was designed to help APHIS, States, and industry prepare for a potential highly pathogenic avian influenza (HPAI) outbreak this fall. The summary that follows presents a snapshot of industry readiness as of August 2015. Further preparation has already occurred as a result of ongoing work, including collaboration between the VS Assistant Directors and State Animal Health Officials.

The questionnaire evaluated a broad set of topics that covered vaccination, depopulation and disposal, employee health, mapping and data management, and biosecurity. A total of 22 integrators and 33 growers/producers responded to the questionnaire and their responses are described in this report.

From this analysis, we conclude that poultry integrators have made important efforts in implementing preparedness and response capabilities for future HPAI cases. Additional recommendations are provided below.

Summary Findings and Recommendations:

Vaccination

- Half of companies would not support vaccinating U.S. poultry for HPAI under any circumstance. Three of the six companies with turkeys supported vaccination under certain circumstances compared with only one of eight companies with broilers.

Recommendations

- APHIS needs to continue to engage States and the poultry industry about its vaccination policy

Depopulation and Disposal

All but one of the surveyed integrators would support ventilation shutdown as a means of depopulation if other methods could not be used to complete depopulation within 24 hours. About three-fourths of companies have a plan for rapidly depopulating their farms if they become infected with HPAI. The highest number of companies (14 of 16 responding to the question) plan to use ventilation shutdown to rapidly depopulate infected farms if other options cannot be used to complete depopulation within 24 hours. Ten of the 16 responding companies have water-based foam in their depopulation plans, and 10 have carbon dioxide in their plans.

Of the 22 integrators responding to the survey, 19 have a plan for rapidly disposing of dead poultry if they become infected with HPAI this fall. Of these, the disposal methods planned for use by the highest numbers of integrators are in-house composting (15 integrators), burial (13), and outdoor, on-site composting (12). Three-fifths of companies estimate that once their largest farm is depopulated it will take them up to 2 weeks to dispose of all their poultry, if they have no help from State or APHIS personnel or their contractors. Two companies estimate that without assistance disposal of depopulated birds from their largest farm will take them 31 or more days.

All companies think they could do some or all of the depopulation, disposal, and cleaning and disinfecting work with financial help from APHIS, if a widespread HPAI outbreak. About two-fifths of companies would be able to do all of the work.

Almost all companies are stockpiling supplies that could be needed during a fall HPAI outbreak. About two-thirds of companies believe their stockpiled supplies would last weeks or months if an outbreak were to occur. One-third of companies believe their supplies would last only days.

Recommendation:

- Industry needs to ensure that there are sufficient supplies available for their employees to use until additional supplies can be provided and that they have existing contracts to ensure that they can get supplies throughout an outbreak.

Employee Health

Slightly more than half of companies have a process in place for workers on their farms to be cleared for respirator use, and about three-fifths have a process to fit-test their workers for respirator use. Almost three-fourths of companies are recommending that their workers get vaccinated for seasonal human flu. About half of companies have protocols in place, or provide a point of contact for employees, in the event a human illness occurs on a company farm during an HPAI outbreak.

Recommendations:

- All companies need a process to clear responders for respiratory use and should increase the number of cleared responders.
- Companies without plans need to develop plans for influenza vaccination of workers and response to illness compatible with influenza in cooperation with State and local public health authorities.

Mapping and Data Management

Four-fifths of companies were sure they have national premises ID or equivalent State location identifiers for at least some of their premises, while about one-seventh did not know. About three-fifths of companies have worked to have PINs assigned and entered into the Emergency Management Response System. Three companies responded that they would like to have EMRS contact them to complete assignment and entry of the PINs into EMRS; those respondents who answered “Yes” and wanted to begin the work promptly were instructed to email the EMRS administrator.

Recommendations:

- Industry needs to use premises IDs and have these entered in EMRS to facilitate response activities.
- Increase State emphasis on EMRS training and facilitate access to the database.

Biosecurity

More than three-fourths of companies have had at least some of their farms implement a biosecurity plan. For three-fifths of companies with biosecurity plans, the plans had site-specific plans for each contract grower. More than four-fifths of companies have implemented protocols for monitoring farm biosecurity compliance. More than four-fifths of companies have instructed company and other service personnel on biosecurity expectations and required them to take vehicle and personal biosecurity precautions. Only one-third of companies have prohibited company and service personnel from visiting multiple farms on the same day. All but one company have had at least one biosecurity audit conducted on a farm. Nearly all companies have communication systems in place to communicate biosecurity and/or diseases status with growers, employees, visitors, and service providers.

Recommendations:

- Companies should increase efforts to develop and implement biosecurity plans on poultry operations.
- All companies should have site-specific biosecurity plans, including a method of verifying the implementation of such plans.
- Companies should consider limiting company and service personnel visits to a single farm or as few of farms as practical during an outbreak.

A. Integrator Level

1. Integrator demographics

A total of 22 integrators responded to the survey. Farms belonging to the surveyed integrators occur in 28 States, primarily in the eastern half of the country. Responding integrators did not have any farms in the District of Columbia and the five Territories.

Integrators might raise more than one type of poultry. Of the surveyed companies, nine had layers, eight had broilers, and six had turkeys. None of the responding companies had game birds or waterfowl.

Seven of the surveyed companies owned or contracted with fewer than 20 farms; 8 of the companies owned or contracted with 20 to 199 farms; and seven companies owned or contracted with 200 or more farms.

About two-thirds of the surveyed companies had pullets and/or breeders. However, more than three-fourths of their farms had growers.

For the 19 integrators who answered questions about the number of birds on farms, about two-fifths (8) had fewer than 100,000 birds on their largest farm. Four companies, or one-fifth of companies, had 500,000 or more birds on their largest farm.

Seven companies had fewer than 1 million birds on all of their farms combined, and 7 companies had 10 million or more birds.

1. Number and percentage of companies by type of poultry:

Poultry type	Number of companies	Percent companies
Turkeys	6	27.3
Broilers	8	36.4
Layers	9	40.9
Game birds	0	0
Water fowl	0	0
Other*	6	27.3

*Breeders

2. Number and percentage of companies by number of farms owned or contracted with:

Number of farms	Number of companies	Percent companies
<20	7	31.8
20 to 199	8	36.4
200+	7	31.8
Total	22	100.0

3. Number and percentage of companies, and percentage of farms owned or contracting with these companies, with the following types of birds:

Bird type	Number of companies	Percent companies	Percent farms
Breeder	14	63.6	16.6
Pullets	15	68.2	4.0
Growers	10	45.5	78.3
Layers	6	27.3	0.5
Other	2	9.1	0.6
Total			100.0

4. Number and percentage of companies by number of birds on the largest farm and number of birds on all of their farms, at normal operating capacity:

Number of birds	Largest farm		Number of birds	All farms	
	Number of companies	Percent companies		Number of companies	Percent companies
<100,000	8	42.1	<1,000,000	7	36.8
100,000 to 499,999	7	36.8	1,000,000 to 9,999,999	5	26.3
500,000+	4	21.1	10,000,000+	7	36.8
Total	19	100.0		19	100.0

2. Vaccination of U.S. poultry for HPAI

Half of companies would not support vaccinating U.S. poultry for HPAI under any circumstance. Three of the six companies with turkeys would support vaccination under certain circumstances compared with only one of eight companies with broilers.

1. Number and percentage of companies with and without layers by whether or not they would support vaccinating U.S. poultry for HPAI under any circumstance:

Would support?	Have layers	Percent companies	No layers	Percent companies	Number of companies	Percent companies
Yes	3	33.3	3	23.1	6	27.3
No	3	33.3	8	61.5	11	50.0
Don't know	3	33.3	2	15.4	5	22.7
Total	9	100.00	13	100.0	22	100.0

2. Number and percentage of companies with and without broilers by whether or not they would support vaccinating U.S. poultry for HPAI under any circumstance:

Would support?	Have broilers	Percent companies	No broilers	Percent companies	Number of companies	Percent companies
Yes	1	12.5	5	35.7	6	27.3
No	5	62.5	6	42.9	11	50.0
Don't know	2	25.0	3	21.4	5	22.7
Total	8	100.00	14	100.0	22	100.0

3. Number and percentage of companies with and without turkeys by whether or not they would support vaccinating U.S. poultry for HPAI under any circumstance:

Would support?	Have turkeys	Percent companies	No turkeys	Percent companies	Number of companies	Percent companies
Yes	3	50.0	3	18.8	6	27.3
No	2	33.3	9	56.3	11	50.0
Don't know	1	16.7	4	25.0	5	22.7
Total	6	100.00	16	100.0	22	100.0

3. Depopulation and disposal—plans and capabilities

All but one of the surveyed integrators would support ventilation shutdown as a means of depopulation if other methods could not be used to complete depopulation within 24 hours.

Foam depopulation requires large amounts of water. Ten to twenty thousand gallons of water are needed to depopulate a poultry house holding 10,000 birds. About half of companies had identified sources of water and water tankers that could be rapidly mobilized, if needed. Eight companies did not identify sources of water or sources of water tankers.

About three-fourths of companies had a plan for rapidly depopulating their farms if they became infected with HPAI this fall.

The highest number of companies (14 of 16 responding to the question) plan to use ventilation shutdown to rapidly depopulate infected farms if other options cannot be used to complete depopulation within 24 hours. Ten of the 16 responding companies had water-based foam in their depopulation plans, and 10 had carbon dioxide in their plans.

Of the 22 integrators responding to the survey, 19 had a plan for rapidly disposing of dead poultry if they became infected with HPAI this fall. Of these, the disposal methods planned for use by the highest numbers of integrators were in-house composting (15 integrators); burial (13); and outdoor, on-site composting (12). Seven of the 19 responding integrators with a disposal plan had plans approved by the State Environmental Protection Agency.

All companies think they could do some or all of the depopulation, disposal, and cleaning and disinfecting work, with financial help from APHIS, if a widespread HPAI outbreak were to occur this fall. About two-fifths of companies would be able to do all of the work.

The majority of companies could not depopulate all of the poultry on their largest farm within 24 hours without assistance from State or APHIS personnel or their contractors.

Three-fifths of companies estimate that, once their largest farm is depopulated, it would take up to 2 weeks to dispose of all of the poultry if they had no help from State or APHIS personnel or their contractors. Two companies estimate that, without assistance, disposal of depopulated birds from their largest farm would take 31 or more days.

Approximately half of companies estimate that, once their largest farm is depopulated and all the poultry is disposed of, it would take more than 2 weeks to clean and disinfect the farm if they had no help from State or APHIS personnel or their contractors.

1. Number and percentage of companies that would support using ventilation shutdown as a means of depopulation to minimize disease spread and animal suffering, if depopulation through other methods is not possible within 24 hours of a presumptive positive:

Ventilation shutdown?	Number of companies	Percent companies
Yes	20	95.2
No	1	4.8
Total	21	100.0

2. Number and percentage of companies that had identified sources for water and water tankers for their farms, given that about 10,000 to 20,000 gallons of water are required to foam depopulate poultry houses holding around 10,000 birds:

	Number of companies (n=21)	Percent companies
Identified sources of water	10	47.6
Identified sources for water tankers that can be rapidly deployed to the farm	12	57.1
Either	13	61.9

3. Number and percentage of companies that had a plan for rapidly depopulating all poultry on each of their farms if the farms become infected with HPAI this fall:

Plan for rapid depopulation?	Number of companies	Percent companies
Yes	16	76.2
No	5	23.8
Total	21	100.0

4. For the 16 companies with a rapid depopulation plan, number and percentage of companies by method(s) they plan to use for rapidly depopulating all poultry on infected farm(s):

Method of depopulation	Number of companies (n=16)	Percent companies
Water-based foam	10	62.5
Carbon dioxide (CO ₂)	10	62.5
Cervical dislocation	4	25.0
Captive bolt	2	12.5
Ventilation shutdown	14	87.5
Other	4	25.0

5. Number and percentage of companies that had a plan for rapidly disposing of dead poultry on each of their farms if they become infected with HPAI this fall:

Disposal plan?	Number of companies	Percent companies
Yes	19	86.4
No	3	13.6
Total	22	100.0

6. For the 19 companies with a disposal plan, number and percentage of companies by method(s) they plan to use for rapidly disposing of all poultry on infected farms(s):

Disposal plan	Number of companies (n=19)	Percent companies
In-house composting	15	79.0
Outdoor, on-site composting	12	63.2
Burial	13	68.4
Off-site composting	3	15.8
Landfill	5	26.3
Incineration	2	10.5
Other	2	10.5

7. For companies with a disposal plan, number and percentage of companies whose State Environmental Protection Agency had approved their disposal plan:

Approved?	Number of companies	Percent companies
Yes	7	36.8
No	5	26.3
Don't know	7	36.9
Total	19	100.0

8. In the event of a widespread HPAI outbreak this fall, number and percentage of companies that would be able to do none, part, or all of the depopulation, disposal, and cleaning and disinfecting measures on the premises, with financial assistance from APHIS:

	Number of companies	Percent companies
None of the work	0	0
Part of the work	12	57.1
All of the work	9	42.9
Total	21	100.0

9. Number and percentage of companies by estimated number of hours it would take to depopulate all poultry on the company's largest farm, without assistance from State or APHIS personnel or their contractors:

Number of hours	Number of companies	Percent companies
0-23	4	19.1
24-71	12	57.1
72+	5	23.8
Total	21	100.0

10. Number and percentage of companies by estimated number of days it would take to dispose of all depopulated poultry on the company’s largest farm, without assistance from the State or APHIS personnel or their contractors:

Number of days	Number of companies	Percent companies
1 to 14	13	61.9
15 to 30	6	28.6
31+	2	9.5
Total	21	100.0

11. Number and percentage of companies by estimated number of days it would take—once depopulation and disposal are complete—to clean and disinfect the company’s largest farm, without assistance from the State or APHIS personnel or their contractors:

Number of days	Number of companies	Percent companies
1 to 14	11	52.4
15 to 30	8	38.1
31+	2	9.5
Total	21	100.0

4. Depopulation and disposal—equipment, agreements, and supplies

More than four-fifths of companies had access to at least one type of depopulation equipment. Half of companies had access to foaming units. About half of companies with access to depopulation equipment owned or leased the equipment. Two companies that owned or leased depopulation equipment would be willing to lease it to others if they did not need it during a disease outbreak.

Almost all companies would voluntarily route their trucks around HPAI control areas or areas identified as likely to become HPAI control areas, if they were notified of these areas.

Three-fourths of companies did not have agreements in place with landfills or other disposal sites for disposal of HPAI-infected birds, other organic materials, equipment, etc., in the amounts likely to be generated if farms are depopulated because of HPAI infection.

Nearly all companies (19) would be able to compost depopulated birds. About three-fourths of companies would be able to compost depopulated birds from their largest farm indoors, whereas just over half could compost the birds outdoors.

Almost all companies were stockpiling supplies that could be needed during a fall HPAI outbreak. Of these companies, more than three-fifths were stockpiling respirators, Tyvek or similar suits, other personal protective equipment, disinfectant, or cleaning agents. The majority of companies stockpiling are monitoring the supplies to ensure that they have not expired. About two-thirds of companies believe their stockpiled supplies would last on the order of weeks or months if an outbreak were to occur this fall. One-third of companies believe their supplies would last only days.

In general, more than half of companies had emergency contracts or sources, or both, in place to quickly acquire personal protective equipment, cleaning agents, and carbon sources for composting depopulated poultry. About one-third of companies were stockpiling carbon sources for composting.

1. Number and percentage of companies by depopulation equipment they had access to:

Equipment	Number of companies (n=22)	Percent companies
Foaming units	11	50.0
CO ₂ carts	5	22.7
Whole-house CO ₂	5	22.7
Other	6	27.3
Any	19	86.4

2. For companies with depopulation equipment, number and percentage of companies by number of units of each type of depopulation equipment they had access to:

Number of Units	Number of companies	Percent companies
Foaming units (n=16)		
0	4	25.0
1	7	43.7
2 or more	4	25.0
Number not specified	1	6.3
CO₂ cart units (n=9)		
0	4	44.4
1 to 5	0	0
6 to 9	2	22.2
10 or more	3	33.3
Whole-house CO₂ units (n=9)		
0	6	66.7
1	0	0
2 or more	1	11.1
Number not specified	2	22.2
Other equipment mentioned:	NA	
Equipment and supplies for ventilation shutdown Personnel for cervical dislocation		

3. For companies with depopulation equipment, number and percentage of companies that owned/leased the equipment listed above:

Own/lease?	Number of companies	Percent companies
Yes	10	52.6
No*	9	47.4
Total	19	100.0

*Method of access not reported.

4. For companies that owned or leased depopulation equipment, number and percentage of companies that would be willing to lease their depopulation equipment to others if they did not need it:

Willing to lease?	Number of companies	Percent companies
Yes	2	20.0
No	6	60.0
Don't know	2	20.0
Total	10	100.0

5. Number and percentage of companies that had approval or a process in place to get expedited approval for the following procedures:

Procedure	Number of companies (n=21)	Percent companies
Outdoor composting, burial, or other disposal methods from local and/or State Departments of Natural Resources and/or other State environmental agencies if needed	11	52.4
Managing of runoff from foaming or cleaning and disinfecting procedures	7	33.3

6. Industry participants in the State/Industry/Federal Fall Planning meeting requested that they be notified of HPAI control areas and other areas to be avoided when routing trucks, e.g., areas likely to be included in a control zone based on a presumptive positive. Number and percentage of companies that would voluntarily route trucks around these areas:

Route around control zone?	Number of companies	Percent companies
Yes	20	95.2
No	0	0
Don't know	1	4.8
Total	21	100.0

7. Number and percentage of companies that had agreements with landfills or other disposal sites to dispose of the following items in the amounts likely to be generated if any of the company's farms were depopulated due to HPAI infection:

Agreements	Number of companies (n=22)	Percent companies
HPAI-infected birds	3	13.6
Bedding, composted birds, manure, and other organic materials from quarantined premises	2	9.1
Personal protective equipment, such as gloves, respirators, Tyvek suits, etc.	3	13.6
Other non-organic materials from quarantined premises	3	13.6
No agreements currently in place	17	77.3

8. Number and percentage of companies that would be able to compost all birds on their largest farm, indoors or outdoors:

Able to compost	Number of companies	Percent companies
Indoors (n=21)	16	76.2
Outdoors (n=19)	11	57.9
Either (n=21)	19	90.5

9. Number and percentage of companies that were stockpiling supplies (Tyvek suits, gloves, disinfectants, foam, respirators, etc.) that could be used during a fall HPAI outbreak:

Stockpiling supplies?	Number of companies	Percent companies
Yes	20	95.2
No	1	4.8
Total	21	100.0

10. For companies stockpiling supplies for a fall HPAI outbreak, number and percentage of companies by type of supplies being stockpiled:

Supply type	Number of companies (n=20)	Percent companies
Respirators	18	90.0
Tyvek or similar suits	17	85.0
Other PPE	16	80.0
Disinfectant	14	70.0
Foam	8	40.0
CO ₂	2	10.0
Cleaning agents	12	60.0
Other	2	10.0

11. For companies stockpiling supplies for a fall HPAI outbreak, number and percentage of companies that monitor supplies and rotate to ensure they have not expired:

Monitor?	Number of companies	Percent companies
Yes	19	95.0
No	1	5.0
Total	20	100.0

12. For companies stockpiling supplies for a fall HPAI outbreak, number and percentage of companies by how long they believe the above supplies would last in the event of an HPAI outbreak this fall:

Supply life	Number of companies	Percent companies
Days	7	35.0
Weeks	10	50.0
Months	3	15.0
Total	20	100.0

13. Number and percentage of companies that had emergency contracts or sources, or both, in place for fall for obtaining rapid delivery of the following supplies or services:

Supplies/services	Number of companies (n=22)	Percent companies
Respirators	15	68.2
Tyvek or similar suits	16	72.7
Other PPE	13	59.1
Disinfectant	15	68.2
Foam	5	22.7
Cleaning agents	14	63.6
Water in tanker trucks	10	45.5
Carbon sources for composting, such as wood chips	13	59.1
Composting thermometers	11	50.0
Foaming crews	7	31.8
Other personnel	8	36.4
CO ₂	7	31.8
Other	0	0
None	3	13.6

14. Considering the substantial amount of sawdust or other carbon sources required for composting poultry, number and percentage of companies that were stockpiling sources of carbon for use in composting:

Stockpiling carbon sources?	Number of companies	Percent companies
Yes	8	38.1
No	13	61.9
Total	21	100.0

5. Employee respirator use and vaccination

Over half of companies had a process in place for workers on their farms to be cleared for respirator use, a process to fit-test their workers for respirator use, and at least some of the employees identified as potential responders medically cleared for respirator use.

Most companies were recommending that their workers get vaccinated for seasonal human flu. About half of companies would reimburse their workers for getting vaccinated for seasonal human flu. About two-thirds of companies hold no-cost vaccination clinics for seasonal human flu for their employees.

About half of companies had protocols in place, or would provide a point of contact for employees, in the event a human illness occurs on a company farm during an HPAI outbreak.

1. Number and percentage of companies that had a process in place for workers on their farms to be cleared for respirator use:

Process to clear for respirator use?	Number of companies	Percent companies
Yes	12	57.1
No	9	42.9
Total	21	100.0

2. Number and percentage of companies that had a process in place for workers on their farms to be fit-tested for respirator use:

Process to fit-test?	Number of companies	Percent companies
Yes	13	61.9
No	8	38.1
Total	21	100.0

3. Number and percentage of companies whose employees that were identified as potential responders had been medically cleared for respirator use:

Employees medically cleared?	Number of companies	Percent companies
Yes, all	4	19.1
Yes, most	6	28.6
Yes, some	7	33.3
None	4	19.0
Total	21	100.0

4. Number and percentage of companies that recommend their workers get vaccinated for seasonal human flu:

Recommend vaccination?	Number of companies	Percent companies
Yes	15	71.4
No	6	28.6
Total	21	100.0

5. Number and percentage of companies that reimburse employees for getting vaccinated for seasonal flu or that hold no-cost clinics:

	Number of companies (n=21)	Percent companies
Reimburse	11	52.4
No-cost clinic	14	47.6
Either	15	71.4

6. Number and percentage of companies that had protocols in place (or a point of contact for employees to turn to) should a human illness occur on a company farm during an HPAI outbreak:

Protocols?	Number of companies	Percent companies
Yes	11	52.4
No	10	47.6
Total	21	100.0

6. Mapping and data management

Four-fifths of companies had national premises ID (PIN) or equivalent State location identifiers for at least some of their premises. Of these, about half had PINs or location identifiers (LIDs) for all their premises. About one-fourth of companies, however, had PINs or LIDs for less than 30 percent of their premises. These identifiers were considered by participants at the fall planning meeting to be critical to response operations during an outbreak.

About three-fifths of companies had participated in activities to have PINs assigned and entered into the Emergency Management Response System. Participants at the fall planning meeting thought entering the PINs into EMRS before an outbreak occurred would facilitate efficient reporting of test results and the issuance of permits for moving animals and products.

Three companies responded that they would like to have EMRS contact them to complete assignment and entry of the PINs into EMRS; those respondents who answered “Yes” and wanted to begin the work promptly were instructed to email the EMRS administrator.

1. Participants in the State/Industry/Federal Fall Planning meeting identified PIN IDs or equivalent State LIDs as critical to response operations. Number and percentage of companies for which any premises had PINs or LIDs:

Any PINs or LIDs?	Number of companies	Percent companies
Yes	17	80.9
No	1	4.8
Don't know	3	14.3
Total	21	100.0

2. For the 17 companies that had any PINs or LIDS, number and percentage of companies by percentage of premises with PINs or LIDs:

Percent premises with PINs or LIDs	Number of companies	Percent companies
1 to 29	4	23.5
30 to 69	1	5.9
70 to 99	4	23.5
100	8	47.1
Total	17	100.0

3. Participants in the State/Industry/Federal Fall Planning meeting identified the pre-outbreak assignment and entry of PINs in Veterinary Services Emergency Management Response System (EMRS) as critical to efficient reporting of test results and to the issuance of permits for moving animals and products. Number and percentage of companies by whether they participated in these activities:

Participated in assignment and entry of PINs into EMRS?	Number of companies	Percent companies
Yes	13	61.9
No	8	38.1
Total	21	100.0

4. For companies that had not had their PINs entered into EMRS, number and percentage of companies that would like the EMRS group to contact them to complete the work:

Would like to be contacted by EMRS?	Number of companies	Percent companies
Yes	3	42.9
No	4	57.1
Total	7	100.0

7. Integrator biosecurity

About three-fourths of companies have had at least some of their farms implement a biosecurity plan. For almost all of the companies with any implemented biosecurity plans, the plans included standard operating procedures to explain how biosecurity procedures will be performed to manage disease risk on the farm. For 10 companies with biosecurity plans, the plans had site-specific plans for each contract grower. Most of the biosecurity issues listed in the tables were addressed in all companies' plans. Air/wind spread was addressed in plans for five companies. Generally, a number of respondents indicated changes to their biosecurity plan as a result of this outbreak.

One fourth of companies listed "proximity to other poultry farms" first in their list of the three potential disease pathways that are most difficult to manage on their farms. One-fifth of companies each listed "foot traffic/personnel" or "air/wind spread" first in their list of the three potential disease pathways that are most difficult to manage.

Three-fifths of companies listed "proximity to other poultry farms" in their list of the three potential disease pathways that are most difficult to manage on their farms. The pathway included in the lists of the next highest number of companies (two fifths of companies) is "distance to other risk factors such as public roads."

More than three-fourths of companies believe the poultry industry would be the most appropriate entity to help them create or update a biosecurity plan for their farms.

Most companies had implemented protocols for monitoring farm biosecurity compliance. More than four-fifths of companies had instructed company and other service personnel on biosecurity expectations and required them to take vehicle and personal biosecurity precautions. Only one-third of companies had prohibited company and service personnel from visiting multiple farms on the same day.

All but one company have had at least one biosecurity audit conducted on a farm. For companies for which any farms had biosecurity audits, half of companies have biosecurity audits quarterly or more often on at least some farms. Approximately half of farms are audited at least quarterly. The majority of companies provide on-the-job training for biosecurity auditors. For companies that have had biosecurity audits, nearly all had the audits conducted by other company personnel. The majority of companies believe the poultry industry would be the most appropriate entity to help create a biosecurity audit program for their farms. For half of companies that had biosecurity audits, 100 percent of farms passed biosecurity audits in the last 12 months. For two companies, less than 50 percent of farms passed biosecurity audits in the last 12 months. About four-fifths of companies that have had biosecurity audits take action when a farm fails a biosecurity audit. For companies that have had biosecurity audits, about three-fifths schedule on-farm visits for the audits, whereas about two-fifths conduct audits via unannounced/unscheduled on-farm visits. For all companies that have had biosecurity audits, biosecurity practices are observed and verified during the on-farm audit.

To increase biosecurity awareness, all responding companies had conducted meetings to address biosecurity with employees and others and also had conducted hands-on training. Almost all companies also developed producer or company site-specific biosecurity plans and conducted site visits to help develop or implement biosecurity plans.

All but one company had a communication system to ensure that contract growers and farm employees receive timely information about the disease status of the farm. All but two companies had a communication/education plan to inform visitors and service providers about the farm’s disease status and biosecurity requirements. All but one company had protocols for growers to report disease or increased mortality.

Four-fifths of companies communicate their biosecurity plan to employees who are not fluent in English in their native language. Four-fifths of companies would find bilingual biosecurity educational materials helpful. All companies that would find bilingual biosecurity educational materials helpful would like the materials in Spanish. Some companies listed more than one language.

1. Number and percentage of companies that have had any of their farms implement a biosecurity plan (i.e., a site-specific document developed by a producer to define the measures taken by employees to prevent disease introduction to the production facility):

Biosecurity plan?	Number of companies	Percent companies
Yes	16	76.2
No	5	23.8
Total	21	100.0

2. For companies with biosecurity plans, number and percentage of companies with plans that include standard operating procedures (SOPs) that clearly describe the following:

Do plans have SOPs that describe?	Number of companies (n=16)	Percent companies
How biosecurity procedures will be performed to manage disease risk	15	93.8
Performance measures	14	87.5
Site-specific plans for each contract grower	10	62.5

3. For companies with biosecurity plans, number and percentage of companies with biosecurity plans that address the following issues:

Issue	Number of companies (n=16)	Percent companies
Proximity to other poultry farms	12	75.0
Proximity to another poultry farm's litter/manure spreading	11	68.8
Distance to other risk factors such as public roads	10	62.5
Separation of clean and dirty areas for barns or other facilities	16	100
General cleaning and disinfection protocols	15	93.8
Vehicle traffic	16	100
Foot traffic/personnel	16	100
Employee exposures to any birds not on the farm on which they work	16	100
Employees' family members that might work at a different poultry farm *	15*	100
Entry by service persons (e.g., no multiple visits on same day, sanitation, clothing, vehicle cleaning and disinfection entering and exiting the facility, etc.)	16	100
Contract crew biosecurity	16	100
Water source sanitation	13	81.3
Air/wind spread (e.g., use of filters or geographical separation)	5	31.3
Dead bird disposal	16	100
Pets, birds, wild birds, livestock, wild and/or domestic animals	16	100
Pest control (e.g., rodents, flies, bats, etc.)	16	100
Policies for shared equipment	16	100
Other	3	18.8

*n=15 for this item.

4.a. Number and percentage of companies that listed the following potential disease pathways first in their list of the three **most** difficult potential disease pathways to manage on their farms:

Pathway	Number of companies	Percent companies
Proximity to other poultry farms	5	25.0
Proximity to another poultry farm's litter/manure spreading	0	0
Distance to other risk factors such as public roads	1	5.0
Separation of clean and dirty areas for barns or other facilities	2	10.0
General cleaning and disinfection protocols	1	5.0
Vehicle traffic	0	0
Foot traffic/personnel	4	20.0
Employee exposures to any birds not on the farm on which they work	1	5.0
Employees' family members that may work at a different poultry farm	0	0
Entry by service persons (e.g., no multiple visits on same day, sanitation, clothing, vehicle cleaning and disinfection entering and exiting the facility, etc.)	0	0
Contract crew biosecurity	1	5.0
Water source sanitation	0	0
Air/wind spread (e.g., use of filters or geographical separation)	4	20.0
Dead bird disposal	0	0
Pets, birds, wild birds, livestock, wild and/or domestic animals	1	5.0
Pest control (e.g., rodents, flies, bats, etc.)	0	0
Policies for shared equipment	0	0
Other	0	0
Total	20	100.0

4.b. Number and percentage of companies for which the following potential disease pathways are in the top three most difficult pathways to manage on their farms:

Pathway	Number of companies (n=20)	Percent companies
Proximity to other poultry farms	12	60.0
Proximity to another poultry farm's litter/manure spreading	7	35.0
Distance to other risk factors such as public roads	8	40.0
Separation of clean and dirty areas for barns or other facilities	3	15.0
General cleaning and disinfection protocols	1	5.0
Vehicle traffic	0	0
Foot traffic/personnel	6	30.0
Employee exposures to any birds not on the farm on which they work	4	20.0
Employees' family members that may work at a different poultry farm	3	15.0
Entry by service persons (e.g., no multiple visits on same day, sanitation, clothing, vehicle cleaning and disinfection entering and exiting the facility, etc.)	1	5.0
Contract crew biosecurity	5	25.0
Water source sanitation	0	0
Air/wind spread (e.g., use of filters or geographical separation)	7	35.0
Dead bird disposal	0	0
Pets, birds, wild birds, livestock, wild and/or domestic animals	1	5.0
Pest control (e.g., rodents, flies, bats, etc.)	1	5.0
Policies for shared equipment	1	5.0
Other	0	0

5. Number and percentage of companies by whether they had implemented protocols for monitoring farm biosecurity compliance:

Implemented protocols?	Number of companies	Percent companies
Yes	16	84.2
No	3	15.8
Total	19	100.0

6. Number and percentage of companies by which entity would be the most appropriate for helping create or update a biosecurity plan for the farm(s):

Entity	Number of companies (n=22)	Percent companies
Poultry industry	17	77.3
Federal government	3	13.6
State government	4	18.2
Academia	5	22.7
Other	2	9.1

7.a. Number and percentage of companies* and percentage of farms by frequency of biosecurity audits:

Frequency	Number of companies (n=18)	Percent companies	Percent farms
Quarterly or more often	9	50.0	54.6
Semi-annually	3	16.7	0.8
Annually	7	38.9	23.0
Less than once/year	3	16.7	12.4
Never	3	16.7	9.2
Total			100.0

*Companies for which **any** farms have audits at specified frequencies.

7.b. Number and percentage of companies for which any farms have had a biosecurity audit:

Had a biosecurity audit?	Number of companies	Percent companies
Yes	17	94.4
No	1	5.6
Total	18	100.0

8. Number and percentage of companies by implementation of biosecurity precautions for company and other service personnel (e.g., field service persons, flock service technicians, etc.):

Precaution	Number of companies (n=20)	Percent companies
Instructed on biosecurity expectation	19	95.0
Prohibited from visiting multiple farms on the same day	7	35.0
Required to take vehicle precautions (e.g., park away from barns, clear/disinfect, etc.)	17	85.0
Required to take personal biosecurity precautions (e.g., shower, clothing, footwear, etc.)	19	95.0

9. For companies that have had biosecurity audits, number and percentage of companies in which biosecurity auditors receive the following training:

Training	Number of companies (n=17)	Percent companies
ISO 9001 auditor	1	5.9
Industry program	8	47.1
State-sponsored auditor	3	17.7
On-job	16	94.1
Other	2	11.8

10. Number and percentage of companies by entity they believe would be the most appropriate for helping create a biosecurity audit program for the farm(s):

Entity	Number of companies (n=22)	Percent companies
Poultry industry	15	68.2
Federal government	3	13.6
State government	5	22.7
Academia	5	22.7
Other	2	9.1

11. For companies that have had biosecurity audits, number and percentage of companies by the entity that conducts biosecurity audits for the farm(s):

Entity	Number of companies (n=17)	Percent companies
Farm personnel	2	11.8
Other company personnel	15	88.2
Third party	4	23.5
Regulatory official	3	17.7
Other	1	5.9

12. For companies that have had biosecurity audits, number and percentage of companies by percentage of farms that passed biosecurity audits in the last 12 months:

Percent farms	Number of companies	Percent companies
Less than 50	2	12.5
50 to 99	6	37.5
100	8	50.0
Total	16	100.0

13. For companies that have had biosecurity audits, number and percentage of companies that take action when a farm fails a biosecurity audit (e.g., retrain, remove contract, re-audit, financial penalty):

Take action?	Number of companies	Percent companies
Yes	14	82.4
No	3	17.6
Total	17	100.0

14. For companies that have had biosecurity audits, number and percentage of companies by how audits are conducted:

How audits conducted	Number of companies	Percent companies
Unannounced or unscheduled/ random on-farm visit	7	41.2
Scheduled on-farm visit	10	58.8
Record check (no visit)	0	0
Other	0	0
Total	17	100.0

15. For companies that have had biosecurity audits, number and percentage of companies for which biosecurity practices are observed and verified during the on-farm audit:

Observed and verified?	Number of companies	Percent companies
Yes	17	100.0
No	0	0
Total	17	100.0

16. Number and percentage of companies by measure(s) implemented to increase biosecurity awareness:

Measure	Number of companies (n=19)	Percent companies
Appointed one individual to be responsible for biosecurity training and implementation	12	63.2
Conducted meetings to address biosecurity with employees, co-op members, contract growers, etc.	19	100.0
Conducted biosecurity webinars for employees, co-op members, contract growers, etc.	4	21.1
Develop producer or company site-specific biosecurity plans	18	94.7
Established biosecurity communications with employees, co-op members, contract growers, etc., by email or mail	16	84.2
Sent biosecurity messages through media (print, radio, etc.)	9	47.4
Conducted paper audits of biosecurity plans	11	57.9
Conducted site audits of biosecurity plans	15	79.0
Conducted site visits to assist in development or implementation of biosecurity plans	18	94.7
Conducted hands-on training	19	100.0
Other	1	5.3

17. Number and percentage of companies that had a communication system that ensures contract growers and farm employees receive timely information regarding the disease status of the farm or operation:

Communication system?	Number of companies	Percent companies
Yes	19	95.0
No	1	5.0
Total	20	100.0

18. Number and percentage of companies that had a communication/education plan in place to inform visitors and service providers of the farm's disease status and biosecurity requirements:

Communication/education plan?	Number of companies	Percent companies
Yes	18	90.0
No	2	10.0
Total	20	100.0

19. Number and percentage of companies that had protocols for growers to report disease or increased mortality:

Protocols for reporting?	Number of companies	Percent companies
Yes	19	95.0
No	1	5.0
Total	20	100.0

20. Number and percentage of companies that communicate their biosecurity plan to personnel who are not fluent in English in their native language:

Communicate biosecurity plan in native language?	Number of companies	Percent companies
Yes	16	80.0
No	4	20.0
Total	20	100.0

21. Number and percentage of companies for which bilingual biosecurity educational materials provided by APHIS would be helpful:

Bilingual material helpful?	Number of companies	Percent companies
Yes	16	80.0
No	4	20.0
Total	20	100.0

22. For companies that would like to have bilingual biosecurity materials, number and percentage of companies by language that would be most helpful:

Language	Number of companies (n=16)	Percent companies
Spanish	16	100.0
Other*	6	37.5

*Other includes Micronesian, Vietnamese, Laotian, Hmong, Napolese.

B. Grower Level

1. Grower demographics

While there are several thousand growers/producers across the United States, this report reflects only the 33 growers/producers who responded to the survey. Growers may raise more than one type of poultry. The majority of respondents (28) raised layers, 5 raised turkeys, and 4 raised broilers. Two-thirds of respondents (22) had more than 1 farm. Of these, about half had 1,000,000 or more birds on their largest farm. In contrast, of the 11 respondents with only 1 farm, about half had fewer than 20,000 birds; only 1 had 1,000,000 or more birds.

1. Number and percentage of growers/producers by type(s) of poultry:

Poultry type	Number of growers/producers	Percent growers/producers
Turkey	5	15.2
Broiler	4	12.1
Layer	28	84.9
Game birds	1	3.0
Waterfowl	2	6.1
Other*	4	12.1

*Breeders, exhibition breeds, bantams.

2. Number and percentage of growers/producers by number of farms owned:

Number farms	Number of growers/producers	Percent growers/producers
1	11	33.3
2	9	27.3
3 to 9	8	24.2
10 or more	5	15.2
Total	33	100.0

3. Number and percentage of growers/producers with one farm and with more than one farm, by number of birds on the largest farm:

Number birds	Number growers/producers with one farm	Percent growers/producers with one farm	Number growers/producers with > one farm	Percent growers/producers with > one farm
Fewer than 20,000	6	54.5	0	0
20,000 to 99,999	1	9.1	2	9.5
100,000 to 999,999	3	29.2	8	38.1
1,000,000 or more	1	9.1	11	52.4
Total	11	100.0	21	100.0

2. Depopulation and disposal

Twenty respondents indicated that they had a plan for rapidly depopulating all their poultry. Of these, the most frequently reported methods they planned to use were carbon dioxide (14) and ventilation shutdown (14). About two-thirds of growers/producers had a disposal plan (23). Of these, the most frequently reported methods they planned to use were outdoor, on-site composting (11), and burial (11).

1. Number and percentage of growers/producers that have a plan for rapidly depopulating all their poultry if they become infected with HPAI this fall:

Depopulation plan?	Number of growers/producers	Percent growers/producers
Yes	20	60.6
No	13	39.4
Total	33	100.0

2. For growers with a depopulation plan, number and percentage of growers/producers by method they plan to use for rapidly depopulating all poultry on infected farm(s):

Method	Number of growers/producers (n=20)	Percent growers/producers
Water-based foam	1	5.0
Carbon dioxide (CO ₂)	14	70.0
Cervical dislocation	6	30.0
Captive bolt	0	0
Ventilation shutdown	14	70.0
Other	0	0

3. Number and percentage of growers/producers that had a plan for rapidly disposing of all their poultry if they became infected with HPAI this fall:

Disposal plan?	Number of growers/producers	Percent growers/producers
Yes	23	69.7
No	10	30.3
Total	33	100.0

4. For growers with a disposal plan, number and percentage of growers/producers by method(s) they plan to use for rapidly disposing of all poultry on infected farm(s):

Method	Number of growers/producers (n=23)	Percent growers/producers
In-house composting	5	21.7
Outdoor, on-site composting	11	47.8
Burial	11	47.8
Off-site composting	1	4.4
Landfill	8	34.8
Incineration	0	0
Other	0	0

3. Grower biosecurity

Nearly all growers/producers required the listed biosecurity precautions for employees. The majority of growers/producers (26) have implemented a site-specific biosecurity plan. The majority of growers/producers (22) had biosecurity audits conducted, of which 10 had audits quarterly or more often. The disease pathway cited most frequently as the most difficult to manage was proximity to other farms (8). The disease pathways cited most frequently as being in the top 3 most difficult to manage included air/wind spread (17), proximity to other poultry farms (11), and pets, birds, wild birds, and other animals (10).

1. Number and percentage of grower/producers by implementation of biosecurity precautions for regular employees:

Precaution	Number of growers/producers (n=31)	Percent growers/producers
Instructed on biosecurity expectation	31	100
Prohibited from visiting multiple farms on the same day	28	90.3
Required to take vehicle precautions (e.g., park away from barns, clear/disinfect, etc.)	28	90.3
Required to take personal biosecurity precautions (e.g., shower, clothing, footwear, etc.)	27	87.1

2. Number and percentage of growers by frequency of biosecurity audits:

Frequency	Number of growers/producers	Percent growers/producers
Quarterly or more often	10	33.3
Semi-annually	5	16.7
Annually	4	13.3
Less than once/year	3	10.0
Never	8	26.7
Total	30	100.0

3.a. Number and percentage of growers/producers that listed the following potential disease pathways first in their list of three most difficult potential disease pathways to manage:

Pathway	Number of grower/producers	Percent growers/producers
Proximity to other poultry farms	8	27.6
Proximity to another poultry farm's litter/manure spreading	0	0
Distance to other risk factors such as public roads	2	6.9
Separation of clean and dirty areas for barns or other facilities	1	3.5
General cleaning and disinfection protocols	0	0
Vehicle traffic	0	0
Foot traffic/personnel	1	3.5
Employee exposures to any birds not on the farm on which they work	3	10.3
Employees' family members that may work at a different poultry farm	0	0
Entry by service persons (e.g., no multiple visits on same day, sanitation, clothing, vehicle cleaning and disinfection entering and exiting the facility, etc.)	0	0
Contract crew biosecurity	5	17.2
Water source sanitation	0	0
Air/wind spread (e.g., use of filters or geographical separation)	4	13.8
Dead bird disposal	0	0
Pets, birds, wild birds, livestock, wild and/or domestic animals	4	13.8
Pest control (e.g., rodents, flies, bats, etc.)	1	3.5
Policies for shared equipment	0	0
Other	0	0
Total	29	100

3.b. Number and percentage of growers/producers for which the following potential disease pathways are in the top three most difficult pathways to manage on their farms:

Pathway	Number of growers/producers (n=29)	Percent growers/producers
Proximity to other poultry farms	11	37.9
Proximity to another poultry farm's litter/manure spreading	2	6.9
Distance to other risk factors such as public roads	8	27.6
Separation of clean and dirty areas for barns or other facilities	2	6.9
General cleaning and disinfection protocols	0	0
Vehicle traffic	5	17.2
Foot traffic/personnel	4	13.8
Employee exposures to any birds not on the farm on which they work	5	17.2
Employees' family members that may work at a different poultry farm	2	6.9
Entry by service persons (e.g., no multiple visits on same day, sanitation, clothing, vehicle cleaning and disinfection entering and exiting the facility, etc.)	3	10.3
Contract crew biosecurity	8	27.6
Water source sanitation	1	3.5
Air/wind spread (e.g., use of filters or geographical separation)	17	58.6
Dead bird disposal	0	0
Pets, birds, wild birds, livestock, wild and/or domestic animals	10	34.5
Pest control (e.g., rodents, flies, bats, etc.)	5	17.2
Policies for shared equipment	0	0
Other	3	10.3

4. Number and percentage of growers/producers that had implemented a site-specific biosecurity plan:

Site-specific plan?	Number of growers/producers	Percent growers/producers
Yes	26	86.7
No	4	13.3
Total	30	100.0

5. Number and percentage of growers/producers that communicate biosecurity information to personnel who are not fluent in English:

Communicate information?	Number of growers/producers	Percent growers/producers
Yes	21	72.4
No	8	27.6
Total	29	100.0

6. Number and percentage of growers/producers for whom having bilingual biosecurity educational materials provided by APHIS would be helpful:

Bilingual materials?	Number of growers/producers	Percent growers/producers
Yes	22	75.9
No	7	24.1
Total	29	100.0

7. For growers/producers who would like bilingual biosecurity materials, number and percentage of growers/producers by language that would be most helpful:

Language	Number of growers/producers (n=21)	Percent growers/producers
Spanish	20	100.0
Other*	4	25.0

*Other includes Karan, Burmese, Jamaican.