

## How do you get the biosecurity message to the grower?

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### Introduction

The odds are, if you are reading this paper, it is because you already know about the importance of biosecurity and you have already heard a few talks about it. So, what's new? Not much in terms of biosecurity measures. We have known for years how to biosecure a farm. Every poultry company has a biosecurity plan on file. But the implementation is just not done consistently. Many poultry people don't comply.

Compliance is "the extent to which a person's behavior coincides with medical or health advice" (Haynes et al, 1979). In the medical profession, compliance has been studied for several decades because non-compliance is often associated with treatment or disease prevention failures. Work by Sackett and Snow (1979) shows that the problem is prevalent with, at best, 78% of patients following their physician's recommendations for short-term treatments. The degree of compliance dropped to 33 to 54% for long-term disease prevention measures. A recent review of the medical literature confirms that the situation is about the same today. In poultry, similar compliance figures have been recorded in a biosecurity investigation of turkey farms (Table 1).

Table 1: Percent compliance to biosecurity measures by visitors on 52 turkey farms in North Carolina in 1996 (Vaillancourt and Carver, unpublished data)

Biosecurity measures	% Compliance
Requirements before a vehicle can enter the farm	21
Restricted access if visitors have previously been in contact with poultry during the same day	54
Visitors using coveralls or farm specific clothing	67
Visitors using footbath	64
Visitor washing hands or using gloves	23

In short, there is a significant discrepancy between the biosecurity plan and reality. Dr Charles Beard, Vice-President of the US Poultry & Egg Association, warns:

*"If the growers are not brought into the effort to upgrade the biosecurity situation in the U.S. poultry industry, very little will be accomplished. The grower level is where the biosecurity effort needs to be concentrated because that is where the birds are."*

One could argue that the biosecurity game is played at two levels: the farm and the region (where companies need to coordinate efforts). But it is clear that if you cannot achieve compliance at the farm level (i.e., the grower), you don't have a functional biosecurity program. As Dr Beard stated, biosecurity should start where the birds are and growers, obviously, need to be active participants.

About 7 years ago, when Poulter Enteritis Mortality Syndrome was devastating North Carolina, all people working on or visiting farms under contract with a turkey company were asked to sign in for each visit. This included the grower and family members, farm personnel, service people working for the integrated company, veterinarians, feed truck drivers, utilities company people, etc. A mailbox was installed on each farm. Log-in cards requesting key information were made available. The company instituted the log-in system as part of a series of measures designed to reinforce the existing biosecurity program. In order to determine the degree of compliance for this new recording system, a hidden camera was installed on three farms to monitor their entrance 24 hours a day for 7 consecutive days. Based on this surveillance, it was clear that many people did not comply, with a compliance level ranging from 7 to 49% (Table 2). Non-compliance was not limited to visitors who were not working for the poultry company or the farm. For example, feed trucks were observed driving on the farm without logging in late at night, even after drivers, who are working for the integrated company, were instructed to do so.

Table 2: Comparison between video surveillance and log-in records on three North Carolina turkey farms<sup>1</sup>.

Farm	Video (average # of visits/day)	Log-in System (average # of visits/day)	Ratio Log-in System/Video
A	5.5	0.4	0.07
B	2.6	0.85	0.33
C	1.0	0.49	0.49

<sup>1</sup>log-in system = a mailbox, log-in cards, a pen, and log-in instructions.

Clearly, the importance of this biosecurity measure for the upper management of the company was lost on many farm workers.

A biosecurity program designed by a company veterinarian and/or a live production manager must be understood and supported by the service people who, in turn, must work with the growers and their farm personnel to implement the program. Some employees may not fully appreciate the significance of each measure. They are usually not rewarded specifically for following these rules. Many are part-time laborers or migrant workers in transit. Under these circumstances, it may be difficult to get buy-in from everyone involved in the organization. To this, we must also consider the lack of knowledge by many of what is involved in disease transmission. They may not appreciate the chain of events required to favor the spread of disease. This lack of understanding is a major determinant of people's perception of the level of risk they and their animals are exposed to. It has been clearly demonstrated that, for a given disease, people's perception of their own vulnerability (or that of their birds), of the potential severity of the outcome, of the value of any given intervention (e.g. biosecurity measures), and their ability to physically,

psychologically and financially deal with the issue play a significant role in whether or not they will comply and follow the rules.

The challenge is to convince all personnel of the impact of their actions on the risk of breaking with an infectious disease. Education is key if one wants to substantially change people's perception of disease risks and, consequently, increase their level of awareness of the importance of biosecurity measures.

Finally, two other factors also deserve to be singled out. One is the recording and auditing of activities associated with biosecurity. Accountability for one's actions takes center stage when records are created and used. Companies should conduct regular audits to make sure that sanitation, traffic control, and pest control are properly implemented. This is in line with current efforts to bring HACCP to the farm. The second factor is the presence of incentives. These may be negative (penalties) or positive (rewards). The consequences of non-compliance to biosecurity rules are not always clearly spelled out in companies. For example, Nespeca et al (1997) found that the majority of respondents did not know what would be the consequences of not following biosecurity rules (i.e., whether or not penalties would occur). Likewise, most organizations do not offer rewards for those who comply. The assumption may be that compliance should contribute to better production performances, which is a form of reward. However, many people working on a farm or servicing it do not directly benefit from this. Cash rewards, gifts, contract incentives or educational opportunities may be worth considering. Reward systems already in place in other corporate worlds should be adapted to the reality of the poultry industry. In other words, nothing spectacular or expensive, but an effort should be made to recognize employees who consistently comply with company and farm rules.

### Reinforcing good behavior

Energized employees are more productive employees. To achieve this, it is important to address at least one of 8 basic human desires (Table 3). What energizes employees? What motivates them? How can one find out? According to several investigations in this field, the answer to these questions is relatively simple: ask them and listen.

Table 3: Human desires and the connection with compliance

Human desires	Connection with compliance
Activity	Meaningful position
Ownership	Could be profit sharing, a very motivating factor; but in the context of biosecurity, "ownership" could be offering the opportunity to all employees to contribute to the biosecurity program. Making them part of the decision process.
Power	Responsibilities
Affiliation	Team spirit
Competence	Knowledge
Achievement	Reaching targets
Meaning	Sense of direction
Recognition	Care; perception that specific actions matter

Active people want responsibilities, they want to belong, they want to feel that they have skills, and that these skills contribute to a goal that will be recognized by superiors.

The common link to all these desires is COMMUNICATION.

In the context of infectious disease control, communication is everything because time normally plays against you. The quicker and the more efficiently you communicate, the better. In order to control diseases, nobody can be ignored.

Therefore, reinforcing good behavior is essentially paying attention to the human desires listed above and using them to reach the main objective: superior compliance. This is achieved via effective and constant communication throughout the company, on the farm, and by recognizing good results, good behavior.

### Rewards for results

Studies have shown that employees find personal recognition more motivational than money. According to consultants K. Blanchard and S. Johnson, it is important to tell people up front that management is going to let them know how they are doing. Other key points:

- “Praise people immediately
- Tell people what they did right, and be specific
- Tell people how good you feel about what they did right and how it helps the organization and the other people who work there
- Encourage them to do more of the same”

For a reward to make sense, it must be based on clear specific criteria. Here is an example of criteria for a service or management level award:

1. Team player abilities
2. Taking initiative to solve problems
3. Providing leadership in supporting company goals
4. Inspiring attitude

### Principles for a successful reward program according to R M Kanter (management consultant):

*Principle 1:* Emphasize success rather than failure. You tend to miss the positive if you are busily searching for the negatives.

*Principle 2:* Deliver recognition and reward in an open and publicized way. If not made public, recognition loses much of its impact and defeats much of the purpose for which it is provided.

*Principle 3:* Deliver recognition in a personal and honest manner. Avoid providing recognition that is too “slick” or overproduced.

*Principle 4:* Tailor your recognition and reward to the unique needs of the people involved.

*Principle 5:* Timing is crucial. Time delays weaken the impact of most rewards.

*Principle 6:* Strive for a clear, unambiguous and well-communicated connection between accomplishments and rewards.

*Principle 7:* Recognize recognition: recognize people who recognize others.

The following is a short list of reward ideas, most of them having the merit of being appreciated and yet, not too expensive (adapted from L.D. Matthews, American President Lines transportation Co.):

1. Letters from manager, vice president, or president
2. Personal phone call from management
3. Lunch coupons to local restaurants
4. Coffee and donuts for a group of employees who performed well
5. Ice-cream social for a group of employees
6. Birthday card, cake, gift
7. Award pin
8. Team dinner, team outing
9. Conference attendance or training session (e.g., participation to an extension meeting organized by a University)
10. Tickets to events
11. Training/attendance award
12. Open praise
13. Formal letter of recognition
14. Recognition lunch
15. Publication of recognition
16. Bulletin board notice
17. Clothing (company logo items)
18. Non clothing company logo items
19. Free car wash
20. Provide an extra break
21. Give the person a two-hour lunch and pay for dessert
22. Give spontaneous time off for specific accomplishments
23. Certificates of recognition, plaques
24. Books, tapes, or videos
25. Nominal cash rewards for employees who performed well when tested about knowledge on biosecurity
26. Holding a contest to promote the program (e.g., testing knowledge; best audit score [team recognition], recognizing the employees from the farm that received the highest score, cleanest footbath, etc.). Note that to be successful, you must have easily measurable goals, limit the contest to a short period, keep rules simple, have prizes that are desirable to employees, link reward directly to performance, and give the rewards promptly.
27. Special assignment for high performer; opportunity to train others

## Penalties

Penalties can be used as a “negative” incentive, or deterrent, when the employees have been well informed of the company’s expectations. This last point is critical. Employees will accept that penalties are imposed if the conditions leading to them have been, without a doubt, well explained to them. If good behavior should be rewarded, inappropriate behavior must also be addressed. An employee who is allowed to “get away with it”, quickly learns the degree of “flexibility” in the system. The more irrelevant breaking the rules appears to be, the more difficult it will be to establish a proper discipline and consistency of application of a biosecurity program.

### How tolerant should an organization be before taking any action?

It is recommended to classify positions according to their degree of sensitivity relative to the risk of disease transmission:

**LOW:** secretarial staff, motor fleet employees, other personnel with no direct access to poultry.

**INTERMEDIATE:** Staff with access to farms or farm material, but not to poultry, such as feedtruck drivers, feedmill employees, etc.

**HIGH:** Any employee with regular access to poultry. Employees working in sensitive areas, such as breeder farms, and individuals having access to more than one farm, such as service people, maintenance individuals, etc. could be classified as “extra high” because the consequences of rule breaking by these people can affect several farms very quickly.

Reprimand/warning: Any observed breaking of a biosecurity rule or conduct may encourage others to break such rules. Modern animal production cannot afford this. A warning should be clearly understood as a step in the wrong direction, and not just a formality or a “virtual penalty”.

Financial penalties: Pay cuts, reduction in overtime pay, reduction or elimination of bonus if bonuses are distributed at a specific time (like during the “holiday season”); reduction or delay in scheduled pay increase relative to other employees; fine dependent on the rule breaking (as indicated above, such fines would have to be clearly explained to employees beforehand).

Loss of privileges: If privileges are available, employees normally regard losing them, even for a short period of time, as a strong incentive to comply. An example of privilege could be coupons normally distributed monthly to employees so that they can purchase company products for less.

When it is time to say goodbye: Individuals who repeatedly break biosecurity rules are too expensive to keep. When no epidemic of a serious disease is present, up to three formal reprimand may be considered before such action is taken. However, when a

company faces a severe condition in its area of production, it must be made clear to all employees that the circumstances are currently different and that the level of tolerance won't be the same. For example, any major breach in biosecurity under such circumstances could be considered sufficient for immediate dismissal of individual classified "intermediate" or "high".

The best way to get the message to growers, in essence, to get them to embrace a biosecurity program, is to:

1. Provide educational material and opportunities.
2. Get them on board by getting them to participate in building and revising the biosecurity program.
3. Have an individual within each company responsible for the implementation of biosecurity measures. This is a person who makes sure that there is a concordance between what is on paper and what happens in the field.

All the above are in response to the need to take action faster and better. If we have learned anything from disasters such as the Foot-and-Mouth epidemic in the UK or the Avian Influenza outbreaks in Italy is that time is of the essence (communication as well is crucial). The successes of the modern poultry industry have also created an environment very favorable to highly contagious agents. In this environment, the window of opportunity to contain an epidemic is very narrow.

## Conclusion

1. Non-compliance of biosecurity rules is the main path to failure to control infectious diseases. To be successful, each individual associated with poultry production must consistently apply biosecurity measures.
2. Factors associated with non-compliance include:
  - Poor training of farm personnel; specifically, a lack of explanation on why biosecurity measures are needed.
  - Lack of communication among farm personnel and with people servicing each farm.
  - Lack of incentive to follow the rules.
  - Poor record keeping of activities associated with biosecurity.
  - No audit of the biosecurity program.
3. Poultry companies must address the issues listed under #2 in collaboration with growers.

## References

Drummond, H. 1993. Power and involvement in organizations: an empirical examination of Etzioni's compliance theory. Avebury, Brookfield; 222 pages.

Haymes, R.B., Taylor, D.W., Sackett, D.L. 1979. Compliance in health care. John Hopkins University Press, Baltimore; 516 pages.

Nelson B. 1001 ways to reward employees. Published in 1994.

Nelson B. 1001 ways to energize employees. Published in 1997.

Nespeca R., Vaillancourt J.-P., Morrow M. 1997. Validation of a biosecurity survey. *Prev. Vet. Med.* 31: 73-86.

Gilbert. Predicting compliance with a regimen of digoxin therapy in family practice. *Can Med Assoc J.* 1980 Jul 19;123(2):119-22.

Rosenstock, I.M., 1974. Historical origins of the Health Belief Model. *Health Educ. Monogr.* 2:328-335.

Sackett, D. L. and J. C. Snow (1979). The magnitude of compliance and noncompliance. Compliance in Health Care. R. B. Haynes, D. W. Taylor and D. L. Sackett. Baltimore, Johns Hopkins University Press: 11-22.