

James L. Holly, M.D.

Ebola and Public Health

By Michael Thomas, MD, Corey Cricchio, CFNP and James L. Holly, MD

Your Life Your Health

The Examiner

October 30, 2014

The United States continues a public dialogue about the protection of this country from Ebola, the prevention of the spread of Ebola when it occurs and the authority of the healthcare system to require and to compel adherence to public health laws and/or regulations to support these ends. Because of contradictory information, there has been significant confusion in this effort. As we balance:

1. The availability of safe and proved prevention tools such as vaccines
2. The right of an individual or in the case of children, the right of parents not to receive vaccines
3. The ethical responsibility of all individuals to participate in prevention and/or immunization programs in order to contribute to public safety and health

We must promote public awareness of the imperative for all citizens voluntarily to participate in public health immunization efforts. This imperative creates an ethical obligation upon all citizens. No one should assume the “right” to exercise a personal choice when, with the same choice being made by others, that choice collectively creates a hazard for the entire community.

The history of public health in the United States is rich and noble. There was a time in the early days of our country when the only immunization protection which was available as in smallpox was the administration of the live virus from an infected person to a non-infected person with the hope that the immunized person would survive the disease. Tragically, sometimes they did not but those who did were immune from the spread of the disease for the rest of their lives. Public health measures eventually resulted in the eradication of smallpox from the United States.

The history of the treatment of Polio is equally as dramatic. Many of us remember the “iron lungs” used to keep polio victims alive because their respiratory muscles had been paralyzed.. Sometimes, coercive methods were used to compel participation in public health efforts such as the requirement of immunizations before a child could attend public school and even with the distribution of immunizations through the school system. While “coercive” is a term generally used in a negative light, it is used here to highlight the idea that public health may require individuals to subordinate their desires to the good of the community and the right of the

community to compel compliance if the individual refuses adherence and if the individual is a threat to the public good.

Public health efforts to control and to eliminate Tuberculosis are also examples. Next August my wife and I will celebrate our fiftieth wedding anniversary. Shortly after we married, our uncle was confined in a Tuberculosis hospital for one year to treat TB. While, no legal action was taken to compel that confinement, our uncle had no option not to be confined. While the current examples of compulsion are less dramatic, there are instances where the individual is compelled to be immunized:

1. A series of immunizations are still required for students to attend public school.
2. Healthcare workers are compelled to have immunization against Influenza A and B. Anyone who refuses is required to wear a mask while on duty.
3. When traveling to countries with certain diseases, travelers are required to receive specified immunizations before their visas become valid.

The reality is that if everyone fulfilled their ethical responsibility in regard to infectious diseases, and if ninety plus percent of United States citizens received their influenza A, B and NiHI Swine flu immunizations every year, it would not be possible for the disease to spread through our communities. This would save thousands of lives every year and it would save billions of dollars of preventable healthcare expense as well.

Ebola and travel

One of the raging discussions about Ebola is whether or not there ought to be a travel ban on people who are coming from West Africa. To some degree this discussion seems to be political, but there is science to give us guidance.

Horses are not as valuable as humans, but, if you wish to import a horse into the United States from Liberia or any African country other than Morocco, the horse needs to undergo a 60-day quarantine period at a USDA approved quarantine facility. African Horse Sickness (AHS) does not exist in the US and this quarantine law is the way it has been kept out. AHS only causes illness in horses, not humans, and our government has determined that it would be devastating to the US horse industry if it were to come here. The United States (and virtually all other countries) require a myriad of tests and often quarantine prior to bringing in a foreign animal.

Within the borders of the United States, you can't legally cross state lines with a horse or cow without a health certificate signed by a USDA accredited veterinarian stating that the animal has been inspected and found free of infectious disease. In most cases blood tests are also required.

The issue for Ebola is the question of whether the danger to humans is such that it warrants the involuntary quarantine of travelers for twenty-one days in order to protect US citizens from Ebola? Whether or not we should ban travel from countries which have Ebola outbreaks is really a political question which can be isolated from the question of quarantine in this country.

How Does Ebola Spread

Without doubt the consequences of contracting Ebola are grave. One term which has been confusing in regard to Ebola is the idea of whether it is “airborne.” Many common infections can spread by airborne transmission at least in some cases, including: Anthrax (inhalational), Chickenpox, Influenza, Measles, Smallpox and Tuberculosis. The answer with Ebola is not a simple “yes” or “no.”

A non-technical definition of “airborne” is a very small virus or other microorganism which can be spread in “dry” air, i.e., dust, dander, etc. It remains in the air for an extended period and it can travel a significant distance and remain infectious for a relatively long time. The term “aerosol infectious particle” is used as a synonym for airborne but may also be used with non-airborne infections.

Non-airborne, infectious conditions require “contact” with the infected individual’s body fluids such as urine, sputum, feces, blood, etc. Ebola is in this category but when a patient with Ebola is very, very sick, meaning that their viral load is very high, and when they are coughing or sneezing globules of secretions, Ebola may be transmitted to those who come into contact with the globules. It always needs to be remembered that these infectious materials need to come into contact with a mucous membrane such as nasal passages, oral cavity, eyes, etc. Unbroken skin is an effective barrier to infection which makes hand washing and scrubbing of exposed skin an imperative means of avoiding infection.

Conclusion

Our public health mandate includes protecting the community’s health by quarantining infected individuals to protect the community. It is currently easier to get a potentially Ebola-infected human into this country, than it is to get a potentially infected animal into the country. That history extends into this day and includes animals and plants. Like other diseases, such as Diabetes where Type II can mimic Type I in the latter stages of the disease, Ebola which is technically a non-airborne disease can, in its latter states, mimic an airborne disease.

Our greatest safety comes from everyone knowing as much as they can about Ebola and from our exercising appropriate caution without living in fear. America’s character demands that we go to Africa to help our fellow man fight this dreaded disease, but it does not demand that we are casual about carelessly spreading that disease to our country or to others. The example of our quarantining horses implies no equivalency of the value of humans and horses; it simply illustrates the illogical decision to give greater protection to animals than we do to humans whether in Africa or America.