Food Safety:
Bird Flu Outbreak

By: Claire Palmquist
Teacher: Mr. Prosen
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US Food Safety Issue Regulation

The United States Drug Administration (USDA) initiated the National Poultry Improvement Plan (NPIP) which uses modern technology to better the poultry and poultry production in the United States, according to FSIS. The program ensures that breeding stock and hatcheries are free from disease (Salmonella Workshop). It is intended to rid poultry from certain diseases such as Salmonella and the Avian bird flu (H5N1). Plants need to partake in this plan in order to ship their poultry internationally (fsis.usda.gov). When it was first created, it targeted eradicating Salmonella in chickens. Today the NPIP focuses on eliminating the following diseases from the birds in the United States: Pullorum, Fowl Typhoid, Avian Mycoplasmas, Salmonella enterica, and the Avian influenza. This Avian Influenza is the disease that is raging through Turkey farms in the Midwest. Minnesota itself has seen the outbreak spread to 84 poultry farms, infecting about 5.5 million birds. As Minnesota is the top turkey producing state in the nation, the NPIP will prove to be even more essential for keeping the disease under control.

This plan was first implemented in the 1930's. Part of the NPIP, the USDA also sponsors the Food Safety and Inspection Service (FSIS). The FSIS ensures that turkey plants carry out the Sanitary Standard Operating Procedures (SSOPs) and the Hazard Analysis and Critical Point (HACCP) plan. The SSOPs focus on the sterility of any materials that come in contact with the turkey along with protection from dangerous chemicals. The HACCP plan is put in place to enforce frequent inspections of the processes to eliminate risk for foodborne illness. These specific processes under the National Poultry Improvement Plan cost more money and consume
more resources to carry out. Therefore, this regulation increases the cost of production. With a higher cost, the plants cannot produce as much, shifting the supply curve to the left.

Specifically, the cost for the NPIP centers around the required Salmonella Pullorum testing process. The process for Turkeys consists of laboratory testing. Due to this fact the cost is slightly higher than the testing of other birds which can have on-farm testing done. It first consists of a 25 dollar call fee. From this point, costs consist of a $5.30 charge for the first bird, with a $1.00 charge for each additional bird. The Avian Influenza test itself, which is causing the death of thousands of Turkeys in Minnesota, is free. It is not essential, but due to this outbreak, is highly recommended. Additionally, although the test itself is free, it is a laboratory test, so the transportation of the birds to the lab would be an additional cost. This test is done biannually, compared to only annually for the Salmonella Pullorum test. Therefore, the transportation costs for the second time of the year would have to be additional. Also, the optional tests for Mycoplasma Gallisepticum and Mycoplasma Synoviae are more frequent, so if these are chosen, additional costs are also found here. Another cost takes the form of a negative externality for humans. Poultry is injected with antibiotics such as levofloxacin. If we are ingesting these chemicals, over time, we start to build up immunity to these antibiotics. In a sense, these people are paying a price for losing the effectiveness of this drug which, according to Dr. Daniel Palmquist, this is a necessary and very effective drug. If we are building up immunity, we are losing the effectiveness of this drug. This negative externality makes us pay a price due to the plants not paying the total cost of production. Many benefits exist, despite these costs of the regulation. One of these includes fewer restrictions when exporting poultry. As international trade is a main source of income, it is essential that the plants have approval to send their poultry internationally. Another benefit of participating in the NPIP includes that birds don’t need to be
P-T tested before entering certain shows and fairs. P-T stands for the Salmonella Pullorum-Typhoid test. Since the NPIP ensures that poultry test their birds prior to such events, it would save time and money to skip this test at the fairs (NPIP Organization). A third very beneficial aspect of NPIP include the high acclaim that NPIP seal holds. When selling your birds, the new plant can easily and freely implement the birds into their own NPIP flock without fear of disease. Without the seal of NPIP, the birds have to go through quarantine before being let into the flock.

Other than government regulation, plants use market mechanisms in order to accomplish their food safety goals. According to EDIS, plants must develop some sort of biosecurity plan. This plan consists of a basic understanding of disease transmission in accordance with basic common sense (FSIS). Operating on basic biosecurity, competition between the plans can cause plants to improve their own standards in attempts to come out on top. Benefiting off of this system, with work of the invisible hand, plants will lose business if they fail to uphold the standard set by its competitors. In addition, if the plant fails to uphold these standards, and it is reported to endanger the health of a customer, this bad publicity will further damage the plant's reputation. Closely related, the customer's health risk is the very downfall of reliance on this market mechanism. Without the universality of the government regulation, one bad company could slip under the radar and put the consumer's health greatly at risk. For this specific issue Avian Flu outbreak, it would be extremely hard to regulate it with a market mechanism because the Avian Influenza is already rampaging through the Midwest.
World Trade Organization (WTO) and Sanitary and Phytosanitary (SPS) Rule

Under the Agreement on the Application of Sanitary and Phytosanitary Measures, the SPS rule lays out simple guidelines to assure the safety of food to be consumed, as well as decreasing risk of disease among animals and plants. These rules may be based on the specific labeling techniques on some foods. These rules must be based on scientific thought and reasoning. Due to this fact, the rules are fairly rigid and constant. However, some countries are allowed to have their own, individual standards that may exceed the international standards of the SPS Rule. Also, specific standards are set for developing countries. For example, they may have more time to implement certain procedures into the process to meet the regulation. Also, technological assistance is provided for these developing nations. These modifications allow the third world nations time to keep up with international trade. Although it does assist these nations, it does create some grey area among the regulations. This gray area has caused dispute among some nations. In these cases, The World Trade Organization (WTO) has had to step in to try to resolve the dispute. Despite these disputes, the SPS Rule looks to provide each country with the food safety it sees appropriate. With the scientific basis, the SPS rule seeks to eliminate “protectionist purposes,” (Handout) and focus on regulatory procedures to protect the food we consume.

There are certain types of foods that are impacted by this SPS rule. These include large bulk amount of foods, such as beef, poultry, fish. The SPS rule is very closely related to the Country of Origin Labeling (COOL), which ensures the label includes where the food was born, raised, and produced or slaughtered (Handout). COOL labels foods such as pork, beef, goat, lamb, chicken, fruits, and vegetables. As The SPS rule is in close relation with COOL, many of these same foods will also be covered. A few important cases where the World Trade Organization had to get involved concerned fish. One example of this occurred with salmon in a
trading dispute between China, Norway, and the European Union. This case resulted in China receiving significantly less imports from Norway. Norway instead exported this salmon to Vietnam. Another case in which the WTO needed to get involved was shrimp trading between US and Mexico.

According to FAS organization, poultry is majorly impacted by the SPS rule. Renee Johnson, specialist in agricultural policy, states that the outgoing Bush administration requested the support of the World Trade Organization in 2009 in regards to a poultry trading dispute. Implied by Johnson, the United States is a major exporter of this poultry, while the European Union is a major importer of poultry. This dispute was caused due to the European Union refusing to accept the exported poultry from the United States (Johnson). The European Union rejected the poultry due to the United States carrying out Pathogen Reduction treatments. Yet this meat was approved by both the United States and European Union SPS rules under the World Trade Organization policies (Johnson). The EU claims they have much tighter regulations, including better ways to remove microbiological contamination, yet the Bush administration argued that the Pathogen Reduction treatments didn’t actually bring risk to the population’s health (Johnson). Due in part to this dispute, Brazil remains as the number one poultry exporter in the world (Johnson). This complicated, confusing, heated dispute illustrates the fact that universal regulations through the SPS rule may be the only way to allow easy international trade.

Since this SPS Rule is a government regulation it increases the cost of production. Due to this fact, there is an increased price on the imported food for the importing country that implemented the measures. This increase in cost would cause a leftward or upward shift in the supply curve. To expand upon this, when the product costs more, the country cannot produce as
much of it. Due to an increased price, demand will decrease. In this case, since food is an essential for survival, people will find substitute goods when one becomes too expensive. As laid out in the handout, as Mexican shrimp becomes more expensive people will begin buying more of the less expensive United States Shrimp. This US shrimp is viewed as a substitute to fill the void of the Mexican shrimp.

This SPS Rule can be seen as very controversial because it at times modifies the criteria to different countries. It has good intentions, as to give developing countries a chance to catch up on the specific modifications and technological advances. Despite these good intentions, as described earlier, this discrepancy can cause major disputes among the countries. From a producer’s perspective, especially a fully developed nation, these modifications can be seen as very unfair. If the developing nations receive extra time and resources to meet the standards, after this allotted amount of time, the developed country and developing country will be viewed as the same caliber. Developed countries have a better reputation; in return, demand for the poultry of this country would be increased. But if the developing countries have more time and technology help to reach these standards, they will eventually have the same reputation. As repeated several times in class, competition benefits the consumer. But if the two countries eventually have a very similar reputation, this competition can’t really play its course. In respect to world trade, the Bush administration example described earlier illustrates the dispute over unclear regulations. The lack of a unified system could eventually shut down the possibility of effective and smooth world trade.
International Food Safety

The Avian Flu has broken out just within the last few months among hundreds of turkey plants in the Midwest. This is a detrimental phenomenon in many senses. In a global sense, from the years 2003 until 2009 there were 486 cases of the Avian Influenza found in humans (WHO).

According to Avian Flu Organization, symptoms upon getting the flu include normal influenza type symptoms such as coughing, fever, sore throat, muscle aches. The symptoms expand to lower respiratory symptoms such as Pneumonia. From there 486 cases, 282 ended up fatal. Twenty five of these casualties occurred in China, 134 in Indonesia, 27 in Egypt, and 57 in Vietnam. Most of these casualties did occur in more densely populated, developing countries. That does not mean we are free from risk here in the United States. According to Doctor Daniel Palmquist, only a small mutation in the influenza could make it harmful again to humans. As in any influenza, the vaccination works for possibly one to two years but then they no longer work. This is due to the fact that the disease changes slightly and we must create a new vaccination. This could very well happen with the Avian Flu (H5N1) disease, and we would be in trouble. In addition to this fact, if we lose large quantities of birds from this Influenza, which is already occurring, this could be detrimental to our food security.

Poultry is a widely consumed good within the United States, and with how rampantly the disease is killing our birds, this could cause a major shift in where we receive meat sources. Also, this will cause a major loss in revenue from exporting this poultry to other countries, if we don’t have enough to export. As described earlier, prevention methods start with market mechanisms. Under
the invisible hand, plants are forced to uphold certain sanitary standards in order to stay competitive in the market. But if one company drops below this “unwritten” standard, people’s health is at risk. This is where the government regulated systems come into play. The National Improvement Plan under the United States Drug Administration administers the universal standards for all plants to further ensure safety and health among the poultry plants across the country.

As described earlier, Indonesia has one of the highest death rates from the Avian Flu since 2003. According to the Food and Agriculture Organization of the United Nations and World Organization for Animal Health joint with the Network of Expertise on Animal Influenza, that only through improving the vaccination and vaccination process in Indonesia can they ensure eradication of the disease in the country. The Food and Agricultural Organization has ensured that the Indonesian government has opened up eight animal health diagnostic laboratories since 2009, specifically to monitor, detect, and characterize the H5N1 disease throughout the country, according to the Poultry Site.

As fewer and fewer deaths have been recorded since 2009, it can be determined that these methods for curbing the disease are working. As expressed earlier, the real issue in conquering this disease fully is going to lie in staying on top of new vaccinations. Experimental phases must be continuous, so when mutations in the disease occur, the lag time is very short. The vaccinations must get into circulation very quickly as to reduce risk of humans getting the flu and it possibly being fatal. It is especially important that we make these vaccinations accessible to developing countries such as Indonesia.

My suggested regulation includes making vaccinations more universal. The vaccinations should be regulated to be given to all people, especially for the ones that live in areas of high
risk, such as Indonesia. Also, government spending should continue supporting the research and improving of the vaccinations to keep up with any mutations that could possibly occur in the very near future. This vaccination will be very costly, especially to send to developing countries, such as Indonesia. But the benefits will far outweigh the costs. If we keep on top of the issue, and take these preventive measures, this can save both people and birds from disease. In regards to the birds, it may be hard to stop this wave of Avian Influenza. But preventive measures should begin to be put in place as soon as possible. The National Poultry Improvement Plan should continue to set up these regulations in order to save a vital production and consumption source for The United States and the world as a whole.
Works Cited


Activity 1
Recall that in Case 2 the demand increase is larger than the supply decrease. In this case, the rightward shift in demand outweighs the leftward shift in supply and results in an increase in the equilibrium quantity from $Q_1$ to $Q_2$.

1. Draw the consumer and producer surplus for the original price $P_1$ and quantity $Q_1$ in the graph below.
2. Draw the consumer and producer surplus for the final price $P_2$ and quantity $Q_2$ in the graph below.

3. Then, discuss what happens to consumer and producer surplus as a result of these shifts in the supply and demand curves.
Food Safety

Activity 3

In this activity, research an example of a Sanitary and Phytosanitary (SPS) rule or regulation from the World Trade Organization (WTO) regarding food safety.

1. Describe this rule or regulation and why it is important for food safety.
2. What types of food are impacted by this SPS rule?
3. Choosing one of the foods that are impacted by this SPS rule, what countries are major exporters of this food? What countries are major importers of this food?
4. Using the graph space below, draw the impact that this SPS measure has on the supply for the foreign-produced food product in one of the countries that is a major importer of this food (refer back to graph A to help you determine the impact).
5. Using the graph space below, draw the impact that this SPS measure has on the demand for the domestically-produced food product in one of the countries that is a major importer of this food (refer back to graph B to help you determine the impact).

![Graph](image)

6. Describe what happens as a result of this rule, referring to the graphs you drew.

7. What are some disputes or debates that have occurred as a result of this SPS rule?