

# Theme Overview: Economic Consequences of Highly Pathogenic Avian Influenza

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*JEL Classifications: Q10, Q17, Q18, R1, H59*

*Keywords: Agricultural Disasters, Highly Pathogenic Avian Influenza, Animal Health Economics*

In a New York Times interview done in October 2015 with an Iowa turkey farmer, the arrival of highly pathogenic avian influenza (HPAI) was described as “when they went to bed one night, their turkeys were healthy; the next morning, almost 100 were dead and hundreds more were gasping for breath. Thousands of birds died in days” (McKenna, 2016). This farmer was one of 211 commercial poultry farmers and 21 backyard poultry farmers with confirmed detections across 15 states that experienced the worst avian health disaster in U.S. history. Previous avian health emergencies, such as the 2002-2003 exotic Newcastle disease (END) outbreak or the 2004 HPAI outbreak, were isolated to a limited geographic region. This outbreak was different. Wild bird surveillance programs identified strains of HPAI in the Pacific Flyway in December 2014, shortly after HPAI was identified in British Columbia in November 2014. HPAI strains H5N2, H5N8, and an isolated case of H5N1 were identified in wild birds, backyard poultry, and commercial poultry farms in Oregon, Washington, California, and Idaho between December 2014 and February 2015. All of these states are in the Pacific Migratory Flyway. Then, the HPAI-H5N2 strain was identified in the Mississippi and Central Flyways starting in March 2015; however, the most expansive damage in terms of birds infected occurred in Minnesota and Iowa. The last infected farm was confirmed on June 17, 2015 in Iowa, although response efforts to eliminate virus on farms continued well into the fall. Response plans in development since the early 2000s were deployed in a combined State-Federal response effort that resulted in the identification and depopulation of 7.5 million turkeys, 42.1 million egg layers as well as ducks and other specialty birds.

This themed set of articles explores the economic consequences of the 2015 HPAI outbreak, and how expectations based on economic research for avian influenza disease response planning played out in reality. The issue brings together animal health economics expertise from government and academia, drawing from research done in the heat of the outbreak and post-outbreak analysis on lessons learned.

## Articles in this theme

- **Local Economies and Highly Pathogenic Avian Influenza**
- **Proactive Risk Assessments to Improve Business Continuity**
- **The Impact of Highly Pathogenic Avian Influenza on Table Egg Prices**
- **Regionalization of Highly Pathogenic Avian Influenza**
- **Government Spending to Control Highly Pathogenic Avian Influenza**

The articles range from the national level, to the regional level, and down to the local level cutting across topics of public decision making and resource allocation, regionalization and trade, business continuity and permits, price formation of poultry products, and costs of local response and cleanup. Johnson, Seeger, and Marsh provide observations of HPAI activities in the local economy and summarize response and cleanup cost information for Minnesota and Iowa. Thompson and Pendell use a business continuity framework to examine product movement and permitting during the HPAI outbreak. Huang, Hagerman, and Bessler investigate the daily shell egg price movements in the Midwest, Northeast, Southcentral, and Southeast regions of the United States, and examine impacts of the 2015 HPAI incident on egg layers in the Midwest on these egg prices. Seitzinger and Paarlberg explore implementation of regionalization, its design, and implications for response strategies. Johannson, Preston and Seitzinger examine U.S. taxpayer costs against the benefit of avoided economic losses to domestic producers in response to HPAI. Each paper provides economic insights from the HPAI events based on empirical assessment from actual data or calibrated simulations. As in any significant economic event such as HPAI, necessary adjustments were made to mitigate losses and costs, lessons were learned, and new questions are in need of answers.

### For more information

McKenna, M. 2016. "The Looming Threat of Avian Flu." New York Times Magazine. Available online: [http://www.nytimes.com/2016/04/17/magazine/the-looming-threat-of-avian-flu.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=photo-spot-region&region=top-news&WT.nav=top-news&\\_r=1](http://www.nytimes.com/2016/04/17/magazine/the-looming-threat-of-avian-flu.html?hp&action=click&pgtype=Homepage&clickSource=story-heading&module=photo-spot-region&region=top-news&WT.nav=top-news&_r=1).

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