Volume 45 Issue 1 JULY 2014

Kentucky Epidemiologic Notes & Reports

Chasing the Pandemic: 2013-2014 Influenza Season

Jan Hatfield, RN, BSN[a] and Hollie Sands, MPH[b]
[a]Influenza Surveillance Coordinator, Immunization Program, Kentucky Department for Public Health, and [b]Epidemiologist, Immunization Program, Kentucky Department for Public Health

As we all know, influenza is a contagious respiratory illness caused by a variety of influenza viruses that infect the nose, throat, and lungs. Influenza can cause anything from asymptomatic infection to severe illness which can result in hospitalization and death. According to the Centers for Disease Control and Prevention (CDC), influenza is responsible for approximately 200,000 hospitalizations and 23,000 deaths annually in the U.S.

Flu seasons are traditionally unpredictable and even though epidemics of flu happen every year, the timing, severity and length of the season varies from year to year. Periodically, a more virulent strain arises, such as the Influenza A 2009 H1N1-like, or novel H1N1, strain (pandemic H1N1 or "pH1N1"), that swept around the globe in 2009-2010. During the pandemic 2009-2010 season, Kentucky experienced an unprecedented burden of influenza disease and testing. We implemented mortality surveillance using a network of Regional Epidemiologists, infection control practitioners, and coroners, actively seeking reports of people who had succumbed to the influenza virus. A total of 41 deaths directly related to infection with pH1N1 were recorded.

Since the introduction of pH1N1 into the population, each year's seasonal vaccines have included the novel H1N1 strain, now being available for 5 seasons (it was introduced in the late fall, 2009). However, each successive year Kentucky has confirmed, via our Sentinel Provider network, a number of individuals who have tested positive for pH1N1, indicating ongoing circulation of this virus in our population. The 2013-2014 influenza season was no exception and as is described below came close (Continued on Page 3)

Letter from the State Epidemiologist

Kraig E. Humbaugh, MD, MPH, Senior Deputy Commissioner

Greetings to all of our public health partners, stakeholders, and friends across the Commonwealth! The Kentucky Department for Public Health is pleased to revive our *Epidemiologic Notes and Reports* newsletter after a five-year hiatus. Many changes have occurred since we last published an issue of *Epi Notes* – H1N1 influenza has come and then not gone, pertussis has made an unfortunate comeback, a comprehensive manual of guidance has been developed for the investigation of foodborne and waterborne illnesses, and Kentucky has moved ahead on the information technology front, implementing a successful health information exchange which promises to improve the efficiency of infectious disease surveillance and reporting when it is fully implemented. One thing that has stayed the same is our commitment to determining the "who, what, when, where, why and how" of population health events, so that resources can be used to best effect in protecting the health of our communities. To that end, the need for epidemiologists, lab scientists, environmentalists, clinicians, nurses and pharmacists to share information and to keep our public health community informed is as strong as ever, which underlines the importance of *Epidemiologic Notes and Reports* and the network of professionals across the state that will contribute to its pages.

I want to give a word of thanks to all those who have played a part in putting this effort together, from the Building Epi Capacity in Kentucky (BECKY) collaborative that spearheaded the initiative to reintroduce the newsletter, to those who volunteered to serve on the editorial board, and finally to Dr. Matthew Groenewold, who took on the mantel of Chief Editor. Like reacquainting yourself with an old friend, I hope that you will enjoy spending time with this and future editions of *Epi Notes*.

In this issue

Past events, Present awareness, Future directions for Public Health

A message from the Editor

Matthew Groenewold, PhD, MSPH

Kentucky Epidemiologic Notes & Reports is back! The series published by the Kentucky Department for Public Health, Division of Epidemiology and Health Planning has been on hiatus since April of 2009, but I am happy to announce its return in a new, entirely online format.

Kentucky Epidemiologic Notes & Reports has a long history. It has its origins in the "Weekly Morbidity Reports" that were tabulated by what was then called the Kentucky State Department of Health, Division of Preventive Medicine. These weekly reports, which date back to 1955, were tables summarizing the numbers of cases of notifiable diseases reported to the state in each county. In much the same way as the CDC's Morbidity and Mortality Weekly Report (MMWR)—first published in 1952—summarized state-level notifiable disease reports for the nation, the Kentucky Weekly Morbidity Reports recorded consistent state and county-level disease statistics that could be used to monitor tends and comprised an historical record of the occurrence of diseases of public health significance in Kentucky.

In July of 1966, the series—again emulating MMWR—was renamed Epidemiologic Notes and Reports and, in addition to the weekly summary tables of reportable diseases, included short articles on the epidemiology of particular reportable diseases in Kentucky, descriptions of outbreak investigations and other topics relevant to public health. With the inclusion of these articles, the publication became something more than a routine administrative report; it became a sort of epidemiologic digest for Kentucky in the same way that MMWR was for the nation. The first issue of Epidemiologic Notes and Reports, published on July 23, 1966, included an article entitled "Paralytic Poliomyelitis, 1965," which reported that "In 1965 there was a single case of poliomyelitis (Type I, non-paralytic) in Kentucky, the first to be reported and confirmed since November, 1962." The article attributes this success to "the widespread acceptance and effectiveness of polio vaccines" administered in a series of Sabin oral polio vaccination clinics sponsored by each of Kentucky's 120 counties beginning in May of 1962, and to the fact that immunization against poliomyelitis was made a prerequisite for admission to Kentucky schools.

While polio is no longer a concern in Kentucky, many of the articles in the earliest issues of Epidemiologic Notes and Reports addressed issues which public health practitioners still deal with in Kentucky today, including outbreaks of shigellosis, tuberculosis contact investigations and the annual influenza season. Beginning in August of 1970, Epidemiologic Notes and Reports changed from a weekly to a monthly publication and, in 1983, the name was changed to Kentucky Epidemiologic Notes & Reports. Over the decades, the articles included in Kentucky Epidemiologic Notes & Reports have reflected the major public health issues and concerns of their times: rabies, tuberculosis, motor vehicle crashes, smoking, HIV/AIDS, cervical cancer, West Nile Virus, smallpox and other bioterror threats firearm injuries, SARS, avian influenza and more.

By the mid-2000's, the reportable disease summary tables around which Kentucky Epidemiologic Notes & Reports had originally been based were no longer routinely included in every issue as they were published elsewhere in periodic summary reports. The emphasis shifted to the articles and the publication became primarily a vehicle by which the Department for Public Health could disseminate timely, useful and relevant information on public health-related topics to the public health and clinical communities in Kentucky. It also served as an accessible venue in which Kentucky public health practitioners, clinicians, researchers and students could publish the results of their work—especially work with a Kentucky-specific focus.

In 2009, the staffing demands of the H1N1 influenza pandemic response and the constraints of a department budget severely affected by the economic recession drastically limited the human and financial resources that could be devoted to Kentucky Epidemiologic Notes & Reports and the publication was put on indefinite hiatus.

Given Kentucky Epidemiologic Notes & Report's long tradition of giving voice to the selfless work of so many public health professionals on behalf of the

health of all Kentuckians over so many decades and its role in chronicling the story of public health in Kentucky, it would have been a true shame to see it go out of production entirely and fade into history. So it is a pleasure to announce, with this current issue, the return of Kentucky Epidemiologic Notes & Reports as a quarterly, online publication. As before, the series will publish timely and useful reports on topics relevant to public health in Kentucky and will serve as a means by which the Department for Public Health can disseminate information to the public health and clinical communities in Kentucky. It will also continue to be a venue for the publication of quality, Kentucky-focused work by public health professionals, clinicians, researchers and students from around the commonwealth.

Reflecting the truly broad scope of public health practice, this issue includes reports on injury prevention, infectious disease (influenza), chronic disease (asthma) and clinical practice (infection prevention and control) in Kentucky. It is my sincere hope that you, as a stakeholder in the practice of public health in Kentucky, find the new Kentucky Epidemiologic Notes & Reports useful and engaging. The Editorial Board and I welcome your feedback on this and all future issues. We are also relying on you to provide the quality content we will publish. To contact us, or to submit material to be considered for publication, email: DPH.EpiNotes@ky.gov.

("Influenza" continued)

to equaling the mortality rate of the 2009-2010 season due to the pH1N1 influenza strain.

Influenza in Kentucky, 2013-2014

The 2013-2014 influenza season in Kentucky began in late October with the first lab-confirmed case reported the week of October 24, 2013. At that time and throughout most of the season, Kentucky's level of influenza-like illness (ILI), as reported to the U.S. Outpatient Influenza-Like Illness Surveillance Network (ILINet), remained below the national average of 2.2% (Figure 1). Kentucky has a network of private providers, hospitals, university health care centers as well as other healthcare facilities that have agreed to participate as ILINet Influenza Surveillance sites. ILINet providers report on a weekly basis into a CDC database the total number of patients seen for the week and the number of those patients presenting with ILI symptoms, which include fever at or above 101°F, cough, and/or sore throat. ILINet is an essential component of seasonal and pandemic influenza surveillance and is invaluable in monitoring the impact of ILI on the healthcare system, as well as informing policy and resource allocation decisions throughout each influenza season.

As can be seen in Figure 1, the percentage of patient visits to ILINet providers in Kentucky with reported ILI symptoms began rising in MMWR Week 49 (early December) and peaked at MMWR Week 3 (week ending January 18th, 2014). Influenza activity for Kentucky as reported to CDC's FluView (available at http://www.cdc.gov/flu/weekly/) was at "widespread" designation for 4 consecutive weeks from January 4, through January 24, 2014, the peak activity week being MMWR Week 3 (ending January 18th, 2014) (Figure 2). According to CDC's FluView report (available at http://www.cdc.gov/flu/weekly/), forty-one states reported widespread geographic influenza activity for the MMWR Week 3. Widespread activity is defined as increased ILI and/or institutional outbreaks in at least half of the regions in Kentucky, i.e., at least 8 of the 15 area development regions. Kentucky had 11 Long Term Care Facilities (LTCF) report outbreaks during the 2013-2014 season, significantly lower

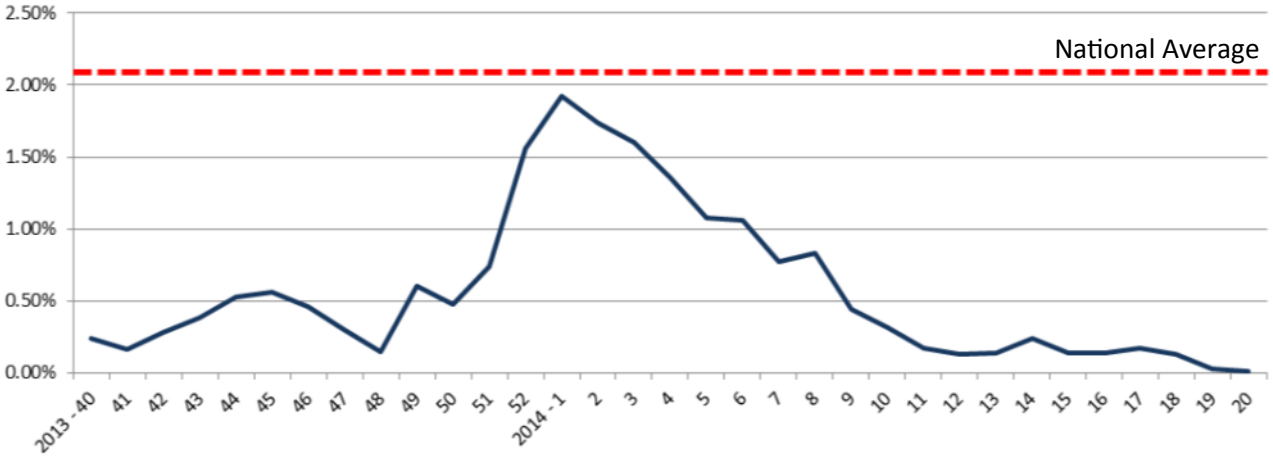
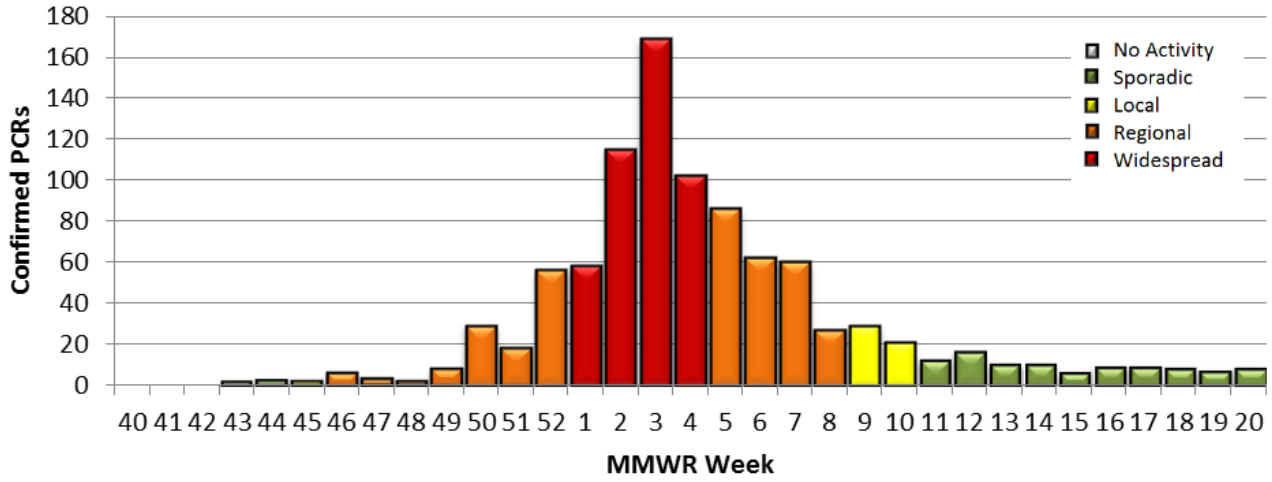


Figure 1: Percentage of Visits for ILI Reported to the US Outpatient ILI Surveillance Network (ILINet) in Kentucky, 2013-2014 Season

Figure 2: Seasonal Influenza Activity in Kentucky by MMWR Week, 2013-2014



than the 58 LTCF outbreaks reported by this point in the 2012-2013 influenza season.

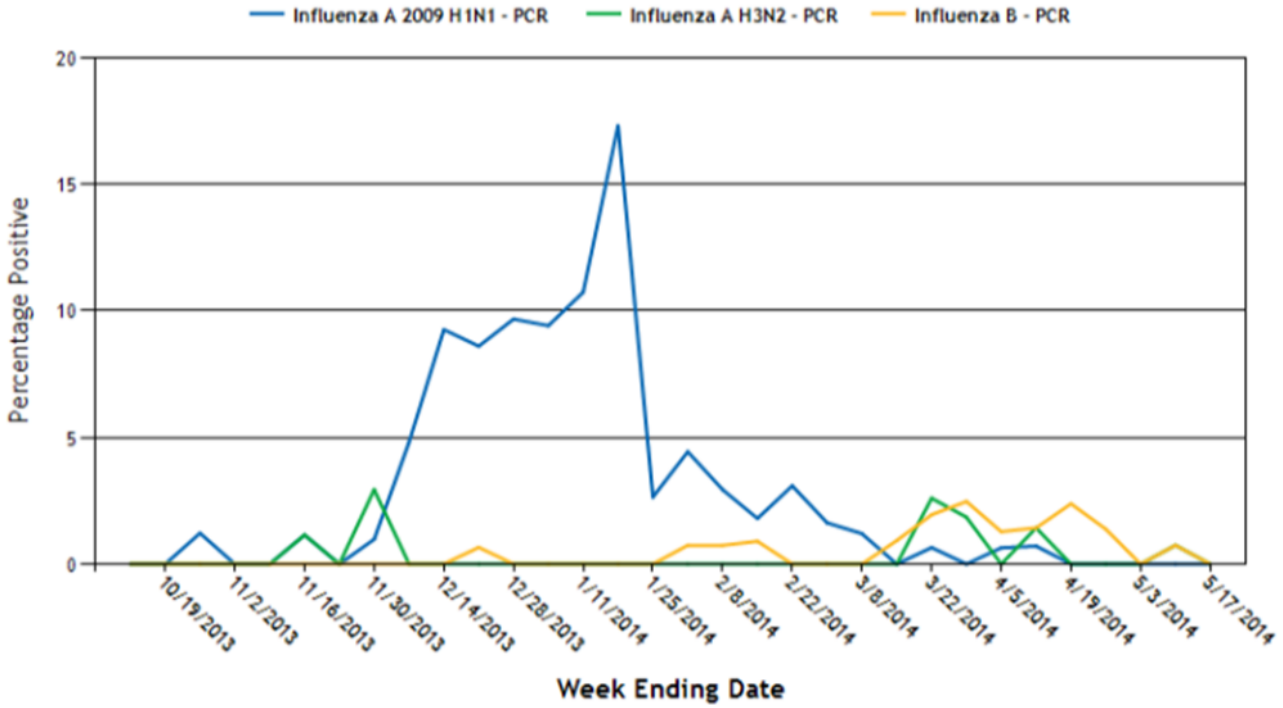
Figure 3 shows the total number of influenza positive cases confirmed by the Kentucky State Division of Laboratory Services, hospital labs and private labs by week, showing a peak in the third week of January. Kentucky laboratories participating in the WHO/NREVSS(National Respiratory and Enteric Virus Surveillance System) have reported results on 4293 polymerase chain reaction (PCR) tests for influenza of which 190 (4.42% have been positive for influenza. Beginning October 6th, 2013 through May 17th, 2014, of the positive results, 80.5% have been positive for Influenza A 2009 H1N1-like (pH1N1), 7.3% have been positive for Influenza A H3N2, and 12.1% positive for Influenza B (Figure 3).

Influenza-Related Mortality in Kentucky

While adult influenza mortality data is not required to be reported to CDC, over a period of 30 years, between 1976 and 2006, estimates of influenza-related deaths in the U.S. have ranged from 3,000 to 49,000 deaths annually. Flu deaths in children were made a nationally notifiable condition in 2004, and since then states have reported flu-related child deaths in the U.S. through the Influenza Associated Pediatric Mortality Surveillance system. Since 2010, Kentucky has had four influenza-related pediatric deaths including one pediatric death during the 2013-2014 season.

Early in 2014, the Kentucky Department for Public Health became aware of a number of influenza-related deaths occurring within a short time. A decision was made to implement the influenza mortality surveillance for the first time since the pandemic of 2009-2010. This was accomplished through interaction of the state's Regional Epidemiologists with local hospitals and coroners and utilized a software application called the Mortality Data Management System (MDMS), which was designed for use in

Figure 3: Polymerase Chain Reaction (PCR)Tests for Influenza Subtypes by Week, October 6th, 2013 to May 20th, 2014



mass casualty situations. With this system, the Department for Public Health was able to confirm Kentucky had a total of 36 PCR-confirmed influenza-related deaths this season and 21 probable deaths (rapid test positive, signs and symptoms, but not PCR-confirmed). The majority of confirmed deaths in Kentucky were infected with the pH1N1 strain, though other strains were circulating. Deaths were primarily among middle-aged adults (mean=52.25 years), males (>55.6%), occurred between December and January (63.8%), and many had underlying health issues such as diabetes, obesity, or asthma. Only three of the confirmed deaths could be determined to have been vaccinated, although one of these received the influenza vaccination too close to illness onset for the vaccination to have produced an antigenic response.

The results of Kentucky's influenza mortality surveillance reflect the higher virulence of pH1N1, its known tendency to affect young-to-middle-aged adults as opposed to the usual victims of seasonal influenza, the very young and very old, and the ongoing need to vaccinate the population against pH1N1. Due to the utility of influenza mortality surveillance in tracking the virulence of the current strains and monitoring seasonal influenza trends, KY DPH will continue to implement influenza mortality surveillance into the future.

Additional Information

Receiving an annual seasonal flu vaccine is the best way to reduce chances of contracting seasonal flu: it is estimated that 90 percent of the children who die annually from the flu in the U.S. have not received a flu vaccine.

CDC has acknowledged that influenza is a disease of major public health importance and has recommended the implementation of risk-reduction counseling and services; medical management; professional and public education; surveillance and research to continue to monitor the trends of this vaccine preventable disease.

Flu activity most commonly peaks in the U.S. in January and February but seasonal flu activity can begin as early as October and continue to occur as late as May. The most vulnerable populations are the elderly; young children, particularly those under 6 months; pregnant women; and those with underlying chronic medical conditions.

CDC recommends a yearly flu vaccine for everyone 6 months of age or older as the first and most important step in protecting against this serious disease. It is also recommended by CDC that the vaccine be taken as soon as it becomes available each year, generally in late September or early October. Protection from the vaccine will last throughout the flu season.

In addition to taking the vaccine, there are everyday preventive steps that can be taken to prevent illness, including good hand washing techniques, staying away from sick people and staying home from work or school if displaying symptoms.

Flu vaccines are designed to protect against the influenza viruses that experts predict will be the most common during the upcoming season. Each year, these viruses are used to produce seasonal influenza vaccine. This year for the first time, a quadrivalent vaccine was available, containing the 3 influenza strains (A/California/7/2009 (H1N1)-like virus; A (H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011; and B/Massachusetts/2/2012- like virus), as well as an additional vaccine virus, B/Brisbane/60/2008-like virus. CDC does not recommend one influenza vaccine over another; the most important point is to get vaccinated.

In February of this year, the World Health Organization recommended keeping the same virus strains for the influenza vaccine for the 2014-2015 season. Later that month, FDA's Vaccines and Related Biological Products Advisory Committee announced they also accepted WHO's recommendation for the vaccine components so the 2014-15 vaccine will be identical to this past season's vaccine. Given the burden of pH1N1 disease we have seen this season, it is clear that we are still not reaching a large segment of the population and need to continue efforts to educate and vaccinate the widest spectrum of Kentuckians to reduce the amount of illness and number of deaths due to influenza.

To whom all correspondence should be addressed:
Jan Hatfield, RN, BSN, Influenza Surveillance Coordinator, 502-564-4478, ext. 4273 or Jan.Hatfield@ky.gov, or

Hollie R. Sands, MPH, Epidemiologist, 502-564-4478, ext. 4264 or Hollie.Sands@ky.gov

More information is available at:
Flu Activity and Surveillance Report - http://www.cdc.gov/flu/weekly/index.htm
2013-2014 Flu Season - http://www.cdc.gov/flu/about/season/index.htm
Treatment – Antiviral Drugs - http://www.cdc.gov/flu/antivirals/index.htm
Information for Health Professionals - http://www.cdc.gov/flu/professionals/index.htm

Asthma in Kentucky

Deepa Valvi, MD, MPH, DrPH
Epidemiologist, Respiratory Disease Program, Kentucky Department for Public Health

Asthma is a chronic respiratory disease of the airways, characterized by periods of reversible airflow obstruction of the passages or airways (bronchi) known as airflow exacerbations or attacks.[1] Airways are narrowed by swelling of the inner lining of the airways, tightening of the small muscles surrounding the airways, and increased mucus production within the airways in reaction to certain stimuli or exposures. Exposures may include allergens (e.g. pollen, mold, dust mite or animal dander); airway infections; tobacco smoke and other factors such as exercise, cold or stress. The result of these exposures can cause symptoms such as wheezing, shortness of breath, coughing, chest tightness or pain.[1]

Asthma is one of the most common chronic respiratory diseases affecting an estimated 25.9 million people, including almost 7.1 million children, in the United States (US) in 2011.[2] Adult self-reported lifetime asthma prevalence in 2012 in the United States was 13.2%, while current asthma prevalence among adults in the same year was 8.9%. Asthma is the most common chronic disorder among children; over 10 million US children under 18 years of age have ever been diagnosed with asthma.[3] The prevalence of asthma in the US has continued to increase and is still at an all-time high. Significant differences in current asthma prevalence exist among many population subgroups.[4] Asthma prevalence is highest among females, children, blacks, those with family income below federal poverty level and those residing in the geographic regions of the Northeast and Midwest.[4]

The estimated total cost of asthma to the United States, including medical expenses, loss of productivity resulting from missed school or work days and premature deaths was $56 billion in 2007.[5] In 2008, asthma caused 10.5 million missed days of school and 14.2 million missed days of work.[5]

Adult Asthma Prevalence in Kentucky

Adult asthma burden is estimated using two measures: lifetime asthma prevalence and current asthma prevalence. These prevalence measures are estimated from the Kentucky Behavioral Risk Factor Surveillance System. Lifetime asthma prevalence estimates are based on respondents who were ever told by a doctor, nurse, or health professional that they had asthma. Current asthma prevalence estimates are based on respondents who said they ever had asthma and still continue to have asthma.

In 2012, adult self-reported lifetime asthma prevalence in Kentucky was 16.0% compared to 13.2% in United States. Current asthma prevalence among Kentucky adults in 2012 was 11.1%, compared to a nationwide prevalence of 8.9%. Figure 1 shows percent of asthma among adults in Kentucky with their 95% confidence intervals (CI). The dotted line denotes a change in BRFSS methodology in 2011.

In 2012, Kentucky and Maine both had current asthma prevalence of 11.1% and ranked highest in the nation among adults with current asthma.

In 2012, estimated adult current asthma prevalence was higher among women than men and higher among blacks than whites (Figure 2).

Childhood Asthma in Kentucky

In 2012, an estimated 10.2% children had current asthma in Kentucky. During the 2011-2012 school year, according to the National Survey of Children's Health, 11 or more days of school absenteeism were reported among 16.0% of children with asthma compared to 2.3% among children without asthma in Kentucky.

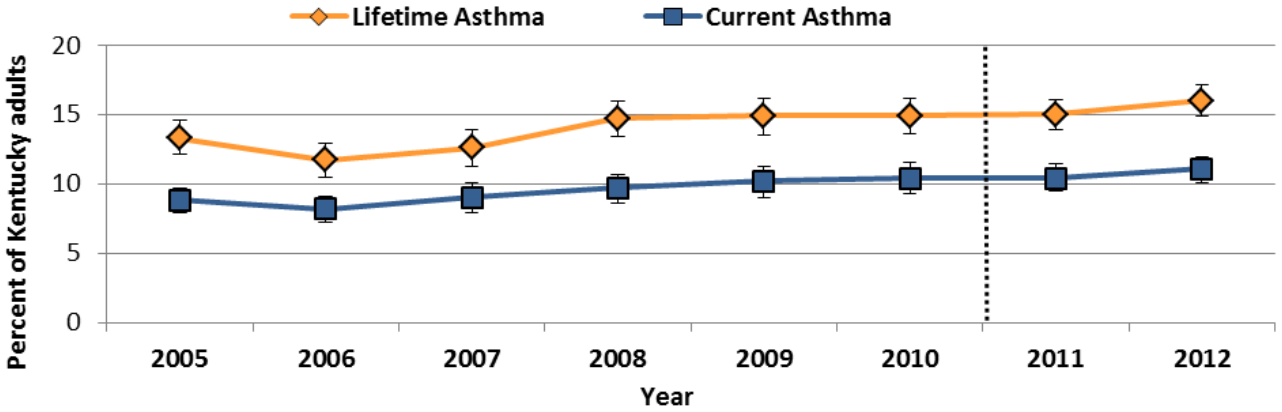


Figure 1: Lifetime and Current Asthma Prevalence Among Adults in Kentucky, 2005-2012

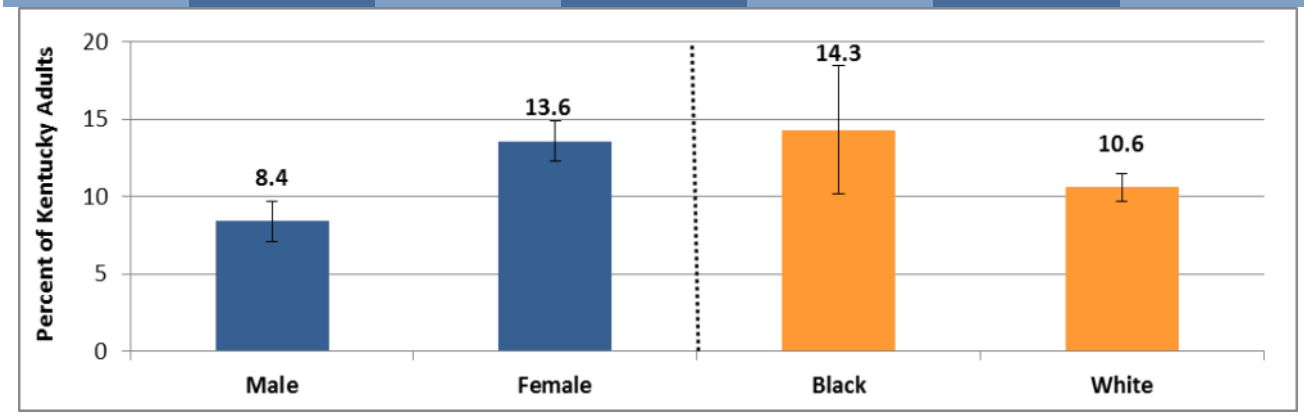


Figure 2: Current Asthma Prevalence Among Adults in KY 2012 with 95% CI

Asthma Hospitalizations in Kentucky

In 2012, there were a total of 5,826 hospitalizations in Kentucky with a primary discharge diagnosis of asthma. Asthma hospitalizations were higher among females than in males, and the average length of stay was also higher among females than in males (Table 1). Asthma hospitalizations were also higher among blacks (crude rate 28.2 per 10,000 population) than among whites (crude rate 11.9 per 10,000 population)(Table1).

In 2012, the total direct charges associated with hospitalizations for asthma as primary diagnosis were $86 million (Table 1). Average charge per hospitalization was approximately $14,800. Total direct charges associated with hospitalizations for asthma were twice as high among females as compared to males, and the average charge per hospitalization among females was 13.8% higher than males.

To whom all correspondence should be addressed:
Pam Spradling, MA, Asthma Program Manager, 502-564-7996, ext. 4351 or Pam.Spradling@ky.gov, or

Deepa Valvi, MD, DrPH, Asthma Epidemiologist, 502-564-7996, ext. 4439 or Deepa.Valvi@ky.gov

More information is available at: www.chfs.ky.gov/Asthma

References

1. National Heart, Lung, and Blood Institute. 2007. Expert Panel Report 3 (EPR 3): Guidelines for the diagnosis and management of asthma. National Institutes of Health, Bethsaida, MD.

2. Centers for Disease Control and Prevention: National Center for Health Statistics, National Health Interview Survey Raw Data, 2009.

3. Centers for Disease Control and Prevention: National Center for Health Statistics, National Health Interview Survey Raw Data, 2011. Available at: http://www.cdc.gov/nchs/fastats/asthma.htm.

4. Akinbami LJ, Moorman JE, Lui X. Asthma prevalence, health care use, and mortality: United States, 2005-2009. National health statistics reports; no 32. Hyattsville, MD: National Center for Health Statistics. 2011.

5. Asthma's Impact on the Nation. Available at: http://www.cdc.gov/asthma/impacts_nation/asthmafactsheet.pdf

	Asthma Hospitalizations	Total LOS	Average LOS	Total Hospitalization Charges	Average Charge per Hospitalization
Gender					
Female	3,739	13,884	3.71	$57,740,582	$15,443
Male	2,087	6,364	3.05	$28,317,564	$13,568
Age group (years)					
0-4	948	2,227	2.35	$9,517,608	$10,039
5-14	770	1,979	2.57	$9,406,256	$12,216
15-34	590	1,719	2.91	$7,551,278	$12,799
35-64	2,255	8,442	3.74	$36,623,439	$16,241
65+	1,263	5,881	4.66	$22,959,565	$18,178
Race					
Black	1,067	3,467	3.25	$17,556,353	$16,454
White	4,674	16,559	3.54	$66,984,964	$14,331
Other**	88	222	2.52	$1,516,830	$17,236
Total Kentucky Population	**5,826**	**20,248**	**3.48**	**$86,058,147**	**$14,771**

Table 1: Number of Asthma* Hospitalizations, Total Length of Stay (LOS), Average LOS, Total Hospitalization Charges, Average Charge per Hospitalization by Sex, Age Group and Race, Kentucky 2012

Long-Term Care and Public Health: A Collaborative Project to Decrease Healthcare-Associated Infections in Kentucky

Andrea Flinchum, MPH, BSN, CIC
HAI Prevention Program Coordinator, Hospital-Acquired Infection Prevention Program, Kentucky Department for Public Health

The Healthcare Associated Infection (HAI) Prevention Program is a relatively new entity housed in the Infectious Disease Branch of the Kentucky Department for Public Health (KDPH). The mission of this program is to provide resources and support for reduction of HAIs in Kentucky through education, outbreak identification and reporting, identification of emerging pathogens, surveillance, and implementation of evidence-based practices for infection prevention and control. This mission applies to all types of healthcare facilities. Recognizing that a great deal of resources and research in preventing HAIs has been focused on acute care hospitals, the HAI Prevention Program also chose to plan a project in long term care (LTC) settings in Kentucky.

With the award of federal dollars through the Affordable Care Act (ACA), the HAI Prevention Program was able to start an LTC collaborative in 2011. Three hundred eight letters were sent out to administrators asking for voluntary participation, 40 facilities responded, 36 signed consent to participate and 24 facilities submitted data to the end of Phase I, June 2013. While the number of participants may seem small in comparison to the entire state, the work accomplished by these facilities has contributed to the body of knowledge regarding infection prevention and control in LTC settings. Additionally, 17 of those 24 facilities have signed on for Phase II which began August 1, 2013 and ends July 31, 2014.

Project Background

The project goal of Phase I was to "Reduce *Clostridium difficile* infections (CDIs) among LTC residents through the decrease of antibiotic use in asymptomatic bacteruria and implementation of evidence-based practices." For the targeted surveillance of symptomatic urinary tract infections (UTIs) and CDIs, the Infection Preventionists (IPs) used the proposed National Healthcare Safety Network (NHSN) definitions that have now been finalized; http://www.cdc.gov/nhsn/LTC/. They tracked the use of indwelling urinary catheters, use of transmission based precautions, antibiotic prescribing practices for UTIs, environmental disinfection practices and their organizational policies that support this work. They also tracked UTIs that had been clinically diagnosed/ treated with antibiotics and did not meet the surveillance definitions.

The HAI Prevention Program provided support to the collaborative partners through quarterly face-to-face meetings, monthly conference calls, and weekly email communication, site visits to each participating facility and a SharePoint site for data entry. On the site visits, HAI Program staff worked one-on-one with LTC IPs to facilitate a working knowledge of the surveillance definitions and validate initial cases of UTIs and CDIs that had been identified. At the face-to-face meetings, breakout groups worked through common issues seen universally in LTC facilities. As a result of this work, the HAI Prevention Program drafted a host of documents and resources for all to adopt either in part, in whole, or to use as a comparison to their existing policies and procedures. Those resources can be accessed at: http://chfs.ky.gov/dph/epi/hai.

Project Overview

The project began with a baseline survey to understand the demographics of the facilities as well as the IPs' education level, experience and time dedicated to infection prevention and control. Following is a synopsis of the results of this baseline survey.

Facilities were grouped in these categories:

- Hospital system, attached facility
- Independent, free standing facility
- Independent, within a continuing care community
- Multi-facility organization

Ninety one percent of participating facilities had an average length of stay greater than 30 days.

IP demographics:

- Median years in position – 3 years
- 91% Associate degree or less
- 9% Bachelor nursing degree or higher
- 0% National certification in Infection Prevention and Control
- 48.4% had received no formal training in Infection Prevention and Control prior to the project

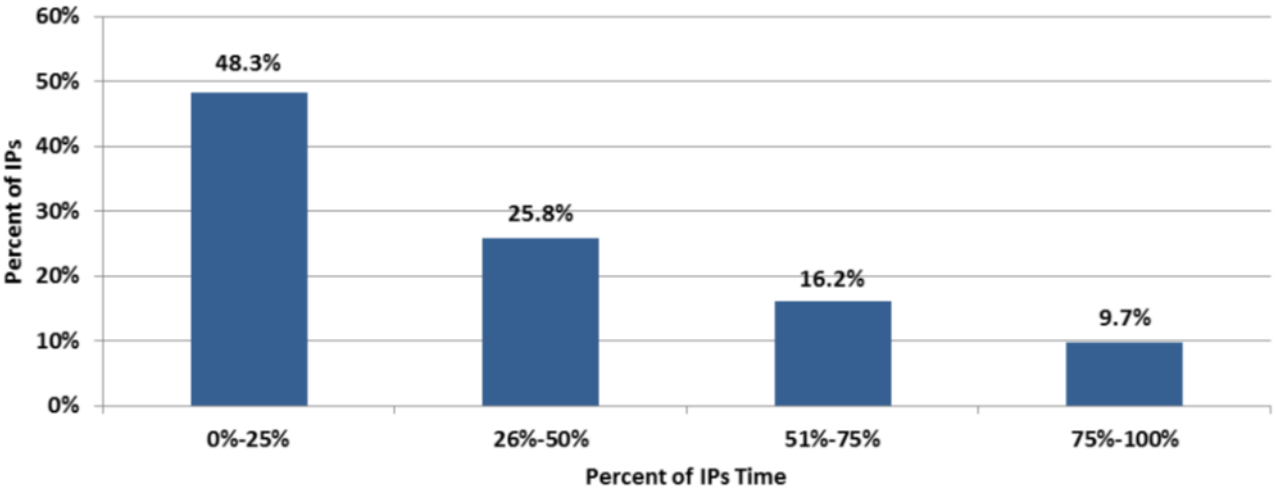


Figure 1: Percent of Time Dedicated to Infection Prevention and Control Activities

- 35.5% had attended state/local conferences with continuing education credits
- 12.9% had attended national training courses with continuing education credits
- 3.2% had received corporate training

Figure 1 illustrates the percentage of time that was dedicated to Infection Prevention and Control activities.

Intervention

The project consisted of 3 phases: pre-intervention data collection, intervention implementation and post-intervention data collection. Figure 2 shows a breakdown of the most common intervention activities that were adopted by the collaborative partners and varied between facilities based on need.

Results

Results from the collaborative project included:

- 27% reduction in urinary tract infections (goal was a 25% reduction)
- 12% reduction in catheter associated urinary tract infections
- 43% reduction in *Clostridium difficile* (goal was a 15% reduction)
- 33% reduction in clinical diagnosis/did not meet a surveillance definition
- Average length of antibiotic therapy – 9.07 days
- 8.52% admission to higher level of care within 30 days
- 2.95% deaths occurred within 30 days
- 14.69% of urinary tract infections were multi-drug resistant organisms (MDRO)
- 84.47% of MDROs placed into appropriate transmission based precautions
- New statewide IP mail group for LTC IPs – > 250 members that receive blast emails, notices, alerts, etc. from KDPH

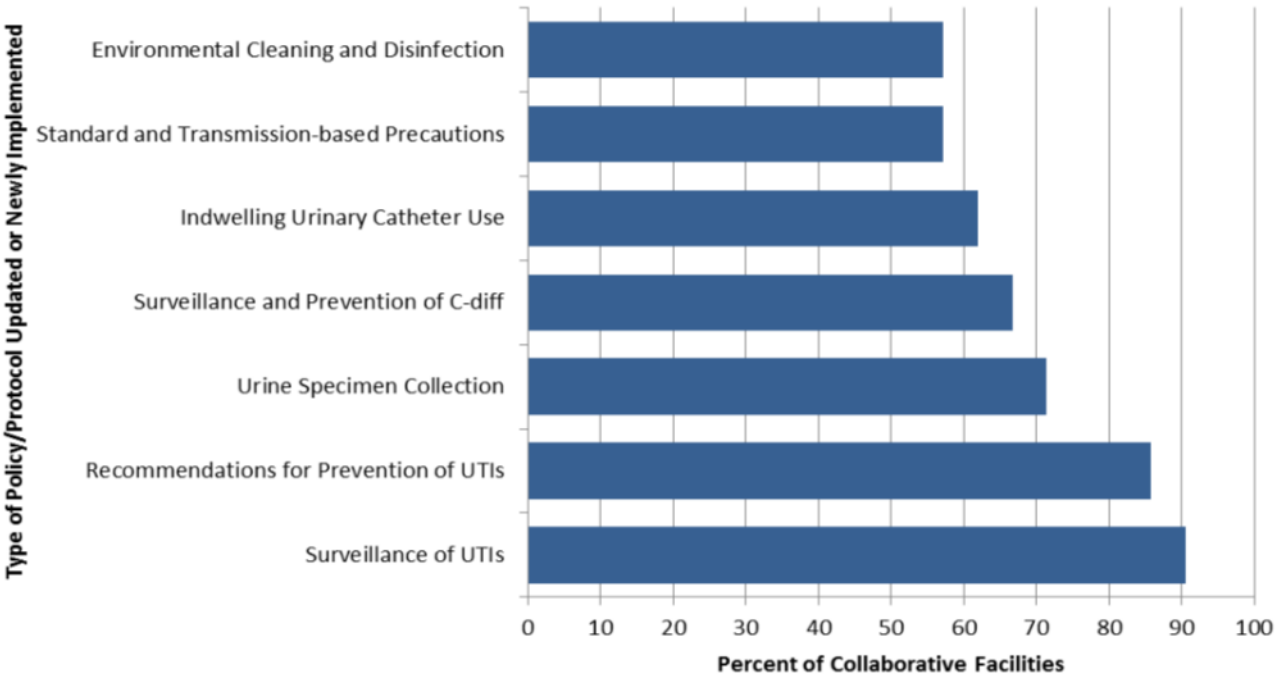


Figure 2: Percent of Facilities Updating or Implementing New Policies or Protocols by Policy/Protocol Type

Picture (right and below): Collaborative partners seen in group work addressing common issues.

Overall, the results were better than predicted. This project allowed the HAI Prevention Program to evaluate how Infection Prevention and Control is operationalized in LTC facilities; based on that evaluation, interventions were tailored to meet their needs. Through adoption of resources, policies, skills check-offs, decision trees, surveillance definitions and evaluation tools, these programs are now more robust. These changes lead to increased quality of care and resident safety. Additionally, these results demonstrate opportunities for continuing improvement for future projects.

Success Stories

In addition to the results described previously, collaborative partners have anecdotally reported a number of additional successes:

- 3 facilities now have 1 FTE for Infection Prevention and Control
- Several additional facilities are enrolling in NHSN
- Several collaborative members are becoming active in local APIC chapters
- Collaborative members have reported positive feedback and increased appreciation for importance of Infection Prevention and Control work in their facility
- All collaborative members have increased skill in using surveillance definitions, implementing change, and computer usage
- 70% of collaborative members attended a 2-day statewide IP conference
- IPs report having greater knowledge and feeling more comfortable with Office of Inspector General (OIG) inspections
- OIG inspections have gone smoother, and surveyors are complimentary

Many thanks to the facilities and staff that participated in this project. They worked tirelessly and are completely dedicated to the population they serve.

Next Steps

Phase II has begun with 17 returning facilities from Phase I. The goals of the second phase are taken from lessons learned and results in Phase I as well as the Health and Human Services Action Plan, Phase 3 for LTC facilities. The primary goals for Phase II include establishing antimicrobial stewardship teams within each facility that will monitor and evaluate antimicrobial usage for appropriateness and selection. Through this process, the HAI Prevention Program anticipates LTC facilities will continue to demonstrate a decrease in CDIs, decrease their costs of antimicrobials, and decrease potential hospitalizations while showing no increase in resident mortality. Additionally, facilities will enroll in NHSN and begin data entry into the system which will allow tracking of MDROs and CDIs.

The HAI Prevention Program will continue to work collaboratively with LTC facilities to improve process and outcome measures for their residents. The Office of the Inspector General is partnering with HAI Program staff to develop a comprehensive training program for state registered nurse aids (SRNAs) in LTC facilities that will focus on Infection Prevention and Control. These trainings are being held in April and May, 2014 in 4 locations across the state. Please watch for announcements regarding this training.

If you would like to be a part of the LTC IP mail group, please submit your name and email address with your request to: Synthia Robinson (Synthia.Robinson@ky.gov).

Contact info for HAI staff is listed on Page 11.

KDPH HAI Program Staff
To whom all correspondence should be addressed:
Andrea Flinchum, MPH, BSN, CIC, HAI Coordinator, 502-564-3261 ext. 4248, Andrea.Flinchum@ky.gov

Lynn Roser, PhD(c), MSN, RN, CIC, Infection Prevention Nurse, 502-564-3261 ext. 4249, Lynn.Roser@ky.gov

Matthew Groenewold, PhD, MSPH, CDC Career Epidemiology Field Officer, 502-564-3261 ext. 4028, Matthew.Groenewold@ky.gov

Fontaine Sands, DrPH, MSN, CIC, Infection Prevention Nurse, 502-564-3261 ext. 4250, Fontaine.Sands@ky.gov

Robert Brawley, MD, MPH, FSHEA, Chief, Infectious Disease Branch, 502-564-3261 ext. 4235, Robert.Brawley@ky.gov

Synthia Robinson, Administrative Specialist III, 502-564-3261 ext. 4247, Synthia.Robinson@ky.gov

Research Assistants: Jared Powell, MHA(c), BS, and Colleen Roberts, BS

Pathways to Safer Kentucky Communities

Genia McKee, BA
Kentucky Safe Communities Coordinator, Kentucky Injury Prevention and Research Center (KIPRC), University of Kentucky

Injury and Violence in Kentucky

Violence and injuries affect everyone. It would be difficult to find a Kentuckian who has not been deeply affected by a car crash, or the drug overdose of a family member or neighbor, the suicide of a friend, or a preventable fall that sends an older parent to a nursing home—sometimes permanently. Injury is a critical public health issue, killing more Kentuckians in the first half of life than any other causes including cancer and heart disease *combined* (Figure 1).

In 2010 Kentucky had the 7th highest unintentional injury mortality rate in the US (KIPRC 2013). Among southern states, Kentucky trailed only West Virginia and Mississippi in unintentional injury mortality. There were 56 visitors treated in Kentucky emergency departments every hour, and over $*46 million* was charged to payers *every week* of 2010 for injuries (KIPRC 2013) (Figure 2, Page 12).

The Kentucky Safety and Prevention Alignment Network

The Kentucky Safety and Prevention Alignment Network (KSPAN) has been an established statewide violence and injury prevention network since 2005. With a membership consisting of more than 100 local, regional, and state-level prevention organizations, KSPAN's mission is to increase Kentucky's capacity for effective injury and violence prevention by promoting greater alignment of stakeholder resources. Coordination is provided by the Kentucky Injury Prevention and Research Center (KIPRC) through a cooperative agreement with the Centers for Disease Control and Prevention's National Center for Injury Prevention and Control. One of KSPAN's primary objectives is to assist communities in building local capacity for injury and violence prevention. To this end, KSPAN and KIPRC entered into a unique

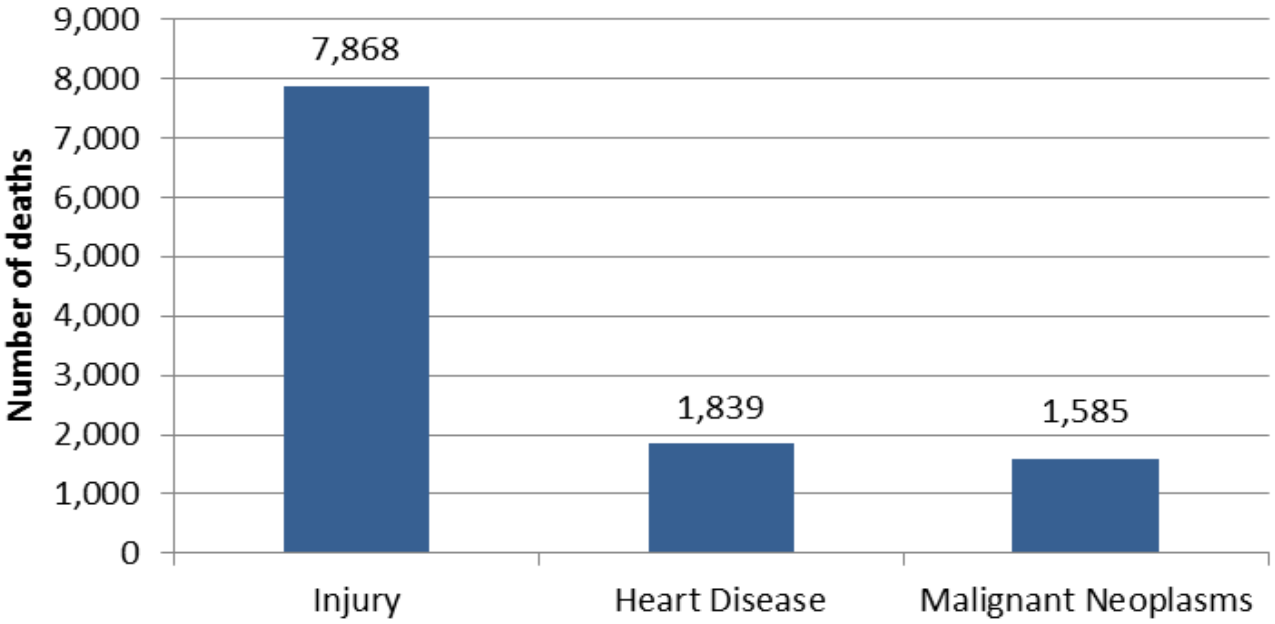
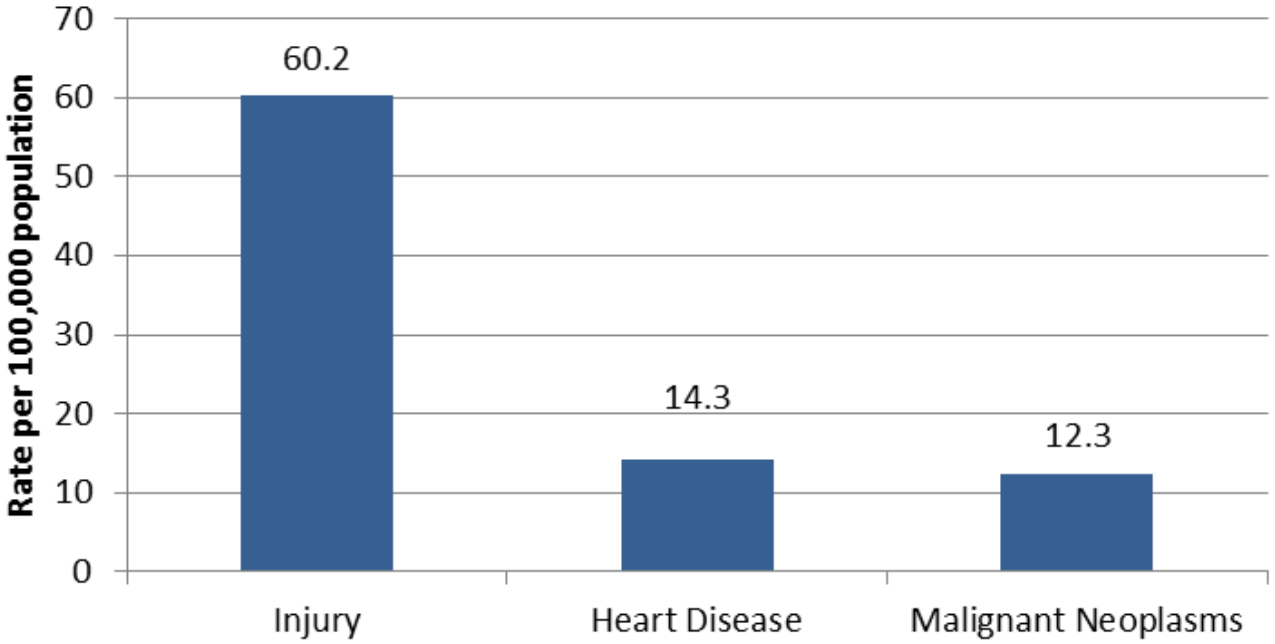


Figure 1: Counts of leading causes of death for Kentuckians from birth to age 44, 2006-2010

Figure 2:
Mortality rate for leading causes of death for Kentuckians from birth to age 44, 2006-2010



partnership with the National Safety Council (NSC) through the Safe Communities America program in 2012.

National Safety Council and Safe Communities America

Chartered in 1913, NSC is a nonprofit organization whose membership consists of businesses and corporations committed to promoting safety and preparedness both on the job and in the community. NSC's mission is to save lives by preventing injuries and deaths at work, in homes and in communities, and on the road, through leadership, research, education and advocacy. One of the ways in which NSC advances this mission is through its embracing of the World Health Organization's Safe Communities program which, in the United States, goes by the name of Safe Communities America.

A Safe Community is about working together to save lives and prevent injuries at home, at work, on the road, and in the community. In the United States, a Safe Community is one that has been independently accredited at the national and/or international levels as a community demonstrating commitment to safety, health and preparedness. Safe Communities accreditation tells the world that a community has integrated local safety and preparedness programs that use local data to plan, implement and evaluate local safety initiatives. A Safe Community coalition includes active involvement from government officials, public health organizations, corporate partners, public safety agencies, civic groups, schools, churches, and a variety of other public and private organizations. Safe Communities accreditation is only awarded to communities that have demonstrated leadership in promoting safety, reducing injuries and preparing for natural and man-made disasters.

Benefits of Becoming an Accredited Safe Community

There are many benefits to becoming an accredited Safe Community. The infrastructure developed through the accreditation process fulfills requirements for other programs, such as Trauma Center verification and Local Health Department accreditation. Other benefits include national recognition of community public safety programs and prevention efforts, increased potential for funding through proven partnerships, and greater citizen awareness of efforts to increase safety, livability, and quality of life.

The Safe Communities local coalition approach has been shown to be very promising in saving lives. A recent NSC analysis showed that injury fatality rates in nine designated U.S. Safe Communities were, on average, 10% lower than in counties in the same state with similar per-capita income (Kolosh 2011).

KIPRC is an accredited Safe Communities America Support Center

In order to better assist local communities and their injury prevention and preparedness efforts, KIPRC was designated a Safe Communities America Support Center in 2012. As an accredited Support Center, KIPRC assists communities through their own accreditation process and supports them after their designation. KIPRC is one of three Support Centers in the United States and works directly with individ-

ual communities.

The Kentucky Safe Communities Pilot Program

To further promote the development of local injury prevention capacity, KSPAN, KIPRC and NSC initiated the Kentucky Safe Communities pilot program (KSC) in 2012. The overarching goals of this five year partnership are (1) to have 30%-50% of the State's population living within the geographic boundaries of an accredited Safe Community, (2) to establish the Safe Communities model throughout Kentucky colleges and universities, and (3) to evaluate the effectiveness of the Safe Communities injury prevention model. If successful, the plan is to implement the program in other states. Currently in Kentucky, Madison County (2010) and Murray State University (2012) are accredited Safe Communities. Western Kentucky University has submitted a letter of intent to apply, and a number of Kentucky communities are exploring Safe Communities designation.

Improving Community-Based Injury Surveillance

In order to improve community-level access to local injury data for program development and planning as well as preparation for safe communities designation, KIPRC created injury data profiles for all 120 Kentucky counties. The profiles can be downloaded from the KSPAN website, and include information on injury-related inpatient discharges and emergency department visits in Kentucky.

Safe Communities In Kentucky

The benefits of Safe Community designation were recently summed up by Kent Clark, Madison County Judge Executive.

"Being a Safe Community has benefited Madison County. The many great partners working together have improved the quality of life for our residents. We are proud of the accomplishments that have improved safety for all of our citizens. The National Safety Council reported that Madison County had a 19% lower unintentional fatality rate than a comparable county that had not been designated a Safe Community."

According to Lloyd Jordison, Madison County Safety Coalition Coordinator:

"Being designated as a Safe Community has elevated our credibility with the community and our partners. Since our designation, the opportunity to reach new community partners about injury prevention has increased significantly."

To whom all correspondence should be addressed:

Genia McKee, BA, Safe Communities Coordinator, 859-323-0298 or Genia.McKee@uky.edu

More information is available at:

Cities and Counties interested in pursuing designation as a Safe Community should contact the KIPRC Safe Communities America Support Center. KIPRC can provide guidance through the application process and provide support and resources after designation to help sustain community safety promotion activities. Also please visit the KIPRC and KSPAN web sites at www.kiprc.uky.edu and http://safekentucky.org/.

References

Kentucky Injury Prevention and Research Center. Commonwealth of Kentucky: Violence and Injury Prevention Plan, 2013. Available from http://safekentucky.org.

Kolosh KP. Are Safe Communities Safe? National Safety Council. Available at: http://www.nsc.org/safety_work/SafeCommunitiesAmerica/Pages/Resources.aspx. Accessed on 2014 Feb 6.

Picture (left):

Kent Clark, Judge Executive of Madison County, signs the Safe Communities agreement at the Safe Community designation ceremony on March 23, 2010.

Announcements

The **Kentucky Foodborne and Waterborne Outbreak Investigation Manual** has been updated and is posted online!

Updates to the manual include:

- Triggers for use of the Manual
- Expanded Control and Prevention Measures
- Management of Multiple Outbreak Investigations Section
- Outbreak Reports – After Action Report Format
- Updated list of contacts for KDPH and Local Health Departments
- Updated Laboratory Collection, Packaging, and Shipping Guidance and Forms
- Updated NORS Forms
- Updated References and Websites

Please share this website and information with appropriate individuals in your agency and applicable partner organizations.

Thank you to the KDPH Foodborne and Waterborne Illness Working Group for your work to update the manual.

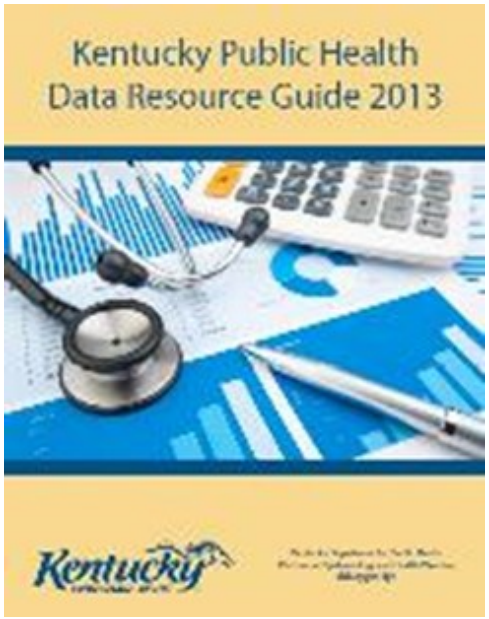
The updated manual and all appendices may be found here:

http://chfs.ky.gov/dph/epi/Outbreak_Manual.htm

If you have questions or comments about the manual, please contact:

Jasie Logsdon, MPH, MA
Epidemiologist III—Foodborne and Waterborne Diseases
Reportable Disease Section
Infectious Disease Branch
Division of Epidemiology and Health Planning
Kentucky Department for Public Health
275 East Main Street, HS2E-A
Frankfort, KY 40621
Phone: 502-564-3261 ext. 4240
Jasie.Logsdon@ky.gov

The **Kentucky Public Health Data Resource Guide 2013** is now available!



The Kentucky Public Health Data Resource Guide 2013 is now online at the following address http://chfs.ky.gov/dph/DataResourceGuide.htm. This guide includes a variety of statewide health surveys as well as other Kentucky-specific surveillance systems and registries. The information provided on each data source includes the types of data collected as well as the strengths and limitations of each data source. Contact information is provided for every source, and most contain web links for easy access to available data. This site allows the user to download the whole document as well as individual chapters on each data source. We hope that the Data Resource Guide will be helpful in

program planning and evaluation as well as in general research.

Special thanks to all who contributed chapters and advised on the production of the Data Resource Guide including Madhu Shah for coordinating the project.

If you have questions or would like to discuss additional data sources to be included in the next version of the Data Resource Guide, please contact Sara Robeson at (502) 564-3418 ex. 4311 or Sara.Robeson@ky.gov.

Kentucky Public Health Laboratory is under new directorship!

As some of you may know, the Kentucky Division of Laboratory Services is under new directorship. Dr. Mayfield has been replaced by Drs. Paul Bachner, Darrell Jennings, and Julie Ribes. Dr. Bachner is serving as the principal director, while Drs. Jennings and Ribes are serving as associate directors. Please join us in welcoming them. As you will read in the short biographical sketches below, each brings unique expertise to the laboratory and has much to offer for the advancement of Public Health in Kentucky.

Paul Bachner, MD, FCAP: Dr. Bachner earned his MD degree at the Columbia University College of Physicians and Surgeons and subsequently was a resident in pathology at the Columbia-Presbyterian Medical Center, in New York City. He is board certified in anatomic and clinical pathology. He has served as Director of Laboratories at UK HealthCare for 20 years and served as Chair of the department for 15 years. He has an extensive background in pathology and laboratory medicine having served as a lab director for many labs of varying size in community, academic and commercial environments. He was the Medical Director of the SmithKline reference lab in New York for many years before coming to Kentucky. Dr. Bachner was a member of the original Clinical Laboratory Improvement Advisory Committee (CLIAC) appointed by HHS Secretary Louis Sullivan. He is a past president of the College of American Pathologists (CAP) and has over 40 years of experience in the CAP Laboratory Accreditation Program including service as a regional commissioner and as a member of the Council on Accreditation. He is currently the chair of the Accreditation Committee which has final responsibility for accreditation decisions for all 7,000 plus U.S. and international CAP labs.

Darrell Jennings, MD, FCAP: Dr. Jennings completed his MD degree at the University of Kentucky and subsequently did a year of Internal Medicine before completing an AP-CP combined pathology residency. He is board certified in Anatomic and Clinical Pathology. He served for 7 years as the Associate Director of the Clinical Laboratories at the Veterans Hospital (Cooper Drive) before becoming Medical Director at the Central Kentucky Blood Center. He has been medical director of the Immunomolecular laboratory and its predecessors at the University of Kentucky for the past 30 years. He has also served as Associate Director of the University of Kentucky Clinical Laboratories under Dr. Bachner. He was appointed Chair of the Department of Pathology and Laboratory Medicine in 2012. Dr. Jennings held the title of Senior Associate Dean, Education from 2003 to 2013. In this role, he led a successful re-accreditation of the MD training program. He is the author or co-author of over 180 scientific publications.

Julie Ribes, MD, PhD, FCAP: Dr. Ribes received medical school and PhD training at the University of Rochester, Rochester NY. She trained at the State University of New York at Syracuse in Clinical Pathology with fellowship training in Hematopathology at that same institution. She then completed Clinical Microbiology fellowship training at the Mayo Clinic, in Rochester, MN. Dr. Ribes is a board certified Clinical Pathologist with specialty certification in Clinical Microbiology and Hematopathology. Her first position after training was at the Veterans Administration Medical Center in Lexington where she served as the Assistant Chief, Clinical Pathology, with direct supervision over Hematology, Urinalysis, Coagulation testing, Point-of-Care Testing (POCT), Quality Control, and Blood Bank. She transitioned into her current position as the Director of Clinical Microbiology in the UK HealthCare Hospital laboratories in

1997. She is also currently serving as the Division Director for Clinical Pathology as well as the CLIA-designated director for the laboratory at Eastern State Hospital and two POCT laboratories within the UK HealthCare enterprise. She is an active member of the CAP Microbiology Resource Committee, the Lexington Healthcare Emergency Planning Committee, and the UK HealthCare Safety and Infection Control Committee. She has been a CAP laboratory Inspector since 1996.

The Kentucky Department for Public Health would like to acknowledge Ashley Webb, Director, and Maria Chapman, Health Educator, of the Kentucky Regional Poison Control Center for their efforts and collaboration in development of the Kentucky Epidemiologic Notes & Reports template design.