Department of Health
FY2017 Update and Accomplishments

Melba R. Moore, MS, CPHA
Acting Director/Commissioner of Health

June 2017
# Department of Health

FY 2017 Update and Accomplishments

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SECTION 1

Letter from the Director
June 5, 2017

Members of the St. Louis City
Board of Aldermen
1200 Market Street, City Hall, room 230
St. Louis, MO 63103

Re: Department of Health Updates and Accomplishments in FY2017

Dear Members of the St. Louis City Board of Aldermen:

The enclosed report provides a summary of the major efforts and accomplishments of the Department of Health for FY2017. The information you are receiving contains data and policy briefs on major continuing and emerging public health threats facing the City. As in previous summaries you’ll find a report from our largest division, the Bureau of Environmental Health.

You’ll also find throughout the summary that during FY2017 we continued to forge new partnerships and strengthened existing community collaborations to assist us in providing essential public health services to the community. This was a priority goal for the Department in 2017.

During the year we continued our FY2016 efforts in meeting in our six strategic focus areas, Sustainability, Health Equity, Obesity, Violence, Innovative Communications, and Emergency Preparedness (SHOovie). But, last year we began building an infrastructure within the Department to review decisions and programs from a racial equity lens to assist in preventing unintended negative impacts to segments of the City. Supervisors and managers received racial equity training, and sessions for line staff will be planned for FY2018.

I hope this summary is informative and as always invite your comments and recommendations on how we can better serve you and the citizens of the City of St. Louis.

Sincerely,

Melba R. Moore, MS, CPHA
Acting Director/Commissioner of Health
SECTION 2

Vision Mission Values
Statement
Our Vision

A healthy St. Louis community every day, all the time.

Our Mission

To assure a healthy St. Louis community through quality public health services and partnerships by providing continuous protection, prevention, and promotion for the public’s health.

Our Values

Professionalism  Assuring a qualified, accountable and skilled staff, grounded in the philosophy of customer service. Demonstrating respect, valuing the worth and dignity of each person, and establishing a system of good civilized discourse.

Quality  Continuously improving processes through the application of quality tools to measure the efficiency, effectiveness, and performance of services, processes, capacity, and outcomes in the best interest of our internal and external customers.

Customer Service  Providing our internal and external customers with services that meet or exceed their expectations by applying continues improvement principles with an end goal of compassionate, culturally competent, effective, responsive, and proactive services.

Collaboration  Building and maintaining seamless internal and external strategic alliances and partnerships working together to assess, and understand and address emerging public health needs within the community. Focusing on population health and improving health equity.

Advocacy  Assuring optimal health through assessment of health indicators and community needs, policy development, public health programs, and promoting a healthy sustainable environment and healthy lifestyles. Promoting access to health care services and reducing disparities in health outcomes for all citizens.

Leadership  Motivated leaders who provide knowledge-based guidance, innovation, and quality setting service standards. Assuring information is shared and distributed timely and effectively.

Trust  Demonstrating high ethical standards and establishing an environment that encourages the development of team and teamwork based on the integrity, strengths, and abilities of all staff at all levels. Providing services in a confidential manner that instills trust.

Updated 8/13/13
SECTION 3

10 Essential Public Health Services
Mission Statement
To assure a healthy St. Louis community through quality public health services and partnerships by providing continuous protection, prevention, and promotion for the public's health.

10 ESSENTIAL Public Health Services

1. Monitor health status to identify community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.

6. Enforce laws and regulations that protect health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure a competent public health and personal healthcare workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.
SECTION 4

Department Program Directory
Vision: A healthy St. Louis community every day, all the time.

Mission: To assure a healthy St. Louis community through quality public health services and partnerships by providing continuous protection, prevention and promotion for the public’s health.

Show Me Healthy Women Project provides professional nursing case management services to ethnic minority, low-income women 40 years of age and older in the geographic areas of the City of St. Louis and St. Charles, Jefferson, Franklin and St. Louis counties, and follow-up of abnormal Pap tests, mammograms and clinical breast exams. (314) 657-1413

Health Equity Program focuses on five health disparities: asthma (Asthma Friendly St. Louis), adolescent STD infection, cardiovascular disease, diabetes and infant mortality. Efforts are concentrated in areas of high priority to provide resources and education to the community. (314) 657-1475

To request a City service, file a complaint/compliment or report problems affecting the public health, call: The Citizens’ Service Bureau (314) 622-4800

To report a public health emergency outside of office hours please call 911

Notice Under the Americans With Disabilities Act
If you require any reasonable modifications or auxiliary aids and services for effective communication because of a disability, please call (314) 657-1480 or email health@stlouis-mo.gov 48 hours in advance.

School Health Service provides professional nursing & supportive services to students in Parochial, Lutheran, Christian, Charter and Public schools, including counseling, screenings, education, and referral services to the community and other health promotion activities, as well as care plans for special needs children. (314) 657-1445

MATCH (Maternal Adolescent, Teen, Children Health) Team provides professional and supportive services with community partners to identify families at greatest risk for child maltreatment, targeting zip codes within the City of St. Louis identified as having the highest risk of reported abuse and socioeconomic factors. All of these services are provided by the Title V Maternal Child Block Grant. (314) 657-1458

Bureau of Women, Children, and Adolescent Health

Revised 5/17
**Administration**

**Director of Health**

Directs strategic planning and overall activities of the Department.  
(314) 612-5100

**Center for Health Information, Planning and Research**

Provides data, research and planning to aid the Department and the community in meeting public health needs.  
(314) 657-1521

**Commissioner of Health**

Oversees the day-to-day activities of the Department.  
(314) 612-5100

**Fiscal Division**

Completes all financial transactions for the Department including payroll.  
(314) 612-5100

**Health Promotion, Education & Marketing Division**

Creates and disseminates culturally specific educational materials, conducts health promotion and education activities in the community, and develops traditional and web-based marketing campaigns for the Department's health initiatives.  
(314) 657-1480.

**Public Information Division**

Develops and issues press releases and health publications and coordinates media activities.  
(314) 657-1480

**Nutrition Services**

Develops and implements community nutrition education activities to reduce the incidence of chronic disease in children and adults within the City.  
(314) 657-1571

**Health Institute**

Links Department staff and community members to health resources both within and outside of the Department.  
(314) 657-1480

**Bureau of Communicable Disease Control**

Disease Investigation provides follow-up services to individuals testing positive for a reported communicable disease.  
(314) 657-1493

HIV/Surveillance in partnership with Missouri Department of Health and Senior Services records, tracks and researches HIV case reports and other data and provides Hepatitis services to city providers.

The Section also tracks adult Hepatitis B cases, maintains medical vital records, and responds to public record requests.  
(314) 657-1427

**HIV/AIDS Care Services**

Provides support services to the HIV/AIDS Regional Council and referrals for medical care and essential support service for individuals and families living with HIV.  
(314) 872-1431 and (314) 657-1532

STD/HIV Prevention provides expertise and training on sexually transmitted illnesses, including HIV and Hepatitis, refers individuals to sexually transmitted illness and HIV testing services and advocates for increased testing and treatment.  
(314) 657-1461

Regional Community Planning convenes community planning groups to assist in developing, operating, and evaluating prevention services.  
(314) 657-1421

Tuberculosis Control works within the community to provide clinical services to ensure that individuals are tested, treated, and educated about their risk of tuberculosis.  
(314) 612-1400 and (314) 612-1401

**Bureau of Environmental Health Services**

**Air Pollution Control Program**

Provides asbestos abatement, demolition, and occupany permitting approval, and minimum site monitoring and enforcement required by the City ordinance.  
(314) 657-1479

**Community Sanitation Program**

Responds to complaints about health hazards such as raw sewage, no water, no heat, excessive garbage and trash, hazardous or infectious materials, and heat or cold-related illnesses. Services also include inspection of swimming pools, bathhouses, massage and tattoo parlors, lodging and childcare establishments.  
Enforces local ordinances for health and safety.  
(314) 657-1539

**Food and Beverage Control**

Inspects and permits restaurants, taverns, and other establishments serving food, including food booths at fairs and festivals, to ensure food safety.  
(314) 657-1539

**Severe Weather Public Health Protection**

Provides information, outreach, and access to resources to enhance resiliency to extreme weather events and other threats to public health.  
(314) 657-1436

**Vector Control Program**

Helps to decrease the number of mosquitoes and rats, both of which spread disease and are a nuisance. The program also responds to reports of other potential disease vectors.  
(314) 657-1500

**Animal Care and Control**

Shelter provides shelter and veterinary care for stray or impounded animals.  
(314) 612-5310

For adoptions contact Stray Rescue at (314) 771-6121

**Animal Care and Control**

Responds to complaints about animals to provide adequate animal welfare and responds to reports of animal bites, licenses pets, investigates reports of animal bites, promotes responsible pet ownership, and enforces ordinances.  
(314) 657-1500

**Bioterrorism and Emergency Response**

Enhances the public health system's ability to respond to public health emergencies, especially biological terrorism. Develops emergency response plans for the City of St. Louis and coordinates with other teams in adjoining counties and throughout the state. It is one of the key partners in any emergency response to a natural or man-made event that threatens public health and safety.  
(314) 657-1568

**Human Resources**

Manages health care personnel for the City.  
(314) 657-1500

**Senior Services**

Tracks and researches HIV and Hepatitis, refers individuals with HIV.  
(314) 612-1427

**Senior Services**

Responds to complaints about health hazards such as raw sewage, no water, no heat, excessive garbage and trash, hazardous or infectious materials, and heat or cold-related illnesses. Services also include inspection of swimming pools, bathhouses, massage and tattoo parlors, lodging and childcare establishments.  
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SECTION 5

The Impact of Public Health
Public Health
Effective public health practice often does overlooked at first. The reason for this is that public health is preventable in nature, resolving issues before a problem occurs. It has been said that if public health entities are functioning, they will be mostly unnoticed. However, there is a value to public health that many don’t always realize at times.

Life expectancy in developed countries has increased from less than 50 years in 1900 to nearly 80 years now. The greatest progress occurred in the first half of the 20th century, when life expectancy in the United States increased by an average of 20 years, largely because of universal availability of clean water and rapid declines in infectious disease, as well as broad economic growth, rising living standards, and improved nutritional status. Other gains in the latter half of the 20th century came about largely from advances in the treatment of cardiovascular disease and control of its risk factors (i.e. smoking, high blood pressure, and high cholesterol).

Public health policies and allocation of public health resources can significantly improve public health. The difference between traditional health care and population-level methods for improving health is that public health interventions often happen at numerous levels. Upstream interventions involve policy approaches that can affect large numbers of people through regulation, increased access to healthcare, or economic incentives. For example, increasing tobacco taxes is an effective method for controlling tobacco-related diseases. Midstream interventions occur within organizations. For example, worksite-based programs that increase employee access to facilities for physical activity show promise in improving health. Downstream interventions involve individual-level behavior approaches for prevention or disease management.

It is vital to the health of any community to have an effective public health workforce ensuring all three approaches above. This includes all ten of the core functions of public health:

Assessment
- Monitor health status to identify community health problems
- Diagnose and investigate health problems and health hazards in the community
- Evaluate effectiveness, accessibility, and quality of personal and population-based health services

Policy Development
- Develop policies and plans that support individual and community health efforts
- Enforce laws and regulations that protect health and ensure safety
- Research for new insights and innovative solutions to health problems

Assurance
- Link people to needed personal health services and assure the provision of health care when otherwise unavailable
- Assure a competent public health and personal health care workforce
- Inform, educate, and empower people about health issues
- Mobilize community partnerships to identify and solve health problems
SECTION 6

Health Topic Data Briefs
Bed Bugs
Update
Bed Bugs as an Evolving Public Health Threat

Bed bugs (*Cimex lectularius*) are small, flat, reddish-brown, wingless parasitic insects that feed solely on the blood of people and animals while they sleep. Adult bed bugs can live several months without a blood meal but nymph bed bugs require a blood meal in order to molt to the next stage. Bed bugs, a problem worldwide, are resurging, causing fear, considerable inconvenience and expense due to property loss and pest management.

Bed bug outbreaks have become much more prevalent. Causes for the rise in bed bug outbreaks, other than a change in vector control strategies, are increased travel and the popularity of second hand furniture and clothing. The good news is that bed bugs are not known to transmit disease at this time.

These insects have been able to covertly hitchhike on the belongings of unknowing travelers from country to country, enabling them to successfully infest new environments. Since bed bugs “feed” on the blood extracted during a bite to a warm-blooded animal, high numbers of bed bug bites over a prolonged time can contribute to anemia in extreme situations. Additionally, when bed bugs become prominent in a living space and their allergens become airborne, those with asthma can experience symptoms of airway disease more frequently. Poor sanitation does not attract bed bugs to a dwelling. However, improperly stored household items can have an impact on controlling and eliminating the infestation.

Though not classified as disease vectors, bed bugs can cause physical and psychological discomfort and distress. Bed bug bites can cause an allergic reaction to the saliva injected at the site, causing raised, inflamed welts and possibly intense itching. Often these bites occur as “three in a row” lending this pattern to be described as “Breakfast, Lunch, and Dinner Sign”. The best way to treat a bite is to avoid scratching the area and apply antiseptic and steroid creams or lotions. Open wounds can lead to secondary infection of bite sites by opportunistic pathogens.

Bed bugs tend to live within 8 feet of where people sleep. Some common facilities in which bed bugs are found include apartment complexes, hotels and motels, dormitories, day care centers, public transportation vehicles (buses, taxis, and trains) and even movie theaters. Bed bugs hide in places such as seams of mattresses, box springs, bed frames, headboards, dresser tables, inside cracks or crevices, behind wallpaper, or any other clutter or objects around a bed. The best way to prevent bed bug bites and bringing bed bugs home is to avoid places in which bed bugs are found frequently. If avoidance is not practical, it is important to learn how to inspect for signs of an infestation. If bed bugs are found, it is prudent to leave the area or perform eradication efforts without delay. Bed bug infestations are commonly treated by high heat laundering, removal of infested items and integrated pest management by licensed professional exterminators.
The City of St. Louis Department of Health (DOH) responds to complaints about bed bugs by performing inspections, providing prevention and control education, and enforcing code violations. DOH staff are trained in identifying the pest and recognizing signs of an infestation. DOH only confirms a bed bug complaint with live bed bugs seen. DOH inspectors are also trained to look for multiple stages of the bed bug life cycle (nymph vs. adult) to characterize the extent of the infestation. If a complaint is confirmed, DOH staff monitor each case until a resolution or enforcement outcome is reached. Challenges to confirming bed bug infestations includes inability of health inspector to coordinate an inspection, lack of knowledge and confusion on behalf of complainants with exposure to other biological organisms or chemical agents that cause similar irritation. Likewise, a long-term challenge that residential areas face with eliminating bed bug infestations circles back to knowledge of preventing infestations and the transient nature of some City residents. DOH staff advise residents to mark infested belongings that will get thrown out to prevent another person from picking up infested furniture.

**Frequency of Reports**

The City of St. Louis has seen an increase in the number of bed bug complaints over the past 3 years. In 2014, DOH responded to 141 complaints about bed bugs, but only confirmed 17% (24) of those complaints. In 2016, DOH confirmed 26% (53) of the bed bug complaints received. In 2017, to-date, 25% of the bed bug complaints received have been confirmed.

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<tr>
<td>% Confirmed Complaints</td>
<td>9%</td>
<td>25%</td>
<td>17%</td>
<td>22%</td>
<td>26%</td>
<td>25%</td>
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<tr>
<td># Total Complaints</td>
<td>21</td>
<td>86</td>
<td>141</td>
<td>203</td>
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**Distribution and Determinants**

Looking at the distribution of bed bug complaints in the City of St. Louis over the last five years, an increase in complaints has been observed. Prior to mid-2012, complaint and inspection outcomes were documented on paper, but more recent electronic methods have improved tracking and analysis of bed bug surveillance. Although the DOH received a similar number of total bed bug complaints in 2015 and 2016, the percentage of confirmation went up from 22% in 2015 to 26% in 2016. The peak number of bed bug complaints has been received later every year (2013 Peak – July, 2014 Peak – August, 2015 Peak – September, 2016 Peak – August). However, the trend still seems to show that most bed bug complaints are observed between July and November.
In 2015, bed bug confirmed complaints were on the rise from March and then peaked in July. This was likely due to increased traveling and vacationing. In 2016, this trend shifted. Bed bug confirmed complaints were on the rise from March to May but there were two more peaks throughout the year (August and November). Both of these changes could be attributed to the delay in extreme cold temperatures during the winter season. This could have possibly promoted an increase in close common socializing, and moving from one residence to another.

The majority of complaints in 2016 were seen in the northern and south-east regions of the city (see maps attached). Infestations can repeatedly occur at locations with a lot of dwelling units (large complexes) and where citizens unknowingly recycle items from thrift shops without inspecting their purchase, reuse improperly disposed items, or frequent a location that has an infestation.

For further information, visit the Centers for Disease Control and Prevention website:

[https://www.cdc.gov/parasites/bedbugs/](https://www.cdc.gov/parasites/bedbugs/)

**Tips for Preventing Infestations:**

- Conduct regular inspections of your dwelling for any signs of an infestation. Also keep an eye out for signs of bed bugs at locations you are visiting.
- **NEVER** pick up discarded furniture from the street, alley or near a dumpster.
- When purchasing a second-hand mattress, sofa or bed, ask the seller if the item has ever been stored or used in an apartment with bed bugs. If yes, **DO NOT BUY IT** before inspecting the item yourself for any sign of bed bugs or eggs.
Cardiovascular Disease
Update
City of St. Louis Surveillance of Cardiovascular Diseases

Cardiovascular diseases (CVD) are the leading cause of death globally, and include a group of diseases that involve the heart or blood vessels. In the United States, approximately 2,200 Americans die of CVD each day, and that is about an average of 1 death every 39 seconds. St. Louis City has a rate of 327% per 100,000 population for 2006 to 2015, which is higher than the state rate of 263% per 100,000 population.

Cardiovascular disease deaths have steadily decreased in Missouri for the past ten years, yet the burden of the disease remains high. In St. Louis City, there has been a 24% reduction in CVD deaths since 2006, yet St. Louis City remains disproportionately higher in comparison to the State and Regional rates. In 2011, the St. Louis Region’s rate of CVD deaths dropped lower that the state’s rate, with 248% for St. Louis Region, compared to 255% for the State. The chances of CVD deaths increase with age, and at rate of 32.5% for age group 25-44, 312% for age group 45-64, and 1822% for those 65 and over.

As seen throughout the state and nationally, males have a higher chance of death from CVD than females. In 2015, males in St. Louis City have a death rate of 378% compared to females at 243%. In the United States, one in every four male deaths is attributed to heart disease. Approximately 8% of all men have coronary heart disease, and half of them have no symptoms. It is estimated that each year 785,000 Americans will have a new coronary attack. Researchers with the American Heart Association report that approximately every 25 seconds, an American will have a coronary event, and approximately one will die every minute.¹
Several factors increase the risks for CVD. High blood pressure, high cholesterol, and smoking are considered the key risk factors for heart disease. Lifestyle choices and medical conditions, such as obesity, poor diet, inactivity, excessive alcohol use, and diabetes can also put people at a higher risk. Studies show a positive association between hypertension and insulin resistance, and many patients have this combination which doubles their chances for cardiovascular disease. As shown in the map at the left, in 2013, 34% of the adult population in St. Louis City reported a BMI of 30 or more, compared to the state’s average of 31%. This was a 2% increase over the rate reported by St. Louis residents in 2012. In 2015, 26% of St. Louis City residents smoked tobacco products, compared to the Missouri’s state rate of 22%. In 2013, 24% of St. Louis City residents over twenty years of age reported that they had no leisure-time physical activity.

What Are Health Departments Doing to Reduce Cardiovascular Diseases?

- Promoting the adoption of food service guidelines and nutrition standards, which include developing policies aimed at decreasing sodium consumption.
- Promoting the adoption of physical education and physical activity in schools, early childcare centers, and work sites.
- Promoting reporting of blood pressure and self-monitoring of blood pressure.
- Promoting awareness of prediabetes among people at high risk for type 2 diabetes.
- Increasing access to healthy foods and beverages, and supportive nutrition environments.
- Implementing quality improvement processes in health systems.
- Educating the community on nutrition and eating healthy foods, being physically active, and other preventive measure for reducing risk factors for cardiovascular diseases.
- Reducing smoking hazards through educational campaigns, promoting policies for smoke-free environments, smoking cessation classes, and enforcing local tobacco-related ordinances.
- Connecting people to resources for medical assistance and for help with reducing risk factors for Cardiovascular Disease.

Sources:

CDC, MICA, and BRFSS


2American Heart Association. 4/28/17. Cardiovascular Disease & Diabetes http://www.heart.org/HEARTORG/Conditions/More/Diabetes/WhyDiabetesMatters/Cardiovascular-Disease-Diabetes_UCM_313865_Article.jsp#.WQPEPuSGOUJ

Depression and Suicide
Update
Depression is a common serious medical illness that can affect mood, cognitive function, and physical abilities. Depression affects over 15 million adults in the United States; it is estimated to cost society about $210.5 billion annually. In a 2010 study by Greenburg, Paul, et. al., these costs were associated with significant healthcare needs, medication, work absenteeism, work productivity, and cost associated with suicides. Depression can also affect children and teens; and impacts their home, social, and ability to attend school.

Diagnosis Criteria

The American Psychiatric Association’s diagnostic criteria for Major Depressive Disorder requires a person to experience five or more of the below symptoms for a continuous period of at least two weeks.²

- Feelings of sadness, hopelessness, depressed mood
- Loss of interest or pleasure in activities
- Change in weight or appetite
- Change in activity: either more or less active than usual
- Insomnia (difficulty sleeping) or sleeping too much
- Feeling tired or not having any energy
- Feelings of guilt or worthlessness
- Difficulties concentrating and paying attention
- Thoughts of death or suicide.

Depression affects both males and females, and can occur at any age. People suffering from depression are at increased risk for disease, injury, mortality, and can even lead to substance abuse. Depression can be short-lived or long-lasting with mild to severe intensity. At worst, depression can lead to suicide. If not effectively treated, depression can become a chronic disease and impair functioning. CDC reports that one out of twenty adults surveyed in the United States report moderate or severe depressive symptoms within the past 2 weeks. Many behaviors or conditions that are often associated with depression include smoking, alcohol use, physical inactivity, sleep disorders, HIV/AIDS, etc.
The average rate of depression reported in Missouri from 2011 to 2015 was 21.0% compared to the national average of 18.4%. Of Missourians reporting depression during this time period, whites were 1.4% more likely to report depression compared to blacks. Persons living below the poverty level are 2 ½ times more likely to have depression than those above the poverty level. The percent of Missourians reporting depression increased as the annual salary ranges decreased. Although females were 1.7% more likely to report depression compared to males in Missouri, males were 3.8% more likely to commit suicide. There were 1007 females and 3820 males that committed suicide from 2011 to 2015. Males in age groups 25-44 and 45-64 have a significantly higher number of deaths due to suicide, as 71% of suicide deaths occurred in these age ranges. Females also have a higher number of suicides reported for ages 25-64, compared to other age groups.
In 2015, Missouri ranked 16th nationally in suicide deaths, and suicide was the tenth leading cause of death in Missouri with 1052 deaths and a mortality rate of 17.1/100,000, compared to the national average of 13.3/100,000.

Suicide rates have been slowly increasing in all regions of Missouri, yet the St. Louis Metro region remains consistent with the lowest average rate of suicide death in Missouri for the past five years at 14%. The Southwest region of Missouri has seen a sharp increase in suicide deaths at 23%. The mortality rate by suicide for males in Missouri from 2011 to 2015 was 25.6% compared to the rate of 6.5% for females, and there were a total of 4827 suicide deaths during this 5 year period, with 1527 of those deaths occurring in the St. Louis Metro Region. There were 34 suicides among children under 12 years of age, but the majority of deaths occurred between the ages of 25 to 64.

From 2005 to 2015, St. Louis averaged 40.3 suicides a year. During this time period, the rate of suicide for men in the city was 20.4% compared to 5.0% for women. The highest rates in the City were among the age group 25-64. The number of suicide deaths in St. Louis City continue to occur more among the white population than the black population. In 2015, the City had 36 suicide deaths, and 64% of those were white and 83% were male. In 2015, 23.6% of suicides were in the age group 45-64 compared to 10.5% in the age group 25-44.
The St. Louis City Health Department has recently trained all its staff in Mental Health First Aid, and is encouraging employees to start conversations about depression and mental illness. Suicide is not inevitable for anyone, and by starting the conversation, providing support, and directing help to those who need it, we can prevent suicides and save lives. Evidence shows that providing support services, talking about suicide, reducing access to means of self-harm, and following up with loved ones are just some of the actions we can all take to help others.

**How You Can Help to Reduce Suicide**

Get resources for yourself or be the difference for a loved one by offering support and understanding, and having conversations about mental health. Learn the risk factors and warning signs of someone who may be thinking about suicide and help connect them to resources.

Spread the word about the Lifeline’s free confidential and emotional support services that are available 24/7, and raise awareness for suicide prevention.

National Suicide Prevention Lifeline 1-800-273-8255

<table>
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<tr>
<th>Known Risk Factors</th>
<th>Known Warning Signs</th>
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<tbody>
<tr>
<td>• Mental disorders, particularly mood disorders, schizophrenia, anxiety disorders, and certain personality disorders</td>
<td>• Talking about wanting to die or to kill themselves</td>
</tr>
<tr>
<td>• Alcohol and other substance use disorders</td>
<td>• Looking for a way to kill themselves, like searching online or buying a gun</td>
</tr>
<tr>
<td>• Hopelessness</td>
<td>• Talking about feeling hopeless or having no reason to live</td>
</tr>
<tr>
<td>• Impulsive and/or aggressive tendencies</td>
<td>• Talking about feeling trapped or in unbearable pain</td>
</tr>
<tr>
<td>• History of trauma or abuse</td>
<td>• Talking about being a burden to others</td>
</tr>
<tr>
<td>• Major physical illnesses</td>
<td>• Increasing the use of alcohol or drugs</td>
</tr>
<tr>
<td>• Previous suicide attempt(s)</td>
<td>• Acting anxious or agitated; behaving recklessly</td>
</tr>
<tr>
<td>• Family history of suicide</td>
<td>• Sleeping too little or too much</td>
</tr>
<tr>
<td>• Job or financial loss</td>
<td>• Withdrawing or isolating themselves</td>
</tr>
<tr>
<td>• Loss of relationship(s)</td>
<td>• Showing rage or talking about seeking revenge</td>
</tr>
<tr>
<td>• Easy access to lethal means</td>
<td>• Extreme mood swings</td>
</tr>
<tr>
<td>• Local clusters of suicide</td>
<td>• Lack of social support and sense of isolation</td>
</tr>
<tr>
<td>• Lack of social support and sense of isolation</td>
<td>• Stigma associated with asking for help</td>
</tr>
<tr>
<td>• Stigma associated with asking for help</td>
<td>• Lack of healthcare, especially mental health and substance abuse treatment</td>
</tr>
<tr>
<td>• Lack of healthcare, especially mental health and substance abuse treatment</td>
<td>• Cultural and religious beliefs, such as the belief that suicide is a noble resolution of a personal dilemma</td>
</tr>
<tr>
<td>• Cultural and religious beliefs, such as the belief that suicide is a noble resolution of a personal dilemma</td>
<td>• Exposure to others who have died by suicide (in real life or via the media and Internet)</td>
</tr>
</tbody>
</table>

Sources:

MICA, BRFSS, and CDC

HIV/AIDS
Update
The primary goal of the City of St. Louis Department of Health HIV public health program is to decrease the number of new HIV/AIDS infection through education and testing outreach. The program also strives to connect newly diagnosed persons to care and for persons living with HIV/AIDS (PLWHA) to help them achieve viral suppression (where levels of HIV in their blood are below the level of detection on clinical laboratory tests). Viral suppression is associated with improved health and survival, as well as reduced risk of transmitting HIV to partners. PLWHA can lower their viral load by taking antiretroviral therapy (ART) as part of regular medical care. While connecting PLWHA to medical care can be challenging, those already in care should initiate ART and become virally suppressed. The City of St. Louis Department of Health is able to assist PLWHA with ART, housing and food through Ryan White program.

**Race**
- Black/African Americans are disproportionately affected with HIV/AIDS.
- 63% of all newly diagnosed HIV cases in the City of St Louis were among Black/African Americans.
- In 2015, the incidence rate of HIV/AIDS was two times higher in Blacks/African American than in Whites, respectively 42.3 per 100,000 vs. 22.2 per 100,000.
- Over the past five years, the number of HIV/AIDS cases in Blacks/African American has decreased respectively by 27% from a maximum of 88 cases in 2012 to a minimum of 64 cases in 2015.

**Age Group and Sex**
- The majority of newly diagnosed cases of HIV disease in the City of St. Louis occurred among males aged 18-34.
- In the City of St. Louis in 2015, the rate of HIV/AIDS in men was 57.0 cases per 100,000 vs. 9.2 cases per 100,000 in women.
- Over the past five years (2011-2015), approximately 83% of the newly diagnosed cases of HIV are people under age of 45.
- The age group 18-24 has the highest rate of HIV/AIDS incidence of 71.4 cases per 100,000 people in 2015, which is two times higher than the rate of the whole City of St. Louis.
Sex

- Over the past five years, on average 86% of newly diagnosed cases of HIV/AIDS were in men.
- In 2015, the incidence rate of HIV/AIDS in the City of St. Louis in men was 57.0 cases per 100,000 vs. 9.2 cases per 100,000 in women.
- The incidence rate of HIV/AIDS in male have decreased by 16 cases per 100,000 from 67.6 cases per 100,000 in 2011 to 57 cases per 100,000 in 2015.

Mode of Transmission (MOT)

- Over the past ten year, the majority of newly diagnosed cases of HIV disease in the City of St. Louis occurred among men who have sex with men.
- In 2015 alone, 66% of new cases of HIV disease were in men who have sex with men.
- 15% of newly diagnosed cases were heterosexual
- There is a great majority of unknown mode of transmission.

Through data, the DOH recognizes that communicable diseases in our community, especially HIV/AIDS, and sexually transmitted diseases are major threats to the wellbeing of the citizens of the City of St. Louis. Multiple initiatives and partnerships have been developed to addresses the highest rate of sexually transmitted disease in the most affected population.

Data sources:
All positive test results of HIV/AIDS are reported to the Missouri Department of Health and Senior Services (MDHSS), and the data is electronically housed to HIV/AIDS surveillance software eHARS.
Opiate Update
The United States is facing an epidemic of opiate overdose deaths. From 2000 to 2015 the rate of overdose fatalities due to heroin have quadrupled in the US. The City of St. Louis is experiencing a similar trend. The number of opiate related overdose deaths, including heroin, that have occurred in the City of St. Louis is six times higher than it was ten years ago. In the last year alone, there were 273* opiate overdose deaths that occurred in the City which is a 108% increase from the previous year. (*Data for 2016 is provisional and is subject to change.)

Heroin is a very powerful and highly addictive drug which is derived from morphine. There are dangerous and harmful effects of heroin such as causing the heart rate and breathing to slow down. Also, those who inject the drug and share equipment are at risk of viral infections such as HIV and Hepatitis C. Many people who use the drug also use alcohol or other combinations of drugs which can exacerbate the effects. Over time users become tolerant to the drug and need higher doses more frequently to achieve the same euphoric high. This puts users at increased risk for overdose or death.

Accessibility contributes to the increase over the past several years as heroin becomes purer and cheaper. Furthermore, an increase in prescription opiate medication contributes to the epidemic. Those who are addicted to prescription opiate medication are forty times more likely to become addicted to heroin.

Fentanyl overdose fatalities have sharply increased in the last year. Fentanyl is a synthetic opioid fifty times more potent than morphine. Often heroin is mixed with fentanyl without the user’s knowledge. A very small amount of this drug can be lethal.

### Unintentional Drug Poisoning (Overdose) Deaths Involving Opiates in the City of St. Louis, 2016

- In 2016, there were 273 drug overdose deaths involving opiates in the City of St. Louis compared to 131 in 2015.
- The number of opiate overdose death has been trending upwards for the past ten years with a six-fold increase during that time period.
- In 2016, the number of overdose deaths involving opiates were highest in the southern portion of the City, specifically ZIP Codes 63111, 63118, and 63116, making up 36% of total cases.
- One-third of all opiate overdose deaths involved more than one substance in 2016.
- One-fifth of all opiate overdose deaths involved alcohol.

In 2016, the majority of opiate mortality cases involved heroin and/or fentanyl. For this reason the data in Table 1 is broken down by deaths that involved heroin, deaths that involved fentanyl, deaths that involved both heroin and fentanyl, and deaths that related to other opiates not including heroin and/or fentanyl. The breakdown is mutually exclusive so cases are not included in multiple categories. Ninety-seven cases (36%) involved heroin, 100 cases (37%) involved fentanyl, 53 cases (19%) involved both heroin and fentanyl, and 23 cases (8%) involved opiates other than heroin or fentanyl.
### Table 1: Number and percent of opiate overdose deaths, City of St. Louis, 2016

<table>
<thead>
<tr>
<th></th>
<th>Total (All Opiates)</th>
<th>Heroin</th>
<th>Fentanyl</th>
<th>Heroin &amp; Fentanyl</th>
<th>Other Opiate</th>
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<tbody>
<tr>
<td><strong>Number of Cases</strong></td>
<td>273</td>
<td>97</td>
<td>100</td>
<td>53</td>
<td>23</td>
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<tr>
<td><strong>Gender</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Male</td>
<td>197</td>
<td>72%</td>
<td>69%</td>
<td>39%</td>
<td>17%</td>
</tr>
<tr>
<td>Female</td>
<td>76</td>
<td>28%</td>
<td>31%</td>
<td>14%</td>
<td>6%</td>
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<tr>
<td><strong>Average Age</strong></td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>41</td>
<td>38</td>
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<tr>
<td>&lt; 18 years</td>
<td>2</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>2%</td>
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<tr>
<td>18 to 25</td>
<td>22</td>
<td>8%</td>
<td>7%</td>
<td>2%</td>
<td>3%</td>
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<tr>
<td>26 to 45</td>
<td>155</td>
<td>57%</td>
<td>60%</td>
<td>29%</td>
<td>9%</td>
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<tr>
<td>46 to 65</td>
<td>85</td>
<td>31%</td>
<td>27%</td>
<td>19%</td>
<td>9%</td>
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<tr>
<td>&gt; 65 years</td>
<td>9</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
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<tr>
<td><strong>Race</strong></td>
<td></td>
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<tr>
<td>Asian</td>
<td>1</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>Black</td>
<td>131</td>
<td>48%</td>
<td>54%</td>
<td>30%</td>
<td>6%</td>
</tr>
<tr>
<td>White</td>
<td>141</td>
<td>52%</td>
<td>46%</td>
<td>23%</td>
<td>17%</td>
</tr>
<tr>
<td><strong>Using alcohol</strong></td>
<td>53</td>
<td>20%</td>
<td>21%</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Using another drug</strong></td>
<td>87</td>
<td>32%</td>
<td>9%</td>
<td>3%</td>
<td>8%</td>
</tr>
</tbody>
</table>

*Other drugs include but are not limited to, oxycodone, hydrocodone, cocaine and other opiates or drugs (not listed in any particular order).

### City of St. Louis Response to the Opiate Epidemic

The Department of Health is working towards reducing exposure to opioids and preventing abuse through the Prescription Drug Monitoring Program.

Missouri is the only state that does not have a statewide Prescription Drug Monitoring Program (PDMP). The City of St. Louis will be participating in a Regional Prescription Drug Monitoring Program which will launch in April, 2017. This program will track prescribing and dispensing of controlled prescription drugs to help identify patients who are at risk of developing addiction. The program can help address prescription drug diversion and abuse and serves as an “early warning system” for drug abuse.

The Department of Health is advocating for increase access to Narcan to prevent death.

Naloxone Hydrochloride (Narcan) can be used to treat opioid overdoses and help prevent death. The City has expanded access and use of Narcan to EMS, ambulances, and firetrucks. Additionally, licensed pharmacists are now allowed to dispense Narcan under the supervision of a physician. Accessibility to this life saving drug can help prevent death from opioid overdose.

The Department of Health is also:

- Partnering with the National Council on Alcoholism and Drug Abuse (NCADA) to educate residents on the health risks and possible signs of heroin use.
- Developing maps to identify “hot spots” for heroin overdose deaths.
- Including the reduction of substance abuse in its Community Health Improvement Plan and building partnerships with engaged stakeholders.
Opiate, Heroin, Fentanyl Related Deaths by ZIP Code (2016) City of St. Louis

1 to 9 deaths
9 to 14 deaths
15 to 20 deaths
21 to 26 deaths
27 to 32 deaths
Highways
Park

**ZIP Code is the death location, not necessarily the home ZIP Code of the deceased.**

Prepared by:
City of St. Louis Department of Health
Center for Health Information, Planning, and Research

Sources: City of St. Louis Office of the Medical Examiner, Centers for Disease Control and Prevention, National Survey on Drug Use and Health
Scabies Update
Overview
Scabies is caused by an infestation in the skin of the human itch mite (Sarcoptes scabiei var hominis). Once contacted, the adult female scabies mite can burrow under the top layer of skin and deposit eggs (as seen below). Symptoms of exposure to the mite are caused by a sensitization or allergic reaction to the proteins and feces of the parasite within the burrow. When a person is infested with the human itch mite for the first time, the incubation period is generally much longer (2 to 6 weeks). However, if a person has had scabies before, symptoms may appear within 1-4 days.

Scabies Transmission, Symptoms and Treatment
Scabies can be transmitted during the incubation period and once symptoms appear. The infested person is generally infectious until the mites are treated and the eggs are destroyed. Although scabies can be passed easily from person-to-person, direct and prolonged skin-to-skin contact with an infested person is required. Scabies can be passed easily to household members and sexual partners.

Symptoms most commonly include itching and a skin rash. In some infested persons, the burrow can be seen with the naked eye. Itching and rash are limited to common sites such as the wrist, between the fingers, elbow, armpit, shoulder blades and waist.

If scabies is suspected, the City of St. Louis Department of Health recommends contacting a healthcare provider. Scabies can be treated with scabicides which are available with a doctor’s prescription. Itching could occur for several weeks after the mites and eggs are killed so it is important to use the prescription as instructed and physician advice warrants. Those who are immunocompromised, elderly, disabled or debilitated are at risk for a more severe form of scabies called crusted (Norwegian) scabies. This form of scabies causes thick crusts of skin that contain a greater number of mites and eggs. Persons with crusted scabies are very contagious and can transmit scabies indirectly by shedding mites and contaminating items like clothing, bedding and furniture.

In the State of Missouri, scabies is not a reportable condition. However, the Department of Health readily provides education and training on scabies transmission upon request to the Citizen’s Service Bureau (314-622-4800). Please visit the Centers for Disease Control and Prevention for more information on scabies.
https://www.cdc.gov/parasites/scabies/index.html
Violence Prevention
Update
THE PROBLEM:

In year 2015, as well as in year 2016, there were 188 homicides in the City of St. Louis. By contrast in 2009 there were 143 homicides.

Homicide is the second leading cause of death for young people ages 10 to 24 years.

Each day on average 39 people are killed in the U.S. In 2016 there were 6018 reported crimes against persons in the City of St. Louis and 3638 aggravated assaults (which are unsuccessful homicides, because the victim survived). That's a 3.3% increase in aggravated assaults from 2015 to 2016.

WHAT ARE WE DOING:

A. PIER Comprehensive Crime Plan
The PIER Plan addresses crime through Prevention, Intervention, Enforcement and Re-Entry strategies. In 2016 the Department of Health had outreach resource events at 2 recreation centers, a pool and a park for the 15 focus neighborhoods identified for concentrated action, including distribution of health status reports in each neighborhood.

B. Youth Violence Prevention Partnership
The YVPP meets monthly to assess the status of youth violence and to have collective impact on the problem. The St. Louis Area Violence Prevention Collaborative meets quarterly to address violence in the region.

C. Jobs, Education & Training
StL Youth Jobs; B.U.D. (Building Union Diversity); Proposition S programming; SLATE/Ranken Technical School partnerships; Innovative Concept Academy; St. Louis Public Schools banning of Pre-K through 2nd grade out of school suspensions; Prison to Prosperity Program; College Kids Children’s College Savings Program; Ready by 21.
D. Economics and Environment

Re-CAST grant (Resiliency in Communities After Stress & Trauma); Re-LINK (re-entry program from City jails); CHOICE Neighborhood; Promise Zone; Metrolink light rail expansion; Byrne Criminal Justice Innovation grant.

E. Law Enforcement Outreach

GREAT Program, Neighborhood Ownership Model, Hot Spot Policing; Real Time Crime Center; Misdemeanor Diversion and Felony Diversion programs; Civilian Oversight Board; Crisis Intervention Team; Informal Treatment & Diversion Programs of Juvenile Court; Operation SAVE (Strike Against Violence Early); Consent to Search Juvenile areas for weapons; Night Watch; Community Engagement & Organizational Development Division; Chess Clubs; Ladies Encouraging Others (LEO); Gentlemen’s Club; Man Up: Police Athletic League (PAL); Books and Badges; Citizens Police Academy; Crime Commission; Implicit Bias training; De-escalation techniques.

F. Health & Human Services

Beginning of the End: Abolishing Chronic Homelessness; Community that Cares; Project LAUNCH; Alive and Well St. Louis; Lead Safe St. Louis; Better Family Life Pulpit to Porches and Ground Zero programs; People’s Behavioral Health Center expansion.

WHAT MORE SHOULD WE DO:

1. Treat violence as the public health crisis it is by funding public health solutions like behavioral health care. Violence can and must be prevented by interrupting the cycle and transmission of violence.
2. Fund efforts to address the known community factors that tend to increase the likelihood of violence such as concentrated poverty; high transience and family disruption; lack of education and training; low levels of community participation and connectedness; socially disorganized neighborhoods; trauma. Fund efforts that decrease violence such as Living Wage/Earned Income Tax Credits; medical homes; mental healthcare; case management models; Family/Community HUBS.
3. Create, strengthen & support connections for people to: people, community, basic needs being met locally, institutions, arts/beauty, fun, continual growth of body/mind/spirit.
4. Repair injuries separating justice system and communities.
5. Fund systems and policy changes while promoting programs.
6. Advocate a culture of gun safety with mandatory training, licensing, and securing of guns.
Zika Virus
Update
Zika Virus Update

City of St. Louis Department of Health
Center for Health Information, Planning, and Research

May, 2017
314-657-1492

Lyda Krewson
Mayor

Zika Virus Update

Melba R. Moore, MS, CPHA
Acting Director / Commissioner of Health

History of Zika Virus Disease
Zika is an emerging mosquito-borne virus causing disease. Zika virus was first discovered in 1947 in Uganda in a monkey with a mild fever. Nonhuman primates have shown the ability to become infected with the virus, but at this time there have been no reports of Zika virus disease in pets or other animal types or their involvement in the transmission of the Zika virus. Beginning in the summer of 2016, presumed local transmission began in Florida, and around November, 2016 in Texas. Most people infected with Zika virus will not show clear symptoms. When symptoms present they may last several days up to a week. Zika infection is confirmed through a blood or urine test and there is no treatment or vaccine.

Transmission
Zika virus is primarily transmitted to humans through the bite of an infected mosquito from the Aedes species, mainly Aedes Aegypti and Aedes albopictus. The estimated range of Aedes albopictus does include St. Louis City, MO. Sexual transmission of Zika virus is possible, but use of condoms reduces the chance of getting Zika. A pregnant woman can transmit Zika virus to her fetus during pregnancy. Zika virus can also be transmitted through blood transfusion but there are no confirmed transfusion transmission cases in the United States. A person can transmit the virus even if they are not experiencing symptoms.

Microcephaly and Zika Virus Disease
Zika virus is the first known mosquito-borne disease to cause birth defects. One severe defect is microcephaly, when congenital Zika infection leads to a smaller brain that may not be fully developed. Zika virus during pregnancy is shown to cause an increased chance for microcephaly defect. As of April 11, 2017, 4% (58/1,367)* of the completed pregnancies to women with either evidence of Zika infection or pregnancy with fetus with congenital Zika virus infection, were infants with birth defects (including microcephaly). As shown, some infants with congenital Zika infection will not develop microcephaly but may show slowed head growth with a delayed microcephaly. Microcephaly complications include developmental and intellectual delay or disability, hearing loss and vision problems. Problems could be lifelong depending on the severity of the microcephaly. Other complications could include miscarriage and stillbirth, both reported to women with laboratory evidence of Zika virus infection. Infection during the first trimester may pose the highest risk.

* - Aggregate numbers are reported from the CDC US Zika Pregnancy Registry. Numbers are reflective of the 50 US states and the District of Columbia only.

What Should Citizens of the City of St. Louis Do?
All persons traveling to areas with active Zika transmission should prevent mosquito bites and practice safe sex. Because Zika virus can be spread from a pregnant woman to her fetus along with the risk of birth defect, the Centers for Disease Control and Prevention (CDC) recommends that pregnant women should consider delaying travel to areas with risk of Zika. Those traveling to an area with risk of Zika should consider abstaining from sexual activities while traveling or use condoms consistently and correctly. Women who are pregnant should do so for the duration of the pregnancy.
Couples should take into consideration that most infections are asymptomatic when illness does occur. Pregnant women who experience any of the symptoms or have a partner who has symptoms consistent of Zika virus infection should talk to their doctor. Diagnostic testing may be necessary. As a precautionary measure, those that have traveled to areas with the Zika virus should continue to take steps to prevent mosquito bites even after they have returned from travel.

As of April 26, 2017, there have been 5,264 Zika virus disease cases reported within the United States. 4,963 of the total number of cases are travel related. Of the 4,963 cases, 224 are locally acquired cases in Florida and Texas only and 77 cases were acquired through other routes (sexually transmitted, congenital infection, laboratory transmission). There have been 38 symptomatic travel-related cases in Missouri. The map below displays Zika cases reported in the United States and territories and the two areas with active Zika transmission (Miami-Dade County, Florida and Brownsville, Texas).

If you are traveling to an Affected Area consider:
- Following the 4 D's
  - DEET: Use an EPA-approved repellent, follow label directions
  - Dress: Wear long sleeved shirts and pants
  - Drain: Get rid of standing water, as these are breeding grounds of mosquitoes
  - Dawn/Dusk: Limit time spent outdoors during dawn/dusk, when mosquitoes are most active
- Stay in places with air conditioning, use windows and door screens.
- Use mosquito bed nets if you cannot keep mosquitoes out of your residence
- Abstain from sex while traveling or use condoms every time, refer to the CDC’s specific recommendations on how to prevent sexual transmission of Zika at: https://www.cdc.gov/zika/prevention/sexual-transmission-prevention.html

Control Mosquitoes Outside your home
- At least once per week, empty and scrub or eliminate items that hold any amount of standing water including:
  - Buckets and Trash cans
  - Planters and Flower pots
  - Toys and Pools
  - Birdbaths
  - Tires
- Report any mosquito breeding site in your neighborhood to CSB at 314-622-4800

Data Sources:
- Center for Disease Control and Prevention (CDC)
- World Health Organization (WHO)
SECTION 7

Program Accomplishments
Communicable Disease Control
COMMUNICABLE DISEASE

HIV COUNSELING TESTING AND REFERRAL SERVICES
TB CONTROL/HIV SURVEILLANCE
GRANTS ADMINISTRATION
ACCOMPLISHMENTS – COUNSELING, TESTING, & REFERRAL

- Over 3,000 HIV Tests
- Department of Health, Williams and Associates, Wash U (Project Ark and The SPOT), St. Louis Effort for AIDS
- 35 Confirmed New HIV Positive Cases (DOH Staff)
- Over 12,000 Clients Reached (outreach/group level interventions)
ACCOMPLISHMENTS – CONDOM DISTRIBUTION PROGRAM

- Over 150 sites
- stlcondoms.com growth from 200 unique visits/month to 600 unique visits/month
- Over 350,000 condoms distributed
- Over 12,000 Clients Reached (outreach/group level interventions)
UPCOMING INNOVATIVE PROJECTS

- Hep C OraSure Grant Award
- Stroll Care Outreach
- HIV, Women, and Intimate Partner Violence (She Speaks ↑)
UPCOMING INNOVATIVE PROJECTS
EVENTS & MEDIA

- Twitter Account @HIPSTL
- Super Jam/Radio 1
- Mobile Web App: stlcondoms.com
- PrideFest
ACCOMPLISHMENTS – TB OUTREACH

- At the end of 2016, the Refugee Program processed > 1,100 refugee health screenings in partnership with the International Institute.

- Hired Public Health Program Supervisor, Amensissa Edossa MPH, to closely oversee TB Outreach & Control.

- Hired Public Health Program Specialist, Jordan Garrido, to coordinate the Refugee Program.
ACCOMPLISHMENTS – TB OUTREACH

- Partnership with St. Louis University for LTBI/Parasite Research Study.
- Grant partnership with University of Missouri St. Louis to precept Doctorate of Nursing Practitioner students in our TB Clinic for public health experience.
- Successfully secured physician services with Dr. Saggar without disruption to citizen services.
UPCOMING PROJECTS

- Shelter Program Focus – Strengthening partnerships with area shelters to offer education seminars on public health topics for their clients and staff in addition to TB testing and referrals.
ACCOMPLISHMENTS – HIV SURVEILLANCE

- HIV Surveillance Team has processed 19,800 labs so far this year
- Provided proof of positivity for over 1,500 clients seeking linkage to care services
ACCOMPLISHMENTS – DISEASE INVESTIGATION

- Hired new clerk, Gloria Cobb.
- In partnership with MDHSS and the DOH Zika work group; developed protocols for Zika investigations, monitoring and coordination of specimen handling.
- Continuing to improve the quality of communication between DOH sections through consolidation of disease investigation & communication policies in a cross sectional work group.
ACCOMPLISHMENTS –
RYAN WHITE GRANTS ADMINISTRATION

- Created and implemented new Regional Ryan White Quality Mgmt Committee
- Successfully completed National Quality Center coaching program
- Featured in NQC e-Newsletter
- Collaborated with regional and statewide partners to craft new MO and IL integrated Prevention and Care plans
Initiated partnership with MATEC, ETI, PrEP experts to reach out to physicians who expressed interest to learn more about HIV care and linkage to support services

- Coordinating HIV core medical and supportive services for over 3000 regional citizens
- Linked 184 citizens newly diagnosed as living with HIV to medical care
# Communicable Disease Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Name</th>
<th>Title</th>
<th>Name</th>
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<td>Franda Thomas</td>
<td>Health Services Mgr I</td>
<td>Meredith Nalick</td>
<td>Public Health Nurse III</td>
<td>Grants Administrator</td>
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<tr>
<td>Maheen Bokhan</td>
<td>Public Health Program Specialist</td>
<td>Paulette Robertson</td>
<td>LPN</td>
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<td>Medical Services Coordinator</td>
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<td>Darne' Guest</td>
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<td>Antoinette Brown</td>
<td>LPN</td>
<td>Karen Washington</td>
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<td>Steve Vance</td>
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<td>John Zakibe</td>
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<td>Tanner Creech</td>
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<td>Phillip Johnson</td>
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<td>Natalie Torres-Negron</td>
<td>Public Health Program Rep</td>
<td>Lorise Thornton</td>
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<td>Helen Windom</td>
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<td>Nicola Ackles</td>
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<td>Margaret Robinson</td>
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Environmental Health Services
ENVIROMENTAL HEALTH

AIR POLLUTION CONTROL
ANIMAL CARE AND CONTROL
COMMUNITY SANITATION
EMERGENCY PREPAREDNESS
FOOD AND BEVERAGE CONTROL
VECTOR CONTROL
The Air Pollution Control (APC) Environmental Health Officers (EHOs) permit, inspect, and enforce local regulations for asbestos abatement, demolition projects, occupancy permits, and smoke free environments.

In 2016, with 0 full time staff, 386 demolition permits were approved by Air Pollution Control, and nearly 2/3 of these were in north City ZIP Codes.

This includes a review of asbestos inspections and abatement and field visits when possible.
AIR POLLUTION CONTROL

- Ordinance 70399 and Ordinance 70400 became effective November 23, 2016. These ordinances amend the City Revised Code Chapter 11, prohibiting the sale of tobacco, cigarettes, alternative tobacco products, and vaping products to persons under age 21.

- In early 2017, Food Establishment Inspectors (due to having no air pollution staff) visited nearly 600 convenience stores, grocery stores, taverns, and coffee bars to provide education and placards to these establishments.
In 2016-2017, Air Pollution Control has met with elected officials, neighboring counties, the Missouri Department of Natural Resources, East-West Gateway, and other community partners to plan the revision of the City’s air pollution ordinance and establish a memorandum of agreement with Missouri Department of Natural Resources.

This agreement is planned to go into effect by September 1, 2017, and will allow the DOH to receive permitting fees and to establish staff for air pollution control locally.
Services provided by Animal Care and Control include:

- ordinance enforcement
- apprehension and quarantine of biting/dangerous dogs
- maintenance of rabies tags and promotion of responsible pet ownership
- efforts to increase the live release rate from the shelter
50% of Animal Care and Control Officers (ACCOs) are now certified by the Missouri Animal Control Association (MACA). The team is still working toward the goal of 100% certification with MACA.

This year ACCOs have been equipped with tablet computers, providing a quality improvement opportunity for data management next year.
In 2016, DOH issued a request for proposals to privatize its shelter operations.

Stray Rescue of St. Louis entered into a Memorandum of Understanding with the shelter in the Spring of 2017 to assist in shelter operations.

Stray Rescue of St. Louis will assume management of the shelter as of June 30, 2017.
In 2016, EHOs addressed 1,623 complaints from the Citizens’ Service Bureau (CSB). General Sanitation complaints made up 76% of Community Sanitation inspections. Following second was recreational water inspections, third childcare and fourth lodging.
Community Sanitation conducted a thorough review of the State of Missouri lodging regulation in 2016-2017. This review caused more detailed inspections and an increase of observed violations. About 46% of City facilities were referred to the State for follow-up compared to the 2015-16 licensing year when only 17% were referred.
In 2016, Community Sanitation conducted 38 Virginia Graeme Baker compliance inspections through an agreement with the Consumer Product Safety Commission. This contract was completed on-time, with all paperwork submitted by the deadline.
EMERGENCY PREPAREDNESS

- Public health threats are always present. Whether caused by natural, accidental, or intentional means, these threats can lead to the onset of public health incidents. Being prepared to prevent, respond to, and rapidly recover from public health threats is critical for protecting and securing the health and safety of City residents.

- During 2016, the Emergency Preparedness program initiated activities for 9 events – including exercises – to implement or test response capability.
EMERGENCY PREPAREDNESS

In 2016, Grant-funded awards to supplement preparedness programs = $143,000

- Activities focused on emerging diseases, e.g., Ebola, and included:
  - Gap analysis of regional urgent care centers and retail walk-in clinics
  - Creation of on-line learning portal for highly infectious, emerging diseases
  - Regional conference on emerging diseases for public health and urgent care centers / retail walk-in clinics / FQHCs / hospitals
Development of information provided to the community through social media, other city agencies, and community wide networks.
DOH staff were actively involved in the planning, coordination, and hosting of 4 City-sponsored community health fairs in conjunction with the Mayor's Office and other city agencies under the City of St. Louis 15 neighborhood's PIER - Crime Prevention Plan

Events were held at O’Fallon Recreation Center, Wohl Recreation Center, Marquette Recreation Center, and Gregory J. Carter Park in May and June 2016
In 2016, Food & Beverage Control:

- Conducted 7,203 inspections (3% decrease)
- Issued 284 permits for new establishments (23% decrease)
- Renewed 2,058 permits for existing establishments (0.3% increase)

- Performed 1,452 temporary permit inspections (6% increase)
FOOD AND BEVERAGE CONTROL

- In 2016, 7 inspectors and supervisor assisted and attended the International Association for Food Protection at the America's Center, which had 3,400 registrants attending from all over the world.

- During the power outage downtown on 6/16/16, 2 inspectors checked 50+ establishments to see if they lost power. Another larger power outage on 7/14/16 - 7 inspectors checked the status of over 300 establishments, and distributed information on food safety during power outages.
VECTOR CONTROL

- Zika virus concerns stimulated EHS collaboration with regional vector control programs to explore alternatives to adult mosquito fogging, such as more community education, more larvacide treatment, and trapping and surveillance of mosquito populations.
- Mosquito surveillance will aid in development of a data-driven approach to mosquito treatment.

In 2016, a team of summer interns collaborated to provide mosquito control education and re-establish mosquito surveillance.
 VECTOR CONTROL

- Prevention of mosquito breeding sites is the most effective approach to reduce populations
- Vector Control is coordinating with the State and regional local health departments to re-establish a trapping and surveillance program to monitor for mosquito varieties known to carry disease
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<th>Environment Health Staff</th>
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<tr>
<td>Jeanine Arrighi</td>
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<td>Chantez Williams</td>
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<td>Patricia Mahoney</td>
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<td>Jill Speicher</td>
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<td>Zachary Krug</td>
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<td>Patricia Curtis</td>
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<tr>
<td>Chantez Williams, Program Manager I</td>
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<tr>
<td>Jill Speicher, Animal Regulation Center Supervisor</td>
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<tr>
<td>Jim Cunningham, Food Establishment Inspector</td>
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<td>Danielle Eichholz, Animal Control Officer</td>
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<td>Ophelia Anderson, Environmental Health Officer</td>
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<td>Nila Garba, Epidemiologist</td>
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<td>Patricia Mahoney, Environmental Health Supervisor</td>
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<td>Zachary Krug, Environmental Health Supervisor</td>
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<td>Rich Eskew, Food Establishment Inspector</td>
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<td>Frank DeManuele, Animal Control Officer</td>
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<td>Maria Cuciureanu, Environmental Health Officer</td>
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<td>Candace Da Silva, Public Health Educator</td>
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<td>Patricia Curtis, Public Health Nursing Supervisor</td>
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<td>Cathy Ivy, Clerk Typist II</td>
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<td>Alenia Foster, Food Establishment Inspector</td>
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<td>Ronald Fischer, Animal Control Officer</td>
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<td>Anthony Elliott, Environmental Health Officer</td>
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<td>Connie Giunta, Secretary I</td>
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<td>Dawn Watts, Clerk II</td>
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<tr>
<td>Monique Hudspeth, Food Establishment Inspector</td>
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<td>Abel Lopez, Animal Control Officer</td>
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<td>Jackie Trotman, Environmental Health Officer</td>
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<td>Kimberly Vanden Berg, Public Information Officer</td>
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<td>Elise Krueger, Clerk I</td>
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<td>Kathe Schaele, Food Establishment Inspector</td>
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<td>Matthew Payne, Animal Control Officer</td>
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<td>John Ward, Environmental Health Officer</td>
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<td>Steve Hummel, Pest Control Worker</td>
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<td>Jim Womack, Food Establishment Inspector</td>
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<td>Edward Ratliff, Animal Control Officer</td>
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<td>Gregory Morgenthaler, Pest Control Worker</td>
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<td>Christian Jones-Meiser, Animal Control Officer</td>
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<td>Vacant, Food Establishment Inspector</td>
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<td>Devon Bench, PP Animal Control Officer</td>
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<td>Vacant, PP Animal Control Officer</td>
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Fiscal
FISCAL OPERATIONS
PAYROLL
CONTRACT COMPLIANCE
CUSTODIAN OF RECORDS
PURPOSE

To maintain the financial support for the Department of Health’s commitment to assure a healthy community for the City of St. Louis by providing accountable, reliable, and accurate financial services and information to our internal and external customers.
ACCOMPLISHMENTS

Contract Execution Process
- Over 96% of prime contracts executed within 45 days
- Over 98% of sub-recipient contracts executed within 45 days

Invoice Activity
- FY 16 processed 1,014 invoices with 1,018 batches
- FY 17 processed 2,296 invoices with 1,066 batches
# FISCAL STAFF

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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<tbody>
<tr>
<td>Robin Jones</td>
<td>Fiscal Manager</td>
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<tr>
<td>Patty Koller</td>
<td>Executive Assistant I</td>
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<tr>
<td>Vacant</td>
<td>Payroll Specialist II</td>
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<tr>
<td>Brenda Pierce</td>
<td>Contract Compliance Officer</td>
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<tr>
<td>Victoria Reed</td>
<td>Accountant II</td>
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<tr>
<td>Leslie Gatewood</td>
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<td>Gordon Russell</td>
<td>Accountant II</td>
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<td>Vacant</td>
<td>Clerk Typist II</td>
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<td>Dorance Payne</td>
<td>Messenger Mail Clerk</td>
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Health Promotion, Education, and Marketing
HEALTH PROMOTION
EDUCATION & MARKETING

HEALTH CELEBRATION & OBSERVANCES
LET'S MOVE! STL
MEDIA RELATIONS
NUTRITION SERVICES
SMALL CHANGES FOR HEALTH
HEALTHY KIDS COOK-OFF
What We Do

Health Promotion, Education, and Marketing creates and disseminates culturally specific educational materials, conducts health promotion and education activities in the community, and develops traditional and web-based marketing campaigns for the Department’s health initiatives.
Health Celebrations/Observances

- Promoted 21 Health Observances including:
  - Food Day - October 2016
  - Go Red for Women - February 2017
  - National Nutrition Month - March 2017
  - National Public Health Week - April 2017
  - Earth Day - April 2017
Let’s Move!
STL Media Highlights

- 325 likes on Facebook
- 313 followers
- 348 followers on Twitter
- 932 Tweets
- Website – www.letsmovestl.org
  - 264 subscribers to letsmovestl.org
  - 1,167 average monthly views
Let’s Move!
STL Highlights

- 1602 kids had nutrition/physical activity education
- 15,000 students, 1,300 participated in the 3rd Annual Flash Mob
Media Relations Highlights

- Media Inquiries Responded To - 75
- Press Releases - 15
Reached a total of 20,752 kids and 5,690 adults through health fairs, nutrition educations, cooking demonstrations, presentations, or other events this year

- 51 Nutrition Educations/Cooking Demos
  - 250 adults & 1602 kids educated
  - 90% showed initial change in knowledge/behavior
  - 92% satisfaction rate
Small Changes For Health

Highlights

- New Registered Participants: 416 (114% increase)
- Total Page Views: 41,388 (357% increase)
- 1,000 e-blast subscribers
- 1,191,296 total media impressions
Healthy Kids Cook-Off

A new Department campaign designed to promote healthier lifestyles by asking students throughout St. Louis to submit favorite healthy family recipes

- 63 recipes submitted
- 5,513 website page visits
- 1,141,330 total impressions

Winning Recipes:
- Apple Chicken Salad
- Healthy Albacore Tuna Bowl
- Rainbow Salsa
Community Outreach

- 24 Health Fairs
  (reached 4,428 children and 3,098 adults)
- 3 Community Walks/Runs
# Health Promotion, Education, & Marketing Staff

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Harold Bailey</td>
<td>Public Information Officer</td>
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<tr>
<td>Lori Jones, MS, MPHA, RD, LD</td>
<td>Nutrition Services Program Manager</td>
</tr>
<tr>
<td>Lauren Landfried, MS, RD, LD</td>
<td>FAND Nutrition Coordinator</td>
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<tr>
<td>Melissa Ramel, MS, MPHA, RD,LD</td>
<td>Nutrition Coordinator</td>
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<tr>
<td>Vanessa Winegar, RD, LD</td>
<td>Dietitian</td>
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Policy
The Department of Health has both developed and supported policies for improvement of public health in 2016-17:

**PRESCRIPTION DRUGS**

- Helped with input and drafting of [ordinance 70277](#), Prescription Drug Monitoring Program (PDMP), resulting in participation with St. Louis County’s PDMP, in lieu of a Missouri PDMP.
The Prescription Drug Monitoring Program (PDMP) –

- Helps those who prescribe controlled substances (e.g. doctors) and those who distribute them (e.g. pharmacists) to know a patient’s controlled substance prescription history;
- Can be monitored to reduce misuse, diversion and over-prescription of controlled substances;
- Helps to identify doctor shopping and over-prescription;
- Checks to see if the levels and combinations of drugs a patient is receiving puts them at risk of overdose;
- Improves patient care; and
- Is a positive step toward gaining a Missouri statewide PDMP.
The Department of Health has supported:

- Good Samaritan legislation, ordinance 70311, designed to value life over prosecution, so that we encourage calls to 9-1-1 when overdoses occur in the midst of illegal drug usage.
- Use of Narcan (naloxone) to stabilize individuals who have overdosed on heroin or other opioids.
- Proper disposal of unused prescription medications.
In conjunction with Missouri Network for Opiate Reform & Recovery and St. Louis County Department of Public Health, the Department of Health sent letters of support for H.B. 88 that would have authorized needle exchanges in certain circumstances, in order to reduce HIV, Hepatitis B & C infections.

The Department of Health is a member of a regional St. Louis City/St. Louis County effort to address heroin and opiate abuse.
POLICY SUPPORT CONTINUED
TOBACCO 21

- Helped draft legislation to fit into the City of St. Louis Code, similar to St. Louis County legislation, which outlaws sales of tobacco products and vapor products to persons under 21 years old. Ordinances 70399 & 70400.
- Helped draft and testified in support of Ordinance 70516 that outlaws use of tobacco alternative products and vapor products at sporting events.

95% of smokers begin before the age of 21, and raising the age reduces the number of younger students under age 18 years who rely on 18 & 19 year olds to buy cigarettes for them. Vapor products are becoming popular precursors for youth to begin smoking.
The Department of Health continued efforts to extend “Healthy Heart” campaign in vending machines by working with Comptroller’s Office and Dynamic Vending to increase healthy food options. This resulted in replacement of some vending machines with refrigerated machines, offering healthier options.

Worked together with American Heart Association to provide input for Executive Order 58, which essentially adopts Food Service Guidelines for Federal Facilities in order to reduce sodium, fats and sugars in city owned vending outlets.

Workers spend at least on-third of their day at work consuming meals, beverages and snacks. Healthy choices should be the easier choice for employees and residents who visit our facilities. Obesity is one of the greatest drivers of chronic disease and healthcare costs.
POLICY SUPPORT CONTINUED

AFFORDABLE CARE ACT AND C.H.I.P.

- The Department of Health helped to prepare a letter for Mayor Slay as part of the U.S. Conference of Mayors Day of Action in support of affordable healthcare. The letter recommended repairing the Affordable Care Act, rather than repealing and replacing it.

- The Department of Health also supports the extension of funding for the Children’s Health Insurance Program (CHIP), which provides medical coverage for 8.9 million U.S. children, who are ineligible for Medicaid coverage because their families earn between 133% and 200% of federal poverty income.
The Department of Health testified before the Crime Prevention and Public Safety Committee in support of the position expressed in HR 405 (Rep. Bruce Franks), encouraging Missouri to declare youth violence a public health issue and to adopt trauma informed education as a strategy to address it.
The Department of Health recently worked together with Women’s Voices Raised for Social Justice, Department of Parks, Recreation & Forestry and Police Department to seek modification of a policy that prohibited the use of part of a disabled firearm at a recreation center to demonstrate how to lock a gun.

Safe storage of guns is a proven successful strategy to reduce accidental gun injuries.
Women Children & Adolescent Health
WOMEN CHILDREN AND ADOLESCENT HEALTH

SHOW ME HEALTHY WOMEN HEALTH EQUITY MATERNAL CHILD HEALTH SCHOOL HEALTH SERVICE
Show Me Healthy Women (SMHW) provides professional nursing case management services to ethnic minority, low-income women 40 years of age and older in areas throughout the metropolitan area. Pap tests, mammograms and clinical breast exams are some of the services that are offered. The program:

- Averaged 342 provider contacts a month
- Tracked 104 participants a month
- Averaged more than 18 abnormal follow-ups requested
HEALTH EQUITY

Health Equity focuses on five health disparities; asthma, adolescent STD infection, cardiovascular disease, diabetes and infant mortality. The program:

- Provide services at 380 Community events
- Serviced 2,364 children through community outreach
- Serviced 5,777 adults through community outreach
- Provided 52 Men’s Health Presentations
- Conducted 20 Smoking Cessation Classes
Maternal Child Health provides professional and supportive services with community partners to identify families at greatest risk for child maltreatment, targeting zip codes with the City identified as having the highest risk of reported abuse and socioeconomic factors. Services are provided by the Title V Maternal Child Block Grant. The program:

- Completed 72 Child Fatality Visits
- Performed 219 Family Follow-Ups
School Health Service provides professional nursing and supportive services to students in Parochial, Lutheran, Christian, Charter and Public schools, including counseling, screenings, education, and referral services and care plans for special needs children.
## WOMEN CHILDREN & ADOLESCENT STAFF

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<th>Steven Escopare</th>
<th>Gwendolyn Thompson</th>
<th>Bobie Williams</th>
<th>Vacant</th>
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<tr>
<td>Gwendolyn Thompson, Public Health Nurse III</td>
<td>Ashley Watts, Community Health Aide</td>
<td>Lakiska Stephenson, Public Health Program Representative</td>
<td>June Lane, Public Health Nurse II</td>
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<td>Bobie Williams, Program Manager I</td>
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<td>Robin Hayes, Public Health Representative</td>
<td>Janice Bugett, Community Health Aide</td>
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<td>Vacant, Public Health Nurse III</td>
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<td>Tiffany L. Brown, Community Health Aide</td>
<td>Yolanda Mitchell, Community Health Aide</td>
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<td>Vacant, Public Health Nursing Supervisor</td>
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<td>Jalonda Auberry, Program Specialist II</td>
<td>Mary Wheelington, Community Health Aide</td>
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<td>Yvonne Franklin, Public Health Nurse II</td>
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<td>Angela Buchannan, Public Health Nurse II</td>
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<td>Stella Oparaji, Public Health Nurse II</td>
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<td>Elileen Webber, Public Health Nurse II</td>
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<td>Sheria Stinson, Clerical Typist II</td>
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SECTION 8

Environmental Health Report
2016 Annual Environmental Health Report

This report overviews regulated environmental health issues within the City of St. Louis. Data and information from this report were retrieved from various databases used by the City of St. Louis Department of Health including CityWorks, HealthSpace, and Chameleon. The Missouri Department of Health and Senior Services, Centers for Disease Control and Prevention, Environmental Protection Agency, East-West Council of Governments and the World Health Organization were used for additional content.

This report is produced by:

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Released June 2017
MESSAGE FROM THE DIRECTOR OF HEALTH

The City of St. Louis Department of Health’s Bureau of Environmental Health Services (EHS) strives to assure a healthy community through quality public health services and partnerships by providing continuous protection, prevention, and promotion for the public’s health. EHS is organized into six sections: Food & Beverage Control, Animal Care & Control, Community Sanitation, Air Pollution Control, Vector Control, and Emergency Preparedness.

This report looks at the regulated environmental health issues in the City of St. Louis. These threats to public health must be monitored to assure our citizens of a healthy environment. This is achieved by caring, qualified, culturally-competent Department of Health (DOH) employees who are responsive and proactive to community needs. We work closely with the Citizens’ Service Bureau (CSB) to address the public’s concerns about environmental risks to animal and human health.

Melba R. Moore, MS, CPHA
Acting Director/Commissioner of Health
This is a City of St. Louis Ward Map to use as a reference for the various maps throughout this report.
**Food and Beverage Control**

**Overview**
Ensuring food establishments store, prepare, cook and serve food in a safe and sanitary manner is imperative to protecting the public from foodborne germs and illnesses. Approximately 1 out of 6 Americans become ill after ingesting food contaminated with germs. Food safety continues to be a challenge due to continuous changes in food production, increase in imported food, emergence of antibiotic resistant bacteria, and changes in the environment. Our food takes many steps to get from where it is produced to where it is served or eaten and contamination can happen at any step during the process. The Centers for Disease Control and Prevention (CDC) estimates that while *E. coli* infections have decreased by about 50% since 1997, *Salmonella* infection has not declined in 15 years. Both *E. coli* and *Salmonella* are two common causes of foodborne illness. Federal, State and Local regulations are in place to keep the public safe. Failure to follow regulations can result in fines, legal action, or even worse, foodborne illness and increases in medical costs.

**What We Do**
The Food & Beverage Control section is responsible for verifying that all food establishments follow well-recognized procedures to provide safe and wholesome food to the public. The DOH adopted and enforces the 2009 Food & Drug Administration (FDA) Food Code. This includes all operations that provide food to the general public, such as restaurants, taverns, carry-outs, grocery stores, caterers, and child care centers. Both permanent and temporary operations are regulated.

Food inspectors routinely inspect all food establishments. The frequency of regular inspections depends on the complexity of the operation. The number of inspections is determined by the risk rating of a facility. Risk ratings are calculated by responses to 10 questions. Questions involve whether the facility serves potentially hazardous foods (PHFs), offers a buffet, cools and reheats PHFs, and whether a critical population is served (children or elderly). A facility can be high, medium or low risk. For example, a gas station that sells pre-packaged food would be inspected less often than a restaurant serving a complex menu of easily perishable items. High risk facilities are inspected every 120 days (4 months), medium risk every 180 days (6 months) and low risk annually (12 months).

Additional inspections are done when a permanent food establishment opens up, or when complaints are reported to the Citizens’ Service Bureau (CSB). If problems are found, follow-up inspections are done to ensure compliance with regulations.

Whenever a temporary operation is set up, such as a food stand at a public event, food inspectors verify compliance before food is allowed to be served.

During an inspection, problems are identified and reported, and the food establishment is given a list of problems to be addressed. Some problems can be fixed before the inspector leaves the establishment. Others take more time, and the inspector returns to verify the problems have been resolved. This results in a second inspection report, which generally finds that problems have been resolved. If not, then subsequent inspections will occur until all problems are resolved. If the food establishment is unable to resolve problems, then various fines and sanctions can be imposed. In extreme cases, food operations may be shut down until problems are resolved.
**Accomplishments**

In 2016, Food & Beverage control inspectors responded to 460 complaints. The number of complaints has risen (32%) in the past five years. Some of this increase is due to the increase in foodborne illness complaints.

![Number of Complaints Reported (2010-2016)](chart)

Complaints for Food & Beverage Control were separated into 6 Categories:

1. Food Establishment Problem
2. Problem with Food
3. Foodborne Illness
4. Illegal Establishment
5. Ill Food Worker or a Food worker without proper Hepatitis A vaccination
6. Pets and Pests (including birds, pets in restaurant, rats, mice and insects)

49% of the complaints received were because of a Food Establishment Problem. Problems generally had to do with unsanitary conditions in the facility.

During 2016, only 17% of complaints to Food & Beverage were confirmed. 48% of complaints received were closed as unable to confirm a violation. Food & Beverage complaints are challenging to confirm because they are time sensitive. Once an inspector responds to the location, the food problem or establishment condition in question may have been corrected.
Food and Beverage complaints are spread out throughout the city; however, in 2016, Wards 7, 15 and 20 received the most complaints. The central corridor of the city, including ward 7, has the wards with the most food facilities. This area includes the Central West End, a portion of the Delmar Loop, and Downtown St. Louis City.
In 2016, Food & Beverage Control conducted 7,203 inspections, issued 284 permits for new establishments, and renewed 2,058 permits for existing establishments. There were 3% fewer inspections in 2016, which can be attributed to a 3% reduction in food establishments from 2015. In 2011, internal policies updated the inspection frequency from a quarterly schedule to a risk-based (high/medium/low) frequency. Additionally, in 2012, the food inspectors adopted new technology to track complaints, inspections, permits, and billing details.

Grades

Based on City Food Code, Ordinance #68597, a point system is used for grading establishments, whereby points are deducted for each violation found. Violations are ranked as critical or non-critical. Critical violations imply a more severe public health consequence. Critical violations include violations involving potentially hazardous foods, time and temperature requirements, good employee hygienic practices, and lack of adequate handwashing facilities.

A score of 100 is given when there are no violations found during the inspection. Scores are summarized into a general health grade for each inspection.

- Grade A is for scores 85-100
- Grade B is for scores 71-85
- Grade C is for scores under 71

Critical violations generally accrue a higher number of points. When three or more critical violations occur during an inspection, the Grade is dropped to “B” or “C”. Operations that are given a “B” grade must improve within a relatively short time to avoid further sanctions. Often, downgraded establishments decide to suspend operations until they can regain their “A” rating. Operations with a “C” grade must improve immediately to avoid permanent closure. With “C” ratings, the DOH may insist operations be suspended until problems are resolved. Once ready to open, suspended operations must reapply for a new permit.

In 2016, out of the 7,203 inspections conducted, 73 inspections resulted in a lower grade (about 1% of inspections). In more meaningful terms, about 1 out of 100 inspections last year resulted in a lower grade. Compared with previous years, 2016 saw the highest ratio of
inspections resulting in a lower grade. Inspectors routinely give verbal advice and education through “teachable moments”, resulting in a small number of downgraded facilities.

<table>
<thead>
<tr>
<th>Year</th>
<th># Total Inspections</th>
<th># Inspections resulting in a lowered grade</th>
<th>% Inspections resulting in a lowered grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>12,585</td>
<td>61</td>
<td>0.5%</td>
</tr>
<tr>
<td>2010</td>
<td>10,532</td>
<td>24</td>
<td>0.2%</td>
</tr>
<tr>
<td>2011</td>
<td>9,819</td>
<td>37</td>
<td>0.4%</td>
</tr>
<tr>
<td>2012</td>
<td>9,860</td>
<td>27</td>
<td>0.3%</td>
</tr>
<tr>
<td>2013</td>
<td>8,163</td>
<td>33</td>
<td>0.4%</td>
</tr>
<tr>
<td>2014</td>
<td>8,371</td>
<td>57</td>
<td>0.7%</td>
</tr>
<tr>
<td>2015</td>
<td>7,414</td>
<td>62</td>
<td>0.8%</td>
</tr>
<tr>
<td>2016</td>
<td>7,203</td>
<td>73</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

Foodborne Illness

A safe food supply leads to longer and healthier lives, less burden on the healthcare system, and consumer confidence in the food safety system. Foodborne illness, also known as food poisoning, occurs when an individual becomes sick after consuming contaminated foods or beverages. Young children and the elderly are more susceptible to serious conditions and hospitalizations from infections originating from contaminated foods. Preventing foodborne illnesses is a challenge in the food industry. The Food & Beverage Control section of the DOH works hard to investigate complaints of food problems, foodborne illnesses, and illegal establishments. Food inspectors routinely check for safe-food handling certifications and will often observe the food preparation process. As part of normal procedure, each complaint is investigated: the complainants are interviewed for specific incident details and the establishments are inspected thoroughly. Inspectors did not confirm any links between reported illnesses and particular food items or the food establishments.
The Centers for Disease Control and Prevention reports as few as 2.9% of those who become sick with foodborne illness seek medical care and most do not report their illness.

Foodborne illness complaints can be reported through the Citizen’s Service Bureau (CSB) via phone, online submission, or direct tweet to CSB (@stlcsb). Residents and visitors can also report foodborne illness through the DOH website; however, new media and information channels, such as social media and search engines, are promising sources of data for improving disease surveillance and reporting.

In 2015, the City of St. Louis Department of Health adopted new surveillance technology aimed at detecting and responding to suspected cases of foodborne illness in the community through the use of Twitter. Called “Food Safety STL,” the surveillance tool captures tweets that use keywords related to foodborne illness located within a 50-mile radius from the center of the City of St. Louis. These captured tweets prompt a response link from the DOH’s Food Safety STL Twitter account (@FoodSafetySTL) to invite the Twitter user to provide further information on reporting. After a report has been submitted, the individual will receive either a follow-up reply tweet and/or email providing him/her with a case number. Complaints that fall outside of this jurisdiction get appropriately referred to the corresponding local health department and the state health department.
The Food Safety STL initiative utilized the expertise from the City of St. Louis Department of Health, Washington University in St. Louis, HealthMap at Boston Children’s Hospital, and the Chicago Department of Public Health to improve foodborne illness surveillance and reporting by identifying and responding to foodborne illness tweets on Twitter. This project hoped to increase the number of foodborne illness complaints. In addition, staff hoped to see an increase in the number of foodborne illness complaints where a violation was noted.

Between October, 2015 and May, 2016, the Food Safety STL Dashboard received 442 tweets, 193 of which received a reply. Out of the 193 that received a reply, only 13 foodborne illness reports were made and only 5 were within the City of St. Louis jurisdiction and all 5 received an inspection. 2 of these inspections resulted in no violations, 1 had critical and non-critical violations and 2 had non-critical violations only. In 2015, there were 37 complaints from the public for foodborne illness. In 2016, 62 complaints for foodborne illness were received. This is the highest number of foodborne illness complaints received within the last 7 years.

The Food Safety STL Dashboard encouraged interaction with residents on foodborne illness issues and increased the perceived transparency and trust of the City of St. Louis Department of Health. Residents and visitors were also educated on the foodborne illness reporting process.
Overview
Sanitation is a cornerstone of public health. Lack of sanitation can cause transmission of bacteria, viruses, and parasites to humans and the contamination of water, soil, and food can accelerate the spread of diseases. Sanitation in a community setting refers to the means of promoting health through enforcement of hygiene practices, wastewater disposal, and hazardous waste removal. Decreases in infectious and communicable illness can be partially attributed to community sanitation. Today, although community sanitation has improved by leaps and bounds, certain conditions and chronic diseases such as asthma, cancer, and vector-borne illnesses are caused or exacerbated by poor sanitation. Emerging and re-emerging infectious diseases can also be transmitted because of poor sanitation. Adequate sanitation, good hygiene and property maintenance, and water supply are essential for public health, urban growth, and economic development.

What We Do
The Community Sanitation section strives to ensure the residents of the City of St. Louis have a safe and sanitary environment. The section protects public health by responding to citizen complaints. Complaint types cover interior and exterior issues pertaining to pests, refuse accumulation, access to heat and running water, hazardous waste, smoking in prohibited places and odors. Community Sanitation also enforces codes in the following areas: inspecting for general sanitation, child care facilities, lodging facilities, recreational water facilities, and tattoo and massage facilities.

The Community Sanitation section enforces certain state laws and local ordinances. The Environmental Health Officers (EHOs) have backgrounds in the sciences including chemistry, physics, biology, microbiology, environmental health, and public health. Inspections are conducted routinely in the following areas:

- Community Events
- Child Care Facilities
- Lodging Establishments
- Recreational Water Facilities

Community Sanitation works closely with the Citizens’ Service Bureau and other City departments (Building Division, Water Division, Forestry Division, Refuse Division, Land Reutilization Authority) to investigate and mitigate public health threats. The EHOs respond to complaints received through the Citizens’ Service Bureau, a call center that funnels citizen complaints to the appropriate agency.

Investigations are conducted for housing/neighborhood sanitation, chemical hazards, sanitation practices, and other immediate threats to public health. These complaints are investigated for violations of local ordinances. As a rule, inspectors also check neighboring properties for exterior violations. Failure to comply with local sanitation regulations can result in administrative and/or legal action.

Accomplishments
In 2016, the Community Sanitation section conducted 3,916 inspections. This is a 23% decrease from 2015. The majority of inspections (76%) were conducted for compliance with general sanitation regulations, received from citizen complaint. The number of general
sanitation inspections increased between 2012 and 2015, due to implementation of quality improvement processes within the DOH. However, due to the implemented integrated pest management program (discussed in the vector control section), approximately 1109 complaint inspections usually conducted by Community Sanitation were investigated by Vector Control. If these complaints were first investigated by Community Sanitation, the section would have seen the 4th consecutive year of increased inspections.

<table>
<thead>
<tr>
<th>Number of Inspections by Establishment Type</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massage/Tattoo Parlor</td>
<td>7</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Fumigation</td>
<td>6</td>
<td>15</td>
<td>20</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>Lodging</td>
<td>65</td>
<td>82</td>
<td>98</td>
<td>119</td>
<td>178</td>
</tr>
<tr>
<td>Recreational Water</td>
<td>322</td>
<td>434</td>
<td>337</td>
<td>404</td>
<td>415</td>
</tr>
<tr>
<td>Child Care</td>
<td>359</td>
<td>334</td>
<td>349</td>
<td>336</td>
<td>348</td>
</tr>
<tr>
<td>General Sanitation</td>
<td>1,368</td>
<td>2,879</td>
<td>3,722</td>
<td>3,958</td>
<td>2,962</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,127</strong></td>
<td><strong>3,750</strong></td>
<td><strong>4,534</strong></td>
<td><strong>4,834</strong></td>
<td><strong>3,916</strong></td>
</tr>
</tbody>
</table>

**General Sanitation**

In 2016, EHOs addressed 1,623 complaints from the Citizens' Service Bureau (CSB). General Sanitation complaints made up 76% of Community Sanitation inspections. Following second was recreational water inspections, third childcare, and fourth lodging.

Sanitation-related complaints are categorized into multiple different types. Refuse and Unsanitary Condition complaints are generally the number one complaint type. 33% of violations observed by EHOs was for refuse, including refuse capable of feeding or harboring rats. Second and third were pest infestations. 210 complaints were received about bed bugs. But only 15% of Community Sanitation violations included those for bed bugs or roaches and 14% for mice or rats. Smoking ban complaints made the top ten this year, at 71 total complaints, only 17% were confirmed. Overall, only 23% of all complaints were confirmed.
While investigating complaints, inspectors are trained to do a complete and thorough inspection to address other sanitation violations within either the same dwelling or adjacent properties. The graph below shows the consistency in the trend of finding multiple violations per confirmed complaint over time. In 2015, EHOs completed public health laws training on over thirty-five local ordinance sections and codes. Coupled with the introduction of the Administration Fine Ordinance, the training allowed EHOs to establish thresholds for identification of a violation and subsequent enforcement actions. Quality improvement tools such as flowcharts, cause-and-effect diagrams, trend graphs, and check sheets were used to

**Top 10 Complaints Addressed by Community Sanitation (2016)**

- Refuse and Unsanitary Conditions: 276 Confirmed, 128 Not Confirmed
- Bed Bugs: 173 Confirmed, 37 Not Confirmed
- Mold: 164 Confirmed, 47 Not Confirmed
- Mice Infestation: 120 Confirmed, 47 Not Confirmed
- Rat Infestation: 108 Confirmed, 24 Not Confirmed
- Wastewater: 88 Confirmed, 37 Not Confirmed
- Roach Infestation: 90 Confirmed, 31 Not Confirmed
- Fumes/Smells/Odors: 59 Confirmed, 9 Not Confirmed
- No water supply: 59 Confirmed, 9 Not Confirmed
- Smoking Ban: 59 Confirmed, 12 Not Confirmed

Mold was the 3rd most common complaint in 2016. There are no local regulations for mold abatement.

**Outcome of Community Sanitation Complaints (2016)**

- Confirmed: 23%
- Not Confirmed: 77%

**Top 5 Violation Types**

<table>
<thead>
<tr>
<th>Violation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refuse Accumulation</td>
<td>33%</td>
</tr>
<tr>
<td>Vermin Infestation</td>
<td>15%</td>
</tr>
<tr>
<td>Rodent Infestation</td>
<td>14%</td>
</tr>
<tr>
<td>Wastewater</td>
<td>7%</td>
</tr>
<tr>
<td>No Water Supply</td>
<td>7%</td>
</tr>
</tbody>
</table>
identify areas to reduce complaints, but increased the number of violations observed during an investigation. This trend remained in 2016.

Integrated Pest Management Program
According to Healthy People 2020, exposure to the presence of trash can become a physical and social determinant of health, impacting a wide range of health, functioning, and quality of life outcomes. Accumulation of rubbish and illegal dumping can result in the spread of disease, vermin and rodent infestations, fire or chemical hazards, and nuisances. Furthermore, sustained trash accumulation in certain areas signals urban disorder and social apathy and distress which in-turn exacerbate insanitary conditions. The atmosphere created in these areas make enforcement a challenge. Proper containment and disposal of refuse by citizens is essential for improving public health in the City of St. Louis community.

Through the Integrated Pest Management program (IPM), in 2016, Vector Control investigated 872 complaints pertaining to refuse accumulation and commercial dumpster problems. Only 34% of these complaints were referred to Community Sanitation for investigation. The majority of complaints were closed as no problem found. Vector Control, through IPM, also refers observed sanitation violations from traditional vector complaint types (rats, mosquitoes) to Community Sanitation. In turn, Community Sanitation received 341 complaints about refuse accumulation and commercial dumpster problems from Vector Control. Out of the 341 raw garbage and commercial dumpster complaints received from Vector Control, only 36% were confirmed.
The number of observed refuse violations have decreased since 2014. This is likely due to public health laws training (for EHOs), increased collaboration with partners, implementation of the Administration Citation Fine (ACF) Ordinance, increased public education opportunities and education given to the community through the IPM program. Refuse complaints were located mostly in the north central and south eastern portions of the City.
Refuse violations mimic the same trend with confirmations observed in the north central and southeast areas of the City.
**Mold**

The third most common complaint type in 2016 was from citizens who found what appeared to be mold in their residences. The root cause of a mold problem can sometimes be traced to a leaking pipe or plumbing fixture, which is considered a nuisance under general sanitation regulations. Increases in mold complaints are seen after peaks in monthly precipitation (August). While there are over 100,000 types of mold, only a very small amount of them pose a risk to human health. Most citizens call in about “Black Mold”. Due to the pervasive nature of mold spores, the City of St. Louis does not have any local ordinances governing mold levels. Likewise, the Environmental Protection Agency (EPA) does not have any standards or Threshold Limit Values for airborne mold contaminants. The added burden of identifying mold spores is costly and intensive, so the DOH focuses on providing citizens with education on how to control indoor moisture factors to limit mold growth. The potential health effects caused by mold are broad and can vary depending on the type of mold present and your individual sensitivities. Eliminating as many moisture sources as possible will dramatically decrease mold growth.

![Mold Complaints and Total Monthly Precipitation (2016)](image)

When mold complaints are received, the citizen is educated about mold and given advice on how to clean up possible mold, based on EPA guidelines. 74% of mold complaints received were closed as verbal advice given. Citizens are also questioned about the root cause of the mold problem which can sometimes be traced to a leaking pipe or plumbing fixture, which is considered a nuisance under general sanitation regulations. In 2016, EHOs went out on 206 complaints for wastewater, water leaks, defective drains/sewers, and leaking pipes and confirmed 29% of these complaints.
Priority Complaint Types: Insufficient Heat and No Water

Access to running water and sufficient heat have a profound influence on human health. At a very basic level, a minimum amount of water is required for consumption on a daily basis for survival and therefore access to some form of water is essential for life. Clean and safe drinking water is crucial to sustaining human life and without it water borne illness can be a serious problem. The effects of extreme weather can cause a significant impact on health also. Acute exposure can lead to hypothermia, while exposure over time can exacerbate chronic health conditions. Thermoregulatory-impaired individuals and vulnerable populations are at increased risk of morbidity and mortality.

Community Sanitation receives complaints regarding running water throughout the year. However, only between the cold-weather months of October through April does Community Sanitation receives complaints from citizens with insufficient heat. Commonly, city residents who have insufficient heat are found to have an inadequate or inoperable furnace, overdue gas bills, or lack insulated accommodations. Citizens without water can be experiencing the effects of extreme cold weather with broken water pipes. Another hazard often observed is the inappropriate use of stoves and space heaters as a primary source of heat. EHOs respond to these complaints by assessing temperatures and access to running water throughout all habitable rooms, enforcing local ordinances, giving verbal advice, and if needed, referring the complainant to utility assistance agencies. While at the location, EHOs also give verbal advice about the proper use of alternative heating devices.

In 2016, EHOs responded to 54 complaints for insufficient heat and 107 complaints about no water supply. The months of January and February saw the coldest average temperatures; these months also saw the majority of insufficient heat complaints.
EHOS immediately investigated the circumstances of each priority complaint and confirmed 40% of insufficient heat complaints and 69% of no water complaints.
The majority of insufficient heat complaints came from the north and southeast parts of the City.
**Bed Bugs**

Bed bugs are wingless, reddish brown hitchhiking insects. They may migrate from one hotel or apartment to another through holes in walls, water pipes, or gutters. Given their small size and hidden habitat, bed bugs are hard to find. Adult bed bugs are approximately 5 mm in length, about the size of an apple seed. They are not known at this time to spread disease. However, bed bugs require blood meals to survive. They feed on human blood. They also feed on other warm-blooded mammals and birds. Common thought is that bed bugs come out to feed before dawn and hide during the day; however, bed bugs sense their host and will feed whenever the meal is available. Emerging pest control barriers bed bug control includes insecticide resistance. Epidemics of bedbugs have been reported in most big cities on all continents of the world.

The City of St. Louis Department of Health (DOH) responds to complaints about bed bugs by performing inspections, providing prevention and control education, and enforcing code violations. EHOs are trained in identifying the pest and recognizing signs of an infestation. If a complaint is confirmed, EHOs monitor each case until a resolution or enforcement outcome is reached. Challenges to confirming bed bug infestations included lack of knowledge and complainants’ confusion with exposure to biological organisms or chemical agents that cause similar irritation. Likewise, a long-term challenge that residential areas face with eliminating bed bug infestations circles back to knowledge of preventing infestations. EHOs advise residents to mark infested belongings that will get thrown out to prevent another person from picking up infested furniture.

In 2016, Community Sanitation responded to 205 complaints about bed bugs, but only confirmed 26% (53) of those complaints. Bed bug complaints peak somewhat during the summer months and the majority of bed bug complaints are seen in residential homes (91%). This is likely due to increased traveling, vacationing, common socializing, and moving from one residence to another. EHOs provide advice to the public on identification of bed bugs, prevention of infestation, and elimination of harborage conditions.
Looking at the distribution of bed bug complaints in the City of St. Louis over the last three years, an increase in complaints has been observed. Prior to mid-2012, complaint and inspection outcomes were documented on paper, but more recent electronic methods have improved tracking and analysis of bed bug surveillance.
Looking at the distribution of bed bug complaints in the City of St. Louis in 2016, the complaints were distributed across the City, with the exception to the southwest portion.
In 2016, infestations were followed the same trend as complaints, distributed across the City, with the exception to the southwest portion.
**Administrative Fine Ordinance #69821**

Board Bill 94 was introduced and approved in 2014 for an Administrative Citation Fine (ACF) Ordinance #69821. This ordinance pertains to enforcement of code violations relating to health and safety, effective January 24, 2015, and allows the time and resources spent by the DOH to hold people accountable. Also as an intended result, the health of the community will improve because of the escalation of consequences. Generally, an EHO utilizes the ACF process for most non-critical violations. For the priority violation types (no water supply, insufficient heat, hazardous waste), the municipal court system would be used. In instances where the at-risk population are affected (children, elderly), the municipal court system may be used for non-critical violations. The Community Sanitation section prepared and began establishment of a systematic workflow for enforcing this ordinance in the latter part of 2014.

This ordinance gives the legal authority to levy an administrative citation fine, depending on the code violation. The benefits of ACFs include:

- Increased and timelier compliance with escalating consequences
- Greater likelihood for health violations’ abatement
- Heightened awareness regarding code enforcement

Since implemented, EHOs referred 69% fewer cases (407) to court in 2016, compared to 2014. Instead, 111 ACFs were issued through the new process.
Noise

The major sources of chronic unwanted noise in the United States include road, rail, and air transportation. Adverse health effects are possible with enjoyable sources—loud sporting events, firearms, and music. Exposure to noise constitutes a health risk. There is sufficient scientific evidence that noise exposure can induce hearing impairment, hypertension and ischemic heart disease, annoyance, sleep disturbance, and decreased school performance. Noise activates the body’s sympathetic nervous system, raising blood pressure and heart rate. Although inhabitants of noisy environments may be able to tune out noise, that habituation does not appear to extend to the cardiovascular system during nighttime exposures. Repeated arousals have been reported to prevent blood pressure from dropping during sleep the way it’s supposed to. Disrupted sleep is also associated with increased levels of lipids and the stress hormone cortisol, potentially increasing the risk of disorders such as depression and atherosclerosis.

The EPA’s limit for protecting against all health effects of noise is a 24-hour average 55 dBA, weighted with a penalty for nighttime exposures to account for the special impact of disrupted sleep. According to the Ordinance #68130, permissible noise levels are set depending on zoning. Noise levels in zone A (single-family residential) are more stringent than those in zone J (industrial district).

In 2016, Community Sanitation received 21 noise complaints, more than the last 3 years combined. This increase can be attributed to stories in the news media about noise, generators in particular, and the number of current construction projects, building and road related. Noise complaints peaked in September but the majority were received from July and October.
**Environmental Child Care**

Group child care homes, child care centers, family child care homes, and license-exempt child care facilities are inspected annually under state regulations. In 2016, there were 348 child care facilities that were inspected by EHOs at the request of the Missouri Department of Health and Senior Services Section for Child Care Regulation Division of Regulation and Licensure. This was a 3.5% increase in inspections, compared to 2015.

![Number of childcare inspections (2010-2016)](image)

**Lodging**

Lodging establishments, or hotels and motels, are inspected annually under state regulations. Any operating facility that is a building or group of buildings where five or more guest rooms are provided, which is held out to the public for hire and advertising as such, is considered a lodging establishment and must have a license. In 2016, 48 hotels were inspected for the 2015-2016 licensing year. EHOs conducted 178 inspections and re-inspections at these facilities, a 49.5% increase in inspections than 2015. This increase can be directly attributed to increased training, understanding of lodging regulations and collaboration with State officials.

![Number of lodging inspections (2010-2016)](image)
Recreational Water
Non-residential swimming pools, spas, wading pools, and splash pads are inspected monthly under local recreational water facility ordinances. Swimming pools are treasure troves for bacteria, mainly due to vomit and fecal contamination. In order to protect the health of the public from these threats, EHOs conduct their inspection using a safety checklist and a water chemistry kit. Free chlorine, pH, water clarity, and total coliform counts are assessed in every pool. There were 105 pools and spas under regulation in the City of St. Louis in 2016. Outdoor pools are closed seasonally (winter), but re-open after the Memorial Day Holiday. In 2016, 415 pool inspections took place, very similar to inspection counts from 2015. The increase is partially due to an additional 38 inspections done for Virginia Graeme Baker compliance through a contract with the Consumer Product Safety Commission. This contract was completed on-time, with all paperwork submitted by the deadline.

![Number of recreational water inspections (2009-2016)](image-url)
Overview
Air pollution is associated with a variety of negative health conditions. According to the World Health Organization, high levels of air pollution are associated with cancers of the lung, urinary tract, and bladder. Other conditions associated with high levels of air pollution are stroke, heart disease, asthma, chronic obstructive pulmonary disease, and acute lower respiratory infection. Research has connected air pollution to negative pregnancy outcomes as well, particularly premature birth and low birth weight.

In the past 25 years, air pollution has steadily decreased in the City of St. Louis. Air quality in the St. Louis area has improved due in large part to the implementation of the following control programs: Passage of the Clean Air Act, more restrictive emission standards for cars, stricter standards for diesel engines, and increased production of low-sulfur diesel fuels.

In 2011, funding for the local air pollution program ended, and the Missouri Department of Natural Resources absorbed the responsibility of enforcing the United States Clean Air Act. This consisted of permitting and monitoring sources of air pollution in the state. Following these drastic cuts, the City of St. Louis Department of Health Air Pollution Control (APC) section narrowed its focus to reviewing asbestos abatement and authorizing demolition permits.

What We Do
The Air Pollution Control (APC) section permits, inspects, and enforces local regulations for asbestos abatement and demolition projects.

Many structures in the City of St. Louis contain asbestos, a naturally occurring mineral fiber used in construction between the 1930s and 1970s. Having asbestos in your home does not pose a hazard unless there is damage or a demolition is planned.

However, damage or unsafe demolition can cause asbestos particles to become airborne. Research shows that fibers stay in the air for long periods and can cause significant health problems. The three major health risks associated with asbestos exposure are: asbestosis, mesothelioma, and lung cancer. Research studies have also linked inhalation of asbestos fibers to several other types of cancer including: laryngeal, pharyngeal, stomach, and colorectal cancers. There is currently no known safe level of asbestos exposure, and those most at risk are construction workers and demolition contractors that work in the construction industry.

Demolition permits and asbestos notifications improve health because they allow APC to monitor situations where asbestos is a threat to public health. APC can then ensure demolitions and repairs are performed safely in a way that will not harm citizens.
Accomplishments
In 2016, Air Pollution Control investigated 16 complaints from CSB. This was an increase from 2015; however, the quantity of complaints received per year has remained relatively steady since the migration of responsibilities to the state. Most often, air pollution complaints received were to investigate possible asbestos exposure.

Demolitions
In 2016, 332 demolition permits were approved for construction projects. This was a 3% increase from 2015.
APC demolitions also occur more through the warmer months, as predicted. Most demolitions were approved between March and August.

Only 36% of the demolition permit approvals involved asbestos and the majority of permits (90%) were approved for residential structures.
Demolition projects were located predominantly in the northern region of the City.
Asbestos
In 2016, approximately 171 asbestos notifications were approved by APC. These projects were located predominantly in the northern regions of the City.
Overview
Human health is distinctly linked to animal health and the surrounding environment. Due to the large number of communicable diseases (zoonoses) that can be transmitted from animals to humans, the World Health Organization recognizes veterinary medicine as a contributor to the maintenance and promotion of public health. Local public health agencies often lead their community’s animal control and health initiatives by providing shelter and veterinary services for animals in need.

What We Do
The mission of Animal Care and Control (ACC) is to ensure the health and safety of City of St. Louis residents and companion animals through the enforcement of pet-related ordinances, as well as the promotion of pet safety and responsible pet ownership. Animal Care and Control is dedicated to providing an array of animal control, health and pet-owner services to promote responsible pet ownership and humane treatment of animals among the citizens of St. Louis.

Animal Care & Control Officers (ACCOs) investigate animal abuse and neglect, investigate and rescue abandoned animals, investigate animals attacking people and other animals, rescue injured animals and animals in distress, investigate ordinance violations (such as: leash law, feces removal, pet limit, prohibited pets, tethering, and welfare/care violations), educate the public on ordinances and responsible pet ownership, and assist the Police Department, Fire Department, Sheriff’s Department, and EMS with emergency situations.

Accomplishments
In 2016, ACC received and addressed 4014 complaints, the most complaints received in at least 6 years. The most common complaint (31%) was for stray animals.

Other programmatic accomplishments in the past five years include:

- Increased our partnerships with animal welfare, service, and control agencies
- Increased grant funding to our partners
- Implemented an Administrative Citation Fine process
- Issued a request for proposals to privatize the operation of the animal shelter


**Enforcement of Local Ordinances**

In 2016, CSB submitted 760 complaints to ACC for enforcement of local ordinances. These ordinances protect and promote the general welfare of the citizens and animals living in the city with strong emphasis placed on responsible animal ownership. Upon investigation, ACCOs issued 39 court summons in 2016. Use of Administrative Citation Fines and limited staffing possibly contributed to the reduction in court referrals.
The main animal ordinances cover registration laws, vaccination laws, leash requirements, feces removal, tethering laws, pet limits, and prohibited pets. The majority of these complaints came from citizens in Wards 27, 2 and 20. The majority of confirmed complaints were observed were in the north, and southeast parts of the City.
ACC is the only section that operates 24 hours a day, 7 days a week. ACCOs respond to emergency calls from police dispatch whenever necessary. In 2015, the section made improvements in data management to capture ACC’s workload after hours; these indicators were not previously tracked or quantified. After hours complaints are received throughout the year.

Animal Bite Investigations
Animal bites pose a major public health concern because of the potential to transmit zoonotic disease and cause serious injury. The size and health of both the animal and the person dictates the health impact of each bite incident. Children are the most common victims of animal bites and are more likely to have serious injuries. In addition, animal bites have the potential for transmitting rabies, an almost-always fatal viral infection that attacks the nervous system and brain. For these reasons, animal bites are reportable in the State of Missouri. ACC investigates every bite report and checks rabies vaccination records, tests for rabies, and/or issues quarantine orders to determine whether the animal is free from rabies. Dog are the usual culprits responsible for animal bites in the City of St. Louis. Dog bites account for 96% of the confirmed bites in 2016. Dog bites accounted for 90% of all bites in 2015. ACCOs also investigated bites from cats and bats.

<table>
<thead>
<tr>
<th>Bites by Animal</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dog</td>
<td>180</td>
</tr>
<tr>
<td>Cat</td>
<td>7</td>
</tr>
<tr>
<td>Bat</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>188</strong></td>
</tr>
</tbody>
</table>
Animal bites in 2016 showed a small seasonal trend, as predicted. Most bites occurred during warmer months, between March and September.

Basic safety tips to prevent a dog bite:
- Remain motionless when being approached
- Do not panic, make loud noises or run
- Avoid direct eye contact, stand with your side facing the dog
- Wait for the dog to pass and remember to be calm

The most routine complaint type for investigation is for ordinance enforcement. Examples include leash law, prohibited animals and residences exceeding the maximum allowable number of pets. In 2016, ACC saw an increase for the number of stray animal complaints received. Other complaint types include animal abuse, complaints to check the welfare of an
animal, a report of an injured or sick animal or to surrender a pet. ACC received 813 complaints for animal welfare check, the second highest complaint type received in 2016.

### ACC Service Requests by Type, 2016

![Graph showing service requests by type for 2016 with data points for 2013, 2014, 2015, and 2016.]

**Animal Care and Control Shelter**

In 2009, the aging ACC shelter facility located on Gasconade Street was identified by the Office of the Mayor and the Department of Health as being obsolete and unable to fully meet the community’s needs in providing a safe, healthy, and humane environment for shelter animals. Steps to improve enforcement and sheltering operations were identified, including closing the Gasconade Street facility and opening the ACC shelter on Clark Avenue. Additionally, partnerships with other animal welfare organizations were established to support the goals of:

- Protect the public.
- Guarantee the humane treatment of companion animals.
- Reduce companion animal overpopulation.
- End companion animal abuse.
In 2016, the live release rate for dogs was 68.9%, which was a 12.2% increase from 2015. In 2016, the live release rate for cats was 77.9%, which was very similar to the release rate for cats in 2015.

In 2016, the euthanasia rate for dogs was 31.5%, which was an 18% decrease from 2015. In 2016, the euthanasia rate for cats was 22.7%, similar to the euthanasia rate for cats in 2015.
**Vector Control**

**Vector Control**

Vectors, or any agents that transmit an infection pathogen to another living organism, can easily transmit disease through animal-to-animal or animal-to-human contact. Mosquitoes are the most commonly known vector, transmitting diseases like West Nile virus, malaria, chikungunya, dengue fever, and more. Some other vectors are flies, ticks and fleas. The diseases caused by vectors make up over 17% of all infectious diseases seen around the world.

There has been an increase in vector-borne diseases in places they were not before due to many factors such as globalization, climate change and rapid urbanization. A key element in prevention of vector-borne diseases, according to World Health Organization, is behavior change. This includes providing education and awareness on protecting oneself from contact with the vectors themselves. These vector-borne diseases can also be controlled or eliminated through preventative measures such as chemical control and removal of harborage conditions.

**What We Do**

The Vector Control section helps to decrease the number of mosquitoes and rats, both of which spread disease and are considered a nuisance. Pest Control Workers (PCWs) respond to citizen complaints of these disease vectors. PCWs are state-licensed Category 8 public health pest control operators, and are well trained on identifying signs of vector infestations.

**Accomplishments**

According to the Centers for Disease Control and Prevention (CDC), Integrated Pest management (IPM) programs reduce the risk from the overuse or inappropriate use of hazardous chemical pest-control products. The three components to IPM are food, water and harborage. Eliminating all three are a requirement of a successful IPM system. Community Sanitation and Vector Control began jointly addressing sanitation and vector complaints to reduce the number of reoccurring problems. Pest Control Workers were trained on local health codes and to conduct initial inspections on complaints for external refuse accumulation and illegal/improper tire storage. If they found rat burrows or mosquito breeding sites, they immediately started treatment and referred the case to an Environmental Health Officer for enforcement. This allowed both treatment of the immediate problem and enforcement actions towards preventing future environmental public health problems.

IPM focuses on pest prevention, pest reduction and the elimination of conditions that lead to pest infestations. Together, both programs were able to focus on the environmental conditions conducive to pests in certain neighborhoods. Both programs conducted inspections and monitored poor environmental conditions but were also able to identify and treat for neighborhood pests. One key component to the IPM procedure was the identification of raw garbage violations.

In 2016, Vector Control addressed 2,417 requests and complaints for mosquito fogging treatments, mosquito breeding sites, exterior rat infestations and IPM exterior sanitation issues. This was an almost 70% increase in complaints dispatched to Vector Control when compared to 2015.
Mosquito Fogging and Breeding
Mosquitoes can carry diseases which threaten the public health, including West Nile Virus, Zika Virus and several forms of encephalitis. In 2016, the United States had almost 900 cases of non-neuroinvasive West Nile Virus Disease (confirmed and probable). In 2016, the City of St. Louis began trapping mosquitoes for speciation. Of the Aedes mosquitoes identified, 71% of them were typed as Aedes albopictus. In an effort to protect public health, the DOH accepts fogging requests and complaints of mosquito breeding from citizens from May-September annually. However, updates to the current Integrated Pest Management Program will involve more in-depth surveillance for conditions conducive to mosquito breeding when fogging requests are received.

Licensed DOH vector control staff use Aqua-Reslin to spray for adult mosquitoes. The active ingredients in this product are permethrin and piperonyl butoxide. This ultra-low volume
aerosol causes a physical change in the anatomy of the mosquito, resulting in poor flight and feeding ability. As a result, mosquito biting rates decrease significantly. The chronic toxicity of the product was found through studies not to produce a risk until far outside the anticipated human daily consumption and was stated as not indicating a health risk to human beings. The mutagenicity testing resulted in no production of any mutagenic effects. This information was found on the product’s material safety data sheet. The product the DOH uses to combat mosquitoes has been found to not pose a health risk to humans. Fogging typically takes place after sunset, which minimizes the impact on butterflies, bees, and other pollinators.

The City of St. Louis parks are routinely treated in the summer months. Aside from that, the Citizens’ Service Bureau routes complaints and fogging requests to Vector Control. When the PCWs receive a fogging request for a city block, they review the request, assess the city block, and respond by treating the surrounding 2-block radius. In 2016, 98% of fogging requests were completed. The remainder of fogging requests (6%) were found to have no problem.

Vector Control staff handle complaints about potential mosquito breeding sites and will treat with adulticide if confirmed. While the number of complaints for reported mosquito breeding sites had been steadily decreasing from 2009 to 2012, an increase was seen in 2013 due to heightened awareness and concerns about the West Nile Virus epidemic that hit the United States in 2012. In 2015, concern about the Zika virus most likely caused the increase of breeding complaints, from 88 in 2015 to 108 in 2016. In 2016, only 11% (12 complaints) were confirmed and treated with larvicide. Another 15% were referred to Community Sanitation for enforcement of a potential health violation.
Between 2015-2016, mosquito complaints and fogging requests peaked between June and September. In 2016, complaints peaked in August.

Mosquitoes breed in numerous small pools of water that form following a rainfall. The larvae develop within a few days and escape from the aquatic habitat before it dries out. According to the CDC, it is difficult to predict when and where these temporary breeding sites will form and that larval control may be implemented through source reduction and chemical larviciding. Recommended forms of mosquito control primarily focus on source reduction and personal protective measures, with chemical larviciding and fogging to be used only if necessary.

In 2016, an increase in fogging requests and complaints for potential mosquito breeding sites were seen following an increase in monthly precipitation during the summer months.
Complaint-Driven Data vs. Investigation-Driven Data
Mosquito control efforts in the City of St. Louis are largely centered on complaint-driven data, or reports from citizens. This data source is crucial to identifying specific city areas where citizens are concerned and provides a starting point for DOH staff to investigate the public health concern. However, the majority of complaints are not confirmed due to inadequate burden of proof for a violation, lack of citizen education, or wrong address submission.

The outcome of a complaint results in investigation-driven data. DOH staff conduct inspections, document the outcome electronically, and take photographs of the property. If a violation exists, the inspector first notifies the owner, then assesses a fine or sends the owner to court. Investigation-driven data is important for identifying existing areas that pose a significant threat to public health. This type of data can be initiated through a complaint, or DOH staff can self-initiate investigations while performing routine duties.

Primary use of either complaint-driven or investigation-driven data can lead to underrepresentation of public health concerns and low percentage of confirmed outcomes. When examined together, complaint-driven data gives information on where most citizens are concerned while investigation-driven data shows identification, location, and severity of the public health problem. The limitation to investigation-driven data is that it is initiated in areas where complaints are made. If complaints are not generally made in a specific area, investigation-driven inspections will most likely not occur.
In 2016, complaint-driven data showed 281 complaints of potential mosquito breeding sites. Stagnant water accounted for 51% of complaints, while mosquito breeding accounted for 57% of complaints. Wards 9, 24 and 20 were the top three wards with potential breeding site complaints.

In 2016, investigation-driven data identified 194 potential breeding sites. Stagnant water accounted for 54% of the sites and illegal or improper tire storage accounted for 40% of the sites. The majority of sites were identified in Wards 2, 27, 1, 3 and 4 (all northern wards).

Together, the two types of data provide a meaningful picture when assessing the abundance of mosquito breeding areas and the need for education on source reduction. This can advise future mosquito control intervention programs to reduce the spread of mosquito-borne illnesses. This type of data can also provide a baseline for mosquito trapping and surveillance programs within the integrated pest management program.
Complaints of Potential Mosquito Breeding Sites in the City of St. Louis, 2016

<table>
<thead>
<tr>
<th>Complaint Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stagnant Water</td>
<td>142</td>
</tr>
<tr>
<td>Mosquito Breeding</td>
<td>107</td>
</tr>
<tr>
<td>Tires</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>281</strong></td>
</tr>
</tbody>
</table>

Legend:
- Stagnant Water Complaints
- Mosquito Breeding Complaints
- Tire Complaints
- Parks

Prepared by: City of St. Louis Department of Health Center for Health Information, Planning and Research (1/31/17)
Potential Mosquito Breeding Sites Identified in the City of St. Louis, 2016

- Stagnant Water: 104
- Mosquito Breeding: 13
- Tires: 77
- Total: 194

Legend:
- Mosquito Trapping Site
- Parks
- Count of Potential Breeding Sites:
  - 0-3
  - 4-7
  - 8-16
  - 17-22

Prepared by:
City of St. Louis Department of Health Center for Health Information, Planning and Research (1/31/17)
Zika Virus Disease
Zika is an emerging mosquito-borne virus causing disease. Zika virus was first discovered in 1947 in Uganda in a monkey with a mild fever. Nonhuman primates have shown the ability to become infected with the virus, but at this time there have been no reports of Zika virus disease in pets or other animal types or their involvement in the transmission of the Zika virus. Beginning in the summer of 2016, presumed local transmission began in Florida, and around November, 2016 in Texas. Most people infected with Zika virus will not show clear symptoms. When symptoms present they may last several days up to a week. Zika infection is confirmed through a blood or urine test and there is no treatment or vaccine.

Zika virus is primarily transmitted to humans through the bite of an infected mosquito from the Aedes species, mainly Aedes Aegypti and Aedes albopictus. The estimated range of Aedes albopictus does include the City of St. Louis. Sexual transmission of Zika virus is possible, but use of condoms reduces the chance of getting Zika. A pregnant woman can transmit Zika virus to her fetus during pregnancy. Zika virus can also be transmitted through blood transfusion, but there are no confirmed transfusion transmission cases in the United States. A person can transmit the virus even if they are not experiencing symptoms.

Zika virus is the first known mosquito-borne disease to cause birth defects. One severe defect is microcephaly, when congenital Zika infection leads to a smaller brain that may not be fully developed. Zika virus during pregnancy is shown to cause an increased chance for microcephaly defect. Some infants with congenital Zika infection will not develop microcephaly but may show slowed head growth with a delayed microcephaly. Microcephaly complications include developmental and intellectual delay or disability, hearing loss and vision problems. Problems could be lifelong depending on the severity of the microcephaly. Other complications could include miscarriage and stillbirth, both reported to women with laboratory evidence of Zika virus infection. Infection during the first trimester may pose the highest risk. In addition, Zika virus is associated with a recent increase in incidence of Guillain-Barré syndrome, a condition in which the body’s immune system attacks the peripheral nervous system.

As of April 26, 2017, there have been 5,264 Zika virus disease cases reported within the United States. 4,963 of the total number of cases are travel related. Of the 4,963 cases, 224
are locally acquired cases in Florida and Texas only and 77 cases were acquired through other routes (sexually transmitted, congenital infection, laboratory transmission). There have been 38 symptomatic travel-related cases in Missouri. The map below displays Zika cases reported in the United States and territories and the two areas with active Zika transmission (Miami-Dade County, Florida and Brownsville, Texas).

![Map of Zika cases](http://www.cdc.gov/zika/geo/united-states.html)

All persons traveling to areas with active Zika transmission should prevent mosquito bites and practice safe sex. Because Zika virus can be spread from a pregnant woman to her fetus along with the risk of birth defect, the Centers for Disease Control and Prevention (CDC) recommends pregnant women should consider delaying travel to areas with risk of Zika. Those traveling to an area with risk of Zika should consider abstaining from sexual activities while traveling or use condoms consistently and correctly. Women who are pregnant should do so for the duration of the pregnancy. Couples should take into consideration that most infections are asymptomatic when illness does occur. Pregnant women who experience any of the symptoms or have a partner who has symptoms consistent of Zika virus infection should talk to their doctor. Diagnostic testing may be necessary. As a precautionary measure, those that have traveled to areas with the Zika virus should continue to take steps to prevent mosquito bites even after they have returned from travel.

The City of St. Louis Department of Health (DOH) follows the current recommendations from the CDC and is working closely with the State of Missouri and health care providers to facilitate testing approval. The DOH is asking healthcare providers to be alert for Zika virus infection symptoms and to actively report cases. In efforts to protect the public, the DOH is preparing to expand the current mosquito control program by increasing education around “Fight the Bite” and fully implementing the integrated mosquito management program as we enter mosquito season. In an effort to fight mosquito bites, DOH is encouraging citizens to drain or treat standing water with larvicides, remove abandoned tires and submit mosquito breeding complaints and fogging requests.
**External Rat Infestation**

Rats can transmit a number of diseases which can be potentially fatal to man, such as Weil's disease. Rats also carry disease organisms such as *Salmonella* bacteria and other viruses. Rats can be the reservoir for pathogens that can then transmit via vectors like fleas. In urban areas rats readily find food from a variety of sources such as refuse from commercial kitchens and restaurants, discarded takeaway food in addition to scavenging in domestic refuse or in drains and sewers. Their feeding, foraging, and nesting behaviors are considered a nuisance in the City of St. Louis. It is easy for infestations to build up without noticing a rat. Signs of an infestation may include droppings, gnaw marks, runs, and smear marks produced by the continual rubbing of their fur against surfaces. In order to protect public health from this environmental threat, the DOH recommends removing any outdoor conditions that provide harborage or food sources.

The Vector Control section works to address exterior rat infestations based on complaints received from the Citizens’ Service Bureau. The PCWs investigate for signs of rat colonies, evaluate the environment for harborage conditions, and treat infested areas appropriately. The DOH uses a single-feeding anticoagulant with bromadiolone to treat rat infested areas. This is a USDA-approved rodenticide that kills Norway rats, warfarin-resistant Norway rats, and roof rats. Careful attention is given to the placement of bait, to prevent mammals, birds, dogs, cats, and other animals from accidental ingestion. For this reason, the bait is not placed openly above ground or applied directly to water sources.

The number of rat infestation complaints have increased 4.5% since 2015. Only about 13% are confirmed. Of the 87% not confirmed, 159 were referred to Community Sanitation through the IPM program. Referred complaints were for conditions conducive to rat infestations (refuse, improperly stored items, etc.).
In 2016, there were 764 complaints received for rats on the exterior. Rat complaints were observed more in the northern portion of the City but overall observed throughout.
EMERGENCY PREPAREDNESS

Overview
This report describes the Emergency Preparedness Program and its 2016 activities. Program partners with City of St. Louis local government agencies and departments, private and public sectors, faith-based groups, families and individuals to prepare City of St. Louis organizations and citizens to respond to and recover from emergency events that can affect the public’s health. Our activities are primarily funded by grants from the Missouri Department of Health and Senior Services.

Local focus with regional coordination
Emergencies occur at the local level, yet they know no jurisdictional boundaries.

Emergency Preparedness collaborates closely with neighboring public health agencies and the regional healthcare coalition to share best practices, expertise, coordination, and training opportunities.

Responding to large-scale events can require resources beyond those available to local governments. DOH enlists and engages agencies and partners to plan together to share resources, avoid duplication of effort and work toward common goals. Emergency Preparedness program activities are directed toward meeting the national standards set by the CDC and ASPR. Each agency has outlined a set of capabilities, 15 from the CDC and eight from ASPR, that guide the work of their grantees at both the state and local levels.

What we do
Public health threats are always present. Whether caused by natural, accidental, or intentional means, these threats can lead to the onset of public health incidents. Being prepared to prevent, respond to, and rapidly recover from public health threats is critical for protecting and securing our nation’s public health.

The 2009 H1N1 influenza pandemic underscored the importance of communities being prepared for potential threats. However, state and local public health departments continue to face multiple challenges, including an ever-evolving list of public health threats. Regardless of the threat, an effective public health response begins with an effective public health system with robust systems in place to conduct routine public health activities. In other words, strong state and local public health systems are the cornerstone of an effective public health response.

For guidance in planning and response efforts, the DOH relies on the Centers for Disease Control’s (CDC) Public Health Capabilities recommendations which are designed to accelerate local preparedness planning, and, ultimately, assure safer, more resilient, and better prepared communities. These 15 Capabilities serve as the foundation for DOH preparedness endeavors.
The Centers for Disease Control and Prevention has identified the following 15 public health preparedness capabilities as the basis for state and local public health preparedness:

1. Community Preparedness
2. Community Recovery
3. Emergency Operations Coordination
4. Emergency Public Information and Warning
5. Fatality Management
6. Information Sharing
7. Mass Care
8. Medical Countermeasure Dispensing
9. Medical Materiel Management and Distribution
10. Medical Surge
11. Non-Pharmaceutical Interventions
12. Public Health Laboratory Testing
13. Public Health Surveillance and Epidemiological Investigation
14. Responder Safety and Health
15. Volunteer Management

The 15 capabilities are intended to serve as national standards that local public health departments can use to advance their preparedness planning.

The Public Health Emergency Preparedness program is charged with demonstrating measurable and sustainable progress toward achieving the public health preparedness capabilities and to promote prepared and resilient communities.

Today, public health systems and the respective preparedness programs face many challenges. While federal funds for preparedness have been declining over the past few years causing state planners to express concerns over their ability to sustain the real and measurable advances made in public health preparedness since September 11, 2001, the state of Missouri has continued to provide stable and relatively level funding to local jurisdictions in support of local public health preparedness. The City of St. Louis Department of Health (DOH) works diligently to prioritize and ensure that federal and state dollars are directed to priority areas within our jurisdiction.

Accomplishments

Zika

As of December, 2016, the Centers for Disease Control (CDC) reported nearly 4800 cases of travel-associated Zika virus in the United States and DC. In addition, the CDC announced the number of Zika cases among pregnant women with Zika infection rose to 1,394. Local transmission has been seen in Florida and Texas. While the natural range of the Zika-carrying mosquito A. egypti poses the greatest immediate threat to our southern states, the fact remains that there are confirmed Zika cases in virtually every single state. Missouri is home to the A. albopictus mosquito which is also a known vector for Zika virus. As is the case with many more central and some northern states, the threat of local transmission of the virus is
serious. Studies suggest that Zika is anticipated to spread, with as many as 200 million people in our country living in areas where mosquitos that carry the virus could potentially thrive.

**The Department of Health Response**
Beginning in January of 2016, the DOH began formulating its plan for activities around addressing the Zika virus. Our actions include the following:

- 12-member team from the department formed
- 1 Subject Matter Expert designated for press releases / media interviews
- 3-pronged approach determined: Disease investigation, environmental surveillance, and public messaging
**EBOLA and Emerging, Highly Infectious Diseases**

*Ebola*
As attention shifted to focus on the threats of the Zika virus, new studies have brought insight to ongoing efforts to combat the deadly Ebola virus that threatened countries in West Africa, and still potentially threatens the global community. More is being learned on the lingering effects of the virus. More than 28,600 people were infected with Ebola in West Africa during the outbreak. Of that number, 11,300 died. Researchers are studying Ebola survivors to find out more about possible continued long-term neurological and other health problems for the more than 17,000 survivors of the infection.

*The Department of Health Response*
A competitive grant - the Ebola Preparedness Grant - was secured through the Missouri Department of Health and Senior Services to continue the efforts around Ebola which began in the fall of 2014. The following description of activities summarizes DOH’s on-going efforts regarding Ebola and emerging infectious diseases:

**Goal:** Develop a network of partnerships among urgent care/retail clinics, LPHAs, and the Regional Healthcare Coalition.

**Objectives:** Provide technical assistance, expertise, and advice to regional LPHAs regarding how to strengthen the relationships with urgent care and walk-in clinic staff to assure that these sites are prepared to:
- Identify patients exposed to or symptomatic of highly infectious diseases
- Isolate identified patients
- Initiate appropriate local/regional notification protocols
- Utilize best practice for patient transportation

**Activities**
1. Provide technical assistance to identify urgent care sites/retail walk-in clinics to be involved in this project.
2. Provide technical assistance to determine urgent care sites’/retail walk-in clinics’ preparedness maturity levels and gaps, including
   - Competence and capacity development
   - Information sharing for situational awareness and the receipt and transmission of critical information exchange with state and LPHA.
3. Provide expertise and facilitate access to education and training resources to address competence and capacity development needs, including a formalized section of the HC Learning Management System to include a curriculum portal: [www.eehid.com](http://www.eehid.com)
4. Provide expertise and recommendations regarding methods to strengthen partnerships among these sites and LPHAs and to encourage sites to serve as part of the surveillance network for the LPHAs.
5. Host a conference/workshop (September, 2016) to strengthen partnerships and provide platform for sharing of best practices and infectious disease updates and guidance in urgent care and outpatient settings.
6. Provide expertise to identify policy and procedure templates and checklists associated with the management of exposed or symptomatic patients.

The City of St. Louis Department of Health (DOH) conducted multiple meetings and workshops across the region with our public health partners and healthcare providers in efforts to prepare our community for the possible arrival of Ebola virus. When surveyed, 100% of DOH partners responded in favor of additional meetings with their local health department to discuss latest guidance, best practices, lessons learned on specific / special topics such as Ebola.

**Other Infectious Diseases**

In addition to the grant secured through the Missouri Department of Health and Senior Services, a second competitive grant was awarded to our Emergency Preparedness Program through the National Association of City and County Health Officials (NACCHO) - LINC Initiative: Lessons in Infection Control.

Perhaps most satisfying in receiving this grant is the dove-tailing of LINC activities with DOH current work plans under the existing Ebola Preparedness grant. While working on assessment and capacity building in the community around issues of emerging diseases, it is highly satisfying to have the opportunity to mirror those efforts internally.

The activities outlined in the LINC grant application underscore the DOH commitment to strengthening internal capacity to effectively respond to outbreaks of Ebola, healthcare-acquired infections, and other emerging infectious diseases. The LINC program activities touch upon the following focus areas:

1. Assess the LHD’s competencies and capabilities in infection control
2. Strengthen internal coordination across agency departments
3. Improve collaboration across state and local public health, healthcare, and other sectors
4. Plan and implement training and professional development opportunities for LHD staff.

**Medical Countermeasures**

Intentional and natural disease outbreaks in the United States, beginning with the 2001 anthrax attacks followed by the 2009 Novel H1N1 global pandemic have focused increased attention on the continued need for local public health authorities to provide affected individuals and communities with rapid, reliable access to prophylactic medications. In light of the substantial health risks posed by anthrax, influenza, and other bacteria, spores, toxins, or viruses, local public health jurisdictions have been called upon to develop comprehensive mass prophylaxis plans to ensure that their citizen populations have timely access to necessary antibiotics and/or vaccines - medical countermeasures - in the event of future outbreaks or bioterrorism events.
The City of St. Louis Department of Health (DOH) tracks progress toward ensuring capacity to provide medical countermeasures in a timely fashion by building capability around the “worse-case scenario” which mandates delivery of medication to combat an intentional category A agent release within 48 hours of the event to the entire jurisdictional population.

The metrics that reflect DOH’s capacity for delivery of medical countermeasures are updated and presented to the CDC’s Strategic National Stockpile program on an annual basis.

<table>
<thead>
<tr>
<th>City of St. Louis Medical Countermeasures Jurisdictional Profile (2015 - 2016)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local population covered by dispensing plan:</td>
</tr>
<tr>
<td># hours for dispensing operations</td>
</tr>
<tr>
<td># of Open PODS required</td>
</tr>
<tr>
<td>Population served by Open PODS</td>
</tr>
<tr>
<td>Hourly thru-put at Open PODS</td>
</tr>
<tr>
<td>Population served by Closed PODS</td>
</tr>
<tr>
<td># Closed PODs with healthcare entities / agencies (e.g. nursing homes, long term care facilities)</td>
</tr>
<tr>
<td># Closed PODs with private business</td>
</tr>
<tr>
<td># Closed PODs with governmental agencies (e.g., juvenile programs, corrections centers)</td>
</tr>
<tr>
<td># Closed PODs with universities</td>
</tr>
<tr>
<td># Closed PODs with community-based agencies</td>
</tr>
<tr>
<td>Population served by Alternative Dispensing Modalities</td>
</tr>
<tr>
<td># Alternative Dispensing Modalities</td>
</tr>
</tbody>
</table>

Medical Countermeasures planning has incorporated the following at-risk populations:

☑ Those who have disabilities
☑ Those who live in institutional settings
☑ Those who are from diverse cultures
☑ Those who have limited English proficiency
☑ Those who are non-English speaking
☑ Those who are transportation disadvantaged
☑ Those who have chronic medical disorders
☑ Those who have pharmacological dependencies
**Severe Weather Protection Program and Community Resilience**

As outlined in the National Health Security Strategy and Implementation Plan, published by the Assistant Secretary for Preparedness and Response (ASPR), community resilience is a community’s sustained ability to withstand, adapt to, and recover from adversity. The Emergency Preparedness Program is actively engaged in this multisector endeavor that leverages community and individual assets, such as infrastructure, talents, skills, relationships, technology, and natural resources. Because health is a key aspect of overall community resilience, the scope of our efforts around severe weather protection includes community health resilience.

The Emergency Preparedness Program promotes community health in part by engaging with and supporting partners working on community infrastructure, including secure housing, economically viable neighborhoods, quality healthcare facilities, and spaces for gathering and exercise. Under this model, public health, healthcare, behavioral health, and social service organizations work together to understand the needs of the people they serve and be ready to meet those needs before, during, and after an incident, with the belief that as individuals and organizations become more health-resilient and build robust social networks, whole-community resilience will thrive.

Priorities of this program include:

1. Improving social connectedness
2. Enhancing coordination of health and human services through partnerships and other sustained relationships
3. Building a culture of resilience by promoting physical, behavioral health, and social health; leveraging health and community systems; and increasing access to information and training to empower individuals and their communities

Severe Weather/Community Resilience partners with the Department of Human Services in efforts to promote, build, and utilize the City’s Functional Needs Registry. Currently, approximately 4,000 at-risk individuals are registered with the City to receive information and services during emergency events.

Severe Weather/Community Resilience also partners with HeatUp/CoolDown St. Louis offering grant management assistance. HeatUp/CoolDown St. Louis offers utility assistance to vulnerable families. Annually, this organization reaches approximately 1,500 households.

Outreach and education is performed throughout the year, reaching over 20,000 individuals annually.
**Exercises and Training**

The City of St. Louis Department of Health’s (DOH) multiyear training program is our roadmap to reach an accomplished level of readiness / preparedness around the 15 public health capabilities. DOH has pursued a coordinated strategy that combines enhanced planning, new equipment purchases, innovative training, and realistic exercises to strengthen their emergency prevention and response capabilities. Training and exercises play a crucial role in this strategy, providing DOH with a means of attaining, practicing, validating, and improving new capabilities.

The DOH multiyear plan employs a building-block approach in which training and exercise activities focus on specific capabilities in a cycle of escalating complexity.

The training and exercise schedule is frequently updated and refined at least annually, but may be adjusted as new information becomes available. For example, lessons learned from actual incident responses may point to the need to add training. Similarly, exercise After Action Reports (AARs) may require modification to the exercise schedule at any time. Finally, as the Region and State agree to coordinate training and exercise priorities, cooperation with their broader strategies may point to the need for adjusting our training / exercising, in terms of content or schedule.

The department’s priorities for training and exercises are:

- Achieving readiness level public health capabilities
- Strengthening ESF-8 support capabilities
- Implementing the National Response Framework and National Incident Management System
- Expanding regional collaboration
The DOH incorporates real world events into our training and exercise program by ensuring that the event is fully utilized in teaching us about response activities. Emergency Preparedness staff write After-Action Reports that are compliant with Homeland Security Exercise and Evaluation Program following each exercise and real world event that focuses on an emergency response, or incorporates an activity that might be utilized in a disaster event.

In 2016, the DOH hosted or participated in exercises or real events that included the following scenarios and touched upon corresponding public health capabilities:

**Active Shooter**
- Emergency Operations Center
- Public Information and Warning
- Responder Safety and Health
- Information Sharing
- Community Preparedness

**Zika Virus**
- Public Information and Warning
- Information Sharing
- Surge Capacity
- Non-Pharmaceutical Interventions
- Public Health Laboratory Testing
- Surveillance and Epidemiologic Investigation

**Alternate Care Sites**
- Mass Care
- Information Sharing
- Community Preparedness
- Surge Capacity

**Rabbit Fever/Tularemia**
- Public Information and Warning
- Medical Countermeasures
- Medical Materials Management & Distribution
- Volunteer Management

**SLU Closed POD**
- Medical Countermeasures
- Volunteer Management

**CHEMPack**
- Emergency Operations Center
- Public Information and Warning
- Surveillance and Epidemiologic Investigation
- Responder Safety and Health
- Non-Pharmaceutical Interventions
# of Exercises or Real Events
2009 - Present
with Corresponding Public Health Capability
**Technical Reviews**

In July 2014, the Centers for Disease Control and Prevention (CDC) implemented a new method of reviewing state and local medical countermeasure operational readiness. The Medical Countermeasure (MCM) Operational Readiness Review (ORR) replaces CDC’s technical assistance review (TAR) planning tool, which CDC used successfully for nearly a decade to review medical countermeasure planning at the state and local levels.

CDC’s new review process is designed to better measure a jurisdiction’s ability to plan and successfully execute any large-scale response requiring distribution and dispensing of medical countermeasures. It builds upon the medical countermeasure planning progress PHEP awardees have made over the years and is intended to identify medical countermeasure response operational capabilities as well as gaps that may require more targeted technical assistance.

The City of St. Louis Department of Health was reviewed for the first time under the CDC’s new review tool, the ORR, in January, 2016 and results are still pending. No reviews were conducted during 2014 and 2015 while the new tool was under development.

Prior to the introduction of the ORR, the Emergency Response Program review scores were as follows:

![Annual Program Reviews](image-url)

<table>
<thead>
<tr>
<th>Year</th>
<th>Score</th>
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