BACKGROUND:
The study’s purpose is to encourage prioritizing oral health issues within a chronic disease setting in Texas by measuring the health impact of permanent tooth removal and delayed dental care services.

METHODS:
Data came from the 2010 Texas Behavioral Risk Factor Surveillance System. Three binary variables were used to characterize oral health issues: removal of six or more permanent teeth due to tooth decay or gum disease (yes/no), last visit with dental health professional >5 years ago (yes/no), and last professional teeth cleaning >5 years ago (yes/no). Three binary variables were used to characterize impact on health: >5 days poor physical health in past month (yes/no), >5 days poor mental health in past month (yes/no), and life satisfaction (very satisfied/satisfied versus dissatisfied/very dissatisfied). Cardiovascular disease, diabetes, and asthma status were determined by self-reported doctor diagnosis. Logistic regression models were used to provide measures of associations (odds ratios (ORs) with associated 95% confidence intervals (CI)). Models were adjusted for age, sex, race/ethnicity, education level, income status, body mass index, marital status, current smoking status, and physical activity level. Sex and age-group (18-39, 40-64, ≥ 65) were treated as potential effect modifiers. All analyses were conducted in Stata v 11.0.

RESULTS:
Similar percentages of adults reported delayed dental services (15.0%) as having had six or more teeth removed (12.3%). Respondents reporting delayed dental services were more likely to be male, non-White, unemployed, current smokers, obese, not married, and less physically active. Respondents reporting major tooth removal were significantly older and majority female. There was a stronger adjusted association between delayed teeth cleaning and life dissatisfaction (OR: 2.52 (95% CI: 1.71-3.70)) than for the presence of at least one major chronic illness (1.39 (.97-1.99)). Using models that adjusted for the co-presence of major chronic illnesses, major tooth loss remained associated with poor mental health (1.45 (1.15-1.83)) and poor physical health (1.58 (1.29-1.93)). The adjusted associations between delayed dental services/tooth removal and all three outcomes of interest declined with increasing age with young adults experiencing the strongest associations.

CONCLUSIONS:
Delayed dental care and tooth removal have strong associations with lack of well-being and life dissatisfaction in the Texas adult population. These associations are comparable to and even stronger for certain quality of life measures than the impact of major chronic diseases. Results indicate higher priority should be placed on oral health issues in health promotion and chronic disease prevention activities.
Chronic Disease / MCH / Oral Health

PRESENTATIONS ON MONDAY, JUNE 10 • 3:30PM

Board #197
1673  Breast Cancer Mortality Among American Indian/Alaskan Natives

ARICA WHITE
Centers for Disease Control and Prevention

BACKGROUND:
Previous estimates of breast cancer mortality among American Indian/Alaska Natives (AI/AN) have been subject to racial misclassification. The objective of this study was to estimate breast cancer mortality rates among AI/AN women compared to non-Hispanic white (NHW) women from 1990 to 2008 using data for which misclassification was minimized.

METHODS:
Breast cancer deaths were obtained from the National Vital Statistics System Public Use Mortality data files for AI/AN and NHW women living on or near reservations. These areas have a high proportion of the AI/AN population and thus less misclassification of AI/AN race. To further minimize race misclassification, race coding for AI/AN decedents included a combination of race classification by National Center for Health Statistics based on the death certificate and information derived from data linkages between the Indian Health Service (IHS) patient registration database and the National Death Index (NDI). Preliminary analyses were completed by individual IHS-designated regions including Alaska, Pacific Coast, Northern Plains, Southern Plains, Southwest, and the East, as well as all regions combined. Mortality rate ratios (RR) and 95% confidence intervals (CI) were calculated using age-adjusted mortality rates for AI/AN women compared to NHW women. Joinpoint regression was used to examine mortality trends.

RESULTS:
Among women aged 40 years or younger, breast cancer mortality was lower for AI/AN than NHW in the Pacific Coast region (RR=0.42; 95% CI: 0.22-0.71). For women 40-49 years old, mortality was lower for AI/AN compared to NHW in Alaska, East, Pacific Coast and Southwest. Among women 50-64 years, AI/AN were less likely to die than NHW in the Pacific Coast and Southwest regions. For women aged 65 and older, mortality was lower for AI/AN compared to NHW in the East, Pacific Coast and Southwest. While NHW experienced a decrease in mortality from 1990-2008 (annual percent change of -2.2; 95% CI: -2.3- -2.0), the rates for AI/AN were essentially unchanged (APC=0.5; 95% CI: -0.3-1.4), with no improvements, during this time period.

CONCLUSIONS:
Although AI/AN women experienced a lower breast cancer mortality than NHW women in most geographic regions, there have been no improvements in death rates for the last two decades. These findings suggest there is a need for targeted interventions to improve the breast cancer deaths among AI/AN women. These estimates can serve as a benchmark for measuring the impact of breast cancer control programs and identifying regions where additional outreach is needed.
BACKGROUND:
This study aimed to assess how birth weight and infant mortality varied in relation to the county poverty rate in Kansas from 2006 to 2010 and to evaluate if there was an independent effect separate and beyond that due to maternal characteristics and behaviors.

METHODS:
This was an analytical cross-sectional multilevel analysis of linked birth and death certificate data for the years 2006 to 2010. There were 105 counties and 191,309 infants included in the analysis. One-way analysis of variance and chi-squared tests were used to assess for differences in the distribution of birth weight and infant mortality among independent variables. Random effects linear and logistic regression was used to calculate the crude and adjusted effect of the county poverty rate on birth weight and infant mortality.

RESULTS:
Birth weight and infant mortality were both associated with the county poverty rate. Birth weight decreased ($\beta$ -3.11 grams, 95% CI -5.4, -0.8, p<0.05) and infant mortality increased (OR 1.02, 95% CI 1.01, 1.03, p<0.05) with each 1% increase in the county poverty rate in crude analysis. Both birth weight ($\beta$ -0.2 grams, 95% CI -2.1, 1.7, p=0.85) and infant mortality (OR 1.00, 95% CI 0.98, 1.01, p=0.79) were attenuated to the null after adjusting for maternal characteristics and behaviors.

CONCLUSIONS:
Neighborhood level poverty has been shown to effect human health in multiple studies. Macintyre, et. al state that neighborhoods effect health through their physical features, built environment, service provisions, culture and reputation. The atomistic fallacy warns us of ignoring community context when describing causal relationships. These social factors can be considered risk regulators; not direct risk factors in the traditional sense, rather determinants of more proximal risk factors. Using this as a framework for interpretation, there is evidence that the county poverty rate does play a role in birth weight and infant mortality in Kansas. Increases in the county poverty rate were associated with worse outcomes for both birth weight and infant mortality, although a strong linear trend is not evident. This association remained after controlling for county urbanization. The effect of the county poverty rate did not remain after adjusting for maternal characteristics and behaviors. Rather than interpreting this as confounding, the risk regulator framework allows us to interpret the county poverty rate as a driver of maternal behaviors, which influence birth weight and infant mortality.
BACKGROUND:
The Agency for Toxic Substances and Disease Registry (ATSDR) maintains the National ALS Registry, which identifies ALS cases using national administrative datasets and patient self-registration through a web portal. This non-traditional case ascertainment requires validation against more conventional surveillance techniques; therefore, ATSDR established surveillance projects in three states and eight metropolitan areas. The primary objectives were to: (1) obtain reliable and timely information on the incidence and prevalence of ALS in NJ; (2) better describe the demographic characteristics of NJ ALS cases; and (3) assist ATSDR in evaluating the completeness of the Registry.

METHODS:
Neurologists practicing in the multi-state region were contacted to determine if they diagnosed or treated ALS patients and were asked to submit one-page case reporting forms for NJ residents with ALS under their care from January 1, 2009, through December 31, 2011. A medical record verification form and a copy of an EMG report were requested for a sample of cases. Death and hospital data were reviewed for quality assurance purposes and to identify additional cases. Compensation was offered for each form. No patients were contacted.

RESULTS:
Of 679 providers contacted in New Jersey’s coverage region, 168 (24.7%) diagnosed or treated ALS patients and 152 (22.4%) reported cases. All major referral centers in the region participated. Targeted phone calls, faxes immediately followed by phone calls, and on-site visits appeared to increase participation. A total of 965 case reports were submitted. After de-duplication, 766 unique cases were retained in the final dataset. The annual incidence rates for 2009, 2010 and 2011 were 1.77, 1.98 and 1.84 per 100,000 persons, respectively. Rates were higher among males, whites, and those aged 60-79 years. Two-thirds of cases experienced symptoms up to 1.5 years prior to being diagnosed. For cases that were matched with a death certificate (n=295), 73% died within two years of diagnosis.

CONCLUSIONS:
Approximately 75% of NJ neurologists do not diagnose or treat for persons with ALS. More than 90% of neurologists who diagnosed or treated ALS patients reported cases. Our findings are similar to previously reported ALS prevalence studies, suggesting that case ascertainment activities yielded a high proportion of possible cases. The project uncovered lessons regarding physician recruitment that may prove helpful in replicating similar surveillance efforts. Conducting time-limited, state-based, active surveillance for a non-reportable chronic condition is challenging; but with proper planning, adhering to data collection methodologies, providing compensation, and executing quality assurance procedures, project objectives can be met.
BACKGROUND:
Asthma is associated with significant morbidity in Kentucky. Kentucky has 120 counties that are divided into 15 Area Development Districts (ADD) for the purposes of planning and funding. Using Behavioral Risk Factor Surveillance data, the Kentucky Asthma Program identified eight of the area development districts with higher prevalence rates of asthma in which to implement objectives and activities defined in the 2009 Kentucky State Plan for Addressing Asthma. This was made possible through a small amount of state funding and CDC funding initially received in 2009 and ongoing annually. The objective of this study is to measure the current burden of asthma and resulting impact of interventions implemented by the Kentucky Respiratory Disease Asthma Program and Kentucky Asthma Partnership.

METHODS:
Prevalence data was obtained from Kentucky Behavioral Risk Factor Surveillance Survey (BRFSS) 2004-2011. Hospitalization and mortality data (2001-2011) was obtained from Office of Health Policy and Office of Vital Statistics respectively. Men and women, age 18 and older were included in this analysis. Child asthma was reported by the parent responding to the BRFSS survey. Prevalence estimates (weighted) of self-reported asthma were calculated for each Area Development District (ADD). Similarly, age-adjusted asthma hospitalizations and mortality rates were calculated for each year from 2001-2011 for all ADDs.

RESULTS:
Current Asthma prevalence in Kentucky has continued to increase since 2004 (8.3%) to 2010(10.4%) as compared to the US rates of 8.1% in 2004 to 8.6% in 2010. Conversely, the child asthma age-adjusted hospitalizations rates have shown a steep decline in Kentucky since 2009 in targeted Area Development Districts. It was observed that there was a 35.5% decline in child asthma hospitalization rates in the targeted areas as compared to only 6.7% decline in the non-targeted areas. The decline in adult asthma hospitalization rates was gradual. One major limitation of this study is that these changes in the hospitalization rates cannot be solely attributed to program activities.

CONCLUSIONS:
A decrease in asthma hospitalizations rates especially in children has been observed since 2009. This decrease is particularly evident in targeted ADDs of Kentucky. But further studies are needed to understand the factors that have helped in a declining trend seen in child asthma hospitalization rates. Asthma in Kentucky needs to be further addressed to decrease the burden of morbidity and mortality associated with asthma.
BACKGROUND:
Little is known about the prevalence of sexually transmitted diseases (STDs) among people with disabilities. It is thought the prevalence of STDs among people with disabilities might be the same as the prevalence among people without disabilities. Thus, the objective is to estimate the prevalence of sexually transmitted diseases in people with disabilities compared to those without.

METHODS:
Data from the National Health Interview Survey (NHIS) for 2003–2010 and the National Health and Nutrition Examination Surveys (NHANES) for 2003–2010 were analyzed. Bivariate statistical tests and multivariate logistic regressions were used to test associations between STDs among people with disabilities compared to those without.

RESULTS:
Using NHIS data, 4.6% of adults with a disability and 2.2% of adults without a disability aged 18 to 49 years reported having a STDs in the past 5 years. Multivariate analysis revealed that having any disability (physical, visual, hearing or cognitive limitation) was associated with a higher odds of having a STD (adjusted odds ratio [aOR]: 1.60, 95% confidence interval [CI]: 1.44, 1.78). Comparable results were found using NHANES data, with adults with any disability more likely (aOR: 1.28, 95% CI: 1.07, 1.54) than adults without a disability to have a positive laboratory test for herpes simplex virus, type 2.

CONCLUSIONS:
This paper sheds light on a higher prevalence of STDs in adults with disabilities, a group that is not typically targeted for STD prevention and treatment. Research, surveillance screening tools, and the adaptation of care standards that apply to people with disabilities are needed to reduce disparities in STD prevalence among people with disabilities.
Board #212
2120 Differential Reduction in Near-Term Births for White Vs. Black Births in Ohio, 2007-2010

ALISON NELSON
Moffitt Cancer Center and Research Institute

BACKGROUND:
Preterm birth is associated with more than 75% of perinatal mortality and half of perinatal and long-term morbidity. Non-Hispanic Black (NHB) women are 60% more likely to have a preterm birth compared to non-Hispanic White (NHW) women and the cause of this disparity remains largely inexplicable. To improve birth outcomes by reducing unnecessary births before 39 weeks gestation, the Ohio Perinatal Quality Collaborative (OPQC) initiated a quality improvement initiative with 20 hospitals in 2008. Statewide, a decrease in births at 36-38 weeks gestational (near-term) was observed from 2007-2010; however NHB experienced a smaller improvement than NHW. The purpose of this project was to determine why NHB experienced a smaller decrease in near-term births than NHW.

METHODS:
Five explanations for the disparity were hypothesized and tested using vital statistics records for births in Ohio to NHW (n=418, 246) and NHB (n=93,709) women during 2007-10. Time trends were assessed with logistic regression and racial difference in trend was assessed by an interaction between year and race in the model. Cross-sectional differences were tested by Chi Square.

RESULTS:
From 2007-2010, significant (p<0.05) decreases in near-term births were experienced for both NHW and NHB women overall (15% vs. 8%, respectively) and within OPQC hospitals (17% vs. 7.5%) (p-value for racial difference <0.0001). Of NHB births, 70% occurred in OPQC hospitals vs. 41% of NHW births (p<0.0001). NHB women were more likely deliver < 36 weeks vs. NHW (12.2% vs. 7.0%; p<0.0001) and at 36-38 weeks, the prevalence of medically indicated inductions were 3.9 vs. 3.7 (p <0.0007) and birth following spontaneous labor were 25.8% vs. 22.8% (p<0.0001).

CONCLUSIONS:
The observed disparity in the reduction in near-term birth was likely attributable to the OPQC initiative being less likely to impact NHB births. While NHB women were more likely to deliver in an OPQC hospital than NHW, near-term births among NHB decreased less than among NHW both overall and within OPQC hospitals. Birth prior to 36 weeks, when the initiative was targeted, was more common among NHB. After reaching 36-38 weeks, NHB women were more likely to have spontaneous labor or a medical indication for induction, both outside the purview of the initiative. While the initiative reduced near-term births for both NHB and NHW women, disparities increased. To eliminate disparities in preterm birth, approaches must target the common reasons for birth < 39 weeks among NHB women: early and spontaneous preterm births and medical indications for induction before 39 weeks gestation.
BACKGROUND:
Race and ethnicity are collected in hospitals, however it often lacks quality and completeness due to inconsistent collection methods. Methods of identifying race and ethnicity are often subjective and are rarely based on patient self-report. In 2011, the New Mexico Department of Health (NMDOH) was funded by the Agency of Healthcare Research and Quality to improve race and ethnicity data collection in hospitals. The NMDOH mandated that all non-federal hospitals report race and ethnicity using the categories of the 1997 Office of Management and Budget Standards and encouraged the use of self-report as the gold standard beginning in 2011. To assist in this transition, hospital staff was trained on how to appropriately acquire this information from patients. To determine the improvement of race and ethnicity data in the New Mexico Hospital Inpatient Discharge Dataset (NMHIDD), a baseline evaluation of concordance between New Mexico Vital Records Death Data (NMVRDD) was completed in the year prior to the intervention.

METHODS:
The purpose of the linkage between NMHIDD and NMVRDD is to determine the concordance of race and ethnicity data between these datasets. Due to its completeness of race and ethnicity data, the NMVRDD was used as the gold standard. Because of variability in collection methods, the quality of the race and ethnicity data in the NMHIDD, as well as concordance, is predicted to be low. The 2010 NMHIDD (n=209,144) was linked to 2010 and 2011 NMVRDD (n=14,953 and n=15,428, respectively) using LinkPlus and probabilistic matching techniques. Of those patients that linked (n=15,051 in 2010 and n=4,630 in 2011), percent agreement, sensitivity, specificity, positive and negative predictive value, and Cohen’s Kappa were calculated for each race and ethnicity category (Asian, Black, Hispanic, American Indian/Alaska Native and White).

RESULTS:
Asian and Black had the highest percent agreement in both years (Asians 100% for both years; Black 99% in 2010 and 100% in 2011), yet Asian had the lowest Kappa score in 2010 and 2011 (0.59 and 0.62, respectively). Whites had the lowest percent agreement for both years (88% in 2010 and 89% in 2011). In 2010 and 2011, Hispanic and American Indian/Alaska Native had percent agreements of 92% and 98%, respectively.

CONCLUSIONS:
Percent agreement was better than expected for minority groups but worse in majority groups. Next steps include comparing these results to a linkage between 2011 NMVRDD and 2011 NMHIDD to determine if the change in race and ethnicity collection methods has improved concordance between the datasets.
BACKGROUND:
Per federal guidelines, the NMBRFSS collects Hispanic ethnicity separately from race. However, the two are often combined into a single variable for reporting on health disparities. While self-identified assignment would be preferred, Hispanics have not had the opportunity to indicate whether ethnicity or race best describes them. As a surrogate approach, New Mexico has used a “smallest group” method that assigns respondents to the ethnic or racial group that comprises a smaller percentage of the population. To assess how accurately this approach and another method compare to self-identification, an additional question was piloted allowing Hispanic respondents to identify their preference for racial/ethnic assignment.

METHODS:
Following standard ethnicity and race survey questions, all 2011 NMBRFSS respondents who reported Hispanic ethnicity and at least one race were also asked “Which one of these groups would you say best describes you?” Respondents could select a single response from a list that included Hispanic or Latino, all standard racial categories, or “other”. Using self-identification as the gold standard for validity, comparisons were made to assignments using the “smallest group” method and an alternate “aggregate Hispanic” method (assigning all Hispanic respondents to a racial/ethnic designation of “Hispanic” regardless of racial identity). We assessed the effect of these different assignment methods on estimates of general health status, smoking, and obesity.

RESULTS:
2,429 respondents qualified for the additional preferred race/ethnicity question. Compared to self-identification, the “aggregate Hispanic” method correctly assigned more of the 162 Hispanic/American Indian respondents than the “smallest group” method (69% vs. 28%, respectively). 85% of 2,211 Hispanic/White respondents were correctly assigned with both methods. Among Hispanic/White and Hispanic/American Indian respondents, estimates of general health and obesity did not vary substantially based on method of racial/ethnic assignment. Hispanic/American Indian respondents were more likely to report being current smokers than Hispanic/White only or American Indian only respondents. Therefore, “aggregate Hispanic” assignment underestimated and “smallest group” assignment overestimated the percent of American Indians who reported being smokers. Very small numbers for other racial/ethnic combinations prohibited precise estimates.

CONCLUSIONS:
One year of pilot data suggests that neither surrogate method for assigning Hispanic NMBRFSS respondents to a single racial/ethnic category appears to consistently reflect self-identified preferences. Both methods can lead to biased estimates of important health indicators, such as smoking prevalence among American Indian adults. In the absence of self-identified preference, the “aggregate Hispanic” method appears more accurate for assigning race and ethnicity than the “smallest group” method.
Board #215
1872 Legal Authority for Infectious Disease Reporting in the 50 States, D.C., and N.Y.C. with the 2009 H1N1 Influenza Pandemic as a Case Study

RICHARD N DANILA
Minnesota Department of Health

BACKGROUND:
Mandated disease reporting laws vary as to which diseases and who must report; specimen submission and medical records access; and the ability to rapidly add conditions. Using 2009 H1N1 as a case study, we examined the relationship between a state’s authority and its ability to collect data.

METHODS:
We used Westlaw to characterize reporting features in focusing on general communicable disease, influenza, and emerging infections. Features were combined to create measures for robustness in three domains: General, Influenza-specific, and Emerging Disease-specific. We surveyed key informants regarding data collection barriers during the pandemic, and data-based recommendations regarding schools, daycares, antivirals, and vaccine prioritization. A sample was interviewed regarding perception of how reporting laws functioned during then.

RESULTS:
37/52 (71%) had robust general laws; 8 (15%) robust influenza; and 1 (2%) robust emerging disease. 19/52 (37%) made changes since the 2009 pandemic. Of 8 that did not mandate reporting of individual cases at the pandemic onset, 7 changed to mandate some specific influenza cases, and 6 made reporting permanent. Of 45 respondents, none reported lack of legal reporting authority problems, 1 reported legal concerns with submitting data to CDC. However, 28/45 (62%) reported not collecting data (e.g. race/ethnicity) for reasons such as lack of resources. Respondents generally reviewed their data during and most adopted CDC recommendations for antivirals and vaccine without modification. Fewer states, but a majority, adopted CDC school/daycare recommendations during the first pandemic wave without modification.

CONCLUSIONS:
While most have robust mandatory infectious disease reporting laws, there is room to strengthen laws addressing influenza and emerging diseases. For instance, 40% did not have express authority to immediately add a new reportable disease outside of standard or emergency rulemaking procedures. Over 1/3 changed their laws since the pandemic to enhance their mandates. States generally adopted CDC pandemic recommendations with no deviations in their own data than nationally. The locus of decision-making may be different in a regional outbreak, which may rely more on the use of state-specific data. Reliance on cooperation during the pandemic may not be generalizable to other emerging infections. Influenza surveillance was generally pre-existing and public health labs were often the only labs capable of detecting 2009 H1N1. A novel pathogen, or one that affects persons in a stigmatized group, might result in surveillance challenges that require legal mandates for reporting. States should be mindful of their mandated reporting parameters and review the robustness of their laws.
BACKGROUND:
The California Fatality Assessment and Control Evaluation (CA/FACE) Program in the California Department of Public Health conducts surveillance of workplace fatalities to prevent future fatalities. Previous research demonstrated higher numbers of workplace deaths among Latino workers as compared to other ethnic groups. A fatality investigation of a day laborer who fell off a scaffold demonstrates the need for safety training materials appropriate for this vulnerable population. Objectives of this presentation are to 1) demonstrate that day laborers are a vulnerable population at risk for workplace fatalities and 2) describe the hazards associated with scaffold use and the need for safety training appropriate for day laborers.

METHODS:
CA/FACE investigators interviewed the homeowner, the victim’s siblings, and the scaffolding rental store agent to learn more about the incident. The etiology of the fatality was determined and prevention recommendations were developed. Research to identify existing scaffold safety materials appropriate for day laborers was conducted. Thirteen day laborer centers across California were contacted to assess the accessibility of scaffold safety training materials appropriate for day laborers. CA/FACE staff partnered with Street Level Health Project and surveyed day laborers to determine their access to scaffold safety training materials, knowledge of scaffold use, and to collaborate with them to develop appropriate scaffold safety training materials. All surveys were conducted in Spanish. Incentive cards were provided to day laborers who participated in the survey.

RESULTS:
The victim was born in Mexico and spoke only Spanish. He was hired off a street corner to reface the exterior of a private residence. He rented a scaffold and erected it using improper methods; he was working alone and not wearing any fall protection devices. CA/FACE identified a lack of accessible scaffold training materials appropriate for day laborers, and determined that day laborers are often asked to perform work on scaffolds without proper training. CA/FACE developed a Spanish language scaffold safety fact sheet with feedback from day laborers.

CONCLUSIONS:
This investigation demonstrates that day laborers are often asked to perform dangerous work without proper equipment or training. Although fall protection and scaffold safety materials have been developed, they are not readily accessible to day laborers. Feedback provided by day laborers was invaluable to modifying and improving the safety materials developed by CA/FACE. Including day laborers in the development of training materials is critical in order to create materials that will be adopted and well understood by this population of workers.
Background:
In the United States, the term “young workers” has recently expanded beyond those under age 18 to include persons ages 18-24 (young adults). Each year, nationwide, an estimated 795,000 young workers are treated in emergency departments for non-fatal work-related injuries. Since 1993, the Massachusetts Department of Public Health’s Teens at Work Project (TAW) has tracked work-related injuries to teens under age 18 and has documented high rates of work-related injury among Hispanic teens. TAW has engaged in outreach activities to address identified health and safety problems and disparities. In 2010, TAW began collecting data on workers ages 18-24, with special attention paid to whether Hispanics in this age group also have higher rates of work-related injury.

Methods:
Data from the statewide Emergency Department and Hospital Discharge datasets were reviewed to identify non-fatal work-related injuries with dates of hospital encounter from 2005 through 2009. Cases were defined as persons age 18-24 treated for an injury (ICD-9-CM 800-999) with an expected payer of workers’ compensation. Frequencies and rates were calculated by age, gender, race/ethnicity, year, nature of injury, and external cause of injury. This Spring, formative research will be conducted, using applied health communication, to learn more about Hispanic young workers in Massachusetts. Research will focus on workers’ awareness and communication preferences regarding workplace health and safety.

Results:
From 2005 through 2009, a total of 53,891 young adults were treated in Massachusetts emergency departments for work-related injuries; the annual rate of work-related injury was 382/10,000 FTEs. Hispanic young adults had the highest rate of injury: 457/10,000 FTEs compared to 360/10,000 FTEs for Whites. The leading nature of injuries for all workers was open wounds, while the leading external cause of injuries was cuts/pierces. A total of 512 young adults were hospitalized for work-related injuries during this period; the annual rate of hospitalization for work-related injury was 3.6/10,000 FTEs. Hispanics had over double the rate for Whites (8/10,000 FTEs v 3/10,000 FTEs). Fractures accounted for nearly half of all worker hospitalizations, while falls was the leading external cause of injuries. Formative research findings and intervention recommendations will be shared in the presentation.

Conclusions:
The observed high rate of injuries among young adults is consistent with findings reported elsewhere. Hispanics had the highest rate of injury in both datasets. Formative research may provide valuable guidance for developing tailored intervention to reduce non-fatal work-related injuries among this population.
BACKGROUND:
Approximately 74,000 Salmonella infections each year in the United States are due to reptile and amphibian exposure. In March 2012, the Centers for Disease Control and Prevention (CDC), public health officials and the Food and Drug Administration (FDA) began investigating a series of multistate outbreaks of Salmonella infections associated with small turtles or their environment. A total of 248 persons from 34 states have been identified. Of the 248 persons identified, exposure to turtles prior to illness was reported in 72% of ill persons and 89% of those with turtle exposure specifically recalled exposure to small turtles with a shell length less than four inches. In addition, 34% of ill persons with small turtles reported purchasing turtles from street vendors and 17% reported buying from pet stores. As a result of four cases reporting exposure to small turtles at souvenir shops in Florida, the Florida Department of Health (FDOH) and the Florida Fish and Wildlife Conservation Commission (FWC) conducted an environmental assessment of these shops.

RESULTS:
From the 25 samples obtained from the souvenir shops, all were positive for Salmonella. The laboratory isolated 30 Salmonella colonies for further testing. The lab identified six different serogroups and eight different serotypes. The four clinical isolates from Salmonella positive cases that visited Destin, FL matched four isolates of S. Poona from one of the turtle aquaria sampled. One isolate collected from a different souvenir shop also matched the Salmonella Sandiego cluster 1204COJLX-1.

CONCLUSIONS:
This investigation into Salmonella outbreaks related to turtle exposure in Florida linked environmental sampling results and five human cases. Conducting the environmental assessment aided the national investigation in identifying one source of turtles and human cases. The assessment also aided in identification of a turtle distributor in Louisiana. However, even if a definitive match had not been found, the fact that every environmental sample was positive for Salmonella highlights the potential risk of exposure to Salmonella when coming into contact with turtles and/or their environment.
PRESENTATIONS ON MONDAY, JUNE 10 • 3:30PM

Board #228
1946  Health Impact Assessment of Targeted Tree Planting in Ann Arbor Michigan and Identification of Neighborhoods Vulnerable to Climate Change

LORRAINE CAMERON
Michigan Department of Community Health

BACKGROUND:
The City of Ann Arbor is developing its first Urban and Community Forest Management Plan with a goal of planting 1,000 trees in 2013, while addressing uneven tree canopy cover in neighborhoods potentially vulnerable to extreme heat events and other climate change impacts. A Health Impact Assessment (HIA) was conducted to assess health and psychosocial outcomes associated with urban tree planting and identify vulnerable neighborhoods whose populations would most likely benefit from increasing tree canopy.

METHODS:
Methodology developed by the North American HIA Practice Standards Working Group was used to assess the proposed policy of targeted tree planting, and included: screening for value and feasibility; scoping to determine health issues for analysis and research methods to be employed; assessment of vulnerabilities and key health impacts in affected communities; reporting the assessment findings; and communicating the results. Scoping and assessment employed both qualitative and quantitative methods based on literature reviews and available health and demographic statistics. A Vulnerability Index was created using 13 Census demographic measures at the block level to identify and map neighborhoods that are likely vulnerable to adverse effects of heat events; this was overlayed with current tree canopy cover to identify high priority areas for tree planting. Scoping meetings with the communities and HIA planning team, combined with a thorough review of the literature linking tree canopy with health or psychosocial outcomes, identified priority outcomes for the assessment phase of the HIA, which were measured using existing prevalence data including Behavioral Risk Factor Survey and Washtenaw County Health Improvement Plan Survey, hospital discharge data, and Michigan Uniform Incident Crime Reporting statistics.

RESULTS:
The HIA identified neighborhoods with low tree canopy whose inhabitants were more likely to be exposed to air pollution and crime, and less likely to participate in physical activity, compared to neighborhoods with more trees. These vulnerable neighborhoods were at risk for higher rates of heat related illness, asthma, COPD, diabetes, obesity, hypertension, and mental illness than neighborhoods with greater tree canopy. Vulnerable neighborhoods had a preponderance of individuals who were female, multiracial or black, aged 18-24 years and 5 to 9 years old, non-high school graduates, or those earning less than $15,000.

CONCLUSIONS:
The Ann Arbor HIA documented the value of targeting tree planting in vulnerable neighborhoods, and identified specific outcomes likely to be impacted by targeted tree planting. Monitoring will be needed to reveal any measurable benefits to the neighborhoods or City.
BACKGROUND:
North Carolina implemented a Smoke-Free Restaurants and Bars Law on January 2, 2010. A 2011 study showed that the rate of emergency department (ED) visits for acute myocardial infarction in NC decreased by 21% after implementation of the law. Reports by the Surgeon General and the Environmental Protection Agency provide significant evidence suggesting a causal relationship between secondhand smoke and asthma attacks. Several other studies have shown an association between smoke-free legislation and reduced hospitalizations and/or ED visits for asthma. Therefore, the ED visits for asthma in NC before and after the implementation of the law were examined to see if a similar decrease occurred.

METHODS:
An interrupted time series design was used to evaluate the effect of the implementation of the legislation on ED visits for asthma. Using data from the North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT), we extracted ED visit records for the years 2008-2009 (pre-law) and 2010-2011 (post-law) with a first or second listed ICD-9 CM diagnosis code for asthma. Crude and adjusted rate ratios were calculated by modeling the monthly number of ED visits for each stratum of sex, county, and age. Analyses will be conducted using Poisson regression models and use stepwise regression to identify the best fitting model.

RESULTS:
Preliminary results of the ongoing analysis suggested that the unadjusted rates of ED visits for asthma decreased among certain populations after the implementation of the law in 2010. The unadjusted rates of ED visits for asthma were calculated to show change pre-law versus post-law. The rate significantly decreased for adults (18+) from 735.2 to 724.3 visits per 100,000 residents post-law. The rate among females, specifically adult female residents also saw a significant decrease. The rate among females in general decreased from 1009.1 to 986.8 visits per 100,000 residents and adult females saw a decrease from 978.1 to 942.9 visits post-law per 100,000 residents. Interestingly, the rate significantly decreased among residents of urban counties from 885.7 visits pre-law to 806.5 visits post-law per 100,000 (showing a 9% decrease). Creation of a regression model is ongoing to consider confounding variables such as temperature, air quality, allergic rhinitis, and influenza rates.

CONCLUSIONS:
Based on previous studies and our preliminary results, it is hypothesized that after adjusting for these confounding variables a decrease in ED visits for asthma among adults in NC after implementation of the law will continue.
BACKGROUND:
In September 2012, the Tennessee Department of Health investigated an outbreak of fungal infections among patients who received epidural glucocorticoid injections. The investigation implicated contaminated methylprednisolone acetate (MPA) as the source of fungal exposure. Our objective was to identify risk factors for infection among patients who received MPA injections in Tennessee.

METHODS:
Records of glucocorticoid injection procedures performed at the three clinics from June 26, 2012, to October 2, 2012, were abstracted using a standard questionnaire. Cases were defined according to the CDC case definition as of December 20, 2012, which includes case classifications of meningitis, stroke, spinal or paraspinal local infection, or local infection of a peripheral joint. A cohort analysis was performed to identify risk factors for infection among patients who received MPA injections in Tennessee.

RESULTS:
A total of 1021 patients at three clinics received MPA injections. As of December 20, 2012, 131 (12.8%) patients met the case definition; 105 patients had localized spinal or paraspinal infection, 76 had meningitis, 3 had stroke (without lumbar puncture), and 2 had joint infection. In univariate analysis, risk factors for fungal infection included: age >60 years, female sex, receiving an injection at Clinic B, exposure to multiple procedures, exposure to MPA lot 06292012@26, and exposure only to vials >50 days old (compared to exposure to newer vials only); protective factors included receiving an injection at Clinic C and exposure to MPA lot 05212012@68.

In multivariate analysis, risk factors for infection included age >60 years (adjusted odds ratio (aOR): 3.69; 95% CI: 2.21, 6.15); undergoing at least one translaminar procedure (aOR: 2.02; 95% CI: 1.24, 3.28); and cumulative dose of lot 06292012@26 injected 46-60 days and >60 days after production, in 40-mg increments (aOR: 1.39; 95% CI: 1.16, 1.67; aOR: 1.80; 95% CI: 1.50, 2.17, respectively). Risk factors for meningitis or localized spinal or paraspinal infection were similar to the results for all cases.

CONCLUSIONS:
We identified procedural and demographic risk factors for fungal infection following MPA injection. Of note, infection risk increased with every 40-mg exposure to MPA lot 06292012@26 with shelf life >45 days, indicating that these vials may have been more heavily contaminated than vials from lot 05212012@68 and newer vials of lot 06292012@26.
BACKGROUND: Illnesses with neurologic manifestations often come to the attention of public health because etiologies include viruses such as rabies, varicella, measles, West Nile and other arboviruses, enteroviruses (EV) as well as bacteria such as *Neisseria meningitidis*. Un- or mis-diagnosed neurologic illnesses can be costly in terms of clinical workup and treatment, and may also result in fear in the community. Misdiagnosis also leads to less effective surveillance for many of these diseases. Unfortunately, it is a common misconception that molecular testing of cerebrospinal fluid (CSF) is the best methodology for the diagnosis of many viral agents, while such testing is simultaneously undervalued for bacterial etiologies. The California Department of Public Health (CDPH) evaluated samples from patients with neurologic illnesses, particularly encephalitis, with the goal of identifying etiologic agents. Important caveats were learned about the limitations and utility of polymerase chain reaction (PCR) testing of CSF samples.

METHODS: Between 1998 and 2012, serum, CSF, and respiratory samples from patients with neurological illnesses were received and tested for potential infectious agents by the CDPH Viral and Rickettsial Disease Laboratory (VRDL).

RESULTS: Specimens from 4,081 suspect viral encephalitis cases were received and tested. A single CSF PCR was negative in 59 (29%) of 175 EV cases, 19 (24%) of 79 Herpes Simplex 1 Virus cases, 36 (65%) of 55 Epstein-Barr Virus cases, and all of 7 rabies cases. Either a 2nd CSF or non-CSF specimen was used to determine the diagnosis. Conversely, of 45 patients with positive CSF Human Herpes Virus 6 (HHV6) PCR, only a subset were actually due to HHV6. Additionally, a subset of suspect ‘viral’ encephalitis cases with negative bacterial CSF culture were found to be CSF PCR positive for *N. meningitidis* (6) or *S. pneumoniae* (3).

CONCLUSIONS: Although molecular testing plays an important role in the detection of causative agents for neurologic illnesses, substantial limitations exist with respect to making viral etiologic determinations using CSF PCR testing alone. Conversely, use of CSF PCR for bacterial agents in appropriate settings may assist in determining the causal agent of some previously ‘unknown’ cause cases. The CDPH experience suggests that consideration of these limitations is important for both testing choice and interpretation of results. Knowledge of these experiences can improve appropriate case follow-up as well as public health surveillance and response.
BACKGROUND:
West Nile virus (WNV) causes annual seasonal outbreaks that fluctuate in size and scope. In 2012, >5,400 cases of WNV disease were reported in the United States, the most since 2003. We evaluated national surveillance data to determine if the higher number of WNV cases reported in 2012 was associated with changes in the epidemiology or severity of disease.

METHODS:
WNV disease is a nationally notifiable condition. Cases are reported to CDC using standardized case definitions and classified as neuroinvasive (e.g., meningitis, encephalitis, or acute flaccid paralysis) or non-neuroinvasive disease. Due to more uniform testing practices, neuroinvasive disease is a more consistent measure of incidence and severity. We calculated incidence, distribution of age, sex, and clinical syndrome, hospitalization rates, and case-fatality ratios for neuroinvasive disease cases reported in 2004–2011 and 2012. To determine if the 2012 values were different from what would be expected based on previous years, we calculated 95% prediction intervals (95% PI) for 2012 based on 2004–2011 and compared them to the observed 2012 data reported as of January 7, 2013.

RESULTS:
Preliminary 2012 data indicate the incidence of reported WNV neuroinvasive disease was 0.89 cases per 100,000 population, which is higher than expected based on data from 2004–2011 (average annual incidence 0.31; 95% PI 0.01-0.61). The average age of cases was 57 years in both 2012 and 2004–2011 (95% PI 55-59 years) and 60% were male during both time periods (95% PI 55-64%). The distribution of clinical syndromes for neuroinvasive disease cases was similar in 2012 compared to 2004-2011 [encephalitis (56% vs. 58%; 95% PI 53-62%), meningitis (37% vs. 36%; 95% PI 29-44%), and acute flaccid paralysis (8% vs. 6%; 95% PI 2-11%)]. The hospitalization rate for neuroinvasive disease cases was higher in 2012 (93%) than 2004–2011 (90%) but it was within the expected 95% PI (75-100%) for the previous 8 years and was similar to rates for each of the last 4 years (93-97%). The case fatality ratio was similar in 2012 and 2004–2011 (8% vs 9%; 95% PI 6-11%).

CONCLUSIONS:
The WNV disease outbreak in 2012 was larger than expected based on recent patterns from 2004–2011. Despite the increased incidence of neuroinvasive disease, national surveillance data showed no evidence of increased disease severity compared to the previous 8 years.
BACKGROUND:
Lymphocytic choriomeningitis virus, a rodentborne arenavirus, can cause aseptic meningitis, encephalitis, and severe birth defects among humans. In May 2012, four employees of an Indiana rodent-breeding facility experienced aseptic meningitis caused by lymphocytic choriomeningitis virus. An epidemiologic investigation revealed exposure to lymphocytic choriomeningitis virus infected mice originating from a Kentucky breeding facility (Facility A) as the cause. We investigated Facility A to determine the extent of the outbreak and prevent further cases.

METHODS:
We performed lymphocytic choriomeningitis virus serologic testing for all Facility A employees and conducted interviews to assess their infection control practices and potential risk factors for seroconversion. We reviewed shipping records and contacted facilities that had received potentially infected mice to encourage euthanization of the mice and assess employees’ risk for exposure. Pregnant, sick, or immunocompromised pet store employees were offered serologic testing.

RESULTS:
Among 32 Facility A employees, 11 (34%) were lymphocytic choriomeningitis virus seropositive, and one experienced aseptic meningitis; the one pregnant employee tested negative. Twenty-nine (91%) reported wearing gloves, and 13 (41%) using a mask. No risk factors were significantly associated with seroconversion. Feeder mice bred as reptile food at Facility A comiled with wild mice, the presumed source of infection. Among facilities from 21 states that received these mice, 264/521 (51%) pet stores and 7/11 (64%) distributors still had >500,000 potentially infected mice, which were subsequently euthanized. Thirty-five pet store employees from six states tested negative for lymphocytic choriomeningitis virus.

CONCLUSIONS:
Lymphocytic choriomeningitis virus can pose a serious health risk to persons who work with or handle mice. Rodent breeding facilities should ensure that wild mice are separated from mice intended for distribution. Personal protective equipment and education regarding its use should be provided to employees who handle mice.
PRESENTATIONS ON MONDAY, JUNE 10 • 10:00AM

Board #117
1526 Hantavirus Outbreak Investigation--Yosemite National Park, 2012

JONATHAN NUNEZ
California Department of Public Health

BACKGROUND:
Hantavirus pulmonary syndrome (HPS) is a severe, frequently fatal, respiratory disease caused by inhalation of sin nombre virus (SNV) in aerosolized excreta from infected deer mice. During June–August, two cases of HPS among Yosemite National Park (YOSE) visitors were reported. Because HPS clusters are rare, we investigated the extent and source of disease.

METHODS:
Cases were defined as any febrile illness with SNV antibodies or antigens after lodging at YOSE during June 1–August 28. Patients were located through YOSE visitor notifications and clinician health alerts. We reviewed clinical data and YOSE lodging records, and interviewed patients. We compared the number of cases by lodging type by using Fisher’s exact test. We examined lodging facilities for rodent activity and collected mice for SNV serology.

RESULTS:
Among 10 patients identified, nine experienced respiratory illness and three died. Median age was 44.5 years (range: 12–56). One had stayed in an area previously associated with HPS cases. Nine stayed in Curry Village (CV), an area not previously associated with HPS. All nine had stayed in signature tent cabins (STC), which differ from regular tent cabins in having an insulated shell. At CV, nine cases among 8,719 STC lodgers were reported, compared with none among 40,288 regular tent cabin lodgers (P <0.001). Rodent infestations were common in STC insulated spaces. Of 185 traps placed at CV during August, 73 (39%) successfully trapped deer mice; 14% were SNV-seropositive.

CONCLUSIONS:
SNV-infected deer mice were present in CV. Infestation of insulated spaces likely increased the risk for hantavirus transmission in STCs, leading to this outbreak. All STCs were closed indefinitely, and multifaceted rodent exclusion and control measures were implemented.
BACKGROUND:
The healthcare burden of the intersecting epidemics of human immunodeficiency virus (HIV), hepatitis C (HCV), and hepatitis B (HBV) has not been extensively studied. Most studies have focused on viral co-infection in clinical settings, leading to gaps in knowledge on the impact of co-infection at a population level. Through examination of the healthcare and financial burdens of HIV, HCV, and HBV in a large hospital billing database, hospitalization trends and high risk subgroups can be characterized.

METHODS:
Hospitalization data for residents of southeastern Pennsylvania were extracted from Pennsylvania Health Care Cost Containment Council (PHC4) hospital billing database for 1996-2010. Infection status was determined by ICD-9 codes indicative of infection or co-infection. The mean hospitalizations for patients in co-infection groups were compared to those for mono-infection groups.

RESULTS:
9750 persons infected with HCV were identified, with a mean of 13.69 hospitalizations per patient. 1426 HBV cases and 4796 HIV cases were also found, with mean hospitalizations of 17.99 and 11.18 visits per patient, respectively. Among the co-infection groups, 660 cases of HIV/HCV, 609 cases of HBV/HCV, and 194 cases of HIV/HBV were identified, with average hospitalizations of 17.47, 20.33, and 19.05 visits per patient, respectively. Generally, hospitalizations were higher for those identified with co-infections versus mono-infected individuals. On average, those with HIV/HCV co-infections had 6.3 more visits than individuals with HIV mono-infections and 3.8 more visits than HCV mono-infected individuals (p<0.0001). Individuals with HBV/HCV co-infection exhibited an average of 2.3 more visits than those with HBV mono-infection (p<0.02) and 6.6 more visits than those with HCV mono-infection (p<0.0001). As compared to HIV mono-infected persons, individuals co-infected with HIV/HBV had an average of 1.1 more hospital visits per patient (p<0.0001). No significant difference was seen for HBV mono-infection and HIV/HBV co-infection.

CONCLUSIONS:
The observed increases in the number of hospitalizations for virally co-infected persons relative to mono-infected persons indicates a critical need for early identification and treatment of co-infected persons, as well as services integration at both the screening and treatment levels. Further knowledge of the health care burden and financial impact of the intersecting epidemics of HIV, HCV, and HBV infection is vital to future program planning and development.
BACKGROUND:
Pertussis incidence had increased dramatically in the past 20 years. Control efforts have included the introduction of the acellular vaccine as well as additional booster vaccinations recommended at school entry, 6th grade and once as adults. These measures have led to a discussion of the reservoir of infection and transmission patterns, especially in the context of preventing infant infectious.

METHODS:
Analysis of pertussis case reports to the Centers for Disease Control and prevention 1990-2008, were aggregated over time and analyzed by state. Age groups were defined as child <5 years, elementary 5-9 years, teen 10-19 years, and adult 20+ years. Years were separated into epidemic and non-epidemic based whether infants (<1 year) exceeded an incidence rate of 40 per 100000 infants in any quarter of the year. Splined, fortnight aggregated, case averages were plotted by state, age and epidemic year, from which peak and trough values and corresponding fortnight were extracted. Plots were examined to illustrated age specific transmission tendencies, and hypotheses were examined within a state specific context.

RESULTS:
Strong age-specific trends were evident both in epidemic and endemic years, case reports initially peak in children, followed by adults and finally teens. Elementary school children exhibited very low incidence, but frequently exhibited a bi-modal transmission patterns, aligning with both the child and teen transmission periods. Alternatively a few states, report co-incident peaks among all age groups. Transmission peaks were not significantly different between epidemic and not epidemic years.

CONCLUSIONS:
The national data suggests endemic transmission may be initiated by low level transmission in the teen age-group. Shortly thereafter increasing disease reports are evident among infants and adults. However, the primary transmission period among teens usually occurs in the late fall months. The annual primary peak transmission period cannot clarify the primary infection reservoir of pertussis, as children are the earliest group to report peak infection. The delayed primary transmission among the teen age-groups suggests strong within group transmission, which is expected based on strong within group contact patterns seen in other studies. Their atypical infection period tends to extend the duration of infection within a state, and they appear to have the highest baseline case reporting average throughout the year.
BACKGROUND:
Imported Dengue to non-endemic regions presents an unwelcome opportunity for Dengue establishment. Little is understood on transmissibility, vector density, thresholds and climactic impact in temperate zones like the United States. Travel recommendations for US travelers to Dengue endemic regions include the use of mosquito avoidance practices (MAP). To understand risk of Dengue establishment in the US, it is important to conduct research on travel behavior and significant factors that influence compliance with MAP, particularly in high-risk populations such as visiting friends and relatives (VFR) travelers and repeat travelers.

METHODS:
A pre-travel behavioral assessment survey on MAP was developed and tested in travelers to the cultural celebration of Carnival in the Republic of Trinidad and Tobago in 2012. The survey used an adaptation of the Precaution-Adoption Process Model (PAPM) to identify stages of awareness to compliance with MAP for Dengue prevention. Data was collected using snowball sampling through social media. An exploratory factor analysis established construct validity and revealed a tentative intended MAP international travel behavior model (IMAP-ITB). Field observations of comparative population samples were conducted as a complete participant/participant observer with travel groups to Brazil and Thailand. Field notes were collected for qualitative analysis to inform the tentative IMAP-ITB model.

RESULTS:
The survey can identify PAPM-Dengue stage of the traveler to determine behavioral risk of Dengue acquisition. The IMAP-ITB model revealed cultural embeddedness, risk distractions, type of travel and experiences as constructs associated with intended MAP. Field observations revealed social interactions as influential on actual MAP, insect repellent use was considered a personal responsibility for travelers, repeat travelers had lower risk perception for travel-associated illnesses, and social/physical environment directly influenced MAP based on cultural embeddedness, risk perception and perceived severity in the travel destination.

CONCLUSIONS:
Social and physical environmental factors play an important role on intended and actual MAP. More research is needed to understand differences in travel experiences and the role of environment on actual travel behavior.
BACKGROUND
Connecticut (CT) has one of the lowest teen pregnancy rates in the United States; however, a great disparity exists between whites and other ethnicities. Black teens are 4-5 times more likely and Hispanic teens are 8 times more likely to give birth compared to whites. The risks of teen pregnancy, namely school dropout and low birth weight, in these minority groups call for interventions that move toward the elimination of disparities. The objectives of our research are to: 1) Formulate an action plan to identify community partnerships to assist Planned Parenthood (PP) in reducing teen pregnancy disparities in CT; 2) Determine the risk of teen pregnancy attributable to race/ethnicity in three cities of interest.

METHODS:
Focus groups were conducted with teen peer educators. One hour sessions were conducted at PP facilities. Key informant interviews were conducted by phone with staff at local health facilities. Atlas. ti and Statistical Programming Software Packages were used to analyze results from qualitative and quantitative findings. Region specific teen birth data was used to calculate population attributable risk.

RESULTS:
Three focus group sessions were completed with a 22 adolescent participants (14 female, ages 15-21). Seventeen (77%) respondents self-identified as African American. More than 50% of session attendees were aware of all birth control forms. Condoms (64%) and abstinence (36%) were the most common types used. Respondents attributed teen pregnancy to desire for pregnancy, perceived invincibility, lack of knowledge and family precedent. Respondents indicated that a more substantial presence from peer educators and improved school sex education could have an impact on reducing teen pregnancy in minorities. Two key informants expressed concerns with lack of support to finish school, cultural beliefs towards teen pregnancy, faith/religion as a barrier, and support from the community to tackle this issue. Key informants echoed the focus group sentiments that school sex education was inadequate. A large percentage of teen births could be eliminated if racial disparities were removed, most notably 73.2% in New Haven.

CONCLUSIONS:
Analysis of our qualitative research revealed themes of inadequate education and educational resources in area schools. Parent groups, health centers and faith-based organizations provide potential opportunities for partnership and access to teen behavior modifiers. Results from this research provide information with individual and community centric perspectives to PP regarding the necessary steps to design programs aimed at reducing disparities in teen birth rates in Connecticut.
BACKGROUND:
The NYC Department of Health and Mental Hygiene (DOHMH) receives approximately 2,800 complaints about restaurants annually through the City’s non-emergency call number and website known as “311.” During a recent outbreak, DOHMH noted that many patrons had reported illness on restaurant review website X but had not notified 311. To detect outbreaks not previously identified and potentially prevent further illness, DOHMH collaborated with website X and Columbia University on systematically analyzing restaurant reviews for foodborne illness complaints.

METHODS:
Using website X’s NYC data, we trained a program to automatically analyze the text of reviews for foodborne illness complaints (e.g., sick, vomiting, diarrhea), and other criteria including number of people ill and relevant incubation period (>10 hours). DOHMH used this program to download and analyze new reviews weekly. Flagged reviews were then examined to determine if they 1) indicated an episode of gastrointestinal illness related to a restaurant, 2) suggested the illness occurred recently (within four weeks of the review if a time period was provided), and 3) warranted further investigation because two or more people were ill or severe illness occurred. For all reviews with a recent illness or no time period specified, the reviews were compared with the 311 database to identify duplicate complaints. For reviews requiring further investigation, DOHMH contacted the reviewers through website X’s messaging service.

RESULTS:
From July 2012 - November 2012, 309 reviews were flagged by the classifier program; 165 (53%) described an episode of gastrointestinal illness, and 150 reviews suggested the illness had occurred recently or did not provide a time period. Comparison of these 150 reviews with the 311 database revealed that only five (3%) reviewers had also submitted a complaint to 311. Thirty-one reviews required further investigation, and six (19%) of these reviewers completed a phone interview. In response to the six complaint interviews, representing approximately 13 illnesses, DOHMH reviewed the food inspection history of all six restaurants and conducted environmental investigations at two restaurants.

CONCLUSIONS
Many restaurant-related foodborne illness episodes are not reported to city agencies, but are posted to restaurant review websites. By analyzing reviews on a regular basis, DOHMH was able to detect unreported restaurant-related illnesses and further investigate these establishments. Although no additional outbreaks were detected, DOHMH will continue to explore this tool by refining the mechanics used in the classifier program and expanding the analysis to include additional review websites.
BACKGROUND:
Healthcare-associated hepatitis is an emerging public health problem. The recent shift in healthcare delivery to outpatient settings with limited oversight and infection control resources has made surveillance critical. In New York State (NYS) all laboratory confirmed cases of hepatitis are reported via electronic surveillance systems. The Bureau of Healthcare-Associated Infections (BHAI) uses this information to track and investigate potential transmission in healthcare facilities. This study evaluates the New York Healthcare-Associated Hepatitis Surveillance System (NY-HAHSS) and provides recommendations to improve its future use.

METHODS:
Evaluation was conducted using CDC Guidelines for Evaluating Public Health Surveillance Systems. Data on NYS cases of healthcare-associated hepatitis B and hepatitis C were extracted from the Electronic Clinical Laboratory Reporting System (ECLRS) and paired with an investigation timeline in NY-HAHSS. To evaluate timeliness, median times between three points (diagnosis date, BHAI notification date, investigation completion date) within NY-HAHSS were calculated for 2011−2012. Wilcoxon rank-sum tests were performed to determine significance. Stakeholders from NYS Department of Health were interviewed to evaluate the simplicity and usefulness of NY-HAHSS.

RESULTS:
Compared to 2011, median time was shorter for all intervals in 2012. Median time between diagnosis date and BHAI notification date in 2012 (37 days, N=14) was significantly lower than in 2011 (98 days, N=19, p=0.03). No significant differences were found for either median time between BHAI notification date and investigation completion date in 2012 (73 days, N=13) compared to 2011 (89 days, N=19, p=0.82) or median time between diagnosis date and investigation completion date in 2012 (110 days, N=13) compared to 2011 (187 days, N=19, p=0.123). Seven stakeholders were interviewed about NY-HAHSS. Regarding simplicity, four of seven stakeholders (57%) were dissatisfied. The laborious data collection process, inadequate coordination with local health departments, and manual tracking of investigations were cited as areas in need of improvement. All stakeholders found NY-HAHSS to be useful.

CONCLUSIONS:
From 2011−2012, NY-HAHSS demonstrated a marked improvement in timeliness. Greater collaboration with Bureau of Communicable Disease Control and weekly verification of NYS healthcare-associated hepatitis cases might explain this difference. Furthermore, evaluation of NY-HAHSS revealed it was useful for investigating potential healthcare exposures, managing outbreaks, and monitoring trends in hepatitis in NYS. In the future, efforts should be made to improve the simplicity of NY-HAHSS. Creating a formal database for NY-HAHSS and training additional BHAI employees to manage it would streamline the data collection process and enhance the data analysis capabilities of NY-HAHSS.
BACKGROUND:
Cryptosporidiosis is a highly infectious illness caused by chlorine-tolerant protozoa of the genus Cryptosporidium. After experiencing the largest recreational water associated outbreak of cryptosporidiosis in United States history in 2007, Utah Department of Health (UDOH) began publishing a weekly surveillance report on its website. All confirmed cases of cryptosporidiosis in Utah are investigated to identify potential infection sources, with particular focus on recreational water exposure. UDOH is concerned with the ability of its surveillance system to accurately detect unexpected increases in cryptosporidiosis and to identify common recreational water exposures, enabling public health intervention in a timely manner. Therefore, we aimed to assess the accuracy and timeliness of the current system.

METHODS:
The UDOH surveillance report includes weekly cumulative year-to-date confirmed cryptosporidiosis cases and the percentage of case patients reporting recreational water exposure. The report is completed while case investigations are pending and case statuses may not be finalized. To assess surveillance report accuracy, using the same data source, we generated a second report, the PCSA (Post-Cryptosporidiosis-Season Analysis), after all investigations from 1/1/2012-11/3/2012 were closed and case statuses were irrevocable. Differences between weekly case counts from the UDOH report and the PCSA were tested using the Wilcoxon Signed Rank test. We also calculated the overall mean weekly difference between the two reports and the average duration between date reported to public health and date case confirmation was finalized.

RESULTS:
The total number of cases reported for the time period 1/1/2012-11/3/2012 was similar for the two reports (UDOH report: 168; PCSA: 165). However, the UDOH weekly surveillance report case counts were consistently lower than the PCSA case counts (p<0.01). The mean (standard deviation) weekly difference between the PCSA and the UDOH report was 20.5 (15.1) cases (median=17.5). The mean time from date reported to public health to case confirmation date was 27.9 (42.5) days (median=14 days).

CONCLUSIONS:
The PCSA was generated after case statuses were finalized and is therefore the most accurate account of confirmed cryptosporidiosis cases. However, it does not provide real-time data. The UDOH surveillance report is timelier, but consistently underestimates weekly cumulative case counts. The lower surveillance report case counts suggest that case confirmation timing influences reported confirmed cases. Updating case confirmations weekly, immediately preceding report generation, would improve data accuracy. Improved accuracy of the already timely surveillance reports will strengthen UDOH’s ability to rapidly detect unexpected increases in cryptosporidiosis and identify common recreational water source exposures.
BACKGROUND:
The Wisconsin Violent Death Reporting System (WVDRS) is a statewide, active surveillance system that compiles information from death certificates, coroner and medical examiner (C/ME) records, law enforcement (LE) reports, and crime lab data to construct a unique and thorough picture of the characteristics and circumstances of violent death incidents. The Wisconsin Department of Health Services first received National Violent Death Reporting System (NVDRS) funding from the Centers for Disease Control and Prevention (CDC) in 2003 and data collection began in 2004. As the system nears its 10th year of operation, it is necessary to formally evaluate WVDRS according to the CDC guidelines in order to identify and address system limitations.

METHODS:
An evaluation of WVDRS processes and attributes was conducted according to the CDC’s “Updated Guidelines for Evaluating Public Health Surveillance Systems.” Quantitative measures of system timeliness and data provider participation were obtained from CDC-generated reports and through analysis of the 2008 WVDRS database and research file. WVDRS acceptability and utility were assessed qualitatively through key informant interviews with WVDRS staff, data providers, and data users.

RESULTS:
Timeliness of case initiation in NVDRS decreased from 92.7% initiation within 180 days of death in 2008 to 21.8% in 2009 and 0.0% in 2010. Changes in the case ascertainment process in 2011 led to substantial improvements in timeliness in more recent data years. The decentralized structure of C/ME and LE systems in Wisconsin, understaffing in local C/ME offices, and limited outreach to data providers have resulted in diminished acceptability of and participation in WVDRS since 2008. The potential utility of WVDRS is widely recognized by data providers and users but has been limited in the past few years by insufficient epidemiologic and technical support and consequent delays in data dissemination. Additions to staff and increased support from Wisconsin’s Office of Health Informatics are expected to rapidly improve the utility of WVDRS as the system moves forward.

CONCLUSIONS:
The evaluation identified many strengths and weaknesses to WVDRS processes. In recent years, WVDRS has struggled to restore and maintain timeliness, acceptability, and utility while faced with losses in personnel and changes in data provider operations. The evaluation resulted in recommendations for internal process changes that will be implemented to improve the acceptability, utility, and timeliness of the surveillance system.
BACKGROUND:
Early detection of disease outbreaks is important for timely implementation of disease prevention and control measures. Including patients' demographic and disease information, communicable disease data in New York State (NYS), excluding New York City, is stored in the NYS Department of Health Communicable Disease Electronic Surveillance System (CDESS). This data can be used to identify potential disease outbreaks by detecting spatial-temporal case clusters with scan statistic.

METHODS:
The SatScan space-time permutation model was applied to pertussis and shigellosis cases reported in CDESS, using patients' residential zip code as the geographic level and case investigation date as the event date. The maximum cluster size was set as a circle with radius <= 20 kilometer (km) that could span up to 15 days. With cases reported since 1/1/2011, twenty-four separate space-time analyses were performed prospectively - two for each month of 2012. The SatScan analyses were called by a SAS program which also produces reports of detected clusters in table and map. The outbreak status of reported cases in CDESS was used to evaluate accuracy of the clusters detected by the scan analyses. For the purpose of this study, a cluster is considered as a confirmed outbreak if it contains one or more outbreak cases.

RESULTS:
There were 2,719 pertussis and 802 shigellosis cases reported in 2012. At the p< 0.05 significance level, the scan statistic detected 47 pertussis and 34 shigellosis clusters, of which 37 and 21 were confirmed as outbreaks, yielded positive predictive value (PPV) of 79% and 62% respectively. The median case count was 6 with medians spatial size of 11.6 km and 7 days in duration for pertussis clusters and the medians were 8 cases, 9.2 km, and 10 days respectively for shigellosis clusters.

CONCLUSIONS:
As the space-time permutation scan statistic only requires disease counts, event date and disease location, the method can be easily implemented for detecting disease outbreaks using data routinely collected from disease surveillance systems. The current study showed that scan statistic is a useful tool for detecting pertussis and shigellosis clusters with reasonable PPVs for outbreaks. This method also returns important information to assist outbreak investigations, such as geographic location and time-span of the potential outbreaks. Since the scan statistic result can be greatly affected by disease patterns such as case frequency, incubation period, transmission pattern, etc., it is important to set up scan parameters properly according the disease of interest to achieve optimal results.