

## POSTER SESSION - Tuesday, September 16, 2008

**BREAK and  
POSTER SESSION  
2:30 p.m. – 3:30 p.m.  
Foyer & Peak 1-3**

### **P1 - An analysis of lipids, impaired fasting glucose, and metabolic syndrome among 80,511 health fair participants in Colorado**

*Stephanie Coronel, Senior Project Manager & Epidemiologist, Colorado Prevention Center*

#### **Abstract:** Background:

Metabolic syndrome, a growing health problem affecting over 50 millions adults in the United States, increases the risk for heart disease by 1.5-3 fold. The prevalence of metabolic syndrome has not been well examined in the state of Colorado. Metabolic syndrome defined using modified NCEP ATP III/ADA guidelines includes the presence of 3 or more of the following: 1) waist circumference >102 cm in men or >88 cm in women; 2) triglyceride levels >150 mg/dL; 3) high density lipoprotein (HDL) cholesterol levels <40 mg/dL for men or <50 mg/dL for women; 4) blood pressure >130/85 mm Hg; and/or 5) fasting glucose levels of >100 mg/dL.

#### Methods:

In collaboration with 9Health Fair, we evaluated fasting lipid and glucose levels for 80,511 individuals that visited a health fair between March and May 2006. Proportions of patients with suboptimal lipid glucose levels were calculated. Using HDL, triglyceride, and glucose levels we determined a minimum prevalence of metabolic syndrome. Because our database does not contain information on waist circumference and blood pressure, the rates of metabolic syndrome described herein represent an estimate of the minimum prevalence. In addition, we used logistic regression to determine the odds of having metabolic syndrome after adjusting for all risk factors.

#### Results:

Mean age of the cohort was 56 +/- 14 years and 59% were female. A substantial proportion had suboptimal lipid and glucose levels: 74% had high -cholesterol levels, and 22% impaired fasting glucose. As determined solely by HDL, triglyceride and glucose values, the minimum prevalence of metabolic syndrome for the entire population was 5.6% (95% CI 5.4 - 5.7). Hispanics and Native Americans each had a nearly 2-fold higher minimum prevalence rate of 9.1%. Those with the lowest levels of education also had minimum prevalence rates exceeding 9% while uninsured participants had rates of 7.5%. The lowest rates were found among younger participants, those with graduate school education, and those on no chronic medications. Minimum prevalence rates of metabolic syndrome varied by county and ranged from 2.1% to 20.7%. Multivariate regression results were consistent with those observed independently for each category.

#### Conclusion:

We observed a substantial proportion of Colorado citizens with inadequate risk factor control including glucose

intolerance and metabolic syndrome. We also observed ethnic differences in the minimum prevalence of metabolic syndrome. These data suggests that risk factor control in Colorado is worse among vulnerable populations as defined by geographic region, race, insurance status, and education levels. We believe the high rates of impaired fasting glucose statewide and the multiple "pockets" of highly prevalent metabolic syndrome may serve to inform future public health interventions with an emphasis on vulnerable populations.

**Learning Objectives:** (1) In order to sustain our public health efforts, workforce and financial efforts must be focused on areas with the greatest need. At the end of the session, participants will be able to define metabolic syndrome, and (2) identify counties with highly prevalent metabolic syndrome who may benefit from targeted lifestyle and medical interventions.

**Public Health Topic(s):** Epidemiology and Statistics; Chronic Disease; Health Promotion, Disease Prevention, Education

**Essential Service(s):** Monitor; Diagnose and Investigate; Inform, Educate, Empower

**Target Audience:** Epidemiologists, physicians, nurses

### **P2 - Cardiovascular Risk Factor Knowledge among Monolingual, Uninsured Latinos in Denver, Colorado.**

*Craig Kapral, Project Manager/Medical Anthropologist, Colorado Prevention Center*

**Abstract:** Background: Knowledge and awareness of cardiovascular disease (CVD) risk factors is the critical first step towards health promotive behavior. While CVD remains the leading cause of mortality among Latinos in Colorado and the US, some studies have demonstrated lower awareness of preventive lifestyle behaviors in this population. Less is known about their actual knowledge of known CVD risk factors. Awareness among monolingual Latinos has not been well characterized. The objective of this study was therefore to assess knowledge of CVD risk factors among a group of monolingual and primarily uninsured Latinos attending a large screening event in Denver, Colorado.

**Methods:** The screening event included blood pressure, cholesterol, and global (10-year) CVD risk testing. 235 adult Latinos were recruited at Kaiser Permanente's 2007 Neighbors in Health Fair. A total of 182 participants (77%) completed a comprehensive telephone survey designed to assess knowledge and awareness of 10 CVD risk factors. 174 individuals identifying Spanish as their primary language constituted the analysis cohort. Knowledge was computed as a continuous variable based upon correct identification of the 10 risk factors. Multivariate regression analyses were conducted to determine factors independently associated with knowledge.

**Results:** Mean age was 41 +/- 11 years. Nearly all (97%) respondents reported a foreign country of birth, with 68%

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living in the United States ~15 years. The majority (61%) had incomplete education (middle school or less) and 46% reported annual family income as < \$20,000. 90% of participants had no health insurance. Mean number of correctly identified risk factors was 2.16 +/- 1.08 out of 10 pre-specified risk factors. High cholesterol was the most commonly cited risk factor (56%), followed by high blood pressure (34%), bad diet (32%) and overweight/obesity (30%). Only 16% correctly identified smoking or diabetes (17%) as CVD risk factors. Those who self-reported being well informed named 31% more risk factors on average compared with those that felt uninformed ( $p = 0.0174$ ). Participants with high school or more education had increased knowledge of risk factors versus those who had middle school or less (25% increase,  $p = 0.003$ ). No significant difference was found in ability to name risk factors between those who spoke with a health professional about their CVD risk at the fair and those who did not.

Conclusion: Despite receiving comprehensive CVD risk factor screening, 10-year global CVD risk assessments, and access to risk factor counseling and educational materials, substantial CVD knowledge gaps exist in the monolingual Latino community. Although knowledge was slightly higher among more educated and self reported "well informed" participants, overall knowledge was still low. This suggests that tailored educational efforts including downstream components beyond the initial screening event are necessary to improve CVD risk factor knowledge.

(Theme)Public health is sustainable only inasmuch as it serves all sociodemographic sectors of society. As such, we must address not only citizens engaged in the healthcare system but also those uninsured and vulnerable populations in order to reduce health disparities. This will foster a public health infrastructure that ensures sustainability and reach.

**Learning Objectives:** (1) Identify the gaps in knowledge of CVD risk factors demonstrated by a sample of monolingual, primarily uninsured Latinos in Denver, Colorado. (2) Describe the factors independently associated with risk factor knowledge among the sample population. (3) Determine the sociodemographic characteristics of the sample population.

**Public Health Topic(s):** Chronic Disease; Health Disparities and Underserved Populations; Health Promotion, Disease Prevention, Education

**Essential Service(s):** Inform, Educate, Empower; Research; Assure a Competent Workforce

**Target Audience:** Health educators, physicians, nurses, chronic disease prevention workers and researchers, and public health professionals interested in health disparities.

### P3 - Evaluating the effectiveness and appropriateness of a best practice infant feeding website for child care providers

*Alena Clark, PhD, MPH, RD - Assistant Professor, University of Northern Colorado*

**Abstract:** Breastmilk has been shown to provide benefits to the mother, infant and the community. In addition, many public health organizations recognize breastmilk as the ideal food for infants up to 1 year of age. Despite recognized benefits, the 4th most common cited reason Colorado mothers discontinue breastfeeding is because they must return to work or school. Every day, 3 out of 5 children are in child care. With the decline in breastfeeding often coinciding with mothers return to work, it is important to identify other community resources who can offer support to these mothers in an innovative and cost-effective way. A needs assessment (N=267) was completed that investigated the role of Colorado child care providers as an additional support system for breastfeeding mothers. Results of the needs assessment concluded that child care providers desired a website which contained infant feeding information, specifically on feeding breastmilk to the infants in their care. Child care providers also provided comments on how inaccurate infant feeding information was often provided to them by parents, colleagues and health professionals. Providing infant feeding information on the Internet can offer child care providers access to best-practice information twenty-four hours a day. The overall objective of this research study was to develop and evaluate the effectiveness of an infant feeding website for child care providers. First, group discussions with child care providers were led to determine the layout of the InfaNET Nutrition for Child Care Providers website. Second, the website was developed using the Social Learning Theory and contains best practice infant feeding information in English, Spanish and French on breastfeeding, bottle feeding and introducing solid foods to infants (<12 months). Third, a process evaluation (N=20) determined that the content and visual/graphic design of the website was appealing to both child care providers and infant feeding experts. Fourth, a quasi-experimental research design study was conducted (N=38) to determine the effectiveness of the website. In the experimental group, child care providers' behaviors and attitudes significantly improved ( $p < .05$ ) from pre- to post-test on ways they can create a supportive breastfeeding environment in child care centers. 3,972 visits to the website were made during the study period; no complaints were received from study participants regarding the usability of the website. Providing educational information on a website is an important and sustainable tool for all public health professionals to use for their clientele, but only when it contains best practice information and is usable by the target audience. The results of this research project reflect that the InfaNET Nutrition for Child Care Providers website was deemed by the child care providers as a well-liked, effective and technologically timely tool to receive infant feeding information.

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**Learning Objectives:** (1) Articulate the need to include child care providers as a community resource for supporting working breastfeeding mothers and their infants. (2) List three areas that child care providers perceive as important educational needs to provide a more supportive environment for working breastfeeding mothers and their infants. (3) Define behavioral and attitudinal changes that occurred when child care providers have access to a website that is specific to their needs on infant feeding, specifically breastfeeding as well as appropriate steps in developing and evaluating a website to provide important health education.

**Public Health Topic(s):** Maternal and Child Health; Physical Activity, Food, and Nutrition; Health Promotion, Disease Prevention, Education

**Essential Service(s):** Inform, Educate, Empower; Research; Evaluate

**Target Audience:** public health nurses, health educators, WIC educators

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### P4 - GIS Analysis of Childhood Immunization Rates and Pockets of Need for Denver County

*Christie Mettenbrink, Epidemiologist, Denver Public Health Department*

**Abstract:** The Community Health Services (CHS) organization within Denver Health, which serves the residents of the City and County of Denver, analyzed the childhood immunization rates within Denver to identify geographic areas where low immunization rates existed. This evaluation helped plan improvements of immunization efforts at existing Community Health Centers and School-Based Health Clinics as necessary, as well as helped determine where new outreach immunization efforts may be most valuable to compliment the current healthcare system. In our most recent collaborative effort between CHS, Denver Public Health (DPH), and Colorado Department of Public Health and Environment (CDPHE), GIS maps were produced detailing Vaccine for Children (VFC) provider coverage using information from both the Denver Health immunization registry (VaxTrax), and the statewide Colorado Immunization Information System (CIIS). This effort sought to identify those Denver neighborhoods containing the highest number of children eligible for VFC vaccine, families at risk for low immunization rates, and children with the lowest documented immunization rates. The resulting information assisted the CHS immunization program, along with the DPH Immunization Clinic, to better plan outreach immunization efforts in those neighborhoods determined by the GIS maps. Outreach immunization efforts are currently available in Denver Public Elementary School sites and Women, Infants, and Children (WIC) offices. Additional outreach immunization efforts are being implemented to include churches, municipal centers, food distribution and clothing banks located in community hubs.

**Learning Objectives:** (1) At the end of the session, participants will have a clear idea where low immunization rates lie in Denver County and the attempts that have been made to rectify these low numbers.

**Public Health Topic(s):** Application of Geographic Information Systems in Public Health; Immunizations; Built Environment

**Essential Service(s):** Diagnose and Investigate; Develop Policies and Plans; Monitor

**Target Audience:** Nurses and immunization outreach workers

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### P5 - Immunization Focus Groups: Exploring Obstacles and Interventions in the Childcare and School Settings

*Jamie Damico, Public Health Nurse Consultant, Colorado Department of Public Health and Environment*

**Abstract:** Immunizing children against vaccine preventable diseases in Colorado continues to be a high priority. The Colorado Immunization Program conducts annual immunization audits in the school setting to obtain statewide immunization rates. The focus group project sought to identify specific obstacles school nurses, childcares and parents encounter regarding immunizing Colorado's children. After identifying obstacles, it was important to create interventions that addressed those barriers. The qualitative data obtained from the focus group sessions support evidence based practice ideals and guides immunization best practices implemented in health care provider offices and clinics. The identified obstacles are congruent with current immunization literature and the data obtained from the focus group of parents who choose not to immunize their children or who choose to under-immunize their children provide a direction in the development of parent education addressing vaccine safety issues. The issue of sustainability in creating immunization efforts that protect populations from vaccine preventable disease is best demonstrated in the collaboration efforts of Colorado's immunization partners.

**Learning Objectives:** (1) At the end of the session, participants will be able to list 3 obstacle identified by school nurses. (2) At the end of the session, participants will be able to name 3 interventions created by the school and childcare immunization workgroups. (3) At the end of the session, participants will be able to identify 3 concerns parents voice regarding the safety of vaccinating their children.

**Public Health Topic(s):** Immunizations; Infectious Disease Control; Public Health Nursing

**Essential Service(s):** Research; Inform, Educate, Empower; Assure a Competent Workforce

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**Target Audience:** The target population for this poster presentation is public health nurse, educator, physicians/clinicians

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### **P6 - Importance of Developing Sustainable Relationships for Disease Investigations**

*Jennifer Ward, South Region Epidemiologist, Pueblo City-County Health Department*

**Abstract:** In September 2007, the Pueblo City-County Health Department (PCCHD) and representatives from the Colorado Department of Public Health and Environment (CDPHE) investigated a *Clostridium perfringens* foodborne intoxication outbreak associated with consuming chili beans prepared at a correctional facility. Approximately 125 of 500 (25%) inmates reported onset of gastrointestinal symptoms, primarily diarrhea and abdominal pain, within a 24-hour period after a lunch meal.

Public health is responsible to monitor health status and identify and solve community health problems. This outbreak taught PCCHD the importance of developing and sustaining relationships in order to manage small to large outbreaks. Events of this nature also ensure sustainability through training and mentoring of newer staff members. The investigation ran smoothly due to the collaboration between the PCCHD, the correctional facility and their medical team, and CDPHE. The correctional facility and their medical team implemented control measures immediately, collected specimens for testing, and worked with the PCCHD to identify the illness. PCCHD promptly initiated an investigation. A case-control study was conducted among a proportion of the ill and well inmates. Cases and controls were interviewed about symptoms and exposures during the week before the onset of illness. Environmental health specialists performed an onsite kitchen inspection. Twenty-four stool specimens from ill inmates and leftover food were sent to the state public health laboratory for viral, bacterial, and toxin analysis.

The case-control study included 36 cases and 40 controls. A case was defined as an inmate experiencing diarrhea, defined as three or more episodes in a 24-hour period, with onset after lunch on September 4 or on September 5. In addition to diarrhea, 33 (92%) cases reported abdominal pain. Less than one-third of cases reported fever, bloody diarrhea, or vomiting. Symptom onsets occurred between 1:00 p.m. September 4 and 2:00 p.m. September 5. Duration of illness ranged from two to 72 hours (median 24 hours). No cases were hospitalized. Several food exposures were statistically significant; however chili beans served for lunch on September 4 had the largest odds ratio (OR = 12.50,  $p = 0.0066$ ). An onsite kitchen inspection found several violations, including food holding temperature violations. Laboratory analysis found 18 of 24 (75%) stool specimens positive for *Clostridium perfringens* toxin. Chili bean culture results found 11,000 *C. perfringens* colonies per gram. According to the Centers for Disease Control and Prevention, the presence of the *C. perfringens* toxin in stool specimens of two or more ill individuals confirms a *C. perfringens* outbreak.

*C. perfringens* intoxication was determined to be the cause of the outbreak and is an important cause of foodborne illness worldwide. This outbreak demonstrates the importance of prompt public health response to reported outbreaks and the importance of collecting stool and food specimens to assist in determining the etiology.

**Learning Objectives:** (1) To identify the importance of developing and sustaining key partnerships. (2) To identify the importance of senior staff mentoring newer staff during investigations. (3) To identify the need for public health to be viewed as a leader in protecting the health and safety of the community.

**Public Health Topic(s):** Epidemiology and Statistics; Enhancing Public Health Systems; Infectious Disease Control

**Essential Service(s):** Monitor; Diagnose and Investigate; Assure a Competent Workforce

**Target Audience:** public health professionals

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### **P8 - Obesity Prevention: Teen Lifestyle Balance**

*Carol Foust, Chair and Professor, Colorado State University-Pueblo*

**Abstract:** Diabetes is a significant health problem in Pueblo County, Colorado. The prevalence of diabetes is higher in Pueblo than in Colorado as a whole (BRFSS 2001-2006). For example, the rate of people clinically diagnosed with diabetes in Pueblo is 8.7 percent, compared to 5.3 percent statewide and compared to the Healthy People 2010 objective of 2.5 percent. The age-adjusted death rate for diabetes for the county is 40.9 per 100,000, over twice the state rate of 18.3. Latinos, in particular, face significant health risk factors. The death rate from diabetes among Latinos is up to 2.3 times greater than that of other racial and ethnic groups; 34 percent of Latino deaths and 26 percent of Latina deaths result from heart disease/stroke. In addition, approximately 33% of cases are estimated to be undiagnosed. Further data that support the need for education confirm high rates of obesity. According to BRFSS 2006 data 64 percent of Pueblo residents are overweight compared to 56 percent of Colorado residents and a Healthy People 2010 goal of only 40 percent. This project empowers people to take charge of their health by providing effective health education and by providing opportunities for Coloradan to choose healthy activities and foods. Decreased levels of teen obesity would result in decreased levels of diabetes and heart disease and decrease burden to Pueblo County, the state of Colorado, and the nation. This project could reduce future health care costs, lost human resources, and other burdens resulting from chronic disease. The project is a collaborative between Colorado State University - Pueblo, the Pueblo Community Diabetes Project, and Pueblo School District #60 and is designed to reduce obesity and prevent Type 2 diabetes in teens 13-18 residing in Pueblo, Colorado. The project recruits

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teens and caregivers into classes delivered in a small group setting. The curriculum used is based on the Diabetes Prevention Program (DPP) 16-week Lifestyle Balance curriculum sponsored by the National Institute of Diabetes, Digestive Disorders, and Kidney Diseases. The national DPP participant data demonstrated a 58 percent reduction in the progression to diabetes and a 5 to 7% weight loss. The curriculum has also been proven through previous local projects to be successful in reducing weight and diabetes risk. The curriculum has been modified in previous programs for cultural competence, but was modified for use with teens versus adults.

So far, the program has resulted in weight loss and BMI reduction among some of the teens and parents, reduced fat and calorie intake, increased physical activity, increased portion control, and significant increase in the stage of change. More data will be available before the conference and will allow for statistical analysis on weight, BMI, and nutritional information.

This program is a part of a larger community action plan through the Steps to a Healthier Pueblo program. Sustainability efforts are being implemented and this program is an extension of earlier efforts by Steps to address childhood obesity. Another program for children aged 8-12 was started by Steps and is now being sustained by the YMCA.

**Learning Objectives:** (1) By the end of the poster session, the participants will be able to discuss the effects of childhood obesity. (2) By the end of the poster session, the participants will be able to site local and state statistics for childhood obesity and it's related diseases. (3) By the end of the poster session, the participants will be able to evaluate an obesity prevention program for teens.

**Public Health Topic(s):** Health Promotion, Disease Prevention, Education; Chronic Disease; Physical Activity, Food, and Nutrition

**Essential Service(s):** Inform, Educate, Empower; Mobilize Community Partnerships; N/A

**Target Audience:** health educators

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### **P9 - Occupational Health Indicators in Colorado**

*Holly Sackett, Senior Professional Research Assistant, Mountain and Plains Education and Research Center, University of Colorado Denver*

**Abstract:** Purpose: Each year, thousands of workers in Colorado (CO) are affected by work-related exposures, illnesses, and injuries for which the development of a comprehensive occupational health surveillance system is essential for prevention. We report the current baseline health status of workers in CO for the purpose of determining the greatest need for surveillance, intervention and prevention.

Methods: Using the Council of State and Territorial Epidemiologists (CSTE) Occupational Health Indicators: A Guide for Tracking Occupational Health Conditions and Their Determinants, we abstracted data from multiple state

and national datasets for the years 2000-2006 to describe worker demographics, measures of work-related health, and factors that influence worker health.

Results: The majority of workers employed in CO were white, non-Hispanic, between the ages of 25 and 54 years, employed full-time and worked at least a standard work week of 40 hours or greater. The distribution of gender was similar. Approximately 5% of CO workers were employed in industries at high risk for occupational morbidity and 10% were employed in occupations at high risk for occupational morbidity. An estimated 15% of workers were employed in industries and occupations with high risk for occupational mortality. The rate of fatal work-related injuries per 100,000 ranged from 4.4 to 6.3, attributable mostly to transportation incidents. Notably, the rate of work-related fatalities was higher each year in CO compared to the corresponding national rate. On average, 1.5% of workers in CO submitted non-fatal work-related injury and illness claims to the CO Division of Workers' Compensation for which over half involved greater than 10 days of temporary disability benefits. The average annual incidence per 100,000 workers for amputations was 4.2 and 16.4 for carpal tunnel syndrome. The crude annual hospitalization rate per million CO residents from or with pneumoconiosis rose from 92.5 in 2000 to 119.4 in 2005. Age-adjusted mortality rates of pneumoconiosis per million ranged from 1.5 to 5.4. The incidence of mesothelioma per million ranged from 8.0 to 15.8. Annually, an estimated 2 per 100,000 workers in CO experienced a work-related pesticide poisoning. For every 100,000 employees in CO, there was an average of 3 occupational medicine physicians, 3 occupational health nurses, 9 industrial hygienists and 11 safety professionals.

Conclusions: Although work-related illnesses, injuries and deaths are preventable, cases continue to occur in CO, sometimes at rates higher than the national average. A systematic, prospective approach to conducting occupational health surveillance is needed to determine and improve the health status of workers in CO.

**Learning Objectives:** (1) Participants will learn the current baseline health status of workers in Colorado (2) Participants will be able to describe the importance and need of a comprehensive occupational health surveillance system in Colorado (3) Participants will discuss various methods of surveillance, intervention and prevention.

**Public Health Topic(s):** Health Promotion, Disease Prevention, Education; Epidemiology and Statistics; Enhancing Public Health Systems

**Essential Service(s):** Diagnose and Investigate; Inform, Educate, Empower; Develop Policies and Plans

**Target Audience:** Physicians, occupational health nurses, epidemiologists, occupational health professionals

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### **P10 - Partnership in Action: Development of a Medical Home Brochure for Dissemination through Immunization Sites in Colorado**

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*Mette Riis, Nursing Program Manager, Denver Public Health, Jamie Damico, RN, MSN, CNS, Colorado Department of Public Health and Environment*

**Abstract:** Background:

Although public health departments and immunization outreach services reduce barriers and provide necessary access to childhood vaccinations, patient utilization of a medical home is ideal for maintaining optimal health outcomes and providing consistency in medical record and vaccine documentation.

Setting:

Various public health venues including clinics, outreach, and educational settings.

Population:

The state of Colorado has 4,804,353 residents including 1,202,213 children under the age of 18 years.

Project Description:

The Colorado Immunization Program facilitates a Childcare and School Immunization work group with statewide participation. Work group participants in school, child care, and primary care settings saw the need to inform parents of the importance of not only receiving immunizations but also establishment of a medical home for their children. One of the members of the work group was selected to lead the development of this brochure and key stakeholders provided expertise in creating the content of this brochure which would be distributed at sites where immunization-only visits were occurring (health departments, nursing services, immunization outreaches, etc.). The team that created the brochure met via teleconference and included statewide options for resources, insurance and medical home descriptions.

Results/Lessons Learned:

An important brochure promoting the medical home, immunizations, and the provision of a variety of resources was a useful interagency collaborative that utilized the expertise of many immunization stakeholders. The inclusion of local HCPF would have been useful and is now included in the revision and update team.

**Learning Objectives:** (1) At the end of the presentation participants will be able to identify the importance of the medical home for maintaining optimal immunization and health outcomes, outline resources for inclusion in a medical home brochure, and identify key stakeholders nec

**Public Health Topic(s):** Immunizations; Health Promotion, Disease Prevention, Education; Maternal and Child Health

**Essential Service(s):** Inform, Educate, Empower; Mobilize Community Partnerships; Link People

**Target Audience:** Public Health nurses, physicians, health educators, immunization walk-in and outreach clinics, clinics that do not accept VFC eligible clients

### P11 - Planning Active Community Environments (PLACE) Training

*Leanne Jeffers, Public Health Training Manager, Regional Institute for Health & Environmental Leadership*

**Abstract:** "The modern America of obesity, inactivity, depression, and loss of community has not 'happened' to us. We legislated, subsidized, and planned it this way." (H. Frumkin, L. Frank and R. Jackson. *Urban Sprawl and Public Health*. 2004).

The relationship between our built environment (land use and community planning/design) and the health and well-being (e.g. cardiovascular health, obesity, diabetes, injury, air quality) of people who live in those environments is emerging as an important field within the disciplines of public health and planning. Since this is a new topic within public health, there are few public health professionals who are sufficiently trained in this subject area. In partnership with the Colorado Department of Public Health and Environment's Colorado Physical Activity and Nutrition Program (COPAN), Leanne Jeffers of the Regional Institute for Health and Environmental Leadership (RIHEL) at the University of Denver, University College and James van Hemert of the Rocky Mountain Land Use Institute (RMLUI) at the University of Denver Sturm College of Law developed and implemented an in-depth skill-building pilot training for public health professionals on land use planning and community design. In June 2007, over 70 public health, planning and transportation professionals and health advocates from communities around Colorado participated in this training.

The Goals of the PLACE Training are:

1. To provide public health professionals (managers, environmental health, others) and advocates the knowledge and skills to actively participate in the land use planning and development review process to create "smart growth" active living environments.
2. To develop productive working relationships between the public health community (government and advocacy) and local government officials engaged in the land use planning and development review process.

It was also intended that the project will produce a model replicable curriculum, build capacity of the public health workforce in the state, and produce concrete, sustainable policy or environmental change in local communities and neighborhoods to positively impact the built environment and the health of the people living in those places.

Overall results of the training:

**VALUABLE**

- It was a valuable learning experience for all who attended.

- Participants built capacity and confidence with regard to the land use planning process.

**DESIRE FOR MORE**

- Interest in further developing skills and knowledge base in the many topic areas that comprise the land use planning and public health field.

- Give resources and attention to enhancing the training and repeating the session at a future date.

- Additional training sessions on related subjects should be considered.

**RELATIONSHIPS**

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- Among respondents to a follow-up evaluation, approximately 45% indicated that they have formed new relationships with public health or planning professionals; and ~30% formed new relationships with environmental health professionals, transportation planners and public works professionals.

### APPLICATION

- Among respondents to a follow-up evaluation: a majority (89%) indicated that they did/plan to incorporate active community environment strategies into new funding proposals; Eighty-one percent (81%) had opportunities to apply the skills gained from the PLACE Training.

### New Developments:

- Our planning colleagues requested we develop a variation of the PLACE training targeted to urban planners and transportation planners.

- A proposal was submitted and funded to develop and deliver the PLACE for Planners training - to be held in November 2008

- Six community partners have come forward to support the creation, sponsorship, promotion and delivery of this new training

**Learning Objectives:** (1) describe the purpose of the PLACE Training. (2) identify the training elements of the PLACE Training. (3) describe four outcomes of the PLACE Training.

**Public Health Topic(s):** Built Environment; Physical Activity, Food, and Nutrition; Health Promotion, Disease Prevention, Education

**Essential Service(s):** Inform, Educate, Empower; Assure a Competent Workforce; Mobilize Community Partnerships

**Target Audience:** General Public Health audience, specifically those interested in building community awareness and capacity around the built environment, healthy community design and active community environments.

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## P12 - The Use of GIS in Public Health Planning and POD Distribution

*Christie Mettenbrink, Epidemiologist, Denver Public Health Department, Lori Baker, Epidemiologist, Denver Public Health Department*

**Abstract:** Public Health planning for natural disasters and emergency situations is very important. Language barriers, among others can make it very difficult for public health officials to get out important information in times of a crisis. For that reason, it is very important to understand where these particular barriers lie so that additional planning can be implemented for these areas.

**Learning Objectives:** (1) Participants will be able to better understand the many barriers that Denver Public Health must take into consideration when planning for natural disasters and emergency situations.

**Public Health Topic(s):** Application of Geographic Information Systems in Public Health; Emergency Preparedness and Response; Built Environment

**Essential Service(s):** Monitor; Monitor; Monitor

**Target Audience:** Public health planners and planners

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## P13 - The use of GIS with Passive Surveillance Systems

*Christie Mettenbrink, Epidemiologist, Denver Public Health Department, Lori Baker, Epidemiologist, Denver Public Health Department*

**Abstract:** Passive Surveillance Systems are very important for the daily monitoring of disease activity within a particular area. GIS helps to bring a new level of surveillance to our agency by allowing our staff to visually examine disease levels by location as well as overall absolute numbers, a practice that allows for a stronger overall surveillance system.

**Learning Objectives:** (1) Participants will be able to understand our surveillance activities in Denver County and see how the use of GIS enhances these practices.

**Public Health Topic(s):** Application of Geographic Information Systems in Public Health; Epidemiology and Statistics; Built Environment

**Essential Service(s):** Evaluate; Diagnose and Investigate; Monitor

**Target Audience:** Public health nurses, epidemiologists, and physicians

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## OP2 - Access to Recovery

*Bert Singleton, ATR Project Director, Colorado Alcohol and Drug Abuse Division*

**Abstract:** Access to Recovery (ATR) is an initiative designed to provide a comprehensive approach to addressing the needs of individuals in treatment or recovery from alcohol and other drug abuse and addiction. The project allows the public health professionals the opportunity to go beyond meeting just treatment needs, and instead offers a variety of wrap around support services designed to help the individual stay in and complete treatment and then sustain their recovery effort. The program gives public health field an effective means of addressing the number one preventable health problem in the country by offering a comprehensive approach that reduces the financial and time intensive burden substance abuse places on public health, social services, and criminal justice systems

**Learning Objectives:** (1) recognize the value of addressing the comprehensive needs of individuals with alcohol and their drug dependency or addiction in order to

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reduce recidivism (2) identify specific steps to take to refer patients for treatment and recovery support services (3) participate in collaborative efforts in their community to address substance abuse and related concerns, including domestic violence, child abuse and neglect, and poverty

**Public Health Topic(s):** Tobacco, Alcohol, and Drug Use; Enhancing Public Health Systems; Health Disparities and Underserved Populations

**Essential Service(s):** Mobilize Community Partnerships; Inform, Educate, Empower; Link People

**Target Audience:** public health nurses, health educators, and anyone else interested in addressing a concern that currently clogs the health care system

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### OP8 - Creating a Culture for Positive Behavior Change in Teens Who Smoke

*Eliza Lanman, Tobacco Control Program Manager, American Lung Association of Colorado*

**Abstract:** Background: About a quarter of the nation's teens currently smoke and recent data shows this number as holding steady.

Purpose: In order to change youth smoking statistics communities must complement youth prevention efforts by investing in sustainable youth cessation programs.

Successful cessation interventions will include both an effective cessation program and comprehensive policy and program efforts in the home, school, and community that create an environment which supports positive behavior change.

Methods: Colorado has implemented the Not on Tobacco (N-O-T) youth smoking cessation program for the past six years. The American Lung Association of Colorado (ALAC) provides training, technical assistance, and resources to schools and youth-serving organizations across the state, reaching over a thousand teens a year. ALAC is now looking critically at the symbiotic relationship the N-O-T program has with other elements of a comprehensive tobacco control program including adult cessation, smoke-free homes and workplaces, tobacco-free schools, and youth access policies. ALAC is examining its role in a multi-dimensional effort to create a culture within families, schools, and communities that supports smoke-free lives.

Results: 80 percent of teens who participate in Colorado's N-O-T program quit smoking completely or reduce the number of cigarettes they smoke by the end of the program. Additionally, 97% of participants who completed the program reported improved confidence in their self image and/or ability to handle stress while almost 80% reported improved diet and/or exercise habits as a result of the program.

Discussion: The success of the N-O-T program itself must be viewed within a larger cultural context, however. The overwhelming majority of N-O-T participants indicate they have friends or family members who smoke, and list this as a significant obstacle in their attempts to quit smoking and to stay quit. Additionally, as a community we are also

responsible to share a more meaningful wellness message with our youth around diet, exercise and making healthy choices. Meanwhile, though there is a statewide tobacco-free schools law, some schools struggle to find effective ways to enforce it. Finally, tobacco retailers in Colorado are not required to hold a license, making enforcement of no-sales-to-minors laws challenging, and very few local policies are in place to limit access to tobacco products or advertising. The impact of these environmental factors must be included in our efforts to assist teens in successfully quitting smoking.

Recognize the benefits of a youth smoking cessation program and how it fits into a comprehensive tobacco control program.

Identify the influences at home, school, and in the community which impact young people's smoking behavior.

Strategize with others in their community about taking action to create a culture which fosters positive, smoke-free behavior change among youth.

**Learning Objectives:** (1) Recognize the harms around youth smoking and realize the benefits of a youth smoking cessation program and how it fits into a comprehensive tobacco control program. (2) Identify the influences at home, school, and in the community which impact young people's smoking behavior. (3) Strategize with others in their community about taking action to create a culture which fosters positive, smoke-free behavior change among youth.

**Public Health Topic(s):** Health Promotion, Disease Prevention, Education; Tobacco, Alcohol, and Drug Use; Chronic Disease

**Essential Service(s):** Inform, Educate, Empower; Develop Policies and Plans; Mobilize Community Partnerships

**Target Audience:** public health nurses, physicians, health educators, teachers, counselors, school administration

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### OP9 - Enhancing Sustainability of Public Health Programming: Lessons Learned in Integrating Chronic Disease and Health Promotion Related Programming within Community and Faith Based Agencies, Organizations and Programs.

*Beverly Tafoya-Dominguez, Health Education Specialist, Denver Public Health*

**Abstract:** Funding for public health programs has been decreasing during the last several years. Sometimes this decline in funding is for good reasons. For example, as the rate of tobacco use decreases within the state of Colorado, the amount of funds available for prevention, education and cessation will continue to decrease. However, unless tobacco use is completely eradicated, the need for such programming will always exist, at least at a minimal level. Other health programs see a reduction

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or complete loss in funding due to national and state budget cuts and/or competing health priorities. Sustainability can be achieved through integration of programs or parts of programs within agencies and community groups. Sustainability can also be achieved through policy change and implementation. Also, attempts to integrate public health programming in non-traditional settings are vital to keep important public health messages and services flowing into the community even as funds are being curtailed.

In an attempt to build sustainability of tobacco prevention, education, and intervention programming in Denver County, steps have been taken to integrate tobacco services with nutrition and physical activity services within Denver Public Health and within community and faith based agencies, organizations and programs serving Denver residents. Such agencies include Head Start, Denver Public Schools, Denver Parks and Recreation, Latinos Using Cardio Health Actions to Reduce Risk (LUCHAR), the Colorado Statewide Parent Coalition, the American Diabetic Association's Por Tu Familia Program, Operation Frontline, Ventanillas, LiveWell West Denver, childcare centers, churches and mosques.

Policy changes are important to ensuring sustainability within agencies and in communities. One type of policy change being addressed is to institutionalize identifying tobacco use status of the agencies' clients and their family members and then refer those that use tobacco to the Colorado QuitLine/QuitNet and/or other appropriate cessation services and resources.

Though this presentation is focused on integrating tobacco related and health promotion programming into community and faith based agencies, organizations, and programs, all members of the public health workforce will benefit from steps taken and the lessons learned about integration of chronic disease programs and sustainability.

This work was partially funded by the Tobacco Education, Prevention and Cessation Grant Program.

**Learning Objectives:** (1) By the end of the presentation, the target audience will be able to list three organizations or systems in which tobacco education (or other health education materials) can be "embedded" or integrated as a method of sustaining tobacco or other health rel (2) Identify several layers of participation and multiple methods of sustainability including capacity building and policy change in which community and/or faith based organizations, agencies or programs can provide education and resources about tobacco and o

**Public Health Topic(s):** Health Promotion, Disease Prevention, Education; Tobacco, Alcohol, and Drug Use; Enhancing Public Health Systems

**Essential Service(s):** Develop Policies and Plans; Inform, Educate, Empower; Mobilize Community Partnerships

**Target Audience:** Health Education Professionals and Outreach Workers

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### OP10 - Hep C Connection: A Valuable Community Resource throughout Colorado

*Laura Ginnett, Director of Community Outreach, Hep C Connection*

**Abstract:** Hep C Connection is the only organization in the state of Colorado dedicated to the hepatitis C virus (HCV). Our mission is to educate the general public about hepatitis C and to provide resources and support for those affected by the virus. Individuals in the public health arena deserve to be aware of the resources that we offer to individuals infected or affected by hepatitis C. By having the opportunity to educate about the resources Hep C Connection offers, we will show how collaborations between public health and Hep C Connection can offer sustainability in the public health arena.

Hep C Connection has two main programs, Awareness and Prevention, and the Support Network. Our Awareness and Prevention program's main focus is to educate the general public, those at highest risk for infection, healthcare providers, case managers, and counselors about hepatitis C. We educate about the virus, how it is transmitted, the benefits of early detection, healthy lifestyle changes, and community resources. The Awareness and Prevention program also includes our Co-Infection Program. About 30% of individuals infected with HIV are also infected with HCV and we provide education and support to co-infected individuals based on the unique challenges they face, including a support group. Finally, the Awareness and Prevention program includes anti-body testing, which is offered for free to individuals with high risk factors for infection.

Hep C Connection's Support Network provides psychosocial support, assessment of individual needs, and assistance and referrals in obtaining medical, social, community, and financial services. Our Helpline is a toll-free national support line that provides telephone counseling to answer questions, offer support, and link callers with resources. Our trained and compassionate telephone counselors are up-to-date on the latest information, address the caller's priorities, and promote risk reduction, further medical evaluation, and treatment options. We offer nine hepatitis C-specific support groups throughout the state run by trained counselors, many of whom have been personally affected by hepatitis C. We provide a monthly e-newsletter to offer information about current treatment and research updates as well as agency updates. Our website includes our monthly e-newsletter, our national support group database, referrals to other resources and internet sites, and our annual Colorado Directory of Resources. Finally, we offer many publications regarding hepatitis C, co-infection, transmission routes and risk-reduction, and community resources.

Hep C Connection dedicates itself to learning the most current and up-to-date information about the hepatitis C virus to offer the best practices available to all individuals, including those in the public health arena. We hope to have the opportunity with this program to educate about Hep C Connection's valuable resources for public health sustainability to conference attendees.

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**Learning Objectives:** (1) At the end of the session, participants will be able to educate others about Hep C Connection and the services we offer to the community. (2) At the end of the session, participants will be able to achieve the ability to refer appropriate individuals to Hep C Connection. (3) At the end of the session, participants will be able to realize the valuable resource that Hep C Connection offers to the state of Colorado while sustaining and complimenting the work of public health.

**Public Health Topic(s):** Enhancing Public Health Systems; Health Promotion, Disease Prevention, Education; Chronic Disease

**Essential Service(s):** Inform, Educate, Empower; Mobilize Community Partnerships; Link People

**Target Audience:** community service providers, epidemiologists, health educators, physicians, program coordinators and administrators, nurses, public health officers, researchers, related health specialists

### OP11 - Infant Mortality in Colorado: Current Trends & Disparities

*Christine Demont-Heinrich, Analyst, Colorado Department of Public Health & Environment, Kirk Bol, MSPH, Colorado Department of Public Health & Environment*

**Abstract:** Infant mortality, or deaths among infants under one year of age, is often used as an indicator to determine the health of a population. While U.S. national trends show a general decline in the infant mortality rate since 1980, a much noted increase in the infant mortality rate was observed in 2002. Although the downward trend in the U.S. infant mortality rate resumed again the following year, this increase has created a renewed interest in the factors behind and causes of infant mortality. An additional topic of continued discussion is the sizeable and persistent disparity in the rates of infant mortality among the Black population, which are presently twice as high as those in the White population. This study was initiated to:

- 1) Compute the current trends of mortality among Colorado's infant population;
- 2) Explore perinatal factors associated with increases in Colorado's infant mortality rate; and
- 3) Identify disparities in infant mortality among Colorado's race/ethnic sub-populations.

Colorado's birth and death certificate data, maintained by the Health Statistics Section at the Colorado Department of Public Health and Environment were utilized, as were linked birth/infant death files, in order to measure infant mortality. Rates were computed as the number of infant deaths per 1,000 live births, and were studied in detail for specific race/ethnic populations as well as by birth weight and cause of death.

The U.S. infant mortality rate in 1990 was 9.2 deaths per 1,000 live births and fell to 6.8 in 2004, but not before increasing to 7.0 in 2002. In 1990, Colorado's infant mortality rate was 8.8, and dropped to 5.7 in 2006, although some increases were seen between 2002 and 2005.

In 1990, the leading causes of infant mortality in Colorado were congenital malformations/birth defects and sudden infant death syndrome (SIDS), followed at a distant third by disorders related to short gestation and low birth weight. By 2006, the leading causes of infant mortality were congenital malformations and short gestation/low birth weight, with SIDS having dropped to a distant third. The infant mortality disparity seen nationwide among Black infants is observed in Colorado as well, and has been present over time. In 2006, the infant mortality rate among Black infants in Colorado was 12.4, while that among White/non-Hispanic infants was 5.0. A second disparity among Black infants in the U.S. and Colorado is a percentage of low-weight births and very low-weight births that is nearly double that of White/non-Hispanic infants.

The Healthy People 2010 objective for infant mortality is less than 4.5 infant deaths per 1,000 live births across all race/ethnic groups. Given observed increases in the percentage of births that are of low and very low weight, disparities in low birth weight across race/ethnic groups, and associations between low birth weight and infant mortality, a necessary step in reducing infant mortality across all race/ethnic populations must be a continued emphasis on reducing low weight and pre-term births.

**Learning Objectives:** (1) Describe the current trends of mortality among Colorado's infant population. (2) Characterize perinatal factors associated with increases in Colorado's infant mortality rate. (3) Identify disparities in infant mortality among Colorado's race/ethnic sub-populations.

**Public Health Topic(s):** Maternal and Child Health; Health Disparities and Underserved Populations; Epidemiology and Statistics

**Essential Service(s):** Monitor; Diagnose and Investigate; Inform, Educate, Empower

**Target Audience:** Public health planners, epidemiologists, statisticians, public health nurses, health educators

### OP16 - Smoking Cessation Interventions for Persons with Mental Illnesses: A Randomized Trial

*Mandy Graves, Project Coordinator, University of Colorado Denver, Department of Psychiatry*

**Abstract:** Persons with mental illnesses have increased prevalence of tobacco use, and greater rates of associated morbidity and mortality. Tobacco use prevalence among this population is over 40% nationally, twice that of the general population (Lasser et al., 2000). Previous studies have found that although these individuals may be harder to treat than the general population, smoking cessation rates remain substantial (Baker et al, 2006). The University of Colorado Denver has been working in partnership with the Colorado

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Department of Public Health and Environment (CDPHE) to pilot sustainable cessation interventions at rural and urban community mental health centers statewide. The pilot is a 2-year, randomized study comparing the effectiveness of two tobacco cessation treatments, use of the Colorado QuitLine and NRT compared to this intervention augmented by a 10-session wellness group at the community mental health centers. The primary hypotheses are that: (1) In comparison to treatment as usual, brief assessment and referral to the National Jewish QuitLine will significantly increase tobacco cessation rates and reduce daily cigarette consumption, and; (2) In comparison to treatment as usual and to brief assessment and referral to the National Jewish QuitLine (intervention #1), participants who also receive a community wellness group (intervention #2) will have significantly higher tobacco cessation rates and reductions of daily cigarette consumption. A total of 123 individuals have enrolled in the study, with the majority having psychotic disorders. Three, six, and twelve month outcome data will be presented on self-reported smoking (cigarettes per day in the last 7 days), psychiatric functioning, quality of life, self-efficacy, motivation stage-readiness. Participant demographics (geographic area, age, ethnicity/race) and diagnoses (psychiatric and substance abuse) will also be presented. We will discuss barriers and opportunities encountered as we strove to create community uptake, sustainability, and dissemination.

**Learning Objectives:** (1) Describe the physiological, psychological, and social health disparities facing persons with mental illnesses who use tobacco. (2) Review the current cessation pilot study design and participant outcomes including smoking cessation and reduction, psychiatric functioning, and self-efficacy. (3) Discuss lessons learned, barriers and opportunities encountered regarding community uptake, sustainability, and dissemination.

**Public Health Topic(s):** Tobacco, Alcohol, and Drug Use; Health Disparities and Underserved Populations; Health Promotion, Disease Prevention, Education

**Essential Service(s):** Research; Mobilize Community Partnerships; Inform, Educate, Empower

**Target Audience:** Public health nurses, physicians, health educators, mental health providers

### OP20 - What Do We Know About the Prevalence of Mental Illness in Colorado?

*Rickey Tolliver, BRFSS Coordinator, Colorado Department of Public Health and Environment*

**Abstract:** What Do We Know About the Prevalence of Mental Illness in Colorado?

Background: The Behavioral Risk Factor Surveillance System (BRFSS) is a random digit dial telephone survey administered in all U.S. states and territories with support from the Centers for Disease Control and Prevention. In 2006, a Mental Illness and Stigma Module was added to

the Colorado BRFSS in a collaborative effort between the Colorado Department of Public Health and Environment and the Colorado Department of Human Services, Division of Mental Health. The mental illness and stigma module was designed to measure Serious Psychological Distress (SPD), an indicator of serious mental illness (SMI) by employing the Kessler 6 scoring and classification system (K-6). These indicators were established by The Substance Abuse and Mental Health Services Administration (SAMHSA) for states to obtain block grant funds for providing community mental health services. Along with questions to measure K-6 scores and mental illness, the module also includes questions to measure the perceived stigma related to mental illness.

**Objective:** To examine mental illness and stigma related to demographic characteristics, health behaviors, chronic diseases, obesity, and health related quality of life.

**Methods:** The 2007 Colorado BRFSS included ten questions about mental illness and stigma. Using descriptive statistics and multiple regression models, this analysis examines the relationships between the BRFSS mental illness indicators and health indicators such as demographic characteristics, health behaviors, chronic diseases, obesity, and health related quality of life.

**Results:** The preliminary results indicate that the total prevalence of SPD in Colorado was 3.2 percent, in 2007. SPD was significantly associated with smoking, fair or poor health status, and a low level of social support. Also in 2007, the prevalence of receiving medication or treatment for a mental health condition was 10.1 percent. Mental health treatment was significantly associated with smoking, fair or poor health status, low level of social support, arthritis, diabetes, and obesity.

**Conclusion:** Mental illness measures from the BRFSS are associated with high-risk behaviors, chronic diseases, and obesity. These findings support a call to action to examine and treat mental and physical health as a combined entity in public health efforts.

**Learning Objectives:** (1) Participants will be able to describe the prevalence of serious psychological distress or mental illness among Colorado adults. (2) Participants will be able to identify health and risk behaviors related to mental illness. (3) Participants will be able to describe the Kessler 6 scale for serious psychological distress (SPD).

**Public Health Topic(s):** Epidemiology and Statistics; Chronic Disease; Other

**Essential Service(s):** Monitor; N/A; N/A

**Target Audience:** public health professionals