Colorado HIV/AIDS Strategy

2014-2016

Developed by staff of the

STI/HIV/Viral Hepatitis Branch
Colorado Department of Public Health and Environment

In Collaboration with
Community Stakeholders

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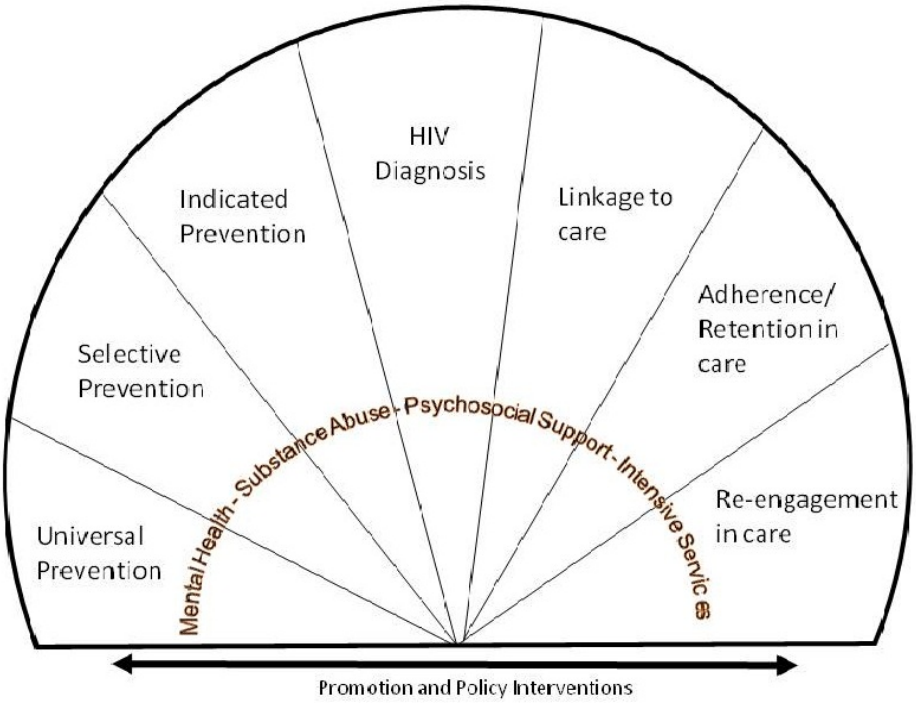
Chapter 1 – Executive Summary

The Colorado HIV AIDS Strategy (COHAS) represents a major step forward by the Colorado Department of Public Health and Environment (CDPHE) and community partners to integrate the full spectrum of efforts to prevent HIV and to provide care and treatment for people living with HIV or AIDS (PLWHA). The vision of COHAS is depicted visually in Figure 1, below, which is based on a model first developed by the U.S. Institute of Medicine (IOM) for behavioral health services.

Figure 1: The Colorado Model, based on the Institute of Medicine



As shown on the left side of this model, effective HIV prevention requires well-designed, evidence-based strategies and interventions at three levels: universal (for the general population), selective (for groups at higher than average risk), and indicated (for individual people with enhanced risk factors and experiencing "critical events"). Moving to the right on the spectrum, we certainly hope that future HIV infections will be rare, but when they occur, our goal is provide the means by which people can be informed of their HIV serostatus as early as possible after infection. The next step, linkage to care, is also considered successful when it occurs as promptly as possible following diagnosis and results in a person having access to services they need to initiate care and treatment. The next step, adherence to and retention in care, is deemed successful when it is long term and sustained. When there are lapses in care, the strategies for re-engagement in care become important.

Underlying this entire model are two sets of additional strategies, which support and promote the success of the other strategies. The first set is Promotion and Policy Interventions, which seek to create a generally more supportive environment for service delivery and community

action. The second set is mental health, substance use, psychosocial support, and intensive services for people experiencing critical events. It is certain that those who provide prevention, HIV diagnoses, linkage to care, retention/adherence, and re-engagement will encounter clients with these often challenging additional issues and will need a variety of specialized resources to respond effectively to such client needs.

The chapters/sections of COHAS follow this diagram. Section 4b covers universal, selective, and indicated prevention as well as policy and promotion interventions. Section 4c covers HIV testing. Section 4d covers both linkage to care and re-engagement in care. Section 4e covers adherence to and retention in care. Section 4f covers mental health, substance use, and psychosocial support services. Section 4g covers intensive services for people who are experiencing critical events.

COHAS is meant to be both practical and aspirational. For some areas of the plan, there are currently sufficient resources to deliver the strategies and interventions. For other areas of the plan, CDPHE and the larger community must come together to identify the needed resources so the vision of COHAS can become a reality.

At its best, a document like COHAS is an opportunity for the full group of stakeholders – CDPHE, funded contractors, community members, and other concerned parties – to come together for a frank appraisal of what has been accomplished, what remains to be done, and how we can come together to do what is best for all of Colorado. As we enter this era of expanded healthcare and treatment as prevention, there are many exciting opportunities that many thought impossible just a few years ago. There are also very difficult decisions to be made, but we have found the will and commonality of purpose to make difficult decisions in the past. We owe nothing less to our friends, neighbors, partners, and family who face HIV each day with courage, and those we have lost to HIV but keep alive in our memories.

Chapter 2 – Acknowledgements

COHAS could not have been written without the tremendous contributions of many people. A very diverse group of people attended planning meetings, submitted written comments, and participated in the writing process.

Particular thanks are extended to the following people, whose attendance at multiple meetings and active contributions to COHAS were invaluable:

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Chapter 3 - Colorado HIV/AIDS Epidemiological Profiles and Surveillance Maps

The STI/HIV/Viral Hepatitis Surveillance staff, who produce various reports including the HIV/AIDS Epidemiological Profile, use the U.S. Census Bureau's definition of urban and rural. An urban county is defined as a county containing a city of 50,000 people or more. A rural county, in contrast, only contains cities of fewer than 50,000 people and frontier is a subset of rural with 6 or fewer persons per square mile. These are the definitions used in Chapter 3 of this plan.

Colorado State Characteristics

As of December 2012, Colorado's population was estimated to be 5,187,582 with approximately equal distribution between men and women. The majority of Colorado's population resided in 13 of 64 counties, with 66 percent of Coloradans between the ages of 18 and 65 years. Colorado's population was 69.6 percent White, 21.0 percent Hispanic/Latino, 3.8 percent Black/African American, 2.9 percent Asian/Pacific Islander, 0.6 percent American Indian/Alaskan Native and 2.0 percent comprised of Two or More Races. Colorado ranked 18th in the nation's poverty level rating in 2012. Douglas County had the lowest percent of persons living in poverty (4.0%), while Saguache County had the highest percent of persons living in poverty (24.8%). Colorado's percent of nonelderly uninsured persons was lower (17%) than reported nationally (18%) in 2012. In 2012, cancer was the leading cause of death in Colorado. The number of incarcerated persons in Colorado increased 1.7 percent from 22,814 in 2011 to 23,210 in 2012.

HIV Disease in Colorado

Through 2012, 10,334 cases of AIDS and 6,998 cases of HIV infection have been diagnosed and reported in Colorado. Significant decreases in AIDS incidence have been observed both in the United States and in Colorado since the introduction and use of new anti-HIV drug therapies in 1996. Overall, the number of reported cases of AIDS (not HIV) each year in Colorado has continued to decrease since a peak of 704 reported cases in 1993.

Antiretroviral treatment has reduced both mortality and morbidity among persons with HIV infection. AIDS-related mortality has decreased by 43 percent from 2008 to 2012 while the prevalence of PLWHA has increased steadily. By December 2012, 11,543 persons were known to be living with HIV or AIDS in Colorado.

Acquisition of HIV disease in Colorado is still overwhelmingly driven by sexual exposure, primarily among men who have sex with men. MSM continues to be the most significant risk group and accounted for 74.4 percent of adult male HIV cases diagnosed in 2012. Among females, heterosexual transmission represented 58.3 percent of newly diagnosed adult HIV cases in 2012.

Diagnosed cases of HIV/AIDS remain geographically centered in the Front Range and urban population centers of Colorado. Although the number of women living with HIV in Colorado has been increasing, perinatal transmission has decreased dramatically since 1996. The decrease in transmission rates is attributed to the widespread screening of pregnant women for HIV and the use of anti-retroviral drugs during and after pregnancy, labor and delivery.

Epidemiological Trends in HIV Disease in Colorado

By the end of 2012, an estimated 11,543 Colorado residents were living with HIV disease, which was an increase of 1.6 percent from 2011. Of the total number of people diagnosed with AIDS through 2012, 65.7 percent were White, 19.3 percent were Hispanic/Latino and 12.9 percent were Black/African American. Blacks/African Americans continued to be disproportionally affected by HIV disease and represented 14.6 percent of PLWHA (prevalent cases of HIV and AIDS), while comprising only 3.8 percent of Colorado's population. The 25-29 year old age group accounted for the largest proportion of newly diagnosed HIV cases (19.1%) in 2012. Ninety-five percent of newly diagnosed HIV disease cases were reported in urban counties in 2012. There have been 5,660 AIDS-related deaths reported in Colorado from the early 1980's through the end of 2012.

High Risk Populations

In Colorado, three distinct high risk populations were identified using Surveillance data: men who have sex with men (MSM), persons with injection drug risk (IDU) and high risk heterosexuals (HRH). An additional high risk group contained in all risk populations in Colorado is defined as Late-Stage Testers or Stage 3 diagnosed HIV cases.

Men Who Have Sex with Men

The majority of Colorado's HIV/AIDS cases can be attributed to MSM risk behaviors (65.1% of all cumulative cases). The number of new MSM HIV/AIDS cases remained relatively stable since 2009 among Whites, remained relatively stable the past 5 years among Blacks/African Americans, and has been increasing since 2010 among Hispanics/Latinos. HIV/AIDS cases diagnosed for MSM ages 30-39 years have decreased by 28.0 percent in the last five years.

Blacks/African Americans were over represented in the HIV epidemic among MSM; accounting for 4.1 percent of Colorado's male population but 10.0 percent of HIV cases diagnosed in MSM from 2008-2012. Hispanics/Latinos were also over represented (27.9 % of newly diagnosed HIV MSM cases) for their proportion of the male population (21.4%), while Whites represented 59.5 percent of newly diagnosed HIV MSM cases and 69.2 percent of the male population.

In newly diagnosed HIV cases among MSM by age in 2012, 51 percent of new HIV diagnoses occurred among 20-34 year olds, which represented only 22.4 percent of the male population. Young men ages 20-29 years were over-represented, accounting for 36.8 percent of the HIV epidemic and 15.0 percent of the male population.

From 2008 to 2012, HIV/AIDS cases diagnosed in MSM age 30-39 years at diagnosis have decreased by 28.0 percent, whereas 20-29 years have increased by 9.2 percent from 2008 to 2012.

Persons with Injection Drug Use Risk

Through December 31, 2012, a cumulative total of 3,459 cases of HIV/AIDS were associated with IDU or MSM/IDU risk. Of these, 80.3 percent were reported in men and 19.7 percent were reported in women. IDU and MSM/IDU comprise 17.8 percent of the total HIV/AIDS cases reported in Colorado. Over the past five years, IDU-related cases of HIV/AIDS were most commonly diagnosed in the 20-29 age group.

Among males, 2,779 cumulative cases of HIV or AIDS were related to IDU, either through IDU, MSM/IDU, or heterosexual contact to an IDU. Among the 52 males diagnosed with HIV in 2008-2012 whose only risk was IDU, Whites account for 29 (55.8%) cases, Hispanics/Latinos for 15

(28.8%) cases, and Blacks/African Americans for 4 (7.7%) cases. Among the 117 males with MSM/IDU risk, White males accounted for the overwhelming majority of these cases (77 or 65.8%), Hispanics/Latinos for 30 (25.6%) cases, and Blacks/African Americans for 6 cases (5.1%).

Among females, the number of IDU-related HIV or AIDS cumulative cases (680) was four times smaller than for males. From 2008 to 2012, 21 cases of HIV or AIDS in females were directly related to IDU. Of this number, Whites accounted for 12 (57.1%), Blacks/African Americans accounted for 4 (19.0%) and Hispanics/Latinos constitute 5 (23.8%) cases. The number of cases of females who acquired their infection as a result of heterosexual contact with an IDU (N=15) was higher than for males in all racial/ethnic groups. White females comprised 20.0 percent (N=3), Hispanic/Latino females comprised 40.0 percent (N=6), and Black/African American females represented 20.0 percent (N=3) of this risk group.

In HIV and AIDS cases reported with IDU risk from 2008 to 2012, all age groups showed an even trend in the number of cases reported. However, it should be noted that the number of HIV/AIDS cases attributed to IDU remained small and caution should be taken when interpreting these numbers.

IDU HIV cases diagnosed during the five year time period of 2008 through 2012 were largely concentrated in urban areas. This was consistent with other risk groups, showing that Colorado HIV cases diagnoses were mostly diagnosed in persons living in urban areas. Urban areas reported 94.8 percent of cases, rural areas 4.3 percent, and frontier areas 1.0 percent of cases. This pattern of HIV/AIDS case distribution among urban, rural and frontier regions has remained fairly stable since the early 1980s.

High Risk Heterosexuals

Heterosexual HIV transmission has increased slightly from 10.8 percent in 2008 to 12.0 percent in 2012. Females represented 74.5 percent of heterosexually transmitted HIV/AIDS cases in 2012. Of new HIV cases transmitted by heterosexual contact in 2012, Blacks/African Americans made up 38.3 percent, while Whites made up 31.9 percent, and Hispanics/Latinos comprised 19.1 percent. Heterosexual transmission of HIV was most commonly diagnosed in those persons aged 25-29 years representing 17.1 percent of cases.

Heterosexual transmission accounted for 8.1 percent of Colorado's cumulative HIV/AIDS cases from years 1982 through 2012. It is difficult to make an assessment of the number of persons in Colorado who engage in heterosexual contact that put them at high risk for HIV. A diagnosis of a sexually transmitted infection (STI) would suggest that the person had engaged in unsafe sexual practices. In 2012, 21,631 cases of chlamydia and 2,822 cases of gonorrhea were reported to CDPHE.

In 233 recently diagnosed cases of HIV attributed to heterosexual transmission from 2008 to 2012, Blacks/African Americans accounted for 43.0 percent of cases, Whites accounted for 25.6 percent and Hispanics/Latinos accounted for 21.7 percent of cases. In comparison to their percentage of the total racial/ethnic population, Blacks/African Americans were over represented among heterosexually transmitted HIV cases.

In recently diagnosed cases of HIV attributed to heterosexual contact by age, the largest proportion (17.1%) of newly diagnosed cases occurred in the 25-29 year old age group. The 35-39 year old age group represented 14.7 percent of the cases, and the next highest

contributing age group was 30-34 year old, with 14.0 percent each of heterosexually transmitted HIV cases in Colorado.

Infants born to HIV-Infected Women

Of 136 pregnant women with HIV in Colorado from 2008 to 2012, there were four cases of confirmed perinatal transmitted HIV infection, and all were reported in 2008. Of these cases, two were born outside of the United States.

Late Stage HIV Diagnoses

A late stage HIV diagnosis is defined as an AIDS diagnosis within 365 days of an HIV diagnosis. These diagnoses represented missed opportunities for HIV testing and diagnosis, prevent those at risk from receiving ART and allow continued transmission of HIV and ongoing infection reservoirs. The definition of late stage HIV diagnosis has been evolving, and may be encompassed by the new HIV case Surveillance definition of Stage 3 (AIDS), an advanced stage of HIV infection when CD4+ T-lymphocyte values are usually persistently depressed, when this stage is present at the initial diagnosis of HIV disease.

In 2012 in Colorado, the racial/ethnic distribution of late stage diagnoses was 49.7 percent White, 29.3 percent Hispanic/Latino and 17.6 percent Black/African American. The mean age of those HIV late stage diagnoses was 40. Among late stage diagnoses, 63.0 percent reported MSM risk, 14.5 percent reported no identified risk and 12.0 percent reported heterosexual risk. Twelve percent of late stage diagnoses occurred in foreign born persons.

The overall number and percentage of late stage diagnosed cases has been relatively consistent for the last ten years. The percentage has ranged from 29 to 37 percent. In 2012, 113 of 392 new HIV diagnoses were late stage HIV diagnoses (29%).

Maps

A series of epidemiologic maps may be found in Appendix 1.

Chapter 4 - Colorado Continuum of HIV/AIDS Prevention and Care

Section 4a – Background and Context

The National HIV/AIDS Strategy

On July 13, 2010, the first-ever National HIV/AIDS Strategy (NHAS) for the United States was formulated. The Strategy is the nation's roadmap to execute an informed, comprehensive, coordinated HIV/AIDS response, with a clear vision for the future.

The Vision for the National HIV/AIDS Strategy

"The United States will become a place where new HIV infections are rare and when they do occur, every person regardless of age, gender, race/ethnicity, sexual orientation, gender identity or socio-economic circumstance, will have unfettered access to high quality, life-extending care, free from stigma and discrimination."

1) NHAS Goals

NHAS has devised three ambitious but achievable goals for the nation to work toward by 2015:

- Reducing the number of persons who contract HIV;
- Increasing access to HIV care and optimizing health outcomes for people living with HIV; and
- Reducing HIV-related health disparities.

2) NHAS Coordination

NHAS also stresses a more coordinated national response to the epidemic and charted multidimensional cooperation across all levels of government as well as calling for engagement from all sectors of society to build on and refocus existing efforts to accomplish the Strategy's goals:

"Achieving its goals — reducing new HIV infections, increasing access to HIV care, improving health outcomes for people living with HIV, and reducing HIV-related health disparities — requires the active participation of all sectors of society. This includes not only local, state, tribal and federal governments, but also businesses, faith communities, philanthropy, the scientific and medical communities, educational institutions, people living with HIV, and many others".[1]

Social Determinants of Health

Social Determinants of Health are those factors that can contribute to the group of health disparities. Together these factors contribute to individual and population-level health status.[2] Appendix 2 includes a description of these factors.

Using these social determinants of health as its basis, this plan outlines strategies and interventions that show promise in reducing the number of new HIV infections, and increasing access to care. The strategies are primarily evidence-based, behavioral and medical interventions.

As an example, people with health insurance have better access to health care and better health outcomes than those who are uninsured. In 2012 nearly one of five adults (19.4%) in

[1] NHAS Policy 2010, Office of National AIDS Policy is available at http://www.whitehouse.gov/administration/eop/onap/nhas

[2] Healthy People 2020 Report, available at http://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-health

Colorado was uninsured. Most of Colorado's uninsured adults (70.2%) live below 200 percent of the federal poverty line. By 2016 estimates place the number of Coloradans who could gain coverage through Medicaid Expansion at 510,000. Therefore, a key to advancing NHAS to secure resources and partnerships that improve the social determinants of health for those population groups most adversely affected.

The Effects of Stigma

HIV-related stigma—whether measured by stigmatizing attitudes, fear of or perceived stigma, or enacted stigma — is pervasive and negatively impacts the quality of life of people living with or at risk of HIV. Stigma and discrimination act as impediments to uptake of HIV testing, treatment and care and to adherence to treatment. A consistent, negative association has been found between fear of stigma and use of testing and care services.[3]

COHAS recognizes that programs that systematically identify and address the many dimensions and effects of stigma are more likely to be successful in meeting client needs. PLWHA have been fired from jobs, forced from their homes, and shunned by their familial, social and religious communities. Many people living with HIV live in silence, fearful to disclose their HIV status. PLWHA often have other intersecting stigmatizing experiences: sexual orientation, gender identity, poverty, drug use, mental health issues, violence and trauma.[4]

Stigma has many pervasive forms and locations, which call for comprehensive efforts to educate the general population, family and peers, People living with HIV and other key at risk populations, institutions and structures. This includes internal stigma (how people living with HIV judge themselves), external stigma (how people living with HIV judge others living with HIV), Social judgment (how people living with HIV are judged in social context) and institutional stigma (laws and organizations structures that perpetuate stigma and allow discrimination.)

Those who deliver HIV prevention or care messaging must be vigilant to prevent stigmatizing those they seek to help. It is easy to blame or appear to blame PLWHA or those who are at risk of HIV infection. Instead, consistent with a harm reduction model, there must be a commitment to address peoples lived experiences and accept and embrace the complexity of their lives.

There are existing models to address HIV stigma through education and empowerment campaigns like the Test Positive Aware networks (TPAN) A Day with HIV photo campaign or the CDC's Let's Stop HIV Together campaign which "raises awareness about HIV and its impact on the lives of all Americans, and fights stigma by showing that persons with HIV are real people—mothers, fathers, friends, brothers, sisters, sons, daughters, partners, wives, husbands, and co-workers."[5]

Addressing HIV stigma will require updated science based HIV education for all Coloradans as well as empowerment of those living with HIV. While existing funding is limited for anti-stigma projects, funding opportunities are available and should be pursued by those in the best position to implement programs. Peter Piot, UNAIDS Executive Director has

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[3] UNAIDS, HIV-related Stigma and Discrimination: A Summary of Recent Literature (2009. Available at http://data.unaids.org/pub/Report/2009/20091130_stigmasummary_en.pdf

[4] Anne L. Stangl, Laura Brady and Katherine Fritz – International Center for Research on Women, Washington, DC "Measuring HIV Stigma and Discrimination" http://strive.lshtm.ac.uk/system/files/attachments/STRIVE_stigma%20brief-A4.pdf

[5] CDC's Let's Stop HIV Together is available at http://www.cdc.gov/actagainstaids/campaigns/lsht/ TPAN is available at http://www.adaywithhiv.com/about

commented, "Since the beginning of the epidemic, stigma, discrimination and gender inequality have been identified as major causes of personal suffering, and as major obstacles to effective responses to HIV. Yet there has never been serious political and programmatic commitment to doing anything about them. All these efforts have been relegated to the bottom of AIDS programs, together with human rights, and often with no funding attached to them. I am talking about stigma and discrimination broadly: that aimed against people living with HIV, women, poor people, drug users, sex workers, men having sex with men, prisoners, migrants and refugees."[6]

Categorization of Rural and Urban Counties in COHAS

Colorado is a very diverse state in terms of geography and the impact of HIV. Counties with very high prevalence of HIV may be immediately adjacent to counties with relatively low HIV prevalence. The simple definitions of "urban" and "rural" set by the U.S. Census Bureau are not adequately descriptive for HIV planning purposes. Therefore, COHAS includes the following categorization of Colorado counties; a table showing all 64 Colorado counties broken into these categories may be found in Appendix 6.

Table 1: Categorization of Counties for COHAS

Level 1 Counties	Level 2 Counties	Level 3 Counties	Level 4 Counties	Level 5 Counties
Meet Census Urban definition	Meet Census Urban definition	Meet Census Rural definition	Meet Census Rural definition	Meet Census Rural definition
HIV prevalence rate between 110.57 and 1,035.37	HIV prevalence rate between 42.88 and 157.87	HIV prevalence rate between 58.00 and 301.36	HIV prevalence rate between 22.08 and 56.50	HIV prevalence rate between 0.00 and 579.71
GC 5 yr rate between 26.95 and 192.65	GC 5 yr rate between 11.64 and 48.23	GC 5 yr rate between 3.23 and 53.88	GC 5 yr rate between 2.70 and 26.24	GC 5 yr rate 0.00
Total Population = 2,879,731 PLWHA = 10,248	Total Population = 1,544,709 PLWHA = 1,363	Total Population = 509,311 PLWHA = 607	Total Population = 246,447 PLWHA = 108	Total Population = 7,384 PLWHA = 8
CDC High Impact Counties	6 of 7 counties CHAPP funded	7 of 27 counties CHAPP funded	6 of 20 counties CHAPP funded	1 of 6 counties CHAPP funded

[6] Peter Piot's address "How to reduce the stigma of AIDS" Keynote address Symposium at the XVI International AIDS Conference Toronto, 12 August 2006 Available at http://www.unaids.org/en/media/unaids/contentassets/dataimport/pub/speechexd/2006/200608012_sp_piot_stigma-speech_en.pdf

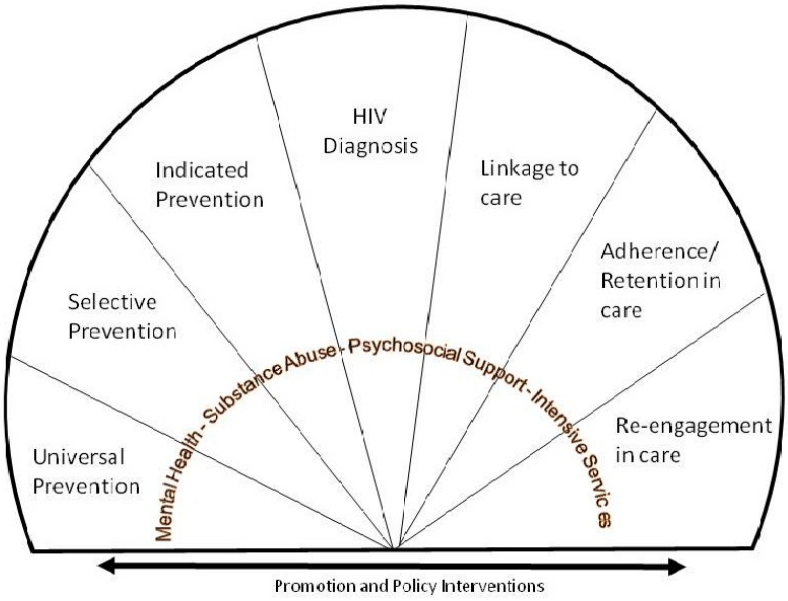
Colorado HIV Care Continuum and Intervention Categories

The continuum of engagement in HIV care is an important framework for understanding the status of HIV care and treatment in the United States (Cheever 2007). People shift up and down the continuum of care depending upon life circumstances, jobs, access to care, mental health, substance use, or other factors. Helping people achieve and maintain viral suppression is an overall goal for COHAS, but this requires extensive supports and access to high quality health care. In order to understand how HIV care delivery fits into the continuum of care, Mugavero and colleagues created a framework through which care services can be better understood, with the ultimate goal of viral load suppression (Mugavero 2011). Viral load suppression not only improves individual health, but it also reduces HIV transmission on a population level (Das 2010, Montaner 2010). As there is mounting evidence that treatment of HIV with combination antiretroviral therapy (ART) reduces HIV transmission and HIV incidence (CDC 1994, Cohen 2011, Jia 2012), there has been more of a public health focus on treatment for everyone, and the DHHS guidelines also recently supported this (DHHS 2013). The continuum focuses on several steps of HIV service delivery, including prevention, diagnosis, linkage to medical care, retention in care, ART, and viral load suppression.

Colorado has adopted a model for classifying HIV interventions across the continuum that is based on a model developed by the U.S. IOM.[7] Although this IOM model was originally designed around mental health and substance use issues and interventions, it is very applicable to HIV prevention in that it matches the intensity of the intervention to the level of risk experienced by the client, while emphasizing that prevention should be seamlessly linked to treatment and to maintenance interventions.

The model used in this plan is shown as Figure 2, below.

Figure 2: The Colorado Model, based on the IOM



[7] Available at http://captus.samhsa.gov/prevention-practice/prevention-and-behavioral-health/behavioral-health-lens-prevention/3

Ongoing and evolving HIV Care Continuum analyses have informed HIV Surveillance activities in Colorado for several years. One critical aspect of the HIV Care Continuum is the denominator of diagnosed persons living with HIV disease and how it is defined. Interpretation and use of care continuum data will be more effective and meaningful when the specific denominator criteria are well understood.

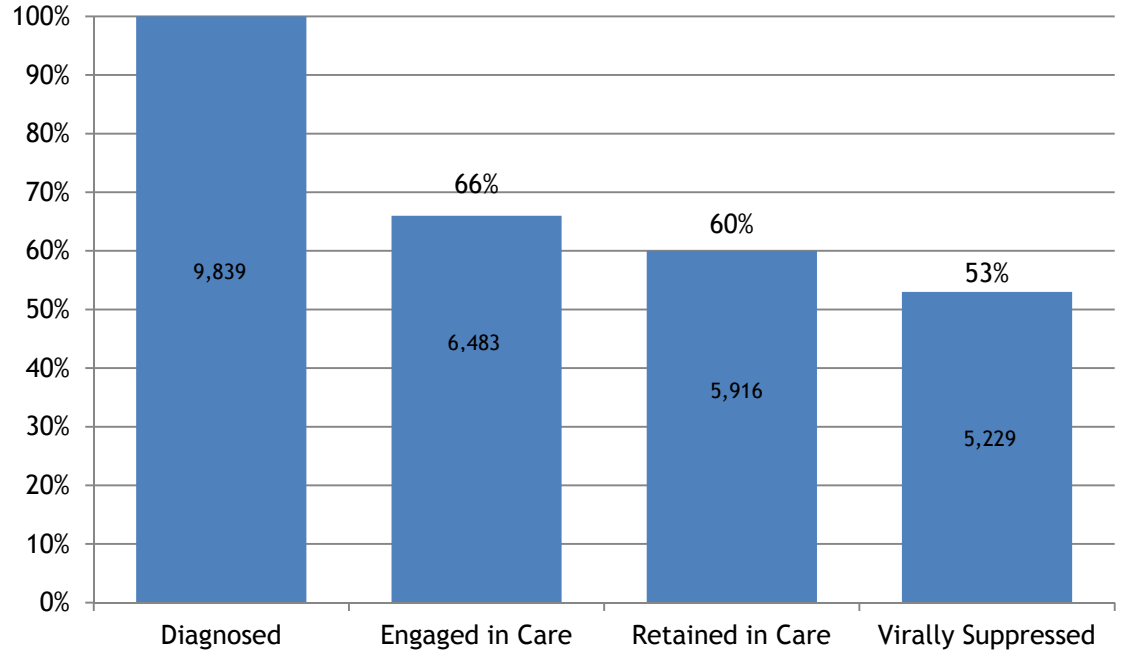
In the HIV Care Continuum depicted in Figure 3, the one hundred percent denominator is defined as "Persons diagnosed with HIV infection (regardless of stage of disease) through December 31, 2012, alive as of December 31, 2013, living in Colorado to the best of our HIV Surveillance knowledge with lab evidence of medical care in Colorado in the last 10 years." (N=9,839)
Sixty six percent of diagnosed Coloradans with any evidence of HIV care in the past 10 years were engaged in care between January 1, 2013 and December 31, 2013 (defined as percent of diagnosed with at least one CD4 or viral load lab test during the time period of January 1, 2013 –December 31, 2013, reported to the state. (N=6,483)

Sixty percent of diagnosed Coloradans with any evidence of HIV care in the past 10 years were retained in care between January 1, 2013 and December 31, 2013, (defined as percent of diagnosed with at least two lab tests at least 90 days apart during January 1, 2013 –December 31, 2013 reported to the state OR virally suppressed at the time of their last lab during January 1, 2013 –December 31, 2013, but did not have any additional lab > 90 days outside from this time period. (N=5,916)

Fifty three percent of diagnosed Coloradans with any evidence of HIV care in the past 10 years were virally suppressed (defined as percent of diagnosed where the most recent (January 1, 2013 –December 31, 2013) viral load test had a result of ≤200 copies/mL. (N=5,229)

Defining the denominator by cases reported in the past 10 years with evidence of HIV care in Colorado is a conservative method and most likely underestimates the true proportion of persons who exhibit viral suppression as a result of their engagement in ART. HIV Surveillance methods are now updating eHARS cases to capture current addresses in a systematic and uniform manner to ensure that estimates of the HIV Care Continuum are comprised of the true vital status and current location of eHARS cases. Estimates based on evidence of care in the past five years are now being used in current HIV care continuum evaluations, and reducing the denominator of diagnosed persons with evidence of care in a more recent time period increases the proportion of people known to be in HIV care during the evaluation period of interest.

Figure 3: Colorado HIV Care Continuum as of December 31, 2013



HIV Care Continuum data can be used to evaluate the impact of prevention activities related to NHAS. HIV prevention activities may be designed to impact outcomes at any stage of the continuum, from Diagnosed to Virally Suppressed. In Table 2, Colorado Care Continuum data show that persons with HIV disease who are currently less than 13 years of age were most likely to be virally suppressed (79%), while those with HIV disease who are currently between 13 and 24 years of age were least likely to be virally suppressed (42%), even though 73 percent were engaged in care. Black/African American persons with HIV disease were least likely to be engaged and retained in care and achieve viral suppression, compared to Hispanic/Latino and White persons with HIV disease. By higher HIV risk groups, female heterosexuals and female IDU were much more likely to be engaged and retained in care and achieve viral suppression compared to male heterosexuals and male IDU. As a high risk group, MSM had higher levels of engagement (68%) and retention (62%) in care, as well as viral suppression (55%).

Table 2: Colorado HIV Care Continuum as of December 31, 2013

	No. Diagnosed /Alive / In Care past 10 yrs.= 100%	Engaged in Care (%)	Retained in Care (%)	Virally Suppressed (%)
All CO	9,839 (100%)	66	60	53
Gender				
Male	8,506 (100%)	66	60	53
Female	1,333 (100%)	68	63	55
Current Age				
<13 yrs.	38 (100%)	87	87	79
13-24 yrs.	178 (100%)	73	62	42
25-44 yrs.	3,656 (100%)	66	59	52
45-64 yrs.	5,459 (100%)	66	60	54
65+ yrs.	508 (100%)	64	62	56
Race/Ethnicity				
White	5,911 (100%)	67	61	54
Black/African American	1,620 (100%)	61	56	46
Hispanic/Latino	2,040 (100%)	67	61	55
Other*	268 (100%)	66	60	51
Risk Male				
MSM	6,248 (100%)	68	62	55
IDU	473 (100%)	55	48	41
MSM/IDU	783 (100%)	64	58	50
Heterosexual	406 (100%)	61	56	50
Pediatric	44 (100%)	68	64	50
NIR	528 (100%)	55	50	45
Risk Female				
IDU	243 (100%)	64	57	50
Heterosexual	793 (100%)	70	66	58
Pediatric	41 (100%)	78	73	61
NIR	247 (100%)	65	59	52

* Includes Asian, Pacific Islander, Native American/Alaskan Native, More than one, and unknown race.

Colorado and the National HIV/AIDS Strategy Goals

Table 3 contains preliminary data showing measures from Colorado HIV Surveillance data which correlate with measures in the National HIV AIDS Strategy, at least partially. Some analyses have not yet been completed, and some are not yet possible to measure with current HIV Surveillance data collection methods, and may be better captured through other HIV prevention, care and treatment systems. This table may help frame the development of HIV prevention activities, or can serve as a reminder of the work being done and what needs to be done.

Table 3: National HIV/AIDS Strategy goals: Colorado estimates for NHAS objectives

NHAS Goal: Prevent New HIV Infections							
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015 Goal**
Reduce New HIV Infections by 25%	388	430	378	388	302	Note[8]	**291**
Reduce Late Stage HIV Diagnoses by 25%	127	146	132	146	129	Note[8]	**95**
Increase knowledge of HIV-positive status to 90%	No local data currently available						
Reduce the perinatal transmission rate by 25%**	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
Reduce sexual risk behavior among MSM by 25%	No local data currently available						
Reduce sexual or injection risk behavior among IDU by 25%	No local data currently available						
NHAS Goal: Improve Access to Care and Health Outcomes							
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015 Goal**
Reduce the HIV transmission rate by 30%	3.6	4.0	3.3	3.4	2.6	Note[8]	**2.52**
Increase linkage to HIV medical care to 85%	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
Increase viral suppression among persons in HIV medical care by 10%	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
Reduce sexual risk behavior among persons in medical care by 33%	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]

** Colorado's perinatal transmission is currently 0 percent.

NOTE: Boxes without values indicate analyses that are yet to be completed

[8] Some analyses have not yet been completed, and some are not yet possible to measure with current HIV Surveillance data collection methods, and may be better captured through other HIV prevention, care and treatment systems.

Table 3: National HIV/AIDS Strategy goals: Colorado estimates for NHAS objectives (cont)

NHAS Goal: Reduce HIV-Related Health Disparities							
	2009	**2010**	**2011**	**2012**	**2013**	**2014**	**2015 Goal**
Reduce new HIV infections among groups at increased risk by at least 25%	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
MSM	254	267	241	244	181	Note[8]	**190**
IDU (combined IDU and MSM/IDU risk)	30	41	32	30	14	Note[8]	**22**
Blacks/African Americans	59	91	56	68	52	Note[8]	**44**
Hispanic/Latinos	117	90	106	114	89	Note[8]	**87**
Increase linkage to HIV medical care among all racial/ethnic groups to 85% or greater	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
Blacks/African Americans	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
Hispanic/Latinos	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
Whites	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
Other Races/Ethnicities	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
Increase viral suppression among specific groups by at least 20%	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
HIV-diagnosed MSM	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
HIV-diagnosed Blacks/ African Americans	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]
HIV-diagnosed Hispanic/Latinos	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]	Note[8]

NOTE: Boxes without values indicate analyses that are yet to be completed

Section 4b – Universal, Selective, and Indicated Prevention

Target Populations

1. HIV Positive Persons
2. MSM
3. Blacks/African Americans
4. Hispanics/Latinos
5. IDU
6. Youth age 13-24
7. Men and Women age 25-39

Sub-Target Populations

1. MSM of Color
2. Foreign Born
3. IDU Co-Infected with Hepatitis C[9]
4. Rural Population (Level 3 and 4 counties; see Appendix 6)

Evidence of Need (Met and Unmet)

National HIV Behavioral Surveillance (NHBS) Findings

The National HIV Behavioral Surveillance (NHBS) system included Colorado respondents and data, which makes it an excellent source of information on met and unmet local need for prevention.

NHBS Findings on Men Who Have Sex with Men (MSM)[10]

The findings from NHBS related to the MSM community in Colorado are from three cycles of data collection (2005, 2008, and 2011) and includes a total of 1,961 respondents over the three cycles. All participants were over 18 years of age, lived within the Denver metropolitan area, reported an assignment of male sex at birth, self-identified as male, were able to complete the survey in either English or Spanish, and were able to provide consent for participating in the survey. Participants who reported having oral and/or anal sex with another male in the past 12 months were included in the data analysis.

The findings from the three cycles of NHBS data collection within the Denver-based MSM community indicated the following trends in MSM risk behavior:

- Condomless anal sex between MSM is the sexual behavior most associated with risk in HIV transmission. While just over half of MSM (51.2%) reported having condomless anal sex in 2005, more than two-thirds (67.6%) of those surveyed in 2011 reported this behavior, a significant 32 percent increase.
- There has been a significant increase in the percent of MSM who report having had sex with more than three male sex partners in the past 12 months. In 2005, 43.7 percent of MSM engaged in sex with more than three male sex partners. By 2011, 52.7 percent

[9] COHAS coordinates HIV interventions for IDU with the efforts described in the Colorado Viral Hepatitis Work Plan, which is included as Appendix 3. See pages 2 and 4 of that Appendix.

[1010] HIV Behavioral Surveillance in the Denver Metro Area: Understanding HIV Risk and Prevention Behaviors among Gay, Bisexual, and Other Men who Have Sex with Men. Available at: denverhealth.org/NHBS

of MSM indicated that they had three or more sexual partners in the past 12 months, a 21 percent increase.

- Despite these changes in risk behavior, the HIV prevalence was similar for the years in which HIV testing was conducted as part of NHBS: 16.9 percent in 2008 and 16.3 percent in 2011.

NHBS collects extensive behavioral data. A summary report of data from the three MSM cycles focused on eight (8) specific risk factors: condomless anal sex, receptive anal sex, more than three male sex partners, injection drug use, methamphetamine use, no HIV test in the past 12 months, diagnosed with an STI in the past 12 months, and last sex partner's HIV status was positive or unknown. Across the three cycles, the mean number of risk behaviors among MSM increased significantly from 2.21 to 2.45. Collapsing across the three cycles, the number of risk behaviors ranged from 0-7, with an average of 2.4 risks reported (median=2.0).

- MSM reporting the highest number (4 or more) of risk behaviors were almost twice as likely (40.5%) as men reporting fewer than 4 risk behaviors to report never testing or not testing for HIV within the past 24 months.
- MSM reporting the highest number (4 or more) of behaviors were less likely to have visited a health care provider in the past 12 months compared to their peers.
- Fewer than half of all MSM who saw a health care provider reported that the provider offered an HIV test during their last visit.
- Across all three cycles, MSM reporting the highest number (4 or more) of behaviors were less likely to disclose their sexual orientation to their doctors when compared to the entire sample of MSM respondents.

NHBS Findings on Injection Drug Users (IDU)[11]

The findings from NHBS related to the IDU community in Colorado are from three cycles of data collection (2006, 2009 and 2012) and includes a total of 1,465 respondents over the three cycles. All of the participants were over 18 years of age, lived within the Denver metropolitan area, had injected drugs that were not prescribed to them in the past 12 months, were able to complete the survey in either English or Spanish, and were able to provide consent to participating in the survey.

Trends noted by NHBS show progress are being made:

- Relatively high proportions of IDU report sharing a non-sterile needle or syringe, although this practice decreased from 80 percent of IDU in 2009 to 64.5 percent in 2012, a significant 19 percent decrease.
- In 2012, one out of three (35.5%) IDU indicated that they had shared a needle or syringe after someone else had used it, a decrease from 40.9 percent in 2009.
- More than half (55%) of the IDU surveyed used a cooker, water, or cotton after someone else in 2012, a decrease from 58.4 percent in 2009.
- Nearly one third (31.6%) of IDU reported using drugs that had been divided with a used syringe in 2012, a significant drop from 36.7 percent in 2009.

[11] HIV Behavioral Surveillance in the Denver Metro Area: Understanding HIV Risk and Prevention Behaviors among Persons who Inject Drugs. Available at: denverhealth.org/NHBS

NHBS Findings on Heterosexual Adults at Increased Risk for HIV (HET)[12]
NHBS was conducted among heterosexuals at increased for HIV in 2007, 2010, and 2013. However, the most recent NHBS report of findings related to at-risk heterosexuals is from 2010 and included 522 respondents. All of the participants were 18 to 60 years old, residents of the Denver-Aurora metropolitan statistical area and were male or female (not transgender). They reported vaginal or anal sex with a person of the opposite sex in the past 12 months. They also were able to complete the survey and provide consent. In addition, NHBS defined "high risk" as persons having an income that is not above HHS (U.S. Department of Health and Human Services) guidelines or whose educational attainment is not greater than high school.

More than half of the high risk heterosexual participants in NHBS self-identified as being female (59%). The majority of participants (76%) fell into the age range of 25-54 years, and over 88 percent of the participants self-identified as heterosexual.

- Among men reporting sex with a female casual partner[13] in the past 12 months, over 82 percent reported condomless vaginal sex and of the men reporting anal sex with these partners, 76 percent reported it was condomless.
- Among men reporting sex with a female exchange partner[14] in the past 12 months, almost 89 percent reported condomless vaginal sex and of the men reporting anal sex with these partners, 100 percent reported it was condomless. An "exchange partner" is someone who exchanges sex for something of value.
- Approximately 82 percent of male participants reported having condomless vaginal sex the last time they had sex with a female partner and approximately 83 percent of the men reporting anal sex with a female partner stated it was condomless.
- Among females reporting sex with a male main partner in the past 12 months, almost 95 percent reported condomless vaginal sex and of those having anal sex almost 92 percent reported it was condomless. Only 43 percent of the female participants reported knowing their partner's HIV status the last time they had sex.
- Approximately 13 percent of high risk heterosexuals reported ever injecting drugs, but none reported injecting, sharing needles, or sharing needles to divide drugs in the past 12 months.
- Approximately 71 percent of participants in the 2010 cycle reported ever being tested for HIV and five participants reported being HIV positive.
- Roughly 31 percent of the high risk heterosexual participants reported receiving free condoms in the past 12 months, and 63 percent of those participants reported using free condoms they received.

In summary, among the three populations at the highest risk for HIV infection, the IDU group has made the largest gains in reducing their risk. With the other two groups, it appears that a condom education, distribution, and follow up program can make a significant impact in reducing at risk behavior.

[12]National HIV Behavioral Surveillance (NHBS), Denver CO, 2010. Available from Denver Public Health.
[13] Defined in the NHBS survey as "someone you have sex with but do not feel committed to or don't know very well."
[14] Defined in the NHBS as "someone who you give to or receive from things like money or drugs in exchange for sex."

Transgender Coloradans[15]

Nationally, the effects of social and economic marginalization of transgender people in America has resulted in higher rates of HIV infection, smoking, drug and alcohol use, and suicide attempts than the general population. For this already at-risk community, seeking regular health-care services is vital, and yet transgender people's ability to seek care is impacted by being refused services and having to teach medical providers about the needs of transgender patients. Also, because they fear discrimination or because they cannot afford it, transgender Coloradan's often delay or avoid medical care.

Detail findings from the One Colorado report are as follows:

- Despite being at increased risk, only 37 percent of transgender persons have received an HIV test in the last year, and only 30 percent have received an STD screening.
- Transgender Coloradans report experiencing depression, social isolation, lack of companionship, and feeling left out and hopeless at rates that are much greater than the overall LGB population.
- The top priority of transgender respondents for improving the health and wellness of LGBT Coloradans is training for health providers, health professional students, and mental health professionals.
- Compared to the overall LBGT respondents to the One Colorado survey, fewer transgender people have a college degree
- e and more had annual incomes less than $35,000. Sixteen percent were unemployed. Not one transgender health dialogue participant said that they had access to everything they needed to be healthy.
- Sixty-one percent of transgender respondents reported that their gender identity or expression had stopped them from seeking services, as compared to eleven percent of overall respondents.
- Four in ten transgender respondents reported lack of adequate or affordable housing as a problem in seeking health care services.
- Twice as many transgender people compared to respondents as a whole disagree that they have sufficient choice and access to LGBT-friendly providers.
- Nearly 9 out of every 10 transgender-identified respondents reported a community fear/dislike of LGBT persons to be a problem when receiving health care services.

Additional findings from the National Transgender Discrimination Survey Report on Health and Health Care[16], which involved 7,000 national respondents, are relevant to COHAS:

- Nineteen percent of transgender individuals were REFUSED care and the number increases for transgendered individuals of color
- Twenty-eight percent reported that they had experienced harassment in a medical setting and two percent reported an experience of violence in a medical setting
- Engaging in sex work for income clearly was a major risk factor for study participants, with 61 percent of those who reported HIV infection in their sample having engaged in sex work.
- Ninety-one percent of those who reported being HIV positive identified as either MTF or gender non-conforming on the male-to-female spectrum. The reported rate of HIV infection for the MTF transgender respondents was 3.76 percent. The reported rate of HIV infection for FTM respondents was 0.48 percent, lower than the national average.
- The following factors were associated with HIV positivity among the respondents:

[15] One Colorado Education Fund (2012). *Invisible: The State of LGBT Health in Colorado.*
[16] Available at http://transequality.org/PDFs/NTDSReportonHealth_final.pdf

Lacking a high-school diploma (13.49%); income below $10,000 a year (6.40%); having lost a job due to bias (4.59%); being unemployed (4.67%).

- Eight percent of the sample reported that they did not know their HIV status
- Transgender women are disproportionately at risk for HIV as compared to transgender men. The reported rate of HIV infection for the MTF transgender respondents was 3.76 percent. The reported rate of HIV infection for FTM respondents was 0.48 percent, lower than the overall U.S. average rate of 0.6 percent

Coinfection with Hepatitis C

In early 2014, the HIV/AIDS and HCV disease registries were compared and identified 1,102 HIV/HCV co-infected individuals. Of the 1,102 identified cases, 85 percent were male; 15 percent female. Sixty-one percent were White, 20 percent Hispanic/Latino, and 16 percent Black/African American. American Indian/Alaskan Native and Asian Pacific Islander were all less than 1 percent of reported cases. Risk factors identified through the STI/HIV/VH Section included 34 percent, MSM, 28 percent IDU, 25 percent MSM/IDU, and 7 percent heterosexual. Risks including transfusion, hemophilia, pediatric, and no identified risk (NIR) accounted for the remaining cases. The majority of the 1,102 HIV/HCV co-infections were found in individuals 45-54 (46%) years of age, followed by 55-64 (24%) year olds. The following age groups account for the remaining cases, 35-44 (20%), 65+ (3%), 25-34 (6%) and 20 – 24 (<1%).

System Status and Challenges

Colorado's health care system is rapidly adapting to the changes brought about by the Affordable Care Act. The general movement is toward integrated care, but the current system of HIV prevention is not well integrated with either medical care or behavioral health care. This results in duplication of services and inefficient utilization of STI/HIV resources. A more integrated model, currently in the implementation stages, calls for individuals and community focused network partners to coordinate planning activities towards common goals and tailor multi-disciplinary service delivery to improve the health of the at risk populations. Once implemented, "Colorado's Open Door To Health Network" will call upon network partners to develop specific plans and operational targets based on epidemiology of STI/HIV/VH to achieve desired outputs and outcome. Integration of viral hepatitis data and activities are described more fully on pages 1 through 4 in Appendix 3, the Colorado Viral Hepatitis Work Plan. The prevention combination packages will be informed by data shared across network partners to efficiently address STI, HIV and hepatitis within the respective communities in a sustainable and cost-effective manner. This approach facilitates an open door to culturally responsive services which will systematically eliminate stigma surrounding HIV, promote sexual health and provide holistic services that address social determinants of STIs, hepatitis and HIV. Through leveraging inter sector coordination; local networks will operate synergistically to mutually reinforce a multi faceted safety net at the community level. Inter disciplinary leadership at the local level will be essential for optimal program collaboration and service integration.

Syringe Exchange in Colorado

In 2010, Colorado passed legislation to allow Clean Syringe Exchange Programs. Colorado joined 35 states and 60 countries in implementing this best-practice intervention for IDU. Colorado's syringe access programs provide tools, resources, and education to IDU to protect themselves and their communities through safer injection practices and harm reduction methods. Complex problems of social stigma, homelessness, unemployment, limited society reintegration after incarceration, poor physical/mental health, and unresolved historical trauma are all factors that contribute to ongoing substance use.

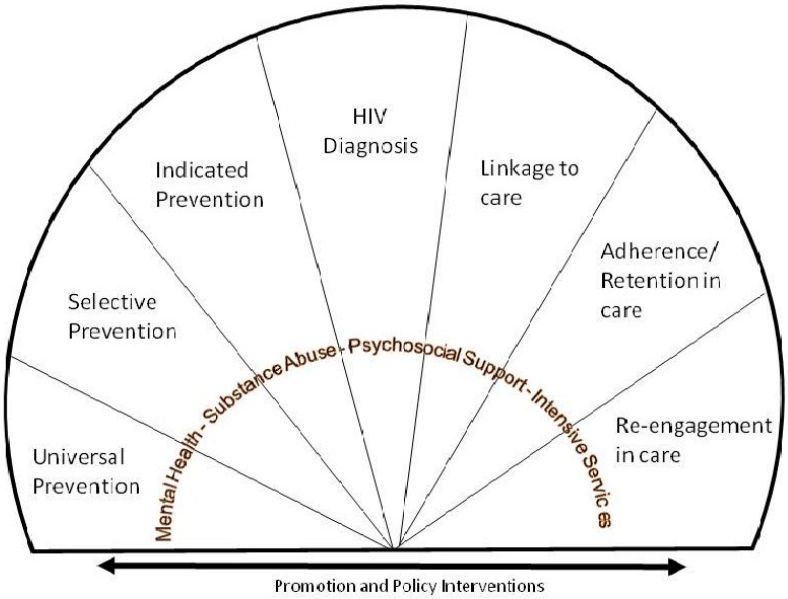
Having unprotected sex and sharing used needles used to inject drugs are the two most common ways of spreading both HIV and HCV. In addition to reducing risks for disease transmission, sterile syringe access programs facilitate greater access to drug treatment, on demand testing for HIV/HCV, and an ongoing opportunity for health education pertinent to IDU. These programs also serve as a crucial entry point into medical care, detox and rehabilitation, and mental health treatment.

Prioritized Strategies and Interventions

Colorado has adopted a model for classifying HIV interventions that is based on a model developed by the U.S. IOM.[17] Although this IOM model was originally designed around mental health and substance use issues and interventions, it is very applicable to HIV prevention in that it matches the intensity of the intervention to the level of risk experienced by the client, while emphasizing that prevention should be seamlessly linked to treatment and to maintenance interventions.

The model used in this plan is shown as Figure 4, below.

Figure 4: The Colorado Model, based on the IOM



This COHAS section focuses on the first four elements of this model (promotion and policy, universal prevention, selective prevention, and indicated prevention). The other elements of the model are covered in the remaining chapters/sections of COHAS.

[17] Available at http://captus.samhsa.gov/prevention-practice/prevention-and-behavioral-health/behavioral-health-lens-prevention/3

Promotion and Policy Interventions

These interventions are designed to create environments and conditions that support health and the ability of individuals to withstand challenges. Promotion and policy interventions also reinforce the entire continuum of HIV prevention, treatment, and care services.

P1. Advocate for changes in school policies and practices that lead to sexual wellness and comprehensive health education, in collaboration with other groups committed to this outcome, including Colorado Youth Matters, Colorado Youth for a Change, Connect 2 Protect, and the Sexual Health Work Group at CDPHE

P2. Create more integrated systems of prevention and care so that HIV prevention delivered by ASOs and other CBOs occurs in collaboration with health care providers, mental health agencies, substance abuse treatment agencies, and other health-related partners. Ensure the existence of infrastructure so that Colorado residents at risk of or living with HIV have access to resources, tools, and services regardless of where they reside in the state.

P3. Capitalize on the Affordable Care Act to promote medical home policies and practices around sexual health, which includes sexual history taking and counseling around protected sex and sexual wellness.

P4. Create other policy initiatives to address issues relevant to HIV in Colorado, as identified in collaboration with the Alliance. Closely monitor efforts to criminalize HIV in Colorado and other stigmatizing policy and legislative actions and respond with public health research showing the damaging impacts of such actions.

P5. Increase funding opportunities for HIV services through legislative tax initiatives.

P6. Seek out collaboration with other groups that share current or potential interests around sexual wellness. This could include Planned Parenthood and agencies funded by the U.S. Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA). Collaboration with viral hepatitis programs is described in Appendix 3, pages 2 through 4.

Universal Interventions

These interventions are delivered to broad populations without consideration of individual differences in risk for HIV. They address the general public or a segment of the entire population with average or less than average probability of becoming infected with HIV.

U1. Promote HIV screening for adolescents and adults ages 15 to 65 years in clinical settings, consistent with the United State Preventive Service Task Force (USPSTF) recommendation. Maintain HIV testing sites open to anyone who wants to know their HIV serostatus, particularly in the regions of the state with a disproportionate share of HIV infections. Collaborate with medical societies, health plans, and health plan associations. For more details on HIV testing, see Section 4c (Early Identification of HIV).

U2. Provide condoms and risk reduction materials at sites accessible to the general public such as mental health centers, STD clinics, substance use treatment providers, schools, parks, recreation centers, businesses, and homeless shelters. Promote and support the “CondomFinder” application to the general public. Utilize community partnerships to promote cultural norms that are supportive and accepting of condom use.

U3. Elicit media interest around the topic of sexual wellness, which includes normalization of consistent condom use.

U4. Develop a comprehensive HIV stigma reduction plan, in collaboration with the Colorado HIV Alliance for Prevention, Care and Treatment, the statewide planning group created by gubernatorial Executive Order in July 2014. See Chapter 6.

U5. Promote basic HIV information for the general public through medical care and outreach efforts. Utilize existing channels, such as medical society mailings and community health center associations, for this purpose. Ensure that this information is inclusive (available in multiple languages, delivered through multiple methods, etc.). These materials will include information regarding the risks for transgender persons.

Selective Interventions

These interventions address specific sub-populations whose HIV-related risk is significantly higher than average, either imminently or over a lifetime. They are delivered to sub-groups of individuals identified on the basis of their membership in a group that has an elevated risk for becoming infected with HIV or transmitting HIV to others. For purposes of COHAS, the sub-populations are listed in Parts i and ii of this section.

S1. Ensure that priority populations have access to free or low cost HIV testing with a minimum of barriers (including cost, location, and cultural responsiveness). Provide testing through a combination of state staff (DIS), contracted testing sites, and health care providers. Improve testing site performance through peer-to-peer technical assistance, sharing of best practices, sharing performance data feedback to clinical sites, meetings with administrative and clinical staff, presenting HIV data at grand rounds, and more thorough analysis and use of testing data. Expand testing by health care providers that serve priority populations. For more details on HIV testing, see Section 4c (Early Identification of HIV). For more details on the coordination of HIV and HCV testing, see Appendix 3.

S2. Promote condom use among priority populations. This includes distribution in specific venues and mailing of condoms on request to individuals living with HIV or AIDS. It also includes social marketing to address norms and attitudes regarding condom use. Promote and support the "CondomFinder" application to priority populations. All contracted agencies and DIS will have a role in these efforts.

S3. Coordinate HIV prevention services with other services needed by members of priority populations, particularly STI and hepatitis services.

S4. Address health disparities experienced by priority populations.

S5. Provide community outreach to communities where priority populations are concentrated, which will include distribution of condoms and risk reduction messages.

S6. Provide HIV prevention interventions that are tailored to the needs of HIV negative priority populations statewide, through contractors and staff. This includes Health Education/Risk Reduction (HE/RR) and high impact behavioral counseling.

S7. Provide interventions to people living with HIV or AIDS around preventing HIV transmission, disclosing HIV serostatus, gaining access to health care, adherence to HIV medications, and achieving viral suppression. Include interventions for people transitioning into or out of incarceration (county and city jails as well as state and federal facilities). More details are available in Sections 4d (Linkage to Medical Home) and 4e (Adherence and Retention) of this document.

S8. Integrate screening for mental health, substance use, and trauma as part of all HIV prevention interventions. More details on this strategy are in Section 4f (Behavioral Health Services).

S9. Strengthen access to services for IDU, including methadone, syringe exchange, and buprenorphine. Fund HIV prevention interventions tailored to the needs of IDU.

Coordinate HIV prevention efforts with HCV efforts, which are described in more detail in Appendix 3, pages 2 to 4.

S10. Provide partner notification services to persons newly identified as HIV infected and notify and offer testing to their exposed partners. Ensure nPEP is offered when appropriate.

S11. Promote provider training and education specific to the health needs of non-heterosexual and transgender persons. Include efforts as described in the comprehensive HIV stigma reduction plan.

Indicated Interventions

These interventions address specific individuals who have known, identified risk factors that enhance the risk of negative HIV outcomes (such as HIV transmission, lack of access to health care, and not achieving viral suppression). These risk factors include history of trauma and stigma, co-occurring mental health or substance use problems, poverty, homelessness, and general lack of health-promoting psychosocial support.

I1. Implement a "critical events system" for people living with HIV or AIDS, which will include screening to identify people with life events associated with failure to initiate care, remain in care, and achieve viral suppression. More on the "critical events system" may be found in Section 4g (Intensive Services for People with Highest Risk).

I2. Screen all people living with HIV or AIDS at least annually for mental health and substance use issues, including trauma and intimate partner violence. Consistent with this screening, expedite access to mental health and substance use services that match clients' needs. Provide a wide range of such services, from brief interventions to inpatient treatment. See Section 4f (Behavioral Health Services) for more details.

I3. For HIV negative individuals at highest risk of infection, provide interventions tailored to their needs, such as CRCS, Pre-Exposure Prophylaxis (PrEP), Non-occupational Post Exposure Prophylaxis (nPEP), and counseling for sero-discordant couples. Develop a network of trained, coordinated health care providers that can support PrEP and nPEP.

Scalability

Universal Interventions

The Diffusion of Innovation Theory[18] holds that 10 – 20 percent of a population must adopt an innovation before that innovation can be expected to diffuse throughout the population. For purposes of COHAS, an estimated 15 percent of the targeted population must receive and integrate the message. Based on 2013 census estimates (age 15 – 65), this is shown in Table 4 below.[19]

Table 4: Estimated Target Population by Gender Based on Diffusion of Innovation Theory

	2013 Estimated Population Size		Target for Diffusion of Innovation
Men	1,836,021	15%	275,403
Women	1,789,213	15%	268,382
TOTALS	3,625,234		543,785

[18] Rogers, E. M. (1983) Diffusion of Innovations (3rd Ed.). New York: The Free Press.
[19] https://dola.colorado.gov/demog_webapps/pagCategory.jsf

Selective Interventions

Estimating the sizes of Colorado's sub-populations at greatest risk of HIV infection is a complex task that must be based on several important assumptions. For MSM, the estimate utilizes a model published in 2011 that sets the prevalence of MSM behavior at 3.6 percent of the overall male population, as shown in Table 5 below.

Table 5: Colorado MSM Estimate

	Total[20]	HIV positive[21]	HIV negative or Unaware[22]
Statewide estimate of MSM	65,771	7,031	58,740

For IDU, the estimate is based on a prevalence of 0.7 percent for all Coloradans age 13-64, as shown in Table 6 below.

Table 6: Colorado IDU Estimate

	Total[23]	HIV positive[24]	HIV negative or Unaware[25]
Statewide estimate of IDU	25,280	473	24,807

Not all populations of heterosexuals are at equal risk of becoming HIV positive in Colorado. Heterosexual risk is higher than average whenever two driving factors are higher than average: 1) practicing unsafe sexual behaviors, 2) in a community where there are potential partners living with HIV or AIDS. As a marker for the extent of unsafe sexual behaviors in a community, COHAS utilized gonorrhea (GC) rates. The CDPHE Surveillance Program ranked all Colorado census tracks by 5-year rates of HIV and then by 5-year rates of GC.

These data result in a two-layer estimate of heterosexuals who at <u>higher than average risk of becoming infected with HIV</u> and therefore in need of selective interventions, as shown in Table 7 below.

[20] Gates, 2011 Available at http://www.publichealthreports.org/issueopen.cfm?articleID=2577
[21] From "Colorado HIV Care Continuum January 1, 2013 – December 31, 2013" published by CDPHE Surveillance Program. Includes MSM/IDU, includes only those who were diagnosed and reported to CDPHE.
[22] Includes those that are unaware of their HIV Positive Status.
[23] Colorado STI/HIV/VH Section, July 2004
[24] From "Colorado HIV Care Continuum January 1, 2013 – December 31, 2013" published by CDPHE Surveillance Program, includes only those who were diagnosed and reported to CDPHE.
[25] Includes those that are unaware of their HIV Positive Status.

Table 7: Colorado High Risk Heterosexual Estimate

	Description	Population age 15-64
Layer 1	The ten highest-ranking census tracts within the five county* Denver Metro Area (DMA) in terms of HIV and GC rates. Of these five counties in the DMA, only two, Denver and Adams, had a high enough rate to be included in the top ten highest-ranking tracts.	29,741
Layer 2	The ten highest-ranking census tracts *outside of the five county* DMA* in terms of HIV and GC rates. This includes census tracts in El Paso, Boulder, Teller, Montezuma, Pueblo, and Mesa counties.	15,046
	SUBTOTAL	44,787
	Minus the estimated MSM population of the 20 census tracts (3.6% of males)	(806)
	Minus the estimated IDU population of the 20 census tracts (0.7% of total)	(313)
	TOTAL ESTIMATE SIZE OF POPULATION AT ENHANCED RISK DUE TO HETEROSEXUAL BEHAVIOR	43,668

*Five county DMA is defined as Adams, Arapahoe, Denver, Douglas and Jefferson counties

These 20 census tracts represent a very diverse population of people. In terms of race, the targeted Denver area census tracts have nearly twice the Blacks/African Americans percentage of residents as compared to the state overall (7.0% versus 3.8%, with one tract over 25% Blacks/African Americans). The targeted census tracts outside the Denver area have a disproportionate percentage of Hispanic/Latino residents (28.7% overall, with one tract nearly 69% Hispanic/Latino). Although not all the census tracts are disproportionately low income, over half of the tracts have at least 10 percent of the population living below the federal poverty rate, with seven (7) tracts exceeding 25 percent and one tract exceeding 75 percent. The gonorrhea rates per 100,000 in these tracts range from 10.92 to 1903.21. The HIV rates per 100,000 in these tracts range from 36.00 to 258.40. Additional details regarding the case information and demographics of these census tracts may be found in Appendices 4 and 5[26, 27].

COHAS has identified these census tracts to be **representational** of the types of communities that appear to be most in need of selective interventions, particularly for high risk heterosexuals. Contractors funded by CDPHE will not be required to deliver services exclusively in these 20 census tracts, nor will clients be denied services because they do not reside in these neighborhoods. It is well known that HIV risk honors no artificial boundaries; people who reside in an apparently "low risk profile area" practice unsafe behaviors in a "high risk profile area," and too often bring HIV home to unknowing partners. However, in evaluating the targeting of selective prevention resources through requests for applications and proposals, CDPHE will identify the extent to which the communities receiving funding

[26] Rural Citation - Data Source: 2008-2012 American Community Survey 5 year estimates. Selected tables include; DP02-Selected Social Characteristics in the United States, DP03-Selected Economic Characteristics, DP04-Selected Housing Characteristics, S0101- Age and Sex, S1501-Educational Attainment, B02001 - Race, B03003 - Hispanic or Latino Origin. (http://www.census.gov/acs)

[27] Urban Citation - Data Source: 2008-2012 American Community Survey 5 year estimates. Selected tables include; DP02-Selected Social Characteristics in the United States, DP03-Selected Economic Characteristics, DP04-Selected Housing Characteristics, S0101- Age and Sex, S1501-Educational Attainment, B02001 - Race, B03003 - Hispanic or Latino Origin. (http://www.census.gov/acs)

meet or exceed the risk profiles of these representational census tracts and will continually advocate for the most optimal investment of scarce resources, while excluding no person or group with demonstrable need.

Scale Needed to Achieve Population Level Impact with Selective Interventions

Based on Diffusion of Innovation Theory, a population-level impact is more likely to occur when at least 15 percent of each targeted sub-population has received and integrated a prevention message. That translates into the figures shown in Table 8 below.

Table 8: Estimated Target Population by Risk Based on Diffusion of Innovation Theory

	Estimated Population Size		Targets for Diffusion of Innovation
MSM	65,771	15%	9,866
IDU	25,280	15%	3,792
HRH	43,668	15%	6,550
TOTALS	134,719		20,208

Indicated Interventions

Within the MSM and IDU populations, the estimated number of people needing indicated interventions is based on the following assumptions:

- 25 percent of HIV negative MSM and 50 percent of HIV positive MSM have enhanced risk factors
- 25 percent of HIV negative IDU and 100 percent of HIV positive IDU have enhanced risk factors

Within the population at risk due to unsafe heterosexual behaviors, COHAS utilizes 12 months of data collected by disease intervention specialists for men and women living with HIV whose only risk was heterosexual behavior.

- There are an estimated 1,316 people living with HIV or AIDS whose only risky behavior is heterosexual sex. Among this group, 50 percent have enhanced risk factors.
- For each heterosexual male living with HIV, there are an estimated 2.2 female partners at potential risk in any given year. Among this group of women, 25 percent have enhanced risk factors.
- For each heterosexual female living with HIV, there are an estimated 2.1 male partners at potential risk in any given year. Among this group of men, 25 percent have enhanced risk factors.

Table 9: Estimated At-Risk HIV Negative Partners

Risk group	Living Cases	Partners per year	Estimated at-risk HIV negative partners
Heterosexual men	461	2.2	1,014 female partners
Heterosexual women	855	2.1	1,796 male partners
TOTALS	1,316		2,810 partners

These assumptions result in the following estimates of the levels to which indicated interventions must be “scaled up” to meet the need in Colorado, as shown in Table 10 below.

Table 10: Estimated Target for Interventions

	Estimated Population Size		Targets for Indicated Interventions
HIV negative MSM	57,990	25%	14,498
HIV positive MSM	7,781	50%	3,891
HIV negative IDU	24,805	25%	6,201
HIV positive IDU	475	100%	475
HIV negative HRH	2,810	25%	703
HIV positive HRH	1,316	50%	658
TOTALS	95,177		26,425

Responsible Agencies and Groups

Responsible agencies and groups for HIV prevention services are as follows:

- Community based organizations, including AIDS Service Organizations (ASOs)
- Providers of medical care
- Community members
- Local Departments of Public Health
- CDPHE Client Based Prevention Program, Disease Intervention Specialists
- CDPHE Client Based Prevention Program, Linkage to Medical Home Specialists
- CDPHE Care and Treatment Program, Health Care Access Specialists
- CDPHE funded prevention contractors (HRSA, CDC, and CHAPP)
- Project staff funded by other sources (Ryan White Parts A, B, C, and D, local tax base, other state or federal sources)

Performance Standards and Indicators

1. Annual number of new HIV infections. Goal: 25% reduction to 300 by 2016, down from 400 in 2011.
2. Rate of perinatally acquired pediatric HIV cases. Goal: 0.0 per 100,000 infants by 2015, down from 0.6 in 2008.
3. Proportion of MSM who report unprotected anal intercourse during their last sexual encounter with a partner of discordant or unknown HIV status. Goal: Reduce by 25% to 10.1% down from 13.5% in 2011.
4. Proportion of IDU who report risky sexual or drug using behavior. Goal: 25% reduction from 73% in 2009 to 55% in 2015

Timelines

In part, the timing of implementation of the interventions depends on the availability of funding. Nearly all of the funding available for HIV prevention is highly targeted and restricted as to use. Table 11 summarizes the funding situation below.

Table 11: Strategy/Intervention Funding Situation

Strategy/Intervention[28]	CDC funding	CHAPP funding	Care Funding	No or Insufficient Funding
P1. School policies and practices				X
P2. Integrated systems		X		
P3. Promote sexual health in ACA medical homes			X	
P4. Other policy initiatives	X			
P5. Increase funding opportunities				X
P6. Collaboration around sexual wellness	X			
U1. HIV screening for the general public				X
U2. Provide condoms for general public				X
U3. Media on sexual wellness		X		
U4. Comprehensive stigma plan				X
U5. Basic HIV information for the general public				X
S1. HIV testing for priority populations	X	X		
S2. Provide condoms for priority populations	X			
S3. Coordinated STI/HIV/Hepatitis services	X	X	X	
S4. Address health disparities				X
S5. Community outreach		X		
S6. HIV prevention for HIV negative people		X		
S7. HIV prevention interventions for PLWHA	X	X		
S8. Screening for mental health/substance use	X	X	X	
S9. HIV prevention services for IDU	X	X		
S10. Partner services	X		X	
S11. Provider education for non-heterosexual and transgender persons				X
I.1. Critical events systems			X	
I.2. Mental health/substance use screening	X	X	X	
I.3. Intensive interventions for high risk negatives		X		

[28] See pages 21 to 23 for complete descriptions of the strategies and interventions.

Table 12: Timeline Target Dates for Section 4b

Target Dates	Activity
February 1, 2015	Contracts and hiring in place to sustain existing capacity and build capacity to delivery HIV prevention services
June 30, 2015	First report on performance indicators delivered to Alliance.
September 30, 2015	Second report on performance indicators delivered to Alliance.
December 31, 2015	Year-end report on performance indicators delivered to Alliance.
April 1, 2016	Renewal of contracts, modified based on “lessons learned” in 2015.
June 30, 2016	First report on performance indicators delivered to Alliance.
September 30, 2016	Second report on performance indicators delivered to Alliance.
December 31, 2016	Year-end report on performance indicators delivered to Alliance.
April 1, 2017	Renewal of contracts, modified based on “lessons learned” in 2016.
June 30, 2017	First report on performance indicators delivered to Alliance.
September 30, 2017	Second report on performance indicators delivered to Alliance.
December 31, 2017	Year-end report on performance indicators delivered to Alliance.

Section 4c – Early Identification of HIV Infection

Target Populations

1. MSM
2. Blacks/African Americans
3. Hispanics/Latinos
4. IDU
5. Youth – age 13-24
6. Men and Women age 25-39

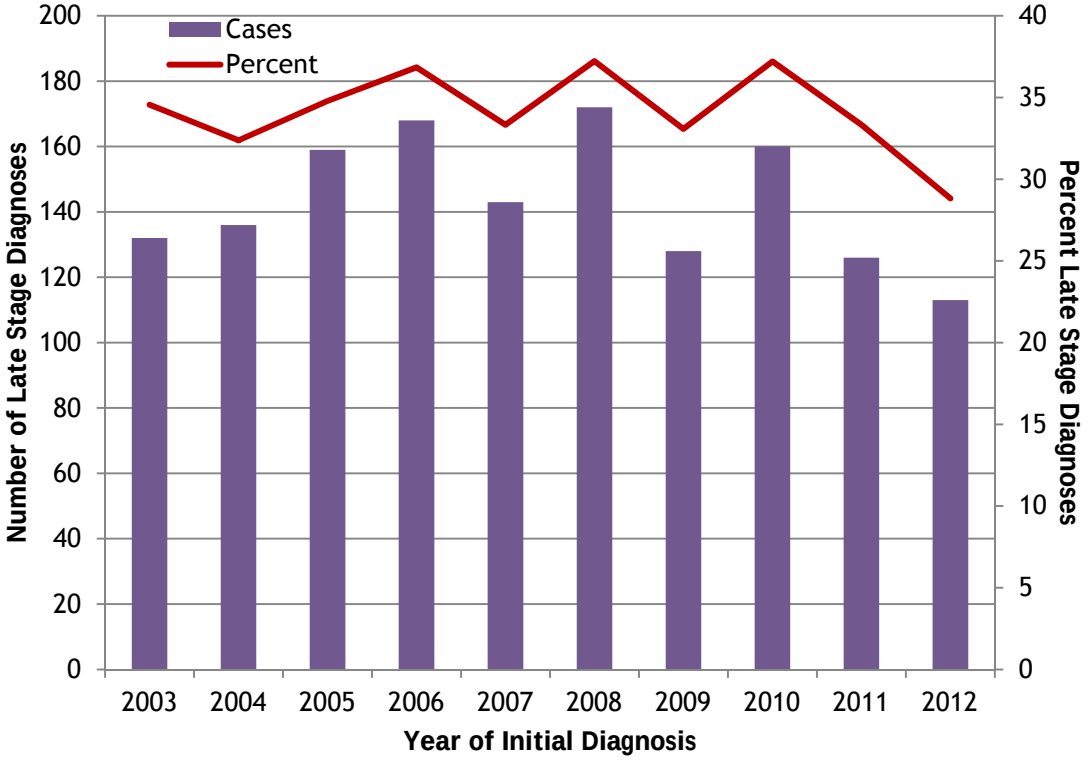
Sub-Target Populations

1. MSM of Color
2. Foreign Born
3. IDU Co-Infected with Hepatitis C[29]
4. Rural Population

Evidence of Need (Met and Unmet)

In 2012 despite great prevention effort in Colorado, 29 percent of HIV infections are still being identified far too late in the disease process.

Figure 5: New HIV Disease Late Stage Cases and Percentage in Colorado, 2003 – 2012



[29] COHAS coordinates HIV interventions for IDU with the efforts described in the Colorado Viral Hepatitis Work Plan, which is included as Appendix 3. See pages 2 and 4 of that Appendix.

This has been a long-standing issue in Colorado, and the problem is evident across multiple sub-populations. Over a third of the 2,044 people (34%) diagnosed with HIV from 2008 through 2012 received a diagnosis of AIDS within a year of their initial HIV diagnosis. And most received their AIDS diagnosis within a week of finding out they tested positive for HIV. These cases are referred to as "concurrent HIV/AIDS" and of the 1,759 males diagnosed from 2008-2012, 35 percent had concurrent diagnoses as compared to 29 percent of the 285 females diagnosed during that time. Among MSM, 32 percent had concurrent HIV/AIDS diagnoses, and among heterosexual men, 59 percent had concurrent diagnoses. Those under the age of 35 were much less likely to have concurrent diagnoses compared to those 35 and over (22% versus 46%). Just under half (49.77%) of those over 45 years of age had concurrent diagnoses. Among race/ethnic groups, Whites had a higher percentage of concurrent diagnoses (32.2%) than Blacks/African Americans (27.49%) and 38.8 percent of U.S. born Hispanics/Latinos had concurrent diagnoses. However, the percentage of Hispanics/Latinos born outside the U.S. with concurrent HIV/AIDS diagnoses was much higher at 53.2 percent.

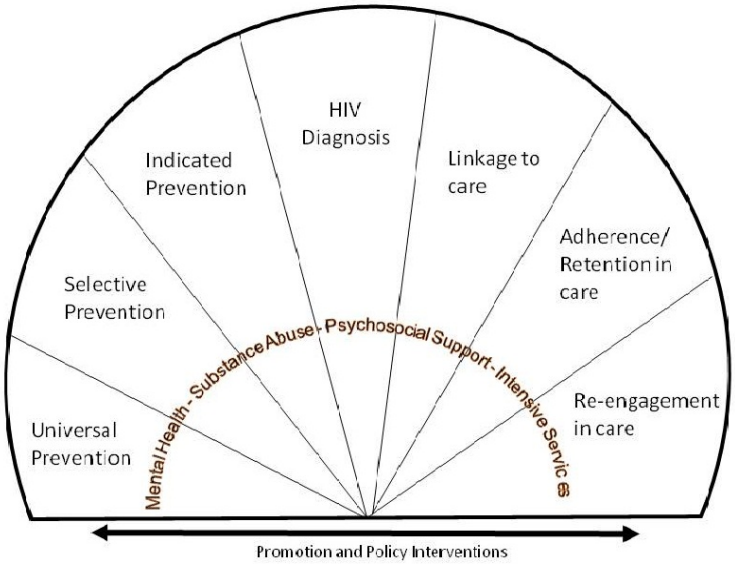
Late diagnosis also occurs in multiple locations across Colorado. For the period 2008-2012, a few low incidence counties had a large proportion of concurrent diagnoses. Six counties had 100 percent concurrent diagnoses, where four were rural and the remaining two were frontier counties. Weld County had the highest proportion of concurrent diagnoses at 56 percent, although the incident rate in Weld County was relatively low, accounting for two percent of the total cases in Colorado. Weld County was followed by Eagle County with 47 percent concurrent cases and one percent of the epidemic, Jefferson County and Adams County with 40 percent concurrent cases and 5 and 13 percent of the epidemic, respectively, and Boulder County with 37 percent of concurrent cases and four percent of the epidemic. Denver County had, by far, the highest number of concurrent diagnoses (N=271), but the proportion of concurrent cases relative to total cases in Denver County was 33 percent, slightly below the state average of 34 percent. Forty percent of all incident cases during that time period were in Denver County.

Early identification of HIV infection faces several challenges and gaps. With the implementation of the Affordable Care Act and the Colorado Medicaid expansion in 2014, an unprecedented opportunity exists to maximize the impact of opt out HIV screening for everyone ages 13 to 64 in healthcare settings. However, cooperation of health care settings to test priority populations needs further development. In addition, improvements in data sharing between CDPHE and local county health departments would improve efforts to assess HIV screening in the priority populations. It also remains to be seen how health care settings and health insurance plans will implement the more rigorous testing that is recommended for priority populations, such as twice annual testing of MSM who practice risk behaviors.

Prioritized Strategies and Interventions

As described more fully in Section 4a (Background and Overview), COHAS is structured around an intervention model originally developed by the IOM. As this diagram shows in Figure 6 below, HIV diagnosis stands at the midpoint between prevention and care. The manner in which diagnosis occurs will determine, to a great extent, the success of subsequent interventions.

Figure 6: The Colorado Model, based on the IOM



The following strategies and interventions show promise of effectiveness for early identification of HIV cases and will be implemented or continued:

1. Use HIV Surveillance data to plan the allocation of HIV testing resources. Analyze newly reported HIV cases to inform local prevention efforts through aggregate data sharing between CDPHE and contracted agencies within the five counties that have the highest proportion of HIV cases in the state (Adams, Arapahoe, Denver, Jefferson, and El Paso counties).
2. Expand HIV testing, particularly in healthcare venues that serve people of color and high risk populations and practices/clinics that have reported HIV cases to the STI/HIV Surveillance Reporting Unit. Utilize existing relationships with these clinic developed through Surveillance to explore expansion of testing.
3. Target HIV testing in non health care settings conducted by ASOs. Include screening and referrals to mental health and substance use service providers. Provide high risk venue testing (including bars, bath houses, book stores, parks, etc.) and ensure that it includes referrals to care and other services for those testing positive.
4. Increase the capacity of HIV testing providers through delivery of peer-to-peer technical assistance, sharing of best practices, sharing performance data feedback to clinical sites, meetings with administrative and clinical staff, presenting HIV data at grand rounds, and encouraging use of multi-platform analyzers.
5. Sponsor periodic HIV screening events among persons at high risk of HIV acquisition (including Black/Blacks/African Americans and Hispanic/Latino heterosexuals, MSM, transgender women, and IDU).

6. Assure linkage to care for people diagnosed with HIV, particularly in the five disproportionately affected counties. (See Linkage to Medical Home Section 4d for details)
7. Create and maintain a Colorado HIV Testing Plan to guide "opt out" HIV testing in health care settings to screen persons 13-64, especially in high prevalence areas, and to inform HIV testing in low prevalence areas of the state.
8. Maintain DIS statewide voluntary HIV testing of high-risk partners and others engaged in high risk behavior as part of Partner Services work.

Scalability

Estimating the sizes of Colorado's sub-populations at greatest risk of HIV infection is a complex task that must be based on several important assumptions. For MSM, the estimate utilizes a model published in 2011 that sets the prevalence of MSM behavior at 3.6 percent of the overall male population, as shown in Table 13 below.

Table 13: Colorado MSM Estimate

	Total[30]	HIV positive[31]	HIV negative or Unaware[32]
Statewide estimate of MSM	65,771	7,031	58,740

For IDU, the estimate is based on a prevalence of 0.7 percent for all Coloradans age 13-64, as shown in Table 14 below.

Table 14: Colorado IDU Estimate

	Total[33]	HIV positive[34]	HIV negative or Unaware[35]
Statewide estimate of IDU	25,280	473	24,807

Not all populations of heterosexuals are at equal risk of becoming HIV positive in Colorado, with equal levels of urgency for HIV testing. Heterosexual risk is higher than average whenever two driving factors are higher than average: 1) practicing unsafe sexual behaviors, 2) in a community where there are potential partners living with HIV or AIDS. As a marker for the extent of unsafe sexual behaviors in a community, COHAS utilized gonorrhea (GC) rates. The CDPHE Surveillance Program ranked all Colorado census tracks by 5-year rates of HIV and then by 5-year rates of GC.

These data result in a two-layer estimate of heterosexuals who at higher than average risk of becoming infected with HIV and therefore in need of selective HIV testing efforts, as shown in Table 15 below.

[30] Gates, 2011 Available at http://www.publichealthreports.org/issueopen.cfm?articleID=2577
[31] From "Colorado HIV Care Continuum January 1, 2013 – December 31, 2013" published by CDPHE Surveillance Program. Includes MSM/IDU, includes only those who were diagnosed and reported to CDPHE.
[32] Includes those that are unaware of their HIV Positive Status.
[33] Colorado STI/HIV/VH Section, July 2004
[34] From "Colorado HIV Care Continuum January 1, 2013 – December 31, 2013" published by CDPHE Surveillance Program, includes only those who were diagnosed and reported to CDPHE.
[35] Includes those that are unaware of their HIV Positive Status.

Table 15: Colorado High Risk Heterosexual Estimate

	Description	Population age 15-64
Layer 1	The ten highest-ranking census tracts within the five county* DMA in terms of HIV and GC rates. Of these five counties in the DMA, only two, Denver and Adams, had a high enough rate to be included in the top ten highest-ranking tracts.	29,741
Layer 2	The ten highest-ranking census tracts *outside of the five county* DMA* in terms of HIV and GC rates. This includes census tracts in El Paso, Boulder, Teller, Montezuma, Pueblo, and Mesa counties.	15,046
	SUBTOTAL	44,787
	Minus the estimated MSM population of the 20 census tracts (3.6% of males)	(806)
	Minus the estimated IDU population of the 20 census tracts (0.7% of total)	(313)
	TOTAL ESTIMATE SIZE OF POPULATION AT ENHANCED RISK DUE TO HETEROSEXUAL BEHAVIOR	43,668

*Five county DMA is defined as Adams, Arapahoe, Denver, Douglas and Jefferson counties

Existing models in the literature were used to inform HIV testing scalability estimates.[36] Under the HIV test-and-treat scenario with immediate initiation of ART, the optimal testing frequency is every 2.4 years for low-risk (0.01% annual incidence) individuals; every 9 months for moderate risk (0.1% incidence) individuals; and every 3 months for high-risk (1.0% incidence) individuals. Early detection of HIV infection, timely administration of ART, and therein, achievement of viral suppression, reduces HIV transmission. Given this, efforts to support early detection of HIV infection are cost effective. Table 16 shows estimates of how HIV testing will need to be "scaled up" to reach HIV negative members of the target populations, consistent with testing frequency recommendations in the literature and estimates of how much of such testing will be delivered in health care versus testing site settings. The estimate of settings is based on prior year experience with each group and the capacity of funded sites.

[36] Lucas, A and Armbruster, B. The cost-effectiveness of expanded HIV screening in the United States. AIDS 2013, 27:795–801

Table 16: Annual Number of Tests by Risk Group and Funding Source

	Estimated Sizes of Populations for HIV testing	Annual Testing frequency	No. of tests funded by health insurance[37]	No. of tests funded by public health sources
Low prevalence general population (age 15-65)	3,625,234	0.42	1,507,372	15,226
MSM (lower prevalence subgroup)	38,273	0.75	28,418	287
MSM (high prevalence subgroup)	19,717	4.00	67,036	11,830
IDU (lower prevalence subgroup)	16,371	0.75	12,156	123
IDU (high prevalence subgroup)	8,434	4.00	28,675	5,060
HRH (lower prevalence subgroup)	40,858	0.75	30,337	306
HRH[38] (high prevalence subgroup)	2,810	4.00	9,554	1,686
TOTAL ANNUAL NUMBER OF TESTS			1,683,548	34,518

Future opportunities to scale up HIV testing activities in Colorado include the promotion of HIV testing among the social and sexual networks of at-risk people, and use of FDA-approved home testing kits, particularly for hard to reach populations. Concerns about unintended consequences of home testing will be addressed in the Colorado Comprehensive HIV Testing Plan, which will be revised in early 2015. Special emphasis will be placed on periodic retesting of MSM, IDU, Blacks/African Americans, Hispanics/Latinos and foreign born or undocumented persons, migrant workers, and testing in the context of annual high school physical for adolescents in high prevalence areas. Locally adapted analytic methods are needed to develop optimal combinations of approaches for improving efficiency, effectiveness, and scalability of HIV screening particularly for undocumented foreign born and transgender populations.

Responsible Agencies and Groups

Responsible agencies/groups for behavioral health services are as follows:

- Community based organizations, including AIDS Service Organizations (ASOs)
- Providers of medical care
- Community members
- Local Departments of Public Health
- CDPHE Client Based Prevention Program, Linkage to Care Specialists
- CDPHE Care and Treatment Program, Health Care Access Specialists
- CDPHE Client Based Prevention Program, Disease Intervention Specialist
- CDPHE funded HIV testing contractors

[37] For lower prevalence groups, it is estimated that 99% of HIV testing will be funded by a client's health coverage. For high prevalence groups, it is assumed that only 85% of HIV testing will be funded by a client's health coverage, reflecting the effects of stigma and the active outreach that occurs to bring higher risk populations into testing, including outreach testing and testing through sexual or sharing networks.

[38] Because the majority of these individuals are likely unaware of their high risk, it is assumed that many of them will be brought to testing by DIS or funded contractors.

- HIV testing contractors funded by other sources (Ryan White Parts A, C, and D)
- HIV testing providers that accept third party payment (including Medicaid)

Performance Standards and Indicators

1) Increase the percentage of people living with HIV who know their serostatus. Goal: 90%, up from 82% in 2012.
2) Decrease the percentage of people diagnosed with HIV who are diagnosed with AIDS (stage 3) within 12 months of initial diagnosis. Goal: 25%, down from 29% in 2012.

Timelines

Table 17: Timeline Target Dates for Section 4c

Target Dates	Activity
April 1, 2015	Contracts and hiring in place to sustain existing capacity and build capacity to serve HIV testing needs.
June 30, 2015	First report on performance indicators delivered to Alliance.
September 30, 2015	Second report on performance indicators delivered to Alliance.
December 31, 2015	Year-end report on performance indicators delivered to Alliance.
April 1, 2016	Renewal of contracts, modified based on “lessons learned” in 2015.
June 30, 2016	First report on performance indicators delivered to Alliance.
September 30, 2016	Second report on performance indicators delivered to Alliance.
December 31, 2016	Year-end report on performance indicators delivered to Alliance.
April 1, 2017	Renewal of contracts, modified based on “lessons learned” in 2016.
June 30, 2017	First report on performance indicators delivered to Alliance.
September 30, 2017	Second report on performance indicators delivered to Alliance.
December 31, 2017	Year-end report on performance indicators delivered to Alliance.

Section 4d – Linkage to Medical Homes

Target Populations

For the purposes of this section, a "medical home" is defined as a model of care delivery that is patient-centered, comprehensive, team-based, coordinated, accessible, and focused on quality and safety.[39] It includes infectious disease practices that subscribe to this model of care delivery.

There are 3 target populations for linkage to medical home (LTMH) services in Colorado:

1) *People living with HIV who are newly or previously diagnosed with HIV or AIDS but never in care.*

This population is defined as having a positive, confirmed HIV test result reported to CDPHE Surveillance with no evidence of having had a previous positive HIV test.

2) *People living with HIV who were formerly in care but who are no longer affiliated with a health care provider*

This population is defined as having initial evidence of care with a subsequent lapse in care of at least 12 months, as evidenced by viral load testing reported to CDPHE Surveillance.

3) *People living with HIV who were never linked to a medical home in Colorado*

This population is defined as living in Colorado, not having been diagnosed with HIV or AIDS in Colorado, and having no evidence of care in Colorado.

Sub-Target Populations

There are ten Colorado sub-populations that have been identified as being more likely not to be engaged in HIV care and therefore needing LTMH services:

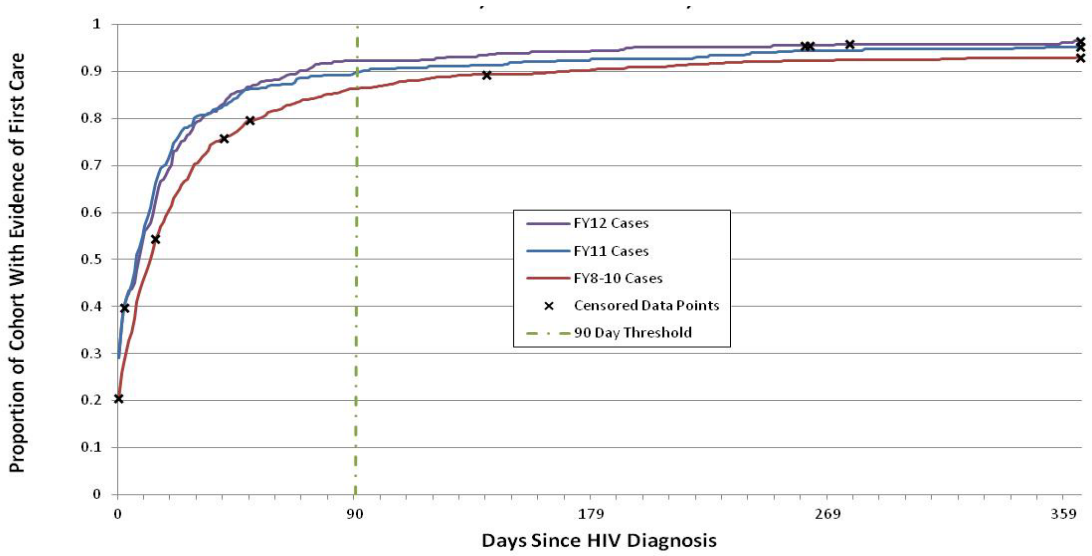
1. People diagnosed after the age of 35
2. Blacks/African American men
3. Residents of rural/frontier areas (Level 3 and 4 counties; see Appendix 6)
4. Residents of Larimer and Douglas counties
5. IDU[40]
6. MSM
7. MSM/IDU
8. People transitioning out of county jail or state prison
9. Hispanics/Latinos
10. Youth age 13 to 24

[39] Patient Centered Primary Care Collaborative, http://www.pcpcc.org/about/medical-home
[40] COHAS coordinates HIV interventions for IDU with the efforts described in the Colorado Viral Hepatitis Work Plan, which is included as Appendix 3. See pages 2 and 4 of that Appendix.

Evidence of Need (Met and Unmet)

In terms of linking newly diagnosed people to care, the Colorado linkage to medical home system appears to be working well to meet identified need. As shown in Figure 7, linkage to medical home for newly diagnosed people improved from FY 2008 to FY 2012, ultimately exceeding 90 percent.

Figure 7: Comparison of Time to First Evidence of HIV Care for New Cases in FY08-10, FY11 and FY12



Unfortunately, the situation with people whose HIV care has lapsed shows considerable unmet need. Based on analysis of Colorado data from January 2013 to December 2013, a total of 9,839 people show some evidence of HIV care in the last ten years. Of that number, only 6,483 (66%) show evidence of HIV care in the past 12 months, and only 5,916 (60%) show two lab results over 90 days apart or were virally suppressed in the last year.

Trauma and stigma have a significant impact on linkage to HIV care. Many PLWHA exhibit symptoms of Post-Traumatic Stress Disorders (PTSD), and when it remains unaddressed, it complicates engagement in care and certainly has negative implications for overall quality of life.[41] A recent meta-analysis estimated a 30 percent rate of PTSD among HIV-positive women in the U. S., which is more than five times higher the rate of PTSD reported in a nationally representative sample of women.[42] The effect on transgender PLWHA may be particularly severe. The National Transgender Discrimination Survey revealed that 19 percent of their sample reports having been refused medical care due to their transgender or gender non-conforming status. Approximately 28 percent of the sample reported postponing or delaying care due to past experiences with discrimination in a health care setting.[43]

[41] Weber K. ea, editor. Abuse and mortality in women with and at risk for HIV. 19th International AIDS Conference; 2012; Washington D.C.

[42] Machtinger EL, Wilson TC, Haberer JE, Weiss DS. Psychological trauma and PTSD in HIV-positive women: a meta-analysis. AIDS and Behavior.
2012;16(8):2091–100. Epub 2012/01/18. doi: 10.1007/s10461-011-0127-4. PubMed PMID: 22249954.

[43] Grant J, Tanis J, Harrison J, Herman J, Keisling M. Report on Health and Health Care. Washington: National Center for Transgender Equality and National Gay & Lesbian Task Force, 2010.

Prioritized Strategies and Interventions
The following strategies and interventions show evidence of effectiveness and will continue to be used in Colorado:

1. Build a collaborative system of delivering linkage-to-medical-home services that brings together the efforts of community based organizations, local health departments, CDPHE, medical providers, and community members.
2. Require HIV testing sites funded by CDPHE to actively link people to HIV care and/or facilitate linkage to medical home through CDPHE staff and LTMH contractors.
3. Utilize Disease Intervention Specialists to make an initial assessment of a newly diagnosed person's access to health care and to initiate linkage to medical home on client request.
4. Make use of Surveillance and AIDS Drug Assistance Program data housed at CDPHE to identify clients who did not initially link to care or who have lapsed in care.
5. Fund a combination of CDPHE staff and contractors to locate patients needing linkage to medical home, do an intake, screen for financial and other eligibility factors, explain options, and occasionally accompany patients to initial HIV care appointments. Include strategies for people who are transitioning into or out of local, state, or federal incarceration. LTMH cases remain open until the patient is settled into a care home (after two care appointments, at least 3 months apart, have been kept), with a follow up plan in place after that. Utilize a trauma-informed care approach to these services, as described more fully in Section 4e.
6. Based on an evidence-based assessment, in partnership with case management, actively link clients to behavioral health care and other psychosocial and support services that improve the success of linkage to medical home efforts.
7. Provide eligibility screening and enrollment counseling for every newly diagnosed person to establish payment sources to cover the costs of their medical care (ADAP, Medicaid, Medicare, marketplace health plans, other private health plans).
8. Enlist and build the capacity of private HIV testing providers to work with linkage to medical home providers. Also include strategies for those testing with HIV home tests.
9. Enlist and build the capacity of private HIV medical care providers to work with linkage to medical home providers.
10. Enlist and build the capacity of case management and linkage to medical home providers to work collaboratively.
11. In collaboration with Ryan White Part A, develop a comprehensive approach to housing support for people who need linkage to a medical home. Include strategies for short-term, medium-term, and long-term housing.

Scalability
In terms of *people who have no previous report of HIV* (target populations 1 and 3), sufficient capacity must be built or maintained to serve 250 to 300 newly diagnosed people per year.

In terms of *people who were formerly in care but who are no longer affiliated with a health care provider* (target population 2), sufficient capacity must be built or maintained to serve 3,328 people with LTMH services by the end of 2017, which is based on the following assumptions.

- Of the 3,056 people who have lapsed in care, an estimated 1,528 (50%) will be locatable and willing to engage in LTMH services in the next 3 years.
- Half of the 1,528 will be reached in 2015, with 25 percent each in 2016 and 2017

- An additional net 600 people per year will lapse in care

These numbers are shown in Table 18 below.

Table 18: Estimated Number of Formerly in Care to be Linked to a Medical Home

	2015	2016	2017	TOTALS
Lapsed in care in 2014 or before	764	382	382	1,528
Newly lapsed in care	600	600	600	1,800
TOTALS	1,364	982	982	3,328

Responsible Agencies and Groups

Responsible agencies/groups for LTMH services are as follows:

- Community based organizations, including AIDS Service Organizations (ASOs)
- Providers of medical care
- Community members
- Local Departments of Public Health
- CDPHE Client Based Prevention Program, Disease Intervention Specialists
- CDPHE Client Based Prevention Program, Linkage to Medical Home Specialists
- CDPHE Care and Treatment Program, Health Care Access Specialists
- CDPHE funded linkage to medical home contractors (HRSA, CDC, and CHAPP)
- Linkage to medical home project staff funded by other sources (Ryan White Parts A, C, and D, local tax base, other state or federal sources)

Performance Standards and Indicators

1. Percentage of patients who attended a routine HIV medical care visit within 3 months of HIV diagnosis, Goal: 85% overall linkage rate (HAB System Level Measure and NHAS)

2. Percentage of patients, regardless of age, with a diagnosis of HIV who had at least one medical visit in each 6-month period of the 24-month measurement period with a minimum of 60 days between medical visits. Goal: 80% overall retention rate (HAB Core Measure and NHAS).

3. Percentage of patients, regardless of age, with a diagnosis of HIV with a viral load test performed at least every six months during the measurement year Goal: 80% viral testing rate during first year following diagnosis (HAB All Ages Measure and NHAS).

4. Percentage of newly diagnosed or re-engaged clients, regardless of age, that report permanent housing. Goal: 86% of clients report being permanently housed within one year of diagnosis or re-engagement in care (HAB System Level Measure and NHAS)

Timelines

Table 19: Target Dates for Section 4d

Target Dates	Activity
April 1, 2015	Contracts and hiring in place to build the capacity to serve 300 newly diagnosed and 1,364 clients from prior years needing linkage to care.
June 30, 2015	First report on performance indicators delivered to Alliance.
September 30, 2015	Second report on performance indicators delivered to Alliance.
December 31, 2015	Year-end report on performance indicators delivered to Alliance.
April 1, 2016	Contracts and hiring in place to build the capacity to serve 300 newly diagnosed and 982 clients from prior years needing linkage to medical home, modified based on "lessons learned" in 2015.
June 30, 2016	First report on performance indicators delivered to Alliance.
September 30, 2016	Second report on performance indicators delivered to Alliance.
December 31, 2016	Year-end report on performance indicators delivered to Alliance.
April 1, 2017	Contracts and hiring in place to build the capacity to serve 300 newly diagnosed and 982 clients from prior years needing linkage to medical home, modified based on "lessons learned" in 2016.
June 30, 2017	First report on performance indicators delivered to Alliance.
September 30, 2017	Second report on performance indicators delivered to Alliance.
December 31, 2017	Year-end report on performance indicators delivered to Alliance.

Section 4e – Adherence To/Retention In Care

Target Populations

There are two target populations for services that promote adherence to and retention in HIV care:

1. *The general population of people living with HIV or AIDS who are engaged in care*

This population is defined as having two viral load tests over 90 days apart in the past year.

2. *People living with HIV or AIDS who are currently engaged in care but showing "warning signs" of non-adherence or lapsing in care*

This population is defined as having evidence of care but experiencing issues that prevent achieving or maintaining viral suppression. This includes people who exhibit less than 80 percent adherence to prescribed medications, have more than 270 days between viral load tests, or experience more than one missed medical appointment per year.

Sub-Target Populations

There are seven Colorado sub-populations that have been identified as being less likely to remain engaged in HIV care or to achieve viral suppression:

1. People age 13 - 24
2. Blacks/African Americans
3. Residents of rural/frontier areas (Level 3 and 4 counties; see Appendix 6)
4. Residents of Larimer and Douglas counties
5. IDU[44]
6. MSM/IDU
7. Hispanics/Latinos, including rural Hispanics/Latinos

Evidence of Need (Met and Unmet)

Based on analysis of Colorado data from January 2013 to December 2013, a total of 9,839 people show some evidence of HIV care in the last ten years. Of that number, only 6,483 (66%) show evidence of HIV care in the past 12 months, and only 5,916 (60%) show two lab results over 90 days apart or were virally suppressed in the last year.

In terms of met need, a total of 5,229 people were sufficiently engaged in care to achieve viral suppression from January 2013 to December 2013. However, that leaves 844 people who were engaged in care, but did not achieve or have documented viral suppression at their last measurement.

Multiple studies have demonstrated that behavioral health issues, particularly substance use and depression, are clearly associated with non-adherence. These issues disproportionately affect people living with HIV or AIDS.
Trauma and stigma also have a major impact on adherence to and retention in care for PLWHA. The Coping with HIV/AIDS in the Southeast (CHASE) Study found that among 490 HIV-positive women and men from five rural Southern states, patients with more categories of

[44] COHAS coordinates HIV interventions for IDU with the efforts described in the Colorado Viral Hepatitis Work Plan, which is included as Appendix 3. See pages 2 and 4 of that Appendix.

lifetime trauma had almost twice the all-cause death rate as those below the median levels of trauma, and trauma was also associated with faster development of an opportunistic infection or AIDS-related death.[45] A study by Edward Machtinger of the University of California – San Francisco revealed evidence that recent trauma (defined as being abused, threatened, the victim of violence, or coerced to have sex in the last 30 days) was the single statistically significant predictor of antiretroviral (ART) failure. Participants reporting recent trauma in the UCSF study had greater than four times the odds of ART failure as those not reporting recent trauma.[46] A recent meta-analysis estimated a 30 percent rate of post traumatic stress disorder (PTSD) among HIV-positive women in the U. S., which is more than five times higher the rate of PTSD reported in a nationally representative sample of women.[47] It is important to note that the roots of trauma extend beyond the family into the community and larger society and include both men and women. In a study of 152 HIV-positive Black/African American MSM, traumatic, stigmatizing experiences of racial discrimination were significantly associated with lower adherence to anti-retroviral therapy.[48] Another study reported that among 57 Black/African American PLWHA, racial discrimination predicted significantly lower adherence, even more than sexual orientation and HIV-related discrimination.[49]

Prioritized Strategies and Interventions

The following strategies and interventions show evidence of effectiveness and will continue to be used in Colorado:

1. Sustain retention in care and adherence counseling services at clinics that are achieving viral suppression rates of 80 percent or higher.
2. Make use of Surveillance data housed at CDPHE to identify clients who are accessing care or are engaged in care but are not achieving viral suppression. Make use of ADAP and Medicaid data to identify adherence rates. Fund new or expanded retention in care and adherence counseling projects in clinics that serve a disproportionate share of these clients. Include methods to document client success rates, clients that opt not to receive these services, and clients that cannot achieve viral suppression.
3. Support evidence-based screenings for trauma, depression and substance use issues in clinical and nonclinical settings. Fund prompt access to effective mental health and alcohol/drug treatment, including brief intervention or therapy where indicated.

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[45] Leserman J. Role of depression, stress, and trauma in HIV disease progression. Psychosomatic Medicine. 2008;70(5):539–45. Epub 2008/06/04. doi: 10.1097/PSY.0b013e3181777a5f. PubMed PMID: 18519880.
Leserman J, Whetten K, Lowe K, Stangl D, Swartz MS, Thielman NM. How trauma, recent stressful events, and PTSD affect functional health statusand health utilization in HIV-infected patients in the south. Psychosomatic Medicine. 2005;67(3):500–7. Epub 2005/05/25. doi: 10.1097/01. psy.0000160459.78182.d9. PubMed PMID: 15911916.

[46] Machtinger EL, Haberer JE, Wilson TC, Weiss DS. Recent trauma is associated with antiretroviral failure and HIV transmission risk behavior among HIV-positive women and female-identified transgenders. AIDS and Behavior. 2012;16(8):2160–70. Epub 2012/03/20. doi: 10.1007/s10461-012-0158-5. PubMed PMID: 22426597.

[47] Machtinger EL, Wilson TC, Haberer JE, Weiss DS. Psychological trauma and PTSD in HIV-positive women: a meta-analysis. AIDS and Behavior. 2012;16(8):2091–100. Epub 2012/01/18. doi: 10.1007/s10461-011-0127-4. PubMed PMID: 22249954.

[48] Bogart LM, Wagner GJ, Galvan FH, Klein DJ. Longitudinal relationships between antiretroviral treatment adherence and discrimination due to HIV-serostatus, race, and sexual orientation among African-American men with HIV. Annals of Behavioral Medicine: a publication of the Society of Behavioral Medicine. 2010;40(2):184–90. Epub 2010/06/17. doi: 10.1007/s12160-010-9200-x. PubMed PMID: 20552416; PubMed Central PMCID: PMC2939142.

[49] Boarts J, Bogart L, Tabak M, Armelie A, Delahanty D. Relationship of race-, sexual orientation-, and HIV-related discrimination with adherence to HIV treatment: a pilot study. Journal of Behavioral Medicine. 2008;31(5):445–51. doi: 10.1007/s10865-008-9169-0.

4. Promote a trauma-informed care approach with contractors and others who provide care for PLWHA. For purposes of this strategy, trauma informed care is defined as a strengths-based framework that is grounded in an understanding of and responsiveness to the impact of trauma, that emphasizes physical, psychological and emotional safety for both providers and survivors, and that creates opportunities for survivors to rebuild a sense of control and empowerment.[50] This approach will address intimate partner, sexual, and other forms of violence as well as the effects of stigma. Promotion efforts will include provider training and updating Part B Standards of Care.
5. Fund community based agencies to provide case management that includes: barriers to adherence to medications; the importance of remaining engaged in health care; referrals to wraparound services that improve adherence to medications (especially behavioral health, psychosocial support, and housing); and referrals to those with appropriate training and credentials to address clinical issues. Provide eligibility screening and enrollment counseling to establish payment sources to cover the costs of medical care (ADAP, Medicaid, Medicare, marketplace health plans, other private health plans).

Scalability

In terms of *the general population of people living with HIV or AIDS who are engaged in care* the current system appears capable of sustaining virologic suppression for 5,229 clients. Efforts that sustain this outcome should be sustained.

In terms of *people living with HIV or AIDS who are currently engaged in care but showing "warning signs" of non-adherence or lapsing in care*, sufficient capacity must be built or maintained to serve 1,129 people with retention in care or adherence counseling services each year, which is based on the following assumptions.

- 1,254 people have some engagement in HIV care, but are not achieving viral suppression, which is 6,483 (clients with at least one care visit in past year) minus 5,229 (virally suppressed clients).
- Of these 1,254 people, 90 percent will consent to and receive retention in care or adherence counseling services, some of which will be delivered in the context of case management. This equals 1,129 people.
- This level will remain consistent for each of the three years. Some people will respond to retention and adherence efforts and go on to achieve viral suppression, but an equal number will develop new retention and adherence issues and experience detectable viral loads.

[50] Hopper E, Olivet J. Shelter from the Storm: Trauma-Informed Care in Homelessness Services Settings. The Open Health Services and Policy Journal. 2010;3:80–100. doi: 10.2174/1874924001003010080.

Responsible Agencies and Groups
Responsible agencies/groups for retention in care or adherence counseling services are as follows:

- Community based organizations, including AIDS Service Organizations (ASOs)
- Providers of medical care
- Community members
- Local Departments of Public Health
- CDPHE Client Based Prevention Program, Disease Intervention Specialists
- CDPHE Client Based Prevention Program, Linkage to Medical Home Specialists
- CDPHE Care and Treatment Program, Health Care Access Specialists
- CDPHE funded retention in care and adherence counseling contractors
- Retention in care and adherence counseling contractors funded by other sources (Ryan White Parts A, C, and D)

Performance Standards and Indicators

1. Percentage of patients, regardless of age, with a diagnosis of HIV who had at least one medical visit in each 6-month period of the 24-month measurement period with a minimum of 60 days between medical visits. Goal: 80% overall retention rate (HAB Core Measure and NHAS).
2. Percentage of patients, regardless of age, with a diagnosis of HIV with a viral load test performed at least every six months during the measurement year Goal: 80% viral testing rate during first year following diagnosis (HAB All Ages Measure and NHAS).
3. Percentage of persons with an HIV diagnosis receiving HIV services, regardless of age, who were homeless or unstably housed in the 12-month measurement period. Goal: Less than 20% of clients report being homeless or unstably housed in the 12-month measurement period. (HAB System Level Measure and NHAS)
4. Percentage of patients, regardless of age, with a diagnosis of HIV with a HIV viral load less than 200 copies/mL at last HIV viral load test during the measurement year. Goal: 60% of clients reporting a viral load less than 200 copies/mL at last HIV viral load test during the measurement year. (HAB Core Measure and NHAS).

Timelines

Table 20: Target Dates for Section 4e

Target Dates	Activity
April 1, 2015	Contracts and hiring in place to sustain existing capacity and build capacity to serve up to 1,129 additional clients needing retention in care or adherence counseling.
June 30, 2015	First report on performance indicators delivered to Alliance.
September 30, 2015	Second report on performance indicators delivered to Alliance.
December 31, 2015	Year-end report on performance indicators delivered to Alliance.
April 1, 2016	Renewal of contracts, modified based on “lessons learned” in 2015.
June 30, 2016	First report on performance indicators delivered to Alliance.
September 30, 2016	Second report on performance indicators delivered to Alliance.
December 31, 2016	Year-end report on performance indicators delivered to Alliance.
April 1, 2017	Renewal of contracts, modified based on “lessons learned” in 2016.
June 30, 2017	First report on performance indicators delivered to Alliance.
September 30, 2017	Second report on performance indicators delivered to Alliance.
December 31, 2017	Year-end report on performance indicators delivered to Alliance.

Section 4f – Behavioral Health Services

Target Populations

There are four target populations for behavioral health services, which include mental health, substance use, and psychosocial support services:

1) *People vulnerable to becoming HIV infected due to mental health or substance use issues*

This population includes people who are not living with HIV but are at heightened risk of becoming infected due to mental health and/or substance use issues. The mental health or substance issues may be clinical (diagnosed or not diagnosed) or may be sub-clinical but nonetheless associated with HIV risk, such as episodic dysthymia or binge drinking.

2) *People vulnerable to becoming HIV infected who lack health-promoting social support*

This population includes people who are socially isolated; have marginal, unstable or highly conditional support; or live in a milieu that poses continual threat of emotional or physical harm. This population often experiences a high degree of shame and stigma around their sexual orientation, socioeconomic status, history of incarceration, gender, gender identity, race, ethnicity, and other factors. Social competency, support networks, and community engagement also build resiliency in this group.

3) *People living with HIV or AIDS who have mental health or substance use issues*

This population is defined as PLWHA living with mental health or substance use issues that interfere with them achieving their HIV-related health goals. These issues often pre-dated their HIV infection, but may also be associated with HIV medication side effects or coping with HIV. The mental health or substance issues may be clinical (diagnosed or not diagnosed) or may be sub-clinical but nonetheless associated with issues such as HIV medication adherence, avoiding dangerous drug interactions, maintaining housing, and keeping partners safe from HIV risk.

4) *People living with HIV or AIDS who lack health-promoting social support*

This population includes PLWHA who are socially isolated; have marginal, unstable or highly conditional support; or live in a milieu that poses continual threat of emotional or physical harm. There may be issues around disclosing HIV serostatus, including to sex partners, in their social support systems. This population often experiences a high degree of shame and stigma around their HIV serostatus, sexual orientation, socioeconomic status, history of incarceration gender, gender identity, race, ethnicity, and other factors. They also experience feeling disenfranchised, stigmatized, and not socially fulfilled.

Sub-Target Populations
For people living with HIV or AIDS, there are seven Colorado sub-populations that have been prioritized for behavioral health services:

1. MSM
2. IDU[51]
3. Women
4. People age 13 to 24
5. People with undiagnosed or untreated mental illness that "self medicate" with substance use and/or compulsive behavior.
6. Survivors of trauma, particularly sexual trauma
7. Populations that have historically mistrusted and underutilized behavioral health services, particularly communities of color and people living in poverty.

For people who are not infected with HIV, there are also seven Colorado sub-populations that have been prioritized somewhat differently for behavioral health services:

1. Women
2. People age 13 to 24
3. MSM
4. IDU[52]
5. People with undiagnosed or untreated mental illness that "self medicate" with substance use and/or compulsive behavior.
6. Populations that have historically mistrusted and underutilized behavioral health services, particularly communities of color and people living in poverty.
7. Survivors of trauma, particularly sexual trauma

Evidence of Need (Met and Unmet)
Persons living with HIV/AIDS have disproportionately high rates of psychiatric disorders, with mood and anxiety disorders being the most common. In a nationally representative US sample of individuals receiving care for HIV infection, 48 percent screened positive for one or more psychiatric disorders in the past year (36% major depression, 27% dysthymia, 16% generalized anxiety, and 11% panic)—rates far higher than those in the general US population. In a meta-analysis, HIV-infected adults were twice as likely to have major depressive disorder compared to HIV-negative adults. Other clinic based studies have found similarly high rates of both lifetime and current mood and anxiety disorders and symptoms among PLWHA. Although the rates of posttraumatic stress and bipolar disorders among PLWHA have not been systematically assessed in large cohort studies, evidence suggests that rates of these disorders are also elevated relative to the general population.[53]

Regarding alcohol and substance use, about 8 percent of PLWHA responding to the national HIV Costs and Services Utilization Survey (HCSUS) reported that they drank heavily, about twice the rate in the general population. Heavy drinking was associated with lower education level and with use of cocaine and/or heroin; however, it was less common among those with more-advanced disease. Men who described themselves as gay or bisexual were more likely to

[51] COHAS coordinates HIV interventions for IDU with the efforts described in the Colorado Viral Hepatitis Work Plan, which is included as Appendix 3. See pages 2 and 4 of that Appendix.
[52] Ibid., pages 2 and 4.
[53] Sikkema KJ, W. M., Drabkin AS, Meade CS, Hansen NB, Pence BW. (2010). "Mental Health Treatment to Reduce HIV Transmission Risk Behavior: A Positive Prevention Model." AIDS Behav. 2010 Apr;14(2):: 252-262

drink and were likely to drink more heavily than any other group. Nearly two-fifths of the HCSUS participants reported using an illicit drug other than marijuana, and more than 1 in 8 screened positive for drug dependence. Those whose survey responses suggested drug dependence tended to be under 35 and heterosexual, live alone or with someone other than a spouse, have many HIV-related symptoms, and often drink heavily. Eight percent of women were drug-dependent or heavy drinkers. Overall, MSM were more likely to use drugs than were other groups, although they were less likely to be drug-dependent.[54]

Mental health and substance use issues are also highly associated with HIV risk. According to a 2010 study, HIV positive patients with co-morbid psychiatric and substance disorders reported multiple sex partners most frequently, while substance dependence contributed to irregular condom use and IDU. Analysis by substance use subgroup (no dependence, alcohol dependence only, drug dependence only, co-morbid alcohol, and drug dependence) showed that alcohol dependence contributed to having multiple sex partners, while alcohol and drug dependence both contributed to irregular condom use.[55] Another study found that HIV risk among MSM increases with both frequency of substance use and the numbers of substances used. For methamphetamine and cocaine, weekly users had higher odds of unprotected anal sex with HIV-positive or unknown status partners (SDUAI) than episodic users, who were in turn at higher risk than non-users. Similarly, the odds of SDUAI increased across categories of the number of substances reported. For poppers, weekly and episodic use were similar, but both carried higher risk than non-use. Finally, heavy alcohol users were more likely to report SDUAI than the moderate users.[56] In terms of more severe mental illness, a recent study showed that patients with Borderline Personality Disorder were more likely to have multiple sexual partners and to use condoms irregularly. Trends for multiple sex partners also were observed among patients with antisocial and depressive personality traits/disorders. Antisocial patients also were more likely to be current IDU.[57]

Recent studies of HIV prevention interventions have presented that HIV-related risk behaviors are influenced by both individual level factors and socio-cultural level factors. Since the 1990s, the relationship between social support and HIV-related risk behaviors has been drawing increased attention in both research and practice fields. To date, this relationship has been examined in diverse populations including PLWHA, drug users, men who have sex with men, and female sexual workers (FSWs). Findings of existing studies have suggested that higher level of social support (either general or HIV-specific) might be generally related to fewer HIV related risk behaviors among FSWs, PLWHA and heterosexual adults. However, results about relationships between social support and HIV-related risk behaviors varied across populations and they were inconsistent within drug users, MSM, and adolescents. The complicated and mixed findings may result from the complexity of social support as a concept

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[54] Rand Corporation (2007). "Mental Health and Substance Abuse Issues Among People with HIV: Lessons from HCSUS." Available at http://www.rand.org/content/dam/rand/pubs/research_briefs/2007/RAND_RB9300.pdf

[55] Newville, H. and D. L. Haller (2010). "Psychopathology and transmission risk behaviors in patients with HIV/AIDS." AIDS Care 22(10): 1259-1268.

[56] Santos GM, Coffin PO, Das M, Matheson T, DeMicco E, Raiford JL, Vittinghoff E, Dilley JW, Colfax G, Herbst JH. (2013). "Dose-response associations between number and frequency of substance use and high-risk sexual behaviors among HIV-negative substance-using men who have sex with men (SUMSM) in San Francisco." J Acquir Immune Defic Syndr. 2013 Aug 1;63(4):540-4. doi:10.1097/QAI.0b013e318293f10b.

[57] Newville, H. and D. L. Haller (2012). "Relationship of axis II pathology to sex- and drug-related risk behaviors among patients in HIV primary care." AIDS Care 24(6): 763-768

with multiple dimensions. Another possible reason for the mixed findings may be that the effect of social support is context dependent.[58]

In terms of health outcomes for PLWHA, substance use treatment in HIV-infected individuals is associated with improved ART adherence, decreased emergency department visits and hospitalizations, and increased receipt of primary care, but substance use treatment is often underutilized.[59] Individuals with alcohol and other substance use disorders are at increased risk for poor retention in care, poor adherence, and virologic failure. Regarding mental health, a meta-analysis of 95 studies found a significant relationship between depression and ART non-adherence that was consistent across patients in resource-rich and resource-limited settings. Research has linked depressive symptoms to poor HIV care engagement and health outcomes, including impaired immunologic response and mortality. Randomized, controlled trials indicate that cognitive–behavioral therapy for depression and psychosocial stress improves ART adherence when conducted in tandem with ART adherence counseling. Combined mental health and ART adherence counseling interventions have shown significant reductions in depressive symptoms, improved ART adherence, and improved treatment outcomes in random control trials (RCTs). In contrast, an RCT of a stress management intervention with no ART adherence counseling reduced psychological distress but did not improve ART adherence or treatment outcomes. Evidence further indicates that pharmacologic treatment of depression is beneficial for ART adherence and treatment outcomes for some patients.[60]

In examining the role of social support in medication adherence, it is important to identify the type of support. A meta-analysis of research on social support showed that structural support (simply having a support system or spouse/partner) did NOT consistently translate into improved medication adherence. More consistent findings were found when the support provided was “practical,” i.e., engaged in the daily challenge of purchasing, acquiring, and administering the medication.[61] In general, though, studies regarding adherence suggest that interventions fostering the development of social support may be worth pursuing, because adherence behavior is increasingly recognized as a dynamic process involving one's social systems.[62]

Trauma is increasingly recognized as an important factor in increasing prevalence of HIV and poor health outcomes of PLWHA, and it affects both men and women. Meta analysis in two studies (2012) demonstrated highly disproportionate rates of trauma exposure and post traumatic stress disorder (PTSD) in HIV-positive women. Thirty percent of American women with HIV/AIDS suffer PTSD (five times national rate) and 55.3 percent of women with HIV/AIDS suffer intimate partner violence (twice the national rate).[63] The work also demonstrated the personal and public health consequences of trauma in women living with

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[58] Qiao, S., X. Li, et al. (2014). "Social support and HIV-related risk behaviors: a systematic review of the global literature." AIDS Behav 18(2): 419-441.
[59] Korthuis, P. T., D. A. Fiellin, et al. (1999). "Unhealthy Alcohol and Illicit Drug Use are Associated with Decreased Quality of HIV Care." JAIDS Journal of Acquired Immune Deficiency Syndromes
[60] Thompson, M. A., M. J. Mugavero, et al. (2012). "Guidelines for Improving Entry Into and Retention in Care and Antiretroviral Adherence for Persons With HIV: Evidence-Based Recommendations From an International Association of Physicians in AIDS Care Panel." Ann Intern Med
[61] Scheurer, D., N. Choudhry, et al. (2012). "Association between different types of social support and medication adherence." Am J Manag Care 18(12): e461-467
[62]S imoni, J. M., K. R. Amico, et al. (2008). "Strategies for promoting adherence to antiretroviral therapy: a review of the literature." Curr Infect Dis Rep 10(6): 515-521
[63] Machtinger EL, Wilson TC, Haberer JE, and Weiss DS (2012). "Psychological Trauma and PTSD in HIV- Positive Women: A Meta-Analysis". AIDS Behav (17 Jan 2012) 16:2091–2100.

HIV: women with HIV who report recent trauma are over four times more likely to fail their HIV treatment and almost four times more likely to engage in risky sexual behavior.[64] This contributes to the epidemic as women are an increasing proportion of new cases and for these women, their virus is not suppressed. The authors also believe that, for some women, substance abuse and depression are closely related to trauma and that all may contribute to the poor outcomes seen in the study. The Coping with HIV/AIDS in the Southeast (CHASE) Study found that among 490 HIV-positive women and men from five rural Southern states, patients with more categories of lifetime trauma had almost twice the all-cause death rate as those below the median levels of trauma, and trauma was also associated with faster development of an opportunistic infection or AIDS-related death.[65] Efforts to treat substance abuse and depression may be more effective if such counseling acknowledges that ongoing trauma may be contributing to both conditions.

For communities of color, there is a serious disparity that exists around behavioral health services. Specifically, there is a lack of providers that are adequate to the culturally-based content that should be addressed in such services. In addition, there are linguistic issues that are evident for all clients who need services in any language other than English.

A significant portion of PLWHA relies on Medicaid for their behavioral health care. Medicaid operates through a network of Behavioral Health Organizations, each of which has a defined network of providers. Clients have experienced serious difficulties navigating this BHO system and locating the services they need in a timely manner. In addition, Medicare has behavioral health coverage, but the coinsurance can be costly.

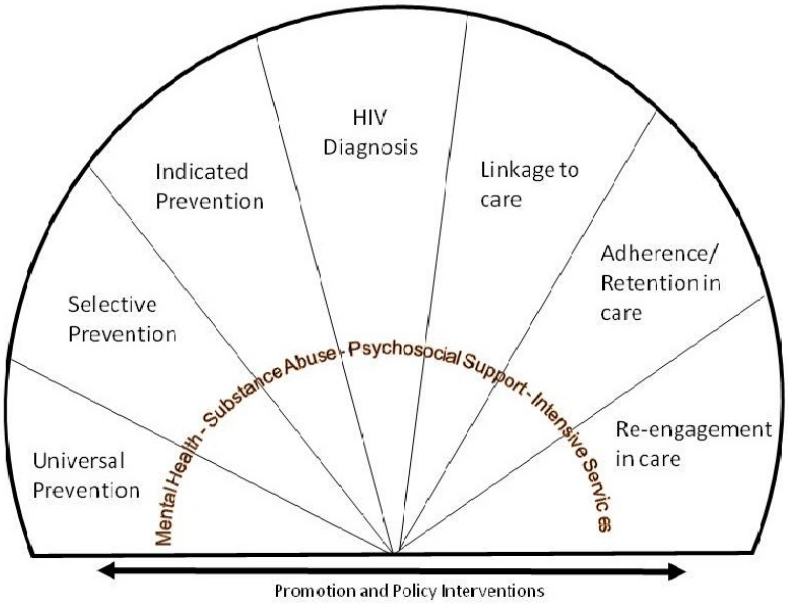
Prioritized Strategies and Interventions

As shown on the COHAS model diagram (Figure 8), behavioral health services (mental health, substance use, and psychosocial support) are considered to be a component of all of the other interventions.

[64] Machtinger EL, Haberer JE, Wilson TC, and Weiss, DS (2012). "Recent Trauma is Associated with Antiretroviral Failure and HIV Transmission Risk Behavior among HIV-positive Women and Female-identified Transgenders". AIDS Behav (17 Mar 2012) 16:2160 – 2170.

[65] Leserman J. Role of depression, stress, and trauma in HIV disease progression. Psychosomatic Medicine. 2008;70(5):539–45. Epub 2008/06/04. doi: 10.1097/PSY.0b013e3181777a5f. PubMed PMID: 18519880.
Leserman J, Whetten K, Lowe K, Stangl D, Swartz MS, Thielman NM. How trauma, recent stressful events, and PTSD affect functional health statusand health utilization in HIV-infected patients in the south. Psychosomatic Medicine. 2005;67(3):500–7. Epub 2005/05/25. doi: 10.1097/01. psy.0000160459.78182.d9. PubMed PMID: 15911916.

Figure 8: The Colorado Model, based on the IOM



The following strategies and interventions show evidence of effectiveness and should be continued or implemented:

1. Continue to support Screening, Brief Intervention, and Referral to Treatment as an essential component of care services, including case management, linkage to medical home, retention in care, adherence counseling, and outpatient ambulatory care. Ensure the availability of a variety of treatment modalities, including brief interventions and brief therapy for people with sub-clinical but problematic substance use patterns.
2. Increase the use of the SAMISS mental health screening tool in case management, linkage to medical home, retention in care, adherence counseling, and outpatient ambulatory care services. Improve depression screening in clinical settings and pharmacological treatment of depression when indicated. Provide evidence-based interventions for people with sub-clinical but problematic symptoms of mental health disorders (particularly dysthymia or other mood issues). Incorporate screenings for trauma and intimate partner violence.
3. Continue to support formal pre-screening for mental health (from the SAMISS screener) and substance abuse symptoms (from the SBIRT model) as an essential component of prevention services, including counseling testing and referral services and group and individual level interventions.
4. Promote and coordinate completion of the SBIRT model training to prevention providers to support internal screening and brief intervention with sub-clinical but problematic substance use patterns in high risk negatives.
5. Promote the use of the behavioral health benefit that is included in Medicaid, Medicare, and commercial health insurance coverage. Build capacity among CDPHE staff and contractors to motivationally link insured clients to behavioral health providers that have proven expertise working with HIV positive and at-risk populations. Make eligibility screening and enrollment services available to all uninsured clients, regardless of HIV serostatus, and utilize funds to cover client premiums and out-of-pocket costs to minimize financial barriers (when allowable).

6. Strengthen access to services for IDU, including methadone, syringe exchange, and buprenorphine. Fund HIV prevention interventions tailored to the needs of IDU. Coordinate HIV prevention efforts with HCV efforts, which are described in more detail in Appendix 3, pages 2 to 4.
7. Fund psychosocial support initiatives for PLWHA, their partners, friends, and other people in their support systems, emphasizing practical ways to support adherence and general well-being.
8. Fund prevention services that address social competencies, building support networks, and community engagement.
9. Fund behavioral health services that build skills to disclose HIV positive serostatus.
10. Promote a trauma-informed care approach among contractors and others who provide behavioral health care for people living with HIV or AIDS or at high HIV risk. This will include evidence-based screening for trauma and intimate partner violence and will be supported by provider training, contractor standards of care, and other strategies to promote this approach.
11. Promote peer-to-peer interventions for PLWHA and people at risk of becoming HIV infected.
12. Establish Referral Networks for all funded prevention providers which will contain both Mental Health and Substance Abuse partner providers to which clients who are pre-screened positive may be referred for further screening, assessment, and to which mental health and substance abuse treatment needs may be met.

Scalability

In terms of *people vulnerable to becoming HIV infected due to mental health or substance use issues*, sufficient capacity must be built to provide the following services, which is based on the following assumptions.

- 100 percent of all MSM, IDU, and high risk heterosexuals (HRH) receiving HIV prevention services will receive screening for mental health and substance use issues. For some, this will be just a pre-screen, with a referral for more formal screening.
- 75 percent of MSM, 100 percent of IDU, and 60 percent of high risk heterosexuals will screen as having some level of mental health or substance use issues that would benefit from mental health services.
- 25 percent of MSM and 25 percent of high risk heterosexuals will follow through on referrals for additional mental health or substance use services. 90 percent of IDU will accept some form of harm reduction services (such as syringe exchange) and 10 percent of IDU will accept further mental health or substance use treatment services

Table 21: Estimated Need for Mental Health or Substance Use Services

	Screened	Positive Screening Results	Need for MH or SA services
MSM	3,000	2,250	563
IDU	2,000	2,000	Harm Reduction 1,800 Other services 200
HRH	1,000	600	150

In terms of *people vulnerable to becoming HIV infected who lack health-promoting social support*, sufficient capacity must be built to provide the following services, which is based on the following assumptions.

- 50 percent of all MSM, IDU, and high risk heterosexuals (HRH) receiving HIV prevention services will receive some level of screening for psychosocial support needs.
- 10 percent of those screened will accept and follow through on referrals for psychosocial support services

Table 22: Estimated Need for Psychosocial Support Services

	Screened	Need for psychosocial support services
MSM	1,500	150
IDU	1,000	100
HRH	500	50

In terms of *people living with HIV or AIDS who have mental health or substance use issues*, sufficient capacity must be built to provide the following services, which is based on the following assumptions.

- 6,483 PLWHA had at least one care visit during the year ending December 31, 2013. This approximates the number of people who will be in HIV care for the next three years.
- 75 percent of PLWHA in care will be screened for substance use or mental health issues.
- Of those screened, approximately half will be experiencing some level of mental health or substance use issues. Of this group, only 25 percent will be ready for, or willing to engage in, services to address these issues.
- Of those ready for and willing to engage in mental health or substance use services, 80 percent will be eligible for some form of health insurance with adequate behavioral health coverage. The remaining 20 percent will require behavioral health services funded by Ryan White or other funders.

Table 23: Estimated Number of People Served by Service Type

Service Type	Number of people served
Screening for behavioral health issues	4,862
Eligibility screening for third party payers, with enrollment as needed	608
Motivational interviewing to access treatment/counseling available through health coverage	486
Delivery of mental health and/or substance abuse services	122

In terms of *people living with HIV or AIDS who lack health-promoting social support*, sufficient capacity must be built to provide psychosocial support services for 927 PLWHA annually, which is based on the following assumptions.

- There will be 350 new HIV diagnoses each year. Of this number, 50 percent will express interest in, and accept, psychosocial support services.

- Of the 1,254 people who are engaged in care but not achieving viral suppression, 60 percent would express interest in, and accept, psychosocial support services

Responsible Agencies and Groups

Responsible agencies and groups for behavioral health services are as follows:

- Community based organizations, including AIDS Service Organizations (ASOs)
- Providers of medical care
- Community members
- Local Departments of Public Health
- CDPHE Client Based Prevention Program, Linkage to medical home Specialists
- CDPHE Care and Treatment Program, Health Care Access Specialists
- CDPHE Client Based Prevention Program, Disease Intervention Specialist
- CDPHE funded behavioral health contractors
- Behavioral health contractors funded by other sources (Ryan White Parts A, C, and D)
- Behavioral health providers that accept third party payment (including Medicaid)

Performance Standards and Indicators

1. Percentage of all persons accessing case management who are offered SBIRT and provided with active referrals as appropriate. Goal: 100%

2. Percentage of all persons interviewed by CDPHE DIS who are offered SBIRT and provided with active referrals as appropriate. Goal: 100%

3. Percentage of all persons accessing HIV prevention services who are screened for mental health and substance use issues (at least a minimal pre-screen). Goal: 100%

4. Percentage of persons with an HIV diagnosis receiving HIV services who were homeless or unstably housed in the 12-month measurement period. Goal: Less than 20% of clients report being homeless or unstably housed in the 12-month measurement period. (HAB System Level Measure and NHAS)

5. Percentage of patients, regardless of age, with a diagnosis of HIV with a HIV viral load less than 200 copies/mL at last HIV viral load test during the measurement year. Goal: 60% of clients reporting a viral load less than 200 copies/mL at last HIV viral load test during the measurement year. (HAB Core Measure and NHAS).

6. Percentage of all persons accessing prevention services who are offered a mental health and substance abuse symptom screening tool. Goal: 100%.

7. Percentage of all persons testing positive on a pre-screening tool who are offered a referral within the partner network. Goal: 100%.

Timelines

Table 24: Target Dates for Section 4f

Target Dates	Activity
April 1, 2015	Contracts and hiring in place to sustain existing capacity and build capacity to for referrals to, or provision of, mental health, substance use, and psychosocial support services
June 30, 2015	First report on performance indicators delivered to Alliance.
September 30, 2015	Second report on performance indicators delivered to Alliance.
December 31, 2015	Year-end report on performance indicators delivered to Alliance.
April 1, 2016	Renewal of contracts, modified based on “lessons learned” in 2015.
June 30, 2016	First report on performance indicators delivered to Alliance.
September 30, 2016	Second report on performance indicators delivered to Alliance.
December 31, 2016	Year-end report on performance indicators delivered to Alliance.
April 1, 2017	Renewal of contracts, modified based on “lessons learned” in 2016.
June 30, 2017	First report on performance indicators delivered to Alliance.
September 30, 2017	Second report on performance indicators delivered to Alliance.
December 31, 2017	Year-end report on performance indicators delivered to Alliance.

Section 4g – Intensive Services for People Experiencing Critical Events

Target Populations

Persons known to be HIV infected who have a critical event, wherein a critical event includes any one of the following:

1. Problems evident in CD4/viral load data (absent/break/worsening)
2. Intimate partner violence/domestic abuse/sexual assault
3. Sexual and reproductive rights and challenges, specifically for women
4. Become homeless
5. Become unemployed
6. Pregnancy
7. Lose health coverage
8. Change health coverage
9. Stress over health care reform and its choices
10. New diagnosis in addition to HIV (acute or chronic)
11. Move to a new part of the state
12. Disruption or ending of supportive personal relationship
13. Mental health issues
14. Substance abuse issues[66]
15. Disruption in health care provider
16. Justice system involvement (enter or exit)
17. Hospitalization
18. Change in medication situation (change in prescription, lower adherence, etc.)
19. Stigma
20. Non-disclosure of their HIV status to sexual and needle sharing partners

Sub-Target Populations

1. Persons who have more than one critical event in a 12 month period
2. Black/African American and Hispanic/Latino MSM who do not gay identify
3. Persons who have never engaged in care (especially heterosexual men)
4. Persons with undiagnosed/untreated substance use/mental health issues at the time of their HIV diagnosis. This includes people living with, or at risk of, viral hepatitis due to substance use behaviors, as described in Appendix 3.
5. MSM IDU/methamphetamine users. This sub-target also experiences very high viral hepatitis risk, as described in Appendix 3.

Evidence of Need (Met and Unmet)

The systems available to offer assistance to PLWHA who are experiencing major life disruptions have been very limited in Colorado. With few exceptions, such assistance has only been available to those living with HIV, not those who are at high risk of becoming infected, due to constraints imposed by funders. In some areas of the state, newly diagnosed people experiencing "critical events" are not prioritized for assistance; they must use the same systems, with the same waiting periods, as people who have been living with HIV for many years and are very knowledgeable about how to request and receive assistance. The funding set aside for this purpose has been very limited. This has resulted in many requests for critical needs being denied due to lack of resources in some parts of the state PLWHA. Clients

[66] Injection drug use is the leading cause of acute and hepatitis C. Current VHP activities targeting this high risk population can be found in the Appendix 3, the Colorado Viral Hepatitis Program Workplan, pages 2 and 3.

experiencing critical events have been offered assistance through the public health order (PHO) process, but this is a very small subset of clients who are experiencing critical events. Most of the assistance offered through the PHO process has been mental health and substance use counseling.

Information sharing across systems and providers working with persons diagnosed with HIV infection are not currently adequate to ensure the timely sharing of a critical event or the identification of multiple critical events. This is an unmet need. Unfortunately most people do not receive the necessary attention to assist them with their critical event(s) until they have experienced a serious health complication or are contacted by CDPHE due to public health concerns (subsequent sexually transmitted infection (STI), named as a non-disclosing sex/needle sharing partner).

While CDPHE has two professional counselors on staff, contracts with private practice counselors, and relationships with community programs, mental health and substance abuse services are not adequate to meet the needs of persons who are ready to engage in services.

Prioritized Strategies and Interventions

The following strategies and interventions show evidence of effectiveness and will be implemented or continue to be used in Colorado:

1. Based on an evidence-based assessment, actively link PLWHA to case management, behavioral health care, substance abuse counselors and other psychosocial and support services that improve the success of staying engaged in care.
2. Engage PLWHA in one-on-one extended counseling services to address their complex, unique situations so as to build skills in accessing services, initiating or staying engaged in care, disclosure, and risk reduction.
3. Actively engage PLWHA in linkage to medical home (LTMH).
4. Pilot a “critical events system” to address the unmet need of PLWHA who are experiencing issues that often result in increased risk taking behavior and dropping out of HIV care. The pilot’s purpose is to create a mechanism for agencies to identify PLWHA in critical situations, request additional financial assistance for such clients, and assemble a team to carry out a stabilizing treatment plan. This pilot will be limited to PLWHA. Clients with multiple critical events will be prioritized over clients with a single critical event. The pilot will focus on a subset of eleven critical events:
    - Recently homeless or at risk of eviction
    - Recently unemployed
    - Diagnosed with gonorrhea, syphilis or chlamydia
    - Worsening health status due to hepatitis C
    - Named as a partner to a person recently diagnosed with HIV
    - Pregnancy
    - Intimate partner violence/Domestic violence/Sexual assault
    - Diagnosed with another acute illness requiring complex medical treatment or hospitalization
    - Recently relocated and not yet established in care
    - Evidence based screening shows potentially severe addiction or drug dependence.
    - Evidence based screening shows potentially severe mental health issues.

5. Based on the results of the pilot, fully implement a "critical events system" which could expand to include highest risk negative people and additional types of issues. Expansion will be contingent on available funding and a thorough evaluation of the outcomes of the pilot.
6. Continue to intervene through the existing public health order (PHO) process. This process focuses on PLWHA who are repeatedly diagnosed with other STIs and non-disclosure of HIV status and will not respond to CDPHE staff. It involves a progressive process of informing clients of their need to engage in dialogue with CDPHE. If they will respond, the process involves a thorough assessment of the client's psychosocial situation and using the least restrictive means possible to intervene effectively. The PHO process will be informed by the evaluation of the critical events systems, in that there will be a substantial overlap in clients. It is expected that fewer clients will require the PHO process once the critical events system is fully implemented.

Scalability

PLWHA experiencing a critical event will respond to that event in a variety of different ways based on existing supports, resiliency, and help seeking behaviors. Processes must be established to ensure that all agencies and providers of services/care are aware of a critical event so as to respond in a coordinated manner, and in the best interest of the person. Too often the experience of multiple critical events is fragmented across several agencies, leaving the person to juggle these challenges in isolation.

In 2013, CDPHE received at least one report of a subsequent STI for 348 unduplicated persons known to be HIV infected. This is only one source of information on a single type of critical event.

The Critical Events Pilot Project will provide more detailed information on the specific needs of clients experiencing a critical event(s). This information will inform the scalability of addressing a broader spectrum of critical needs across client populations.

Responsible Agencies and Groups

Responsible agencies/groups for Intensive Services are as follows:

- Community based organizations, including AIDS Service Organizations (ASOs)
- Providers of medical care
- Community members CDPHE Client Based Prevention Program, Disease Intervention Specialist
- CDPHE Client Based Prevention Program, Licensed Counselors
- CDPHE Client Based Prevention Program, Linkage to Medical Home Specialists
- CDPHE Care and Treatment Program, Health Care Access Specialists
- CDPHE funded therapists
- Ryan White Part A & B Funded Agencies

Performance Standards and Indicators

1. Percentage of all persons accessing case management who are offered SBIRT and provided with passive or active referrals as appropriate. Goal: 100%

2. Percentage of all persons interviewed by CDPHE DIS who are offered SBIRT and provided with passive or active referrals as appropriate. Goal: 100%

3. Percentage of all persons who are reported to have a high priority STI (gonorrhea, chlamydia, syphilis) are interviewed and referred for additional behavioral counseling. Goal: 80% of all assigned cases

4. Percentage of patients who attended a routine HIV medical care visit within 3 months of HIV diagnosis, Goal: 85% overall linkage rate (HAB System Level Measure and NHAS)

5. Percentage of patients, regardless of age, with a diagnosis of HIV who had at least one medical visit in each 6-month period of the 24-month measurement period with a minimum of 60 days between medical visits. Goal: 80% overall retention rate (HAB Core Measure and NHAS).

6. Percentage of patients, regardless of age, with a diagnosis of HIV with a viral load test performed at least every six months during the measurement year. Goal: 80% viral testing rate during first year following diagnosis (HAB All Ages Measure and NHAS).

7. Percentage of newly diagnosed clients that report permanent housing. Goal: 86% of clients report being permanently housed within one year of diagnosis (HAB System Level Measure and NHAS)

Timelines

Table 25: Target Dates for Section 4g

Target Dates	Activity
Ongoing	Continue work of the Data Sharing Task Force to explore, and discuss mechanism for improved information sharing that are inclusive of care/case management needs and provide for client rights.
November 1, 2014	Draft of the Critical Events Pilot Project protocol is available for review by members of the Data Sharing Task Force and the Care and Treatment Committee.
January 1, 2015	Critical Events Pilot Project is operationalized by CDPHE internal staff.
April 30, 2015	An evaluation of the Critical Events Pilot Project has been completed. Evaluation is shared with the Data Sharing Task Force. Adjustments are made to the protocol.
May 31, 2015	Contracted agencies interested in participating in the Critical Events Project have been identified and trained.
June 1, 2015	Contracted agencies begin participation in the Critical Events Pilot Project
June 1, 2015	Develop and distribute a list of indicators that will assist providers and case managers in early identification of persons likely to experience multiple critical events.
June 30, 2015	First report on performance indicators delivered to Alliance.
September 30, 2015	Second report on performance indicators delivered to Alliance.
December 31, 2015	Year-end report on performance indicators delivered to Alliance.
December 31, 2015	Identify/create and support the network of mental health/substance abuse providers who can address the needs of clients.
June 30, 2016	First report on performance indicators delivered to Alliance.
July 31, 2016	Annual evaluation of the Critical Events Project is completed and shared with external partners, Data Sharing Task Force.
September 30, 2016	Second report on performance indicators delivered to Alliance.
December 31, 2016	Year-end report on performance indicators delivered to Alliance.
June 30, 2017	First report on performance indicators delivered to Alliance.
September 30, 2017	Second report on performance indicators delivered to Alliance.
December 31, 2017	Year-end report on performance indicators delivered to Alliance.

Chapter 5 – Collaborations

For COHAS to move into implementation, collaboration will be essential. COHAS envisions a highly integrated system which can rise to the challenge of meeting client needs, with a minimum of unnecessary silos and other barriers.

Sections 4b through 4g of COHAS contain specific lists of responsible agencies that must come together. Certain agencies occur throughout these chapters/sections and should be considered the key collaborators at the core of COHAS:

Community based organizations, including AIDS Service Organizations (ASOs)
Providers of medical care
Community members
Local Departments of Public Health
Behavioral health providers funded by Ryan White Parts A, B, C, and D
Behavioral health providers that accept third party payment (including Medicaid)
Behavioral health providers funded by CDPHE
CDPHE Care and Treatment Program, Health Care Access Specialists
CDPHE Client Based Prevention Program, Disease Intervention Specialists
CDPHE Client Based Prevention Program, Licensed Counselors
CDPHE Client Based Prevention Program, Linkage to Medical Home Specialists
CDPHE funded HIV testing contractors
Linkage to medical home providers funded by HRSA Part B, CDC, and CHAPP
Linkage to medical home project staff funded by other sources (Ryan White Parts A, B, C, and D, local tax base, other state or federal
CDPHE funded prevention contractors (HRSA, CDC, and CHAPP)
CDPHE funded retention in care and adherence counseling contractors
CDPHE funded therapists
HIV testing contractors funded by other sources (Ryan White Parts A, C, and D)
HIV testing providers that accept third party payment (including Medicaid)
Project staff funded by other sources (Ryan White Parts A, C, and D, local tax base, other state or federal sources)
Retention in care and adherence counseling contractors funded by other sources (Ryan White Parts A, C, and D)

Representatives of all these collaborators came together in the writing of COHAS, and their ongoing commitment will be essential as COHAS moves into implementation.

Chapter 6 – Planning Process

1994 was a turning point for HIV prevention planning nationally and in Colorado. The CDC first mandated community planning for HIV prevention in 1993 and the mandate took effect in 1994. In response, Colorado's community planning group formed in 1994, taking the name "Coloradans Working Together: Preventing HIV/AIDS (CWT)".

Coloradans Working Together fostered a truly open and participatory HIV prevention planning process. At its peak, over 200 people attended and participated in CWT meetings, and over 30 subgroups added input statewide. CWT received international recognition in 1998, when it received the Core Values Award from the International Association for Public Participation. In 2009, with the signing of the Executive Order creating the Colorado HIV/AIDS Care and Prevention Coalition, CWT became the HIV Prevention Advisory Committee (HPAC).

To encourage stakeholder involvement care and other HIV issues, the Governor's Advisory Council on AIDS (GAC) was created by Governor Romer by Executive Order in June 1987. at the behest of the community. The GAC and its AIDS Drug Assistance Work Group remained the official advisory bodies for issues related to HIV/AIDS care and treatment until the year 2000, when Governor Owens signed the Executive Order creating the Colorado Advisory Council on AIDS (CACOA). CACOA intended to provide expert advice to Colorado Department of Public Health and Environment (CDPHE) on HIV related issues, including those of policy and science. CACOA existed until 2009.

Executive Order B 001 09, signed by Governor Ritter on December 31, 2008, created the Colorado HIV/AIDS Care and Prevention Coalition ("The Coalition"). As stated in the Executive Order, the purpose of the Coalition was to "serve as an expert resource providing advice and information to CDPHE on issues, trends, needs, and resources pertaining to HIV/AIDS in the promotion of effective HIV prevention and care programs". The Coalition structure was intended to integrate the aforementioned HIV/AIDS planning groups, and provide a mechanism to coordinate HIV/AIDS related planning processes and services supported by CDPHE.

On July 28, 2014 Governor Hickenlooper signed Executive Order B 2014 004 that somewhat refocused the Colorado HIV/AIDS Care and Prevention Coalition. The Coalition was renamed the Colorado HIV Alliance for Prevention, Care and Treatment ("Alliance"). The revised mission of the Alliance is to advise, inform and closely consult with CDPHE to promote effective HIV prevention, care and treatment programs; maximize HIV prevention and provision of care services; promote collaboration, linkages, transparency, and information sharing; advance the needs of, and the rights of, persons living with HIV; create and monitor an HIV Care and Prevention Comprehensive Plan (COHAS); promote coordination with other state agencies; ensure meaningful and diverse community input, participation and involvement in HIV related planning activities; and encourage broad public support and engagement.

To lay a good foundation for the Alliance and plan development, CDPHE requested and received training on Jurisdictional Planning in July 2013 delivered by the National Minority AIDS Council and attended by PLWHA, community partners and CDPHE staff. This training included planning process and structural content, as well as clarity on the expectations of CDC. This then led to the HIV/AIDS/Viral Hepatitis Branch of the Colorado Department of Health organizing an HIV/AIDS Planning Group (HPG) from the HIV Care Advisory Committee,

the HIV Prevention Committee, and the HIV Coalition. The HIV/AIDS Planning Group (HPG) first convened in August 2013 to begin the process of developing the Jurisdictional HIV Prevention Plan by convening stakeholders to solicit feedback on the proposed structure and jurisdictional plan changes; to identify steps for building the plan; and to establish collaborative agreements and commitments to build the Colorado plan. The HPG titled its plan the Colorado HIV/AIDS Strategy or COHAS.

In October 2013, CDPHE convened another community process to further discuss plan content and stakeholder engagement. At this meeting, there was an open discussion of a proposed planning group structure, with expanded parity, inclusion, and representation (P-I-R) and transparency. There was also a presentation of a draft outline of Colorado's Jurisdictional Plan that would meet the requirements of the CDC, as well as anticipated requirements pending from HRSA.

Building on the October meeting, a follow up meeting occurred in December 2013. This meeting went even farther in describing how CDPHE and the community would need to pull together to achieve parity, inclusion, and representation, including PLWHA, people at risk of HIV, content experts, consumers, and other interested community members. There was also a discussion of potential strategies, goals, and outcomes for HIV testing, linkage to medical home, and retention in care. An updated draft of the Jurisdictional Plan was shared, including all of the essential topics required by CDC. Scalability was explored at some length, since this was a relatively new concept to CDPHE and the community.

The next major steps in the planning process occurred between January and March of 2014. The March meeting of the HIV Care and Prevention Coalition included a broad discussion of what an ideal, integrated system of prevention and care would include, including responsiveness to the changes of the Affordable Care Act, increased community involvement, biomedical, and structural strategies. In addition, the meeting included a discussion of parity, inclusion, representation, transparency, trust, looking forward, and respect as critical attributes of the plan development process. This meeting also featured the first draft content of the Jurisdictional Plan, concerning the epidemiology of HIV.

Three chapters of the Jurisdictional Plan were presented at community meetings in April and May of 2014: the Linkage to Care (now Linkage to a Medical Home) Section 4d, the Retention/Adherence Section 4e, and the Intensive Services Section 4g. Section 4f on Behavioral Health was also presented in partial form, including mainly the portions for PLWHA. These sections were released electronically before each meeting, discussed at multiple public meetings, and re-posted on the CDPHE web site as revisions were made.

At the June combined meeting of the HIV Care Advisory Committee and HIV Prevention Advisory Committee –HIV Coalition the HPG reviewed mapping of timelines and responsibilities; reviewed the Care Chapters/Sections of the Plan; and the Chairs of the Prevention Committee presented the State of HIV Prevention. This discussion was the building block for discussing the prevention chapters/sections for the Plan.

Three additional sections of the plan were released in July: the Overview/background Section (4a), Primary Prevention Section (4b), and Early Identification Section (4c). The Behavioral Health and Intensive Services Sections, 4f and 4g respectively, were also re-released with additional prevention content and other changes. At this meeting time was allocated to the HPG to solicit feedback regarding concerns about the plan to date, their

ideas for changing it, polling the group for their feedback on specific change and review summary of agreements and next steps. As with the previous chapters/sections, these drafts were released electronically before each meeting, discussed at multiple public meetings, and re-posted on the CDPHE web site as revisions were made.

In late August, the first "compiled" draft of the Jurisdictional Plan, now titled the Colorado HIV AIDS Strategy (COHAS) in response to public request, was released electronically and posted on the CDPHE web site. Meetings on September 8 and 26 elicited a number of requests for additional content and clarification including: defining youth, High Risk Heterosexual, adding stigma, transgender data and identifying gaps, including more Viral Hepatitis data, providing race data and more specific social determinants of health, and adding IDU data. Three subsequent revisions incorporated these requests.

In terms of P-I-R, the meetings leading up to a final draft of the plan included representatives of the most impacted populations in Colorado: MSM, IDU, at-risk heterosexuals, African Americans, Latinos, and Native Americans. It also included physicians, nurses, social workers, mental health professionals, behavioral scientists, pharmacists, and other content experts. Staff from clinics, prevention agencies, the Colorado AIDS Education Training Center (CAETC), Department of Corrections, and other stakeholders were extensively involved at every stage.

The version that was up for consideration for a letter of concurrence was posted to the CDPHE webpage on October 1, 2014. This version of the COHAS was also emailed to the extensive participant email list. The HPG recommended a letter of concurrence for this version of the COHAS, with only minor adjustments, on October 6, 2014. On November 10, 2014 the Coalition members unanimously voted to approve both the COHAS plan and the letter of concurrence.

The Planning Process Moving Forward

CDPHE is committed to an open, transparent, and meaningful community involvement process to guide implementation of COHAS and promote accountability among those who are tasked with the delivery of services and other key COHAS activities.

As the planning process moves forward, CDPHE will actively partner with the Alliance and its subgroups to:[67]

a. Maintain open dialogue to understand and provide solutions to jurisdictional challenges;
b. Identify barriers and opportunities for engagement and collaboration;
c. Include representation from various entities, such as housing, prevention/service providers, and Ryan White planning groups, to ensure support and coordination of funding streams for various activities and programs;
d. In addition to the Alliance, include other community and key stakeholders through forums, town hall meetings, webinars, and other community involvement strategies
e. Consider health inequities as a priority to ensure that HIV prevention activities and resources are targeted to populations and communities most disproportionately affected by the HIV epidemic and other syndemic infectious diseases (viral hepatitis, STDs, and TB);

[67] These are based on the CDC HIV Planning Guidance (2012), page 20

f. Use national, state, and local surveillance and other types of data to inform the engagement process, and guide the delivery of culturally and linguistically responsive services.

CDPHE will demonstrate accountability to the community regarding COHAS by:[68]

a. Continuing to implement the engagement process and collaborating with the Alliance to review COHAS at least annually for needed revisions;
b. Providing progress reports on the COHAS program indicators at least three times per year to the Alliance, including a comprehensive year-end report that will include aggregated performance data on CDPHE and its funded contractors and a description of the successes and barriers encountered in implementing COHAS;
c. Providing information to the Alliance on applications submitted to CDC and HRSA and their relationship to COHAS, NHAS, and expectations of the federal funders.
d. Keeping the Alliance informed of other planning processes in the jurisdiction related to HIV care, treatment, and mental health and substance abuse services (such as Ryan White planning groups and SAMHSA planning activities) to ensure collaboration between the Alliance and the other entities;
e. Ensuring that the Alliance has access to current HIV-related information and analyses which could have potential implications for COHAS, including program activities, surveillance data, local program experience, best available science (including cost-effectiveness data), and other relevant information, especially as it related to priority populations and sub-populations;
f. Providing the Alliance with information on federal, state, and local public health services (STD, TB, hepatitis, mental health, etc.) for high-risk populations identified in COHAS;
g. Provide regular updates to the Alliance on successes and barriers encountered in implementing the engagement process;
h. Actively involving the Alliance in the rewriting of the Colorado Comprehensive HIV Testing Plan in the first quarter of 2015, which will include specific activities around maintaining accessible public health funded testing, promoting HIV testing funded by other payers (including Medicaid and commercial health insurance), and incorporating new testing technologies (most notably, home HIV testing).

[68] Ibid, pages 27 though 28.

Appendices

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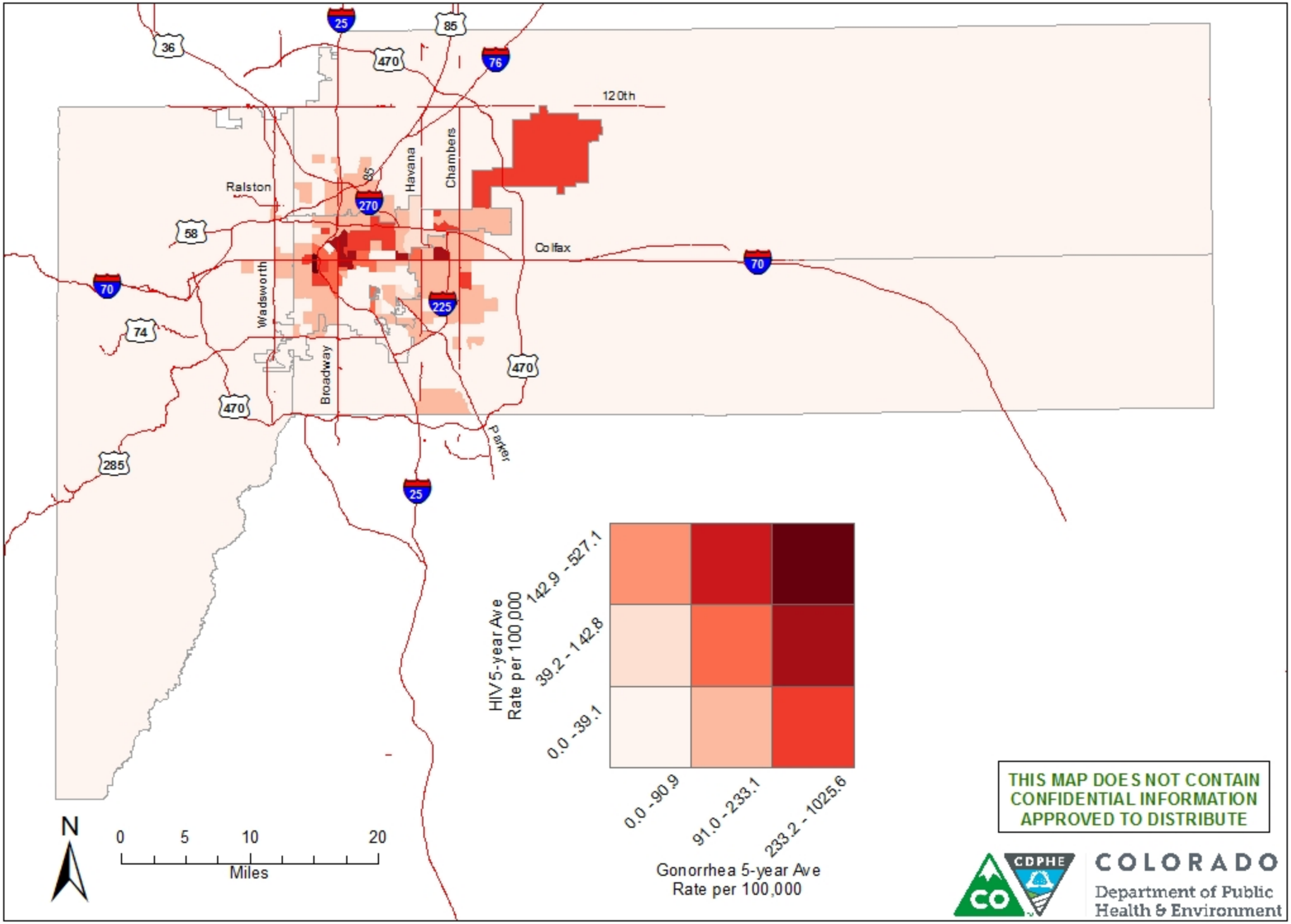
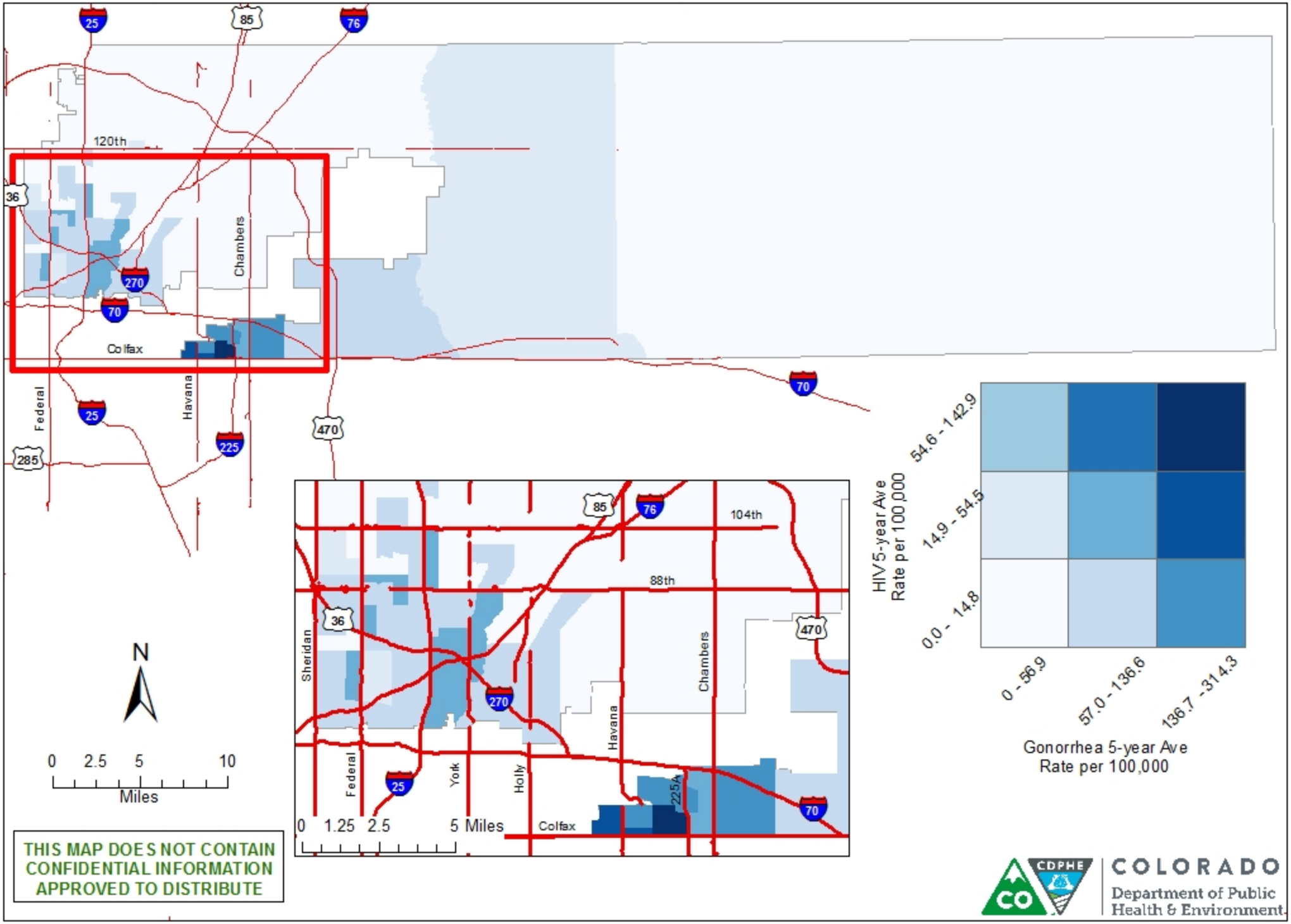
Appendix 1: Epidemiological Maps

Five year rates of Gonorrhea and new HIV diagnosis from 2009-2013 by census tract. The maps highlight urban counties and highly impacted health statistic regions.

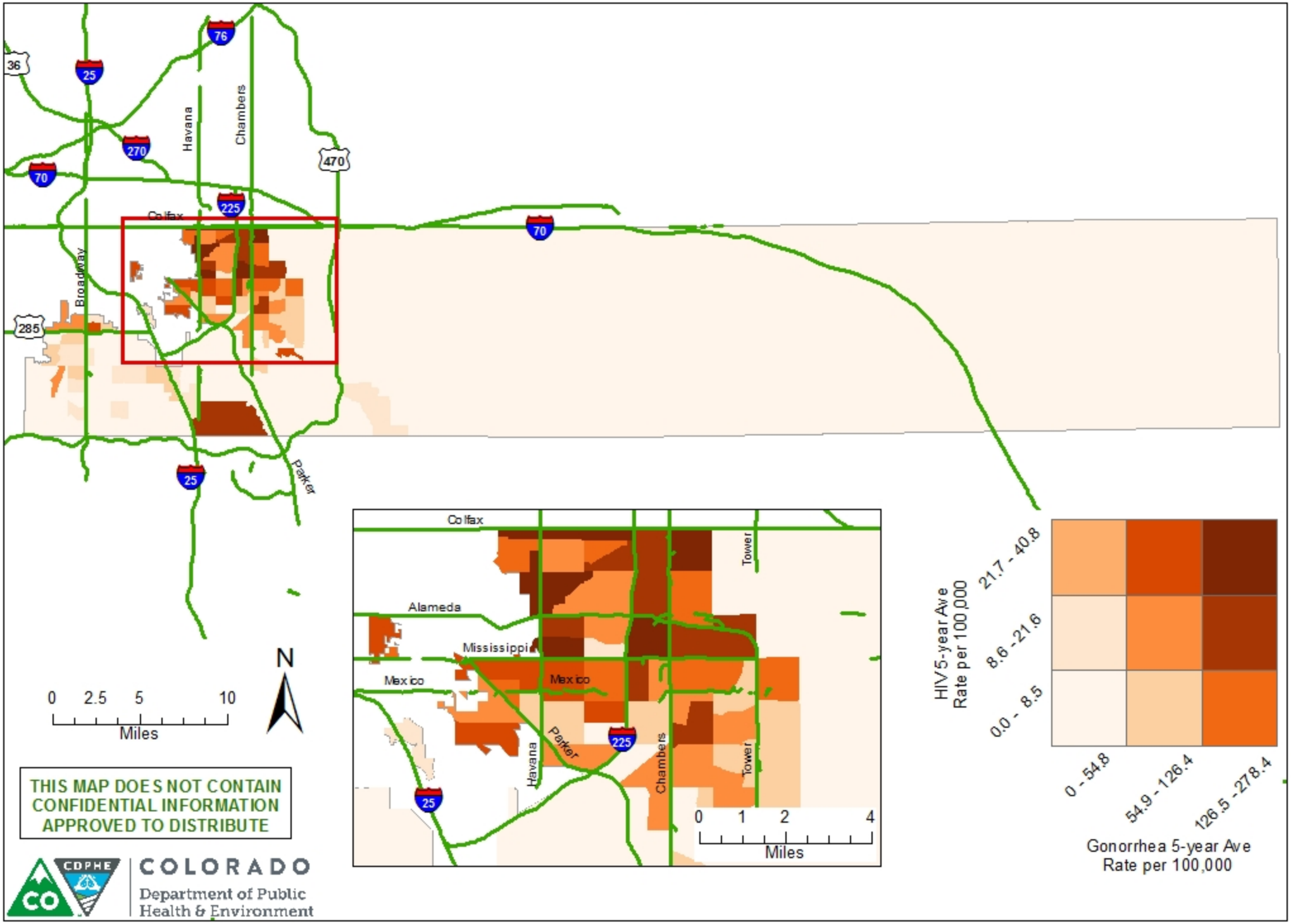
Adams, Arapahoe, Denver and Jefferson Counties New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Adams, Arapahoe, Denver and Jefferson Counties



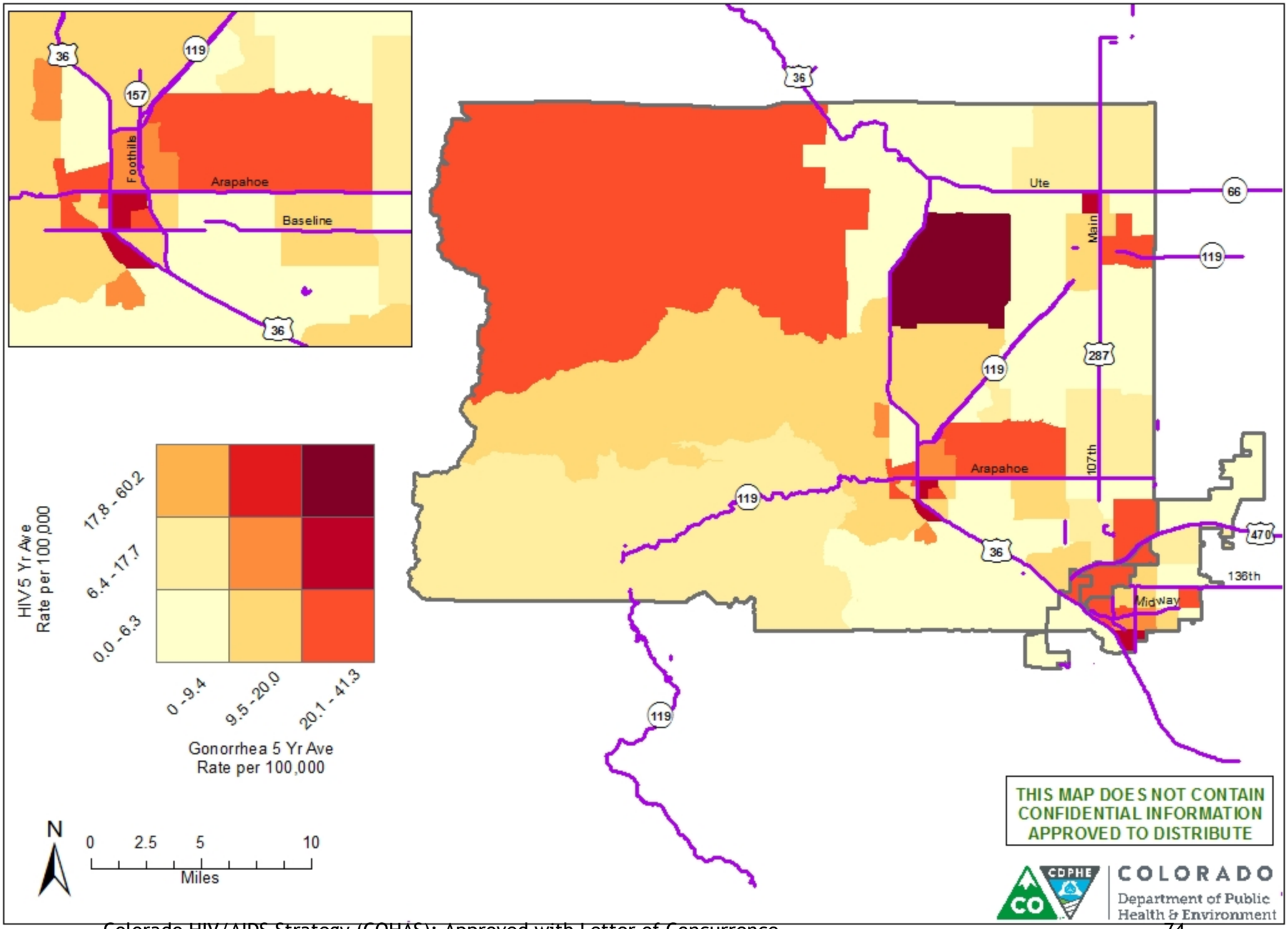
Adams County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Adams County



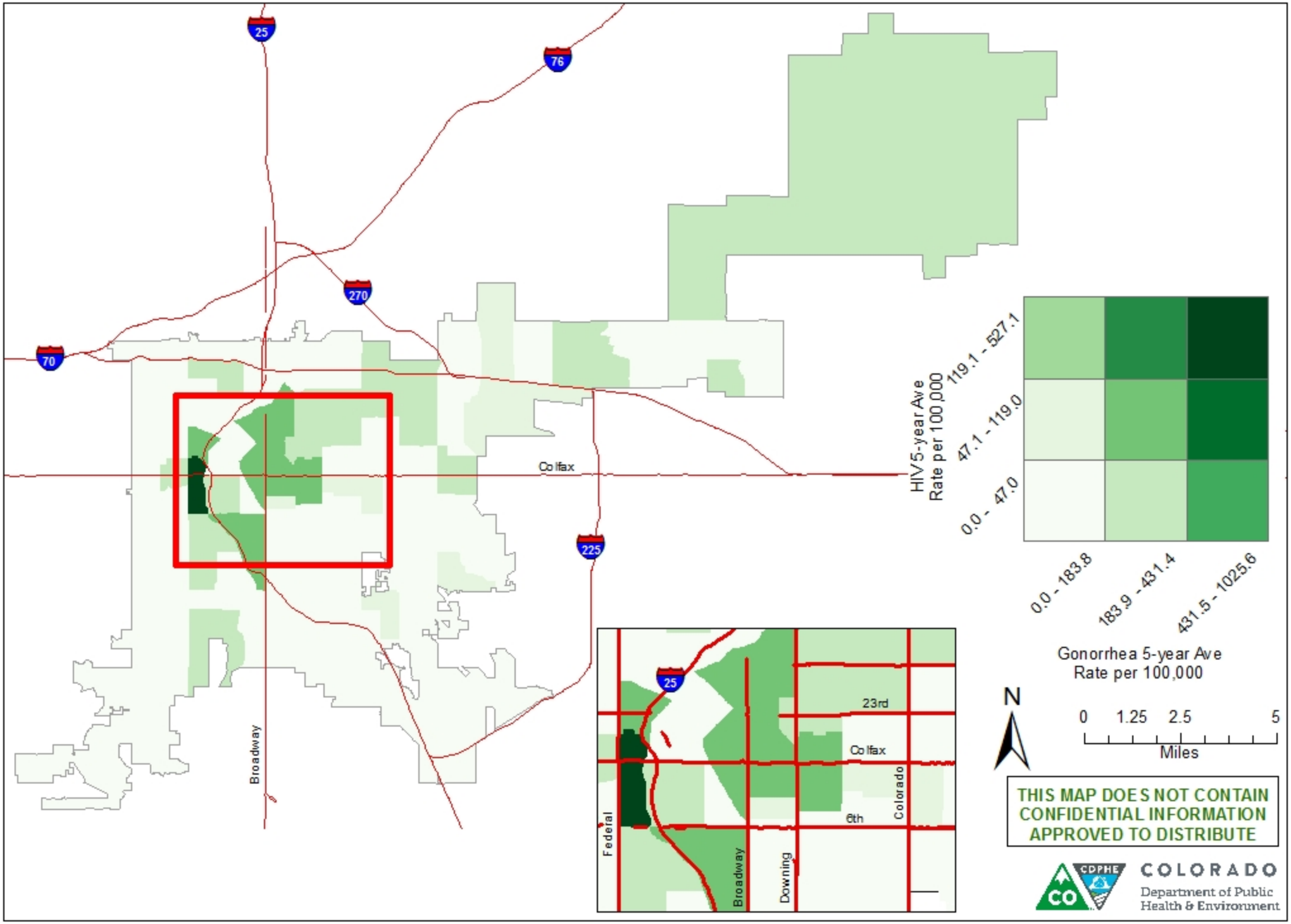
Arapahoe County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Arapahoe County



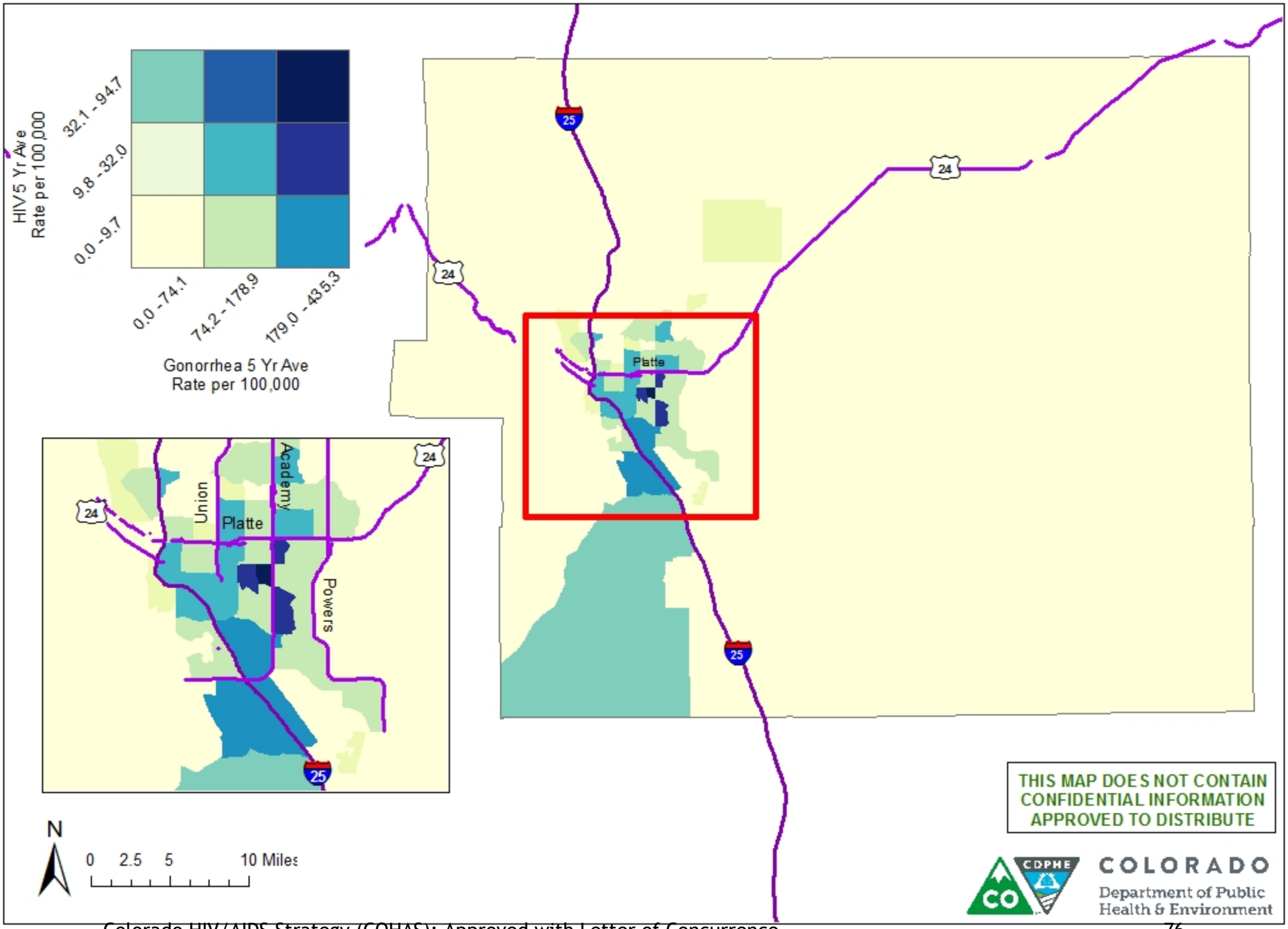
Boulder and Broomfield County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Boulder and Broomfield County



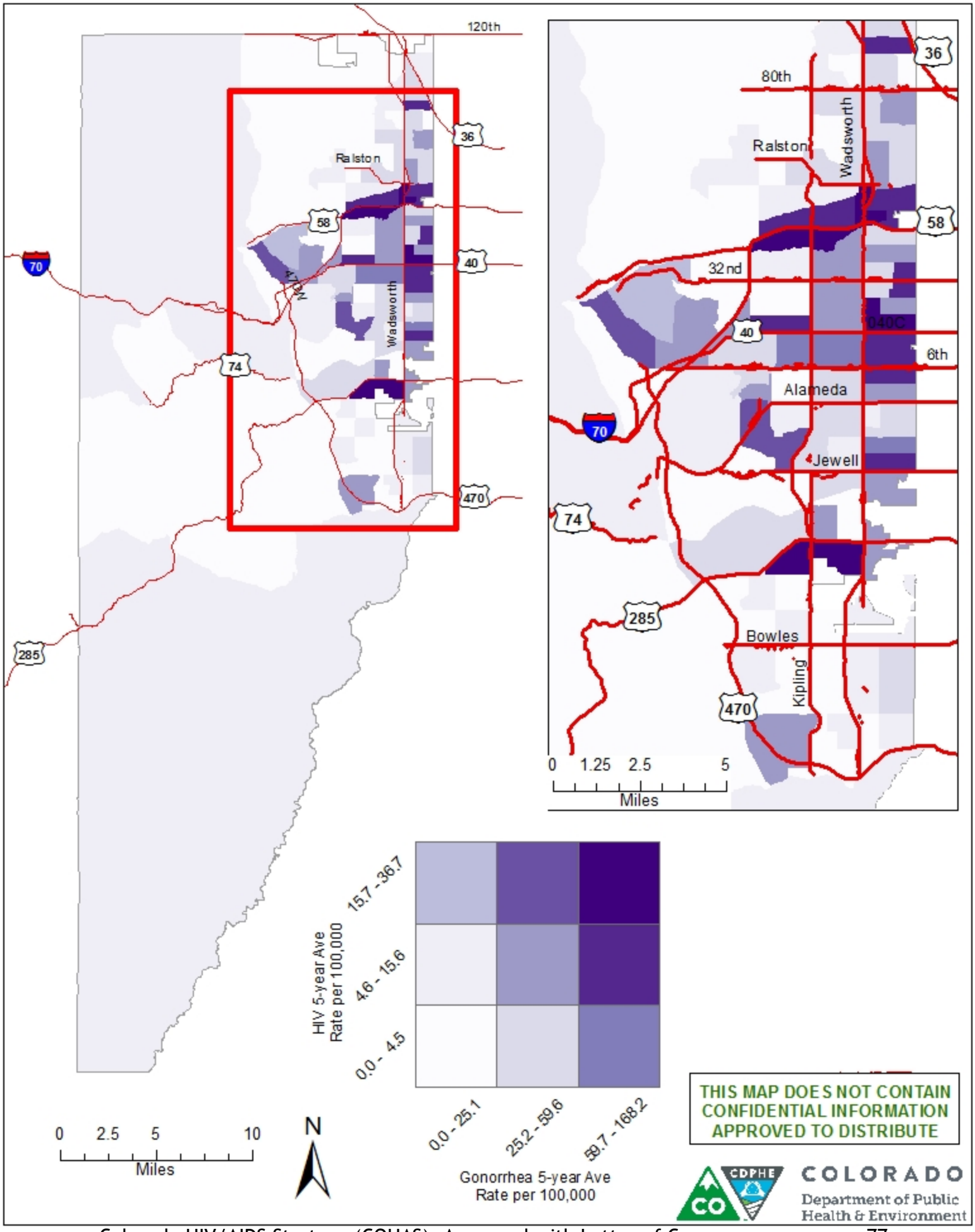
Denver County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Denver County



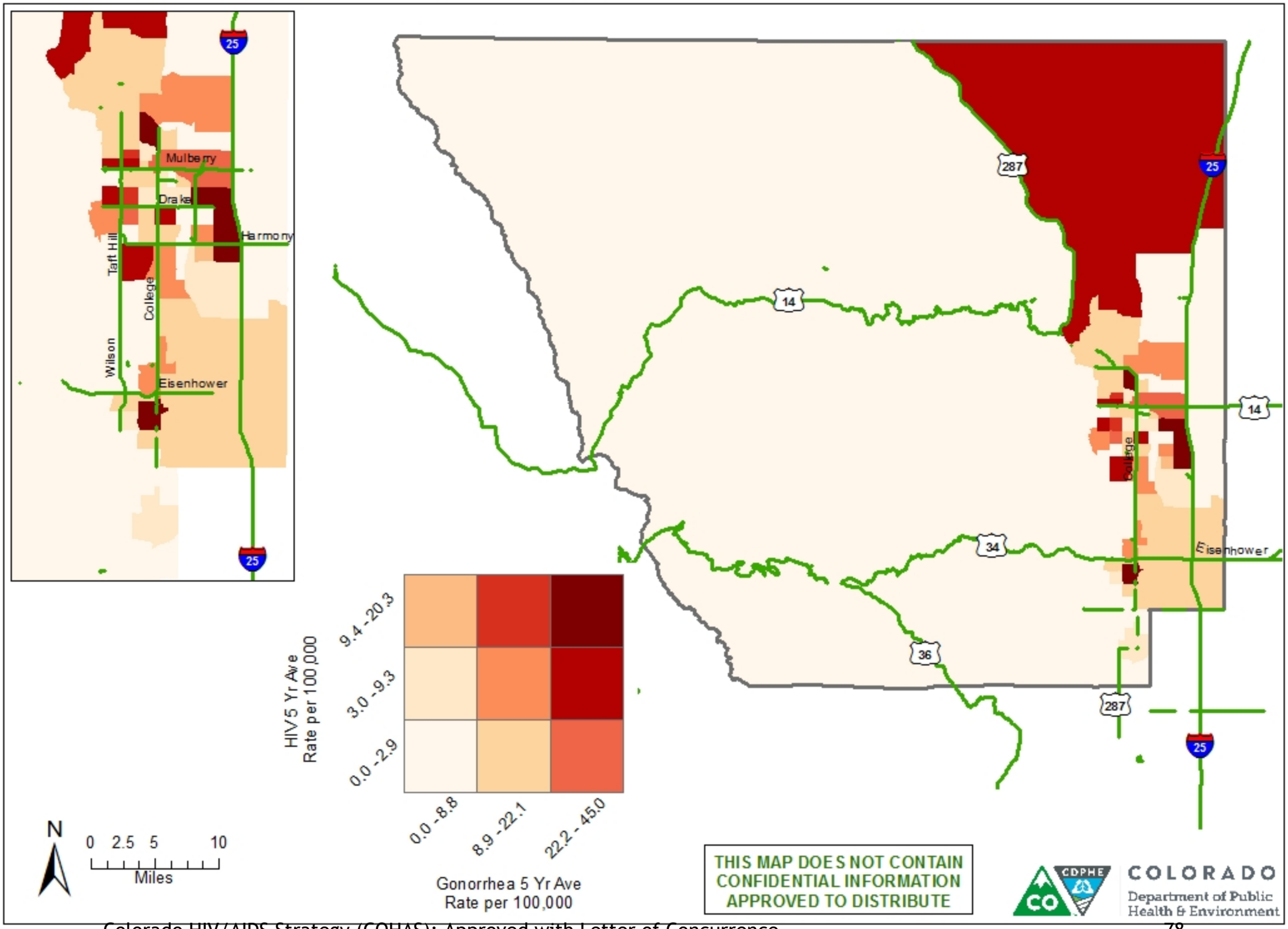
El Paso County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, El Paso County



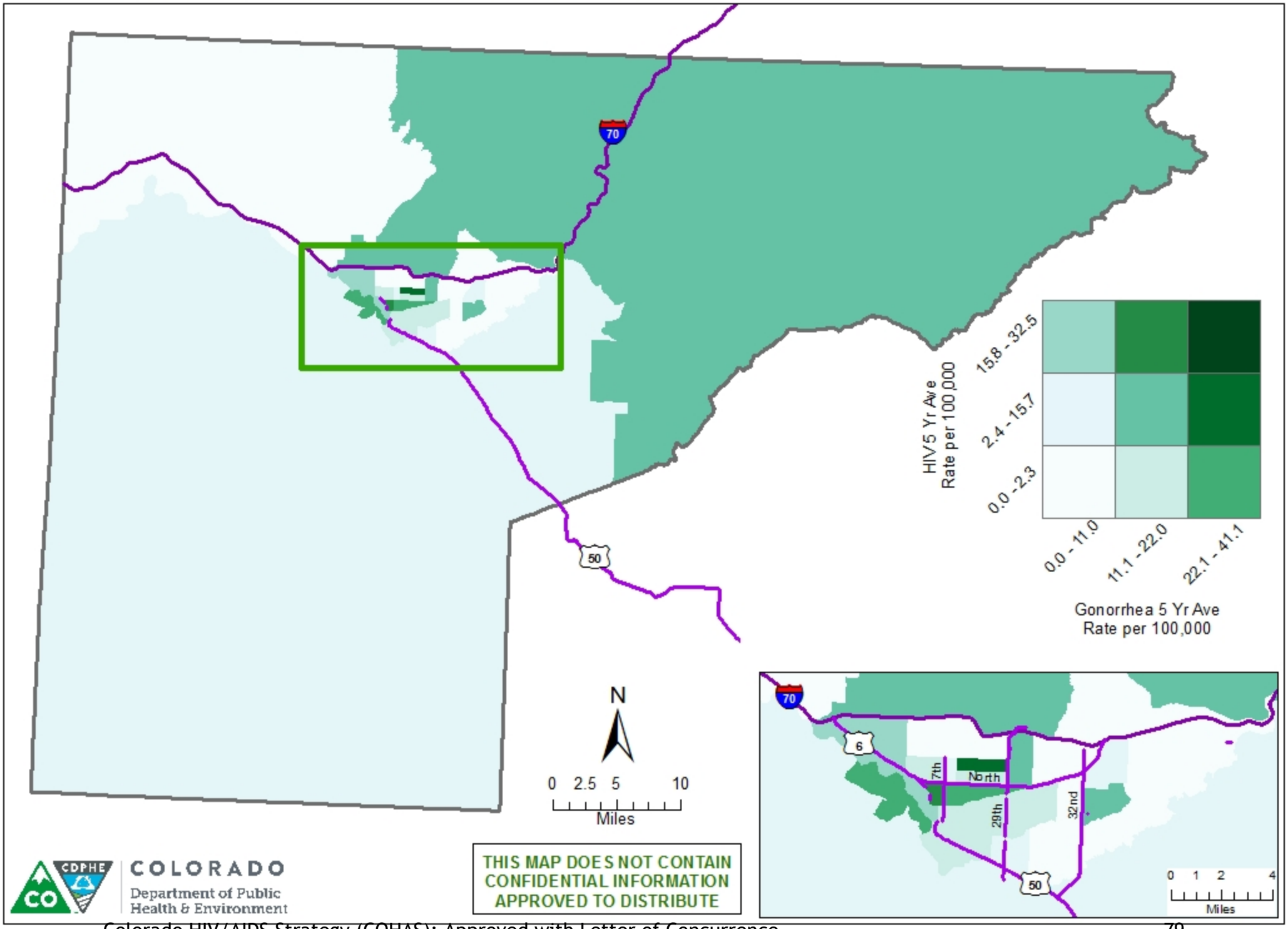
Jefferson County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Jefferson County



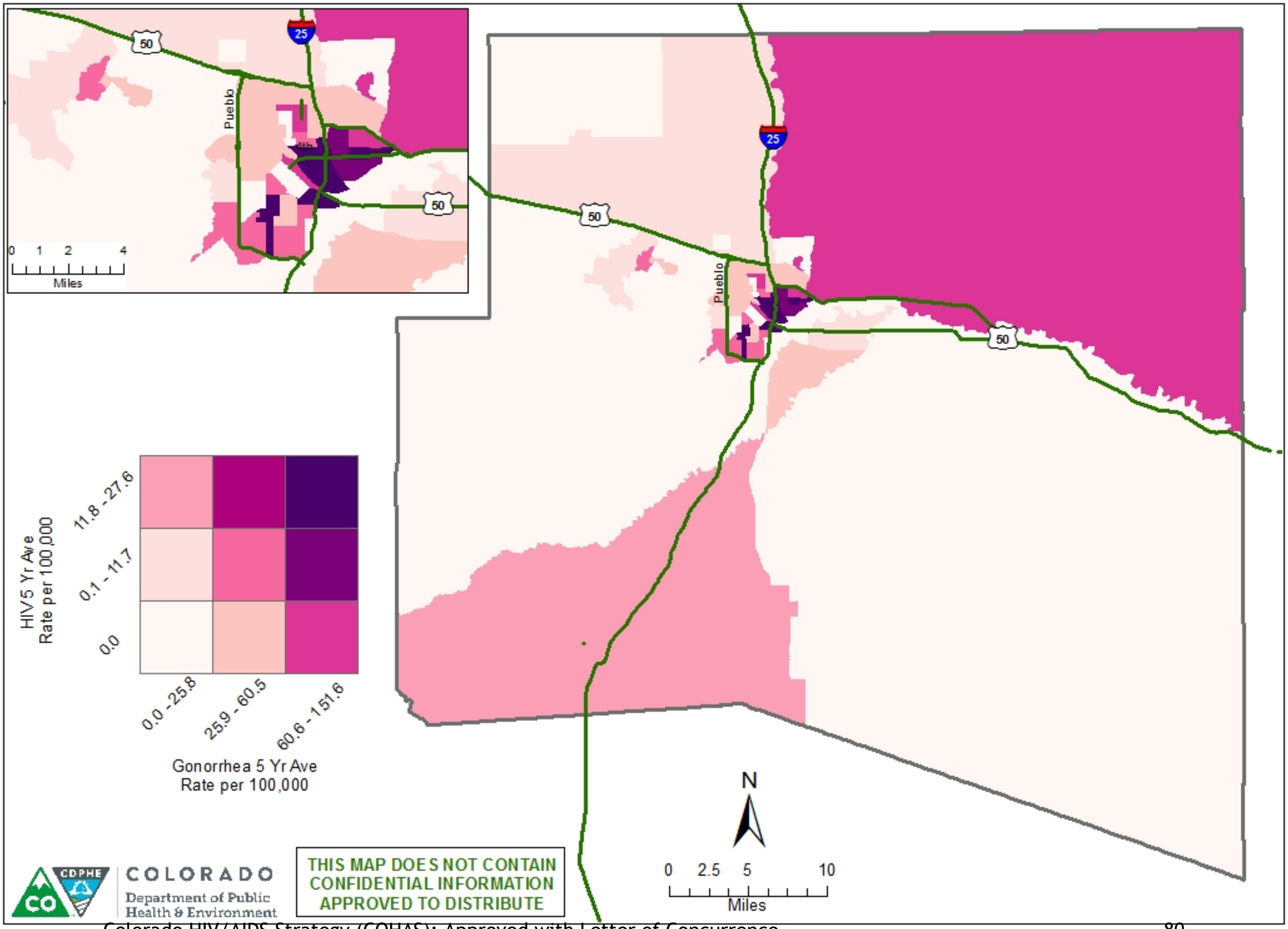
Larimer County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Larimer County



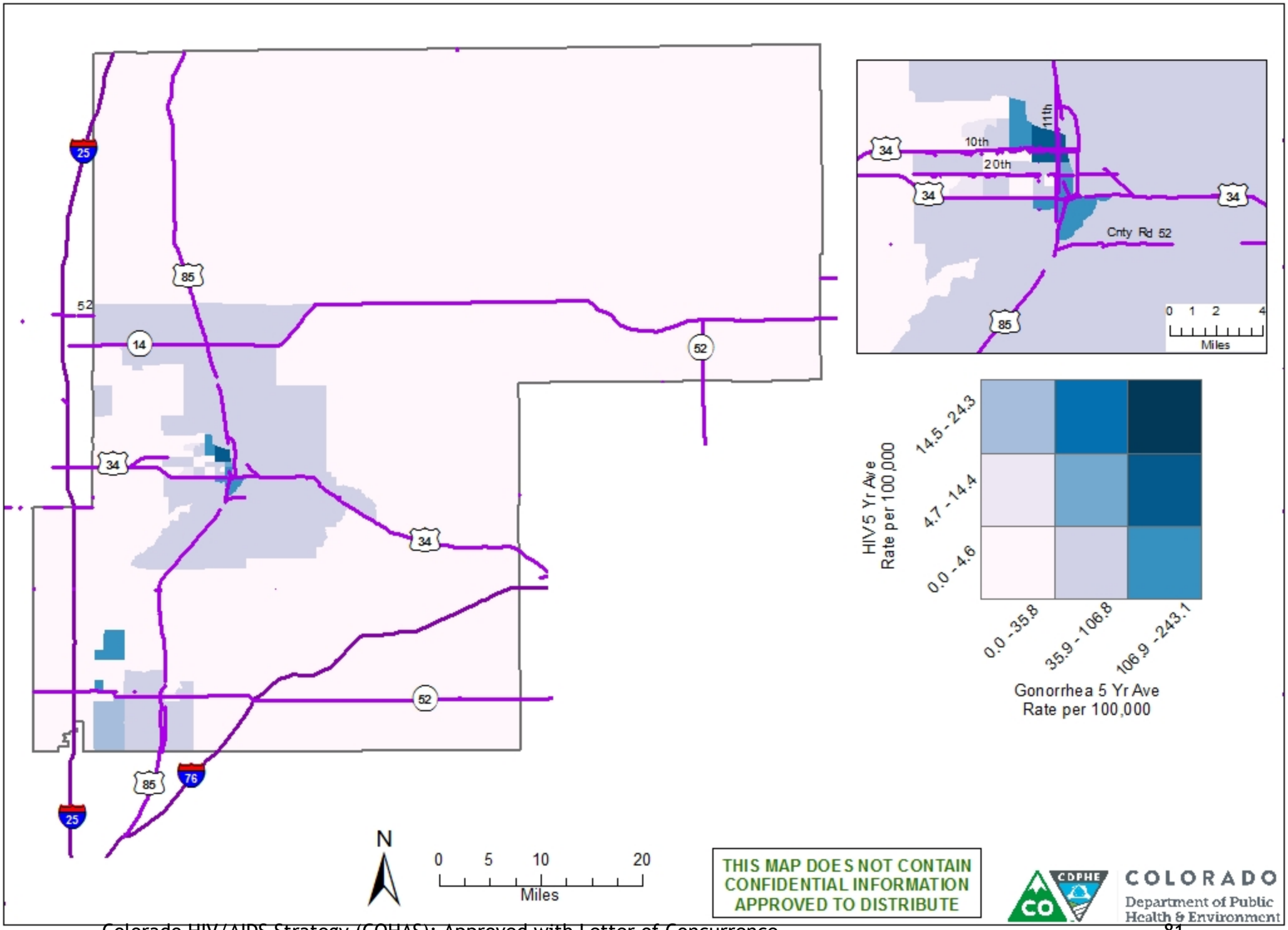
Mesa County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Mesa County



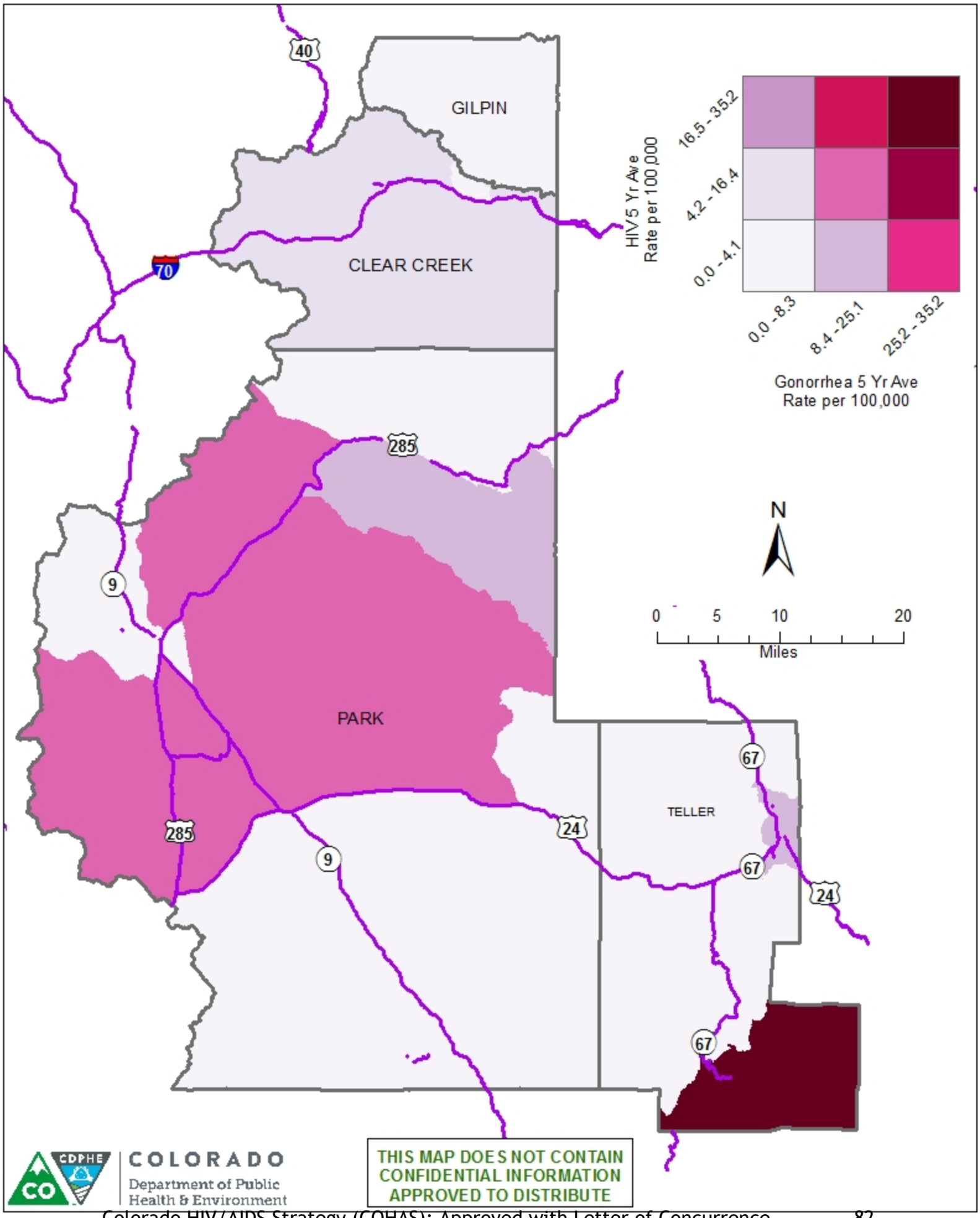
Pueblo County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Pueblo County



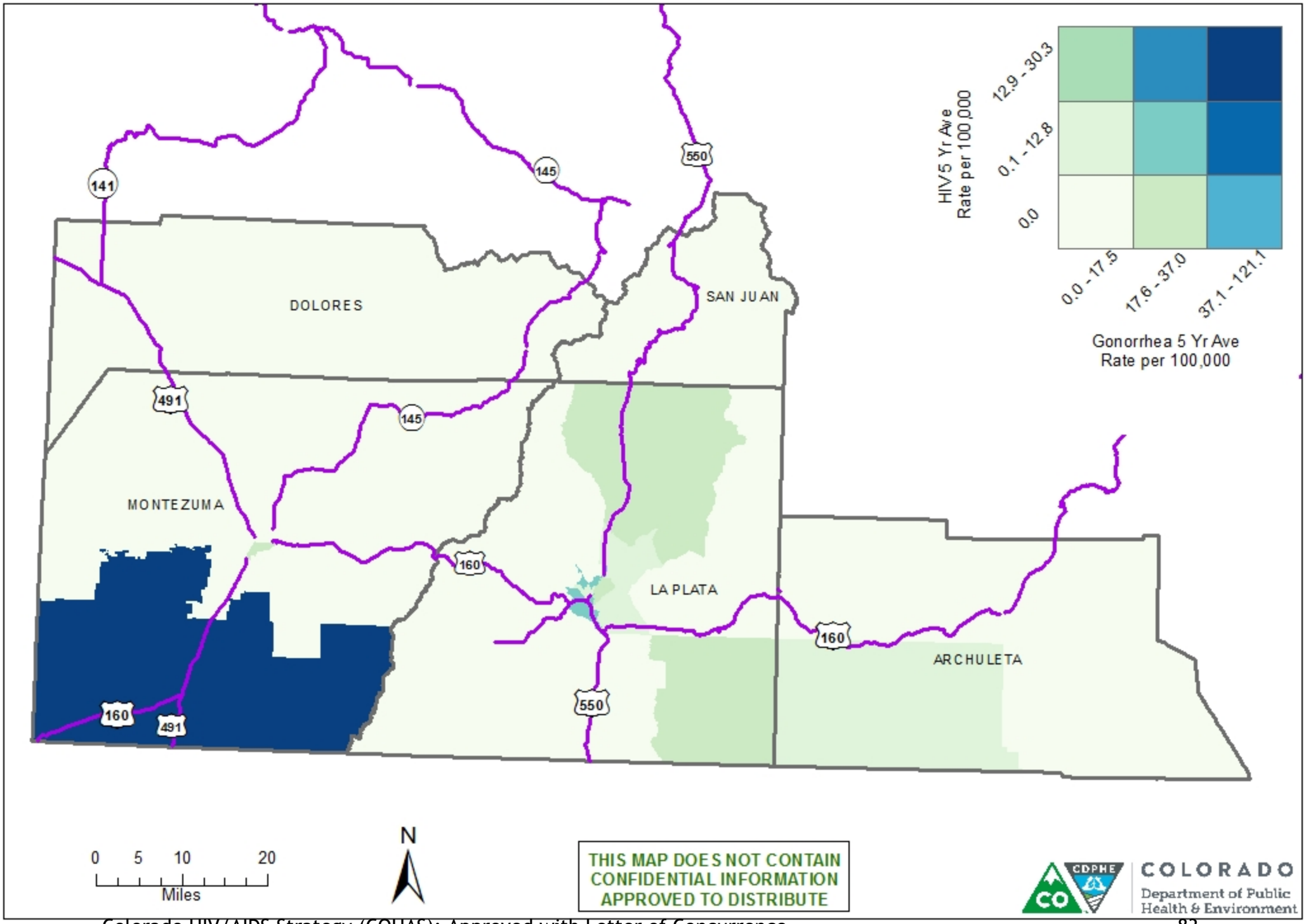
Weld County New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Weld County



Health Statistics Region 17 New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Ave Rates, By 2010 Census Tract, Clear Creek, Gilpin, Park and Teller Counties



Health Statistics Region 9 New HIV and Gonorrhea Diagnoses, 2009-2013
5 Year Average Rates, By 2010 Census Tract, Archuleta, Dolores, La Plata, Montezuma, and San Juan Counties



Appendix 2: Social Determinants of Health

CDC's Healthy People 2020 identifies the following as essential elements of the social determinants of health:

- Economic Stability
  - Poverty
  - Employment Status
  - Access to Employment
  - Housing Stability (e.g., homelessness, foreclosure)
- Education
  - High School Graduation Rates
  - School Policies that Support Health Promotion
  - School Environments that are Safe and Conducive to Learning
  - Enrollment in Higher Education
- Social and Community Context
  - Family Structure
  - Social Cohesion
  - Perceptions of Discrimination and Equity
  - Civic Participation
  - Incarceration/Institutionalization
- Health and Health Care
  - Access to Health services—including clinical and preventive care
  - Access to Primary Care—including community-based health promotion and
  - wellness programs
  - Health Technology
- Neighborhood and Build Environment
  - Quality of Housing
  - Crime and Violence
  - Environmental Conditions
  - Access to Healthy Foods

Appendix 3 - Colorado Viral Hepatitis Work Plan

Mission: to prevent viral hepatitis infections and reduce the burden of viral hepatitis related diseases in Colorado.

- Viral Hepatitis Surveillance Unit
- Perinatal Hepatitis Prevention Unit
- Adult Viral Hepatitis Prevention

Surveillance for Viral Hepatitis

Goals

- Ensure comprehensive, accurate, and useful Surveillance of viral hepatitis in Colorado

Department strategic map objectives

- B1:Establish Evidence-based, Data-driven strategies
- B5:Meet Regulatory and Statutory Requirements
- C2:Engage Partners in Programmatic and Policy Decision-Making

Activities for PERFORMANCE CYCLE 2012-2013

- Increase the utility of Colorado hepatitis Surveillance data
    - Conduct enhanced Surveillance for all acute hepatitis B and C cases
    - Conduct enhanced and integrated Surveillance for all chronic hepatitis B and a subset of hepatitis C cases.
    - Generate Surveillance reports for the website and stakeholders
- Continue collaboration and communication with laboratories testing specimens for hepatitis A, B, and C infection and assure appropriate reporting to public health. This includes site visits and/or surveys to share information about current testing practices, platforms, and reporting regulations.
- Conduct quality assurance procedures including cross-checks of reported cases submitted by laboratories and providers to determine case status, de-duplicate reports/CEDRS entries, and confirm that completeness and timeliness are consistent with CBOH rules.
- Adhere to CDC's routine VPD Surveillance and reporting requirements
- Incorporate Surveillance data into prevention efforts (Ex: educate cases on prevention, promote hepatitis A and B vaccine as appropriate for identified contacts to cases and as appropriate for chronic hepatitis cases.)
- Collect and ship serologic specimens on acute hepatitis A and B cases to CDC as requested or needed for outbreak investigations.
- Identify HBsAg+ pregnant women.

Measures

- All acute hepatitis B and C cases will be investigated (contacts identified, counseling and referral offered.)
- All chronic hepatitis B and C cases will be investigated
    - CDPHE will identify 90% of the lower estimate of expected HBsAg+ pregnant women.
    - CDPHE will interview all HCV cases < 18 years of age.
    - CDPHE will request additional information on all chronic hepatitis B and C cases using a fax-back form.

- Proportion of completed, timely, and de-duplicated reports. Up to 95% of chronic HBV and up to 50% of chronic HCV case reports will be reviewed for completeness, timeliness, and de-duplication of CEDRS records.
- Annual VHP Surveillance data will be posted to the website within 6 months of the close of the year.

Partnerships

Goals

- Expand and integrate statewide viral hepatitis services through partnerships
- Equip stakeholders with the knowledge, skills, and resources necessary to prevent the spread of hepatitis and to decrease morbidity among those already infected

Department strategic map objectives

- A3: Champion Collaboration Among Programs, Departments and Partners
- B1:Establish Evidence-based, Data-driven strategies
- B4: Strengthen Cross-Departmental Collaboration
- C2: Engage Partners in Programmatic and Policy Decision-Making
- C3: Actively Participate as a Partner in the Community
- C4: Create and Support Sustainable, Healthy Communities

Activities for PERFORMANCE CYCLE 2012-2013

- Collaborate with local health departments to investigate reported acute hepatitis B and C cases with similar risk and demographic information to identify and respond to outbreaks.
- Collaborate with CDC on improving the quality of existing data (e.g., recoding variables for standardization, correcting out of range values, improving timeliness, etc.)
- Maintain and support existing HCV counseling and testing sites.
    - Increase screening of individuals for the presence of risk factors for viral hepatitis infection by educating clinicians and prevention workers.
    - Increase the numbers of referrals made at HCV counseling and testing sites
    - Consult with partners on the implementation of the HCV Rapid Test and provide training.
- Provide adult hepatitis A and B vaccine to local health departments, FQHCs and RHCs, and clinical HCV counseling and testing sites.
    - Increase the number of sites providing adult hepatitis A and B vaccine
    - Increase the number of sites providing adult hepatitis A and B vaccine that participate in The Colorado Immunization Information System (CIIS).
- Continue to update and expand the web-based hepatitis service locator map and to disseminate the web address to local health departments, FQHCs, hospitals, and private service organizations.
- Implement a comprehensive provider education program related to viral hepatitis screening, testing, vaccination, and treatment
- Cross-check all acute hepatitis B and C cases with the CDPHE STI/HIV Program for co-infection status and continue to coordinate with STI/HIV field staff on investigations.

- Coordinate viral hepatitis prevention services for HIV infected persons including hepatitis A and B vaccination of all susceptible persons, and testing to identify persons with chronic HCV infection or chronic HBV infection.
- Revise or develop data security and confidentiality protocols in conjunction with other DCEED programs (HIV/STI, TB, Refugee, Communicable Disease) and in accordance with CDC guidance.
- Consult with local jurisdictions and community-based organizations on best practices related to syringe exchange programs and other harm reduction activities that prevent hepatitis C.
- Form a Viral Hepatitis Advisory Committee to provide expert input on issues related to Surveillance, prevention, and linkage to care.

Measures

- # of cases investigated by local partners
- # of testing sites and ratio of #s tested/# of new cases identified
- # of doses of adult hepatitis A and B vaccine distributed to high-risk adults
- Number of education sessions provided through CDPHE contractors and VHP staff and collaboration with Project ECCO, University of Utah.
- # of hits to the hepatitis service locator.
- Implement training for prevention workers, # individuals trained.
- Implement training for clinical providers. # individuals trained by credential
- # of HIV infected individuals that have completed hepatitis vaccination.
- Develop website for best practices related to syringe exchange programs
- Viral Hepatitis Advisory Committee formed and met minimum of 3 meetings

Healthy People 2020 Measures

- IID – 15, IID-25.1-25.3 Reduce hepatitis B infections in adults aged 19 and older, among IDU; among men who have sex with men.
- IID-27 Increase the percentage of person aware that they have a hepatitis C infection (60% of NHANES survey respondents)

Prevention Case Management

Goals

- Reduce morbidity among viral hepatitis positive persons and prevent the spread of viral hepatitis

Department strategic map objectives

- A1: Develop and Implement Strategies to Achieve Winnable Battles (i.e .Infectious Disease)
- B2:Achieve Clear, Specific, Measurable Goals
- C3: Actively Participate as a Partner in the Community
- C4:Create and Support Sustainable, Healthy Communities
- C5: Promote the Value of Public Health and Environmental Protection

Activities for PERFORMANCE CYCLE 2012-2013

- For infants born to HBsAg+ women,
    - Newborn prophylaxis with hepatitis B vaccine and HBIG
    - Timely completion of doses 2 and 3
    - Post-vaccination serology

- Within hepatitis C counseling and testing sites, collect a baseline of the number of referrals made for vaccination, mental health/substance abuse treatment, syringe access programs, and/or hepatitis treatment services. Increase referrals annually by 5%.
- Refer individuals named as contacts to acute hepatitis B and C cases for screening and/or HAV and HBV vaccine and if appropriate, HIV and STI testing.
- Develop and promote linkages to care through training of providers, coordination with providers, and appropriate referrals.

Measures

- 100% of infants born to HBsAg+ women will receive HBIG and a birth dose of hepatitis B vaccine within 24 hours of birth.
- >95% of infants born to HBsAg+ women will receive doses 2 and 3 by 13 months of age.
- >85% of infants born to HBsAg+ women will receive post-vaccination testing by 18 months of age.
- # of referrals made from counseling and testing sites to hepatitis treatment, hepatitis vaccination, mental health/substance abuse treatment, syringe access program, and Hep C Connection.
- # contacts named through acute hepatitis case investigations

Healthy People 2020 Measures

- IID – 1.3 Reduce, eliminate, or maintain elimination of new hepatitis B cases among person 2 to 18 years
- IID- 7.3 Target: 3 doses of hepatitis B vaccine by 19-35 months (90%)
- II.D 7.9 Target: A birth dose of hepatitis B vaccine (0 to 3 days between birth date and date of vaccination, reported by annual cohort (85%).
- IID-10.4 Target: Kindergarten Hepatitis B vaccine (3 or more doses), (95%)
- IID-15 Target: Increase hepatitis B vaccine coverage among high-risk populations

Alignment with Department Strategic Plan Priorities

Goal: Develop and Implement Strategies to Achieve Winnable Battles

- Infectious Disease Prevention
  - Prevent viral hepatitis infections and reduce the burden of viral hepatitis related diseases in Colorado.
- Mental health and Substance Abuse
  - Increase the number of HBV and/or HCV infected persons who receive needed mental health or substance abuse treatment

Department strategic map objectives

- A1: Develop and Implement Strategies to Achieve Winnable Battles (i.e .Infectious Disease)
- A2: Promote Policies That Support Winnable Battles
- B2:Achieve Clear, Specific, Measurable Goals
- C4:Create and Support Sustainable, Healthy Communities
- C5: Promote the Value of Public Health and Environmental Protection

Activities for PERFORMANCE CYCLE 2012-2013

- Improve collaboration with the Center for Medicaid Services and other insurers and care providers to understand the level of viral hepatitis care that is being provided in Colorado
- Promote opportunities to provide more screening in primary care.
- Improve collaboration with the Colorado Department of Health and Human Services to link people into substance and mental health treatment.

Measures

- # of HBV or HCV positive patients that received any follow-up testing
- # of HCV positive patients that received hepatitis vaccines
- # of counseling and testing site referrals to substance or mental health services.
- # meetings with CMS involving viral hepatitis issues and the outline of a plan to collaborate

  Healthy People 2020 Measures
- IID 1.3 Target: Total elimination of new hepatitis B cases (persons aged 2-18 years)
- IID-25 Target: Reduce hepatitis B
  - New HBV infections in adults aged 19 and older (1.5 case per 100,00), IDU (215 cases), MSM (45 new infections)
- IID-26 Reduce new hepatitis C infections (0.2 symptomatic hepatitis C cases/100,000)

Goal: Align Employee Roles and Accountability with Department Priorities

Activities for PERFORMANCE CYCLE 2012-2013

- Viral hepatitis program workplan and grant objectives are aligned with the CDPHE strategic plan.
- Employees meet deadlines and perform quality work.

Measures

- All employee PDQs and performance plans are aligned to the strategic map

Goals: Attract, Retain, and Recognize Talented and Diverse Employees

Department strategic map objectives

- D3: Provide Professional Development and Advancement Opportunities
- D4: Develop a Leadership Succession Plan

Activities for PERFORMANCE CYCLE 2012-2013

- Supervisors will discuss leadership and succession planning with staff
- Supervisors will provide professional development opportunities to staff that are related both to increasing job expertise and defining future activities.

Measures

- Leadership and succession planning discussions will be documented in performance reviews
- Supervisors will develop an annual professional development plan.

Goal : Create a More Efficient, Effective, Customer-Oriented Department

Department strategic map objectives

- E2: Employ Lean Methodologies to Improve Business Processes
- E3: Secure Sustainable, Diversified Funding

Activities for PERFORMANCE CYCLE 2012-2013

- Assure that staff are trained on LEAN principles and implementation
- Identify and implement LEAN projects within the CVHP
- Meet the objectives of funding sources and assure competitiveness for future funding opportunities

Measures

- All staff will have received training on LEAN principles either through CDPHE, or other source.
- One LEAN project will be identified and implemented per calendar year
- All grant objectives will be met.

Cross-cutting Strategic Plan Priorities

Goal: Promote health equity and environmental justice by:

- Increase the number of prevention workers and clinicians who understand the health disparities related to hepatitis B
- Evaluating and describing the inequities related to the care of people chronically infected with hepatitis B or C.

Activities for PERFORMANCE CYCLE 2012-2013

- Conduct viral hepatitis training for prevention workers and clinicians
- Convene an advisory committee to review existing data related to viral hepatitis Surveillance, prevention, and care
    - Review existing data for health disparities
    - Strategize on new data collection methods that address the needs of communities with health disparities

Measures

- # of trainings conducted
- # of advisory committee meetings and actual strategies implemented

Goal: Use Performance-Based Measures and Evaluation to Continuously Improve Effectiveness and Prioritize Resources

Activities for PERFORMANCE CYCLE 2012-2013

- Implement the CVHP Workplan
- Assure performance plans include performance-based measures
- Conduct external evaluations of stakeholders for both program performance and individual performance.

Measures

- % of activities completed in the workplan.
- Results of external reviews.

Goal: Strengthen Internal and External Communication by:

- Participate in existing avenues for communicating with internal and external partners

- Develop new strategies to communicate with internal and external partners

Activities for PERFORMANCE CYCLE 2012-2013

- Continually revise and enhance the CVHP webpage and intranet pages

Attend SARAC, and Team Hep C meetings

Appendix 4: Case Information for the Census Tracts of Interest

Case demographics of the twenty ranked tracts based on 5 year average new HIV rate from 2009-2013. The first table is the top 10 five-county metro tracts and the second is the top 10 non-metro tracts.

Case Demographics of Top 10 Five-County Metro Tracts
based on 5 yr Average HIV Rate, 2009-13

5yr rate of HIV		585.05	
5 yr Rate of GC		1697.99	
	New HIV†	Gonorrhea	Syphilis‡
Total	100.00%	100.00%	100.00%
Gender			
Male	92.53%	62.18%	98.60%
Female	7.47%	37.82%	1.40%
Race/Ethnicity			
NH White	54.60%	35.45%	64.34%
NH Black	12.07%	23.76%	7.69%
Hispanic	28.74%	21.58%	22.38%
Other	4.60%	19.21%	5.59%
Age Grp @ Dx			
15-19	2.30%	15.05%	0.00%
20-24	13.79%	31.68%	13.29%
25-29	20.69%	24.95%	21.68%
30-34	20.69%	10.10%	11.19%
35-39	10.92%	6.93%	16.78%
40-44	13.79%	5.54%	13.99%
45-49	7.47%	3.37%	13.29%
50-54	5.17%	0.99%	6.99%
55-59	2.87%	1.19%	2.80%
60-64	2.30%	0.20%	0.00%
Risk			
MSM	70.11%		
MSM/IDU	8.62%		
IDU	4.02%		
Hetero	8.62%		
No Identified Risk	8.62%		
Other	0.00%		
County			
Adams	2.87%	2.18%	0.70%
Arapahoe	0.00%	0.00%	0.00%
Denver	97.13%	97.82%	99.30%
Douglas	0.00%	0.00%	0.00%
Jefferson	0.00%	0.00%	0.00%

† Regardless of stage of dx
‡ Includes primary, secondary and early latent syphilis
* Includes the following 10 tracts based on 5 year HIV rate:
08001008100, 08031000800, 08031002000, 08031002403, 08031002602, 08031002701, 08031002703, 08031003102, 08031003201, 08031004106

Case Demographics of Top 10 Non-Metro Tracts based on 5 yr Average HIV Rate, 2009-13

5yr rate of HIV	225.97	
5 yr Rate of GC	764.32	

	New HIV†	Gonorrhea	Syphilis‡
Total	100.00%	100.00%	100.00%
Gender			
Male	85.29%	42.61%	66.67%
Female	14.71%	57.39%	33.33%
Race/Ethnicity			
NH White	55.88%	16.52%	22.22%
NH Black	14.71%	17.39%	0.00%
Hispanic	20.59%	33.04%	22.22%
Other	8.82%	33.04%	55.56%
Age Grp @ Dx			
15-19	0.00%	13.04%	0.00%
20-24	14.71%	48.70%	0.00%
25-29	20.59%	21.74%	44.44%
30-34	26.47%	8.70%	0.00%
35-39	2.94%	2.61%	44.44%
40-44	5.88%	1.74%	11.11%
45-49	23.53%	1.74%	0.00%
50-54	2.94%	0.87%	0.00%
55-59	2.94%	0.87%	0.00%
60-64	0.00%	0.00%	0.00%
Risk			
MSM	41.18%		
MSM/IDU	8.82%		
IDU	11.76%		
Hetero	23.53%		
No Identified Risk	14.71%		
Other	0.00%		
County			
Boulder	8.82%	1.74%	0.00%
El Paso	32.35%	53.91%	33.33%
Mesa	17.65%	1.74%	0.00%
Montezuma	5.88%	6.96%	55.56%
Pueblo	20.59%	28.70%	0.00%
Teller	2.94%	0.87%	0.00%
Weld	11.76%	6.09%	11.11%

† Regardless of stage of dx

‡ Includes primary, secondary and early latent syphilis

* Includes the following 10 tracts based on 5 year HIV rate: 08013013202, 08041001900, 08041005202, 08077000300, 08077000900, 08083941100, 08101002000, 08101003500, 08119010202, 08123000402

Appendix 5: Demographic Information for the Census Tracts of Interest

Population demographics of the twenty ranked tracts based on 5 year average new HIV rate from 2009-2013. The first table is the top 10 five-county metro tracts and the second is the top 10 non-metro tracts.

Table 1. Summary of top 10 ranking Denver Metro census tracts for HIV and Gonorrhea infections and select population characteristics

Denver Metro Census Tract	5 year average rate of HIV among 15-64 year olds per 100,000 population	5 year average rate of GC among 15-64 year olds per 100,000 population	Geographic Description	2008-2012 Average Population Estimate per US census	Total No. Male	Percent of Population that is Male	Total No. Female	Percent of Population that is Female
08001008100	258.40	568.48	**Northwest Aurora, Fitzsimons Neighborhood**	700	352	50.29%	348	49.71%
08031000800	163.13	1903.21	**Sun Valley Neighborhood in North Central Denver**	1404	564	40.17%	840	59.83%
08031003102	135.61	524.36	**West Cheesman Park Neighborhood**	2861	1520	53.13%	1341	46.87%
08031002602	134.22	440.99	**City Park West Neighborhood**	2351	1296	55.13%	1055	44.87%
08031002703	121.80	360.88	**East Capital Hill Neighborhood**	4874	2773	56.89%	2101	43.11%
08031002000	121.71	243.42	**Alamo Placita Neighborhood**	1622	1028	63.38%	594	36.62%
08031004106	118.32	118.32	**North West Stapleton Neighborhood of Denver**	10137	5664	55.87%	4473	44.13%
08031002403	112.81	546.69	**Five Points Neighborhood**	3013	1693	56.19%	1320	43.81%
08031002701	108.84	267.15	**West Capital Hill Neighborhood**	4354	2558	58.75%	1796	41.25%
08031003201	108.67	311.84	**East Cheesman Park Neighborhood**	5210	2970	57.01%	2240	42.99%
Total Metro Area		Estimated 2013 Population		29741		52.52%	16108	41.43%

Data Source: 2008-2012 American Community Survey 5 year estimates. Selected tables include; DP02-Selected Social Characteristics in the United States, DP03-Selected Economic Characteristics, DP04-Selected Housing Characteristics, S0101- Age and Sex, S1501-Educational Attainment, B02001 - Race, B03003 - Hispanic or Latino Origin. (http://www.census.gov/acs)

Table 1. Summary of top 10 ranking Denver Metro census tracts for HIV and Gonorrhea infections and select population characteristics, cont.

Denver Metro Census Tract	Percent of Population that is White	Percent of Population that is African American	Percent of Population that is another race	Percent of the Population that is Latino/Hispanic
08001008100	60.43%	6.14%	33.43%	30.29%
08031000800	47.36%	25.78%	26.85%	50.78%
08031003102	74.94%	17.79%	7.27%	15.31%
08031002602	82.86%	7.53%	9.61%	4.98%
08031002703	91.94%	2.71%	5.35%	6.67%
08031002000	73.00%	12.33%	14.67%	4.50%
08031004106	82.57%	9.19%	8.24%	13.86%
08031002403	60.21%	6.64%	33.16%	22.67%
08031002701	77.56%	2.00%	20.44%	23.93%
08031003201	92.32%	1.50%	6.18%	9.04%
Total Metro Area	75.15%	6.99%	23.33%	14.09%

Table 1. Summary of top 10 ranking Denver Metro census tracts for HIV and Gonorrhea infections and select population characteristics, cont.

Denver Metro Census Tract	Percent of Population with High School Education	Percent Foreign Born	Percent of Households below poverty	Median Household Income	Number of Households with no Vehicle Access	Percent of population with no Health Insurance Coverage
08001008100	92.7%	11.7%	8.8%	$ 31,005.00	9.0%	20.6%
08031000800	57.8%	8.4%	73.4%	$ 9,874.00	38.1%	10.7%
08031003102	87.1%	7.0%	28.1%	$ 26,262.00	38.5%	10.0%
08031002602	99.5%	3.7%	8.1%	$ 49,110.00	19.1%	19.3%
08031002703	92.0%	5.9%	<0.1%	$ 36,914.00	27.0%	26.3%
08031002000	92.7%	9.4%	<0.1%	$ 65,306.00	17.4%	14.2%
08031004106	85.0%	8.3%	3.3%	$ 130,579.00	0.6%	1.7%
08031002403	84.2%	11.3%	14.0%	$ 32,688.00	36.7%	21.4%
08031002701	91.5%	9.4%	4.5%	$ 31,125.00	36.6%	28.8%
08031003201	95.8%	2.6%	11.6%	$ 46,438.00	14.9%	16.3%

Table 1. Summary of top 10 ranking Denver Metro census tracts for HIV and Gonorrhea infections and select population characteristics, cont.

Denver Metro Census Tract	Percent of Population Under 5 years of age	Percent of Population 5 to 14 years of age	Percent of Population 15-17 years of age	Percent of Population 18-24 years of age	Percent of Population 25-34 years of age	Percent of Population 35 -44 years of age	Percent of Population 44 years of age and over
08001008100	4.4%	6.7%	<0.1%	8.1%	48.9%	6.4%	25.5%
08031000800	24.2%	25.0%	2.7%	12.8%	18.3%	4.1%	12.9%
08031003102	6.0%	1.1%	1.0%	11.9%	28.0%	16.1%	36.0%
08031002602	1.6%	3.7%	0.3%	16.0%	44.4%	13.1%	20.9%
08031002703	2.5%	1.1%	1.0%	11.9%	41.9%	14.5%	27.1%
08031002000	2.5%	<0.1%	<0.1%	7.3%	31.5%	26.1%	32.6%
08031004106	13.3%	11.6%	1.0%	4.4%	23.3%	29.4%	17.0%
08031002403	6.5%	5.1%	<0.1%	7.7%	26.4%	20.5%	33.8%
08031002701	0.3%	0.6%	<0.1%	21.1%	39.2%	15.2%	23.6%
08031003201	3.5%	0.7%	0.7%	12.2%	37.1%	14.0%	31.8%

Table 2. Summary of top 10 ranking Non - Denver Metro (Rural) census tracts for HIV and Gonorrhea infections and select population characteristics

Rural Colorado Census Tracts	5 year average rate of HIV among 15-64 year olds per 100,000 population	5 year average rate of GC among 15-64 year olds per 100,000 population	Geographic Description	2008-2012 Average Population Estimate per US census	Total No. Male	Percent of Population that is Male	Total No. Female	Percent of Population that is Female
08013013202	57.94	38.62	**North Central Boulder County**	1329	711	53.50%	618	46.50%
08041001900	42.96	236.29	**Central Colorado Springs Area**	4367	2420	55.42%	1947	44.58%
08041005202	68.80	399.06	**South East Central Colorado Springs**	2374	1189	50.08%	1185	49.92%
08077000300	43.16	21.58	**South West grand Junction Area**	1232	634	51.46%	598	48.54%
08077000900	43.66	10.92	**Western Grand Junction Area**	2626	1457	55.48%	1169	44.52%
08083941100	44.16	176.64	**Most South Western Corner of Colorado in Montezuma CO**	1321	649	49.13%	672	50.87%
08101002000	44.10	242.53	**Central Pueblo City and County**	2902	1560	53.76%	1342	46.24%
08101003500	36.00	132.01	**Central Pueblo City and County**	2340	1173	50.13%	1167	49.87%
08119010202	47.82	47.82	**South Eastern Corner of Teller County (West of Colorado Springs Area**	568	309	54.40%	259	45.60%
08123000402	36.72	64.27	**East Central Greeley**	2855	1487	52.08%	1368	47.92%
Total for Rural Areas		Estimated 2013 population		15046		52.88%	10325	47.11%

Data Source: 2008-2012 American Community Survey 5 year estimates. Selected tables include; DP02-Selected Social Characteristics in the United States, DP03-Selected Economic Characteristics, DP04-Selected Housing Characteristics, S0101- Age and Sex, S1501-Educational Attainment, B02001 - Race, B03003 - Hispanic or Latino Origin. (http://www.census.gov/acs)

TOTAL Estimated "AT RISK" POPULATION (both Rural and Urban Census Tracts)	44787

Table 2. Summary of top 10 ranking Non - Denver Metro (Rural) census tracts for HIV and Gonorrhea infections and select population characteristics, cont.

Rural Colorado Census Tracts	Percent of Population that is White	Percent of Population that is African American	Percent of Population that is another race	Percent of the Population that is Latino/Hispanic
08013013202	87.74%	0.00%	12.26%	9.71%
08041001900	88.46%	4.85%	6.69%	14.52%
08041005202	52.23%	23.63%	24.14%	22.70%
08077000300	95.54%	0.00%	4.46%	12.91%
08077000900	91.36%	0.88%	7.77%	14.24%
08083941100	11.66%	0.38%	87.96%	6.66%
08101002000	75.16%	2.00%	22.85%	68.68%
08101003500	74.44%	4.02%	21.54%	50.17%
08119010202	98.06%	0.00%	1.94%	2.46%
08123000402	82.31%	6.13%	11.56%	41.86%
Total for Rural Areas	76.79%	5.14%	18.05%	14.06%

Table 2. Summary of top 10 ranking Non - Denver Metro (Rural) census tracts for HIV and Gonorrhea infections and select population characteristics, cont.

Rural Colorado Census Tracts	Percent of Population with High School Education	Percent Foreign Born	Percent of Households below poverty	Median Household Income	Number of Households with no Vehicle Access	Percent of population with no Health Insurance Coverage
08013013202	98.80%	12.90%	0.90%	$ 108,147.00	1.20%	10.60%
08041001900	87.80%	2.20%	24.80%	$ 23,559.00	16.20%	17.60%
08041005202	92.60%	13.40%	29.40%	$ 34,284.00	16.90%	16.80%
08077000300	80.90%	0.80%	8.00%	$ 38,967.00	10.40%	30.10%
08077000900	88.00%	6.20%	11.40%	$ 50,033.00	4.60%	22.50%
08083941100	82.30%	0.70%	30.70%	$ 32,750.00	12.70%	39.50%
08101002000	78.50%	7.30%	26.40%	$ 24,138.00	11.00%	24.80%
08101003500	74.90%	4.90%	27.60%	$ 15,040.00	35.80%	31.80%
08119010202	95.10%	0.90%	2.70%	$ 31,480.00	3.30%	34.30%
08123000402	80.60%	22.00%	28.90%	$ 38,137.00	7.50%	21.20%

Table 2. Summary of top 10 ranking Non - Denver Metro (Rural) census tracts for HIV and Gonorrhea infections and select population characteristics, cont.

Rural Colorado Census Tracts	Percent of Population Under 5 years of age	Percent of Population 5 to 14 years of age	Percent of Population 15-17 years of age	Percent of Population 18-24 years of age	Percent of Population 25-34 years of age	Percent of Population 35 -44 years of age	Percent of Population 44 years of age and over
08013013202	1.40%	10.20%	5.10%	5.60%	4.0%	9.40%	64.30%
08041001900	8.60%	9.80%	4.00%	6.70%	15.50%	9.20%	46.20%
08041005202	13.60%	10.20%	2.30%	10.40%	14.80%	13.30%	35.40%
08077000300	7.60%	7.50%	2.30%	4.80%	24.40%	13.30%	40.10%
08077000900	9.20%	9.90%	1.10%	14.90%	24.90%	9.60%	30.40%
08083941100	6.10%	14.90%	9.80%	11.70%	12.10%	11.90%	33.50%
08101002000	3.80%	17.60%	1.90%	11.60%	11.40%	14.20%	39.50%
08101003500	1.00%	3.60%	0.80%	13.60%	17.10%	11.90%	52.00%
08119010202	4.20%	9.30%	2.50%	4.90%	10.0%	9.90%	59.20%
08123000402	6.70%	12.00%	3.20%	18.40%	15.60%	15.20%	28.90%

Appendix 6: County Designation Levels Table

This table shows the level designation breakout by county. The variables shown include census urban/rural designation, population density, population (2012 & 2008-2012), HIV prevalence rate and 5 year average incidence rates for HIV and gonorrhea. The prevalence rate was calculated using the following formula: (PLWHA/2012 population)*100,000. The 5 year average incidence rates were calculated using the following formula:
(New Cases 2008-2012/2008-2012 population)*100,000.

		Census Classification	Population Density		Population		Through December 31, 2012		5-yr (2008-2012)			
FIPS	County	Urban/Rural/ Frontier	Total Area (sq mi)	2012 Persons/ sq mi	2012	2008-12	PLWHA†	HIV Prevalence Rate	New HIV Count	New HIV Rate	GC Count	GC Rate
000	Colorado State	N/A	10,516.44	493.28	5,187,582	25,212,368	12,349	238.05	2,044	8.11	14,552	57.72
Level 1 CDC designated Counties												
001	ADAMS	Urban	1182.29	388.74	459,598	2,214,103	890	193.65	273	12.33	1,080	48.78
005	ARAPAHOE	Urban	804.41	740.35	595,546	2,875,224	1,311	220.13	287	9.98	2,575	89.56
031	DENVER	Urban	155.66	4,074.68	634,265	3,031,868	6,567	1,035.37	827	27.28	5,841	192.65
041	EL PASO	Urban	2128.60	303.00	644,964	3,111,768	877	135.98	156	5.01	2,288	73.53
059	JEFFERSON	Urban	772.85	705.65	545,358	2,682,956	603	110.57	109	4.06	723	26.95
Level 2 Counties												
013	BOULDER	Urban	740.72	412.19	305,318	1,484,730	482	157.87	73	4.92	237	15.96
014	BROOMFIELD	Urban	33.32	1,749.64	58,298	281,320	25	42.88	8	2.84	67	23.82
035	DOUGLAS	Urban	842.30	354.05	298,215	1,434,750	159	53.32	37	2.58	167	11.64
069	LARIMER	Urban	2631.75	117.98	310,487	1,505,536	229	73.76	47	3.12	226	15.01
077	MESA	Urban	3345.69	44.19	147,848	727,129	128	86.58	32	4.40	113	15.54
101	PUEBLO	Urban	2396.77	67.11	160,852	794,036	174	108.17	33	4.16	383	48.23
123	WELD	Urban	4013.84	65.70	263,691	1,268,230	166	62.95	36	2.84	315	24.84
Level 3 Counties												
003	ALAMOSA	Rural	723.21	22.33	16,148	77,950	11	68.12	5	6.41	42	53.88
007	ARCHULETA	Rural	1354.53	8.91	12,070	60,140	7	58.00	1	1.66	4	6.65
019	CLEAR CREEK	Rural	396.53	22.76	9,026	45,480	22	243.74	4	8.80	2	4.40
023	COSTILLA	Frontier	1229.38	2.92	3,594	17,898	4	111.30	2	11.17	2	11.17
025	CROWLEY	Rural	800.27	6.70	5,365	28,617	10	186.39	2	6.99	1	3.49
037	EAGLE	Rural	1700.76	30.50	51,874	257,747	78	150.36	15	5.82	12	4.66

		Census Classification	Population Density		Population		Through December 31, 2012		5-yr (2008-2012)			
FIPS	County	Urban/Rural/ Frontier	Total Area (sq mi)	2012 Persons/ sq mi	2012	2008-12	PLWHA†	HIV Prevalence Rate	New HIV Count	New HIV Rate	GC Count	GC Rate
039	ELBERT	Rural	1,849.08	12.65	23,383	115,193	20	85.53	7	6.08	16	13.89
043	FREMONT	Rural	1533.09	30.52	46,788	234,368	141	301.36	10	4.27	33	14.08
045	GARFIELD	Rural	2958.23	19.25	56,953	279,240	49	86.04	12	4.30	23	8.24
047	GILPIN	Rural	150.15	36.57	5,491	26,881	5	91.06	1	3.72	2	7.44
049	GRAND	Rural	1868.53	7.60	14,195	72,786	14	98.63	1	1.37	4	5.50
055	HUERFANO	Frontier	1,592.37	4.14	6,596	34,218	6	90.96	1	2.92	7	20.46
067	LA PLATA	Rural	1700.44	30.82	52,401	256,485	42	80.15	7	2.73	70	27.29
071	LAS ANIMAS	Frontier	4773.27	3.13	14,945	76,451	14	93.68	2	2.62	11	14.39
073	LINCOLN	Frontier	2585.21	2.11	5,453	27,358	4	73.35	2	7.31	3	10.97
081	MOFFAT	Frontier	4755.86	2.78	13,200	67,435	8	60.61	1	1.48	8	11.86
087	MORGAN	Rural	1293.82	22.01	28,472	140,581	18	63.22	4	2.85	16	11.38
089	OTERO	Rural	1267.66	14.75	18,698	94,090	13	69.53	2	2.13	19	20.19
093	PARK	Rural	2209.36	7.26	16,029	80,574	17	106.06	3	3.72	9	11.17
097	PITKIN	Rural	970.37	17.79	17,263	85,243	31	179.57	2	2.35	3	3.52
103	RIO BLANCO	Frontier	3226.24	2.13	6,857	32,782	4	58.33	1	3.05	3	9.15
105	RIO GRANDE	Rural	913.10	13.08	11,943	59,981	9	75.36	2	3.33	26	43.35
107	ROUTT	Rural	2362.11	9.88	23,334	116,339	15	64.28	3	2.58	5	4.30
109	SAGUACHE	Frontier	3168.32	1.99	6,304	30,943	5	79.31	1	3.23	1	3.23
117	SUMMIT	Rural	618.92	45.31	28,044	139,257	47	167.59	6	4.31	13	9.34
121	WASHINGTON	Frontier	2522.90	1.89	4,766	23,931	3	62.95	0	0.00	3	12.54
125	YUMA	Frontier	2369.61	4.27	10,119	50,194	10	98.82	3	5.98	2	3.98

Level 4 Counties

009	BACA	Frontier	2558.48	1.47	3,751	19,055	1	26.66	0	0.00	5	26.24
011	BENT	Frontier	1541.07	3.75	5,773	31,009	2	34.64	3	9.67	6	19.35

		Census Classification	Population Density		Population		Through December 31, 2012		5-yr (2008-2012)			
FIPS	County	Urban/Rural/ Frontier	Total Area (sq mi)	2012 Persons/ sq mi	2012	2008-12	PLWHA†	HIV Prevalence Rate	New HIV Count	New HIV Rate	GC Count	GC Rate
015	CHAFFEE	Rural	1014.12	17.90	18,150	88,898	7	38.57	5	5.62	7	7.87
017	CHEYENNE	Frontier	1781.90	1.05	1,874	9,317	1	53.36	0	0.00	1	10.73
021	CONEJOS	Rural	1290.22	6.41	8,275	41,414	4	48.34	4	9.66	3	7.24
027	CUSTER	Frontier	739.24	5.75	4,249	20,993	2	47.07	0	0.00	2	9.53
029	DELTA	Rural	1149.44	26.48	30,432	152,801	14	46.00	2	1.31	10	6.54
033	DOLORES	Frontier	1076.92	1.85	1,994	10,239	1	50.15	0	0.00	2	19.53
051	GUNNISON	Frontier	3259.22	4.75	15,475	76,610	8	51.70	1	1.31	7	9.14
063	KIT CARSON	Frontier	2,162.43	3.74	8,094	40,817	3	37.06	1	2.45	2	4.90
065	LAKE	Rural	383.56	19.13	7,338	36,518	4	54.51	2	5.48	3	8.22
075	LOGAN	Rural	1845.31	12.26	22,631	112,801	10	44.19	0	0.00	12	10.64
083	MONTEZUMA	Rural	2035.80	12.49	25,431	126,971	11	43.25	2	1.58	28	22.05
085	MONTROSE	Rural	2246.42	18.13	40,725	203,643	14	34.38	2	0.98	21	10.31
091	OURAY	Rural	542.30	8.35	4,530	22,100	1	22.08	1	4.52	1	4.52
095	PHILLIPS	Rural	688.31	6.34	4,367	22,111	2	45.80	1	4.52	2	9.05
099	PROWERS	Rural	1645.37	7.53	12,389	62,748	7	56.50	0	0.00	15	23.91
113	SAN MIGUEL	Frontier	1290.76	5.87	7,580	37,000	4	52.77	0	0.00	1	2.70
119	TELLER	Rural	558.58	41.87	23,389	116,402	12	51.31	2	1.72	22	18.90

Level 5 Counties

053	HINSDALE	Frontier	1,123.35	0.72	810	4,133	2	246.91	0	0.00	0	0.00
057	JACKSON	Frontier	1,619.75	0.83	1,348	6,880	1	74.18	0	0.00	0	0.00
061	KIOWA	Frontier	1,785.90	0.81	1,444	7,098	0	0.00	0	0.00	0	0.00
079	MINERAL	Frontier	878.16	0.81	709	3,611	0	0.00	0	0.00	0	0.00
111	SAN JUAN	Frontier	388.99	1.77	690	3,463	4	579.71	0	0.00	0	0.00
115	SEDGWICK	Frontier	548.83	4.34	2,383	11,924	1	41.96	0	0.00	0	0.00

Colorado Department of Public Health and Environment		Census Classification	Population Density		Population		Through December 31, 2012		5-yr (2008-2012)			
FIPS	County	Urban/Rural/ Frontier	Total Area (sq mi)	2012 Persons/ sq mi	2012	2008-12	PLWHA†	HIV Prevalence Rate	New HIV Count	New HIV Rate	GC Count	GC Rate

^ Source of the 2008-2009 population estimates is the State Demography Office. Website: http://dola.colorado.gov/demog/

^^ Source of 2010-2012 population is US Census Bureau

†PLWHA data from 3q13 when the most recent known address variable was first available in order to accurately portray the prevalence in CO

†15 PLWHA with most recent state = "CO" but no county listed.

Counties are designated Urban when the county has a city of 50,000 people or more or Rural when the county does not have a city of 50,000 people of more. Frontier is a subset of rural with 6 or less persons per square mile.

Further investigated La Plata and Eagle Counties' designation of Urban and it was determined that these two counties should not be labeled Urban as the micropolitan area encompassed most, if not all of the county in question

Appendix 7: Program Collaboration and Service Integration (PCSI) Goals

CO-PCSI has the following goals and objectives.

Goal 1 - To Reduce New HIV Infections in Urban and Rural Counties
Objectives

- Lower the annual number of new HIV infections by 25%;
- Increase from 79% to 90% the percent of PLWHA who know their serostatus;
- Promote HIV home testing for high risk sub-populations;
- Increase access to free condoms at the community level and use POL to promote condoms by the at risk population;
- Create online educational content about STI and HIV for youth;
- Promote point of care for STI/HIV via community marketing, local radio, mobile and online channels;
- Implement evidence-based behavioral interventions tailored to meet unique needs of the at risk sub-populations;
- Promote access to non-occupational post exposure prophylaxis to at least 10% of MSM/BSM

Goal 2 – To Increase Access to Care and Improve Health Outcomes for STI Positive and HIV Negative Persons
Objectives (over five years)

- Screen 15% of the population of 19 – 34 for CT, GC, HIV and Hepatitis;
- 85% of newly diagnosed HIV positive persons linked to clinical care;
- Screen 80% of at risk population for mental health and substance use treatment and refer all positive screens for support services;
- 90% of sexually active MSM and BSM are tested for STIs and HIV at least twice a year;
- Promote VH vaccination of high risk MSM and BSM;
- Increase from 73% to 80% the proportion of PLWHA re-engaged in continuous care (at least 2 visits for routine HIV medical care in 12 months at least 3 months apart).

Goal 3 – To Reduce HIV-Related Health Disparities in Rural and Urban Areas of the State
Objectives (over five years)

- Identify and monitor relevant indicators of health disparities by ethnic group and high risk sub-populations;
- Incorporate prevention approaches that address social determinants of STI/HIV/VH;
- Plan a programmatic agenda to assess stigma and barriers to sexual health for HIV positive and high risks negative population
- Conduct annual needs assessment and gap analyses;
- Create online channels for community feedback.

Efforts funded under this program may include a wide menu of services delivered across networks of prevention and care around the state. Testing for STI/HIV/VH:

- Prioritizing access to prompt STI/HIV/VH treatment;
- Risk reduction counseling;
- Syringe exchange (goals, activities, key principles and monitoring questions);

- Sexual health education for youth with emphasis on reducing stigma;
- Outreach to special and marginalized population;
- Sexual trauma assistance, awareness and education;
- Referring for social services such as housing, transportation and food assistance;
- Promoting and enhancing distribution of free condoms;
- Culturally responsive services for linkage, retention, and quality of care;
- Behavioral interventions for at risk groups;
- VH immunization;
- Needle exchange programs;
- Partnerships for socio-economic and behavioral interventions;
- Tailored services for people living with HIV, mental illness and substance use; and

Directing such intensified prevention package to targeted groups with the highest burden of STI/HIV/VH.