

## Cost and Benefits of Selected Interventions for Healthcare

### AT A GLANCE

This Results First report identifies programs at the Department of Health (DOH) and the Human Services Department (HSD), as well as other evidence-based programs to address birth and chronic disease outcomes, offering recommendations to create a more cohesive system to improve the health of all New Mexicans.

New Mexico struggles with poor birth outcomes such as low birthweight and pre-term birth. These factors can impact a child throughout life due to increased risk for illness and developmental and learning delays. Teen pregnancies have a higher risk of poor birth outcomes, and while the state has reduced its teen pregnancy rate, poor birth outcomes remain a challenge.

The state also has high rates of cardiovascular disease and diabetes. Cardiovascular disease is the leading cause of death in New Mexico and nationally. Additionally, 37 percent of the state's population is either diabetic or prediabetic.

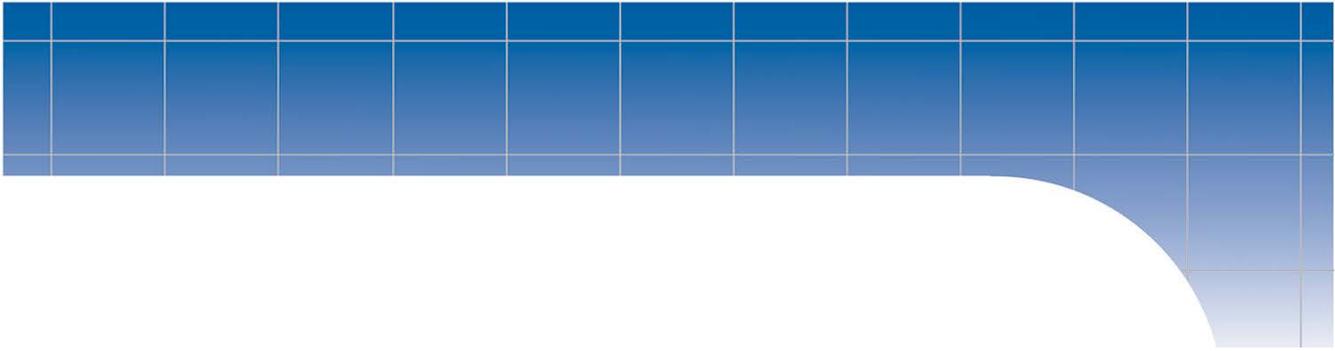
Both DOH and HSD, via Medicaid, offer programs to address birth outcome and chronic disease risk factors. However, a coordinated multi-agency strategy to deploy evidence-based programming is needed to further address birth outcomes and chronic disease.

*Poor birth and chronic disease outcomes will cost New Mexico billions of dollars over the next decade without more robust investment in proven interventions.*

**Results First** uses a nationally recognized, peer-reviewed model with three steps: (1) Use the best research to identify what works, what doesn't, and how effective various programs are in achieving policy goals. (2) Apply state-specific data to the national results. (3) Compare costs with projected benefits.



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## Background

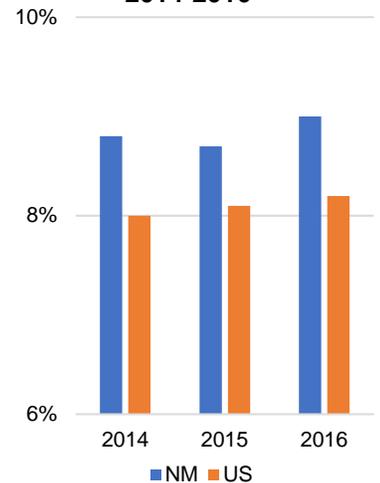
**New Mexico has increasingly poor birth outcomes compared to national data.**

***New Mexico's infant health indicators deteriorated over the last three years.*** In data reported by the Centers for Disease Control (CDC), New Mexico's rates of low birthweight and pre-term births increased between 2014 and 2016, as shown in chart 1 and chart 2. Pre-term birth can lead to various lifelong health issues including intellectual disabilities, cerebral palsy, respiratory problems, vision and hearing loss, and digestive problems. Low birthweight babies have increased risk for various health problems including a risk for infection as a newborn, as well as longer-term problems such as delayed motor skills and social development or learning disabilities. Decreasing risk factors for pre-term births and low birthweight is vital to ensuring children can learn and thrive to become productive adults, as well as reduce the need for support services from the state.

***While New Mexico's teen birth rate reached an all-time low in 2016, teen births are still a concern and can lead to worse birth outcomes.*** New Mexico's 2016 teen birth rate for women ages 15-19 was 29.8 per 1,000, the 7<sup>th</sup> highest rate in the country. The national teen birth rate for 2016 was 20.3 per 1,000. While this rate has dropped from 61.6 per 1,000 in 2005, demonstrating a substantial improvement, there is more to be done to reduce teen births. Research shows young maternal age is a factor in pre-term births, congenital malformations, neonatal mortality, and low birthweight. This may be due to factors such as a lack of adequate prenatal care and inadequate maternal nutrition. According to the federal Department of Health and Human Service (DHHS), teen childbearing has many potential negative effects for the parent and child including children with poorer educational, behavioral, and health outcomes. Additionally, teen childbearing cost U.S. taxpayers between \$9 billion and \$28 billion annually through public assistance payments, lost tax revenue, and increased expenditures for public healthcare, foster care, and criminal justice services. A 2015 LFC program evaluation estimated negative outcomes associated with teen births cost New Mexico taxpayers \$84 million annually.

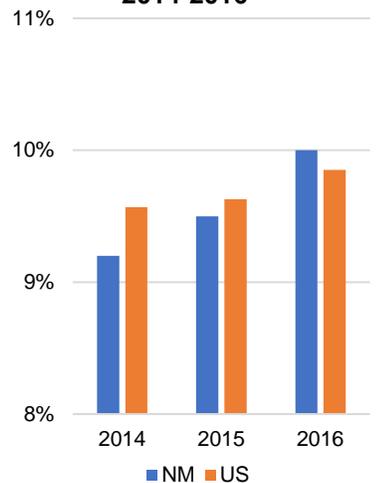
***New Mexico's breastfeeding rates surpass national averages, but these rates still decline significantly after age six months.*** The American Academy of Pediatrics recommends exclusive breastfeeding for the first six months, followed by continued breastfeeding while introducing foods through age 12 months and beyond. A 2012 review of research studies found substantial benefits for both mother and child from breastfeeding. For children, these benefits include less risk of infection, Sudden Infant Death Syndrome, Type 2 diabetes, among others. For mothers, the benefits of breastfeeding

**Chart 1. Low Birthweight NM vs. US Average 2014-2016**



Source: CDC

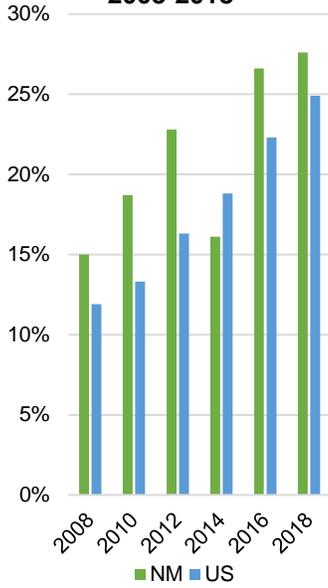
**Chart 2. Pre-Term Births NM vs. US Average 2014-2016**



Source: CDC



**Chart 3. Exclusive Breastfeeding Through Age 6 Months 2008-2018**



Source: CDC

include post-partum metabolic regulation and weight loss, stress relief, as well as reduced risk of Type 2 diabetes, cardiovascular disease, and breast and reproductive cancers.

However, both New Mexico and national breastfeeding rates decline significantly between the infant age of three and six months, as shown in chart 3. While New Mexico has higher breastfeeding rates than the national average, CDC data collected in 2018 shows of a cohort of children, 88 percent were breastfed at some point, but only 53 percent of these babies were still exclusively breastfeeding at age three months, and 28 percent were still exclusively breastfeeding at age six months. This drop in breastfeeding is also an issue nationally. Even though New Mexico’s WIC program won an award for its breastfeeding promotion and support activities, it is clear, like other states, New Mexico has more work to do to achieve recommended breastfeeding rates.

***New Mexico’s high food insecurity rates impact maternal child nutrition and health.*** New Mexico’s food insecurity rate for children to age 17 is 15.8 percent is high when compared to the national average of 12.9 percent. Research shows food insecurity can lead to various health issues for children including socioemotional, cognitive, motor, and neurophysiological delays tied to iron deficiency, as well as a higher risk of childhood obesity and chronic disease due to the toxic stress of food insecurity including cardiovascular disease, pulmonary disease, cancers, asthma, and autoimmune disease. Additionally, school-aged food insecure children had a higher likelihood for hyperactivity and inattention, as well as poor memory tied to poor diet high in sugar and low in iron. From a behavioral health perspective, food insecurity is a predictor of depression and suicidal ideation in adolescence and young adulthood, and child hunger could be related to depression later in life due to nutritional deprivation.

In the case of breastfeeding mothers, proper nutrition is a vital component in the positive effects of breastfeeding. The U.S Department of Agriculture and the CDC both emphasize the need for a nutritious diet while breastfeeding, including 450 to 500 additional kilocalories of healthy food per day compared to the nutritional needs of non-pregnant women. Nutrient deficiency can have detrimental effects on mothers and their children. For example, iron deficiency and its role in depression can affect mothers. Anemia is associated with post-partum depression presenting symptoms such as fatigue, low energy, and difficulty concentrating on daily tasks. As a result, maternal depression is linked to lower child health status and early childhood deficiencies due to nutritional deficiencies and unresponsive caregiving.

***While New Mexico’s rate of pregnant smokers is below the national average, smoking leads to poor outcomes for mothers and infants.*** According to the Pregnancy Risk Assessment and Monitoring System (PRAMS), approximately 10 percent of pregnant women reported smoking during the last three months of pregnancy in 2011. That same year, 9 percent of New Mexico PRAMS respondents reported smoking in the final trimester. While this is below the national average, smoking during pregnancy

contributes to various poor health outcomes for mother and child, including pre-term birth, low birthweight, and increased risk of cardiovascular disease and cancer for the mother. This rate dropped to 6 percent in 2016. However, reducing smoking amongst pregnant women should continue to be a focus in maternal infant healthcare.

**New Mexico has high rates of chronic disease such as diabetes and heart disease.**

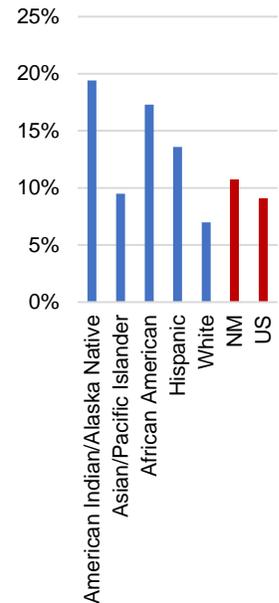
***Diabetes is a significant and costly disease for New Mexico.***

According to the Department of Health’s Behavioral Risk Factor Surveillance System, between 2012 and 2013, 10.7 percent of New Mexicans were diagnosed with diabetes, compared to national prevalence rate of 9.1 percent. Of this group, 20 percent were over age 60 and another 12 percent were ages 40-59. Geographically, northwestern New Mexico had the highest prevalence of diabetes among respondents (12 percent), followed by the southeast and southwest regions (each at 11 percent). Looking at the data based on ethnicity, Native Americans had the highest prevalence of diabetes (19.4 percent), followed by African Americans (17.3 percent) and Hispanics (13.6 percent). When looking at diabetes-caused deaths, again Native Americans had the highest mortality rate, followed by African Americans and Hispanics. It is noteworthy while Hispanics have the second highest prevalence of diabetes, this population’s mortality rate from diabetes is ranked third among all ethnic groups.

According to a study conducted by the American Diabetes Association, the total estimated national cost of diabetes in 2007 was \$174 billion, including \$116 billion in excess medical expenditures and \$58 billion in reduced national productivity. Medical costs attributed to diabetes include \$27 billion for care to directly treat diabetes, \$58 billion to treat the portion of diabetes-related chronic complications, and \$31 billion in excess general medical costs. The largest components of medical expenditures attributed to diabetes are hospital inpatient care (50 percent of total cost), complications of diabetes (11 percent), and physician office visits (9 percent). People with diagnosed diabetes incur average expenditures of \$11,744 per year, of which \$6,649 is attributed to diabetes. People with diagnosed diabetes, on average, have medical expenditures approximately 2.3 times higher than what expenditures would be in the absence of diabetes. Approximately \$1 in \$5 health care dollars in the U.S. is spent caring for someone with diagnosed diabetes, while approximately \$1 in \$10 health care dollars is attributed to diabetes. Indirect costs include increased absenteeism (\$2.6 billion) and reduced productivity while at work (\$20 billion) for the employed population, reduced productivity for those not in the labor force (\$0.8 billion), unemployment from disease-related disability (\$7.9 billion), and lost productive capacity due to early mortality (\$26.9 billion).

***While New Mexico’s heart disease rate is lower than the national average, it is still the state’s leading cause of death.*** In 2016, 3,777 New Mexicans died of heart disease, a rate of 148.3 per 100,000. Nationally, in 2015, the heart disease mortality rate was 168.5 per 100,000. While New

**Chart 4. New Mexico Diabetes Prevalence 2014-2016**

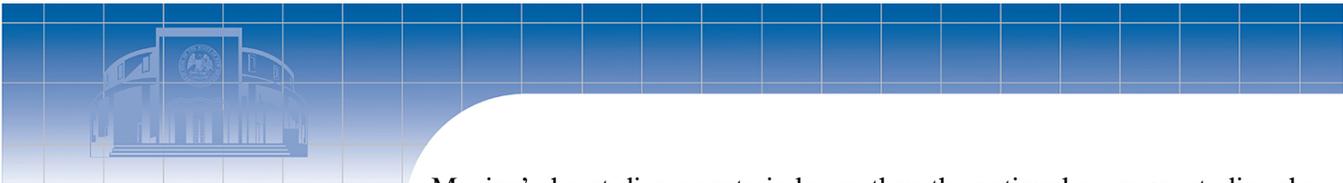


Source: DOH IBIS

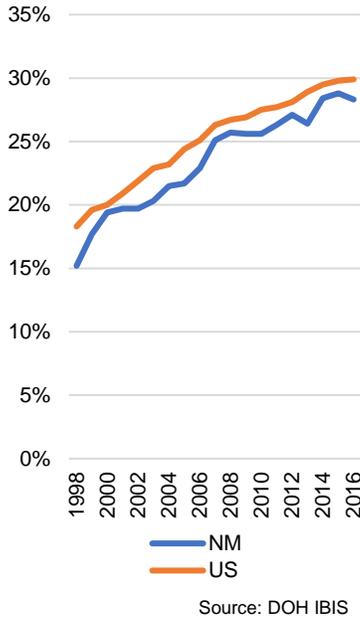
**Chart 5. Heart Disease Deaths per 100,000 New Mexico vs. United States 1999-2016**



Source: DOH IBIS



**Chart 6. Obesity Rates New Mexico vs. United States 1998-2016**

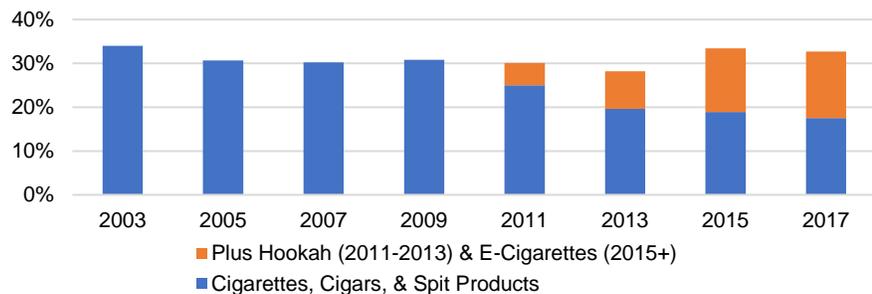


Mexico’s heart disease rate is lower than the national average, studies show national heart disease rates will greatly impact the economy if left unchecked. Additionally, the state has notable prevalence of risk factors contributing to heart disease such as diabetes, tobacco use, and obesity. All three of these heavily behavioral-driven factors in heart disease can be mitigated by evidence-based health prevention and promotion programs. Reducing incidence of heart disease will also help reduce ever-increasing healthcare costs.

**High obesity rates impact New Mexicans’ long term health and increase risk of chronic disease.** New Mexico’s obesity rates track closely to national rates, which have steadily increased since 1998 as shown in chart 6. However, as obesity rates increase nationally, prevalence of obesity-related conditions also increase such as Type 2 diabetes, high blood pressure, heart disease and stroke, cancer, and pregnancy-related conditions such as high blood sugar (gestational diabetes), high blood pressure (preeclampsia), and increased risk for cesarean section delivery.

**While New Mexico’s smoking rates have improved over the last 20 years, e-cigarette use, especially among youth, is eroding these gains.** Survey data collected between 2009 and 2017 shows a steady decrease in youth use of cigarettes, cigars, spit and chew products, and hookah. But in 2015 and 2017, the first years DOH collected data on e-cigarette use, almost 25 percent of young people who reported using tobacco products in the last month used e-cigarettes. Additionally, half of the survey respondents stated they had tried e-cigarettes, while 35 percent had tried traditional cigarettes. Lastly, flavored tobacco product use was most prevalent among New Mexicans under the age of 30.

**Chart 7. Youth Tobacco Product Use 2003-2017**



**NM’s 2017 adult smoking prevalence rate was 17.5 percent and the youth prevalence rate was 10.6 percent, both worse than the national average.**

While youth usage of e-cigarette products appears to be driving overall tobacco use rates, it is important to analyze smoking behavior for traditional cigarette and tobacco product users as well. Looking more closely at New Mexico cigarette smoking statistics, the state ranked 30<sup>th</sup> in the nation for people who identified themselves as current smokers in 2016. Of the people who self-identified as smokers, 32 percent are African American, followed by 17 percent who are Asian. Additionally, two-thirds of smokers were under age



55. Lastly, there was a higher prevalence of smoking in households earning less than \$15,000 in annual household income (28 percent) and for those having less than a high school education (25 percent).

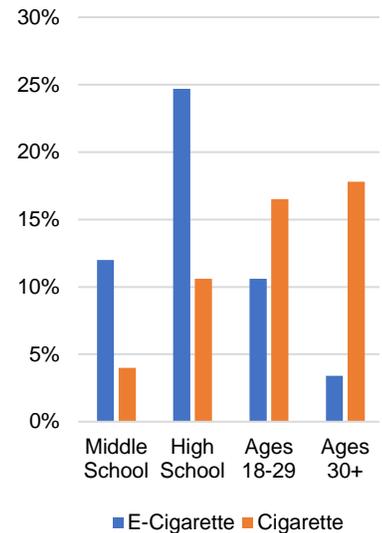
New Mexico has implemented various laws and public policies to reduce smoking behavior. In addition to smoking cessation and education campaigns, the state instituted various legal policies to reduce smoking prevalence including increased cigarette taxes and clean air policies to address the public health risk of smoking and exposure to second hand smoke. **Appendix C** shows when each of these policies went into effect as well as cigarette sales and smoking prevalence for youth and adults during the same time period.

**DOH is the primary funder of health programs in New Mexico, but Medicaid plays an important role, making coordinated partnership with HSD vital.**

**DOH and HSD identified programs totaling \$70 million in annual spending to address chronic disease and maternal infant health, 30 percent of which is evidence-based.** DOH and HSD identified various programs as part of a Results First program inventory for this report. Spending on these programs totaled \$70 million in FY17, with 30 percent of these programs deemed evidence-based through a literature review of available research. While it is unrealistic to expect 100 percent of program offerings to have been rigorously researched, increasing use of evidence-based programs and measuring the impact of these programs is an important step in improving health outcomes.

As expected, DOH is the financial and programmatic driver of programs designed to reduce the risk of poor health outcomes for adults and children. This is reflected by the number of DOH programs reviewed in this report and the total expenditures from these programs. However, as 40 percent of the state’s population is enrolled in Medicaid, HSD and DOH should strengthen coordination of early intervention programs related to birth outcomes and chronic disease. For example, DOH and Medicaid are offering similar programs for tobacco cessation or perinatal care, but there is not a uniform strategy to how these programs are deployed and there is potential for overlap or competition between these programs. HSD has the opportunity to increase awareness of evidence-based programs offered through managed care organizations and Medicaid providers, create consistency in these offerings, and evaluate the outcomes using clinical and financial data.

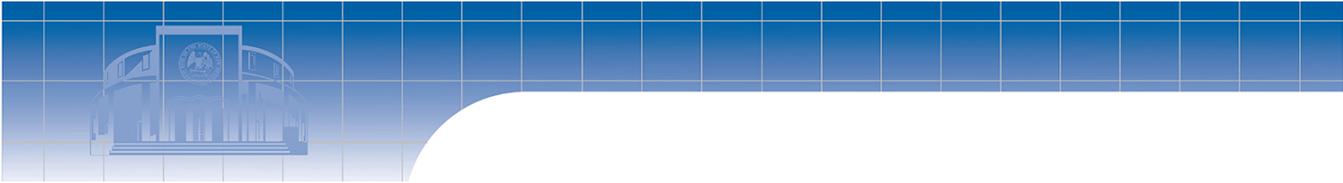
**Chart 8. 2017 NM Smoking and E-Cigarette Use**



Source: DOH 2017 YRRS and BRFSS

Department of Health Identified Evidence-Based Program Spending:  
**\$14 million**

Medicaid Identified Evidence-Based Program Spending:  
**\$9 million**



## Report Methodology

The scope of this project is focused on programs under the direction of the DOH and HSD and, as these agencies are the primary funders of health-related programs and services statewide. While other systems may offer evidence-based health programs including private sector employers, health plans, and local governments, these programs are outside the scope of this report. Additionally, this report is not an all-inclusive inventory of all healthcare interventions, but rather a focused report on select interventions for two specific areas of healthcare: maternal infant health and chronic disease.

This report is divided into two sections: maternal infant health and chronic disease and associated risk factors. Each section will outline currently available services, which programs are evidence-based, program funding, and number of clients served. The definitions of evidence-based, promising, and non-evidence-based programs included in this report are based first upon the Results First Clearinghouse Database (Clearinghouse). If a program is included in the Clearinghouse, the rating provided is used. If a program is included in the Results First model and not the Clearinghouse, for the purposes of this report, it is classified as evidence-based. If external reviews or meta-analyses validated the effects of a program not included in the Clearinghouse or the Results First model, these ratings were also noted, but any non-Results First return-on-investment analysis was addressed in the report narrative.

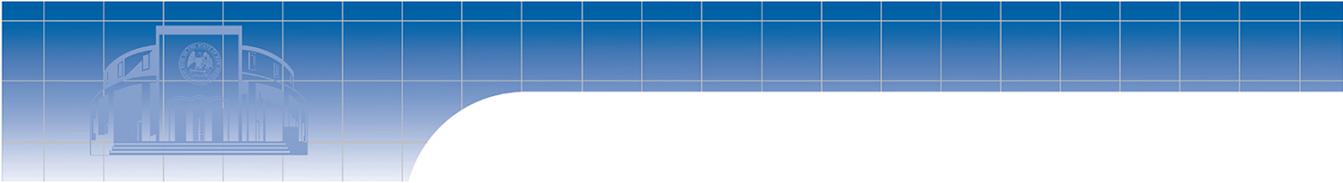
After determining if the program is evidence-based, the Results First approach to cost-benefit analysis is used, looking at return-on-investment (ROI) for New Mexico programs and other programs that could serve the same population or need. When a program is not operated in New Mexico, Washington State cost data is used to complete ROI calculations. The expected ROI is based upon programs run with high fidelity. If fidelity is not maintained, the ROI will likely decrease. If a program is not within the Results First model, but ROI data was available from a local program evaluation or research study, this ROI data is used and noted. The Results First approach is further described in **Appendix B**.

When analyzing the ROI of various programs that serve the same population or need, it is important to consider various factors. First, a program may exhibit a high ROI because program costs are low or because expected benefits are high. Second, a program with higher program costs may have strong benefits, but may result in a lower ROI due to this increased cost. For programs with ROI listed in this report, graphs of costs versus benefits are available in **Appendix D**. Third, it is important to look at the effects of different evidence-based programs from available research. Policy decisions may be impacted by how effectively a program impacts a desired outcome. Lastly, policymakers should consider resources required to implement programs for a specific need.

It is important to note in discussing evidence-based practices in the healthcare sector, there are various levels of protocols. For example, health screenings are



an evidence-based practice and Medicaid tracks these screenings as related to performance measurements for the Healthcare Effectiveness Data and Information Set (HEDIS). While screening and reporting on HEDIS measures are an important part of a healthcare system, these screening practices are not reviewed in this report.





## Maternal Infant Health

### Poor birth outcomes have expensive life-long consequences.

Long-term costs of poor birth outcomes can extend into various systems including healthcare, education, and social services. A systematic review of economic and cost studies of poor birth outcomes found the high rates of morbidity and mortality arising from pre-term birth and low birthweight impose an immense burden on health, education and social services, and families. Studies found pre-term or low birthweight infants are significantly more likely to be re-hospitalized and can later experience learning problems in school. Also, high neurosensory and cognitive disability rates among pre-term or low birthweight infants also have economic implications for social services requiring additional supports after discharge from the neonatal unit. In later life, developmental support services including day programming, case management, respite care, and residential care. All of these costs could be mitigated by reducing the risk of poor birth outcomes through evidence-based programs. Table 1 lists programs administered by DOH and HSD related to maternal infant health, as well as program models studied by the Washington

**Table 1. Maternal Infant Health Program Inventory**

| Program Name  | Evidence Base Rating | Program Operated in NM Via Medicaid or DOH | Total FY17 Participants or Persons Reached | Total FY17 Program Cost or Budget | Benefit-to-Cost Ratio |
|---|----------------------|--|--|-----------------------------------|-----------------------|
| Smoking cessation programs for pregnant women, Contingency management   | Strong Evidence      | N  |  |                                   | \$82                  |
| Smoking cessation programs for pregnant women, Nicotine replacement treatment                                 | Strong Evidence      | N  |  |                                   | \$50                  |
| Tobacco Quitlines: 1-800-QUIT-NOW in NM   | Strong Evidence      | Y  | 22 Pregnant Women                          | \$8,100 Estimate                  | \$57                  |
| Patient financial incentives for prenatal care: Baby Benefits offered through Presbyterian Medicaid MCO in NM | Promising            | Y  | 930  | \$216,000                         |                       |
| Enhanced prenatal care programs delivered through Medicaid  | Strong Evidence      | N  |  |                                   | \$18                  |
| Families FIRST  | Not Rated            | Y  | 2,166                                      | \$1,693,900                       |                       |
| Group prenatal care (compared to standard prenatal care)  | Strong Evidence      | N  |  |                                   | \$19                  |
| Non-Medicaid enhanced prenatal care programs for adolescents  | Strong Evidence      | N  |  |                                   | \$7                   |
| Other prenatal home visiting programs   | Strong Evidence      | N  |  |                                   | \$20                  |
| Long-Acting Reversible Contraception Access   | Promising            | Y  | 12,536                                     | \$7,838,426                       | See Narrative         |
| Women, Infants, and Children Program (WIC): Breastfeeding Support   | Not Rated            | Y  | 52,994                                     | \$1,207,936                       | N/A                   |
| Women, Infants, and Children Program (WIC): Nutritional Support   | Not Rated            | Y  | 48,000                                     | \$45,042,523                      | N/A                   |

Note: Program cost and participant data from CY17 for Medicaid-run programs.  
Source: LFC Analysis of DOH, HSD, and NM Results First Data



Institute of Public Policy (WSIPP) through meta-analysis of published research studies, showing the expected ROI of these programs when available.

**New Mexico offers various programs to address maternal infant health outcomes ranging from smoking cessation to home visiting to reproductive health.**

***There are various evidence-based, cost-beneficial programs targeted to pregnant women for smoking cessation.*** According to the CDC, smoking during pregnancy can increase miscarriage risk, pre-term birth, low birthweight, and perinatal death. Additionally, smoking can increase risk of Sudden Infant Death Syndrome and birth defects. Therefore, it is vital to address smoking through effective cessation programs to reduce poor birth outcomes.

The two most cost-beneficial programs for smoking cessation during pregnancy identified through Results First analysis using Washington State cost data are contingency management programs and nicotine replacement therapy for pregnant women. Contingency management involves offering rewards to patients who quit smoking and remained abstinent. Nicotine replacement therapy with counseling offered the second highest ROI for pregnant women for the program models WSIPP reviewed. Neither of these models are operated in New Mexico in a stand-alone format. Instead, pregnant women can access universal cessation services through DOH's 1-800-QUIT-NOW line or through Medicaid managed care organizations. As a result, neither HSD nor DOH track the costs or outcomes of pregnant and postpartum women participating in smoking cessation services. Additionally, in the case of DOH's quitline, pregnant women receive twice as many sessions (10 as opposed to five sessions), but DOH was unable to identify the costs to serve these women. LFC staff estimated the cost to serve this population, as well as the ROI, finding quitline costs per pregnant client were significantly higher than costs for targeted evidence-based cessation programs for pregnant women, diminishing the benefits obtained.

***Group prenatal care, such as CenteringPregnancy, offered at University of New Mexico Hospital, results in a high ROI.*** CenteringPregnancy, the primary program WSIPP reviewed for its meta-analysis of group prenatal care, results in positive effects related to reduced caesarean sections, low birthweight births, small-for-gestational age births, and pre-term births. CenteringPregnancy includes 10 sessions of education and clinical assessments in a group setting. On average, sessions are two hours long with groups of six to 12 women. UNM Hospital started offering CenteringPregnancy in December 2017, serving just over 100 women total, 39 of which were Medicaid clients.

***Financial incentives to increase compliance with prenatal care offers some positive benefits for New Mexico.*** Many programs exist to incentivize compliance with preventive care, and the literature shows positive results, especially in low-income and high-risk populations. However, incentives directed to pregnant women to increase compliance with prenatal



care has mixed results depending on the outcomes measured. For example, studies are consistently finding financial incentives increase adherence to prenatal care. However, these incentives do not often result in improved birth outcomes related to pre-term birth, small-for-gestational age, or perinatal death. One study did find incentive program participation was significantly associated with reduced risk of neonatal care unit admission. There is a need for further study of how incentives for prenatal care affect maternal infant outcomes.

Medicaid offers incentives for adherence to prenatal care through its MCOs. One program, Baby Benefits, offers monetary incentives for pregnant women who adhere to one early prenatal visit, 80 percent of required prenatal visits during the second and third trimesters, and one post-partum visit between 21 days and 56 days after delivery. Other MCO programs offer non-financial incentives, such as car seats, in exchange for prenatal care compliance, however these types of incentives have not been rigorously studied.

***Enhanced prenatal care, not offered in New Mexico, results in strong returns-on-investment.*** WSIPP reviewed two prenatal care models with a significantly positive ROI: group prenatal care and enhanced prenatal care for Medicaid clients and non-Medicaid adolescent clients. Enhanced prenatal care offered through Medicaid consists of non-clinical services such as care coordination, health education, risk assessment, psychosocial support, or nutritional counseling and are delivered by a nurse or social worker. Women are eligible for these programs during their pregnancy, with some benefits continuing through the first 12 months postpartum. Participants typically receive program benefits for 3-16 months, including both prenatal and postpartum services.

Non-Medicaid enhanced prenatal care programs for pregnant adolescents include intensive case management, group classes, or both, provided by either a paraprofessional or team of health service providers. Adolescent women are eligible for these programs if they are age 18 or under during their pregnancy. Participants typically receive services for four months during the prenatal period, with an average of 12 one-hour sessions.

While these prenatal programs are not offered in New Mexico, Results First analysis can yield a ROI based on proxy cost data from Washington State. Enhanced prenatal care delivered through Medicaid generates an \$18 ROI for every dollar invested. Non-Medicaid enhanced prenatal care for adolescents generated a \$7 ROI for every dollar invested.



**There are two Healthy Start providers in southern New Mexico: La Clinica de Familia and Ben Archer. La Clinica de Familia is not seeking a Healthy Start grant for FFY20.**

**Nurse Family Partnership (NFP), a strong evidence-based program cited for positive impact on child welfare and behavioral health, also garners positive results related to birth outcomes.**

**The Centennial Care Home Visiting Pilot Project beginning in 2019 will expand access to NFP for Medicaid clients.**

**Prenatal home visiting programs have a strong evidence base for reducing poor birth outcomes.** These programs are intended for women with high-risk pregnancies based on socioeconomic status, age, race, or other pregnancy risk factors. One program in this category is Healthy Start, a program started through the federal Health Resources and Services Administration (HRSA). Starting in 1991, HRSA funded a demonstration project of 15 sites across the country in areas with high infant mortality rates. The program has grown to 100 sites in 37 states and the District of Columbia. Healthy Start aims to reduce infant mortality rates, increase access to prenatal care, and removing barriers to healthcare access. HRSA operates a grant program for Healthy Start, providing grantees technical assistance to implement evidence-based practices, share knowledge between grantees, evaluate effectiveness, and work with community partners to improve health and social service systems. Healthy Start programs incorporate three components: care coordination, care between pregnancies, and home visiting. A study conducted of a Kansas Healthy Start program suggests the provision of maternal care coordination and home visitation in an integrated model during pregnancy may favorably impact women’s birth outcomes. WSIPP’s meta-analysis found prenatal home visiting programs garnered positive results in increasing access to prenatal care and reducing incidents of low birthweight, pre-term births, neonatal intensive care admissions, and infant mortality, among others. Two federally qualified health centers in New Mexico participate in Health Start, receiving a combined \$1.4 million in federal funding in 2017. However, federal funding volatility may put New Mexico’s continued participation in Healthy Start at risk.

**DOH operates a Medicaid-funded perinatal case management program called Families FIRST.** The program offers case management to high-risk pregnant women and children from ages 0 to 3, based on a W.K. Kellogg Foundation and Medicaid study from 1996. The purpose of perinatal case management services is to provide a voluntary home visit to eligible clients, to establish a medical home, and assist clients in gaining access to medical, social, and educational services necessary to foster positive pregnancy outcomes and promote healthy infants and children in New Mexico. Analysis of the effect of case management for pregnant Medicaid-enrolled women found strong effects of case management on risks of low birthweight and pre-term birth. The Families FIRST program was last evaluated in the 1990’s, finding cost savings from reduced hospital discharge costs and reduced incidence of low birthweight when compared to other Medicaid births. When examining telephonic case management, researchers found those receiving this service had babies with increased birth weights and saved \$500 in health care costs per person, leading to a \$4 ROI for every dollar invested. Another case management program for women on Medicaid found a reduction in neonatal intensive care unit admissions for children whose mothers received case management services, with a \$2 ROI.



***New Mexico's Woman, Infant, Child Program provides nutritious food to low-income pregnant, postpartum and breastfeeding women, infants, children.***

The Women, Infant, Child Program (WIC) is a federally-funded program offering breastfeeding and nutritional support for women and children. The program operates statewide, serving 52 thousand breastfeeding support clients and 48 thousand nutrition support clients in FY17 with almost a \$50 million budget. The U.S. Department of Agriculture (USDA) operates WIC at the federal level and DOH manages the program in New Mexico. A review of research found WIC participation was associated with positive birth outcomes, improved child nutrition, and higher utilization of healthcare. WIC experienced mixed results related to breastfeeding adherence and childhood obesity.

***Family planning can lead to improved birth outcomes.*** Research shows unintended pregnancies as well as poorly spaced pregnancies can lead to adverse birth outcomes. Family planning methods, including long-acting reversible contraception (LARC), can address these issues. Interventions such as the Colorado Family Planning Initiative which includes counseling and provision of no-cost or discounted contraception, including LARCs, has been shown to increase utilization of LARCs and reduce unintended pregnancy among teens and adults. A study of Colorado's LARC program calculated a \$5 ROI for every dollar invested in the program, the highest cost savings generated among various contraception methods analyzed including oral contraceptives, barrier methods, and injectables.

Under Medicaid, HSD increased both post-partum LARC access, as well as general access to LARCs. In 2013, HSD changed its policy to allow providers and hospitals to bill for LARCs provided during the inpatient delivery stay (immediate post-partum LARC), and in 2016, unbundled LARCs from the encounter rate to ensure women treated at Federally Qualified Health Centers, Rural Health Clinics, and Hospital-Based Rural Health Clinics have access to LARCs when electing to use such products. In CY16, Medicaid paid for over 12 thousand women to obtain LARCs, at a cost of almost \$8 million. HSD increased reimbursement rates for LARCs in FY19.

## **Recommendations**

***As part of a multi-agency strategic effort to improve birth outcomes, the Department of Health and the Human Services Department should***

Cross-inventory all programs and initiatives related to maternal infant health, identify opportunities to increase access to interventions for Medicaid clients, and remove access barriers and overlapping or duplicative efforts where possible to maximize deployment of evidence-based programs;

Develop a strategic plan with associated funding requirements and present this to the Legislature for FY21 which includes:

***In FY17, Medicaid paid for LARC and related services provided for 12,536 women, including 481 immediate post-partum LARC.***



Implementing a proactive smoking cessation program targeting pregnant women which includes counseling, nicotine replacement therapy, incentives for smoking abstinence, and post-partum follow-up to be administered in conjunction with prenatal care programs, collecting outcome data to monitor outcomes;

Creating a pilot project to implement enhanced prenatal care with case management and referral to additional services for high-risk pregnant women;

Realigning the Families FIRST program to meet Healthy Start requirements for evidence-based practices to leverage Medicaid funding to stabilize and grow this program;

Creating long-term funding streams for evidence-based programming by incentivizing managed care organizations and providers through higher reimbursement rates and risk-sharing agreements where improvements in birth outcomes garnered through these programs result in increased revenue sharing; and

Collecting data on post-partum LARC utilization, including length of pregnancy spacing, Medicaid births for LARC clients, and demographic data to determine how to expand access to post-partum LARC services, including offering LARC counseling at New Mexico WIC sites.

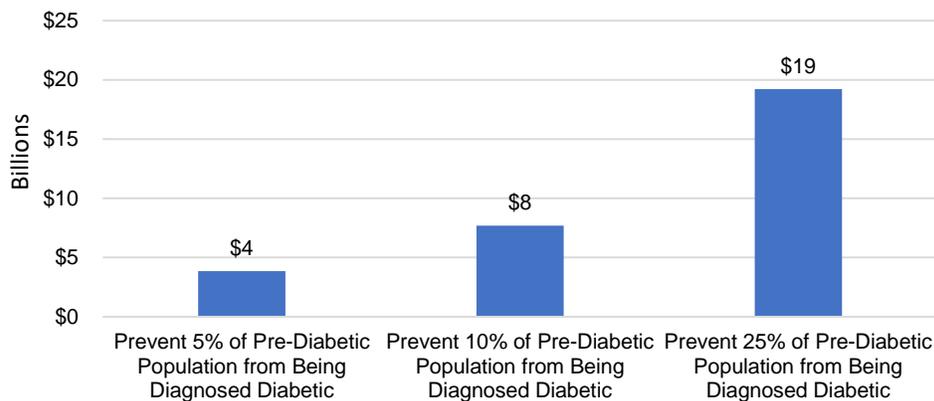


## Chronic Disease and Associated Risk Factors

**Diabetes and cardiovascular disease are costly health conditions leading to billions of dollars in healthcare costs, lost wages, and lost tax revenue.**

***Diabetes in New Mexico could cost over \$100 billion in healthcare and lost wages over the next 10 years if current prevalence estimates persist.*** In 2017, almost 11 percent of the state's population was diabetic, and another 26 percent was estimated to have pre-diabetes. New Mexico Results First estimates the total cost of diabetes over 10 years is \$140 thousand per person diagnosed with diabetes, mostly due to lost wages, tax revenue, and healthcare costs. For the 220 thousand diagnosed diabetics in New Mexico, these costs could exceed \$31 billion. While this is a significant economic cost on its own, these costs would more than double when considering New Mexico's large pre-diabetic population, estimated to be 549 thousand in 2017. However, if the state could successfully limit the number of pre-diabetics who become diabetic, the benefits would be significant, as noted in the chart 9.

**Chart 9. 10-Year Cost Savings of Preventing Diabetes**



Note: Uses 2017 pre-diabetic population estimate of 549 thousand.  
Source: LFC Analysis of DOH and NM Results First Data

***Cardiovascular disease costs are projected to double to over \$1 trillion nationwide by 2035.*** In an analysis produced for the American Heart Association, researchers looked at direct healthcare and indirect costs due to lost productivity for various cardiovascular conditions including coronary artery disease, hypertension, stroke, and atrial fibrillation absent any changes to prevent or reduce the prevalence and economic burden of these diseases. The study also projected national prevalence of cardiovascular disease to reach 45 percent by 2035. The study concluded effective research,



prevention, and treatment are needed to limit the growing burden of cardiovascular disease.

Table 2 lists programs administered by DOH and HSD related to cardiovascular disease and diabetes, as well as program models studied by the Washington Institute of Public Policy (WSIPP) through meta-analysis of published research studies, showing the expected ROI of these programs when available.

**Table 2. Chronic Disease Program Inventory**

| Program Name   | Evidence Base Rating | Program Operated in NM Via Medicaid or DOH | Total FY17 Participants or Persons Reached | Total FY17 Program Cost or Budget | Benefit-to-Cost Ratio |
|--|----------------------|--|--|-----------------------------------|-----------------------|
| Heart Disease and Stroke Prevention Program  | Strong Evidence      | Y  | Unknown                                    | \$503,170                         |                       |
| Chronic Disease Management Programs: My CD Chronic Disease Self-Management Program in NM   | Strong Evidence      | Y  | 665  | \$619,000                         |                       |
| Community Health Workers: Service Offered Through Medicaid in NM   | Promising            | Y  | 53,913                                     | Unknown                           |                       |
| Lifestyle Interventions to Prevent Diabetes: Long-Term, Intensive, Individual Counseling Programs  | Strong Evidence      | N  |  |                                   | \$7                   |
| Lifestyle Interventions to Prevent Diabetes: Shorter-Term Programs with Group-Based Counseling: National Diabetes Prevention Program in NM | Strong Evidence      | Y  | 54   | \$139,000                         | \$5                   |

Note: Program cost and participant data from CY17 for Medicaid-run programs. Source: LFC Analysis of DOH, HSD, and NM Results First Data

**The state offers various evidence-based and promising practices addressing diabetes and cardiovascular disease, but increased investment and barrier reduction could maximize impact of these programs.**

Lifestyle interventions offered individually and in group settings are cost-beneficial in reducing incidence of diabetes. All lifestyle programs target individuals at high risk for developing type 2 diabetes, providing them with counseling and other support. Results First categorizes these programs as long-term intensive programs with individual counseling or shorter-term programs with group-based counseling. Intensive individual programs typically include three years of active intervention with individual counseling sessions and supervised exercise classes. In the group context, shorter-term, lower-cost, group-based counseling programs are provided in community settings. Both program models are shown to be cost-beneficial through New Mexico Results First Analysis as shown in table 2.

**DOH operates the National Diabetes Prevention Program, a CDC-designed program with proven success to prevent or delay the onset of diabetes.** The National Diabetes Prevention Program (DPP) is an evidence-based intervention founded on the science of the Diabetes Prevention Program research study, a 27-center randomized clinical trial to determine whether lifestyle interventions or pharmacological therapy would prevent or delay the onset of diabetes in individuals at high risk for the disease. The DPP



lifestyle intervention was based on empirical literature in nutrition, exercise, and behavioral weight control, especially as it applied to the prevention of type 2 diabetes in diverse ethnic groups. The intervention was designed to achieve and maintain at least a 7 percent weight loss and 700 calories per week of physical activity in all participants. DPP reduced the risk of developing type 2 diabetes by 58 percent in adults with prediabetes. The National DPP is a curriculum of one session per week for 16 weeks and one (or more) per month for the remainder of the year.

DOH started operating DPP in 2012. The program is funded through general fund revenues and tobacco settlement funds. In FY17, there were 54 participants, with a program budget of \$139 thousand. New Mexico Results First analysis shows the National Diabetes Prevention Program garners a ROI of \$5 for every dollar invested, showing DPP to be a strong cost-beneficial evidence-based program. However, in Washington State, the ROI for DPP was \$31. New Mexico's smaller ROI for this program may be due to its limited economy of scale, which is affected by the small amount of prediabetics the program is reaching and higher cost per client. Other factors contributing to low participation rates include the structure of a year-long program with many sites only able to offer one class per year, implementation costs, time commitment for participants, transportation and the long-term format of the program, as well as timing and location of the classes. Compared to the estimated 549 thousand New Mexicans with prediabetes, the program only reached 54 people in FY17, or .0009 percent of this at-risk population. After studying the effects of DPP, CMS authorized the program as an eligible benefit under Medicare. However, DPP is not an eligible benefit under Medicaid. Increasing access to this program would help mitigate the state's increasing costs related to diabetes and related health complications.

***DOH's Heart Disease and Stroke Prevention Program promotes evidence-based protocols for providers to address cardiovascular disease risk.*** New Mexico's Heart Disease and Stroke Prevention Program (HDSP) promotes evidence-based practices based on systematic review of available studies demonstrating the effectiveness of these practices by the CDC's Community Preventative Services Task Force. The program, started in 2014, is 100 percent federally funded, and promotes practices including implementing clinical-decision support systems at the point of care, incorporating team-based care in health systems and interventions engaging community health workers, and implementing self-measured blood pressure monitoring interventions and interactive digital interventions for blood pressure self-management. FY17 funding for the program totaled \$500 thousand. HDSP reports its efforts resulted in the development of blood pressure self-management plans for 300 patients, improved blood pressure control at two of three participating federally-qualified health center systems, and 500 patients identified with potentially undiagnosed hypertension through electronic health records.

***The National Diabetes Prevention Program reduced the risk of developing type 2 diabetes by 58 percent in adults with prediabetes.***



***The My CD: Chronic Disease Management Program is an evidence-based program to help those with chronic disease manage and improve their health.***

My CD is DOH's deployment of the Chronic Disease Self-Management Program (CDSMP), developed by Stanford University and implemented in 48 states, the District of Columbia, and Puerto Rico, as well as in more than 20 countries. The intervention was designed to help individuals with chronic diseases gain confidence and skills to better manage their health through a six-week program led by trained facilitators addressing management of challenges such as pain, nutrition, exercise, medication use, emotional factors, and communication with physicians. New Mexico's program served 665 people in FY18, with a total budget of \$619 thousand from tobacco settlement funds and a federal Administration for Community Living Grant.

A national study of CDSMP, funded by the U.S. Administration on Aging, reviewed the impact of the program on 1,170 participants enrolled in CDSMP across 17 states between 2010 and 2011. The study found lower health care costs per participant including \$714 savings related to emergency room visits and hospital utilization, and \$364 in overall savings net of the program cost of \$350. Additionally, participants showed improvements in various areas including self-reported health, physical activity, depression, symptom management, communication with healthcare providers, and medication compliance. New Mexico's program cost was \$931 per participant in FY17, which was significantly higher than the \$350 cost identified in the national study of CDSMP. However, with higher enrollment of 876 in FY18, the cost per client dropped to \$639.

***Community health workers are a promising practice in chronic disease management.***

Community health workers (CHWs), sometimes called lay health workers, promotores de salud, community health representatives, or community health advisors, serve a variety of functions including providing outreach, education, referral and follow-up, case management, advocacy, and home visiting services. A 2014 randomized control study of community health workers and peer leaders delivering diabetes self-management support through a structured program showed both models resulting in reduced hemoglobin A1c levels, maintained at 18 months. Additionally, a meta-analysis of international research shows CHWs as a cost-effective model in addressing infectious disease. The Centennial Care waiver includes community health workers, employed by the managed care organizations as an administrative expense. In CY17, Medicaid community health workers served almost 54 thousand people.

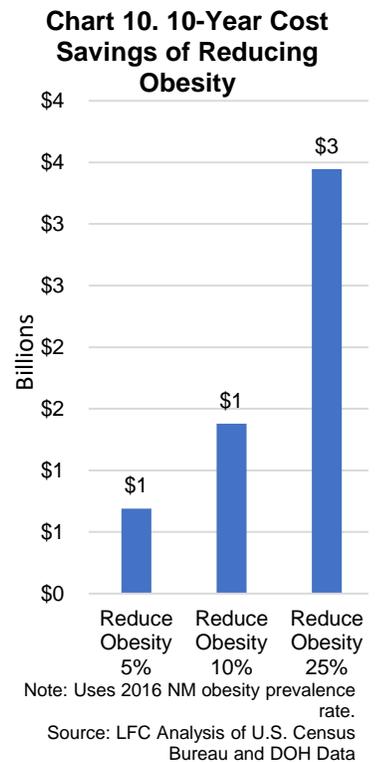


**Obesity is a significant risk factor for various chronic diseases.**

Increasing obesity rates will take a major toll on the economy due to chronic disease and disability. In a 2011 study on obesity trends in the United States and the United Kingdom, researchers estimated, as many as 9 million new cases of diabetes, 7 million new incidents of cardiovascular disease, and more than half a million new cases of cancers would be attributed to increasing obesity rates in these two countries. For the U.S., this increased chronic disease burden would result in as much as \$66 billion in additional annual healthcare costs.

LFC staff performed an analysis using Results First data to see what the impact would be of reducing obesity. Over a 10-year period, one avoided case of obesity would result in \$23 thousand in benefits from reduced healthcare costs, increased productivity resulting in wages, and increased tax revenues to the state and other government entities. Reducing the state’s obesity rate by 25 percent would garner over \$3 billion in benefits over 10 years, as shown in chart 10. While this analysis looks at obesity alone, it is important to consider avoiding obesity also impacts the economic burden of obesity-related diseases such as diabetes and cardiovascular disease, creating potential for a combined benefit.

Table 3 lists programs administered by DOH related to obesity prevention, as well as program models studied by the Washington Institute of Public Policy



**Table 3. Obesity Prevention and Intervention Program Inventory**

| Program Name  | Evidence Base Rating    | Program Operated in NM Via Medicaid or DOH | Total FY17 Participants or Persons Reached | Total FY17 Program Cost or Budget | Cost-Benefit Ratio |
|---|-------------------------|--|--|-----------------------------------|--------------------|
| Behavioral Interventions to Reduce Obesity for Adults: High-Intensity, In-Person Programs                   | Strong Evidence         | N  |  |                                   | \$6                |
| Behavioral interventions to reduce obesity for adults: Low-intensity, in-person programs                    | Strong Evidence         | N  |  |                                   | \$5                |
| Behavioral interventions to reduce obesity for adults: Remotely-delivered programs                          | Strong Evidence         | N  |  |                                   | \$11               |
| Behavioral Interventions to Reduce Obesity for Children: Low-Intensity, In-Person Programs                  | No Evidence of Benefits | N  |  |                                   | No Benefit         |
| Behavioral Interventions to Reduce Obesity for Children: Moderate- to High-Intensity, Face-to-Face Programs | No Evidence of Benefits | N  |  |                                   | No Benefit         |
| Behavioral Interventions to Reduce Obesity for Children: Remotely-Delivered Programs                        | No Evidence of Benefits | N  |  |                                   | No Benefit         |
| School-based health centers   | Strong Evidence         | Y  | 17,448                                     | \$3,311,950                       |                    |
| School-based programs to create a healthy food environment  | No Evidence of Benefits | Y  | 29,781                                     | \$105,425 Estimate                | No Benefit         |
| School-based programs to increase physical activity   | Strong Evidence         | N  |  |                                   | \$27               |

Source: LFC Analysis of DOH and NM Results First Data



(WSIPP) through meta-analysis of published research studies, showing the expected ROI of these programs when available.

**Interventions to address obesity offer positive results in addressing chronic disease risk factors related to diabetes and cardiovascular disease.**

***Behavioral interventions to reduce adult obesity are a cost-beneficial way to address diabetes and cardiovascular-related risks.*** Behavioral interventions for obesity include behavioral counseling, therapy, educational components, and often include diet and exercise components. The U.S Preventive Services Task Force reviewed evidence on weight loss and weight loss maintenance, finding intensive, multi-component behavioral interventions in obese adults could lead to clinically significant improvements in weight status, reducing incidence of type 2 diabetes on this population. WSIPP also reviewed various obesity intervention delivery models including fact-to-face programs at different intensity levels and remotely-delivered programs. While these types of programs are not operated in New Mexico by HSD or DOH, when modeled with Washington State cost data, behavioral intervention programs to reduce obesity garner positive ROI as shown in table 3. The programs resulted in positive effects on participant weight status, cholesterol, and blood pressure.

***Programs to prevent childhood obesity are more effective than targeted interventions once obesity is present.*** A review of research on increased physical activity, reduced sedentary behavior, and increased healthy dietary habits found interventions to prevent obesity in children can have significant effects on physical activity and dietary behaviors. Additionally, strategies to reduce unhealthy behaviors such as reducing sedentary behavior and consumption of dietary fat appeared to be more effective than promoting positive behaviors such as increasing physical activity and consumption of fruits and vegetables.

Results First analysis had similar results, showing no effect from school-based programs aiming to create a healthy food environment like the Healthy Eating in Schools initiative funded as part of DOH's Healthy Kids Health Communities program. However, school-based programs to increase physical activity beyond physical education offerings resulted in a potential ROI of \$27 per dollar invested. DOH also invests in fostering school-based environmental modifications to encourage physical activity through its Healthy Kids Health Communities program. However, this program is not structured to educate children on healthy physical activity or reducing sedentary behavior. Modifications to add education and increased physical activity during the school day would more closely align this initiative with evidence-based practices with a strong ROI.

**School-based health centers are a strong evidence-based practice to increase healthy behaviors among school-aged youth.**

School-based health centers (SBHCs) offer multidisciplinary teams of providers, including physicians, nurse practitioners, registered nurses, physician assistants, and social workers providing a comprehensive range of primary care, preventive care, and early intervention services to children from elementary school through high school. In a 2010 study, researchers sought to validate the effects of having access to a SBHC on the general population of school-aged children. The study found students accessed SBHCs a little more than once per year, usually for the treatment of acute illness or for routine physical examinations. While the study found no significant effects on the general student population based on the mere presence of a SBHC, through increased health education and promotion activities offered through the SBHC, there were positive effects for those students using SBHC services. These effects included greater student satisfaction with overall health, more physical activity, and greater consumption of healthy food by SBHC student clients when compared to non-clients. There are currently 70 school-based health centers, 48 funded by DOH, in New Mexico.

**Smoking and smoking-related diseases continue to be extremely costly to individuals and the overall economy.**

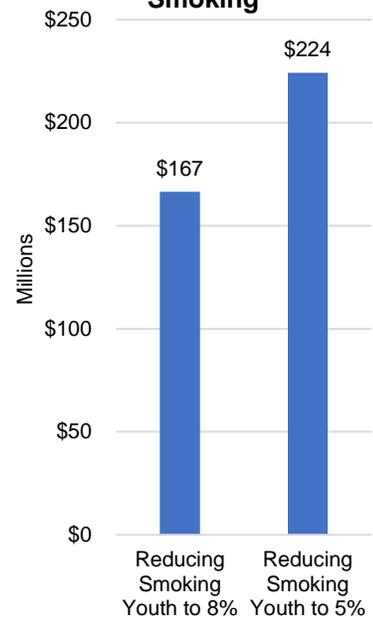
**Preventing youth from smoking could yield hundreds of millions of dollars in benefits for individuals and the state.**

In 2017, DOH reported 10.6 percent, or 52 thousand youth smoked. Over a 10-year horizon, this group of youth smokers could cost \$800 million in lost earnings and healthcare costs. By reducing youth smoking prevalence to 8 percent, \$167 million could be saved, while reducing youth smoking to 5 percent could save as much as \$224 million, as shown in chart 11. Also, by reducing lost earnings due to smoking, the state would gain tax revenues.

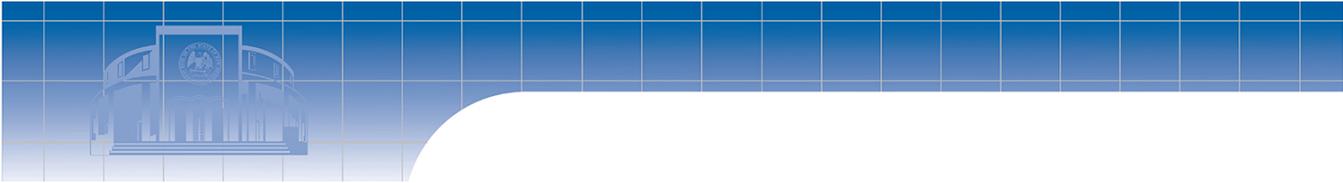
On a broader scale, DOH, in collaboration with the CDC and The Campaign for Tobacco-Free Kids (CTFK), reports smoking costs \$844 million in direct healthcare costs and \$597 million in lost productivity annually. Over a 50-year horizon, these economic and healthcare costs would total \$72 billion dollars.

Table 4 lists programs administered by DOH and HSD related to smoking cessation, as well as program models studied by the Washington Institute of Public Policy (WSIPP) through meta-analysis of published research studies, showing the expected ROI of these programs when available.

**Chart 11. 10-Year Cost Savings of Avoiding Smoking**



Note: Uses 2017 NM youth smoking prevalence.  
Source: LFC Analysis of U.S. Census Bureau, DOH IBIS, and New Mexico Results First Data



**Table 4. Tobacco Cessation Program Inventory**

| Program Name  | Evidence Base Rating | Program Operated in NM Via Medicaid or DOH | Total FY17 Participants or Persons Reached | Total FY17 Program Cost or Budget | Benefit-to-Cost Ratio |
|---|----------------------|--|--|-----------------------------------|-----------------------|
| Mass media campaigns against tobacco use- Adult Effect          | Strong Evidence      | Y  | 171,697,398 impressions                    | \$707,500                         |                       |
| Mass media campaigns against tobacco use- Youth Effect          | Strong Evidence      | Y  | 148,856                                    | \$1,000,000                       | \$576                 |
| Smoke-free policies for indoor areas                            | Strong Evidence      | Y  |  |                                   |                       |
| Smoke-free policies for outdoor areas                           | Promising            | Y  |  |                                   |                       |
| Statewide comprehensive tobacco programs                        | Strong Evidence      | Y  | Unknown                                    | \$6,391,138                       |                       |
| Tobacco cessation therapy affordability                         | Strong Evidence      | Y  |  |                                   |                       |
| Tobacco Quitlines: 1-800-QUIT-NOW in NM                         | Strong Evidence      | Y  | 8,633                                      | \$1,591,900                       | \$127                 |
| Tobacco Taxes: 10% increase in cigarette tax (effect on adults) | Strong Evidence      | Y  |  |                                   | \$391                 |
| Tobacco Taxes: 10% increase in cigarette tax (effect on youth)  | Strong Evidence      | Y  |  |                                   | \$242                 |

Note: Program cost and participant data from CY17 for Medicaid-run programs.  
Source: LFC Analysis of DOH and NM Results First Data

**A 2015 CDC study found Medicaid clients and uninsured persons smoked at rates more than double those for the privately insured or Medicare clients.**

**Based on NM's adult smoking prevalence rate of 17.5 percent, LFC estimates as many as 296 thousand smokers are enrolled in Medicaid.**

**The state offers a comprehensive tobacco prevention and cessation program but increased investment could maximize impact.**

**Comprehensive tobacco programs are evidence-based and cost-effective at reducing smoking prevalence.** The CDC published best practices for comprehensive tobacco control programs, emphasizing these programs should include state and community interventions, mass-reach health communication interventions, cessation interventions, surveillance and evaluation, and infrastructure administration and management. DOH's Tobacco Use Prevention and Control Program (TUPAC) incorporates all of the CDC's best practices. Additionally, evidence reviewed by the Community Preventive Services Task Force indicates these programs reduce the prevalence of tobacco use among adults and young people, reduce tobacco product consumption, increase quitting, and contribute to reductions in tobacco-related diseases and deaths. However, TUPAC's program does not incorporate tobacco cessation services through Medicaid, which excludes a sizeable segment of the state's population in the planning, funding, and carrying out of broadly coordinated tobacco cessation programming.

Economic evidence indicates comprehensive tobacco control programs are cost-effective, and savings from averted healthcare costs exceed intervention costs. Additionally, increases in program funding are associated with increases in program effectiveness. A 2011 study on Washington State's tobacco prevention and control program found more than a \$5 ROI for every dollar invested in this program through reduced hospitalizations for heart disease, stroke, respiratory disease, and cancer caused by tobacco use. A 2013 study of



California's tobacco control program found the program cost \$2.4 billion between 1989 and 2008, but reduced healthcare costs by \$134 billion over the same 10-year period.

Research published in 2011 found adequately funding state tobacco prevention programs could save as much as 20 times the cost of implementing these programs. The CDC made recommendations for tobacco program funding levels in 2014. For New Mexico, the CDC recommends annual tobacco prevention program funding of \$22.8 million. In FY17, tobacco program funding through TUPAC and Medicaid totaled \$7 million. With the CDC reporting smoking rates of Medicaid clients and the uninsured more than twice as high as rates for the privately insured and Medicare patients, increased attention on smoking prevention and cessation in the Medicaid program will have to be a key component in further reducing the state's smoking rates among youth and adults alike. However, Medicaid's smoking cessation offerings differ between the managed care organizations, and the state is not effectively leveraging tobacco settlement dollars to draw down federal Medicaid matching funds to increase smoking cessation efforts targeted at this population.

***Tobacco quitlines are a strong evidence-based program for smoking cessation.*** Quitlines offer telephone counseling, frequently with nicotine replacement, to assist clients to quit smoking. DOH operates the 1-800-QUIT-NOW tobacco quitline with services in English and Spanish, offering coaching, nicotine patches, lozenges, and gum, through phone and web based support. In research compiled by the Robert Wood Johnson Foundation, evidence suggests proactive quitlines, where the cessation specialist schedules follow-calls are more effective than a reactive model where all engagement is driven by the client. Also, three or more sessions are more effective, and phone counseling combined with nicotine replacement therapy (NRT) is more effective than NRT alone. DOH's quitline is a proactive model, where participants receive 5 follow-up sessions after initial contact, 10 session if the participant is pregnant. In FY17, the quitline served 8,621 clients on a budget of \$1.6 million funded through tobacco settlement funds. New Mexico Results First Analysis shows 1-800-QUIT-NOW has a ROI of \$127 for every dollar invested.

***Mass media campaigns to prevent and reduce tobacco use can be highly effective.*** Mass media campaigns use television, print, digital or social media, radio, and other displays to target messages related to smoking prevention and cessation to large audiences. According to the Robert Wood Johnson Foundation, mass media campaigns reduce tobacco use among adults and youth, and reduce or delay tobacco use initiation among young people. Such campaigns can also reduce tobacco consumption, increase quit rates, and increase use of cessation services. Campaigns with messages that include quitline information increase quitline use. Emotional messages such as personal testimonials with surprising narratives, intense images, and sounds or graphic portrayals of negative health consequences appear more effective than other approaches.

***Medicaid paid \$1.4 million to assist 8,108 clients with smoking cessation in 2017.***

***Research from the Centers for Disease Control and Prevention (CDC) suggests campaigns must reach 75 percent to 85 percent of their target audience and last at least 18 to 24 months to affect behavior. Effects on quit attempts may fade shortly after a campaign ends.***



DOH operates two mass media campaign programs, one targeted at adults and one targeted at youth. The adult campaign includes print, digital, and radio media, whereas the youth campaign focuses mostly on social media, as well as youth events. However, DOH measures the impact of these campaigns differently. For DOH's adult campaign, impact is measured using impressions, which are defined as the number of *times* a piece of media is viewed. Youth campaign impact is measured by the number of people reached, which counts the number of *people* who viewed the campaign. DOH reports tobacco campaigns targeted at adults resulted in 171 million impressions and the youth campaign reached 149 thousand people in FY17. How impressions and reach convert to impact through smoking cessation or prevention is almost impossible to quantify in the absence of additional data such as surveys or data collection from quitline clients. Therefore, Results First analysis to determine the ROI of adult effects from mass media campaigns was not possible.

### **Various public policies also positively impact tobacco usage.**

***Taxation of tobacco products is a highly cost-beneficial policy to address smoking activity among adults and youth.*** A 2011 review of studies found tobacco taxation, passed on to consumers in the form of higher cigarette prices, has been recognized as one of the most effective population-based strategies for decreasing smoking and its adverse health consequences. On average, a price increase of 10 percent on a pack of cigarettes would reduce demand for cigarettes by about 4 percent for the general adult population in high income countries. Additionally, New Mexico Results First analysis shows a 10 percent increase in cigarette taxes would result in a \$391 return-on investment from benefits gained through reduced smoking prevalence. For youth, the expected ROI would be \$231. All states and some U.S. territories have a cigarette excise tax ranging from \$0.17 per pack in Missouri to \$4.50 per pack in the District of Columbia. New Mexico's cigarette tax is \$1.66 per pack, making the state the 26<sup>th</sup> highest in the nation. This analysis does not address the impact of e-cigarette taxation, and research on taxation of these products is minimal. However, nine states and the District of Columbia tax e-cigarette products. New Mexico does not tax e-cigarettes.

### ***Clean air policies demonstrate positive effects in reducing secondhand smoke exposure with limited economic detriment.***

The major public health purpose of enacting clean indoor air laws is to protect nonsmokers from involuntary exposure to secondhand smoke. A secondary benefit is to reduce smoking rates among current smokers. Substantial evidence demonstrates clean indoor air laws are effective in protecting nonsmokers from secondhand smoke exposure, and some data also suggests clean indoor air laws have a positive effect in reducing the number of cigarettes smoked per day. Additionally, the implementation of clean air policies have had little negative impact economically. California was one of the first states to promulgate comprehensive clean indoor air laws, first for restaurants in 1995 and then for bars in 1998. Subsequent economic analysis of tax revenue data from 1990 to 2002 indicate an increase in revenues for both restaurants and bars and any reduction in revenue from smokers was offset by the increased presence of nonsmokers in the same establishments. Similar effects



were seen in New York City in response to the 1995 Smoke-Free Air Act, with an increase in taxable sales from both eating and drinking establishments and hotels

The Dee Johnson Clean Air Act, enacted in 2007, is New Mexico's clean air policy, which designates where smoking can still occur. Most public places must be smoke-free under this law except for venues such as casinos and other gaming facilities, designated outdoor smoking areas, and smoking designated hotel rooms, which can be no more than 25 percent of a hotel's total room capacity.

***Making tobacco cessation products affordable increases access and use of these products, contributing to increased quit rates.***

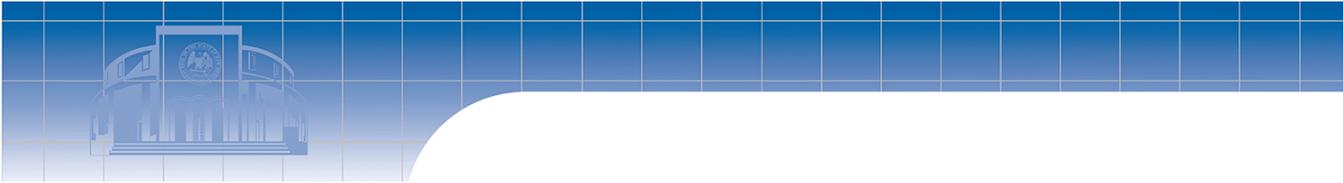
Evidence compiled by the Robert Wood Johnson Foundation indicates interventions that eliminate out-of-pocket costs for smokers in the process of quitting show an increase in quit attempt rates, use of smoking cessation treatments, and success in quitting. Additionally, states with expanded Medicaid coverage for tobacco cessation therapies have higher levels of cessation treatment and higher quit rates than states with lower levels of coverage. Expanded Medicaid coverage for tobacco cessation therapies may also reduce smoking among women before they become pregnant. New Mexico's two primary access points for tobacco cessation products are DOH's 1-800-QUIT-NOW quitline and Medicaid. Cessation products obtained through the quitline are 100 percent paid by DOH through tobacco settlement and federal funds. Medicaid also covers tobacco cessation products, however, while there are no copays for these products, coverage levels are not universal across managed care organizations (MCO). For example, one MCO allows various tobacco cessation product options for 180 days per year, while another MCO offers products for one cycle and then members can be re-enrolled if they do not self-report quitting at six-month follow-up. These disparate policies could indirectly create barriers to accessing appropriate amounts of tobacco cessation products to successfully quit tobacco use.

## **Recommendations**

***As part of a multi-agency strategic effort to improve chronic disease outcomes, the Department of Health and the Human Services Department should***

Cross-inventory all programs and initiatives related to diabetes and cardiovascular disease prevention and intervention, identify opportunities to increase access to interventions for the Medicaid population, and remove access barriers and overlapping or duplicative efforts where possible to maximize deployment of evidence-based programs;

Develop a strategic plan with associated funding requirements and present this plan to the Legislature for FY21 that creates a comprehensive prevention and intervention system providing consistent access to evidence-based programs to address the risk factors and management of chronic diseases such as cardiovascular disease and diabetes by:

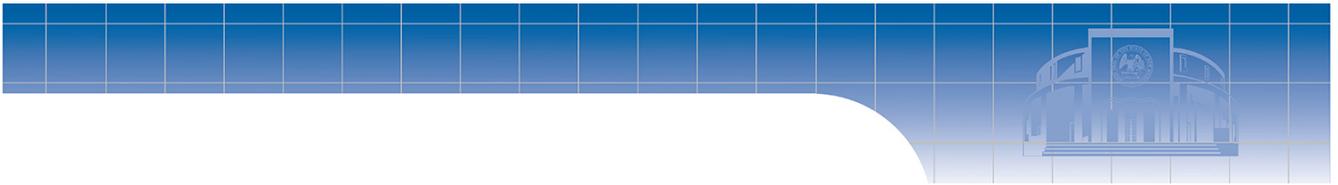


Requiring managed care organizations to contract with DOH to offer the National Diabetes Prevention Program, the MY CD: Chronic Disease Management Program, and 1-800-QUIT-NOW tobacco cessation services to Medicaid clients amending the state Medicaid plan or Medicaid waiver as necessary;

Creating long-term funding streams for evidence-based programming by incentivizing managed care organizations and providers through higher reimbursement rates and risk-sharing agreements where improvements in chronic disease prevalence garnered through these programs result in increased revenue sharing;

Investing tobacco settlement funds to increase cessation efforts among the Medicaid population; and

Collecting performance data to identify utilization, efficiency, and effectiveness of these prevention and intervention programs.





## APPENDICES

### Appendix A: Acknowledgements

#### **Project Team:**

Maria D. Griego, Lead Program Evaluator, Legislative Finance Committee

Sarah Dinces, Ph.D., Consulting Program Evaluator, Legislative Finance Committee

#### **This project would not have been possible without the support of:**

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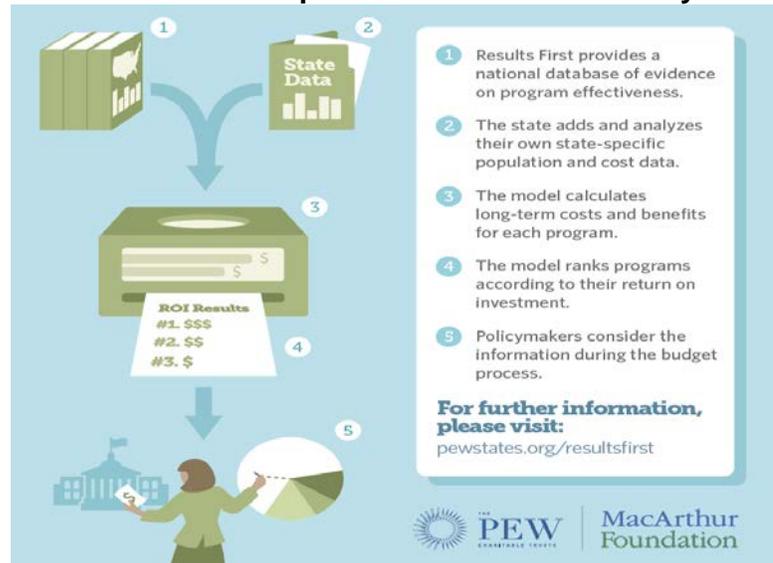
We would also like to acknowledge the participation of program managers and subject matter experts at DOH and HSD for their contributions to this report.

This report is a matter of public record and will be available on the LFC website:  
[https://www.nmlegis.gov/Entity/LFC/Evaluation\\_Unit\\_Reports](https://www.nmlegis.gov/Entity/LFC/Evaluation_Unit_Reports).

## Appendix B: History and Background of the New Mexico Results First Project

The Washington State Institute for Public Policy (WSIPP) utilizes a cost-benefit model to inform decisions of policy makers so they can invest in evidence-based programs delivering the best results for the lowest cost. WSIPP has attributed a number of positive outcomes to the use of the approach on which Results First is based, including a savings of \$1.3 billion per biennium and improved outcomes in the state of Washington.

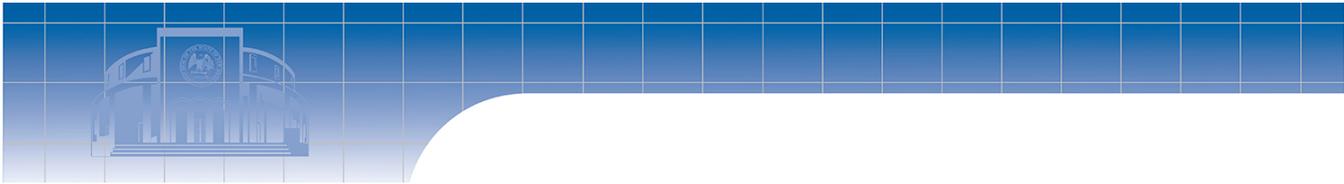
### Results First: Five Steps to Evidence-Based Policy Making



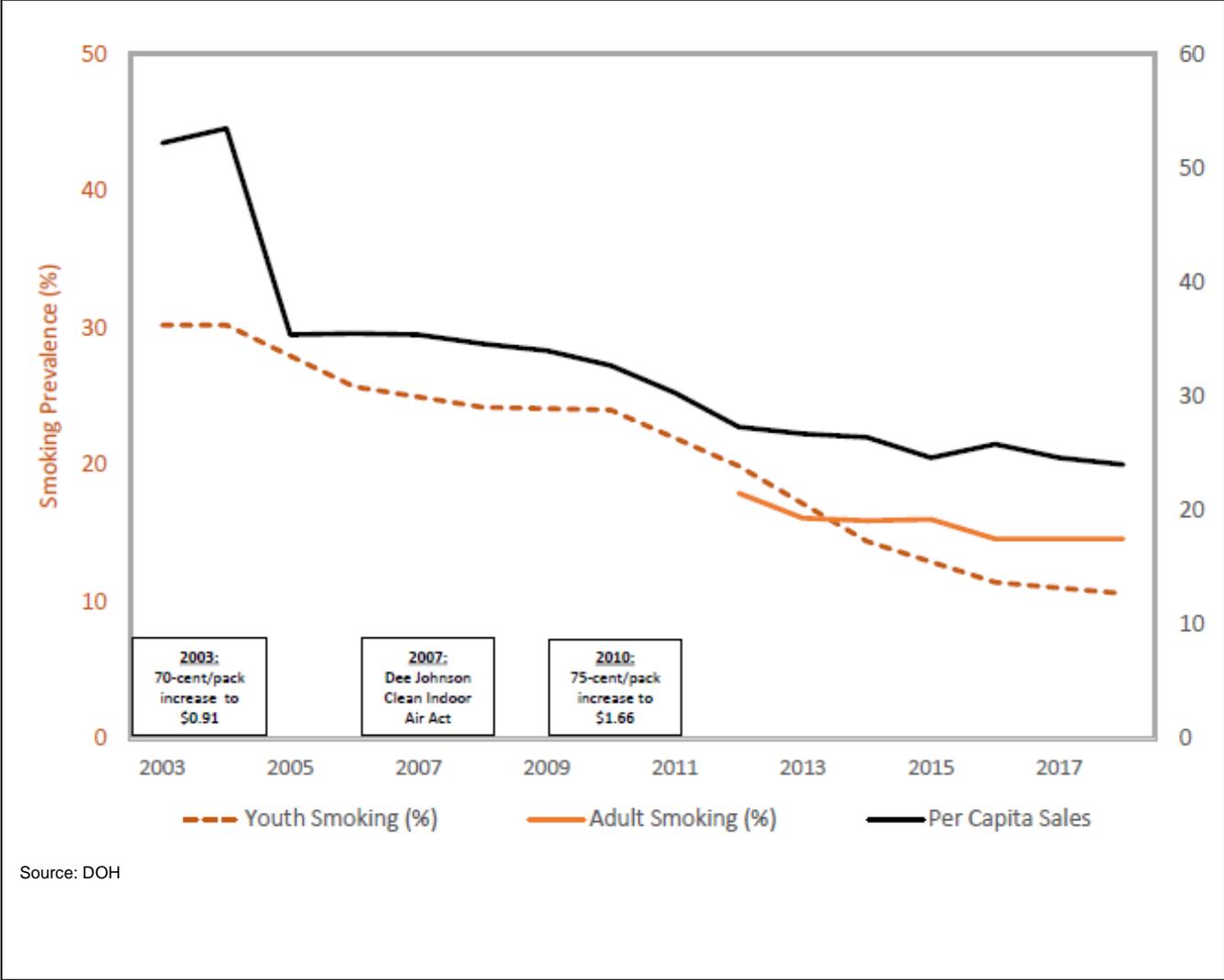
Source: Adapted from the Pew Charitable Trusts

**Cost-Benefit Analysis of Evidence-Based Programs.** The result of the cost-benefit analysis conducted in this report indicates New Mexico could obtain favorable outcomes related to chronic disease and maternal infant health, if the state successfully implements evidence-based programs. The cost-benefit estimates were constructed conservatively to reflect the difficulty that can be encountered when implementing programs at scale. Likewise, well-run evidence-based programs can achieve reported or better results while poorly run programs will not. Some of these programs are currently implemented in New Mexico and the results of this study present the outcomes these programs should be producing based on rigorous research. Several factors need to be considered when interpreting findings. Our analysis is based on an extensive and comprehensive review of research on program outcomes as well as an economic analysis of the benefits and costs of investments in evidence-based programs. The results indicate New Mexico can obtain favorable outcomes if it can substantially and successfully increase its use of several evidence-based programs. The predicted costs, benefits, and return on investment ratios for each program are calculated as accurately as possible but are, like all projections, subject to some level of uncertainty. Accordingly, it is more important to focus on the relative ranking of programs than small differences between them; some programs are predicted to produce large net benefits and represent ‘best buys’ for the state while others are predicted to generate small or even negative net benefits and represent neutral or poor investment opportunities.

**Evidence-Based Program Implementation in Other States through Results First.** States have made substantial progress in their implementation of Results First over the past few years and their use of the process to inform and strengthen policy and budget decisions. These efforts have resulted in millions of dollars in targeted funding, cost-savings, and cost-avoidance that will improve long-term outcomes for citizens. In areas such as reducing recidivism, strengthening families, improving health status, and preparing children for the future. LFC staff has published five other Results First reports located on the LFC website: [https://www.nmlegis.gov/entity/lfc/Evaluation\\_Unit\\_Reports](https://www.nmlegis.gov/entity/lfc/Evaluation_Unit_Reports).

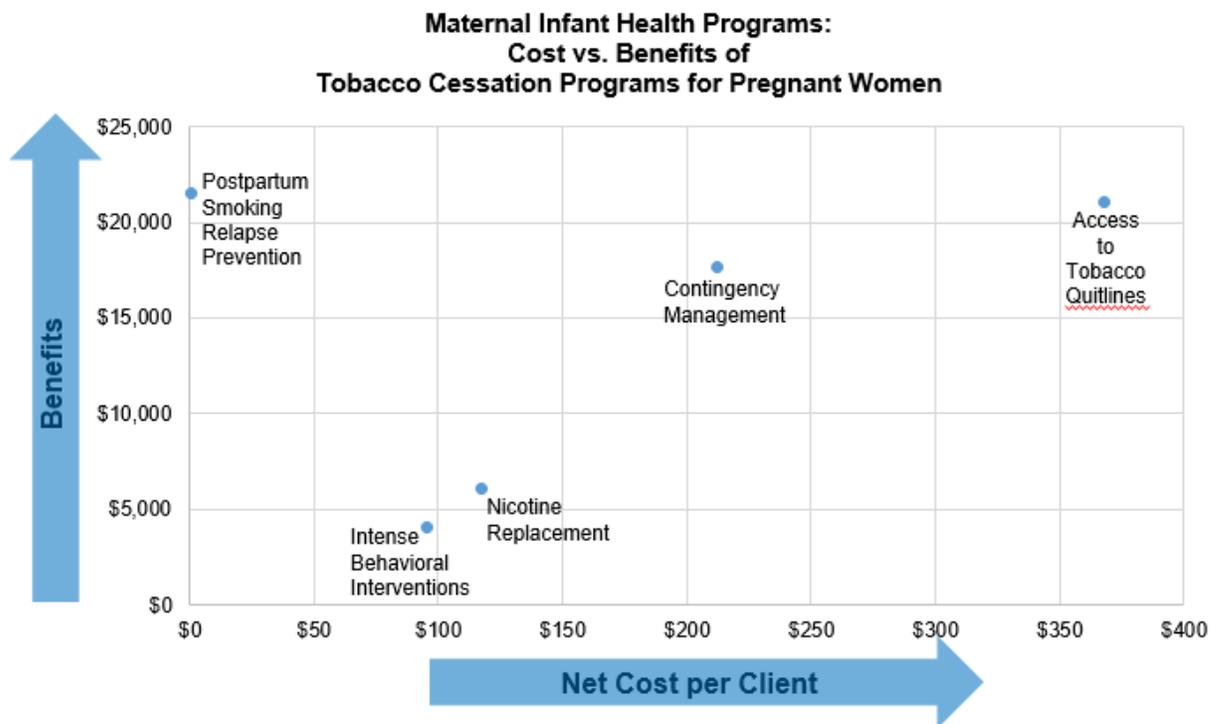


# Appendix C: Smoking Policy implementation and Smoking Prevalence Rates 2003-2017

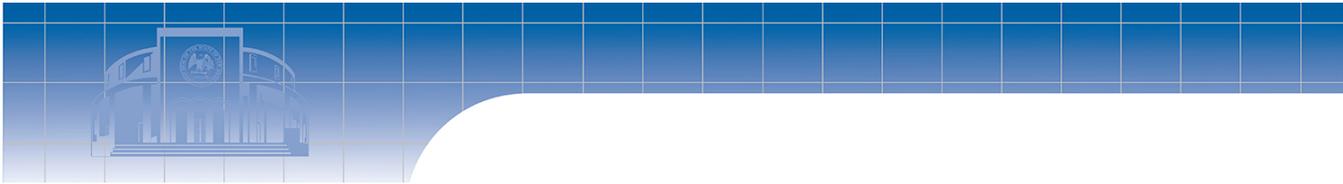


Source: DOH

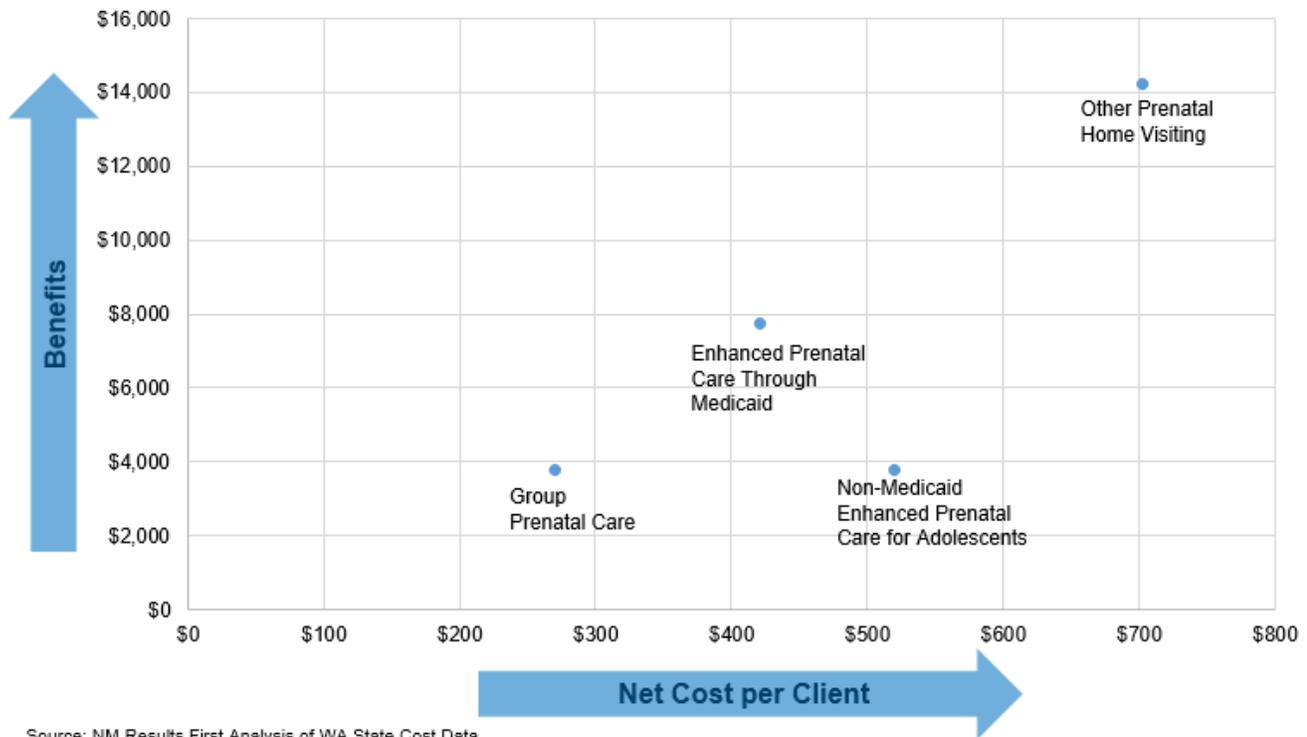
## Appendix D: Results First Analysis of Costs vs. Benefits of Select Maternal Infant Health and Chronic Disease Prevention and Intervention Programs



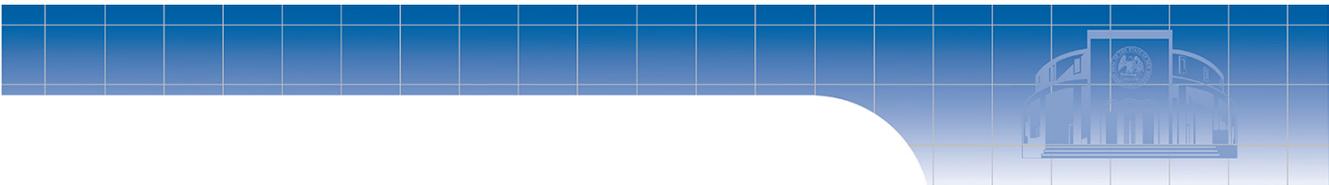
Source: NM Results First Analysis of WA State Cost Data



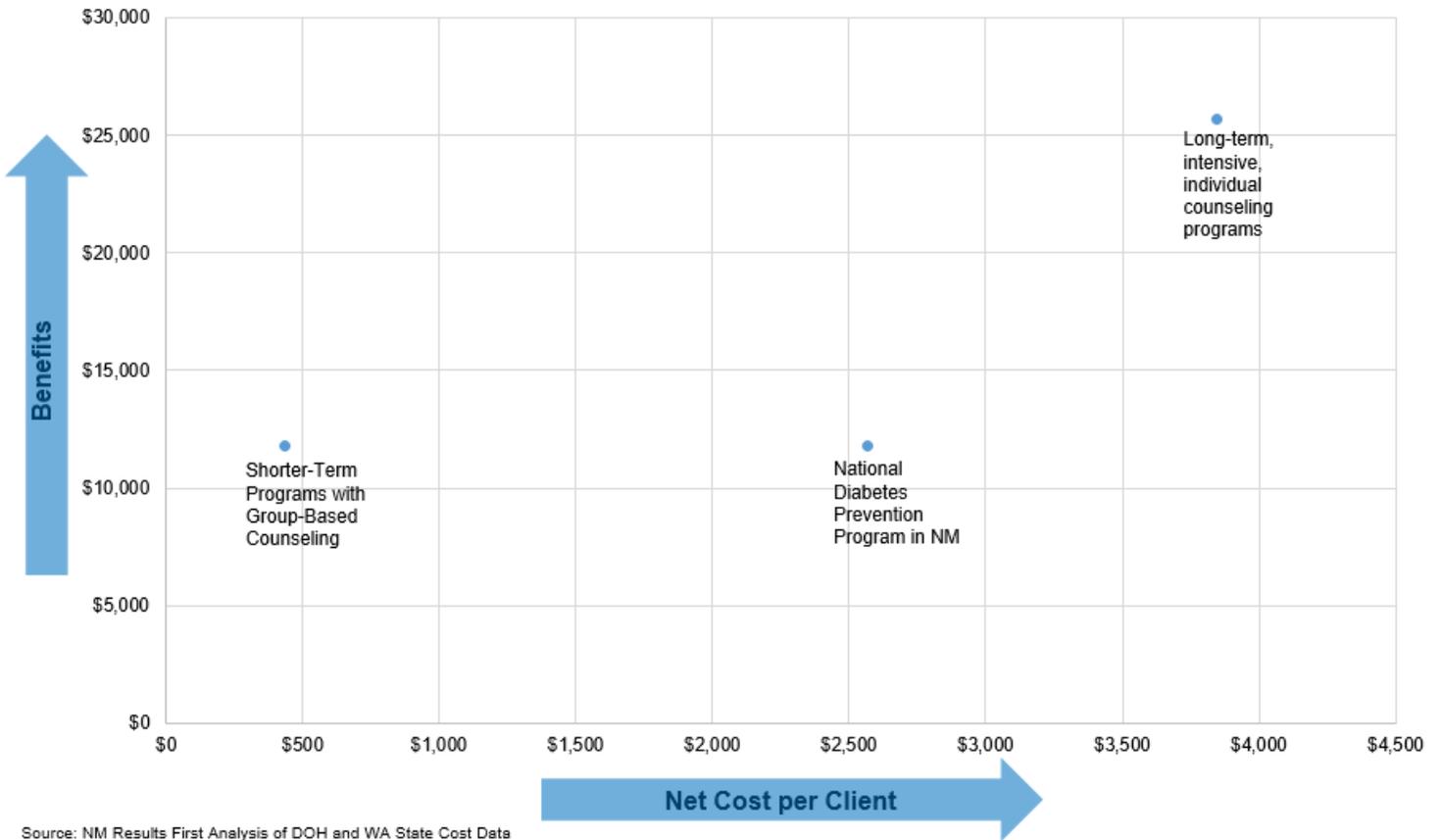
### Maternal Infant Health Programs: Cost vs. Benefits of Prenatal and Perinatal Programs



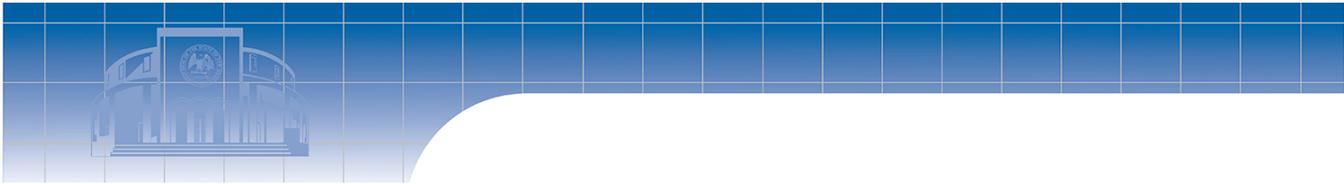
Source: NM Results First Analysis of WA State Cost Data



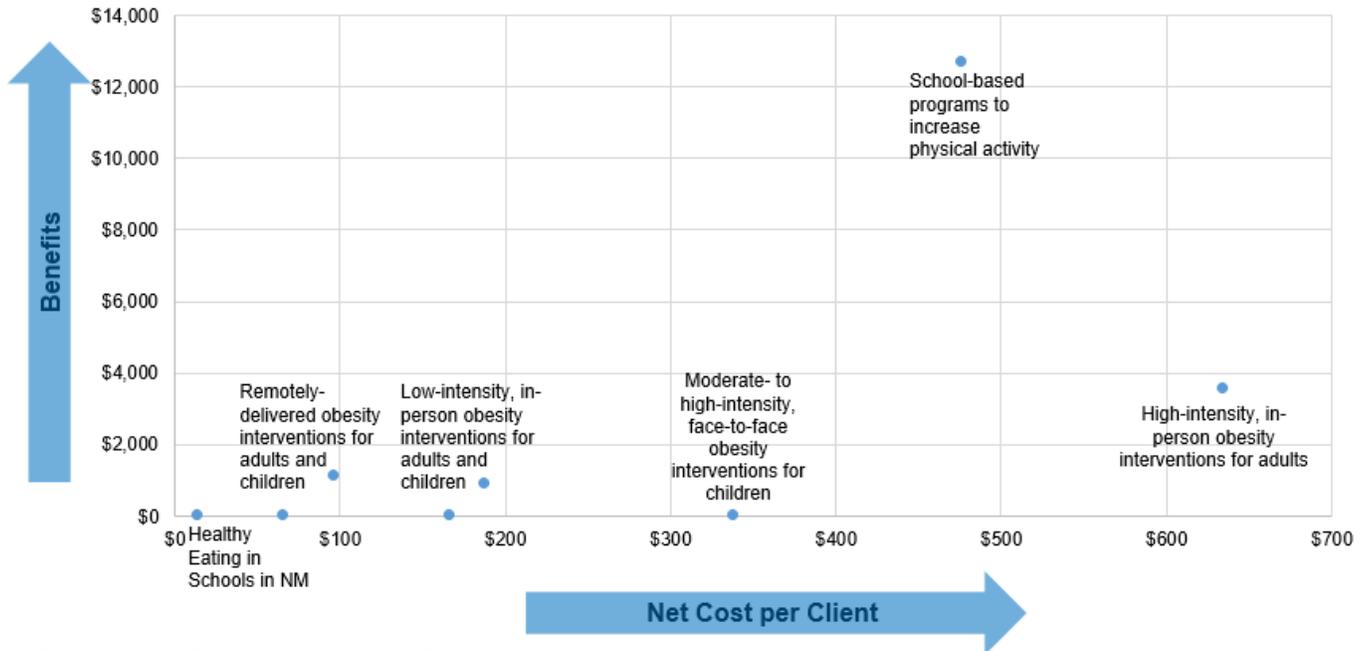
### Chronic Disease Programs: Cost vs. Benefits of Diabetes Prevention Programs



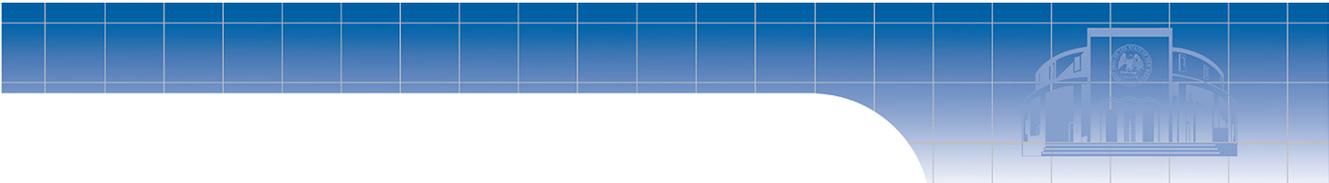
Source: NM Results First Analysis of DOH and WA State Cost Data



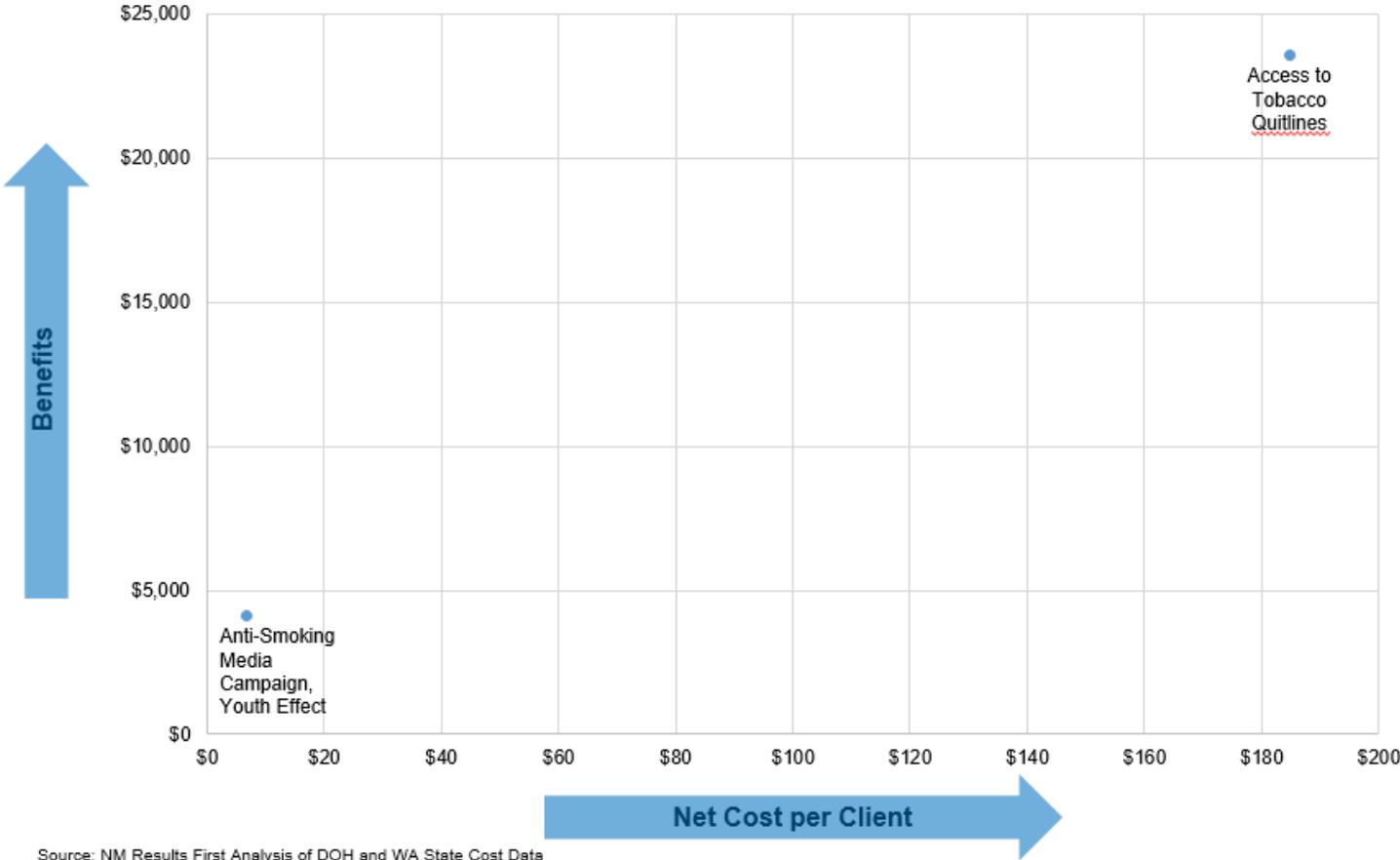
### Chronic Disease Programs: Cost vs. Benefits of Obesity Prevention and Intervention Programs



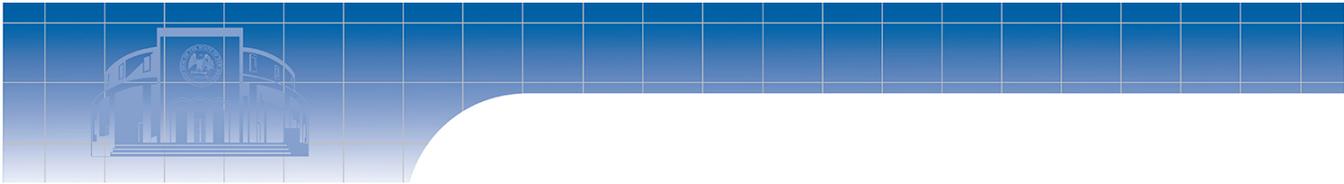
Source: NM Results First Analysis of WA State Cost Data



### Chronic Disease Programs: Cost vs. Benefits of Tobacco Prevention and Cessation Programs



Source: NM Results First Analysis of DOH and WA State Cost Data



### Chronic Disease Programs: Cost vs. Benefits of a 10 Percent Tobacco Tax Increase

