

CHANGE REQUEST for FY 08-09 BUDGET REQUEST CYCLE

Department:	Colorado Department of Public Health and Environment
Priority Number:	1
Change Request Title:	Tuberculosis Control and Treatment

SELECT ONE (click on box):

- Decision Item FY 08-09
- Base Reduction Item FY 08-09
- Supplemental Request FY 07-08
- Budget Request Amendment FY 08-09

SELECT ONE (click on box):

Supplemental or Budget Request Amendment Criterion:

- Not a Supplemental or Budget Request Amendment
- An emergency
- A technical error which has a substantial effect on the operation of the program
- New data resulting in substantial changes in funding needs
- Unforeseen contingency such as a significant workload change

Short Summary of Request:

This is a request for \$295,919 General Fund (\$241,866 operating, \$54,053 personal services) for the Tuberculosis Control and Treatment program (TB program) to address increased tuberculosis (TB) activity and increased costs to manage TB. There will also be a decrease of \$4,287 in federal funding in the Department's central appropriations lines to offset the increase in General Fund Health, Life and Dental and Short term Disability costs.

Background and Appropriation History:

Description of services and funding

Prevention, control, and treatment of TB are core public health activities and are mandated by statute (CRS 25-5-501 through 513) and governed by State Board of Health Rules and Regulations Pertaining to Epidemic and Communicable Disease Control (6 CCR 1009-1, regulations 1-6, 9). The State and local jurisdictions have shared responsibility for performing these activities and providing essential TB services¹; conducting overall planning and development of policy, identifying persons who have clinically active TB, managing persons who have or who are suspected of having disease,

¹ CDC. Essential Components of a Tuberculosis Prevention and Control Program. MMWR 1995; 44: 1-18.

identifying and managing persons infected with *Mycobacterium tuberculosis*, providing laboratory and diagnostic services, collecting and analyzing data, and providing training and education.

Funds to local jurisdictions to manage these cases and related activities come from the counties and from State General Fund through the Colorado Department of Public Health and Environment (CDPHE) TB program. Denver Public Health and Weld County Department of Public Health and Environment also receive Centers for Disease Control funds directly and indirectly through CDPHE. State funds are distributed proportionately based on the historical or estimated number of TB cases per county.

Fifteen counties have organized health departments and 39 counties have public health nursing services. Six Denver-metropolitan counties (Adams, Arapahoe, Boulder, Broomfield, Douglas, and Jefferson) contract with Denver Public Health (City and County of Denver) for TB services. Denver Public Health has the state's only dedicated TB clinic staffed by expert infectious diseases physicians, nurses, and clinical care associates.

County public health agencies outside the Denver metropolitan area provide direct services, in consultation and collaboration with private care providers and the CDPHE TB Program. Seventy-five percent of cases occur in the Denver-metro area and another 19 percent occur in the other counties with organized health departments. The remainder occurs in counties served by public health nursing services.

Centers for Disease Control and Prevention (CDC) TB Elimination cooperative agreement funds have been the primary support for CDPHE TB program staff. The funds for the TB Program personal services funds have decreased 29 percent since calendar year 2002. Funding has decreased from \$521,532 in 2002 to \$370,415 in 2007. Please note that the federal grant funds run on a calendar year, and not a fiscal year.

The chart below shows the entire CDC TB Elimination Cooperative Agreement Fund awards. This chart includes the TB Program personal services, operating, and the

funding for the Laboratory (Personal services and operating), as well as indirect costs assessments.

Grant Calendar Year	Personal	Operating	Indirect	Total
2002	\$247,952	\$537,522	\$70,074	\$855,548
2003	\$256,417	\$396,447	\$62,487	\$715,351
2004	\$188,739	\$204,693	\$47,121	\$440,553
2005	\$299,557	\$146,756	\$58,291	\$504,604
2006	\$286,569	\$138,273	\$60,522	\$485,364
2007	\$287,674	\$126,743	\$60,520	\$474,937

History of State General Funds and funding requests

As shown in the following table, the CDPHE TB Program has received additional State General Funds from a supplemental request (1996) and two decision items (1998, 1999).

STATE OF COLORADO FY 08-09 BUDGET REQUEST CYCLE: Colorado Department of Public Health and Environment

State fiscal year	Operating (\$)	Personal services (\$)	Total General Fund (\$)	Tuberculosis cases (CY)	Comments
1993	185,485	0	185,485	107	
1994	220,993	0	220,993	93	Common policy inflationary increase
1995	223,236	0	223,236	92	Common policy inflationary increase
1996	398,094	0	398,094	101	Denver Public Health Supplemental (partial year)
1997	604,696	0	604,696	94	Annualization of supplemental from previous year
1998	620,581	148	620,729	79	CDPHE DI operating
1999	842,141	7,005	849,146	88	CDPHE comeback DI for personal services
2000	878,801	71,118	949,919	97	Common policy inflationary increase
2001	877,363	72,313	949,676	138	
2002	921,350	69,494	990,844	103	Common policy inflationary increase
2003	909,927	63,228	973,155	111	Base reduction to balance budget during shortfall
2004	919,962	63,228	983,190	127	Common policy inflationary increase
2005	919,962	63,770	983,732	101	
2006	919,962	62,567	982,529	124	
2007	938,733	62,600	1,001,333	118*	Common policy inflationary increase * Based on the 59 new TB cases counted Jan-Jul 2007 and assuming the same rate of disease for the second half of the year.
2008	950,047	64,487	1,014,534	128**	Common policy inflationary increase ** Based on adding a trend line to the graph of TB cases from 1998 through 2007 and using the estimated 118 cases for 2007.

Appropriation History

The Long Bill appropriation for this line contains funding for two distinct programs. The Tuberculosis program which utilizes 100% of the General Funds and a portion of the federal funds, and the Refugee Services program which utilizes 100% of the Cash Funds Exempt, plus the remaining portion of the federal funds. The following table shows the

actual funding used by both programs for the last three actual years, and the estimate and request year.

	Program			
FY 2004-05	TB		Refugee	
	GF	FF	CFE	FF
PS	\$63,769	\$161,450	\$66,479	\$408,013
Op	\$919,962	\$202,125	\$609	\$245,385
Indirect		\$31,457	Not calculated – Part of full DCEED indirect line.	
	Program			
FY 2005-06	TB		Refugee	
	GF	FF	CFE	FF
PS	\$67,214	\$237,977	\$95,273	\$390,591
Op	\$919,962	\$93,969	\$153,984	\$59,475
Indirect		\$45,217	Not calculated – Part of full DCEED indirect line.	
	Program			
FY 2006-07	TB		Refugee	
	GF	FF	CFE	FF
PS	\$67,775	\$223,696	\$95,822	\$436,066
Op	\$938,733	\$105,134	\$207,520	\$73,786
Indirect		\$43,674	Not calculated – Part of full DCEED indirect line.	
	Program			
FY 2007-08	TB		Refugee	
	GF	FF	CFE	FF
PS	\$71,487	\$238,181	\$96,807	\$186,827
Op	\$950,047	\$103,140	\$210,020	\$321,868
Indirect		\$45,520	Not calculated – Part of full DCEED indirect line.	
	Program			
FY 2008-09	TB		Refugee	
	GF	FF	CFE	FF
PS	67,025	\$238,181	\$95,601	\$186,827
Op	950,047	\$103,140	\$210,020	\$321,868
Indirect		\$45,520	Not calculated – Part of full DCEED indirect line.	

FY – 2008-09 will include applicable POTS in Personal services lines. Those estimates are not included in this spreadsheet.

Federal Funds estimates for FY 2007-08 and 2008-09 are based on a continuation of level funding for TB, and the assumption that the refugee program will use the balance of the appropriation because federal grants are not known yet.

Additionally, the Federal funds cover costs incurred by the Laboratory Division that are not included in the totals above.

Laboratory TB Costs (Federal Funds)

FY 2007-08 and 2008-09 are estimates

	FY 2004-05	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09
Indirect	\$15,147	\$18,987	\$15,487	\$15,000	\$15,000
Personal Services	\$62,060	\$81,357	\$57,493	\$49,493	\$49,493
Operating	\$26,521	\$25,917	\$27,603	\$23,603	\$23,603

General Description of Request:

TB remains a threat to the health and well being of people around the world including Colorado. TB is a serious and complex communicable disease caused by the bacteria *Mycobacterium tuberculosis*. It is spread person to person by breathing in infectious particles. Anyone can get TB, regardless of age, gender, or socio-economic status.

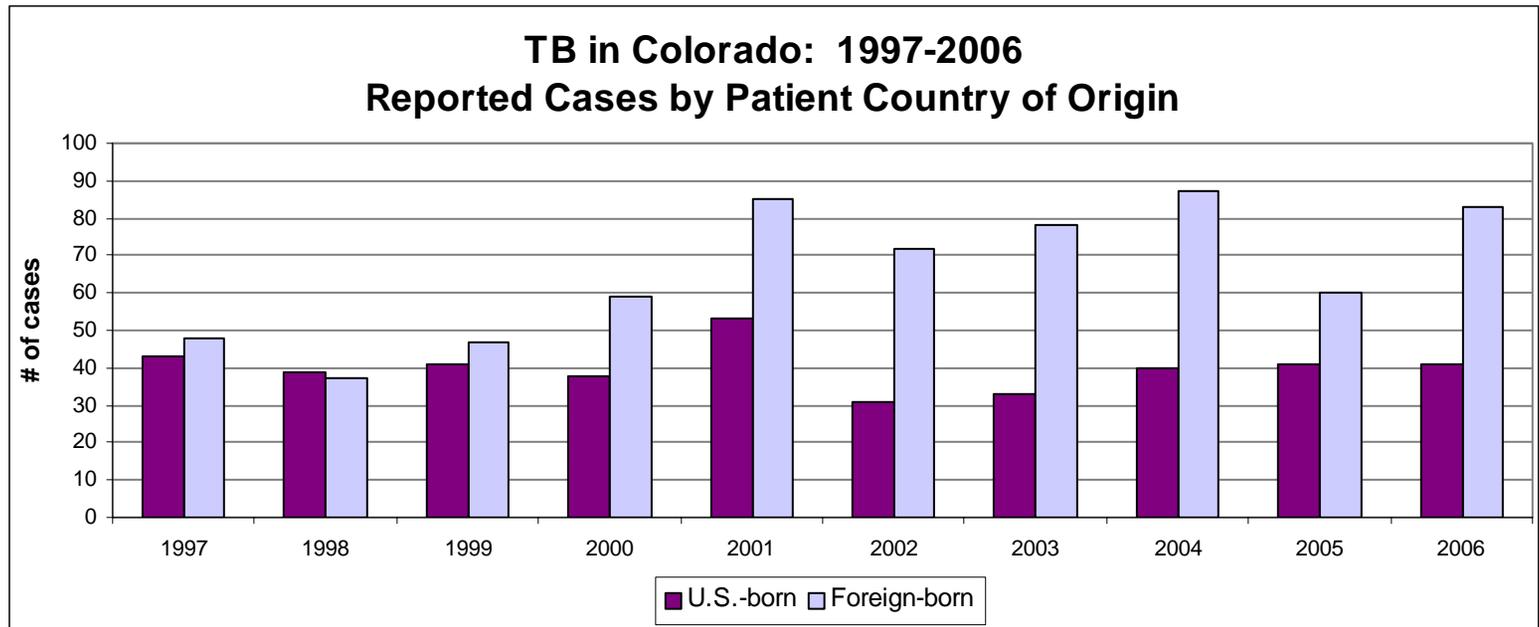
CDPHE is requesting an increase in General Fund of \$295,919 for FY 2008-09 (and subsequent fiscal years) to manage the control and treatment of TB in Colorado.

The changing demographics of Colorado

The number and percent of foreign-born persons residing in Colorado is increasing. Colorado ranks 16th of 51 (50 states plus District of Columbia) for size of foreign-born population and 17th in percent change. From 1990 to 2000, Colorado’s foreign-born population increased 166.8 percent, and from 2000 to 2005, it increased 25.3 percent. Currently, over ten percent of Colorado’s population is foreign-born². This is also

² Migration Policy Institute Data Hub, <http://www.migrationinformation.org/DataHub/>

reflected in the number and percent of foreign-born TB cases as shown in this graph. Foreign-born persons who come from countries with a high prevalence of TB are at high-risk to develop TB.



TB in Colorado

Consistent with Colorado's increasing population, the number of new TB cases has increased from a low of 73 cases in 1989 to 124 cases in 2006. Over the past 10 years, TB cases in Colorado **increased 27%** from a mean of 91.8 cases in 1996-2000 to 116.2 in 2001-2005.

Not only is the number of new TB cases increasing, the numbers of new cases in minority and foreign-born populations are increasing. At 9.0 cases per 100,000, the rate of TB in

the ethnic population in 2006 was 23 times the rate in the non-ethnic population (0.4 cases per 100,000).

More resources are needed to manage these cases plus the increasing number of suspected TB cases and those at highest risk of developing TB disease (e.g. persons recently exposed to infectious TB, refugees and immigrants from high TB burden countries).

In addition, Colorado continues to manage and treat costly cases of multi-drug resistant TB (MDR-TB). Though a case of 'extensively drug resistant' (XDR) TB has not been diagnosed in Colorado, 49 cases have occurred in the United States since 1993, and Colorado is certainly not immune to a case occurring here. These cases are difficult, costly, and require years to treat.

Public health conducts approximately 60 contact investigations each year. As part of the investigations, each year an average of 1,100 potentially exposed persons are identified. These people require evaluation. Twenty to 25 percent of these exposed persons will be found to have latent TB infection (LTBI) and another one percent will be found to have active TB disease. The Healthy People 2010 target is to complete treatment in 85 percent of infected contacts (persons exposed to infectious TB). Though Colorado has been making improvements over the past several years, the completion rate in 2005 was below the target at 71 percent.

Operating Request

Ninety percent of TB cases in Colorado occur in counties with organized health departments, who have been chronically under-funded for this purpose. A recent study reported the cost for treatment, hospitalizations, and other components of TB related activities at \$48,715 per case and societal costs of \$81,628 for one new case of TB.³ Local public health agencies estimate TB-related costs of over \$2 million per year and in 2006, \$937,000 of State General Fund was distributed to them for TB services (directly

³ Miller, TL, Hilsenrath, P, McNabb SJN, Weis, SE. Economic Evaluation of Tuberculosis Prevention and Control: special considerations. Abstract/poster presentation at the 2006 National TB Controllers Workshop, Atlanta, GA.

via contract and indirectly via supplied medications, medical consultation services). There is an expectation and obligation for the CDPHE TB Program to provide a substantial portion of funding to local health agencies to manage TB.

State funding to local public health agencies must be increased to manage the growing number of cases and associated activities. In addition to the increased costs for the treatment of active TB cases, the costs for other TB control activities have also risen. These activities include:

- Clinical and laboratory evaluation of persons reported as possible active TB
- Identification, evaluation, and treatment of persons exposed to infectious TB cases.
- Screening for active TB and LTBI in other high-risk populations (This high priority activity has been minimal due to insufficient funds)
- Interpretation services for non-English speaking clients

The following are four recent examples of resource-intensive TB activities.

1. Contact investigation in a Denver church congregation – Staff from Denver Metro TB Clinic spent many hours on a challenging contact investigation involving a highly infectious patient. This investigation took over 17 weeks to complete and involved several meetings with the church staff. The medical director from the clinic also had to intervene since there was a great deal of reluctance of church staff and members to cooperate. Barriers staff had to deal with were lack of trust, stigma, cultural beliefs surrounding TB and health care, and language. Due to the TB staff's dedication and persistence, the investigation was completed.
2. Influx of Somali refugees – Staff at Weld County Department of Public Health and Environment and Northeast Colorado Health Department have spent significant resources working with Somali refugees who are settling in their communities. The refugees are moving into these communities for work opportunities. In order to manage their TB conditions effectively, the public health nurses have spent many hours helping with various health and social problems, such as other medical needs, inadequate living conditions or family problems. Interpretation services necessary to

work with this population cost between \$2.50 to \$3.95 per minute. Routine visits, with the use of a qualified interpreter, are neither quick nor routine due to the various assistance required to help the patient live, work, and receive treatment in the community. Cultural awareness and sensitivity are a necessity to be successful in reaching and treating these patients. The health care workers have attended cultural competency training specific to the Somali population.

3. A case of active TB was diagnosed in a citizen of Rio Grande County. This is the first active case of TB reported in this county since 2001. The patient had visited the community clinic, was hospitalized in two hospitals, and worked at a factory. The public health nurses made many visits to the patient's home for directly observed therapy and testing and evaluating persons exposed to the patient (contacts). The patient is non-English speaking and an interpreter had to be utilized for each encounter. The contact investigation required working with the various health care facilities, the work site, and also a large extended family. The family included several young children who also needed to receive their treatment by directly observed therapy. The public health nurses made the long trip to the work site multiple times to evaluate the environment, likely exposure to the other workers, and to test the identified contacts at the site.
4. University students exposed to infectious TB – Staff at Pueblo City County Health Department and El Paso County Department of Health and Environment have worked diligently and persistently to identify, contact, and evaluate the 174 students exposed to a person with infectious TB. Students have been contacted numerous times using mail, email, and telephone, yet two-thirds still need evaluation. Further efforts are being made to contact these students as school commences for the fall semester. Public health staff have not given up due to clear evidence that TB transmission occurred. Infected students are at high-risk for developing TB disease and will benefit from preventive treatment.

In addition, it is increasingly difficult to find providers who will accept the Medicaid rate for services. Thus, many local health agencies have to pay more for diagnostic testing and other services for TB clients.

As Colorado's population continues to grow, funding for TB must also grow in order to continue providing quality TB services and protect the public. The requested operating funds (\$241,866) will be distributed to local health departments based on TB caseload.

Personal services request

Many of the smaller communities throughout the state may not see a case of TB for years and thus are not familiar with diagnosis and treatment of TB. Consultation and technical assistance at the Department level are essential to assist the staff at local public health agencies in these areas that rely on TB program expertise. Due to the lengthy treatment regimens for TB disease (minimum of six months) and LTBI (nine months), extensive follow-up is required. Many persons may be exposed from a single case of infectious TB, and conducting a thorough and appropriate contact investigation is critical to prevent an outbreak of TB. TB program staff provide the needed expertise, technical assistance, training and education for the local public health agencies, hospitals and other medical providers.

A recent example of expertise and technical assistance that the CDPHE program staff provided is the contact investigation surrounding the Colorado State University at Pueblo student who died of TB June 2007. As an example, for the month of June 2007, CDPHE TB staff estimate spending 190 hours on investigation activities for this one case alone. Staff from El Paso County Department of Health and Environment, Pueblo City County Health Department, CDPHE TB program, and Colorado State University at Pueblo worked many hours to identify, contact, test, and evaluate potentially exposed persons. The agencies worked collaboratively and successfully. Besides the manpower and resources to conduct tuberculin skin testing clinics; numerous phone calls, conference calls, emails, and meetings have been needed. Meanwhile, 'everyday' TB activities continued.

In addition to providing technical assistance and expertise, the TB program collects, compiles, and analyzes data in order to make data-driven decisions and to monitor progress towards goals. A registry of TB cases is maintained and case data are reported nationally per CDC requirements. A statewide, web-based TB case and contact management system is housed and maintained at CDPHE. The system is used for surveillance and monitoring and is also the system used to order anti-TB medications.

Due to increased costs of personal services and decreased federal funding, requested personal services funds (\$54,053) will be used to support current FTE and ensure minimum staff can be retained. The FTE will be transferred from federal funding to General Fund.

Conclusion

As Colorado's population continues to grow and more cases of TB disease and infection are found, funding for TB must also grow. Funds are being requested for under-funded organized local health departments and the CDPHE TB program to perform mandated TB control and treatment, ensure the provision of essential TB services, and protect the public.

Consequences if Not Funded:

Without additional funding, the local public health departments and the state TB program will have to reduce services. Local public health agencies may need to reduce staff or maintain inadequate staffing. This would result in sub-optimal investigation, management, and treatment of suspected and confirmed cases of TB disease. This may result in patients remaining infectious for longer periods of time due to inadequate or inappropriate treatment, patients not being isolated properly while infectious, or persons exposed to TB not being appropriately evaluated and treated. Local public health may also reduce or stop prevention activities (testing, evaluation, and treatment of person with LTBI) as happened in Boulder County in 2002 and in El Paso County in 2007. Treatment of LTBI is essential to controlling and eliminating TB in Colorado and in the United States. Treatment of LTBI substantially reduces the risk that TB infection will progress to disease, and certain groups are at very high risk of developing TB disease

once infected. High-risk groups include persons also infected with HIV, persons taking TNF-a antagonist medication for Crohn's disease or rheumatoid arthritis, and persons who were infected within the past two years. Further cases of active TB disease, including disease in children, may not be prevented.

At best, a person with pulmonary TB must remain isolated until no longer infectious and take medications for six months. This could have serious financial consequences to a working person. Administration of the medications must be observed by a health care worker causing further disruption of the person's lifestyle. Side effects from medications such as nausea, liver dysfunction, and rash are common.

Each year in Colorado, five to ten persons are either diagnosed with TB at death or die from TB while on therapy. In the first six months of 2007, 10 persons were diagnosed with TB at or after death, including a young university student.

Without additional funding the TB program may need to reduce FTE. This would greatly diminish the program's capability to provide consultative and technical assistance to local health agencies. Resources for data management and surveillance will be decreased thereby impacting the ability to make data driven decisions.

Calculations for Request:

Summary of Request FY 08-09	Total Funds	General Fund	Cash Funds	Cash Funds Exempt	Federal Funds	FTE
Total Request	\$291,632	\$295,919	\$0	\$0	(\$4,287)	0.0
Personal services	\$ 49,766	\$ 54,053	\$0	\$0	(\$4,287)	0.0
Operating – contracts to local health	\$241,866	\$241,866	\$0	\$0	\$0	0.0

Summary of Request FY 09-10	Total Funds	General Fund	Cash Funds	Cash Funds Exempt	Federal Funds	FTE
Total Request	\$295,000	\$295,000	\$0	\$0	\$0	0.0
Personal services	\$ 53,134	\$ 53,134	\$0	\$0	\$0	0.0
Operating – contracts to local health	\$241,866	\$241,866	\$0	\$0	\$0	0.0

Position title	Annual	FTE	Amount requested	PERA 10.15%	STD 0.155%	Medicare 1.45%	Health, dental	AED 1.6%	SAED 0.5%	Total
Nurse consultant	\$ 87,540	0.50	\$ 43,770	\$ 4,443	\$ 68	\$ 635	\$ 4,219	\$ 700	\$ 219	\$ 54,053
									TOTAL	\$ 54,053

The TB request for General Fund personal services for \$54,053 will allow the TB Program to maintain the minimum staff need to carry out core TB prevention, control, and treatment activities as those activities continue to grow and evolve in response to the increasing numbers of TB cases.

For the past several years, as federal funding has decreased, (See the table on page 3) the TB grant budget has been adjusted, with approval from the granting agency, to ensure existing encumbered staff were maintained. Federal funds used for contracts (Denver Public Health, Weld County Department of Public Health and Environment), office supplies, and travel funds have been decreased to accommodate this. Thus the decrease in federal funds used for personal services does not reflect the entire \$54,053.

County	Time period	Personal services	Fringe	Supplies	Equipment	Travel	Other	Diagnostics	Indirect	Total
Delta	Jul 05-Jun 06	\$ 6,099	\$ 1,377	\$ 493	\$ 3	\$ 674	\$ 70	\$ -	\$ -	\$ 8,716
DMTBC ¹	2006	\$ 747,537	\$ 167,748	\$ 200,715	\$ 1,735	\$ 19,437	\$ -	\$ 52,550	\$ -	\$ 1,189,722
El Paso	Jul 05-Jun 06	\$ 101,900	\$ 29,413	\$ 2,097	\$ 833	\$ 2,687	\$ 10,703	\$ 8,877	\$ 47,279	\$ 203,789
Larimer	Jul 05-Jun 06	\$ 102,889	\$ 24,742	\$ 3,153	\$ -	\$ 783	\$ 24,910	\$ 1,918	\$ -	\$ 158,395
NCHD ²	Jul 05-Jun 06	\$ 7,739	\$ 1,762	\$ 3,138	\$ -	\$ 3,142	\$ 2,246	\$ 1,902	\$ 4,088	\$ 24,017
Pueblo	Jul 05-Jun 06	\$ 48,004	\$ 10,851	\$ 1,064	\$ 2,269	\$0	\$ 14,139	\$ -	\$ 1,223	\$ 77,550
Weld	Jan 06-Dec 06	\$ 103,045	\$ 21,730	\$ 2,297	\$ 888	\$ 1,821	\$ 18,436	\$ 6,516	\$ 23,349	\$ 178,082
TOTAL										\$ 1,840,271
ADJUSTED TOTAL³										\$ 1,980,132

1. Denver Metro TB Clinic=Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, and Jefferson Counties
 2. Northeast Colorado Health Department=Logan, Morgan, Phillips, Sedgwick, Yuma, and Washington Counties
 3. Total costs represent counties reporting 92.94% of TB cases. Adjusted total was calculated up to 100% by multiplying total by 1.076%.

Assumptions for Calculations:

Table 1. Salary and benefits are calculated at July 1, 2007 rates. Salary is for an existing position. Health and dental benefits are calculated for employee, spouse, and children (\$703.10 per month), PERA is calculated at 10.15% of salary, Medicare is calculated at 1.45% of salary, and short-term disability is calculated at 0.155% of salary.

Table 2. Costs were provided by the listed local health agencies. These agencies account for 93 % of TB cases reported in Colorado. Total was adjusted to 100% by multiplying by 1.076. The Department is appropriated (for FY 2007-08) \$950,047 General Fund for operating expenses that are used to manage and treat Tuberculosis in the State, and this request will increase the amount provided by 25 percent.

Impact on Other Government Agencies: Some of the costs of TB diagnosis and treatment are borne by Medicaid, though the amount is unknown. Optimal identification, treatment, and contact tracing could potentially reduce the future cost to the Medicaid program.

Cost Benefit Analysis: Increased funding of \$295,000 for TB prevention, treatment, and control will support CDPHE TB program staff and staff at the local public health agencies.

Funding will allow staff to treat TB disease (costs to treat and manage a single case of TB have been estimated from \$6,585⁴ to \$48,715⁵), conduct contact investigations (identify, evaluate, and treat persons exposed to infectious TB), and educate patients, providers, and communities. Approximately 120 new cases of TB disease are diagnosed in Colorado each year. The quicker a patient with TB disease is diagnosed, isolated (if necessary) and placed on appropriate therapy, the risk to others is diminished. In Colorado from 2001-2005, 5,867 persons were identified who were exposed to persons with infectious TB. Of those, 1,262 were found to have been infected and 43 additional cases of TB disease were found⁶. Ten percent of individuals with TB infection will progress to TB disease sometime in their lifetime. Treatment of infected individuals can prevent the development of disease and associated costs (Table 3).

⁴ Denver Public Health Tuberculosis Prevention and Control Funding Fact Sheet, June 7, 2007.

⁵ Miller, TL, Hilsenrath, P, McNabb SJN, Weis, SE. Economic Evaluation of Tuberculosis Prevention and Control: special considerations. Abstract/poster presentation at the 2006 National TB Controllers Workshop, Atlanta, GA.

⁶ Colorado 'Aggregate Reports for Tuberculosis Program Evaluation: Follow-up and Treatment for Contacts to Tuberculosis Cases', 2001, 2002, 2003, 2004, 2005.

Table 3. Estimated savings from prevention of tuberculosis disease in contacts (exposed persons) with latent tuberculosis infection		
1	Average numbers of contacts per year in Colorado	1,173.4
2	% of contacts with latent TB infection in Colorado	21.5
3	Average number of infected contacts (line 1*line 2)	252.4
4	10% of infected will progress to disease ^a (line 3* 0.10)	25.2
5	Goal is to initiate and complete treatment in at least 80% of contacts (line 4 * 0.80)	17.7
6	Treatment of infection 90% effective in preventing progression to disease ^a (line 5*0.90)	15.9
7	Number of active TB cases prevented	15.9
8	Cost of drug susceptible TB case ^b (low value of range)	\$ 6,583
9	Cost of TB case ^c (high value of range)	\$ 48,715
Average potential savings from prevention of TB disease cases (15.9*(6,583+48715)/2 = \$27,649)=\$439,619)		\$ 439,619
<p>a. Centers for Disease Control and Prevention. Core Curriculum on Tuberculosis, 2000.</p> <p>b. Denver Public Health Tuberculosis Prevention and Control Funding Fact Sheet, June 7, 2007.</p> <p>c. Miller, TL, Hilsenrath, P, McNabb SJN, Weis, SE. Economic Evaluation of Tuberculosis Prevention and Control: special considerations. Abstract/poster presentation at the 2006 National TB Controllers Workshop, Atlanta, GA.</p>		

Implementation Schedule:

Task	Month/Year
Determine preliminary budget for contracts	March 2008
Finalize budget for contracts	April 2008
Contract Written	May 2008
Contract Awarded/Signed	June 2008
Start-Up Date	July 2008

Statutory and Federal Authority:

Tuberculosis - Section 25-4-501-513 C.R.S. (1963)

All citations are from the 2006 C.R.S.

25-4-501. Tuberculosis declared to be an infectious and communicable disease.

It is hereby declared that tuberculosis is an infectious and communicable disease, that it endangers the population of this state, and that the treatment and control of such disease is a state and local responsibility. It is further declared that the emergence of multidrug-resistant tuberculosis requires that this threat be addressed with a coherent and consistent strategy in order to protect the public health. To the end that tuberculosis may be brought better under control and multi-drug-resistant tuberculosis prevented, it is further declared that it is the duty of the department of public health and environment to conduct an active program of hospitalization, as necessary and within the available resources, and treatment of persons suffering from active or latent tuberculosis infection, including assurance that patients receive a full course of therapy.

Source: L. 67: R&RE, p. 723, § 1. **C.R.S. 1963:** § 66-12-1. **L. 73:** p. 695, § 1. **L. 94:** Entire section amended, p. 2762, § 432, effective July 1. **L. 2002:** Entire section amended, p. 1313, § 1, effective August 7.

25-4-508. Inspection of records.

Authorized personnel of the department of public health and environment may inspect and have access to all medical records of all medical practitioners, hospitals, institutions,

and clinics, both public and private, where tuberculosis patients are treated and shall provide consultation services to officers of state educational, correctional, and medical institutions regarding the control of tuberculosis and the care of patients or inmates having tuberculosis.

Source: L. 67: R&RE, p. 725, § 1. C.R.S. 1963: § 66-12-8. L. 91: Entire section amended, p. 947, § 6, effective May 6. L. 94: Entire section amended, p. 2763, § 437, effective July 1.

25-4-511. Duties of the state board of health and the department of public health and environment.

(1) (a) With respect to the tuberculosis program provided for in section 25-4-501, the state board of health is authorized to adopt such rules and regulations as are deemed necessary, appropriate, and consistent with good medical practice in the state of Colorado, in order to insure adequate hospitalization and treatment of tubercular patients. The state board is further authorized to establish criteria to be considered by the executive director of the department of public health and environment in determining the eligibility of persons applying for assistance under the program provided for in section 25-4-501.

(b) Assistance under section 25-4-501 shall be given to any applicant who is suffering from tuberculosis in any form requiring treatment and is without sufficient means to obtain such treatment or to an outpatient tubercular.

(2) The executive director of the department of public health and environment, with respect to the tuberculosis program provided for in section 25-4-501, shall:

(a) Direct any program of investigation and examination of suspected tuberculosis cases, including persons who have had contact with a person who is a suspected tuberculosis case, and the administration of antituberculosis chemotherapy or the treatment of a latent tuberculosis infection on an outpatient basis where appropriate;

(b) Make the necessary contractual arrangements with hospitals within this state for the care and treatment of patients with either drug-susceptible or drug-resistant tuberculosis as necessary and if resources permit;

(c) Determine eligibility of persons applying for assistance;

(d) Perform such other duties and have such other powers with relation to the provisions, objects, and purposes of this part 5 as the state board of health shall prescribe.

(3) The department of public health and environment shall cooperate with the state and local medical societies, other state and local medical organizations, the secretary of the United States department of health, education, and welfare, or any other agency of the United States government in order to qualify for and procure the aid of the federal government in caring for tuberculosis patients under the program provided for in section 25-4-501. The department of public health and environment shall make such applications and submit such reports as may be required by agencies of the federal government.

Source: L. 73: p. 695, § 2. C.R.S. 1963: § 66-12-11. L. 94: (1)(a), IP(2), and (3) amended, p. 2763, § 438, effective July 1. L. 2002: (2)(a) and (2)(b) amended, p. 1314, § 4, effective August 7.

Performance Measures:

Objective: Strong and Effective Systems for Addressing Communicable Diseases/Epidemics/and other Public Health Emergencies					
Performance Measure	Outcome	FY 05-06 Actual	FY 06-07 Actual	FY 07-08 Approp.	FY 08-09 Request
Increase the percent of contacts to infectious tuberculosis cases (sputum smear or culture positive) who are identified and treated, in order to prevent further spread of tuberculosis.	Benchmark	65	67	76	80
	Actual	73	76		

The FY 2008-09 benchmark is the goal that the Department hopes to meet with the Decision Item, and if it does not pass, then the percentage could decrease because services may need to be cut.

Performance Measure: Increase the percent of contacts to infectious tuberculosis cases (sputum smear or culture positive) who are identified and treated, in order to prevent further spread of tuberculosis.					
Workload Indicators		FY 05-06 Actual	FY 06-07 Actual	FY 07-08 Approp.	FY 08-09 Request

STATE OF COLORADO FY 08-09 BUDGET REQUEST CYCLE: Colorado Department of Public Health and Environment

The number of contacts to active tuberculosis cases that are identified and treated, in order to prevent further spread of tuberculosis.	500	1,170	1,113	1,113
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