



New Mexico Alliance for School-Based Health Care PHASE II Expected Value-Return on Investment (EV-ROI) Analysis

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Summary Explanation of the *EV-ROI* Cost Benefits Worksheet – 06/14/15

Analysis of 53 School-Based Health Centers in New Mexico

Executive Summary

This report was **requested by the New Mexico Alliance for School-Based Healthcare (NMASBHC) with data supplied by the New Mexico Department of Health (NMDOH), Office of School and Adolescent Health (OSAH).** An analysis of school-based health care administered to 14,777 students in New Mexico in the **school year 2013 – 2014 yields a return of \$7.01 for every dollar expended.** This number was derived by comparing the total projected savings of \$22,308,646 from 9 measures against the total annual budget of \$3,183,100. This is a conservative estimate based on an analysis of 9 measures accounting for a subset of all patient visits, meaning that many other measures were not counted and the outcomes of many other patient visits have yet to be monetized.

The following table summarizes the global findings of the EV-ROI analysis for over 50 New Mexico SBHCs, comparing the results of the 2013 – 2014 school year against the 2012 – 2013 school year.

School Year	Number of SBHCs	Number of Unique Patients Seen	Number of Visits	Operating Cost	Cost per Visit	Projected Savings	<i>EV-ROI</i> per \$1 Spent
2012 – 2013	56	14,500	45,535	\$3,311,225	\$73	\$20,113,469	\$6.07
2013 – 2014	53	14,777	43,062	\$3,183,100	\$74	\$22,308,646	\$7.01
% Increase	-5.7%	1.9%	-5.7%	-4.0%	1.7%	10.9%	15.5%

Comparing the school year results from 2013 – 2014 against the school year results from our previous EV-ROI analysis from 2012 – 2013 reveals a virtual steady state of operation in terms of the number of unique patients seen and a marginal drop (5.7%) in the percentage of encounters that is consistent with the drop (5.7%) in the percentage of SBHCs. **However, the 10.9% increase in savings is due to the fact that we have identified and monetized one additional measure, while also conducting a more in-depth analysis of the other eight existing measures. The relative stability in the operational parameters and the reasonable 10.9% increase in savings**

given the increased depth and breadth of analysis, coupled with the 4% decrease in the budget, makes the 15.5% *EV-ROI* increase an important and credible outcome of this year’s analysis.

Background

The Expected Value-Return On Investment (*EV-ROI*) methodology allows organizations to represent, in part, the impact and outcomes produced by their programs and services in a monetized form. *EV-ROI* is a predictive model that combines a commonly accepted probability theory (expected value) with a common approach that businesses use to make informed financial decisions (return on investment). Expected value is the probability of an occurrence multiplied times the absolute dollar value of that occurrence.

Below is a brief overview of the methodology and assumptions applied for the calculation of the benefits and impact of a number of specific programs and initiatives of SBHCs funded by the New Mexico Department of Health. These *EV-ROI* measures reflect ROI values associated with those 53 New Mexico schools with a School-Based Health Center (SBHC) funded by NMDOH.

Intervention-Specific ROI Calculations

In addition to providing a global value for these 53 SBHCs, we also project *EV-ROI* values specific to each intervention (e.g., administration of flu vaccines or sexually transmitted infections (STI) screenings and treatments). The specific cost of a particular intervention is based on a cost per encounter. This is calculated by dividing the total SBHC budget by the total number of encounters at those SBHCs times the estimated number of encounters associated with a specific intervention (e.g., the number of visits for STI screenings or the number of behavioral health counseling sessions to complete therapy).

Projected Savings and Gains from Nine Measures

There are nine interventions/categories of *EV-ROI* for which we were able to capture enough data, in order to make a credible and defensible estimate of benefit. The following list of results and the global return should be seen as a subset of the total universe of actual benefits and savings experienced by the students, teachers, and their families, due to the presence of these SBHCs. The first seven measures are considered “clinical,” since they can be tied directly to specific interventions that have health outcomes as the main benefit. The eighth and ninth measures are classified as “non-clinical,” since they primarily capture the productivity gains for parents and students that are a result of the collective global effect of the SBHCs.

Clinical / Short-Term *EV-ROI* Measures

Clinical *EV-ROI* measures refer to those interventions that produce a direct effect on the students' health (e.g., interventions that prevent the contraction of the flu, avoid cavities, etc.). There are six aspects of direct projected *EV-ROI* effects included in this study. Below is a brief explanation of the rationale and assumptions behind each category:

- 1. Projected Annual Net Hospitalization Savings of \$141,237 for Asthmatic Students** — This intervention is built around the finding from one study, in which the average annual Medicaid costs for asthmatics in a school with an SBHC were \$471 less than those for asthmatic students in a school without an SBHC¹.
- 2. Projected Annual Net Savings of \$1,028,449 from Early Detection and Treatment of Gonorrhea and Chlamydia** — These savings are based on research findings that show that 40% of undetected cases of chlamydia in female students result in Pelvic Inflammatory Disease (PID), and those female students with PID are 8 times more likely to test positive for HIV. The savings projected here are based on the assumption that these SBHCs successfully detect and treat the estimated 314 female students that come to the SBHCs with chlamydia or gonorrhea.
- 3. Projected Annual Net Savings of \$135,767 from Reduced Incidence of Flu Cases Due to SBHC Injection and Nasal Immunizations** — Based on an average probability of 1 in 8 persons catching the flu in a given year, combined with a conservative 51% injection vaccine effectiveness rate for the 2013 – 2014 flu season² and 77% nasal vaccination effectiveness rate³, we estimate that the 911 students receiving the flu vaccine resulted in the prevention of close to 91 cases of flu. Savings are based upon the average medical costs to treat the flu, and the estimated lost family earnings (e.g., for taking a child from school to the doctor or ER and for time spent recuperating at home) times these 91 cases. Due to the simplicity of administering the flu vaccine (by mist or injection), the cost to provide the vaccine was estimated at only one third of an average encounter.

¹ Evaluation of Healthcare Costs and Utilization among Medicaid Recipients in Schools with School-Based Health Centers; Guo, Jeff J. PhD; Jang, Raymond PhD; Cluxton, Robert J. Pharm. D.; Submitted to the Health Foundation of Greater Cincinnati (2005).

² This refers to the percentage of individuals for whom the vaccine “works” (i.e., prevents contracting the flu). The 51% is per information at the CDC website <http://www.cdc.gov/flu/about/season/effectivenessqa-2013-14.htm>

³ Nasal spray is 50% more effective than injections per CDC website <http://www.cdc.gov/flu/about/qa/nasalspray-children.htm>

4. ***Projected Annual Net Savings of \$744,831 Due to a Projected Decrease in Prescription Drug Costs*** — An SBHC study in Cincinnati found that the average annual prescription drug cost for students in SBHCs was \$351 (adjusted for 2015 dollars) less than for students in comparable schools without SBHCs. The report’s authors contend that at least some of these savings are from SBHCs prescribing less expensive, prevention-oriented drugs at an earlier stage of the disease than would be prescribed for students without access to an SBHC. Savings may also be due to improved medication adherence/compliance, as a result of SBHC involvement and follow-up. In the case of this report, these savings were only attributed to the 5,763 students (of the total 14,777 seen by DOH-funded SBHCs) that made at least three visits to the SBHC during the course of the year.

5. ***Projected Annual Net Savings of \$9,548 from Application of Dental Sealants*** — These SBHCs also provide dental check-ups and treatment on-site for students in some of the SBHCs. The application of dental sealants is among the various treatments provided through this intervention⁴. The savings of about \$384 (in 2015 dollars) per dental sealant is based upon a similar program in Oregon⁵, which demonstrated how dental sealants prevented future cavities, as well as the associated costs. The SBHC costs were likewise based on the estimate from this program of \$76 (in 2015 dollars) per sealant.

Clinical Net Present Value (NPV) EV-ROI Measures

6. ***Projected Lifetime NPV Savings of \$3,190,591 Due to Behavioral Health Service*** — The estimated savings from SBHC behavioral health services is based upon an examination of 2,683 unique students, who were responsible for 13,662 individual, group, and family behavioral health visits. For the purposes of this EV-ROI analysis, the behavioral health visits were assumed to follow the pattern shown in “Table 5: Behavioral Health Visits” of the “School-Based Health Center Improvement Project: Multi-Year Summary of NM Encounter Data” for School Year 2013 – 2014. The taxpayer portion of the NPV return from meta-studies performed by the Washington State Institute for Public Policy was used to estimate the returns for therapies aimed at the top five reasons students seek behavioral health service: Adjustment Reaction Disorder, Depression Disorder, Anxiety, Post-Traumatic Stress Disorder (PTSD), and Family Disruption.

⁴ We believe there are additional savings from other dental treatment services provided, and will include these projected savings upon further research.

⁵ Based on data from the study of School-Based Dental Prevention Efforts of the Happy Smiles Program in Oregon (2004-2011).

7. **Projected Lifetime NPV Savings of \$397,549 Due to Routine Adolescent Immunizations per CHIPRA Measure 6** – According to the “School-Based Health Center Improvement Project: Multi-Year Summary of NM Encounter Data” for 2013 – 2014, four percent of all unique SBHC users received their routine adolescent immunizations at the SBHC. For purposes of the EV-ROI analysis, it was assumed that 4% of the 14,777 unique users, or 591 students received their immunizations through their SBHC. A team of PhD, MD, MPH, and MBA researchers at the CDC concluded that there is a 10.1:1 benefit-cost ratio of administering the routine childhood immunization program in the United States⁶. The cost of administering the vaccines was assumed to be \$73.92 per student times the 591 students, which equals \$43,687, with a corresponding benefit of \$441,236 and a net savings of \$397,549.

Non-Clinical Short-Term *EV-ROI* Measure

A significant, non-clinical, short-term benefit is associated with parents avoiding the need to leave work to pick up sick children to take them to an outside medical provider, due to the fact that they are now receiving care at the SBHC.

8. ***Projected Annual Savings of \$696,276 from Avoidance of Parents’ Productivity Losses (i.e., time off work)*** — The savings articulated here are based on the premise that the presence of an SBHC in a school reduces the number of times a parent would have to take time off work in order to pick up a sick child from school. A related study estimated that 50% of SBHC encounters would have required a parent to pick up his or her child from school in the absence of an SBHC. In addition, 50% of the encounters with these SBHCs, times an average of four hours of a parent’s time off of work to pick up that child, yields an estimated 59,426 hours of parents’ time taken off of work⁷ (half of the 43,062 annual encounters times four hours per encounter times an estimated 69% of the parent’s population in the workforce). An average hourly wage of \$11.72 was assumed, since that was the mean hourly wage for the lowest quartile of wage earners.

⁶ Economic Evaluation of the Routine Childhood Immunization Program in the United States, 2009; Zhou, Shefer, et al; National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia; PEDIATRICS Volume 133, Number 4, (April 2014).

⁷ Our projections are further reduced by the assumption that only about 69% of SBHC students’ parents are actually in the work force.

Non-Clinical NPV *EV-ROI* Measure

The most significant of the non-clinical NPV *EV-ROI* measures represents the change in a student's lifetime trajectory. That seminal *EV-ROI* measure is the degree to which the 53 SBHCs contribute to high school graduation rates by keeping students healthier, increasing their ability to remain engaged in the classroom, reducing school absences, and thus, reducing the likelihood of dropping out of high school.

- 9. Projected Net Present Value (NPV) of \$13,587,515 for Lifetime Incremental Tax Revenues Generated by a Higher Number of High School Graduates in SBHC Schools** — A sampling of the 2011 graduation rate of students from SBHCs (in another study of comparable SBHCs⁸), compared against those schools without SBHCs, showed a 5.3% higher rate of SBHC students graduating high school. Using this same logic and 5.3% higher graduation rate applied to the 53 NM SBHCs resulted in a projected 110 additional high school graduates in SBHC schools that would not have otherwise graduated. A study examining the lifetime impact of earnings and income tax revenues derived from those earnings estimates an additional \$123,081 (NPV) in income tax revenues (adjusted for 2015 dollars) for each high school graduate. This yields a total benefit, in terms of additional income tax revenues, of \$13.6 million.

***EV-ROI* Measures for New Mexico Alliance for School-Based Health 2013-14**

Ref #	Assumptions About Program Effectiveness	
I	Number of schools with SBHCs	53
I	Total students utilizing SBHC services	14,777
II	Total high school students utilizing SBHC services	8,316
III	Number of students with 3 or more visits to SBHC	5,763

⁸ The study was based on 22,522 visits in school year 2011-2012 to 11 SBHCs run by East Baton Rouge's Health Care In Schools.

IV	Estimated number of SBHC users receiving asthma care	443
IV	Number of asthma-related visits	914
V	Number of STI screenings (female)	618
V	Estimated number of female students treated for STIs	498
VI	Number of students receiving injected flu vaccinations	241
VII	Number of students receiving nasal flu vaccinations	670
VIII	Number of students receiving routine adolescent immunization	591
IX	Number of students receiving behavioral health services	2,683
X	Estimated number of dental sealants provided	31
XI	Total net annual costs to operate and staff the 53 SBHCs	\$3,183,100
XII	Total number of SBHC visits in school year	43,062
XIII	Cost per encounter	\$74

Clinical <i>EV-ROI</i> Measures		Savings	Costs	Net Savings
XIV	Reduced hospitalization costs for asthmatic students (CHIPRA)	\$208,799	\$67,562	\$141,237
XV-XVIII	Early detection of chlamydia (CHIPRA) and gonorrhea	\$1,074,131	\$45,682	\$1,028,449
XIX - XXIII	Reduced cases of flu due to vaccination (CHIPRA)	\$158,214	\$22,447	\$135,767
XXIV	Routine adolescent immunizations (CHIPRA)	\$441,236	\$43,687	\$397,549
XXV	NPV lifetime savings from behavioral health services (CHIPRA)	\$4,107,748	\$917,157	\$3,190,591
XXVI - XXVII	Decreased use of prescription drugs due to prevention	\$2,022,824	\$1,277,992	\$744,831
XXVIII	Application of dental sealants (CHIPRA)	\$11,904	\$2,356	\$9,548
	Subtotal	\$8,024,856	\$2,376,883	\$5,647,972
Non-Clinical <i>EV-ROI</i> Measures				
XXIX - XXXII	Avoidance of parents' productivity Loss	\$696,276		
XXXIII - XXXIV	NPV of increased income tax revenues from improved earnings due to better high school graduation rates at schools with SBHCs	\$13,587,515		
TOTAL PROJECTED SAVINGS FROM ALL ABOVE EFFECTS		\$22,308,646		
TOTAL ANNUAL COSTS FOR OPERATING 53 SBHCs		\$3,183,100		
<i>EV-ROI</i> PER DOLLAR OF FUNDING THE SBHCs		\$7.01		

Assumptions on Program Effectiveness

Reference	Finding	Citation
I	There were a total of 14,477 SBHC users (students) at one of 53 SBHCs in New Mexico in the 2013-14 academic school year.	<i>Information provided by the New Mexico Alliance for School-Based Health.</i>
II	8,316 of SBHC visits (60%) were from students aged 14-19.	<i>Information provided by the New Mexico Alliance for School-Based Health.</i>
III	An estimated 39% of SBHC users (5,763) had three or more visits.	<i>SBHCIP Project: Multi-Year Summary of NM Encounter Data: October 2014.</i>
IV	An estimated 443 students (3% of all SBHC users) received treatment for asthma.	<i>SBHCIP Project: Multi-Year Summary of NM Encounter Data: October 2014.</i>
V	618 students received STD detection and treatment services (based on an average of 1.24 encounters per student).	<i>Information provided by the New Mexico Alliance for School-Based Health. SBHCIP Project: Multi-Year Summary of NM Encounter Data: October 2014.</i>
VI	241 students received a flu vaccination injection during academic school year 2013-2014.	<i>Information provided by the New Mexico Alliance for School-Based Health.</i>
VII	670 students received a nasal flu vaccination during academic school year 2013-2014.	<i>Information provided by the New Mexico Alliance for School-Based Health.</i>
VIII	4% or 591 students received their routine adolescent immunization at a cost of \$74 per visit. There is a \$10.10 is returned for every \$1 spent on routine immunizations.	<i>Economic Evaluation of the Routine Childhood Immunization Program in the United States, 2009; Zhou, Shefer, et al; National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia; PEDIATRICS Volume 133, Number 4, April 2014</i>
IX	Taxpayer NPV was used for Anxiety (\$1,837), Depression (\$90) and Trauma (\$1,920). These 2013 values were stated in slightly higher 2015 rates	<i>Washington State Institute for Public Policy (WSIPP) Benefit-Cost Results for Children's Mental Health; downloaded from http://www.wsipp.wa.gov/; June 2015</i>
X	31 dental sealants were provided to students	<i>Information provided by the New Mexico Alliance for School-Based Health.</i>
XI	The total annual budget to operate these 53 SBHCs, inclusive of the \$450,000 federal Medicaid match, in academic school year 2013-14 was approximately \$3.18 million.	<i>Information provided by the New Mexico Alliance for School-Based Health.</i>
XII	There was a total of 43,062 encounters at the 53 schools with SBHCs in New Mexico.	<i>Information provided by the New Mexico Alliance for School-Based Health.</i>
XIII	The average cost per encounter for the New Mexico Health Alliance SBHCs is approximately \$74.	<i>Calculation derived from XI and XII above.</i>

Assumptions on Costs and Benefits

Reference	Finding	Citation
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XIV	Pre-SBHC hospitalization costs per asthmatic student was \$1,150 over 2.5 years (\$460 annually). Post-SBHC hospitalization costs for asthmatic students over 2.5 years dropped to \$180 (\$72 annually). Adjusting for inflation, the 2015 estimated dollar savings per asthmatic student is \$470.	<i>Evaluation of Healthcare Costs and Utilization among Medicaid Recipients in Schools with School-Based Health Centers; Guo, Jeff J. PhD; Jang, Raymond PhD; Cluxton, Robert J. Pharm. D.; Submitted to the Health Foundation of Greater Cincinnati 2005</i>
XV	Approximately 63% of STDs detected are chlamydia or gonorrhea.	<i>High Prevalence and Incidence of Sexually Transmitted Diseases in Urban Adolescent Females Despite Moderate Risk Behaviors; Bunnell, Rebecca E. et al; The Journal of Infectious Diseases, 1999; Volume 180, pp 1624-1631.</i>
XVI	40% of undetected chlamydia/gonorrhea cases results in Pelvis Inflammatory Disease. Women with PIDs are 8 times more likely to test positive for HIV.	http://www.womenshealth.gov/publications/our-publications/fact-sheet/chlamydia.cfm#h
XVII	The average lifetime cost for treating PIDs (in 2015 dollars) is \$2,773.	http://www.ncbi.nlm.nih.gov/pubmed/12916126
XVIII	The average lifetime cost for treating HIV/AIDS is PIDs (in 2015 dollars) is approximately \$1.50 million (\$30,072 times 50 years).	http://www.ncbi.nlm.nih.gov/pubmed/12916126
XIX	Percentage of the U.S. population that will get the flu, on average, each year: between 5% and 20%.	http://www.webmd.com/cold-and-flu/flu-statistics
XX	The estimated annual effectiveness rate of a flu vaccine injection is approximately 51%.	http://www.cdc.gov/flu/about/season/effectivenessqa-2013-14.htm
XXI	The estimated annual effectiveness rate of a nasal flu vaccine injection is approximately 77%.	http://www.cdc.gov/flu/about/qa/nasalspray-children.htm
XXII	The estimated transmission rate of the flu to other family members is approximately 5.6%. Another report estimated transmission rate at 15%	<i>Burden of influenza in healthy children and their households; Authors: Principi N et al; Archives of Disease in Childhood; Volume 89 (2004), pp. 1002-1007.</i> <i>15% Transmission rate on slide 3 of 11 in "Modes of Transmission of Seasonal Human Influenza Viruses"</i> http://www.fao.org/docs/eims/upload/250675/aj154e00.pdf
XXIII	The estimated average medical costs for treating the flu, in 2015 dollars, is about \$897 dollars. The estimated value of lost family earnings per flu case, in 2015 dollars, is \$1,850.	<i>The annual impact of seasonal influenza in the US: Measuring disease burden and costs; Molinari, Noelle-Angelique M. et al; Vaccine; Volume 25 (2007), pp. 5086-5096</i>
XXIV	There is a 10.1:1 benefit-cost ratio of administering the routine childhood immunization program in the United States	<i>Economic Evaluation of the Routine Childhood Immunization Program in the United States, 2009; Zhou, Shefer, et al; National Center for Immunization and Respiratory Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia; PEDIATRICS Volume 133, Number 4, (April 2014)</i>
XXV	The average Net Present Value of lifetime savings of taxpayer savings associated with students receiving mental health therapy services is estimated a \$1,507.	<i>Return On Investment: Evidence-Based Options to Improve Statewide Outcomes; Washington State Institute for Public Policy; April 2012.</i>

Assumptions on Costs and Benefits

Reference	Finding	Citation
XXVI	The average Medicaid prescription drug cost for students in non-SBHC schools was \$640, as compared to only \$350 for students in schools with SBHCs. Updated to 2015 dollars, this results in an average savings per student of \$351.	<i>Evaluation of Healthcare Costs and Utilization among Medicaid Recipients in Schools with School-Based Health Centers; Guo, Jeff J. PhD; Jang, Raymond PhD; Cluxton, Robert J. Pharm. D.; Submitted to the Health Foundation of Greater Cincinnati (2005)</i>
XXVII	The estimated SBHC costs and benefits associated with this measure was limited to the number of students that had three or more visits to an SBHC. Cost per student was projected based on the average of 4.62 visits per student receiving behavioral health services at the \$74 cost/encounter, totaling \$342 per student.	<i>Information provided by the New Mexico Alliance for School-Based Health.</i>
XXVIII	Estimated savings (in the form of averted future dental costs for cavities) per tooth is \$384 (in 2015 dollars), as compared to a cost/tooth of only \$67).	<i>Based on data from the study of School-Based Dental Prevention Efforts of the Happy Smiles Program in Oregon 2004-2011</i>
XXIX	Estimate that 50% of SBHC encounters would have required an average of four hours that a parent would need to take off of work to pick up their child and either bring them home or bring them to a clinic or doctor's office.	<i>Evaluation of Healthcare Costs and Utilization among Medicaid Recipients in Schools with School-Based Health Centers; Guo, Jeff J. PhD; Jang, Raymond PhD; Cluxton, Robert J. Pharm. D.; Submitted to the Health Foundation of Greater Cincinnati 2005</i>
XXX	There was an estimated 45,535 encounters among the 56 SBHC in New Mexico.	<i>Encounters with Students in East Baton Rouge Parish; Health Centers in Schools, East Baton Rouge (2009-10).</i>
XXXI	Low-wage employees, whose earnings fall in the bottom 25% of the earnings distribution, earned \$9.73 per hour in 2005 dollars (\$11.24 in 2015 dollars).	<i>Families and Work Institute; Research Brief No. 1; November, 2006.</i>
XXXII	An estimated 69% of SBHC students' parents were in the workforce.	<i>Estimate requiring verification.</i>
XXXIII	The average graduation rate in 2011 from a sampling of two high schools with SBHCs in Louisiana was 70%, as compared to only 64.7% among a sampling of demographically-comparable non-SBHC high schools.	<i>Information provided by the East Baton Rouge Health Centers in Schools.</i>
XXXIV	Including Social Security contributions, a high school dropout will contribute nearly \$123,081 less in taxes than a high school graduate.	<i>Labor Market Consequences of an Inadequate Education; Rouse, Cecilia Elena; Princeton University and NBER; Prepared for the Equity Symposium on "The Social Costs of Inadequate Education" at Teachers' College, Columbia University; September 2005.</i>

Key Findings and Critical Recommendations

1. **Strategic Interventions.** The *EV-ROI* estimate is based upon a subset of all visits. A more robust analysis looking at additional strategic interventions in New Mexico would have to be undertaken to yield a more complete picture. For instance, there are several high-frequency type encounters — Early and Periodic Screening, Diagnostic, and Treatment (EPSDT), Sports Physicals, and Weight Category Diagnosis/Counseling for Nutrition/Physical Activity — that are absolutely necessary, but for which the research literature is either non-existent, or is equivocal on the topic of ROI.
2. **Flu Immunizations.** Certain interventions that are known to yield very significant returns were reported at an unusually low rate. For instance, flu immunizations are a very low-cost and highly effective public health intervention that returns \$7.05 in projected savings for every dollar expended. Yet in the 2013 – 2014 school year, only 911 (or 6%) of the 14,777 students participating in SBHCs received flu immunization at an SBHC. Assuming an equal number of students received their flu vaccinations outside of their SBHC, a potential of close to \$1.4 million more in net return could be realized if flu vaccinations were made a priority.
3. **Routine Adolescent Immunizations.** A similar case can be made for routine adolescent Meningococcal, Tdap, Td, Tetanus, and Diphtheria immunizations as was made for the flu vaccine. That is, only 4% of the unique visitors to SBHCs received the routine adolescent vaccination, yet 29% of unique patients are in the target age group (between the 11th and 13th birthdays). Assuming an equal percentage (4%) of students receive their vaccinations outside of the SBHC, that still leaves 21% of 14,777 students, or 3,103, having not received their adolescent immunization. Assuming that students, who use an SBHC throughout the course of a year, represent about one-third of all students, then, there are a potential of 9,309 students, who should be vaccinated. Reaching 100% of the uncovered youth would represent an almost 15-fold increase in potential savings, or an additional NPV of \$5.9 million.
4. **Asthma.** Similarly, the rate of students served for asthma was 3% of those students utilizing an SBHC. According to a 2014 report by the New Mexico Department of Health entitled, “The Burden of Asthma in New Mexico: 2014,” the prevalence of asthma among middle school and high school students is greater than 12%. This means that approximately 1,330 (9%) of the 14,777 students utilizing an SBHC suffer from asthma, yet were not treated at the SBHC. This number does not include asthma sufferers among those students, who did not use an SBHC in the 2013 – 2014 school year (12% of all those students beyond the 14,777). Finding and serving these children would quadruple the return from asthma-related interventions, saving an additional \$423,711 plus related productivity losses of parents. Assuming that the 14,777 served represent about one third of the 53-school

population served by the SBHCs studied here, there are approximately 30,000 children not seen by an SBHC in the 53 schools. Applying the 12% asthma prevalence rate to these children means there are 3,600 more children with asthma, who were not seen. Finding and serving these children would again triple the savings from \$564,948 to close to \$1,694,845, a 12-fold increase over current savings.

- 5. Track Outcomes.** This entire analysis was based upon numbers served by these NM SBHCs, but with correlating health outcomes attributed to studies conducted on similar populations. A more substantive and defensible case can be made for the effects of these NM SBHCs if students' health outcomes and graduation rates were tracked over time.

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