

The **Cost Benefit** of Bullying Prevention

A First-time Analysis of Savings



HIGHMARK[®]
FOUNDATION

BULLYING IS A MAJOR PUBLIC HEALTH ISSUE.

It is a malicious, pervasive behavior that has emotional and physical effects on its victims, ultimately hindering learning and a positive school experience for thousands of children.



BULLYING AND ITS COSTS

Executive Summary

Since 2006, tens of thousands of Pennsylvania school children have experienced a safer school environment as bullying incidences have decreased across grades 3 through 12. These children attend schools that have adopted the **Olweus Bullying Prevention Program (OBPP)** through an initiative of the Highmark Foundation. The promising results that have been achieved in reducing in-school bullying behaviors have led the Foundation to question the larger implications of bullying prevention. It saw a need to understand the costs associated with bullying and the financial impact when those costs are avoided through effective bullying prevention programming.

The Cost Benefit of Bullying Prevention: A First-Time Look at Savings, prepared by the Center for Health Promotion and Disease Prevention at the Windber Research Institute, is an outgrowth of the Foundation's ongoing bullying prevention initiative. It looks at the financial impact that could be anticipated based on the

expansion of the Foundation-funded implementation of the evidence-based OBPP over a three-year period and in the 49 Pennsylvania counties it serves. It meets a specific need for investigation into the cost benefits of investing in bullying prevention programs.

The Foundation is not alone in its pursuit of answers to the financial ramifications of bullying. *The Economic Impact of School Violence: A Report for Plan International* [1] cites the lack of studies addressing return-on-investment or cost-benefit analyses of violence prevention programs. A recent report prepared for the Swedish National Council for Crime Prevention asserts that the cost benefits of anti-bullying programs are needed to show how much money is saved for the money expended and that "saving money is a powerful argument to convince policy makers and practitioners to implement intervention programs." [2] The first of its kind conducted in the U.S., this cost-benefit analysis (CBA) demonstrates the potential for significant cost benefits from three perspectives: schools, health care and society.



Saving money is a powerful argument to convince policy makers and practitioners to implement intervention programs.





Children who report using bullying behaviors against others are **over three times** as likely to have multiple criminal convictions by their early twenties.

In the U.S., bullying is pervasive and has been associated with violence. Bullying happens when there is an imbalance of power or strength. It can be direct, as in verbal insults, or indirect, as in spreading malicious rumors. Each time a child bullies or is bullied, potential exists for long-term social and health consequences. For some children involved in bullying, **health outcomes include headaches, sleep problems, anxiety and depression** among other psychosomatic symptoms,[3] and treatment for these conditions has subsequent costs. Children who leave school because they are bullied and seek alternative placement or drop out altogether create a direct loss of revenue to their school district. Socially, children who report using bullying behaviors against others are over three times as likely to have multiple criminal convictions by their early twenties and higher self-reports of drug and alcohol use.[4] The drain on the justice system and social services these individuals generate results in a cost burden to tax payers who ultimately pay for these services.

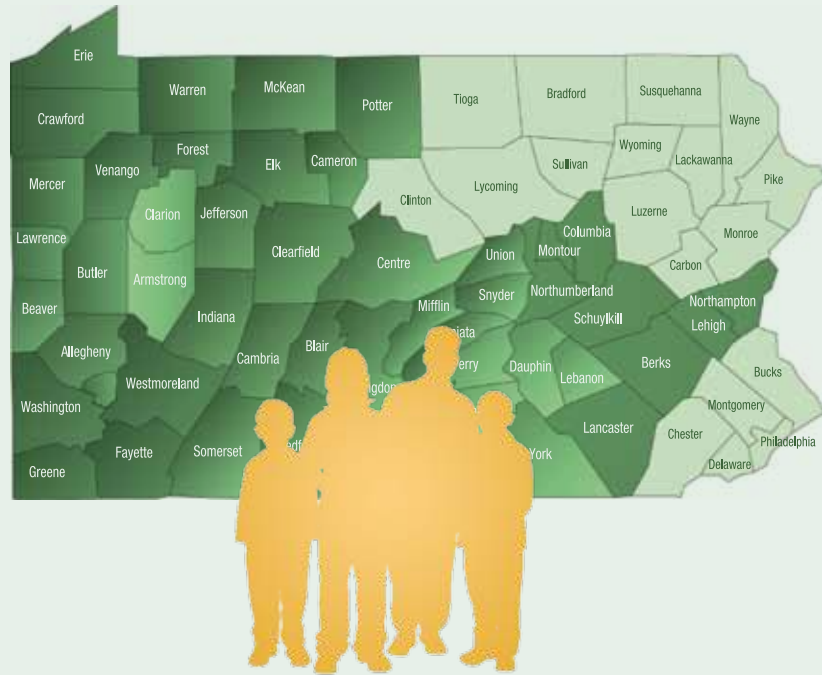
Research shows that between 15 to 25 percent of students in the U.S. are bullied with some frequency while 15 to 20 percent report bullying others. [5] School-based bullying spawns a climate of fear, disrespect and disruption within schools, but until now the economic impact on schools has been unclear.

Over 160,000 students miss school every day due to fear of being bullied. [6] Children who are bullied and finding no relief, sometimes leave their public school and seek alternate placement. Early school leaving translates to lost revenue and added costs to the home district that often are not considered when school officials determine whether or not to invest in a bullying prevention initiative.

Ever-increasing economic challenges for schools, communities and local, state and federal agencies create urgency in understanding the cost benefit of prevention programs to justify funding them. Some administrators and others responsible for allocating school budgets are beginning to appreciate the benefits of bullying prevention. Woodland Hills School District outside of Pittsburgh, Pa., an urban **OBPP** adopter with a diverse student population and plagued by racial tensions and disruptive behavior, saw dramatic change among its 4,400-member student body. At the beginning of the 2008-09 school year when their bullying prevention efforts began, they had seen 333 expulsions, 487 in-school suspensions and 947 out-of-school suspensions. By the end of the third year of implementing **OBPP**, expulsions had been reduced to zero. The district's Superintendent, Dr. Walter Calinger, states that the experience in his district, "has strong implications for cultural changes and change in policy at the local, regional

and national levels.” While not every school district faces the severity of issues nor the stellar results seen at Woodland Hills, this district’s outcomes speak to the larger cultural and financial impact an effective bullying prevention program can have over time. The Highmark Foundation’s intent in funding the following CBA is to add to the body of bullying prevention knowledge and support and encourage implementation of prevention programs. Knowing that the **OBPP**, when implemented with fidelity, can effectively reduce bullying—combined with evidence of its cost effectiveness—constitute strong arguments and rationale for schools to embrace and institute long-term, evidence-based programs to prevent bullying.

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The Highmark Foundation began funding bullying prevention in Pennsylvania schools nearly 10 years ago. In 2006, the Foundation integrated those efforts into Highmark Healthy High 5®, a five-year, \$100 million initiative that focused on five areas critical to children’s health: physical activity, nutrition, grieving, self-esteem and bullying prevention. The scope of the initiative afforded wide-scale adoption of the Olweus Bullying Prevention Program within 49 Pennsylvania counties whereby **210,000 children**, or 14 percent of the total student population in those counties, were affected. The Foundation’s efforts represent the single largest implementation of the OBPP in the U.S. Outcomes data from the ongoing initiative show reductions in bullying across grade levels, over several years. Reports detailing outcomes can be accessed through www.highmarkfoundation.org.



How Cost Benefit Is Determined

Public Health Role in the Highmark Foundation's Approach to Bullying Prevention

The Highmark Foundation's continuing commitment to safe school climate and the health and well-being of children grows out of one of its core areas of emphasis, family health. The Foundation has also applied the theories and practices of public health science and research in its approach that includes: coalition development, determining school and community resources and identifying a programmatic and cost benefit to society. A public health focus applied to bullying prevention and the implementation of the Olweus Bullying Prevention Program also calls for continuous evaluation of program planning and impact as well as modifying and enhancing program aspects as data indicate. The result has been to protect the health of children, strengthen systems and build capacity within schools and the agencies that serve them so that long-lasting bullying prevention takes root and enables and empowers schools to sustain the effort. This approach has proven successful in the field of public health to bring about sustainable change over a large population. Through the collection, analysis and interpretation of data, the Foundation's effort has been refined and its impact maintained over time.

ECONOMICS OF THE OLWEUS BULLYING PREVENTION PROGRAM

Understanding the Economics of Prevention

Bullying is a complex issue, and preventing it calls for a comprehensive approach.

The Olweus Bullying Prevention Program (OBPP)

is the most researched and best-known bullying prevention program available today. It is a whole-school approach, tackling bullying through involvement at all levels: administrators, teachers, school staff and students, whether in classrooms, hallways, cafeteria or bus. The goals of the OBPP are to prevent bullying problems from arising and to achieve better peer and adult-student relationships.

Five years of implementing and evaluating the impact of the **OBPP** in the schools that have adopted it through the Highmark Foundation have proven, through impressive reductions in bullying behaviors, that bullying prevention works. Research reveals that fidelity to program components is key to success; [7] and fidelity monitoring has been a hallmark of this large-scale implementation. Through the use of site visits and survey tools, project coordinators aim to ensure that the **OBPP** is delivered as it was designed and in the correct dosage.

Data collected through fidelity monitoring informs technical assistance and additional continuing education opportunities for schools. This targeted support and adherence to basic principles of bullying prevention have delivered outcomes [8] [9] in line with the original research conducted by Dr. Dan Olweus, program creator, in Norway. [10] [11] [12] [13] The question of cost effectiveness grew out of the successes of the Foundation's bullying prevention initiative and became the impetus for examining economic benefits.

A cost-benefit analysis (CBA) has an advantage over a straightforward financial or return-on-investment analysis because a CBA considers the program's outcomes and impact or benefits along with the cost to implement at the school level. Understanding the cost benefits of the OBPP are far-reaching and various because bullying is an issue that affects many stakeholders beyond the children that are affected. They include families, schools, health care organizations, the justice system, the social service system, and taxpayers that often fund such programs.

WHY A CBA IS PREFERRED OVER A RETURN ON INVESTMENT ANALYSIS

- ▶ Data from disparate sources and collected for different reasons can be combined to estimate anticipated outcomes on populations beyond those included in specific studies.
- ▶ Intangible benefits and the avoidance of future costs, typically not included in financial analyses, can be identified and quantified.

The Importance of the Three Impact Areas

Data gathered from the Foundation's bullying prevention initiative as well as research data from the literature, and public statistics are the basis for the cost-benefit models that were used to investigate three areas of potential cost impact:



HEALTH CARE

Decreased utilization through reduction in health-related consequences of bullying.



SCHOOLS

Decreased early school leaving, alternative placements, transfers and cyber school enrollment related to bullying.



SOCIETY

Decreased school dropout rates, drain on justice, and adverse effects on employment potential throughout the life of students who bullied or were bullied.

HEALTH CARE cost savings are important because they indicate that bullying is far more than a social issue. The effects of bullying are felt not only in schools but ripple through to the health care system as costs mount to treat the health conditions that are related to bullying.

SCHOOL cost benefits relate not only to improved school climate and classroom management, but also to school budgets. When students leave school for any reason, including because they are being bullied, public schools lose revenue from state reimbursements for student enrollment. Bullying prevention acts to keep students in school who might otherwise leave because they suffer the pain and humiliation of being bullied; and, unable to find relief, resort to alternative placements.

SOCIETAL cost benefits arise from students who stay in school and become productive members of society, who find jobs and add to community life instead of draining from it by using resources within justice and social service systems. The impact of students who drop out differs from those who leave school early because dropouts do not seek alternate placements to complete their education. Society feels the long-term impact in increased costs. Not surprisingly, the highest cost benefit comes when schools are equipped to interact and intervene with those who bully.

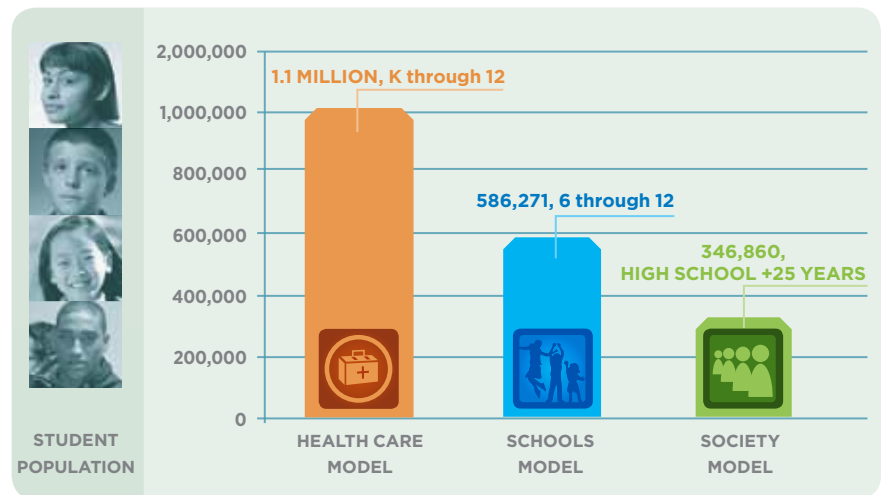
The results of the cost-benefit analysis not only demonstrate how savings are derived in these various arenas—both in the short and long term—but provide compelling justification for schools and communities to invest in bullying prevention.



Estimating the Impact on a Larger Population

To evaluate and illustrate the economic value or cost benefits afforded through implementation of the **OBPP** for a larger population, separate models were developed to capture consequences of bullying in the three areas examined. Each of the three models estimates the cost benefit of **OBPP** implementation if applied to the student population within the entire 49 counties that comprise the study area.

The health care model uses a population of 1.1 million students representing those in grades K through 12 in the study area. The school model uses only middle and high school students (grades 6 through 12), or a population of 586,271. Elementary schools were not included because few students leave school at this level for any reason; and early school leaving is the basis for the analysis. The societal model simulates a cohort of 346,860 students who completed high school and follows them for 25 years after their graduation.



The three models developed for this study were based on varying population sizes.

The Costs

Program costs are calculated for the population in each model based on the actual **OBPP** implementation in Pennsylvania. Many of the implementation costs depended on the number of teachers, staff and students in a school building; therefore, an average number of students, teachers and staff per building were used to estimate costs for the purposes of the CBA. The highest program costs were incurred in the first year of the three-year initiative because of start-up expenses, including baseline data collection, material cost and training. Based on the Highmark Foundation

Pennsylvania initiative, year-one costs represented approximately 62 percent of implementation over three years. Costs for years two, three and beyond were significantly lower and typically included only ongoing staff education and student surveys required by the program.

But implementation cost is only one factor in the cost-benefit equation. When considering the benefits of preventing bullying in the context of its far-reaching financial consequences, the savings weighed against cost that the analysis demonstrates in each of the three areas are significant and important.


Many of the **implementation costs** depend on the number of teachers, staff and students in a school building

COST BENEFIT IN THREE IMPACT AREAS

Impact on Health Care and Saved Costs | Calculating Benefits

Table 1. Prevalence rates, treatment rates and treatment costs of bullying-related health conditions and problems

The cost benefit of OBPP implementation is felt when the health-related consequences of bullying are reduced. If the number of students who bully or who are bullied decreases, fewer students experience health-related consequences and health care utilization and care costs also decrease. Savings arising from effectiveness of **OBPP** can be calculated by examining the known health conditions related to bullying, the treatment rate and cost to treat those conditions, and the estimated savings if those costs are avoided, as shown in Table 1.


| Health condition or problem  | Prevalence rate | | | Treatment rate | Cost of treatment per student (18 months) |
|--|--------------------------|--------------------|---------------|-----------------------|---|
| | Students who are bullied | Students who bully | Bully/Victim* | | |
| Mental Health disorders | 30.83% | 9.87% | 27.60% | 50.60% ⁱ | \$3,567 ⁱⁱ |
| Psychosomatic symptoms | 17.39% | 8.54% | 16.93% | 3.00% ^a | \$609 ^{b,ii} |
| Headache | 16.20% | 12.80% | 10.70% | 62.50% ⁱⁱⁱ | \$1,472 ⁱⁱ |
| Abdominal pain | 16.90% | 7.60% | 14.30% | 34.80% ^{iv} | \$609 ^{b,ii} |
| Alcohol abuse | 49.20% | 19.50% | 36.90% | 5.90% ^v | \$2,150 ^{vi} |

- a. Estimate based on up to two-thirds of children who seek medical treatment for “unexplained” symptoms [14]
- b. Based on symptomatic diagnoses
- c. MS and HS only

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* This particular victim is not as prevalent as the passive victim, and comprises just 5 percent of children who are bullied. However, the Bully/Victim tends to be quick tempered and tries to fight back if insulted or attacked and is more likely to alienate peers and teachers. When bullied, they tend to be bullied by many students or the entire class. Bully/victims in turn tend to bully those people who are younger or weaker than themselves.

Table 2. Summary results for health care model

|  | OBPP implementation cost without considering benefit of reduced utilization | Cost benefit of Years 1-3 implementation costs | Cost benefit of Years 2-3 implementation costs |
|---|---|--|--|
| Overall | -\$25,799,455 | -\$2,314,496 | \$13,747,365 |
| Per Student | -\$23.09 | -\$2.07 | \$12.30 |

The **total cost of OBPP** implementation over a three-year period for all 1,117,437 students in the Highmark Foundation, Pennsylvania initiative would be \$25.8 million or an average of **\$7.70 per student per year**.



The total cost of **OBPP** implementation over a three-year period for all 1,117,437 students in the Highmark Foundation Pennsylvania initiative would be \$25.8 million or an average of \$7.70 per student per year. A review of incremental cost benefit shows that the total implementation cost is \$23.09 per student for the three years of **OBPP** implementation. However, this cost is reduced to only \$2.07 per student when factoring in the **OBPP's** effectiveness in reducing health care visits and services related to bullying.

An additional perspective shows even greater cost benefits. Because the start-up costs are one-time expenses and occur only in year one of implementation, ongoing implementation results in lower costs in subsequent years. Ongoing implementation compares the program cost for years two and three against the benefits or reductions in health care utilization over the same period. Over time, savings in health costs reflect an overall gain over implementation cost or \$12.30 per student by the end of Year 3 as shown in Table 2, above.

COST BENEFIT OF OBPP FOR SCHOOLS

Preventing student withdrawal adds to the bottom line

In the current environment of shrinking budgets, public school districts may be hesitant to allocate limited resources to bullying prevention. However, the cost benefit of **OBPP** implementation is an important consideration when decision makers debate expenditures. Bullying undoubtedly disrupts the classroom and is detrimental to overall school culture, but the financial cost of bullying to a school district is significant and is felt in lost revenue when students leave school. A student's alternative placement, or opting for private, charter, cyber or home school, or simply dropping out, all have significant financial costs to public schools either from a loss of reimbursement and/or from paying the additional costs for alternative choices.

The PA Department of Education data was used to determine the average percentage of students and the average cost of each student involved in alternative placements (1 percent at \$17,300); or in other school arrangements for which

the district loses revenue, such as private, charter or cyber school (5 percent at \$8,123); and drop-outs (1.5 percent at \$8,123). Because these rates can vary significantly by school district, the estimates used for the analysis are conservative yet give a realistic view of how bullying behaviors affect the expenditures and loss of reimbursement for a school district. By applying the reduction rate of students who bully and who are bullied, the cost savings from a reduction in early school leaving due to bullying can be estimated. Savings from the revenue loss that occurs when students leave the school district become the benefit of OBPP implementation to the school district.


If public middle and high schools in the Foundation Pennsylvania initiative reduce the number of students who leave school because of bullying, those schools save a total of \$17.1 million. Deducting \$10.5 million in OBPP implementation costs, schools realize an overall benefit or savings of \$6.7 million, or **a gain of \$11.42** for every student in their enrollment.



The **cost of OBPP implementation** for a school is recovered if just two students are prevented from transferring to alternate schools due to bullying. If public middle and high schools in the Foundation Pennsylvania initiative reduce the number of students who leave school because of bullying, those **schools save a total of \$17.1 million.**



Table 3. Summary results for the school model

|  | OBPP implementation cost without considering benefit of early school leaving | Cost benefit of Years 1-3 implementation costs | Cost benefit of Years 2-3 implementation costs |
|---|--|--|--|
| Overall | -\$10,453,600 | \$6,693,109 | \$13,119,608 |
| Per Student | -\$17.83 | \$11.42 | \$22.38 |

When considering only the ongoing maintenance costs—and excluding the Year 1 start-up costs—the overall benefit becomes \$13.1 million or \$22.38 per student. Table 3 summarizes the results and the incremental cost benefit for the school model. At the individual district level, school districts can recover more than the cost of OBPP implementation if they prevent just two students from transferring to alternate schools due to bullying.



SOCIETAL COST BENEFITS OF BULLYING PREVENTION

Bullying Effects Felt for a Lifetime

Pay me now or pay me later is a phrase most public policy makers know well. Often public health programs and approaches are rejected because of the cost to implement them and the scarcity of funds to pay for them. In the long term, cost savings are sometimes difficult to project. But, beyond the immediate cost impact on schools, bullying also has serious cost implications that are paid over an individual's lifetime. Students who experience bullying are more likely to be involved with the justice system as well as to be dependent on public assistance programs. [15] They are also less likely to have the same earning potential as those who do not experience bullying.

An Assessment of the Labor Market, Income, Social, Health, Civic, Incarceration, and Fiscal Consequences of Dropping Out of High School: Findings for Michigan Adults in the 21st Century [16]

estimates the societal costs of bullying

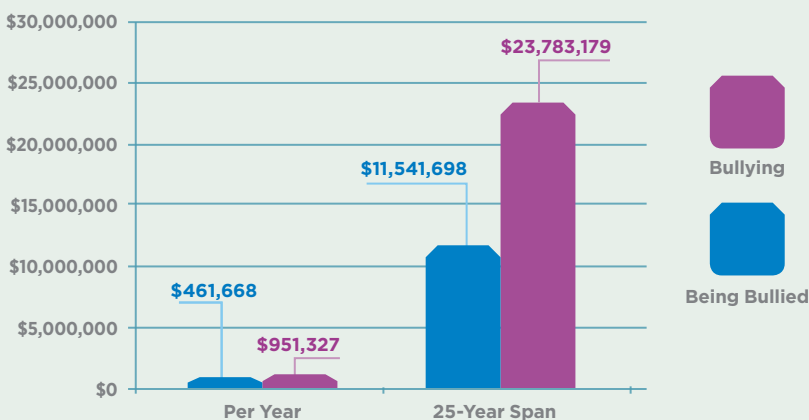
for a cohort of high school students for 25 years after graduation. The cohort was divided into three groups: those who bullied in high school, those who were bullied in high school, and those who did not experience bullying in high school. Those three groups were further divided into whether they dropped out of high school, earned a high school diploma only, or went on to graduate from college.

The societal cost of bullying was determined by comparing the difference between the societal cost for those who were not bullied with those who were bullied or bullied others in high school. The cost-benefit model simulated anticipated costs over 25 years based on employment opportunity, involvement with the justice system or reliance on public assistance where individuals in the simulation could switch between each of those options based on the probability of being in that option. See Figure 1, below.



Students who experience bullying are more likely to be **involved with the justice system** as well as to be dependent on **public assistance programs**.

Figure 1: Societal Costs of Bullying



(Additional costs compared to those who do not experience bullying)

Cost Benefit Estimates Recap

Projected Gains for Pennsylvania based on Highmark Foundation Bullying Prevention Initiative

- Decreased health care cost weighed against OBPP implementation cost decreases implementation cost per student from \$23.09 to \$2.07. When start-up costs are excluded, benefits increase to a gain of \$12.30 per student over a two-year period or total cost benefit of **\$13,747,365** in saved health care cost in 49 Pennsylvania counties.
- Costs of implementing OBPP in schools can be totally offset if only two students are prevented from leaving school because of bullying over a three-year period, translating to a total cost benefit of **\$13,119,608** to all schools across the 49 counties.
- The societal costs accrue and compound over the lifetime of students who bully or are bullied in high school compared to students who are not bullied. If high school bullying is prevented, cost benefits to society total **\$1,412,995** per individual over a lifetime.

ECONOMIC IMPLICATIONS OF BULLYING PREVENTION PROGRAM

A Need to Do More - Expanding the Cost Benefits

While this report is groundbreaking and advances understanding of the economic impact of bullying, it also represents the beginning of more work to be done. These models are conservative estimates of the cost benefit of bullying prevention. Potentially, more cost savings could be included into each of the evaluated areas. Examples include the physical injuries associated with bullying, the liability costs of districts who fail to appropriately respond to bullying reports, the long-term health consequences related to being bullied in school, and others. These simple models are a first step to measuring economic impact and lead the way for expanding the scope as consequences are more fully understood. The economic methodology of the CBA deliberately utilizes conservative data. Actual results could be far greater than reported here if more complete data were available.

To more fully develop a health care economic model, longitudinal studies following the health outcomes of children who experience bullying—now not existing in the U.S.—need to be conducted. In the school model, the number of students who leave school because of bullying, or who are placed in alternative school environments, and students who drop out because of bullying are not being measured directly. Finally, a more complete

economic analysis of the societal costs calls for a longitudinal study that follows individuals who experienced bullying in school into adulthood.

While some of the missing data is not feasible to collect, some data, such as those for the school model, could be gathered easily by adding a “bullying” category to the list of reported reasons for school leaving. For the health model, commonly reported health consequences of bullying, such as headache, abdominal pain and depression are treated as singular events not correlated with bullying. Once again, those data could easily be gathered by the health care provider adding a single question to routine data gathering, “Did this injury occur because of peer abuse?” or “Is this physical/psychological complaint related to peer abuse?” Too often the whole picture is missed because opportunities to ask the right questions are lost.

The study of bullying and its related consequences is an evolving science. This report and the subsequent discussions in homes, schools, communities, legislative venues, media, health care, justice and social service systems will likely engender wide-ranging debates about education policies, funding formulas, alternative placements, charter and cyber school impact and outcomes, and legal and ethical responsibilities rightfully due children in schools.

Too often the **whole picture is missed** because opportunities to ask the right questions are lost.

Shaping the Future

With further investigation, more can be learned about the cost benefits of bullying prevention. While CBA methodologies are not new, use of CBAs or cost-effectiveness analyses should be a component of any program evaluation. CBA models allow for the indirect use of information when actual data measuring the direct outcome does not exist; therefore, models can be improved through the collection of data directly measuring desired outcomes. In the short term, however, it is imperative that the findings in the report become well-known and publicized so that policy makers, parents and others concerned about the well-being of children become advocates for evidence-based bullying prevention. The CBA report adds timely evidence that further engaging schools in bullying prevention has ramifications beyond improving school climate such as decreased health care utilization, school cost savings, and social-ecological impact. These are clear indicators of cost savings that extend to families, communities, local, state and federal agencies, health care organizations, and schools.

The Highmark Foundation and its colleagues at the Center for Health Promotion and Disease Prevention at Windber Research Institute, who prepared this analysis, share a common vision to become thought leaders in the area of bullying prevention, to advance a public health perspective and approach to bullying, and to advocate for systems change to improve the long-term health outcomes and social support needs of youth in school and community settings.

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About the Center for Health Promotion and Disease Prevention

The Center for Health Promotion and Disease Prevention (CHPDP) at Windber Research Institute (WRI) was created in September, 2008 and was formerly at Memorial Medical Center in the Conemaugh Health System from 1997-2008. The work of CHPDP serves as a model for national public health programming at a time when health care organizations are seeking expert direction, leadership and vision. With a dedicated approach to prevention, health promotion and wellness, CHPDP is able to identify the positive changes in behavior and health outcomes for the citizens of our communities as well as demonstrate financial benefits. The CHPDP at WRI is positioned to assist hospitals, schools and other community agencies in becoming public health advocates for the communities they serve.

Programmatic Initiatives

- Highmark Healthy High 5 HALT!® Bullying Prevention Program
- Health Promotion in a Pediatric Asthma Clinical Setting: the Expanded Chronic Care Model
- World Health Organization — Health Promoting Hospital Coalition
- Cambria County Health Coalition
- Combat Stress Intervention Program
- KidShape® and TeenShape®
- Holistic Educational Approach to Learning (HEAL)
- Pennsylvania Youth Survey
- Spedali Civili, Brescia, Italy
- Pfizer Project — Large Population-Based Health Promotion Initiative

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