

Economic Impact of Domestic Violence in Pinellas County

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1. Introduction

CASA (Community Action Stops Abuse), the official domestic violence center for south Pinellas County, approached the Center for Data Analytics and Visualization at the University of South Florida, St Petersburg to evaluate the economic costs associated with domestic violence. Many of the costs associated with domestic violence are hard to quantify, either because the data are unavailable or the costs themselves are intangible. Thus, this study, while conservative in its estimates, provides a starting point to value the magnitude of such impacts. However, even a rough estimate can provide a sense of the worth of the preventive work CASA and its partners undertake to stop domestic abuse.

Two faculty from the University of South Florida, St. Petersburg led the data collection: Dr. Han Reichgelt, Professor of Information Systems Management and Director of the Institute for Data Analytics and Visualization; and Dr. Rebecca Harris, Economics Instructor. They worked closely with staff from CASA: Lariana Forsythe, CEO; Jill Flansburg, Senior Grants and Compliance Manager; and Gabriela Lopez, Community Education and Awareness Manager; and Sherry Clester, Victim Advocate for the St. Petersburg Police Department and CASA board member.

2. Methodology and Parameters of the Study

The team met regularly to first outline all the potential costs associated with domestic violence and then to determine specific values for those costs. Data came from CASA's own experiences, news reports, various local agencies in support of domestic violence victims, and local law enforcement agencies. Where local data was unavailable, the team used national data or concepts from academic literature to estimate local costs. All data sources are explicitly cited in the analysis below.

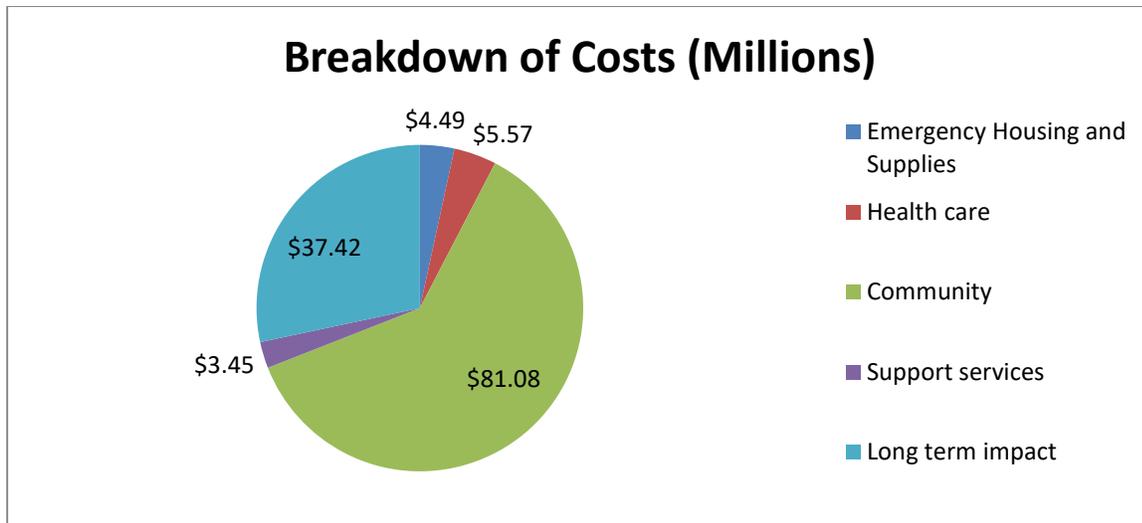
For the most part, the analysis is based on the reported number of domestic violence cases in Pinellas County for 2017, which consists of 6,228 incidents (FBI, 2017), of which 8 were reported fatalities. However, it is well documented (National Domestic Violence Hotline, 2013; Fluery, et al, 1998) that under-reporting is quite common in domestic violence situations, particularly in upper income families (Farmer and Tiefenthaler (2004)). Also, not all victims of abuse are able to receive the support they need simply because of a lack of resources within the community. For example, FCADV (2017) states that for the state of Florida, 5,212 requests for emergency shelter went unmet in 2017 because of a lack of shelter capacity.

In addition, in order to maintain the confidentiality of those who do report abuse or who do use the services available to them, much of their personal data, both before and after seeking help, is not reported. Thus, this study was unable to get exact information on income, work status, medical claims, etc.

The costs were categorized as follows: Emergency housing and supplies; Medical care; Community costs, including lost productivity, law enforcement, and legal costs; Support services, and Other long-term costs. A thorough description of the elements inside each category is given below.

3. Results

We conservatively estimate that these costs come to about \$132 million, which is roughly \$21,000 per victim. The figure below shows a breakdown of the \$132 million by major cost category.



a. Emergency housing and supplies

This category includes many of the immediate, non-medical costs that are incurred by domestic violence. Figures for emergency housing are estimated by calculating the costs for shelter at CASA and inflating these figures by 30%, to include the second emergency shelter in Pinellas County, The Haven of RCS. CASA has 100 beds and but typically houses 115 individuals each night, year-round, while The Haven has 30 beds. The calculation takes into account that about half of CASA's clients bring children with them, raising the per night cost of shelter from \$79.27 per individual to \$230.80 per family. Thus, the cost for individuals sums to \$1.7 million per year, while for families, the cost totals \$2.4 million per year. These costs cover food, transportation, housing, childcare, personal care, and youth advocate services. CASA has recently added pet boarding to the services it provides, which costs an additional \$30,000 per year. Including additional direct support that is provided by volunteers adds another \$34,000¹. The total annual cost of providing emergency shelter comes to nearly \$4.1 million.

This cost of emergency housing only includes costs from the county shelters. It would be difficult to measure the value of temporary housing that domestic violence victims find with family, friends, and at hotels, to say nothing of costs incurred by both individuals and society of homelessness.

¹ In order to capture the full value of economic activity associated with domestic violence, this study includes not just the cost of paid workers but also of volunteers. Given that volunteers could be spending their time in other volunteer or paid commitments, it is important to capture their efforts as a cost to society.

To estimate the cost of lost or damaged supplies, we first used CASA's budget for clothing and household items and divided it by the number of clients CASA sees. We then multiplied that per person cost by the total number of domestic violence victims, to estimate a total cost of \$113,000. We further used the average cost of a crime scene clean up for a murder (Sterman, 2013) and multiplied that by 8, for the number of homicides in 2017, to reach \$160,000 for this task.

b. Health care

Due to a variety of reasons, such as privacy concerns and non-reporting by victims, there is little data on health care costs due to domestic abuse. Thus, the current study uses health care costs based on estimates from a national survey (National Violence Against Women Survey, NVAWS) conducted by the Centers for Disease Control and Prevention (CDC, 2003). Though the survey was conducted in 1995, the results are still used as base line data in more current studies (for example, IWPR, 2017). As the CDC study suggests, these figures are lower-bound estimates, particularly because they are unable to account for longer term medical care costs.

Costs are broken down by short term medical care - including emergency room visits, outpatient hospital visits, overnight hospital stays, physician and dental visits, ambulance and paramedic services and physical therapy - and mental health care. The CDC (2003) study analyzed the number of visits to each type of care according to type of domestic violence - physical assault, rape or stalking. It is presumed that stalking victims do not seek medical care but only mental health services. The percentage of each type of injured victim seeking health care is shown in Table 1:

Table 1. Percentage of injured DV victims who seek healthcare services

	% seeking medical care	% seeking mental health care
Rape	36	33
Physical Assault	28	26
Stalking	--	43

source: CDC (2003).

These data are consistent with the more recent National Crime and Victimization Survey which reports that, on average, 36.6% of domestic violence victims who report an injury receive medical care (Truman and Morgan, 2014). In Pinellas County, of the 6,228 reported cases of domestic violence in 2017, 29 were rape cases, 6,187 physical assault cases, and 12 stalking cases. We then used the percentages from above and applied them to these figures to find out the total number of domestic-violence related health care visits in Pinellas County in 2017. Then, we used data from IWPR (2017) to get the cost per visit, which resulted in the total domestic-violence related costs in Pinellas County in 2017. The findings are reported in Tables 2a and 2b below, broken down by medical care and mental health care, respectively.

Table 2a. Calculations of Medical Care Costs, by type of assault

	# seeking medical care	cost per medical treatment	Medical Costs
Rape	3	\$3,342	\$10,855
Physical Assault	721	\$4,273	\$3,082,560
Total Medical Costs			\$3,093,415

Table 2b. Calculations of Mental Health Care costs, by type of assault

	# seeking mental health care	cost per mental health treatment	Mental health Cost
Rape	10	\$978	\$9,359
Physical Assault	1,633	\$1,017	\$1,661,135
Stalking	5	\$690	\$3,560
Total Mental Health Care Costs			\$1,674,055

The calculated mental health care costs do not include the costs of therapy for children who have witnessed domestic violence at home. Local estimates (Salloum *et al.*, 2015) suggest that, on average, PTSD treatment for children costs about \$2,300. Given that over 2,000 Child Protective Investigator (CPI) reports were filed in 2017, representing at least one child each, this could quickly add up to at least \$4,000,000 in needed (if not actual) treatment.

Following Jiwani, Himmelstein, Woolhandler and Kahn (2014), we also calculate the cost of billing and claims processing. They estimate that these administrative costs add on about 18% to total health care costs, which, in this study, amounts to over \$800,000.

In total, all health care costs come to \$5.6 million, which, for the reasons mentioned above, is likely an underestimate. In addition, we are unable to track longer term costs. Studies (Reeves and O'Leary-Kelly, 2003; CDC (2014)) suggest that survivors of domestic abuse are more likely to experience more chronic pain, gastrointestinal disorders, post-traumatic stress disorder, substance abuse, depression and general poor health than the rest of the population. IWPR (2017) states that, five years after an incident, abused women face medical costs that are about 19% higher than other women. In the case of mental health care, as well, there are long term consequences and associated costs, which have yet to be quantified.

c. Community costs

When domestic violence occurs, it harms not just the individual or family involved, but also costs are incurred by the surrounding community, in terms of lost work productivity, costs associated with sending children to foster care, and resources that must be spent in the courts and on protection and law enforcement. These costs total nearly \$80 million.

1. Cost of Lost Productivity

Some of the costs of victims and perpetrators missing work are borne by those individuals and some are felt by employers and the public. Using the official number of 6,228 reported cases of domestic violence in Pinellas County in 2017, we estimate that 44,903 days of work were lost by victims who had to miss work or quit their jobs following a domestic violence incident. This number was obtained by taking the number of victims in each category of violence (rape, physical assault, and stalking) and multiplying each by the average number of work days missed according to the National Violence Against Women Survey referenced above. Table 3 shows these calculations.

Table 3. Days of work missed, by type of domestic violence

Type of Domestic Violence	Number of Victims	Average Days of Work Missed	Total Days of Work Missed
Rape	29	8.1	235
Physical Assault	6,187	7.2	44,546
Stalking	12	10.1	121
TOTAL DAYS OF WORK MISSED			44,903

It is important to remember that these data only reflect reported cases of domestic violence, which is likely an underestimate.

We multiplied the number of work days missed by the average daily salary in Pinellas County, which is about \$176, according to the US Bureau of Labor Statistics (2018). This gave a total value of lost days of work totaling over \$7.9 million. Use of an average daily salary assumes that the distribution of victims of domestic violence mirrors that of the general working population, which ignores the possibility that not all victims are employed. A national survey conducted by CDC (2014) suggests that prevalence of intimate partner violence is higher in lower income groups, however. In addition, domestic violence reports to authorities (Farmer and Tiefenthaler, 2004) tend to skew toward lower income individuals.² Thus, it is possible that this figure is an over-estimate.

² As stated earlier, the current study only considers the costs of reported domestic violence cases. It is likely that upper income families are less likely to report domestic violence (Farmer and Tiefenthaler, 2003). Thus, while using an average salary may not reflect all *reported* cases of domestic violence, it may be more realistic in a study that is able to capture unreported incidents as well. On the other hand, CDC (2014) shows a higher prevalence of intimate partner violence among lower income levels.

There is also a question regarding lost productivity for those who remain in their jobs following an abuse incident. Farmer and Tiefertal (2003) note that in the NCICP survey, 41% of women who had been abused reported being distracted at work but did not find any attempts to put a value on less productive workers. Access Economics (2004), which conducted a study on the cost of domestic violence to the Australian Economy, suggests that the loss in productivity by some victims of domestic violence is countered by those who need to work harder to reduce their financial dependency on their abuser. Reeves and O'Leary-Kelly (2003) find that IPV victims lose between 5 to 9 days per year in productivity, compared to non-victims, due to difficulty concentrating, slower work, feeling tired, and needing to do work over. We used the conservative estimate of 5 days per year, multiplied it by the average daily wage and the number of victims, to estimate that about \$5.5 million was lost in worker productivity.

Following CDC (2003) and Access Economics (2004), this study measured not just the value of a victim's time away from paid work but also time away from unpaid work – i.e., household chores. This helps capture the full value of a person's time, particularly because if a person is unable to complete domestic tasks, he/she either must find (and possibly pay) someone else to do them or bear the consequences of not having them done. To estimate the value of lost time in household chores, we relied on the CDC (2003) study that suggested that about 85% of the value of lost time was from lost paid work and 15% was from lost (unpaid) household work. In Pinellas County, this implies that the value of lost domestic chores totaled \$1.4 million in 2017.

This study also included the value of lost wages for those perpetrators who end up in jail. In the first 6 months of 2017, 93 abusers went to jail on a felony charge and stayed in jail for an average 319 days, or a total of 29,667 days. In the same period, 162 abusers went to jail on a misdemeanor charge for an average of 41 days, for a total of 6,642 days. To account for the whole year, we doubled these figures to get 72,618 days in jail for the combined charges. We translated this into weeks of work and multiplied it by the average weekly wage in Pinellas County of \$837, for a total of over \$9.1 million in lost wages due to incarceration. As with the calculations for victims, this presumes perpetrators work full time and receive the average salary for Pinellas County.

Time lost at work, by either perpetrator or victim, also puts extra stress on the employer or manager, who must either find new workers or distribute tasks among other employees. Following Access Economics (2004), we assume that employers spend an average of 30 minutes on this kind of management for each day that his/her employee loses work due to domestic violence. Given the number of days of missed work from above (almost 45,000 days for victims, and 72,618 days for perpetrators), this translates into 22,500 hours that the employer or manager must spend making up for lost workers. At an average hourly wage of \$53 per hour (a "management" salary in BLS, 2018), this time is valued at over \$3.1 million.

Finally, the analysis includes a loss in income tax revenue due to the missed work by both victims and perpetrators. There is no local or state income tax in the study area and we used a conservative estimate of the effective Federal tax of 1% (reflecting the average Federal income tax paid by someone earning the average salary), to see that the Federal income tax loss associated with missed work is about \$170,500.

2. Costs of Foster Care

There is no accurate data on the number of children in Pinellas County that must be placed in foster care as a result of domestic abuse. Many children who are in foster care come from homes with a multitude of problems, so it is hard to isolate domestic abuse as the reason for removing a child. A national study by the US Department of Health and Human Services (2017) states that 12% of children in foster care were removed from their homes because of child abuse (in other words, not because of living in homes where someone else was abused) and 4% were sexually abused.

Given the murkiness of the data, we used a conservative figure that 10% of children in foster care come from homes with some form of domestic abuse. According to Eckerd Connects, 943 children are in foster care in Pinellas County, 690 of whom are in family foster homes and 253 in residential group care³. We therefore estimate that 69 children are in family homes, which cost \$19.19 per day. We also estimate that 25 children are in group homes, which cost \$145.17 per day. The average number of days in foster care is about 600 days, which equates to \$794,500 for those in individual homes and \$2.2 million for those children in group homes.

Of course, there are also intangible costs associated with placing children in foster care that we are unable to quantify in this study. There are potential long term emotional and psychological impacts that moving to a foster care facility or facilities may have on children. In addition, there are educational costs for children that result from those impacts, as well as from changing schools, which can have long term consequences as well.

3. Law Enforcement, Protection and Court Costs

The above-mentioned time in jail – totaling 72,618 days – costs \$145 per day. This sums to \$9.1 million that the public pays to keep perpetrators in jail.

The costs of public servants in legal work and law enforcement comes to \$41.7 million. The bulk of this - \$38.8 million – comes from law enforcement officers (sheriff's office and various police agencies in Pinellas County). To calculate this figure, we first estimated that officers spend about 83% of their time responding to calls, about 38% of which are related to domestic violence in Pinellas County.⁴ Thus, about 31.5% of officers' time is spent responding to domestic violence calls. We multiplied this percentage by an average officer's salary (per city in Pinellas County) and then multiplied the number of police officers to get the total salaries – including benefits – that were devoted to domestic violence in 2017. Table 5 breaks down salaries by municipality.

³ Email correspondence with B. Bostick, Eckerd Connects.

⁴ The 83% estimate comes from a study in the Jacksonville, FL Sheriff's office (Wu and Lum, 2016), which is corroborated by Webster (1970).

Table 5. Sheriff and Police Officer Salaries Devoted to Domestic Violence Cases

Municipality	Number Sworn Officers	Cost of Officers
Pinellas County Sheriff	406	\$11,138,132
St. Petersburg	550	\$15,628,493
Clearwater	180	\$5,001,493
Gulfport	32	\$856,608
Kenneth City	10	\$269,777
Tarpon Springs	29	\$767,532
Treasure Island	19	\$523,420
Bellair	12.5	\$337,222
Indian Shores	12	\$323,733
Largo	90	\$2,353,270
Pinellas Park	64	\$1,616,328
TOTAL	1,404.5	\$38,816,007

Other costs in this category include the salaries for: 2 bailiffs from the Sheriff's Office that are in court; the equivalent of 1 FTE judge in criminal cases; four assistant State Attorneys; four public defenders; slightly over 1 FTE judge in civil cases for injunctions; 4 bailiffs to provide security at injunctions and the equivalent of 9.5 FTE bailiffs to serve injunctions. These salaries total \$2.4 million. In addition, 8.5 law enforcement advocates provide support through local police departments in Pinellas County. These advocates are on call 24/7 and get called out to serious crime scenes such as homicides and rapes. Their support includes providing transportation, accompaniment to court, assistance with getting an injunction, and crisis counseling. Their salaries combined total about \$459,000. Finally, 8 victim advocate volunteers, working through non-profits such as CASA, devote approximately 5 hours each per week to supporting victims in court, at a value of about \$45,000.

Costs from the Medical Examiner's office are one more cost borne by the community, at about \$6,000, or \$750 per homicide.

d. Support services

This category refers to programs and activities that help support victims and their children and attempt to prevent future abuse. They total \$3.4 million. The costliest item in this category is the Child Protective Investigator (CPI) reporting; with 2,062 domestic violence reports at \$1,292 per report, this amounts to \$2.7 million per year. Costs for the batterers' intervention program total about \$306,000. This assumes that the approximately 320 people ordered to attend in 2017 did go to each class per week for 26 weeks, at a cost of \$35 per class. This item may be an overestimate.

Trainings for school age children on conflict resolution cost about \$273,000 annually. CASA spends \$129,510 per year on case management for child welfare and specialized law enforcement; we added 30% on to this figure to include similar work at The Haven, for a total of about \$168,000. In addition, training and outreach programs to help law enforcement agencies and health care workers recognize domestic violence and its symptoms total about \$31,000.

Other costs include programs for job training and placement; financial literacy; and empowerment and parenting classes. These together come to about \$3,700.

e. Other long-term costs

Long term costs associated with domestic violence are perhaps the most difficult to measure, because there is little data to track (i.e., the causes of certain medical conditions may not be easily traceable to a domestic violence incident) and many of the costs are intangible. We have attempted to measure just two long term costs: lost lifetime earnings due to premature death and the value of lifetime pain and suffering. We erred on the side of caution and calculated long term costs to be at least \$37.4 million.

For lost lifetime earnings due to premature death, we have followed common practice of estimating the present value of lifetime earnings (see Max, et al., 2004). We first found the life expectancy for a woman of age 35 (assuming that as the age at premature death), which is 80 years old. We then used earnings data by gender and age to estimate the earnings of an "average" woman over her lifetime up until the age of 80.⁵ These lost earnings summed to about \$1.5 million per woman, which was multiplied by the 8 fatalities in 2017, for a total of \$9.2 million.

Calculations of pain and suffering are often determined by juries or by insurance companies and vary widely depending on the circumstances of the case, its presentation of the case, the particular judge, and so on. One common way to get a ballpark figure is to take the total value of lost wages, lost housework, and healthcare costs and multiply it by a factor between 1-5. We used a conservative factor of 2 and calculated lifetime pain and suffering to be approximately \$28.2 million. Considering that the health care costs themselves are an underestimate, as discussed above, this calculation of pain and suffering is likely on the low side.⁶

The medical costs calculated above do not include long term medical costs. Domestic violence certainly leads to more chronic pain, gastrointestinal disorders, PTSD, substance abuse, depression and poor health generally, with some of these outcomes being the direct result of a physical injury and others caused by emotional response such as stress (CDC, 2014; Reeves and O'Leary-Kelly, 2003). However, there are no studies to quantify the long-term health care costs associated with domestic violence, in part because of under-reporting, because of difficulty or lack of knowledge in determining causality, and

⁵ Earnings were raised by 1% each year, assuming a 1% growth in wage, and further discounted by 3% each year to get the present value.

⁶ Indeed, pain and suffering for rape victims has been estimated as high as \$198,000 in 2008 dollars by McCollister, French and Fang (2010).

because of the potential time span between a domestic violence incidence and the health manifestation.

Our calculations also leave out the lost lifetime earnings of those who survived abuse but were unable to return to the workforce. Again, a paucity of data has prevented us from making that calculation. Reeves and O'Leary-Kelly (2003) estimate that lifetime IPV victims (that is, victims who were abused in any previous year) who are currently working tend to miss about 4 days of work more per year than non-victims, which would be another cost to consider over the long run.

A complete cost accounting would also include the future impacts of domestic violence on children. Anecdotal evidence suggests that there is a positive correlation between childhood exposure to domestic violence and their involvement in domestic violence, either as victims or perpetrators, as adults. There are not many rigorous studies to prove this, however (Kimber et al, 2018). Kimball & Keen (2016) suggest that children who have been exposed to violence in their households where they are not the primary victim of the abuse have a higher incidence of social and academic difficulties that affect their relationships and job prospects as adults. They are more likely to suffer from depression, anxiety and post-traumatic stress disorder. All of these problems lead to an increased risk of suicide. Edleson (1999) and Kimball (2005) conducted literature reviews of the impacts of children witnessing domestic violence and conclude that children exposed to domestic violence have a more positive attitude toward violence and show more aggression. Finally, they are more likely to be in a violent relationship as adults.

A hard-to-measure but no less important component of the costs of domestic violence relates to that of consumption efficiency. Namely, a family consisting of two adults (with or without children) achieves lower per person costs than a single person due to the many costs that do not rise proportionally with the number of people (e.g., housing, utilities, etc.). Thus, when a family breaks up due to domestic violence, it is likely to lose some of those efficiencies in consumption and therefore has added costs. Because we do not have data tracking what happens to families after a domestic violence incident, we are unable to measure this extra cost in this study. Access Economics (2004) reports efficiency losses in Australian households to be equivalent to about \$13,000 per victim, in 2017 US dollars.

Related to this, if a family breaks up, it is likely that the adults (victim or perpetrator) will have increased debt and loss of good credit (Littwin, 2002). This is not only due to the loss in consumption efficiency, but also because of the income disruption, medical costs, possible relocation costs, etc. In addition, single parents have a harder time maintaining a job, and particularly one with a living wage, if they have childcare responsibilities. All of these factors lead to increased debt, which has a long-term impact on the families involved, as well as those who hold the bad debt (banks, other family or friends, etc.).

3. Conclusions and thoughts for further research

This report serves as a first look at the economic costs of domestic violence in Pinellas County. While many of the calculations are based on estimates, we have tried to be as conservative as possible and thus consider the results to be a lower-bound estimate of the full costs. Nevertheless, the data serves as a starting point to get a sense of the many components that must be considered and of the magnitude of the costs of domestic violence. As explained here, the costs go beyond the tangible costs

to the victims and spill over into costs that are borne by various sectors of the rest of society. In addition, we have attempted to put a dollar figure on some of the intangible costs associated with domestic violence.

Several caveats of the calculations are worth highlighting and provide guidance for further research. First, there is the issue of underreporting of domestic violence incidents. Data suggest a severe underreporting of domestic violence, since there is quite a discrepancy between the number of victims indicated by surveys and those reported to authorities. Humiliation, fear of retribution, and emotional attachment are just a few factors that contribute to underreporting (National Domestic Violence Hotline, 2013). The numbers here are based only on the reported 6,228 cases of domestic violence in Pinellas County, but the true figure is probably much higher. According to the National Intimate Partner and Sexual Violence Survey conducted by the CDC (Smith, et al, 2017), 6.2% of Florida women over 18 report having suffered sexual or physical violence or stalking at the hands of an intimate partner, and 5.1% of Florida men over 18. The Census Bureau estimates that there were 426,126 women over 18 in Pinellas County in 2017, and 384,623 men. Assuming that the incidence of intimate partner violence or stalking in Pinellas County is the same as Florida, one would therefore expect around 26,500 cases of intimate partner violence or stalking against women, and around 19,600 against men, or around 46,100 in total. Moreover, intimate partner violence or stalking is only one form of domestic violence. In other words, one would expect at least 7 to 8 times more cases of domestic violence than are reported.

This is consistent with numbers from the National Domestic Violence Hotline, which suggest that, even among reported incidents, it takes 7 unreported incidents for a victim to report domestic violence (National Domestic Hotline, 2013). Thus, each of the 6,228 cases reported in 2017 probably represent many more costs in terms of extra health care services, pain and suffering, and days of productivity lost. While the unreported cases may not have the same costs to the community (e.g., no police time or law enforcement involvement), many of the intangible costs to children would also apply.

The health care costs and loss of productivity costs are based largely on national data. If we could survey victims in Pinellas County, we would likely get more accurate data. However, we recognize that this would be very difficult to do. However, we may be able to find more specific data related to pain and suffering costs through jury awards of specific domestic violence cases, which is a task for a future study.

Ultimately, this report helps to put a modest dollar value on the costs to individuals, families and society as a whole that result from domestic violence. Our data suggest that each instance of domestic violence brings a cost of at least \$21,000 to the community. In other words, for each case of domestic violence that is avoided, this is the saving that occurs not just for the victim, but for society as a whole.

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