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A Framework for Valuing Investments in a Nurturing Society: Opportunities for Prevention Research

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Abstract

Investing in strategies that aim to build a more nurturing society offers tremendous opportunities for the field of prevention science. Yet, scientists struggle to consistently take their research beyond effectiveness evaluations and actually value the impact of preventive strategies. Ultimately, it is clear that convincing policymakers to make meaningful investments in children and youth will require estimates of the fiscal impact of such strategies across public service systems. The framework offered here values such investments. First, we review current public spending on children and families. Then, we describe how to quantify and monetize the impact of preventive interventions. This includes a new measurement strategy for assessing multi-system service utilization and a price list for key service provision from public education, social services, criminal justice, healthcare, and tax systems.

Evidence-based policy efforts are increasingly seeking to invest public resources in effective interventions that improve wellbeing while reducing costs to public systems (Aarons, Hurlburt, & Horwitz, 2011; Haskins & Margolis, 2015; Herk, 2009). As a result, many policymakers are turning to prevention efforts that promise to build a more nurturing society (Haskins & Margolis, 2015; Vandlandingham, 2016). Despite this growing demand, the field has yet to consistently move beyond effectiveness evaluation and actually value investments in many such preventive strategies (Crowley, Hill, Kuklinski, & Jones, 2013; National Academies of Medicine, 2015). This work described here offers a framework for such research. The growing need to value efforts to nurture children and families requires an understanding of how public resources are spent and how the success of those individuals in turn support future public investment (i.e., priorities, resources, tax revenue; Crowley & Jones, 2015; National Academies of Medicine, 2014). In particular there is an imperative need to reduce approaches that exacerbate exposure to coercion and conflict and augment and increase support for prosocial behavior (see Biglan, 2015). There are multiple public systems used to invest in children and families that should be considered (Currie, 2006; Issacs, Edelstein, Hahn, Toran, & Steurle, 2013).

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Compliance with Ethical Standards

This research did not involve human participants and/or animals

Investments in a Nurturing Society

Investments in a nurturing society represent a broad array of intervention strategies that seek to minimize toxic social relationships, promote prosocial behavior, limit influences and opportunities for problem behavior, and promote psychological flexibility (Biglan, 2015, 2016; Catalano et al., 2012; Coie, Watt, West, Hawkins, et al., 1993). Strategies to enhance investments in a nurturing society are distinct from tertiary efforts that only address problems (or the symptoms of problems) after major and potentially irreversible outcomes occur (e.g., treatment of preventable chronic illness, mass incarceration, permanent removal of children from their families). Instead, such strategies tend to be preventive in nature—seeking to promote skills and abilities characterized by ‘upstream’ deployment of resources to avert the consumption of an even greater amount of public spending in the future (i.e., downstream; Crowley & Jones, 2015; National Academies of Medicine, 2015).

While some investments in a nurturing society have already been integrated into existing public systems, many suffer from implementation and sustainability challenges (Durlak & DuPre, 2008; Fagan & Mihalic, 2003; Miller, 2013). Most of these investments have yet to be wholly integrated for widespread dissemination (Fishbein, Ridenour, Stahl, & Sussman, 2016; Wandersman et al., 2008). In order to increase the use of effective preventive strategies, policy- and budget makers require a better understanding of how scaling such investments within public systems not only helps children and families, but may improve—or disrupt—current need for services (Haskins & Margolis, 2015; National Academies, 2015; The Pew Charitable Trusts, 2012). Achievement of this insight will require valuing these investments in a consistent manner that supports comparable analyses (Crowley et al., 2013; National Academies of Medicine, 2014). This framework is offered here. First, the current state of public spending on children and families is characterized. Then a process for quantifying and monetizing the impact of investments in a nurturing society is described. Importantly, this work ultimately seeks to accelerate cost-effectiveness and benefit-cost analyses of interventions for children and families by encouraging researchers to think broadly about how children and families interact with public systems. To facilitate this, we propose a tool for better organizing information about program impact on public spending. This builds on growing foundational work on increasing the quality and utility of economic evaluations for children and families (Miller & Hendrie, 2013; National Academies of Medicine, 2015).

Public Spending on Children & Families

Public expenditures are ideally made to meet the collective needs of society (Breckon, 2015; Dodge & Haskins, 2015; Nussle & Orszag, 2014). Public spending on children and families occurs in a number of public systems (Currie, 2006; Isaacs, Toran, Hahn, Fortuny, & Steurle, 2012; Karoly, 2008). This includes education, social services, criminal justice, healthcare, welfare and income credit related investments. From a research standpoint, many disciplines study public service provision within the systems most related to the investigators’ work (e.g., criminologists and the criminal justice system, education scientists and public education, health service researchers and healthcare; Breckon, 2015; Ginexi, 2006; Glasgow, Lichtenstein, & Marcus, 2003). These systems are rarely considered in tandem and, as a

result, surprisingly little is known about how these systems work—or fail to work—together to support children and families (e.g., Currie, 2006). This spending can be characterized as a social safety net, although this implies a level of coordination that is rarely achieved (Currie, 2011). In this context, the major pathways through which public resources are spent on children and families are considered.

Table 1 offers a brief description of each program, number of children and families served, and total spending. In the Appendix we provide more detailed information related to each program's service rates and expenditure levels in an effort to help researchers unfamiliar with these systems rapidly locate current information. For the purposes of this work, this review is limited to direct investments in children and families. While other forms of public spending indirectly invest in children and families (e.g., national defense, trade, environmental sustainability), they are not considered here. Further, we focus on some of the largest or most visible investments measurable through survey and administrative record review.

A Framework for Valuing Investments in a Nurturing Society

It is important to consider the intent for which programs were created. Certain public investments intend to increase nurturing contexts and reduce toxic environments (e.g., WIC, EITC). Other spending is made in an effort to mitigate downstream problems that may or may not have been preventable by current intervention strategies (law enforcement, courts and corrections). In this sense, some spending is mixed. For instance, the intent of CHIP and Medicaid is to cover some preventive health strategies, as well as treatment of preventable health problems (e.g., substance abuse treatment, emergency health services). Finally, some spending supports largely inevitable outcomes (e.g., end-of-life care) that would otherwise overwhelm families and is thus preventive in nature (e.g., caregiving for elderly parents). There is general agreement that program funding could be better managed—either through greater efficiency of program outlay and delivery —either through greater efficiencies, more targeted spending, or efforts to move spending upstream (Crowley, 2013; Currie, 2011; O'Connell, Boat, & Warner, 2009).

In order to build a more nurturing society, there is a need to take a broader view of what we consider an investment in children and families. While within a specific system a service may be considered preventive or tertiary in nature—when we consider investments across systems—it becomes clear that what might be considered a remedial or tertiary service in one context is ultimately a form of prevention in another. For instance, remedial services in high school may easily be re-framed as drop-out prevention once you begin to take a lifespan perspective. Similarly, social services that remove a child from a home are often considered the last resort within the social services system, but over the span of a child's life may be a prevention strategy for averting future health and safety related problems. From some perspectives, incarceration of adult offenders is tertiary yet this constraint of certain individuals' freedoms can prevent harm coming to others—although could exacerbate underlying behavioral issues that result in greater future crime. Thus, this generalist view that one system's remediation is another system's prevention can provide a more holistic view of the investments we do (or do not) make in children and families. What is key, once

such a perspective is adopted, is then to identify which investments effectively support a nurturing society and which may be less effective in doing so. Further, researchers can more effectively consider where upstream investments (e.g., effective home visiting) may reduce the need for less effective strategies (e.g., out of home placement, incarceration). We adopt this perspective here and use it to orient our focus on key public services.

Many preventive interventions offer the ability to orient spending within these systems toward upstream investments that negate the need for downstream costs (Crowley & Jones, 2015; National Academies of Medicine, 2015). These could be programs embedded within a specific system (e.g., Drug Courts) that avoid future spending within that system (e.g., corrections spending from incarceration). This could include programs embedded in another system (substance abuse prevention in schools) that reduce spending in another system (e.g., law enforcement from drug arrests; public alcohol/drug treatment services). Both share the fact that spending is occurring earlier to increase health and wellbeing that in turn avoids future spending. The potential for prevention to achieve such outcomes within and across system impacts is a well-recognized but infrequently evaluated phenomena (Currie, 2006; Foster, Prinz, Sanders, & Shapiro, 2008; Kuklinski, Briney, Hawkins, & Catalano, 2012). Doing so within prevention research requires quantifying the impacts of an intervention on service utilization in each public system and then valuing the impacts (Beatty, 2009; Crowley et al., 2013; Foster, Dodge, & Jones, 2003).

Quantification

Quantifying service utilization across multiple systems can vary in difficulty depending on the intervention and the context within which it is being evaluated (National Academies of Medicine, 2015; Reynolds, Temple, Robertson, & Mann, 2002). If trial participants can be linked to administrative records within each system, it may be feasible to conduct high-quality cross-system analyses (Crowley, 2015; Garnier & Poertner, 2000). In many cases administrative data will not be available and researchers will need to employ survey methods to assess impact on systems (Guyl, Spoth, & Crowley, 2011; Kuklinski et al., 2012). While guidance exists on approaches to measuring service utilization in many systems, for the most part they are siloed within disciplinary journals and traditions (French, Dunlap, Zarkin, McGeary, & McLellan, 1997; Horwitz, 2001). Further, many such measures were not developed to collect information in a manner that facilitates researcher efforts to monetize service utilization (Karoly, 2008; McCollister, French, & Fang, 2010). In this context, a relatively brief tool for organizing information about the quantity of services used across multiple public systems is offered (see Appendix). This tool, the Valuing Multisystem Utilization (VMU) framework, is not meant to collect comprehensive information about all health service utilization, but rather to gather the minimum information needed to place a value on preventive interventions. Further, the VMU Framework includes skip patterns to minimize researcher and/or participant burden. Below, the main aims of each section of the VMU framework are characterized.

- *Public Education.* Understanding the utilization of education services requires capturing whether families use pre-K services (Head Start or state-funded), their use of K–12 education services (repeated grades, skipped grades, special education, graduation) and their use of higher education (attendance).

- *Social Services.* Utilization of social services requires ascertaining whether child maltreatment was reported and substantiated. If so, then the use of different categories of social service resources needs to be assessed.
- *Criminal Justice.* To understand utilization of the criminal justice system, first, law enforcement contact needs to be determined (arrested and charged). Then court system utilization (plea bargain or trial) needs to be assessed. Finally, use of the correction system must be evaluated (time served).
- *Healthcare.* Quantifying healthcare utilization is one of the most involved processes. First, it should be determined whether an individual's healthcare is covered by a publicly funded program must be determined (Medicare, Medicaid, CHIP, TRICARE, or VA). Then, the types and amount of health service utilization need to be quantified. First, the level of inpatient care should be established (number of overnights at a hospital or clinic). Then the types of procedures received should be determined. Among the hundreds of different procedures, utilization rates vary by age. As such, the most common procedures for different age bands are provided in the Valuing Multisystem Utilization Measure-Healthcare Utilization Supplement (VMU-HUCUS). Determining which procedures about which to ask should be tailored by target sample age. Additional procures should be added based on risk and demographic characteristics (e.g., high drug-using population should be asked about substance treatment utilization). Then the level of emergency department utilization needs to be assessed. Finally, the level of prescription drug utilization should be evaluated. This includes whether an individual is taking six of the most common types of pharmaceuticals (painkillers, cholesterol medication, antibiotics, ADHD medication, and antidepressants).
- Welfare utilization should be assessed by soliciting information on the receipt of TANF, WIC, and SNAP. This includes whether they are receiving the benefits and the number of weeks benefits have been received.

The VMU framework can be used as a tool for organizing information about service utilization. This measure is meant to complement existing service use questionnaires in a number of fields (e.g., Service Assessment of Children & Adolescents, Drug Abuse Treatment Cost Analysis Program). In particular, it is oriented specifically to allow for valuation of service utilization across multiple systems. Some types of service use information can be appropriately and easily solicited from the recipient (e.g., do you receive WIC or food stamps?). Service use information gathered through survey means (e.g., self- or parent-reported) can be designed to answer the simpler VMU framework items. Others types of information can be difficult to accurately obtain through self-report or other survey means (number of times you saw a doctor in the last ten years). In this context, administrative records may be the more appropriate information source.

The VMU framework can be used to organize the overwhelming amount of administrative records on individuals' service use into a consistent and interpretable manner, across public service systems. Ultimately, the VMU framework is not meant to be a measure in itself, but instead a tool that can be used to organize information gathered from other sources. Best

practices for measurement across the multiple systems continue to be developed and it is important to reference the current literature about which measurement approaches will provide the most accurate information (Bhandari & Wagner, 2006; Prinz, 2017; Purtell, Gershoff & Aber, 2012).

Monetizing

Once the quantity of each type of service utilization is ascertained, the value of those resources may be monetized. Monetization is the result of the product of the quantity and the price of an individual unit of services. Different systems will consider different units (e.g., per student, per child victim, per beneficiary, per recipient). The price of a service is the per-unit cost. The most appropriate annual estimates should be used and then adjusted for inflation (i.e., valued in dollars' worth of the same amount). Table 2 provides top-down estimates of price information for different types of public service utilization across multiple systems, adjusted for inflation into 2016 dollars. These prices are discrete, allowing researchers to use quantity estimates derived from the VMU framework to create summary estimates for each individual. Employing this method enables an evaluation of nurturing investments' impact on total cost aversion. This can be reflected as:

$$\begin{aligned} & \text{TotalCostAversion} \\ &= \sum (education_q * education_p) + (childwelfare_q * childwelfare_p) \\ &+ (crimjustice_q * crimjustice_p) + (healthcare_q * healthcare_p) + (welfare_q * welfare_p) \quad (1) \end{aligned}$$

Where q = the quantity of services received, p = the average price of resources and *TotalSpending* = is the sum of total spending across public systems on an individual. This simplified formula can be expanded to accommodate multiple drivers of public spending within and across systems. Key cost drivers are explored below and examples of expanded formulas for valuing investments are provided.

Public Education

Substantial resources are spent across childhood and into early adulthood to educate youth (Barnett et al., 2016; The Pew Charitable Trusts, 2015). This important investment in human capital provides substantial opportunities for building a more nurturing society (Biglan, 2015; Currie, 2011). Many preventive interventions target key education outcomes, which have important implications for downstream spending (Becker, 1993; Belfield, Nores, Barnett, & Scheweinhart, 2006). Within the education system there are known inefficiencies that arguably waste public resources (Monk, Roellke, & Brent, 1996), such as absenteeism and grade repetition. These represent certain types of spending whose demand can be reduced through strategic early investment. Repeating a grade costs on average of \$11,600 for each year repeated (skipping a grade in school can allow the school system to avert the same amount). Investments that nurture children and help avoid grade repetition are highly valuable not only to the student, but also in terms of public resources. Further, as we learn how to better cultivate nurturing pre-K environments, we may be able to develop not only better programs, but interventions that can serve more youth for less per student resources. A starting point for valuing an intervention's impact on education spending is:

$$\begin{aligned}
 & \text{TotalCostAversion}_{\text{education}} \\
 &= \sum [(repeatedschoolyears_I - repeatedschoolyears_C) * price_{\text{schoolyear}}] \\
 &+ [(skippedschoolyear_s_C - skippedschoolyear_s_I) * price_{\text{schoolyear}}] \quad (2)
 \end{aligned}$$

Where $\text{TotalCostAversion}_{\text{education}}$ is the reduction in spending requirements from an intervention, I is the years of repeated or skipped school of the intervention group, C is reflective of the years of repeated or skipped school of the control group, and $price_{\text{schoolyear}}$ is the cost of sending a student to school for a year adjusted for inflation.

Social Services

Child maltreatment is preventable (Butchart, World Health Organization, & International Society for the Prevention of Child Abuse and Neglect, 2006; Cicchetti & Toth, 1995). Increasingly effective intervention strategies are becoming available (Butchart et al., 2006; K. Dodge & Goodman, 2012). The societal costs of abuse and neglect are tremendous, with estimates that include each child's lost health and welfare reaching over \$200,000 (Fang, Brown, Florence, & Mercy, 2012). The current child welfare system seeks to identify instances of child maltreatment, mitigate the harms, and prevent new cases (Aarons & Palinkas, 2007). As a result, it is largely reactive in nature. Monetizing the cost of child welfare services provides the most direct estimates of the value of preventing child maltreatment. While these costs are in themselves quite high, these estimates only provide a near-term estimate of the total costs of maltreatment. It is useful to highlight the downstream spending that could be liberated with greater upstream investment in primary prevention. Quantified estimates of different service social service utilization can be monetized by multiplying use by the average price of different services. In their simplest form, this can be whether a child received child protective services, in-home services, out-of-home services, adoption and guardianship services, and/or transitional assistance.

$$\begin{aligned}
 & \text{TotalCostAversion}_{\text{childwelfare}} \\
 &= \sum [(ChildProtective_I - ChildProtective_C) * price_{\text{ChildProtective}}] \\
 &+ [(inhome_I - inhome_C) * price_{\text{InHome}}] + [(OutHome_I - OutHome_C) * price_{\text{OutHome}}] \\
 &+ [(AdoptionAssistance_I - AdoptionAssistance_C) * price_{\text{AdoptionAssistance}}] \\
 &+ [(TransitionalAssistance_I - TransitionalAssistance_C) * price_{\text{TransitionalAssistance}}] \quad (3)
 \end{aligned}$$

Where $\text{TotalCostAversion}_{\text{childwelfare}}$ is the sum of the reduction in resource requirements from an intervention across types of public services.

Criminal Justice

The criminal justice system, similar to the social services system, involves substantial public spending to mitigate the harm of illicit behavior and enable future deterrence. Law enforcement, the judicial system and corrections each consume tremendous amounts of public resources. Preventive efforts that support development and reduce toxic environments are known to decrease contact with these systems. Doing so reduces the burden and averts

spending on that individual. For instance, an individual sentenced to federal prison costs the public about \$30,450 per year. Preventing that individual from going to jail (or recidivating after leaving the correction facility) has tangible benefits for the system. Similarly, prevention of criminal activity has meaningful cost aversion for law enforcement, which spends on average \$9,570 in public resources to make an arrest.

$$\begin{aligned}
 & \text{TotalCostAversion}_{\text{criminaljustice}} \\
 &= \sum [(Arrests_I - Arrests_C) * price_{Arrests}] + [(FederalCases_I - FederalCases_C) \\
 & \quad * price_{FederalCases}] + [(StateCases_I - StateCases_C) * price_{StateCases}] \\
 & \quad + [(FedYearsIncarcerated_I - FedYearsIncarcerated_C) * price_{FedYearsIncarcerated}] \\
 & \quad + [(StateYearsIncarcerated_I - StateYearsIncarcerated_C) * price_{StateYearsIncarcerated}] \quad (4)
 \end{aligned}$$

Where $\text{TotalCostAversion}_{\text{criminaljustice}}$ is the sum of the reduction in resource requirements from an intervention across criminal justice services. For evaluators interested in understanding the multi-year costs of sentences, the product of the number of years (or days) by the price of incarceration for a year (or day) will provide a usable estimate.

Healthcare

The healthcare system engages multiple public funding streams that consume a tremendous amount of resources. From a prevention standpoint, the goal of intervention is not to reduce the number covered (unless that reduction come from improve earnings that allow for consistency private coverage), so much as to help healthcare systems make better upstream investments. For instance, CHIP and Medicaid coverage of key preventive services (e.g., vaccines, folic acid, obesity screening, tobacco and alcohol misuse counseling) have the potential to reduce future costs to Medicare. Similarly, ensuring the highest-quality coverage for trauma-related injury by the TRICARE system is likely to reduce chronic problems that the VA must cover. In this context, interventions that nurture individuals upstream and reduce the average healthcare costs described in Table 1 offer value to society. This framework may be expanded to include targeted healthcare utilization estimates. Current price data for key procedures and services may be found in a number of locations (see, e.g., Fair Health, 2016). The total cost aversion based on enrollment changes from increased economic stability may be reflected as:

$$\begin{aligned}
 & \text{TotalCostAversion}_{\text{healthcare}} \\
 &= \sum [(Medicare_I - Medicare_C) * price_{Medicare}] + [(Medicaid_I - Medicaid_C) \\
 & \quad * price_{Medicaid}] + [(Tricare_I - Tricare_C) * price_{Tricare}] + [(VA_I - VA_C) * price_{VA}] \quad (5)
 \end{aligned}$$

Where $\text{TotalCostAversion}_{\text{healthcare}}$ is the sum of the reduction in resource requirements from an intervention across types of publicly funded healthcare.

Welfare

The welfare system offers a number of programs aimed at preventing downstream problems. They are, in themselves, an effort to shift spending upstream in the hope of requiring fewer

public resources in the future. Yet, there is incentive to invest even further upstream before individual must rely on these services. That is, while these program seek to stabilize families, there is great benefit in prevent destabilization in the first place.

$$TotalCostAversion_{welfare} = \sum[(TANF_I - TANF_C) * price_{TANF}] + [(WIC_I - WIC_C) * price_{WIC}] + [(SNAP_I - SNAP_C) * price_{SNAP}]$$

(6)

Where $TotalCostAversion_{welfare}$ is the sum of the reduction in resource requirements from an intervention across types of welfare services.

Applying the Framework for Valuing Multisystem Utilization

This framework may be used to guide efforts to value the impact on downstream service utilization from upstream intervention, as well as to orient evaluators towards considering how interventions can optimize investments in nurturing societies across systems. Key is the effort to overcome traditional disciplinary silos that encourage focus on impact to a single system without consideration of how an intervention may affect other systems. For instance, consider an effort to reduce the need for special education in K–12 by increasing school readiness among children living in poverty. This framework seeks to motivate assessment of potential impacts outside educational context—specifically on other systems such as healthcare utilization (Medicaid enrollment) or future criminal justice system involvement (e.g., truancy, theft). Developmental theory points to ‘spillover’ benefits into these domains and their related systems. For instance, assume that a high-quality pre-K program reduced a child’s need for special education by an average of 2 years. Further, due to increased education attainment, it reduced their enrollment in Medicaid by 3 years over their lifetime and future incarceration by 1 year. Such findings could be contextualized within the $TotalCostAversion$ equation using the 2016 average annual expenditures listed in Table 2 as:

$$\begin{aligned} TotalCostAversion &= \$96,220 \\ &= \sum(2 \text{ years of grade retention} * \$11,600) + (1 \text{ Year of incarceration} * 30,450) \\ &\quad + (3 \text{ years of Medicaid} * \$14,190) \end{aligned}$$

Such an exercise provides a rough estimate of total cost aversion. It does not take the place of the formal cost-effectiveness of benefit-cost analyses, but does provide an initial estimate for considering the potential value of an investment. Such a number should be used to motivate further study of the fiscal impacts of programs for children and families. We encourage evaluators with promising findings to engage in formal economic evaluations that employ best practices as outlined by the Society for Prevention Research, National Academies and Panel on Cost-effectiveness in Health and Medicine. For instance, to consider the economic value of fiscal calculations presented here, it is important to discount calculations proposed here—from an economic standpoint, future benefits are worth less

than current benefits (National Academies of Medicine, 2015). Ultimately, this framework provides a starting point for guiding more coordinated scientific inquiry that considers the multisystem impact of intervening in the lives of children and families. Alone, it is not meant to be a replacement for formal benefit-cost analyses, but instead seeks to emphasize a key approach to the study of children and families. Specifically, that investments in children and families do not operate in isolation from other systems and must be considered in a multisystem context. Failing to take this broader perspective limits the impact of our work and the success of interventions we develop.

It is important to note that considering only the service utilization characterized in Table 2 is likely to provide a conservative estimate of impact. Specifically, as noted above, the goal of this table is not to identify important programs to consider, but to highlight programs likely to be influenced by interventions for children and families. When considering the broad array of state and local services, many programs may be of particular relevance to specific populations. Our goal here first and foremost is to encourage researchers to consider impacts across systems. In some contexts, conservative estimates are preferred. For instance, if the goal is to demonstrate that a program averts more downstream spending than it costs to provide that program, then a conservative estimate provides greater confidence that the program does in fact break even. Yet, if the goal is to use estimates for performance-based budgeting initiatives (i.e., tying public spending to achieving specific child and youth outcomes), then it is ideal to use estimates that capture the true magnitude of benefits. To do so will likely require considering impacts on other types of program utilization.

Valuing investments in a nurturing society based upon their impact on public spending allows researchers to recognize the value of preventive interventions beyond the individual recipient. Doing so also increases their relevance for public policy and supports evidence-based decision making. Yet valuing investments in this manner should be recognized as a relatively conservative estimate of impact. This framework is designed to maximize the relevance of estimates for policy- and budget makers, as opposed to giving a full economic accounting of the lifetime benefits expected from building a society that nurtures its children and families. While even the full economic cost is unlikely to capture the full value of a truly nurturing society, an understanding of the partial value of such investment strategies is likely to highlight their importance.

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Appendix: A Framework for Valuing Investments in a Nurturing Society: Opportunities for Prevention

Appendix A: Public Services and Spending for Children and Families

1. Education

One of the main approaches to investing in children occurs through public education systems. These include publically funded pre-k, K-12 education, and higher education.

1.A. Head Start

The federally funded Head Start program was launched in 1965 and designed to serve low-income children. The DHHS Administration for Children and Families' Head Start Office provides annual information about service rates and spending on this program (Office of Head Start, 2016). In 2015, Head Start served 944,581 children and their families in urban and rural areas of all 50 states, the District of Columbia, Puerto Rico and US territories. In addition to pre-k for children three to five, Head Start centers often also provide health services such as health screenings and dental checkups. In 2015, over \$8.2 billion was spent on Head Start resulting in an annual investment of about \$8,680 per child.

1.B State Pre-K

For over a decade the Rutgers National Institute for Early Education Research (NIEER) has conducted annual reviews of state funded pre-K (Barnett et al., 2016). In 2015, Over 40 states and the District of Columbia provided varying degrees of publically funded pre-K. These efforts served almost 1.4 million children at a cost of \$6.2 billion or about \$4,490 per child. As with many publically funded, locally operated services, quality can vary dramatically across sites. This holds true in the case of Head Start and many pre-K programs (Ludwig & Phillips, 2007; Puma et al., 2010)

1.C. Primary and Secondary Education

Each year the US Department of Education's National Center for Education Statistics assembles information about primary and secondary school enrollment and spending from across the country (NCES, 2016). K–12 public education comprises about 98,300 public schools organized into 13,500 school districts that serve about 50.4 million students. About 3.1 million teachers are employed by public schools. The cost to serve these students was about \$584.4 billion for the 2016–2017 school year or about \$11,600 a student for the year. An estimated 5.83 million of these students use special education services and consume a relatively larger share of education resources. Best estimates are that around 55% more is spent on students using special education services than the average student who does not need services (Chambers, Parrish, & Harr, 2004). School discipline also consumes a substantial amount of educational resources with over 5% of administrator time and substantially more teacher time being spent on dealing with students' misbehavior (Hornig, Klasik, & Loeb, 2009). Of all students in public education, an estimated 6.5% of these students will not graduate from high school—with substantial variability by district. An estimated 68.4% of graduates will enroll in college the fall after finishing high school (NCES, 2016).

1.D. Higher Education

Each year the National Center for Education Statistics compiles information on higher education attendance (Ma & Baum, 2016). In 2013, about 18.1 million students attended colleges and universities. Public higher education served over 13.7 million students a year and private high education serves about 4.4 million. Periodically, the College Board reviews government spending on higher education. Both federal and state budgets support higher education, albeit in different ways. In 2013, the federal government provided about \$48.8

billion in support (excluding loans and federal research grants). Of that total, \$31.3 billion supported federal Pell Grants, \$12.2 billion supported veterans' educational benefits, \$1.6 billion was provided in other financial aid grants. Another \$3.8 billion was provided in general purpose appropriations to support operations within higher education institutions. States provided about \$62.6 billion in total, with \$9.6 billion supporting state financial aid grants and \$53.0 billion in general purpose appropriations. Local governments contributed another \$9.2 billion in supporting general purpose appropriations. This \$120.6 billion in total public support translates into an average of about \$6,660 a year per student in higher education. These resources are disproportionately oriented toward public institutions, with the majority of the federal and state general purpose appropriations going only to public institutions (The Pew Charitable Trusts, 2015).

2. Social Services

Child welfare agencies protect and promote the welfare of youth at-risk for, or who have already experienced child maltreatment. Each year the DHHS' Administration for Children and Families' Children's Bureau reviews the state of child maltreatment and child welfare services utilization for the country (Child Welfare Information Gateway, 2016; Children's Bureau, 2016). In 2014, the most recent data available, there were an estimated 6.6 million referrals for suspected cases of abuse or neglect, 3.3 million who received an investigation. This resulted in an estimated 702,000 substantiated victims of child abuse and neglect and 2.5 million related non-victims (e.g., siblings, non-abusing family members). Of those, 1.3 million received in home services and 242,919 received foster care system services. Every two years for over a decade, ChildTrends has compiled information on government spending for child welfare services (Rosinsky & Connelly, 2016). In 2014, federal, state, and local governments spent \$29.1 billion on child welfare services. States used numerous funding sources to finance their child welfare agencies and efforts. In this context, the US spends over \$40,000 on child welfare services per child victim per year. This does not include any of the downstream healthcare, criminal justice, social service or welfare costs known to be related to experiencing child maltreatment (Fang et al., 2012; Gilbert et al., 2009). These child welfare system costs vary greatly across cases and also include the costs to investigate a substantial amount of child maltreatment reports that are not substantiated.

Federal funding provides about 43% of child welfare funding. Title IV-E funding provided over half of federal child welfare resources (55%). Temporary Assistance for Needy Families (TANF) accounts for another 20%, and Medicaid accounts for another 10%. The Social Services Block grants provides another 8%, Title IV-B. The final 3% come from a variety of other federal funding streams. These included Child Abuse Prevention and Treatment Act (CAPTA), Community Based Child Abuse Prevention (CBCAP), Children's Justice Act, Adoption Opportunities Adoption Incentive Awards, Maternal, Infant, and Early Childhood Home Visiting, Supplemental Security Income (SSI), Social Security Disability Insurance (SSDI), Social Security Survivor's Benefits and/or Veterans Administration funds.

State and local funds provided the remaining 57% of total child welfare resources spent in the country. The amount any particular state and local governments spends varies widely. In

2014, it ranged from 82 cents for every federal dollar spent in Puerto Rico to 12 cents for every federal dollar spent in West Virginia (Rosinsky & Connelly, 2016).

Child welfare services may be divided into five categories (Aarons & Palinkas, 2007; Landsverk, Brown, Rolls Reutz, Palinkas, & Horwitz, 2011): child protective services, in-home preventive services, out-of-home placement, adoption and legal guardianship, and services for youth transitioning out of foster care. Child protective services include intake, screening family assessment, investigation, services provided during the investigation and all associated administrative support. These services account for about 15% of all child welfare spending at over \$4.4 billion a year or about \$1,360 per child served (Putnam-Hornstein & Needell, 2011; Rosinsky & Connelly, 2016). In-home services to prevent child abuse or neglect or prevent permanent removal from the home include family preservation services, in-home caseworker supports, post reunification services and all associated administrative support. These services account for about 16% of all child welfare spending at over \$4.7 billion a year or about \$3,610 per child served (Aarons & Palinkas, 2007; Rosinsky & Connelly, 2016). Out-of-home placement services include foster care maintenance payments, case planning and review, services provided to children in foster care, and all associated administrative support. These services account for about 47% of all child welfare spending at over \$13.6 billion a year or about \$32,640 per child served (Kelly, 2015; Rosinsky & Connelly, 2016). Adoption and legal guardianship services include ongoing and nonrecurring assistance payments or services and all administrative support. These services account for about 17% of all child welfare spending at over \$5.0 billion a year or about \$32,760 per child served (Annie E. Casey Foundation, 2014; Rosinsky & Connelly, 2016). Services for youth transitioning out of foster care include services and supports intended to help youth make a successful transition and all administrative costs. These services account for about 2% of all child welfare spending at over \$580 million a year or about \$1,290 per child served (Rosinsky & Connelly, 2016). In addition, there is public support for enforcing child support payments. In 2013, the federal government provided states about \$5.7 billion to enforce payment in 14.7 million cases.

3. Criminal Justice

The criminal justice system aims to prevent and adjudicate criminal behavior and includes law enforcement, the judicial and the corrections systems.

3.A. Law Enforcement

US law enforcement encompasses includes over 17,985 state and local law enforcement agencies as well as over 100 federal law enforcement agencies. The Federal Bureau of Investigations Unified Crime Reporting program compiles information about reported offenses, arrests and clearances from across the country (FBI, 2013). In 2012, 18.2 million offenses became known to law enforcement and law enforcement made over 12.2 million arrests. As a result of these arrests, over 4.0 million offenses were closed (22% of known crimes). The US Department of Justice periodically releases a summary of its budget authority by appropriations, which provides information about past and current spending on federal law enforcement. In 2012, the federal government spent about \$14.4 billion on its

principal criminal federal law enforcement agencies. Each year, the Bureau of Justice Statistics releases information about state and local law enforcement spending (DOJ, 2014). In 2012, state governments spent \$14.2 billion and local governments spent \$84.1 billion on law enforcement. Nationally, this public spending translates into about \$9,122 per arrest or about \$27,509 to clear a crime. Local sources (county and municipalities) bore 87% of these costs. The cost to clear a crime can vary greatly by the type of the crime, geography and local capacity.

3.B. Judicial System

The US judicial system includes the 108 federal courts and over 1,800 state district, appeals and supreme courts. In 2012, the federal judiciary filed 1.6 million cases (DOJ, 2013; US Supreme Court, 2012). In 2012, the federal government spent \$7.0 billion on the federal judiciary (US Supreme Court, 2012). Each year, the Bureau of Justice Statistics releases information about state and local judicial and legal spending and case filings (BJS, 2012). In 2012, the states filed an estimated 15.3 million cases. In 2012, state governments spent \$22.7 billion and local governments spent \$22.0 billion. The average cost of close a federal case was around \$4,360 a case. The cost to close a state case is around \$2,930 a case.

3.C. Corrections System

The US corrections system includes 1,719 state prisons, 102 federal prisons, 2,259 juvenile correctional facilities, 3,283 local jails, and 79 Indian Country jails (BJS, 2016). Each year, the Bureau of Justice Statistics releases information about state and local corrections spending. In 2012, there were 1.5 million prisoners in federal and state facilities (217,815 federal; Carson & Golinelli, 2013). In 2012, the federal government spent about \$5.9 billion, state governments spent about \$48.4 billion, and local governments spent about \$26.4 billion on corrections facilities (BJS, 2012). Each year the Bureau of Prisons releases an annual determination of the average cost of incarceration through the *Federal Register* (Prisons Bureau, 2016). The official annual determination of the average cost of incarceration for federal inmates in 2012 was \$29,027 a year or \$79.31 per day (Prisons Bureau, 2013). For federal inmates transitioning out of federal facilities they may stay in Community Correction Centers at an annual cost of \$27,003 or \$73.78 per day. In 2012, state correction costs per inmate were around \$47,600 a year or \$130.50 a day, but vary widely by state (Association of State Correctional Administrators, 2011; Henrichson & Delaney, 2012).

4. Healthcare

The healthcare system includes organizations of people, institutions and resources that deliver health services. Of the over \$2.9 trillion in healthcare spending in 2013, 64.3% was publically funded by federal, state and local governments (Himmelstein & Woolhandler, 2016). This spending came from: (1) direct government payments for Medicare, Medicaid, and other public programs such as the Veterans Health Administration, and other public health departments; (2) government agencies' expenditures for public employees' health insurance coverage; and (3) federal, state, and local tax subsidies to healthcare. Direct government expenditures are the largest category of spending and the focus here as described above.

4.A. Medicaid

Medicaid is a government insurance program for individuals and families with limited resources. As a means-tested program started in the 1960s, it requires enrollees to have an income below a set amount. It is jointly funded by the federal and state governments. Medicaid enrollment varies with individuals cycling in and out depending on their income status. Further, changes under ACA have led to increases in Medicaid enrollment since its passage in 2010 (Thompson, Clark, Howland, & Mueller, 2011). Each year the Centers for Medicare and Medicaid Services provide enrollment and national health expenditure data about Medicaid (CMS, 2014b). In 2011, enrollment was 57.1 million for the year (CMS, 2011). In 2011, the most recent year available, average expenditures on Medicaid enrollees with full or partial coverage was \$5,790 (KFF, 2013). For aged individuals on Medicaid the average was \$13,249. For individuals with disabilities it was \$16,643. For adults it was \$3,247. For children it was \$2,463.

4.B. CHIP

The State Children's Health Insurance Program (CHIP) is designed to cover uninsured children in families with incomes that are low, but still too high to qualify for Medicaid. CHIP is a partnership between federal and state governments (CMS, 2014a). States may operate it as a separate program independent from Medicaid, use CHIP funding to expand Medicaid or combine these approaches. Each year the Centers for Medicare and Medicaid Services provides enrollment and national health expenditure data about CHIP (CMS, 2014b, 2016; MACPAC, 2016). In 2011, 7.9 million children were enrolled in CHIP. This had grown to 8.1 million by 2014. In 2014, \$13.0 billion was spent on CHIP or about \$1,600 an enrollee a year.

4.C. TRICARE

The Military Health System provides healthcare to active-duty and retired US military personnel and their dependents. The MHS consists of 65 hospitals, 412 clinics, and 414 dental clinics worldwide. Military personnel are provided with the Tricare program that provides civilian health benefits and functions much like Medicare. Data are not frequently released about the TRICARE system. A recent review by the CBO, which was able to obtain data from the Department of Defense, provided enrollment and spending information for the TRICARE program (CBO, 2014). In 2012, TRICARE served 9.6 million beneficiaries at a cost of about \$52.0 billion (\$5,400 a beneficiary).

4.D. Veterans Administration

The Veterans Health Administration consists of about 1,700 hospitals, outpatient clinics, counseling centers, and long-term care facilities. These facilities are owned and operated by the federal government. Each year the National Center for Veterans Analysis and Statistics releases compiles utilization and expenditure data by state (NCEVAS, 2015). In 2015, of the about 27.6 million current veterans, the VA served over 5.9 million. That year \$65.6 billion was spent on VA medical care or about \$11,056 per veteran who used the VA for the year (NCEVAS, 2015).

5. Welfare

A number of welfare programs are available to support individuals, many of which are targeted towards children and families. These include Temporary Assistance for Needy Families (TANF), Women, Infant and Children (WIC) program, and Supplemental Nutrition Assistance Program (SNAP).

5.A. TANF

The Temporary Assistance for Needy Families (TANF) is a federal assistance program created in 1997 that replaced the Aid to Families with Dependent Children (AFDC) program. TANF provides cash assistance to poor American families with dependent children, but also provides funds for child welfare (as described above; Falk, 2016). There is a federal maximum of 50 months of the cash assistance from TANF across an entire lifetime, but some states limit this further. Recipients are required to find a job within 24 months of receiving aid. Caseload and expenditure data for TANF are released each summer by the DHHS Administration for Children and Families Office of Family Assistance (ACF, 2016a). In 2015, TANF provided support to 1.6 million families (4.1 million recipients, 2.9 million children). In 2015, federal and state governments spent \$8.4 billion on cash assistance or about \$5,190 a year per family or about \$2,196 a year per individual.

5.B. WIC

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) program is a federal assistance program from the United State Department of Agriculture that supports the nutrition and health of low-income pregnant women, breastfeeding women, and infants under the age of five. Family income must be below 185% of the federal poverty level. The USDA Food and Nutrition Service periodically releases reports on WIC utilization and expenditures (Johnson et al., 2013). WIC serves over 50% of all infants born in the US. In 2012, it served 9.7 million participants at a cost of \$6.8 billion or a cost of about \$700 a participant. Actual WIC payments to recipients vary depending on income level and family size.

5.C. SNAP

The Supplemental Nutrition Assistance Program (SNAP), previously referred to as Food Stamps, is a federal aid program that provides food purchasing assistance for low income individuals (Food and Nutrition Service & Office of Research and Analysis, 2012). It is administered by the US Department of Agriculture and distributed by state social service agencies. The USDA Food and Nutrition Service releases periodic reports of enrollment (USDA, 2015). In 2015, SNAP provided assistance to about 4.8 million individuals each year at a cost of about \$74.0 billion or about \$1,616 a year per recipient.

5.D

Housing Assistance.

6. Tax Credits

Two major types of tax benefits are directed at children and families: the Earned Income Tax Credit (EITC) and the Child Tax Credit (CTC). These two programs come in the form of a tax credit. If the credit is more than they owe in taxes, a benefits is paid out as part of the tax return (i.e., lump sum). It is estimated that together these programs have helped raise 9.4 million people out of poverty.

6.A. EITC

The EITC is one of the largest anti-poverty programs. The Internal Revenue Service releases annual statistics on tax returns claiming the EITC and the amount claimed (Internal Revenue Service, 2016). In 2015, 27.5 million individuals received it at a public cost of \$66.7 billion. The average amount of EITC paid to those who claimed it was \$2,400. About 80% of those eligible for the EITC claim it. There are over 20 different determinations for eligibility for the EITC.

6.B. Child Tax Credit

The child tax credit is worth up to a \$1,000 a child for families with children under the age of 17 (Center on Budget and Policy Priorities, 2016). A qualifying child is one that is your son, daughter, stepchild, foster child, brother, sister, stepsister or descendant of any of these individuals (grandchild, niece or nephew) or non-biologically related adopted child. The child must be a dependent on the guardians' tax return and not provided more than half of their own support. The child must be a US citizen, US national or US resident Alien and must have lived with the guardian for more than half the year. The tax credit begins to decrease when an individual's income is over \$75,000 for the year or a couple income is over \$110,000 for the year. In 2014, 19.9 million households received the child tax credit.

Table 3

Valuing Multisystem Utilization Framework (VMUF)

Education
1 How many children do you have? ____ child(ren) {REPEAT ITEMS FOR EACH CHILD}
2 Has your child participated in Head Start? Yes/No {IF NO SKIP TO 4}
3 How many years have they attended the Head Start program? ____ years
4 Has your child attended a pre-kindergarten program? Yes/No {IF NO SKIP TO 6}
5 Did you pay for them to attend the pre-kindergarten program? Yes/No
6 Did you/are you receive(ing) a reduced rate for them to attend the pre-kindergarten program? Yes/No
7 How much was the reduction? ____% reduction
8 Has your child ever repeated a grade in school? Yes/No {IF NO SKIP TO 9}
9 How many times have they repeated a grade? ____ times
10 Does/did your child receive special education services because of a learning disability or behavioral issue? Yes/No
11 Did your child graduate high school? Yes/No
12 Does/did your child attend college? Yes/No

Social Services	
13	Have you or your child ever experienced a case of child abuse or neglect? Yes/No {IF NO SKIP TO 17}
14	Was it substantiated by a Child Protective service or Child Welfare worker? Yes/No
15	Were services ever provided in your home (counseling, XXXX, XXX)? Yes/No
16	Was your child ever removed from the home (foster care, XXX)? Yes/No
17	Was your child adopted or did their guardianship change to a family member besides their biological parents? Yes/No
Criminal Justice	
18	Has your child ever been arrested? Yes/No
19	Has your child ever been charged with a crime? {IF NO SKIP TO 27}
20	Did they agreed to a plea deal or settlement? Yes/No
21	Was there a trial? Yes/No
22	Has your child ever had to serve time in a corrections facility (jail, prison)? Yes/No
23	How long was their sentence? ____ weeks/months/years
24	Have they been released? Yes/No
25	How long did they actually serve? ____ weeks/months/years
26	Was it a State or Federal facility? State/Federal
Healthcare	
27	How old are you? ____ year(s)
28	Is your healthcare covered by Medicare? Yes/No {IF NO SKIP TO 29}
29	For how many years have you received Medicare coverage? ____ year(s)
30	Have you ever received health coverage through Medicaid? (i.e., {INSERT RELEVANT STATE NAMES FOR MEDICAID}) Yes/No {IF NO SKIP TO 32}
31	For how many years/months did you receive coverage? ____ year(s)
32	Has your child ever been received healthcare coverage from the Children's Health Insurance Program? (i.e., {INSERT RELEVANT STATE NAMES FOR CHIP}) Yes/No
33	For how many years did they receive this support? ____ year(s)
34	Did you, your spouse or your parent ever serve in the military? Yes/No {IF NO SKIP TO 43}
35	Are you, your spouse or your parent currently considered active duty? Yes/No {IF NO SKIP TO 33}
36	For how many years have you, your spouse or your parents been active duty? Yes/No
37	Were you, your spouse or your parent honorably under honorable conditions or a general discharge?
38	How many years ago were you or your spouse discharged? Yes/No
39	Do you currently use Veterans Administration (VA) facilities to receive healthcare? Yes/No
40	For how many years have you used Veterans Administration Facilities? ____ years
41	Does your spouse or children use Veterans Administration facilities to receive healthcare? Yes/No
42	For how many years has your spouse of child(ren) used Veterans Administration Facilities? ____ years
Welfare	
43	Have you ever received benefits from TANF (Temporary Assistance for Needy Families) also referred to as welfare? {IF NO SKIP TO 45}
44	How many weeks have you received TANF benefits? ____ weeks
45	Have you ever received benefits from WIC (Supplemental Nutrition support for Women, Infants and Children) {IF NO SKIP TO 48}
46	How many weeks did you receive these benefits? ____ weeks

47 Have you ever received benefits from SNAP (Supplemental Nutrition Assistance Program) also referred to as Food Stamps? {IF NO THEN END}

48 How many weeks did you receive these benefits? ____ weeks

Income Credits

49 What was your total income last year (salary, wage, investment, combat and retirement)? \$ ____

50 Did you file taxes with a partner (joint-filing) Yes/No

51 Did you claim them as dependents? Yes/No

Table 4

Valuing Multisystem Utilization Framework-Healthcare Utilization Supplement VMUF-HCUS

1. How many nights have you stayed in the hospital in the last year? ____ nights	
2. In the last year have you {TAILOR BASED ON SAMPLE AGE}:	
1–17 years	
a.	Had your appendix removed (i.e., Appendectomy)? Yes/No
b.	Received a blood transfusion? Yes/No
c.	Received chemotherapy for cancer? Yes/No
d.	Required a tube to help you breathe (Respiratory intubation and mechanical ventilation)? Yes/No
18–44 years	
a.	Required a Cesarean section (C-section)? Yes/No
b.	Undergone fetal monitoring? Yes/No
c.	Received a blood transfusion? Yes/No
45–64 years	
a.	Received a blood transfusion? Yes/No
b.	Undergone a cardiac catheterization (tube in your neck, arm or groin to your heart)? Yes/No
c.	Required a tube to help you breathe (Respiratory intubation and mechanical ventilation)? Yes/No
d.	Received an upper gastrointestinal endoscopy (examination using a tube through your mouth into your stomach)? Yes/No
65–84 years, total stays	
a.	Received a blood transfusion? Yes/No
b.	Required a tube to help you breathe (Respiratory intubation and mechanical ventilation)? Yes/No
c.	Undergone a cardiac catheterization (tube in your neck, arm or groin to your heart)? Yes/No
d.	Received an upper gastrointestinal endoscopy (examination using a tube through your mouth into your stomach)? Yes/No
e.	Knee Replacement (Arthroplasty)? Yes/No

85+ years, total stays

- a. Received a blood transfusion? Yes/No
- b. Required a tube to help you breathe (Respiratory intubation and mechanical ventilation)? Yes/No
- c. Received an upper gastrointestinal endoscopy (examination using a tube through your mouth into your stomach)? Yes/No
- d. Diagnostic ultrasound of heart (echocardiogram)? Yes/No
- e. Have a fractured or dislocated hip/femur treated? Yes/No
- f. How many times have you had surgery? Yes/No
- g. How many times have you gone to see the doctor in a non-emergency setting? Yes/No
- h. How many times have you gone to the dentist? Yes/No

3. How many times have you gone to the Emergency Room/Department in the last year? ____ times

4. In the last have you taken any prescription drugs? Yes/No

5. In the last year how often have you taken the following prescription drugs?

- a. Painkillers (e.g., Hydrocodone, Oxycodon)? Daily, Weekly, Once a Month, Every 3 Months, Once a Year
- b. Cholesterol Medication (Zocor, Statins)? Daily, Weekly, Once a Month, Every 3 Months, Once a Year
- c. Blood Pressure Medication (Lisinopril, Prinivil, Zestril, Norvasc, Hydrochlorothiazide)? Daily, Weekly, Once a Month, Every 3 Months, Once a Year
- d. Antibiotics (Azithromycin, Z-Pak, Zithromax, Amoxicillin)? Daily, Weekly, Once a Month, Every 3 Months, Once a Year
- e. ADHD Medication (Evekeo, Adderall, Adderall XR, Dexedrine, ProCentra, Zenzedi, Focalin, Focalin XR, Vynanse, Concerta, Daytrana, Metadate CD, Ritalin)? Daily, Weekly, Once a Month, Every 3 Months, Once a Year
- f. Antidepressants (e.g., Celexa, Lexapro, Luvox, Paxil, Pexeva, Prozac, Sarafem, Zoloft)? Daily, Weekly, Once a Month, Every 3 Months, Once a Year

Table 1**Public System Spending & Service Provision for Children & Families**

System	Annual Public Expenditure*	Number Served
Education		
Head Start	\$8.2 billion ²⁰¹⁵	1.0 million students
State Pre-K	\$6.2 billion ²⁰¹⁵	1.4 million students
K–12	\$584.4 billion ²⁰¹⁶	50.4 million students
Higher Education	\$120.6 billion ²⁰¹³	18.1 million students
Social Services		
Child Support Enforcement	\$5.7 billion ²⁰¹³	14.7 million cases
Child Protective Services	\$4.4 billion ²⁰¹⁴	3.2 million investigations
In-Home Services	\$4.7 billion ²⁰¹⁴	1.3 million victims served
Out-of-Home Services	\$13.6 billion ²⁰¹⁴	415,129 victims served
Adoption & Guardianship Services	\$5.0 billion ²⁰¹⁴	153,598 victims served
Transitional Assistance	\$580 million ²⁰¹⁴	45,664 victims served
Criminal Justice		
Law Enforcement	112.7 Billion ²⁰¹²	12.2 million arrests
Federal Courts	7.0 billion ²⁰¹²	1.6 million cases
State Courts	22.7 billion ²⁰¹²	4.7 million cases
Federal Corrections	5.9 billion ²⁰¹²	217,815 inmates
State Corrections	48.4 billion ²⁰¹²	1.4 million inmates
Healthcare		
Medicaid	\$545.1 billion ²⁰¹⁵	68.0 million beneficiaries
CHIP	\$13.0 billion ²⁰¹⁴	8.1 million beneficiaries
TRICARE	\$52.0 billion ²⁰¹²	9.6 million beneficiaries
VA Health System	\$65.6 billion ²⁰¹⁵	9.0 million beneficiaries
Welfare		
TANF	\$8.4 billion ²⁰¹⁵	1.6 million families
WIC	\$6.8 billion ²⁰¹²	9.7 million recipients
SNAP	\$74.0 billion ²⁰¹⁵	46.5 million recipients
Housing Assistance Vouchers	\$19.3 billion ²⁰¹⁵	2.1 million households
Public Housing		1.1 households
Section 8 Project-based Housing		1.2 households
School Lunch Program	\$12.6 billion ²⁰¹⁴	30.3 million recipients
School Breakfast Program	\$3.7 billion ²⁰¹⁴	13.5 million recipients
Income Credits		
Earned Income Tax Credit	\$66.7 billion ²⁰¹⁵	27.5 million filers
Child Tax Credit	\$21.6 billion ²⁰¹³	19.9 million children claimed

* Expenditure Year in superscript

Table 2

Average Public System Spending on Service Provision per Recipient

System	Average Annual Expenditure (2016 Dollars)	Unit	Sources
Education			
Head Start	\$8,820	Per student	Office of Head Start, 2016
State Pre-K	\$4,560	Per student	Barnett et al., 2016
K–12	\$11,600	Per student	NCES, 2016
Higher Education	\$6,820	Per student	Ma & Baum, 2016
Social Services			
Child Support Enforcement	\$387	Per case	OCSE, 2016
Child Protective Services	\$1,390	Per investigation	CWIG, 2016;
In-Home Services	\$3,680	Per child victim served	Children's Bureau, 2016;
Out-of-Home Services	\$33,210	Per child victim served	Rosinsky & Connelly, 2016
Adoption & Guardianship Services	\$33,330	Per child victim served	
Transitional Assistance	\$1,310	Per child victim served	
Criminal Justice			
Law Enforcement	\$9,570	Per arrest	DOJ, 2014; FBI, 2013
Law Enforcement	\$28,860	Per crime closed	
Federal Courts	\$4,574	Per case filed	DOJ, 2013; US
State Courts	\$3,070	Per case filed	Supreme Court, 2012
Federal Corrections	\$30,450	Per inmate	BJS, 2016; Prisons
State Corrections	\$49,930	Per inmate	Bureau, 2013; ASCA, 2011
Healthcare			
Medicaid	\$14,190	Per beneficiary	CMS, 2011; 2014; KFF, 2013
CHIP	\$1,630	Per beneficiary	CMS, 2014b, 2016; MACPAC, 2016
TRICARE	\$5,660	Per beneficiary	CBO, 2014
VA Health System	\$11,250	Per veteran served	NCEVAS, 2015
Welfare			
TANF	\$5,270	Per family	ACF, 2016b, 2016a
WIC	\$730	Per recipient	Johnson et al., 2013
SNAP	\$1,520	Per recipient	USDA, 2015
Housing Assistance Vouchers	\$9,141	Per households	
Public Housing		Per households	NCSHA, 2016; CBPP, 2016
Section 8 Project-based Housing		Per households	
School Lunch Program	\$416	Per recipient	USDA, 2016
School Breakfast Program	\$274	Per recipient	USDA, 2016
Income Credits			
Earned Income Tax Credit	\$2,440	Per filer	IRS, 2016
Child Tax Credit	\$1,000	Per child	CBPP, 2016

* All Average Annual Expenditure estimates are adjusted from base year to 2016. Healthcare-related programs are calculated using the medical care group.