Critical Years:

Childhood Wellbeing in Dallas County

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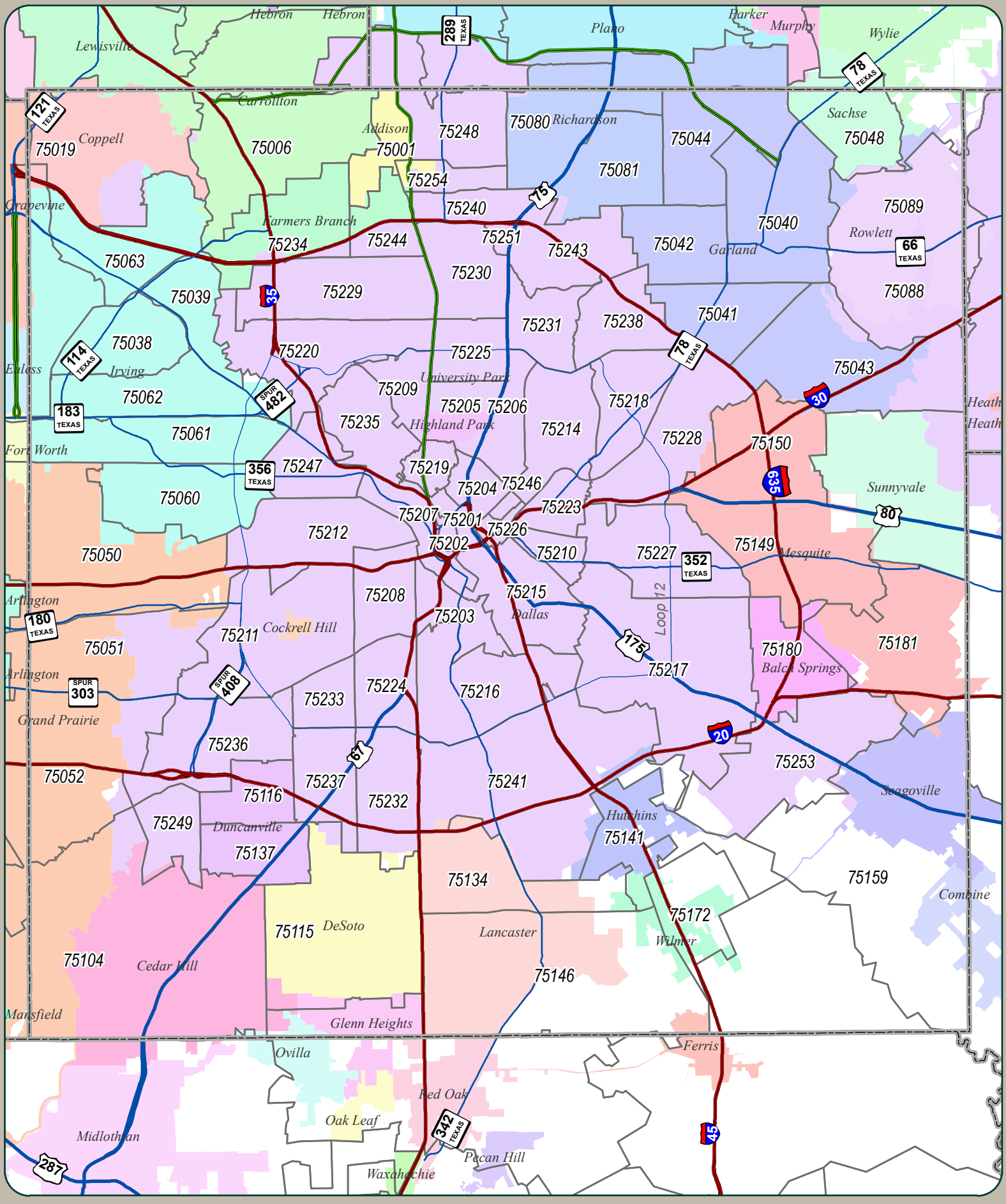

Dallas County Overview

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INTRODUCTION

There is a precious time in life when we embody innocence and perfection, but also vulnerability. Those critical years from infancy until the day we enter school lay the foundation for everything that follows. Developmental advantages and foundations generated during these early years serve individuals throughout their school age years and later in life, while developmental disadvantages suffered during the first 3 years of life present severe impediments as children attempt to grow socially, emotionally, physically, and academically. Not only are early childhood experiences of critical importance to individual development and success for any given child, but collectively, the early childhood experiences of our youngest citizens are of critical importance to the development and success of our region and our nation. The next generation begins with the infants and toddlers of today, and their future—our future—is already being forged, influenced by the social, emotional, educational, environmental, and physical experiences that inevitably contribute to the development of each child.

This study focuses on the youngest of the young: children ages 3 and under. While widespread preschool programs enrich and inform us about the development of 4- and 5-year-olds, children ages birth to 3 years old can be largely isolated from society. Tracking their development and targeting interventions is therefore more challenging and less well-researched than for older children. Thus, this study aims to provide a comprehensive picture of the state of childhood wellbeing among children ages 3 and under in Dallas County. Research has shown these early years are a crucial time of development with a marked impact on subsequent learning, growth, and physical health. During this time, the brain develops rapidly, and patterns of nerve "wiring" are affected by sensory stimulation and a child's emotional experiences. Between birth and age 3, factors such as chronic stress, level of nurturing by and interaction with caregivers, and nutritional intake affect children's ability to learn, process, interact with, and respond appropriately to their environment throughout the lifecourse.[1]

THE DEMOGRAPHICS OF POVERTY

Young children who are born into poverty, in particular, suffer significant developmental setbacks. Not only does family financial hardship itself take its toll on young children, but so do many other factors that are strongly correlated with poverty, such as low parental educational attainment. The Early Childhood Longitudinal Study (ECLS) identified four risk factors among kindergarteners: (a) family income below the federal poverty level, (b) mother's education less than high school graduate, (c) living in a single-parent household, and (d) a language other than English being the primary language of the home.[2] Children with

one of these risk factors performed significantly lower on reading and math assessments than children with no risk factors, and relatively small differences observed in kindergarten compounded over time to produce a much wider achievement gap by the third grade. Children with two or more of the identified risk factors showed an even lower achievement trajectory, to the degree that by third grade, children with two or more risk factors performed approximately 2 standard deviations below their no-risk-factor peers.[3] Studies have shown that, like kindergarten, the third grade is a watershed year—children who are not performing at grade level by the third grade face overwhelming odds against their future success. According to a study performed by Lloyd, "[s]ix or seven out of every ten students who will later drop out of high school can be correctly predicted from characteristics exhibited in the third grade."[4]

Childhood poverty can severely disadvantage a child's future life chances, even if that child later moves out of poverty. Brooks-Gunn and Duncan have identified five pathways through which poverty operates to negatively influence childhood outcomes.[5] Those pathways are (a) health and nutrition, (b) the home environment, (c) parental interactions with children, (d) parental mental health, and (e) neighborhood conditions.[6]

Statistically, poor children have been shown to have higher rates of low birthweight and elevated blood lead levels than their nonpoor peers. These health conditions have been linked to lower cognitive functioning in young children. Low birthweight has further been shown to have long-term implications on academic success as children get older, including grade retention, learning disabilities, and higher dropout rates.[7] Poor nutrition is also more common among children in poverty than in children with more economic resources, whether due to the parents' lack of income with which to purchase fresh, healthy foods, or lack of these foods' availability in stores in poor communities. Stunted growth, a result of and proxy for poor nutrition, is twice as common among poor children as in nonpoor children. Moreover, growth stunting has been associated with negative effects on memory, indicating that poor nutrition can have cognitive as well as physical ramifications.[8]

Disentangling the causal mechanisms that connect the various interrelated risk factors associated with poverty to the observed outcomes is a daunting but crucial task that must be performed if interventions are to be targeted at the true drivers of poverty-related negative childhood outcomes. However, a number of studies have concluded that children in poverty are at least twice as likely to repeat a grade in school, be suspended or expelled, or drop out of high school as their nonpoor peers.[9] They are 1.7 times as likely to be born with a low birthweight or die before their first birthday, and 6.8 times as likely to be a victim of (reported) child abuse or neglect. Children experiencing poverty prior to age 6 are twice as likely to be neither employed nor in school by age 24, and the women in this group are 3 times as likely to have had a child outside of marriage. Nevertheless, many of these studies do not typically distinguish between the effects of low income *per se* and the many concomitant characteristics of families in poverty.[10]

While the effect of residing in a very-low-income household on children's outcomes when taken in isolation from other poverty-related drivers and neighborhood characteristics remains somewhat controversial, the effect of low income alone is clearer when poverty characterizes the earliest years of a child's life. Duncan et al. found that an increase in parental income had the greatest effect on children's later educational attainment for children under age 6 in low-income families.[11] In other words, poverty in the earliest years of children's lives has a greater effect on their later educational achievement than either (a) poverty experienced during adolescence, or (b) income differences among families not in poverty.[12]

In addition to the pathways of poverty described above that appear to posit poverty and lack of resources as the root cause of poor childhood wellbeing, poverty is also linked, seemingly inextricably, to a number of factors that are more likely driving mechanisms rather than consequences of any given family's poverty. These

factors, such as low maternal educational attainment, low maternal employment, young motherhood, and single motherhood, constrain the financial resources of the family and make poverty a more likely reality.[13] At the same time, these factors have been shown to have strong negative effects on childhood wellbeing—effects that have sparked significant debate in the literature as to whether it is the actual lack of financial resources or these other factors that are the true mechanisms behind the consistently negative outcomes we observe among children in poverty.[14]

Table 1-1. Children Age 0–5 in Poverty; Highest Poverty Zip Codes, 2000

Zip Code	Total Population	Total Population Ages 0–3	Total Population Ages 0–5	% of Children Ages 0–5 in Poverty
75210	9,343	692	1,033	60.54%
75215	18,731	1,082	1,679	60.18%
75246	4,499	244	350	59.50%
75251	1,331	41	50	50.00%
75203	19,492	1,512	2,256	47.76%
75212	22,173	1,873	2,844	43.37%
75219	22,665	1,208	1,757	43.12%
75241	23,763	1,328	2,050	42.56%
75226	2,981	170	237	39.49%
75223	15,652	1,253	1,849	38.40%
75216	49,681	2,915	4,446	35.52%
75204	20,740	1,127	1,635	34.29%

Source: U.S. Census, 2000.

As shown in Table 1-1, in three zip codes in Dallas, approximately 60% of children under age 6 live in poverty. Those zip codes are 75210 and 75215 (South Dallas neighborhood) and 75246 (Old East Dallas). In another nine zip codes, between one third and one half of children under 6 live in poverty. These zip codes are 75251 (I-635 and N 75), 75203 (between I-35 and I-45, just south of downtown), 75212 (West Dallas neighborhood), 75219 (Oak Lawn), 75241 (between I-35 and I-45 at I-20), 75226 (Old East Dallas/northeast of Fair Park), 75223 (Lakewood and northern South Dallas), 75216 (between I-35 and I-45, roughly from Illinois to Ledbetter), and 75204 (Uptown and Roseland Homes areas). It is important to note that while many of these zip codes fall in the southern sector, several also fall in the near-downtown areas of the northern sector of the city of Dallas.

When one considers that more and more children in Dallas County are being born into disadvantaged situations with respect to higher poverty rates, abuse/neglect rates, and a lack of insurance, this study's focus on the wellbeing of 0- to 3-year-olds in Dallas County is particularly timely. Poverty data on children and families, taken from the American Community Survey, point to striking disparities in our community.[15] In Dallas County, the percentage of households making less than $25,000 rose from 23.9% in 2000 to 28.7% in 2004. Currently, more than 330,000 of Dallas County's 2.2 million residents live in poverty—many of these residents are less than 3 years of age. Likewise, the poverty rate in Dallas County increased from 12.5% in 2000 to 17.0% in 2004. While the poverty rate for children under age 18 in Dallas County was 21.5%, the poverty rate for children under age 5 was 25.0%. Strong evidence of the feminization of poverty in Dallas County also exists. In 2004, the proportion of families living in poverty and headed by females reached 41%. In addition, over 50% of the African American female-headed families with children under age 5 were living below the poverty level in 2004.

NEIGHBORHOOD CONTEXT: WHY PLACE MATTERS

The influences affecting the growth and development of young children come not just from parents and childcare settings, but also from the communities in which children reside. A neighborhood's conditions can affect a child independently of the conditions in the child's home. In particular, neighborhoods characterized by concentrated poverty can exacerbate the effects of family poverty.[16]

Table 1-2. Zip Codes With the Highest Numbers of Children Ages 0–3, 2000

Zip Code	Total Population	Total Population Age 0–3	Children Age 0–3 as % of Total Population	% of Children <18 Living with Married Parents	% of Children Age 0–5 in Poverty	Median Family Income (1999)	% Renter Occupied	Median Year Housing Unit Built (All Units)	Median Single Family, Owner-Occupied Home Value
75211	68,693	5,755	8.38%	63.22%	26.39%	$34,120	45.7%	1962	$57,900
75217	72,897	5,635	7.73%	52.11%	30.82%	$33,726	34.5%	1966	$51,900
75228	65,688	4,826	7.35%	52.49%	22.64%	$36,809	50.3%	1968	$75,000
75220	50,341	4,747	9.43%	62.89%	30.60%	$31,551	69.0%	1969	$106,000
75231	52,329	4,416	8.44%	52.96%	33.16%	$31,126	86.8%	1976	$183,400
75052	56,252	3,922	6.97%	73.03%	6.99%	$64,841	23.3%	1985	$93,200
75061	53,184	3,865	7.27%	63.80%	24.39%	$41,714	62.5%	1972	$90,300
75243	59,551	3,817	6.41%	54.36%	19.80%	$44,554	73.1%	1981	$145,300
75040	55,558	3,810	6.86%	70.49%	11.58%	$54,137	21.7%	1976	$82,500
75227	49,066	3,768	7.68%	55.80%	25.51%	$35,439	40.1%	1969	$65,900
75149	54,693	3,614	6.61%	64.43%	12.06%	$51,464	31.1%	1976	$76,200
75240	50,003	3,296	6.59%	64.61%	29.14%	$43,906	79.7%	1982	$223,300

Source: U.S. Census 2000. Note: Zip codes highlighted in blue appear in both Tables 1-1 & 1-2.

Many of the observed racial and ethnic differences in childhood outcomes can be attributed to a combination of family characteristics, such as poverty, and neighborhood conditions. One study estimated that one quarter of the black–white gap in IQ scores among 3-year-olds was attributable to greater neighborhood affluence among white children, while as much as three-quarters of the differences between high school dropout rates among African American and white teenage girls could be explained by differing neighborhood economic characteristics.[17]

In 2000, there were 146,136 children ages 0 to 3 in Dallas County, or 6.6% of the total county population. The highest numbers of children in this age range were in zip codes 75211 (south of the West Dallas neighborhood), 75217 (southeast of the Fair Park/South Dallas neighborhood), 75228 (east of White Rock Lake), 75220 (north of Love Field), and 75231 (northwest of White Rock Lake). Each of these zip codes had more than 4,000 residents ages 3 and under in 2000. Each of these zip codes also had poverty rates for children ages 5 and under in excess of 20%; three zip codes had child poverty rates in excess of 30%. The median family income in 1999 was less than $40,000 in these zip codes; in four of the five zip codes, it was less than $35,000. Renter occupancy ranged from 35% to 87%. In four of the five zip codes, the median year of construction for housing units was in the 1960s. In addition, at least one third of the children in each of the five zip codes were living in households headed by a single parent or nonparent, placing these children at a higher risk of living in poverty.

In looking at the zip codes which are home to the highest concentration (percentage) of children ages 0 to 3, we see a similar, if not exacerbated, situation (see Table 1-3). Zip code 75220 (north of Love Field) had the highest proportion of children ages 0 to 3, at 9.4% of the population. Children ages 0 to 3 made up between 8% and 9% of the population in zip codes 75237 (I-20 and 67 area), 75212 (West Dallas neighborhood), 75231 (northwest of White Rock Lake), 75211 (south of West Dallas neighborhood), 75253 (northwest of Seagoville), 75233 (South Oak Cliff), and 75223 (Lakewood). In each of these eight zip codes, there were high percentages of child poverty, reaching well over 50% in six of the eight zip codes. Median family incomes (1999) did not exceed $40,000 and dipped into the $20,000s. Renter occupancy was high in the majority of the eight zip codes. Some of the poorest and most distressed neighborhoods in Dallas County are also home to some of the largest percentages of children age 0 to 3. While this reflects other demographic transitions, it is also the

Table 1-3. Zip Codes With the Highest Percentage of Children Ages 0–3, 2000

Zip Code	Total Population	Total Population Age 0–3	Children Age 0–3 as % of Total Population	% of Children <18 Living with Married Parents	% of Children Age 0–5 in Poverty	Median Family Income (1999)	% Renter Occupied	Median Year Housing Unit Built (All Units)	Median Single Family, Owner-Occupied Home Value
75220	50,341	4,747	9.43%	62.89%	30.60%	$31,551	69.0%	1969	$106,000
75237	12,534	1,081	8.62%	24.08%	23.17%	$26,681	94.5%	1984	$88,700
75212	22,173	1,873	8.45%	41.83%	43.37%	$25,692	49.7%	1960	$34,400
75231	52,329	4,416	8.44%	52.96%	33.16%	$31,126	86.8%	1976	$183,400
75211	68,693	5,755	8.38%	63.22%	26.39%	$34,120	45.7%	1962	$57,900
75253	15,366	1,264	8.23%	58.40%	22.24%	$35,531	25.0%	1986	$58,000
75233	13,679	1,100	8.04%	50.97%	29.20%	$38,777	46.0%	1967	$85,300
75223	15,652	1,253	8.01%	58.70%	38.40%	$30,120	49.5%	1953	$56,900
75224	32,596	2,538	7.79%	54.94%	27.11%	$35,463	41.1%	1960	$61,800
75051	31,299	2,428	7.76%	55.13%	25.18%	$37,097	48.5%	1969	$60,100
75203	19,492	1,512	7.76%	47.56%	47.76%	$23,909	67.7%	1958	$43,600
75089	18,446	1,427	7.74%	84.61%	3.76%	$74,526	6.3%	1991	$116,200

Source: U.S. Census 2000. Note: Zip codes highlighted in blue appear in both Tables 1-1 & 1-2.

result of pockets of concentrated poverty.[18] Perhaps more importantly, it serves as an important reminder that mitigating poverty and improving wellbeing for young children need to be addressed in tandem.

CHANGING DEMOGRAPHICS IN DALLAS COUNTY

The post–World War II baby boom left an indelible mark on U.S. population dynamics. Because the boom was followed by a period of declining fertility, the boom generation continues to account for the largest share of total population when segmented by age. Figure 1-1 shows the age distribution in the United States for 2006. The baby boomer cohorts aged 40 to 44 and 45 to 49 are the largest age groups. Children under age 5, traditionally the largest age group in a population graph, constitute only 6.7% of total U.S. population. In fact, of all the age cohorts under age 55, only two age groups have a smaller population than the 0 to 4 age group.

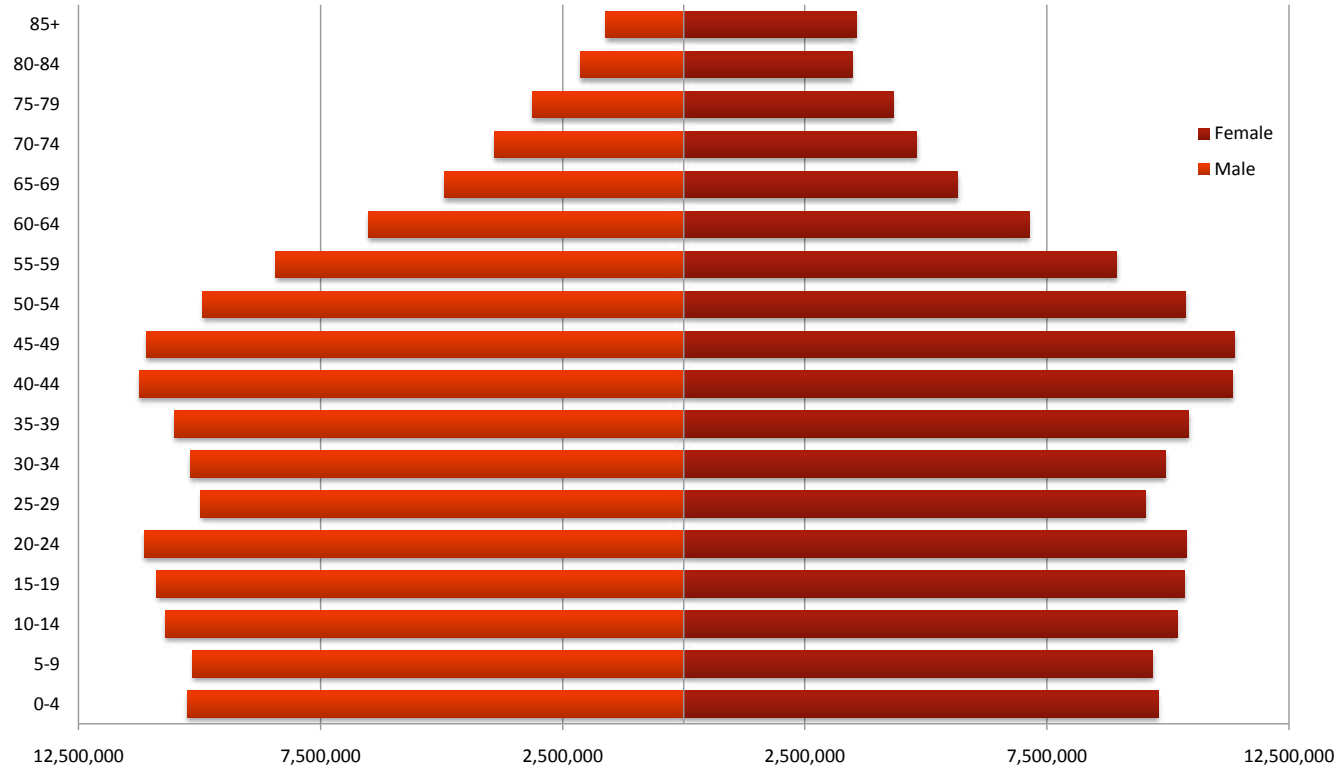
Table 1-4. Population Ages 0–4 as Proportion of Total Population in Dallas County, 1970–2006

Year	Total Population	Population Ages 0–4	% Ages 0–4
1970	1,326,835	127,668	9.6%
1980	1,555,681	141,360	9.1%
1990	1,852,134	184,182	9.9%
2000	2,218,899	180,574	8.1%
2006	2,321,717	208,051	9.0%

Source: Neighborhood Change Data Base, by Geolytics

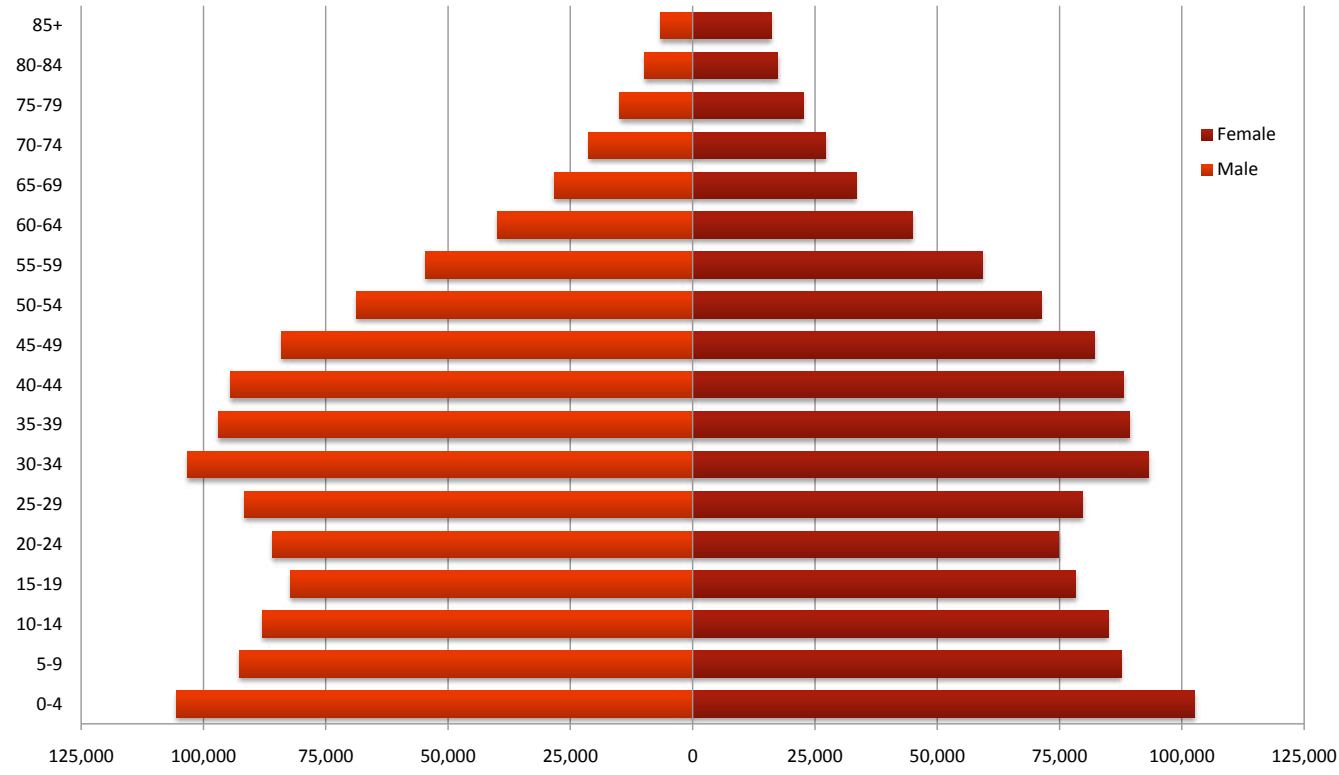
However, Figure 1-2 shows a very different picture for Dallas County. Children ages 0 to 4 constitute the largest age group in Dallas County, in line with pre-World War II traditional population dynamics.[19] Over the past 35 years, the percentage of the total population in Dallas County represented by children ages 0 to 4 has oscillated between 8% and 10% without a clear trend (see Table 1-4). The total number of 0- to 3-year-olds in Dallas County has increased from 127,668 in 1970 to an estimated 208,051 in 2006. New births among Hispanics account for much of this dramatic growth. Roughly 13% of the Hispanic population was between the ages of 0 and 4 in 2006. Hence, our social programs, educational institutions, and local public policy must be prepared to adequately deal with this new demographic reality, especially the bilingual character and linguistic isolation of some Hispanic households.

Figure 1-1. Age Distribution in the United States, 2006



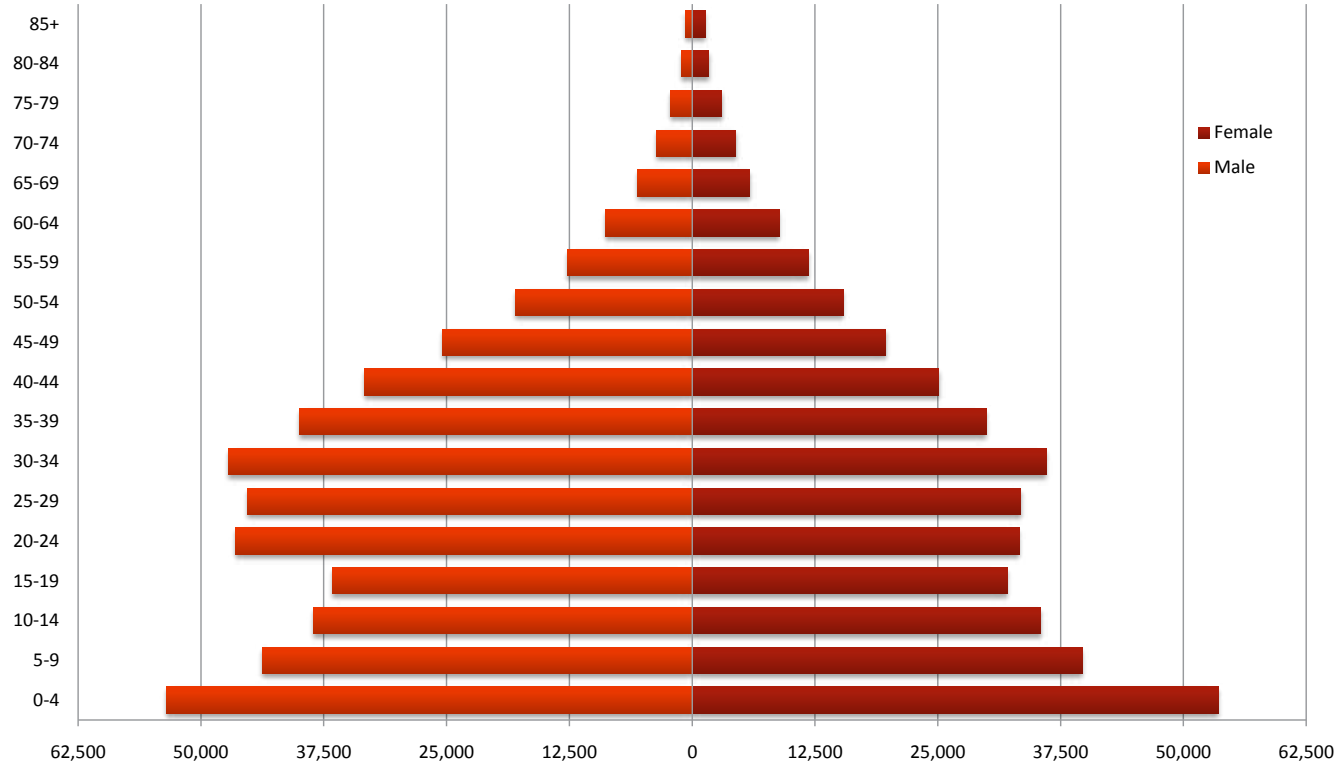
Source: Claritas Marketing Estimates, 2006

Figure 1-2. Age Distribution of Dallas County Residents, 2006



Source: Claritas Marketing Estimates, 2006

Figure 1-3. Age Distribution Among Hispanics in Dallas County, 2006



Source: Claritas Marketing Estimates, 2006

INCREASING DIVERSITY

Over the past several decades, we have witnessed significant diversification in the racial/ethnic makeup of the Texas population, as seen in the population of the nation as a whole. From 1980 to 2000, the white population in Texas declined from 65.7% to 53.1% of total population, while the Hispanic population increased from 21.0% to 32.0% of the total population over the same time period. The black population remained stable in comparison to other racial/ethnic groups, at 11.9% of total population in 1980 and 11.6% in 2000.[20]

This demographic shift is even more dramatic when we look at the racial/ethnic makeup of specific age groups. In the year 2000, the median age of Hispanics in Texas was 25.5 years, compared to 38.0 for whites.[21] Murdoch et al. describe a "clear relationship between youth status and non-Anglo status."[22] In Texas, in the year 2000, the population over age 65 was 73% white and 17% Hispanic, while the population under age 5 was 40% white and 44% Hispanic. At 60% of children under age 5, "minority" children currently constitute a majority of young children in Texas.[23] As a result, the challenges facing minority groups and the challenges facing young children are likely to become increasingly intertwined.

In Dallas County, these changing demographic realities are reflected in the differences between the racial/ethnic distribution of children ages 0 to 3 and the distribution of the total population (see Table 1-5). In some zip codes, particularly those close to downtown Dallas, the difference between the percentage of the total population in a racial/ethnic group and the percentage of the children ages 0 to 3 in that racial/ethnic group exceeds 20 percentage points. At the zip code level, these differences reflect both the larger demographic shift and the degree to which schools and other factors drive residential choice.

The implications of this massive demographic realignment of the social and economic landscape in Dallas County are significant and pressing, insofar as demographics track socioeconomic conditions. Murdoch

Table 1-5. Demographic Comparison, Total Population & Children Ages 0–3, Dallas County, Selected Zip Codes, 2000

Zip Code	WHITE		BLACK		HISPANIC		ASIAN		OTHER	
	% of Total	% of Children	% of Total	% of Children	% of Total	% of Children	% of Total	% of Children	% of Total	% of Children
75201	67.7%	21.7%	17.0%	55.8%	9.9%	14.2%	3.1%	0.0%	2.3%	8.3%
75204	37.8%	9.3%	11.2%	10.3%	44.3%	73.8%	5.2%	5.1%	1.5%	1.5%
75206	53.6%	29.4%	4.6%	5.3%	36.6%	60.1%	3.4%	2.9%	1.8%	2.3%
75207	42.4%	0.0%	37.3%	0.0%	17.9%	100.0%	0.1%	0.0%	2.4%	0.0%
75210	0.9%	0.1%	82.8%	70.8%	15.4%	28.3%	0.2%	0.3%	0.7%	0.4%
75216	2.2%	0.8%	77.9%	64.1%	19.0%	33.7%	0.1%	0.0%	0.9%	1.5%
75219	41.7%	8.9%	8.3%	13.8%	41.2%	67.5%	7.0%	7.9%	1.8%	1.9%
75226	33.9%	6.5%	11.7%	9.4%	51.9%	82.4%	1.5%	0.6%	1.0%	1.2%
75238	59.0%	38.9%	21.2%	29.3%	16.4%	27.2%	1.4%	1.1%	2.1%	3.5%
75240	43.5%	20.8%	9.3%	8.4%	40.4%	63.4%	4.7%	4.5%	2.1%	3.0%
75247	20.1%	0.0%	55.5%	25.0%	19.3%	75.0%	0.8%	0.0%	4.3%	0.0%

Source: U.S. Census 2000

et al. state that ". . .in the absence of changes in the socioeconomic resources of population groups, . . . demographic change in Texas is likely to produce socioeconomic change."[24] The researchers' calculations show that when population change is coupled with no change in socioeconomic differentials, the average household income in Texas is likely to suffer a 12.1% decrease by 2040. Meanwhile, if socioeconomic differences were eliminated and the Hispanic and black populations enjoyed socioeconomic characteristics equal to that of the white population, average household income by 2040 would see a 15.4% increase. With no change in socioeconomic differentials between racial/ethnic groups, the number of families in poverty in Texas can be expected to nearly quadruple by 2040.[25]

This demographic shift is largely a result of two components: (a) international immigration of Hispanics and (b) natural demographic change due to differing fertility rates. According to the Office of the State Demographer, the fertility rate[a] among Hispanic women is nearly 50% higher than the fertility rate among other women in Texas.[26] On average, a Hispanic woman in Texas is expected to have 2.9 children in her lifetime, compared to 2.1 children for black women, 1.9 children for white women, and 1.9 children for women from other racial/ethnic backgrounds.[27]

In 1957, at the height of the baby boom, the fertility rate in the United States was 3.8.[28] Since that time, fertility rates have been steadily dropping. In 2000, the U.S. fertility rate was 2.1.[29] In Dallas County, where the Hispanic population is proportionally more than double that of United States,[b] the fertility rate was significantly higher at 2.4. There were areas within Dallas County, however, with vastly different fertility rates, as shown in Table 1-6. Zip code 75247 (southwest of Love Field) had the highest fertility rate at 11.5. However, this zip code is an industrial area with a very small population, so this number should be regarded with caution. Zip codes 75220 (north of Love Field), 75141 (Hutchins), 75229 (south of I-635, between the I-35E and the Tollway), 75246 (Old East Dallas), 75001 (Addison), 75172 (Wilmer), 75223 (Lakewood and northern South Dallas), 75203 (between I-35 and I-45, just south of downtown), and 75212 (West Dallas neighborhood) all had fertility rates of more than 3.0.

a In this report, we use the Total Fertility Rate, which estimates the total number of children each woman will have during her lifetime by combining age-specific fertility rates.

b In 2000, Hispanics comprised 12.5% of total U.S. population and 29.9% of Dallas County population. By 2005, those numbers had risen to 14.5% for the United States and 36.8% for Dallas County. (Data from the U.S. Census Bureau, Decennial Census, 2000, and American Communities Survey, 2005.)

Table 1-6. Highest Fertility Rates in Dallas County by Zip Code, 2000

Zip Code	Total Population	Total Births	Total Fertility Rate	% Hispanic, Total Population	% Hispanic, Children Ages 0–3
75247	254	4	11.5	19.3%	75.0%
75220	50,341	1503	3.5	77.3%	87.9%
75141	2,825	70	3.3	22.6%	35.5%
75229	31,113	572	3.3	32.8%	50.7%
75246	4,499	88	3.2	54.3%	77.1%
75001	8,259	235	3.2	12.0%	30.5%
75172	3,610	86	3.2	41.5%	59.1%
75223	15,652	393	3.2	64.1%	71.8%
75203	19,492	461	3.2	61.4%	76.1%
75212	22,173	558	3.1	62.1%	64.1%
75208	35,830	854	3.1	71.5%	87.3%
75217	72,897	1693	3.0	46.4%	60.5%

Sources: Population data, U.S. Census 2000. Birth data, Texas Department of Health, 2000

SPATIAL DIFFERENCES IN GROWTH AMONG THE 0–3 POPULATION IN DALLAS COUNTY

While childcare centers, parental education programs, and other resources need to be concentrated in zip codes with the largest populations of children and/or those zip codes with the fewest existing resources for children, long-range planning and public policy must consider changing trends in the geographic or spatial distribution of young children. Of the zip codes identified as having the highest number or percentage of children ages 0 to 3 in Dallas County, only one zip code, 75237 (I-20 and 67 area), was also identified as having one of the fastest growing populations of children ages 0 to 3. Two zip codes with very small residential populations, 75207 (the industrial corridor just west of downtown along the north banks of the Trinity River) and 75202 (downtown Dallas), showed extraordinarily high growth rates in the population of children ages 0 to 3 from 2000 to 2006. However, because of the very small residential population of these zip codes, these numbers must be viewed cautiously.

Zip codes with more stable residential populations still posted growth rates between 50% and 115% from 2000 to 2006 in the population of children ages 0 to 3. These zip codes included 75001 (Addison), 75182 (Mesquite/Sunnyvale), 75048 (Sachse), 75039 (Irving), and 75134 (Lancaster). Interestingly, none of these zip codes are in the city of Dallas.

Of the zip codes with the fastest population growth among children ages 0 to 3 over the past 6 years, listed in Table 1-7, all but three also made the list of zip codes whose population of children ages 0 to 3 is projected to grow fastest over the next 5 years (through 2011), as listed in Table 1-8. Among these zip codes are 75048 (Sachse), 75236 (Ledbetter and Walton Walker area), 75089 (Rowlett), and 75182 (Mesquite/Sunnyvale).

CHANGING FAMILIES IN DALLAS COUNTY

Families are arguably the most important influence on infants and toddlers. The family provides children with the nutrition and healthcare they need; nurtures and stimulates them; decides where and from whom the children will receive childcare; provides children with financial resources and fit housing; and keeps children

safe and secure. Although a number of socioeconomic factors that influence a family's ability to care for children need to be addressed to help improve the strength of families, the family remains one of the more proximal factors affecting a child.

Table 1-7. Zip Codes with the Fastest Growing Population of Children Ages 0–3, 2000–2006

Zip Code	Total Population Ages 0–3, 2000	Total Estimated Population Ages 0–3, 2006	Total Projected Population Ages 0–3, 2011	Percentage Change 2000–2006	Percentage Change 2006–2011
75207	3	85	96	2733.3%	12.9%
75202	10	37	42	270.0%	13.5%
75001	357	770	709	115.7%	-7.9%
75182	79	143	164	81.0%	14.7%
75048	731	1212	1478	65.8%	22.0%
75039	82	128	133	56.1%	3.9%
75134	762	1154	1294	51.4%	12.1%
75181	1,213	1791	1999	47.7%	11.6%
75089	1,427	2103	2444	47.4%	16.2%
75251	41	60	68	46.3%	13.3%
75237	1,081	1565	1581	44.8%	1.0%
75104	2,171	3032	3399	39.67%	12.1%
75115	2,123	2844	3087	34.0%	8.5%

Source: 2000 data: U.S. Census 2000. 2006 & 2011 data: Claritas. All zip codes except 75001, 75039, and 75237 can also be found in Table 1-8.

A study of families from 27 countries identified six common characteristics describing strong families: Family members appreciate and care for one another, are committed to the family, have positive communication skills, can cope well with stress, have spiritual wellbeing, and spend enjoyable time together.[30] Children who grow up in homes with these traits have a stronger likelihood of doing well in school; and as adults, they are more likely to perform well on the job, have strong families of their own, and contribute positively to society.[31]

On the other hand, one or both parents in dysfunctional families are often characterized by one or more of the following traits:

- Have addictions that harm other family members
- Exert control over children or other family members through the use or threat of physical force
- Force children to cater to their personal needs (role reversal in which a child must act as the parent)
- Cannot provide, or threaten to retract, financial, emotional, or physical care from children
- Exert overly rigid control over children

When children grow up in homes with these characteristics, they often have difficulty learning to trust the world around them and, consequently, perform poorly in school, have problems forming and maintaining relationships, and lack an appropriate sense of self.[32] Furthermore, such family problems are related to unhealthy behaviors and conditions, such as early teen sexual acting out, youth suicide, substance abuse, teen pregnancy, and childhood/adolescent depression, which in a cyclical fashion affect future generations of children as well.[33]

Of course, families do not usually fit neatly into either the strong or dysfunctional family category. For example, some researchers have labeled unwed couples and their children as "fragile families." Although these families may do well, they have an increased risk of experiencing a variety of economic and social problems that prevent children from creating and sustaining family bonds.[34] Most families, regardless of family structure, will experience periods of strength and weakness. It is important to consider, however, that all families likely possess some strengths, and that even the strongest families may still possess some weaknesses that can

Table 1-8. Zip Codes with the Fastest Growing Population of Children Ages 0–3, Projection 2006–2011

Zip Code	Total Population Ages 0–3, 2000	Total Estimated Population Ages 0–3, 2006	Total Projected Population Ages 0–3, 2011	Percentage Change 2000–2006	Percentage Change 2006–2011
75048	731	1212	1478	65.8%	22.0%
75236	771	694	812	-10.0%	17.0%
75089	1,427	2103	2444	47.4%	16.2%
75182	79	143	164	81.0%	14.7%
75202	10	37	42	270.0%	13.5%
75251	41	60	68	46.3%	13.3%
75207	3	85	96	2733.3%	12.9%
75134	762	1154	1294	51.4%	12.1%
75104	2,171	3032	3399	39.7%	12.1%
75146	1,003	1321	1476	31.7%	11.7%
75181	1,213	1791	1999	47.7%	11.6%
75201	120	141	155	17.5%	9.9%
75115	2,123	2844	3087	34.0%	8.5%

Source: 2000 data: U.S. Census 2000. 2006 & 2011 data: Claritas. All zip codes except 75201, 75146, and 75236 can also be found in Table 1-7.

impact the overall wellbeing of a child.

Because the issue of family strength is critical to child development, it is imperative that we track measures of family wellbeing and intervene where problems are observed to ensure the safety and security of children. Unfortunately, most traits of strong families, such as communication and affection, are difficult to measure on a wide scale. Data are therefore not available on some of the most pertinent indicators of family strength. However, some proxy indicators of family strength do exist, such as measures of family structure.

CAREGIVER MARITAL STATUS

One of the more easily measured indicators of strong families is marital status of primary caregivers. Research shows a relationship between the type of family a child grows up in—married-parent, single-parent, or cohabiting-parent family—and the child's wellbeing. Children who grow up with two continuously married parents tend to have more economic resources available and tend to experience fewer cognitive, emotional, and social problems throughout childhood and as adults, compared with children who grow up in single-parent families.[35, 36] Children who live with a parent and his or her cohabiting partner tend to have more behavioral and emotional problems and be poorer than children with married parents, but are generally better off financially than children who grow up with single parents.[37] These relationships are not necessarily believed to be causal. That is, growing up in a single-parent family does not necessarily lead to psychosocial problems. Rather, it is more likely that both family structure and behavioral development are related to other factors, such as level of stress, availability of necessary resources, and social support. Because the relationship exists, however, we can look at the general structure of families in Dallas County to glean a sense of how our children are doing.

Overall in Dallas County, 67% of families with children under age 18 are headed by married parents, while 33% are headed by single parents. Approximately 6% of all families with children (18% of all single-parent families with children) have a cohabiting partner living in the home. (For this analysis, we chose to consider the marital status of any related primary caregiver, regardless of whether that person is the child's biological parent. Thus, it includes grandparents, aunts/uncles, adoptive parents, and so on. Furthermore, married-couple caregivers

Table 1-9. Marital Status of Birthmothers in Dallas County, 1990–2003

Year	Married	Non-Married
1990	74.6	25.4%
1991	73.7	26.3%
1992	77.5	22.5%
1993	79.5	20.5%
1994	65.6	34.1%
1995	64.4	35.5%
1996	62.7	37.2%
1997	62.1	37.8%
1998	60.2	39.7%
1999	60.8	39.0%
2000	65.8	34.0%
2001	67.4	32.5%
2002	68.7	31.1%
2003	59.2	40.7%

Source: U.S. Census 2000

include stepparents, step-grandparents etc.)

The overall percentage of infants born into married-parent families has decreased from 75% of births in Dallas County in 1990 to 59% in 2003—a decrease of 15%, as shown in Table 1-9. For African American children born into married-parent households, the rate decreased from 44% in 1990 to less than 38% in 2003. During the same year, the percentage of newborns born into married-parent households across some zip codes in Dallas County was less than 25%. Many of these zip codes are also experiencing significant disadvantages across several other social and economic indicators, such as lower rates of homeownership than the overall county average, higher rates of child abuse, and severe poverty—e.g., neighborhoods experiencing a poverty rate of 40% or higher as demonstrated in other sections of this research report.

Table 1-10. Caregiver Marital Status for Selected Zip Codes, 2000

Zip Code	Number of Families with Related Children Under Age 18	% of Families with Married-Couple Caregivers	% of Families with Single Caregiver	% of Families with Cohabiting Caregiver
75237	2,374	25.3%	74.7%	9.1%
75201	134	25.4%	74.6%	3.7%
75210	1,422	27.9%	72.1%	10.2%
75215	2,457	28.3%	71.7%	10.4%
75241	3,456	37.8%	62.2%	6.3%
75231	7,180	54.8%	45.2%	9.2%
75226	227	58.2%	41.9%	9.3%
75253	2,441	64.1%	35.9%	10.7%
75089	3,415	86.7%	13.4%	2.5%
75048	1,739	86.9%	13.1%	2.7%
75225	2,763	87.1%	12.9%	0.5%
75182	415	87.7%	12.3%	1.9%
75082	2,407	91.0%	9.0%	1.3%

Source: U.S. Census, 2000

The percentage of single caregiver families varies widely across zip codes in Dallas. After excluding zip codes with less than five families, zip code 75237 (southwest Dallas) had the highest percentage of single caregiver families, followed by zip codes 75201, 75210, and 75215 (south Dallas). On the other hand, zip code 75082 (north Dallas) has the highest percentage of married-couple caregiver families, followed closely by zip codes 75182 (east Dallas), 75225 (Highland Park area), 75048 (northeast corner of Dallas), and 75089 (northeast corner of Dallas). (See Table 1-10.)

UNMARRIED MOTHERS

The percentage of births to unmarried mothers is a more specific measure of caregiver marital status. Researchers differentiate between children growing up in single-parent homes due to divorce and children born to unwed mothers. They have found that children born to unwed mothers are at a slightly higher risk for dropping out of school, having a teen birth, and being depressed than children from married-parent families or children from divorced, single-parent families.[38] As shown in Table 1-11, in Dallas County, nearly 45% of births in 2004 were to unmarried mothers, with rates ranging from 3% to 79%, depending on the mother's zip code of residence. Zip codes 75215, 75210, 75241, and 75237 had some of the highest percentages of unmarried women giving birth, while zip codes 75225, 75205, 75039, and 75082 had the lowest. As would be expected, there was significant overlap of zip codes with high percentages of single parents and those with high percentages of children born to unwed mothers, suggesting that both divorce and pregnancy outside of marriage are significant issues.

NONPARENT HEADS OF HOUSEHOLD

In 2000, many children in Dallas lived in homes where the head of household was someone other than their biological or adoptive parents (13.2%), usually with a grandparent or other relative (11.5%), and sometimes

Table 1-11. Births to Unmarried Mothers Across Select Zip Codes in Dallas County, 2004

Zip Code	Number of Births	% of Children Born to Unmarried Mothers	% of Children Born to Married Mothers
75215	309	79.0%	20.7%
75210	157	78.3%	21.7%
75241	360	75.8%	23.9%
75237	284	71.5%	28.5%
75216	905	70.7%	29.1%
75082	67	4.5%	94.0%
75039	55	5.5%	94.6%
75205	169	4.1%	95.3%
75225	203	3.0%	97.0%

Source: Texas Department of Health, 2004

with a non-relative (1.7%). As with the other indicators, this measure varied across Dallas. In zip code 75241, about 33% of children lived in a household headed by someone other than their biological or adoptive parents, followed closely by zip codes 75215 and 75216. Because a large number of individuals from these zip codes are sentenced to the Texas Department of Corrections, many children cared for by someone other than the biological or adoptive parents in these zip codes are children of incarcerated parents. In other areas of Dallas, such as zip codes 75207 and 75247, all children lived with parent heads of household. (See Table 1-12.)

It is important to note that children living with a nonparent head of household are not necessarily without a parent's presence. According to the 2005 American Community Survey, more than 51% of children who lived with a grandparent in Dallas County were not under the legal guardianship of the grandparent—the child was simply living with the parent or other primary caregiver in the grandparent's home. Furthermore, 69% of children who lived with a grandparent as legal guardian still had at least one parent residing in the home. In 2005, only about 16% of children who lived with a grandparent in Dallas County did not also have a parent present in the home. Similar situations likely exist for children who live in other homes where a nonparent relative is the head of household, but there are no explicit data available to measure the frequency of these situations.

There are a variety of reasons children live with nonrelative heads of household. In Dallas County, 14% of children who lived with a nonrelative head-of-household lived with a foster parent. These were children for whom a court had granted the Department of Family and Protective Services (DFPS) legal responsibility to place them elsewhere because the court had determined there was some sort of abuse and/or neglect in the home. However, the majority of children who lived with a nonrelative heads of household had some

Table 1-12. Children Living with Nonparent Head of Household, 2000

Zip Code	Total Children	% of Children Living with Grandparent Head of Household	% of Children Living with Other Relative Head of Household	% of Children Living with Nonrelative Head of Household	Total % of Children Living with Nonparent Head of Household
75241	6,871	26.8%	5.4%	1.2%	33.4%
75216	14,562	22.6%	6.6%	1.9%	31.1%
75215	5,395	20.5%	6.2%	1.8%	28.5%
75210	3,082	16.8%	6.7%	1.7%	25.2%
75212	8,478	18.5%	4.9%	1.2%	24.6%
75232	8,353	17.5%	4.6%	1.8%	23.9%
75203	6,114	12.0%	7.2%	3.5%	22.7%
75141	802	12.1%	5.7%	3.7%	21.6%
75225	5,542	0.7%	0.2%	0.1%	1.0%
75207	90	0.0%	0.0%	0.0%	0.0%
75247	32	0.0%	0.0%	0.0%	0.0%

Source: U.S. Census, 2000

other living arrangement, such as a teenager who had moved out of his or her parents' home to live with a roommate, or a child whose parent was living in an unmarried partner's home.

Depending on the circumstances of the living arrangements, the presence of a nonparent head-of-household can be viewed as either a strength or a weakness for a family. These other adults may provide the family with additional resources and support and be another role model for the child. However, if delinquent parenting has forced the child or family into a situation where they have had to live with someone else, this may be an indicator of a dysfunctional family.

THE IMPLICATIONS OF DEMOGRAPHIC SHIFTS

This report addresses the multiple risk factors that can have a negative impact on childhood wellbeing. Three common themes emerge from the discussion: (a) prevalence of these risk factors is concentrated among children from disadvantaged backgrounds, (b) multiple risk factors present in the same child can have a compounding negative effect on that child's wellbeing, (c) only targeted and sustainable interventions and policies that address the social, economic, geographic, and family characteristics of children will improve the state of child wellbeing in Dallas. The concentration and compounding of risks among children with the fewest resources has generated a greater divergence in wellbeing and opportunity between children of the affluent, who tend to reside in wealthy neighborhoods, attend quality preschools, have high family incomes, have mothers with high education levels, and are more likely to have married parents; and the children of the poor, whose low family incomes are compounded by a higher likelihood that they will live in a distressed neighborhood, have mothers with lower educational attainment and/or single mothers, attend lower-quality schools, and be less ready for school.

Additionally, the demographic changes discussed in this chapter and this report suggest that unless the socioeconomic differentials between white and minority families are significantly altered, the proportion of parents with low educational attainment and living in poverty will only increase in the coming decades. If the relationships we see between childhood wellbeing and parent socioeconomic status continue unfettered, the result will be continued divergence in wellbeing between the children of the affluent and the children of the poor. Moreover, observed population dynamics indicate that ever-increasing proportions of poor children who experience disadvantage will enter adolescence and adulthood unprepared for success and will be all too likely to pass these disadvantages on to their own children, again compounding the impact of poverty.

CONCLUSION

Together, concentrated poverty, changing demographics, and changing family structures visible in Dallas County may create distinct risk factors for many of our children during the most vulnerable years of their lives—0 to 3 years of age. In addition, if proactive measures are not taken to better prepare many of our institutions for these changing realities, the result may be even more fragile children being raised by fragile families in fragile communities. The Dallas Foundation has commissioned this study to bring awareness to the reality that Dallas County is facing—the precarious wellbeing of 0- to 3-year-old children in Dallas County.

The remaining chapters of this study focus on:

- ⇒ The health of Dallas County children and the degree to which demographic, neighborhood, family, and behavioral characteristics impact the health of infants and children
- ⇒ The status and quality of early childhood education and childcare in Dallas County and the degree to which such care is available, affordable, and accessible
- ⇒ How economic and neighborhood factors impact childhood wellbeing in Dallas County
- ⇒ The status of childhood safety and security for 0- to 3-year-olds in Dallas County
- ⇒ How space and place impact childhood wellbeing in Dallas County through the creation of the new Childhood Wellbeing Index
- ⇒ How long-term poverty can impact long-term wellbeing of 0- to 3-year-olds in Dallas County
- ⇒ The financial impact of low levels of child wellbeing for Dallas County
- ⇒ Identifying programs and organizations in Dallas County that are currently addressing childhood wellbeing
- ⇒ Identifying best practices programs and general models across the country aimed at improving childhood wellbeing
- ⇒ Offering policy suggestions on how to best improve childhood wellbeing in Dallas County

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CHAPTER TWO: HEALTHY CHILDREN & INFANTS

By Rachael Jackson & Kelly Ylitalo

INTRODUCTION

The first three years of life are critical to an individual's health throughout the lifecourse. A mother's behaviors before and during pregnancy affect her child's health outcomes during delivery and early childhood, which in turn affect the child's mental health, cognitive development, and risk of developing heart disease and diabetes as an adult.[1, 2, 3, 4] Therefore, as we strive to track childhood wellbeing in Dallas, we must measure not only the health of our children, but also the health of our mothers.

HEALTHY PREGNANCIES/HEALTHY INFANTS

Maternal behavior during pregnancy has a considerable impact on the health of an infant. Maternal health behaviors and pregnancy outcomes are so closely associated that it is difficult to examine them independently. It is important to examine maternal and infant health because the wellbeing of a child or adolescent is largely dependent on that individual's experience as an infant.

PRENATAL CARE

Prenatal care includes all education, counseling, and healthcare during pregnancy, and generally consists of three major components: psychosocial, nutritional, and medical. Prenatal care is one of the most important factors in the health of an infant, as it can often identify and manage risk factors in the mother that are traditionally associated with pregnancy outcomes.

Numerous studies have evaluated the effect of prenatal care. Maupin et al. compared the pregnancy outcomes of women who received no prenatal care with women who received some prenatal care. The study found that women who received no prenatal care were more likely to experience preterm labor and delivery, stillbirth, and low birthweight.[5]

Likewise, Barros, Tavares, and Rodrigues examined the role of prenatal care in preterm birth and low birth weight outcomes. The study examined over 3,500 live births and assessed the mothers' use of prenatal care. After adjusting for maternal characteristics, adequate prenatal care was associated with both lower risk of preterm delivery and have babies with low birthweight.[6]

Numerous studies have examined the barriers to prenatal care. In addition to socioeconomic factors, pregnancy intentions and attitudes are also associated with seeking, initiating, and ultimately using prenatal care services. Sable and Wilkinson found that women who had negative attitudes regarding their pregnancies, such as unhappiness, denial, and uncertainty, were more likely to have inadequate initiation of prenatal care. Overall, the study suggested pregnancy attitudes may be a significant barrier to prenatal care.[7]

In Dallas County, utilization of prenatal care varied by zip code. (See Table 2-1.) Zip codes with the highest percentage of mothers who did not receive an adequate number of prenatal care visits included 75220 at 47.2% and 75234 at 44.8%. Adequacy of prenatal care was based on the Kessner Index, a scale that shows how many prenatal care visits a woman should have based on the estimated length of her pregnancy.[8] As one might expect, receiving an inadequate number of prenatal care visits was closely related to receiving late or no prenatal care. Zip codes 75241 and 75203 had the highest proportions of children born to mothers who received late or no prenatal care, at 8.2% and 7.7% respectively. Zip codes with the lowest proportion of women who did not receive an adequate number of prenatal care visits included 75039 at 7.2% and 75063 at 10.2%. Zip codes 75010, 75039, and 75201 all reported no children born to mothers who received late or no prenatal care.

Table 2-1. Inadequate Prenatal Care, 2003.

Zip Code	Number of Births	% of Children Born to Mothers with Inadequate Number of Prenatal Care Visits	% of Children Born to Mothers who Received Late/No Prenatal Care
75010	37	29.7%	0.0%
75019	503	11.1%	1.2%
75039	69	7.2%	0.0%
75063	576	10.2%	1.4%
75089	405	15.1%	2.5%
75201	29	27.6%	0.0%
75203	440	40.9%	7.7%
75219	354	43.5%	4.8%
75220	1226	47.2%	4.1%
75226	55	41.8%	7.3%
75231	1299	43.9%	6.3%
75234	466	44.8%	3.0%
75235	364	44.0%	6.0%
75241	365	35.6%	8.2%
75243	1136	41.7%	6.4%

Source: Texas Dept. of State Health Services, 2003.

Utilization of prenatal care varies by racial/ethnic group in Dallas County as well. White women were most likely to receive an adequate number of prenatal care visits (80.7%) and to begin prenatal care in the first trimester (84.8%). Black women and Hispanic women were much less likely to receive adequate prenatal care. Only 68.5% of black women received an adequate number of prenatal care visits, and less than 70% of black women began their prenatal care within the first trimester of their pregnancy. Relatively more Hispanic women began their prenatal care during the first trimester (74.1%) compared with black women, but relatively fewer Hispanic women followed up and received an adequate number of prenatal care visits (64.9%).

MATERNAL SMOKING AND SUBSTANCE ABUSE

Cigarette smoking and alcohol use during pregnancy can contribute to adverse health outcomes in both mothers and their infants. From a public health perspective, smoking and alcohol cessation during pregnancy can be an effective preventive measure against poor pregnancy prognosis.

Apart from damage to the infant, maternal substance abuse can lead to potentially life-threatening complications for the mother that are unique to pregnancy. Castles, Adams, Melvin et al. performed a meta-analysis to examine the association between smoking during pregnancy and five different pregnancy complications: placenta previa, placental abruption, ectopic pregnancy, preterm premature rupture of the membrane, and preeclampsia. Smoking was strongly associated with elevated risk in four of the five complications. Independent of the risk to the unborn child, maternal smoking increases the risk of pregnancy complications to the pregnant woman, with universal cessation advised for all women.[9]

Smoking is also associated with adverse health outcomes in infants. Hruba and Kachlik examined the association between smoking during pregnancy and fetal growth retardation. The study categorized the

Table 2-2. Healthy Pregnancies for Selected Zip Codes, 2003

Zip Code	Total Births	% Children Born to Mothers who Smoked During Pregnancy	% Children Born to Mothers who Drank Alcohol During Pregnancy	% Children Born to Diabetic Mothers
75010	37	0.0%	0.0%	5.4%
75039	69	0.0%	0.0%	4.4%
75042	757	2.5%	0.0%	2.9%
75141	58	8.6%	0.0%	1.7%
75154	102	6.9%	0.0%	5.9%
75159	207	14.0%	1.0%	1.9%
75182	38	2.6%	2.6%	15.8%
75201	29	0.0%	3.5%	0.0%
75205	197	1.5%	7.1%	1.0%
75214	689	3.5%	6.1%	2.6%
75225	238	0.8%	7.1%	0.8%
75226	55	0.0%	0.0%	3.6%
75246	90	3.3%	3.3%	0.0%
75253	291	11.3%	1.4%	1.7%

Source: Texas Department of Health, 2003

women as active smokers, former smokers, and never smokers. The birthweight of infants born to active smokers was significantly lower than that of infants born to those who never smoked. Interestingly, the birthweight of infants born to former smokers was higher than that of infants born to those who never smoked. However, when preterm infants were excluded, birthweights of infants born to active smokers and former smokers were still lower than that of infants born to women who never smoked.[10] Nevertheless, this provides encouraging data on the immediate benefits to the unborn child of maternal smoking cessation.

Likewise, prenatal alcohol exposure can have numerous and long-lasting health outcomes as well. King and Fabro studied the effects of alcohol on the unborn child. Fetal alcohol syndrome (FAS) is perhaps most typically associated with alcohol use during pregnancy and consists of a group of central nervous system, growth, and facial abnormalities that range in severity. In addition, low birthweight is associated with alcohol consumption during pregnancy, independent of all other risk factors for low birthweight.[11]

In Dallas County, maternal cigarette and alcohol use also varied by zip code. (See Table 2-2.) Zip codes 75159 and 75253 had the highest proportion of children born to mothers who smoked during pregnancy, at 14.0% and 11.3% respectively. Interestingly, these zip codes did not report the highest proportions of children born to mothers who drank alcohol during pregnancy. Rather, the zip codes with the highest proportions of children born to mothers who drank alcohol were 75225 and 75205, both at 7.1%. Both 75010 and 75039 reported no children born to mothers who smoked or drank alcohol during pregnancy; however, these zip codes also accounted for a relatively small proportion of overall births to women in Dallas.

These indicators also vary across ethnic groups within Dallas County, but in a different way than one might expect based on birth outcomes. Among pregnant white women, 3.2% drank alcohol and 9.1% smoked cigarettes while pregnant, making them approximately three times more likely to engage in these risky behaviors than any other ethnic group. In contrast, only 1.1% of pregnant black women and 0.4% of pregnant Hispanic women drank alcohol while pregnant, and only 3.8% pregnant black women and 0.9% of pregnant Hispanic women smoked while pregnant.

MATERNAL DIABETES

Diabetes affects both the mother and the unborn child during pregnancy. There is a distinction between two different types of diabetes during pregnancy: preexisting diabetes and gestational diabetes. Preexisting diabetes refers to mothers who had diabetes before they became pregnant, while gestational diabetes implies that the mother developed diabetes during her pregnancy.

Preexisting diabetes is a pervasive condition that continues throughout pregnancy. Mothers with preexisting diabetes are at higher risk for perinatal mortality, congenital abnormalities, and high birthweight babies.[12] One study found that the women who developed gestational diabetes were older, of higher weight and parity, and were more often Hispanic than women who did not develop gestational diabetes.[13] Because gestational diabetes generally occurs during the second or third trimester of pregnancy, it is not typically associated with congenital abnormalities that form during the first trimester of a pregnancy. However, gestational diabetes is associated with preeclampsia and gestational hypertension[14], both of which can be dangerous to the mother during pregnancy. A retrospective cohort study by the University of Texas Southwestern Medical Center in Dallas compared infants born to women with gestational diabetes to infants born to nondiabetic women.[15] The study found that the major adverse consequence of gestational diabetes was excessive fetal size, which led to difficult labor and delivery for the mother. Excessive fetal size is significant because infants considered to be of excessive size at birth are at higher risk for developing a metabolic syndrome, such as Type 2 diabetes mellitus, later in childhood.[16]

In Dallas County, the proportion of children born to mothers with diabetes, both preexisting and gestational, varies widely by zip code. (See Table 2-2.) The zip code with the highest proportion was 75182, with 15.8% of children born to diabetic mothers. Zip codes 75201 and 75246 reported the lowest numbers, with 0.0% in both areas. The prevalence of diabetic mothers also differed slightly by race. Hispanic mothers were most likely to suffer from diabetes (4.0%), followed by black mothers (2.9%) and white mothers (1.9%).

PRETERM BIRTH AND LOW BIRTHWEIGHT

Preterm birth and low birthweight are unfavorable pregnancy outcomes, and both are associated with infant mortality and future adverse health outcomes. Preterm delivery is the factor most causally associated with low birthweight, defined as an infant weighing less than 2500g at time of birth. Independent of medical and socioeconomic factors, African American women have the highest incidence of preterm birth.[17]

Cognitive and behavioral impairments associated with preterm birth are indicated by numerous research studies. Bhutta, Cleves, and Casey et al. performed a meta-analysis to examine the association between preterm birth and cognitive and behavioral outcomes when the children reached school age. Interestingly, the investigators found that average cognitive scores for children who were born preterm were directly proportional to their birthweight. Also, children who were born preterm had an increase in unwanted externalizing and internalizing behaviors and attention-deficit/hyperactivity disorder.[18] Thus, it seems, preterm birth and low birthweight have lasting and problematic effects on health and wellbeing.[19]

Table 2-3. Infant Health Outcomes, 2003

Zip Code	Number of Births	% Children Born Low Birthweight (<2500 Grams)	% Children Born Preterm (<37 Weeks Gestation)	Infant Mortality Rate (Infant Deaths/1000 Live Births)
75010	37	2.7%	0.0%	27.03
75141	58	12.1%	20.7%	17.24
75154	102	3.9%	16.7%	0.00
75201	29	10.3%	20.7%	34.48
75215	287	16.0%	20.9%	24.39
75218	350	10.3%	14.6%	5.71
75223	360	7.8%	15.3%	8.33
75229	493	4.9%	9.7%	2.03
75233	284	10.6%	14.8%	7.04
75236	240	12.9%	17.9%	4.17
75237	289	13.5%	15.9%	3.46
75246	90	8.9%	10.0%	22.22
75254	343	7.9%	12.2%	20.41

Source: Texas Department of Health, 2003

Overall, the percentage of children born preterm in Dallas County in 2003 (12.4%) was similar to that for Texas as a whole (12.2%).[20] However, this varied significantly by zip code. (See Table 2-3.) Zip code 75215

had the highest proportion of children born preterm, at 20.9%, while there were no children in zip code 75010 who were born prematurely. These proportions also varied somewhat by race, with over 16% of African American children being born preterm, compared to only 11% of white children, 12% of Hispanic children, and 10% of children from all other races.

The percentage of low birthweight children in Dallas County (7.9%) was also comparable to the figures for Texas (7.8%).[21] In zip code 75154, however, the proportion of low birthweight children was more than double, at 16.7%. On the other hand, only 2.7% of children being born in zip code 75010 had low birthweights. This proportion varied significantly by race as well, with African American children again experiencing the worst outcomes. Over 13% of African American children had low birthweights, compared with only 6.4% of Hispanic children, 7.0% of white children, and 7.8% of children from all other races.

BREASTFEEDING

Breastfeeding is unquestionably one of the most important ways for an infant to receive proper nutrition. Aside from the various emotional benefits such as the mother-child bond, breastfeeding has important medical and cognitive developmental benefits.

Research indicates that breastfeeding protects against the development of a number of adverse medical conditions like immune-related diseases and obesity in later childhood.[22] Breastfeeding is also associated with cognitive development. Anderson, Johnstone, and Remley's meta-analysis of 20 studies examined the effect of breastfeeding on cognitive development, comparing breastfed children to formula-fed children. The meta-analysis concluded there were significant benefits in cognitive development for those who received breast milk. Larger differences in cognitive development were seen in low-birthweight infants compared with normal-birthweight infants, which suggests that premature infants receive the most benefit from breastfeeding. In addition, the analysis found that the associated cognitive benefits increased with the duration of breastfeeding.[23]

Breastfeeding is associated with cognitive ability and academic achievement. An 18-year birth cohort study found significant positive results in the areas of intelligence quotient, reading comprehension, and mathematical ability. Infants who were breastfed for more than 8 months had higher mean test scores in childhood compared to children who were formula-fed in infancy. The effects of breastfeeding on these study children were measurable and pervasive. Most importantly, the effects were long-lasting, as they extended from childhood into adulthood.[24]

While research is conclusive regarding the general benefits of breastfeeding, there are differing opinions regarding the optimal duration of breastfeeding. Although 3 months seems to be the shortest recommended length of time, some research indicates that at least 6 months of exclusive breastfeeding yields further medical benefits.[25] In general, more research is needed to explore the most beneficial duration of breastfeeding.

In 2005, about 74% of mothers with children between 19 and 35 months of age in Dallas County reported having ever breastfed their child. Approximately 47% of these mothers reported they exclusively breastfed their children until 3 months of age, and 13% were exclusively breastfeeding their children until 6 months of age. Furthermore, 41% of mothers reported providing their children with at least some breast milk at 6 months of age, and 18% of mothers continued until their child was 1 year old. In comparison, the U.S. Department of Health and Human Services (HHS) has set the goal, through Healthy People 2010, of having 75% of mothers initiating breastfeeding, 50% of mothers breastfeeding at least 6 months, and 25% of mothers breastfeeding at 12 months of age. While Dallas County is not far from reaching these goals, there is still work to be done to educate new mothers and promote breastfeeding in the area.[26]

IMMUNIZATIONS

Immunizations have played an important role in reducing childhood morbidity and mortality in the United States over the past century. From a public health perspective, the use of vaccines is critical, not only to protecting individual children from infectious diseases, but also to protecting entire communities. This happens through a process called herd immunity—when a large enough percentage of the population is immune to a disease, the entire community, including individuals who are not immune, is protected because there are not enough vectors for the infecting agent to live in and be transmitted through, so it eventually dies out.[27] For example, health agencies worldwide took extensive efforts to provide smallpox vaccinations to people across the globe in the last half of the 20th century. Due to the success of these efforts, smallpox has been eradicated. Similar efforts have almost eradicated polio, as well.

Figure 2-1. Recommended Immunization Schedule for Children

Vaccine ↓ / Age →	Birth	1 Month	2 Months	4 Months	6 Months	12 Months	15 Months	18 Months	19-23 Months	2-3 Years	4-6 Years
Hepatitis B	Hep B	Hep B			Hep B					Hep B Series	
Rotavirus			Rota	Rota	Rota						
Diphtheria, Tetanus, Pertussis			DTaP	DTaP	DTaP		DTaP				DTaP
Haemophilus influenzae type B			Hib	Hib	Hib	Hib		Hib			
Pneumococcal			PCV	PCV	PCV	PCV				PCV	
										PPV	
Inactivated Poliovirus			IPV	IPV	IPV						IPV
Influenza					Influenza (Yearly)						
Measles, Mumps, Rubella						MMR					MMR
Varicella						Varicella					Varicella
Hepatitis A						Hep A (2 doses)				Hep A Series	
Meningococcal										MPSV4	

Key	Range of recommended ages	Catch-up immunization	Certain high-risk groups

Source: Department of Health and Human Services, Centers for Disease Control and Prevention, 2007.

Table 2-4. Zip Code Analysis, Percentage of All Hospitalizations of 0- to 4-Year-Olds Caused by Asthma

Zip Code	% Asthma Hospitalizations
75039	0.0%
75054	0.0%
75182	0.0%
75201	0.0%
75202	0.0%
75247	0.0%
75251	0.0%
75223	0.2%
75234	0.4%
75137	0.4%
75254	0.4%
75180	0.4%
75220	0.5%
75038	0.5%
75244	0.6%
75062	0.7%
75041	0.7%
75229	0.7%
75240	0.8%
75063	0.8%
75060	0.8%
75209	2.0%
75224	2.1%
75149	2.1%
75134	2.3%
75040	2.3%
75115	2.3%
75043	2.3%
75051	2.3%
75216	2.4%
75237	2.5%
75212	2.5%
75146	2.9%
75181	3.1%
75225	3.2%
75246	3.5%
75215	3.6%
75232	3.7%
Dallas County	1.4%

Source: Texas Health Care Information Collection (THCIC), 2004 Hospital Discharge Data.

As shown in Figure 2-1, the U.S. Department of Health and Human Services (HHS) recommends that all children between the ages of 0 and 6 years receive a series of 10 or 11 vaccinations, depending on the health of each child, to prevent many common causes of childhood morbidity and mortality.[28] This is especially important for young children, under age of 2 years, because their underdeveloped immune systems leave them particularly susceptible to disease. Sadly, many children go without the proper immunizations until age 5 or 6, when they are forced to receive them so that they can enroll in school. Thus, they are left unnecessarily vulnerable to many preventable diseases during the years when they are most at risk.[29] Furthermore, with certain immunizations, such as the rotavirus vaccine, there is a specific window of opportunity during which the child can be immunized, after which it is unclear whether the vaccine is still safe and effective.[30]

Unfortunately, in Dallas County many families are either unaware of or have chosen to ignore the HHS vaccination recommendations. As a result, many Dallas children are going without these immunizations. Overall, only about 62% of Dallas children were getting the recommended vaccinations at the appropriate ages in 2005. This is slightly lower than the percentage of Texas children who were up-to-date on immunizations (63.5%) and significantly lower than the percentage of U.S. children with up-to-date immunizations (72.8%).[31]

For most diseases, scientists believe that 80 to 90% of the population needs to be immunized in order for herd immunity to be conferred upon the community. With less than 65% of children in Dallas receiving the recommended vaccinations, not only are many individual children placed at higher risk of contracting preventable diseases, but the community as a whole is at greater risk of experiencing an outbreak of disease. Thus, families who elect not to immunize their children are increasing the risk of disease for children in the area who are medically unable to be immunized (due to allergies or compromised immune systems), as well as increasing the risk of disease for their own child(ren).

ASTHMA

Asthma is one of the leading chronic illnesses in children, as well as one of the leading causes of missed school days, visits to the doctor, and unnecessary hospitalizations.[32] As such, asthma places a heavy burden on families and children who suffer from the disease, as well as on society, which often has to bear the cost of the additional hospitalizations. However, asthma is also a disease that is relatively easy to manage in most children. Most physicians acknowledge that poor asthma-related outcomes, such as hospitalization or death, are usually associated with a lack of quality primary care and patient/family education. Thus, impoverished children and those from working class families who cannot afford health insurance, along with minority children and those living in inner-city neighborhoods, often bear the brunt of the burden.[33, 34, 35]

Recent research has shown that this burden includes more than the obvious health outcomes, such as wheezing, asthma attacks, and the associated doctor's visits and missed school days. The effects of asthma extend into many areas of a

child's life and can have lasting impacts into adulthood. One study found that children with asthma engage in fewer physical activities and tend to have a higher body mass index (BMI) than children without asthma, placing them at a higher risk for obesity.[36] Many studies have also found that asthma is related to mental health and behavioral problems in school. Children with asthma tended to have more emotional difficulties, had poorer peer interactions (i.e., had a harder time making friends or talking to other children and got into more fights), displayed more shy/anxious behaviors, and scored lower on assessments of task orientation than children without asthma.[37, 38]

In Dallas County, almost 1,500 children were hospitalized because of their asthma in 2004[39], and about half of these were children between the ages of 0 and 4 years old.[40] Overall, asthma caused about 1.4% of all hospitalizations in children between the ages of 0 and 4 years old, but this varied by zip code. In many areas, including zip codes 75039, 75054, 75182, 75201, 75202, 75247, and 75251, no children were hospitalized due to asthma. But in zip codes 75181, 75225, 75246, 75215, and 75232, the percentage of hospitalizations caused by asthma was more than twice as high as the county-wide percentage.[41] (See Table 2-4.)

As with so many other health indicators, this measure varied across racial/ethnic groups. Non-Hispanic Black children suffered the most from severe asthma symptoms, with about 3% of all of their hospitalizations being due to asthma. The percentage of hospitalizations due to asthma among non-Hispanic White children was only about half as high (1.4%). Hospitalizations of Hispanic children were least likely to be caused by asthma (0.8%).[42]

HEALTH INSURANCE

Access to quality healthcare is essential for children to receive the preventive and primary care they need to start healthy and stay healthy. Increasing access to healthcare is one of the keys to improving asthma outcomes and ensuring that children remain up-to-date on immunizations.[43, 44] Improving the affordability of healthcare by providing and/or expanding the coverage of health insurance is one of the most effective ways to increase access to health care. Research shows that children who have access to health insurance through the Child Health Insurance Plan (CHIP) are more likely to attend well-child care, dental, and specialty care visits and are less likely to have emergency room visits than children who are uninsured.[45] Furthermore, when looking at the same children over time, after children were enrolled in CHIP, they attended more outpatient doctor's visits and were more likely to receive a well-child exam than before they enrolled in CHIP.[46] These differences in health care utilization occur largely because low-income families without health insurance are often forced to use hospital emergency departments as their source for primary health care. Because this is not convenient, they often simply go without health care until a health problem becomes so bad it requires a visit to the ER. This lays a heavy burden on individuals, hospitals, and ultimately on society, as people suffer and/or die from preventable or treatable diseases. In terms of the economic impact, this causes parents to miss days at work while being charged enormous hospital bills, which often go unpaid. The American Hospital Association reports that hospitals spent approximately $25 billion on uncompensated health care in 2004.[47]

Unfortunately, despite the clear economic and health benefits of public health insurance programs, budget cuts and policy changes in Texas have led to a decrease in child enrollment in CHIP and Medicaid. In Dallas County alone, 18,000 children dropped out of CHIP between 2003 and 2006, and this drop in public health insurance enrollment has not been alleviated by an increase in private health insurance enrollment. Instead, the percentage of the population that is uninsured has continued to rise.

Texas had the highest percentage of uninsured population (24.6%) and the highest percentage of uninsured children (21%) in the nation in 2005.[48] The situation is even worse for children in Dallas County. Here, 28.9%

of children between 0 and 17 years of age, or approximately 185,000 children, are uninsured.[49] Unfortunately, minorities fare even worse than the rest of the population when it comes to availability of health insurance. Hispanic children are at least 4 times more likely to be uninsured (45.1%) and African American children are almost 2 times more likely to be uninsured (19.6%) than white children (10.6%). Thus, many children in Dallas County, especially minority children, lack the kind of access to health care that is needed to maintain health and prevent disease.

CONCLUSION

A great deal of research has described the impact early childhood health has over the life course of an individual. Physical and mental health in childhood, even in the womb, can affect not only adult health, but also an individual's educational, social, and economic wellbeing. (For a more detailed discussion of the impact of childhood health on adult outcomes, see Chapter 8.) Thus, it is critical that we take special steps to ensure that mothers and children receive the best possible health care and that the environment in which they grow and develop is safe and healthy.

There are a number of steps that can be taken to improve the health of our children. As previously mentioned, increasing children's and families' access to health care is a critical step. Increasing the use of primary and preventive health care can help decrease the prevalence of many common childhood diseases and keep children healthy. Other traditional approaches to improving health include educating families and the public at large about critical childhood health issues, such as immunizations, asthma, and nutrition, and monitoring children's caregivers to ensure they are providing a safe and healthy environment for kids to learn and grow. More recently, however, research has suggested that we can improve the health of our children by addressing other childhood issues, such as education, economics, neighborhood characteristics, strong families, and child safety, as health has been linked to all of these social factors. Regardless of how we strive to improve childhood health, however, it is critical that we take action while continuing to monitor the state of our children's health and continue our work until it improves.

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CHAPTER THREE: EARLY CHILDHOOD EDUCATION & CHILDCARE

By Teri Wesson

INTRODUCTION

Young children have been compared to sponges, soaking up what they experience and perceive in their environment. Thus, exposing children to a variety of positive stimulating activities aids in their development. What is not always clear, however, is the degree to which early childhood education and care affects social, emotional, cognitive, and academic wellbeing, or how early in a child's life wellbeing is impacted. Research has shown that 85% of core brain development occurs before age 3.[1] Furthermore, parents and other caregivers do not always understand what constitutes a developmentally stimulating environment for an infant or young child. What some might believe to be mere games are actually activities that help babies and young children begin to make sense of their world and progress in their stages of development. Early childhood experiences can have long-lasting effects on a child's life, so it is vital for early childhood education programs to become a priority. While they do not necessarily incorporate educationally intense activities into a child's day, daycare facilities are another facet of early childhood care that must be examined.

THE STATE OF EARLY CHILDHOOD EDUCATION & CARE: A NATIONAL PERSPECTIVE

Nearly 70% of 3- and 4-year-olds are enrolled in preschool nationwide, and the number continues to grow; however, less than half of poor 3- and 4-year-olds are enrolled in preschool. Furthermore, Hispanic children and children whose mothers are high-school dropouts show low levels of preschool enrollment. Research has shown participation declines as income levels decline until reaching levels slightly below median income. On a positive note, participation plateaus or even increases as income levels further decrease.[2] However, there is great disparity in the quality of educational programs.[3] Overwhelmingly, researchers stress that increasing participation in early childhood programs is not enough; programs must be high quality to have significant long-term impact on the overall wellbeing of children.[4, 5]

Young children from low-income families are another concern in early childhood education and care issues. Differences in language, cognitive, social, and emotional skills related to income disparities surface as early as age 3, and seem to continue or even worsen through the school years.[6] Children from homes with the highest income levels show average cognitive scores before entering kindergarten that are 60% higher than average scores of children from the lowest-income homes.[7] Parents at low income levels face a variety of obstacles, which can make it even more difficult to provide the many aspects of care their children need to grow appropriately. For example, 48% of mothers of children served by Early Head Start programs showed signs of depression—a condition that can have a negative impact on the social and emotional health of their children.[8] Although federally funded programs such as Early Head Start and Head Start serve children of lower-income families, it is questionable whether all local programs are high quality. However, this is the

case with other early childhood education programs as well, and does not apply only to those targeted at low-income children.

An important component of early childhood education and care is the development of literacy skills. If a child struggles with reading, he or she will likely struggle with other academic areas and life skills. Literacy development begins long before a child learns to read. Therefore, it is important for children to participate in literacy activities, such as being read to and playing letter and number games, to build a basis for learning to read.[9] Research has shown a strong link between a mother's educational level and the likelihood she will read to her child. For example, studies have found that 77% of children with college-educated mothers were read to every day. Conversely, only 49% of children whose mothers had only a high school education were read to every day.[10] The Annie E. Casey Foundation reported that 54% of children between ages 0 and 5 in higher-income homes were read to daily. Only 40% of children in this age group from low-income families (defined as families with incomes less than 200% of the poverty threshold) were read to on a daily basis. However, statistics for Texas children were even lower—51% of children from higher-income homes were read to daily, compared with only 34% of children from low-income families.[11] Because many parents work outside the home, early childhood education and care programs must address literacy to effectively prepare young children to be successful students and workers in the future. Although standards for Texas registered and licensed childcare facilities require facilities to have written activity plans, they do not specifically mandate reading activities.[12, 13] Head Start programs require that children develop print and number awareness, identify at least 10 letters, and recognize a word as a unit, among other milestones in literacy development.[14]

The broad range of programs available can make researching early childhood programs difficult. The three broad categories are: (a) educational programs for children ages 3 to 5, (b) interventions and care for children from birth to age 2, and (c) educational programs targeted at parents.[15] Programs vary by location (community centers vs. home-based care), length of service (year-round vs. academic calendar), and types of activities used (high levels of direction and input from caregivers vs. low levels). Furthermore, many parents do not report home-based care as "school," even if educational activities are a component of the care; they may also report any care taking place in a classroom as an educational setting, regardless of the program's quality. Additionally, many children participate in multiple programs, making it difficult to track program types and to what extent programs are being utilized.[16]

BENEFITS OF EARLY CHILDHOOD EDUCATION

Numerous studies demonstrate that early childhood education has a variety of long-term benefits. These include increased readiness for kindergarten,[17, 18] lower rates of grade retention, reduced rates of special education placement, increased rates of high school graduation,[19] and reduced likelihood of being convicted of crimes as juveniles and adults.[20] Educational programs also have positive effects on classroom behavior and social adjustment.[21]

While early intervention strategies clearly have a variety of benefits for children, research has shown that early childhood education produces greater gains in subject-specific skills (reading, math, etc.) than in general cognitive development.[22] This should not be seen as a failure; preparing students for school entry is one of the main goals of early childhood programs. Data from the Northwest Evaluation Association have shown the language and math achievement gaps observed in some children nearly always occur before the second grade (almost completely for language and close to 70% for math), and occur mostly between birth and kindergarten.[23]

The Kennewick, Washington, school system found that 40% of its kindergarteners entered public school 1 to 3 years below grade level. School leaders realized major instructional changes were required to advance

beyond students achieving only one grade level of "catching up" per year. They created a program, Ready! for Kindergarten, to address this problem. Currently, 85% of students whose parents attended at least two sessions of the program's classes have met the standard on the incoming kindergarten assessment tool used by the school system. This rate is 35% higher than for students whose parents did not participate in the sessions.[24] While the program is a parental intervention strategy and not one where the focus is on teachers and caregivers other than parents, its initial success is important to note here.

HIGH-QUALITY EARLY CHILDHOOD EDUCATION

As previously stated, the quality of early childhood education is of the highest importance. Increased participation rates alone are unlikely to lead to significant gains, particularly for children from lower-income families.

There are a number of elements that constitute a high-quality program. Programs that have proven most successful in aiding young children in age-appropriate development are intensive and have higher teacher quality (i.e., teachers have 4-year degrees, rather than 2-year certifications or less), higher teacher pay, smaller class sizes, and higher teacher-student ratios. These programs also provide year-round, full-day service over many years, as opposed to just 1 year.[25] Two such programs are North Carolina's Abecedarian preschool program and Michigan's Perry Preschool program, both of which are discussed in the best practice section of this report. Studies of these programs have shown they have twice the impact on cognitive and language abilities of above-average state preschool programs, and 8 to 10 times the impact of Early Head Start and Head Start programs.[26, 27] Programs like these have also been shown to result in an estimated additional $30,000 in lifetime earnings—almost 10% of the total estimated lifetime earnings for a high school dropout.[28]

While these elements (i.e., higher teacher quality, etc.) are important aspects of a quality early childhood education program, it can also be said that they serve as proxies for measures of program assessment. Knowing what takes place during a child's day at preschool provides a better picture of the quality of education a child receives.[29] The National Center for Early Development and Learning (NCEDL) studied 2,500 children in 750 preschool classrooms and 11 states. The study found that among state-funded programs that served 4-year-olds, only about 25% provided children with high levels of emotional and instructional support. Another study of state-funded preschool programs in six states conducted between 2001 and 2003 found that children in these classrooms spent very little time hearing stories and developing early reading skills—activities known to have the most value for child development.[30] A number of studies substantiate the finding that children in high-quality programs make significant gains in academic and lifetime achievement. Additionally, children at greater risk and disadvantage often make even greater gains than other children when participating in programs demonstrating attributes of high quality.[31]

CHALLENGES IN EARLY CHILDHOOD EDUCATION & CARE

Researchers have found that children who need high-quality education the most are rarely enrolled and participating in such programs, and those in need who do attend high-quality programs are unlikely to receive quality education once they enter the K–12 school system.[32] In their current state, most programs are not likely to have strongly differing effects on different groups of children. Therefore, it is the opinion of some researchers that programs should be targeted to children in lower-income families. In such programs, lower-income children would likely have disproportionate gains and an increased probability of social mobility. However, universal programs, open to all children, would likely generate a higher public return on investment; such programs would also be liable to receive higher levels of political support.[33]

Limited funding for federal programs (Early Head Start, serving children younger than age 3, and Head Start, serving children ages 3 through 5) has been a hindrance to providing lower-income children with the quality of education they need in order to overcome potential developmental disadvantages. In 2003, Early Head Start served fewer than 62,000 children; Head Start served approximately 900,000 children, most of whom were between the ages of 3 and 4.[34] Regardless, research has found that higher levels of spending on Head Start resulted in improved outcomes.[35]

Another difficulty associated with serving children from low-income families is that eligibility for programs targeting those groups can change as parents' income levels change. Therefore, there are obstacles in even identifying the children who could potentially be helped through those programs.[36] Furthermore, paying for childcare can be difficult, if not impossible, for families who earn low incomes but are not eligible for programs serving low-income families. In Texas, the average annual cost of preschool care in a licensed childcare center is $4,427. For infant care in Texas, the average annual cost is $5,386. Often, parents sacrifice quality when choosing childcare due to the high costs of higher quality services.[37]

As previously discussed, another attribute of high-quality education is length of service. Of 4-year-olds participating in Head Start programs, only half were served for 2 years, beginning at age 3. Furthermore, most states' public preschool programs focus mostly or completely on 4-year-olds. One exception is special education programs; however, participation in early interventions through these programs varies.[38]

While increased calls for policy changes in quality requirements for early education programs signify progress, the resulting demand for quality professionals to staff programs is growing faster than the qualified workforce. Whatever types of programs are established—universal programs or those targeting children at greater risk and disadvantage—increased numbers of teachers and related staff must be recruited in order to keep up with the improvements in the educational programs. Training and other professional development programs for these teachers must also be considered and developed,[39] as well as policies of higher pay, which could help attract more individuals to the field. The average pay for preschool teachers is less than half the average pay for kindergarten teachers.[40]

In recent years, a number of states, including Texas, have begun encouraging public and private prekindergarten programs to partner in order to ensure quality education to more children.[41] The Texas Early Education Model (TEEM) is an approach currently being used, and serves approximately 40,000 children annually; a recent proposal by Texas Governor Rick Perry would increase funding for programs using this model by $80 million over the next 2 years, potentially allowing the number of children served by programs using the TEEM model to rise to about 120,000 each year.[42] In this approach, public schools, Head Start centers, and childcare centers accepting federal welfare-to-work vouchers work together to educate young children through state grants. A certain percentage of students in TEEM classes—typically 50 to 75%—must come from low-income households.[43]

This strategy allows the number of children receiving quality education to increase without drastically increasing the number of children eligible for public school programs; that increase is desired, but funding for such a move remains difficult to attain.[44] The TEEM approach provides participating Head Start and private programs with state-endorsed activities and teacher-training programs like those used in public

Table 3-1. Head Start of Greater Dallas Enrolled Students, Numbers, & Percentages with Select Characteristics, 2005–2006

Characteristic	Number	Percentage
Katrina evacuees	244	5.6%
Live at/below federal poverty level	4,263	96.9%
Have working parents	3,136	71.3%
Enrolled in Medicaid	3,005	68.3%
Families who receive food stamps	1,281	29.1%
Enrolled in special services	529	12.0%
Parents were referred to ESL classes	272	6.2%

Source: *Head Start of Greater Dallas, Report to the Community: 2005–2006*

school programs—elements that have often been lacking. Such cooperative efforts should improve the quality of various neighborhood programs and thus help parents in their search for appropriate educational centers for their children. Additionally, this model saves public schools money because it eliminates the need for new buildings—children are served in Head Start and private facilities. Despite the advantages the TEEM approach seems to offer, some warn that sufficient funding may not be available; a January 2007 preliminary budget from the Legislature included a reduction in prekindergarten expenditures. Others say that enough money is already in the system and it is simply a matter of allocating funds appropriately.[45]

THE STATE OF EARLY CHILDHOOD EDUCATION & CARE: A LOCAL PERSPECTIVE

It has already been mentioned that it can be difficult to assess a region's early childhood education and care, particularly on a larger scale; however, data and information on Head Start of Greater Dallas, the Dallas Independent School District, and preschool enrollments in Dallas County will be presented here.

HEAD START OF GREATER DALLAS

Head Start is a federally funded program that provides services locally and across the country. The number of sites in each city with Head Start of Greater Dallas centers is as follows:[46]

- Dallas: 27
- Grand Prairie: 2
- Irving: 3
- Garland: 2
- Mesquite: 1
- Carrollton: 1

In 2005–2006, the total enrollment for Head Start of Greater Dallas was 4,399 children—an all-time high. However, needs clearly outweigh the current capacity—1,689 children are on the enrollment waiting list. Enrollment breakdown by racial/ethnic group for 2005–2006 was:[47]

- 47% African American
- 48% Hispanic
- 1% White
- 2% Asian American
- 2% Other

Table 3-1 shows numbers and percentages of children with select characteristics enrolled in Head Start of Greater Dallas for 2005–2006.

DALLAS INDEPENDENT SCHOOL DISTRICT (DISD)

Preschool is available on every DISD campus that serves children in kindergarten through third grade; however, services begin at age 4, which is typical of most states' public school preschool programs (as opposed to beginning at age 3). A few campuses also have collaborations with Head Start.[48]

Home Instruction for Parents of Preschool Youngsters (HIPPY) is a parental involvement program that serves children ages 3 through 5 and their families; the program operates in conjunction with DISD. Staff go into children's neighborhoods to assist parents in learning how best to interact with their children to aid development. DISD also collaborates with Even Start, a local family literacy program funded by federal grants.[49, 50]

CHILD CARE MANAGEMENT SERVICES

A program of the Texas Workforce Commission—Child Care Management Services—offers subsidized childcare to eligible families with children under age 13. Families who receive or are transitioning from public assistance, receive or need protective services, or have low levels of income are eligible. The administration of services occurs through local Workforce Development Boards, and boards may establish more detailed eligibility requirements.[51] In regard to local conditions, the number of subsidized childcare slots increased 29% between 2000 and 2005. Despite this increase, demand remains higher than supply; there were more than 2,200 children on the waiting list for these slots in Dallas County as of November 2006. Furthermore, this number underestimates the actual need for subsidized childcare, as families are required to call every 2 months in order to remain active on the waiting list.[52]

Table 3-2. Dallas County Zip Codes with 10 Highest Numbers of Nursery School/Preschool Enrollments

Zip Code	Total Enrollments	Ranking
75217	1,421	1
75019	1,404	2
75007	1,243	3
75052	1,230	4
75228	1,219	5
75211	1,170	6
75243	1,115	7
75040	1,106	8
75149	1,094	9
75231	971	10

Source: U.S. Census Bureau, Census 2000, Summary File 3, P36

DALLAS COUNTY PRESCHOOL ENROLLMENTS

The U.S. Census Bureau's 2005 American Community Survey (ACS) reported 40,184 children were enrolled in nursery school or preschool in Dallas County. Of these, 56.1% were enrolled in public school, and 43.9% were enrolled in private school. The percentage of children ages 3 and 4 reported as enrolled in school was 35.2%.[53]

Because children in large cities are often at greater risk than other children,[54] data for the city of Dallas from the 2005 ACS are presented here as well. In Dallas, 20,265 children were enrolled in nursery school or preschool. Of these, 58.9% were enrolled in public school, and 41.1% were enrolled in private school. The percentage of children ages 3 and 4 reported as enrolled in school was 34.5.[55]

Census 2000 data provide nursery school/preschool enrollments in zip codes located in Dallas County. Table 3-2 shows the zip codes with the 10 highest enrollment numbers. Some of the highest enrollment numbers were in zip codes 75217 (southeast of the Fair Park/South Dallas neighborhood), 75019 (Coppell), 75007 (north Carrollton), 75052 (Grand Prairie), and 75228 (east of White Rock Lake).

Table 3-3. Dallas County Zip Codes with 10 Lowest Numbers of Nursery School/Preschool Enrollments

Zip Code	Total Enrollments	Ranking (Lowest)
75202	0	1 (tied)
75207	0	1 (tied)
75247	0	1 (tied)
75251	0	1 (tied)
75039	11	5
75226	13	6
75182	17	7
75201	25	8
75246	39	9
75141	56	10

Source: U.S. Census Bureau, Census 2000, Summary File 3, P36

Table 3-3 shows the zip codes with the 10 lowest enrollment numbers. Some of the lowest enrollment numbers were in zip codes 75202 (downtown Dallas), 75207 (industrial corridor just west of downtown along the north banks of the Trinity River), 75247 (southwest of Love Field), 75251 (I-635 & N 75), and 75039 (Irving). Some of these areas are primarily business centers, so "0" results for these zip codes are not surprising.

Census 2000 data also provide a picture of how many children are enrolled in public school programs and how many are enrolled in private school. Table 3-4 shows the zip codes with the 10 highest percentages of public nursery school/preschool enrollments out of total nursery school/preschool enrollments. Some of the highest percentages were in zip codes 75201 (south Dallas), 75210 (south Dallas), 75246 (old East Dallas), 75212 (West Dallas neighborhood), and 75125 (southeast of Lancaster and Red Oak).

Table 3-4. Dallas County Zip Codes with 10 Highest Percentages of *Public* Nursery School/Preschool Enrollments

Zip Code	Total Public Nursery School/Preschool Enrollments	Percentage of Total Enrollments	Ranking
75201	25	100.0%	1 (tied)
75210	185	100.0%	1 (tied)
75246	39	100.0%	1 (tied)
75212	372	96.9%	4
75125	124	93.9%	5
75172	63	91.3%	6
75215	184	88.9%	7
75141	49	87.5%	8
75241	430	84.7%	9
75217	1,196	84.2%	10

Source: U.S. Census Bureau, Census 2000, Summary File 3, P36

Table 3-5. Dallas County Zip Codes with 10 Highest Percentages of *Private* Nursery School/Preschool Enrollments

Zip Code	Total Private Nursery School/Preschool Enrollments	Percentage of Total Enrollments	Ranking
75039	11	100.0%	1
75230	570	91.2%	2
75001	61	89.7%	3
75205	578	89.3%	4
75218	231	82.8%	5
75048	223	81.4%	6
75063	366	79.9%	7
75225	582	79.8%	8
75088	359	78.7%	9
75214	491	77.6%	10

Source: U.S. Census Bureau, Census 2000, Summary File 3, P36

Notes to tables: Zip code 75039 appears in Table 3-3 and Table 3-5.
Zip code 75217 appears in Table 3-2 and Table 3-4.
Zip codes 75201, 75246, and 75141 appear in Table 3-3 and Table 3-4.

Table 3-5 shows the zip codes with the 10 lowest percentages of public nursery school/preschool enrollments out of total nursery school/preschool enrollments. Some of the lowest percentages are in zip codes 75039 (Irving), 75230 (between Dallas North Tollway and N 75), 75001 (Addison), 75205 (southern part of Highland Park area), and 75218 (northeast of White Rock Lake).

CHILDCARE FACILITIES

Given that the majority of brain development occurs between birth and age 5,[56] the importance of early childhood education is obvious. Thus, childcare facilities clearly also play a vital role in the development of our society's children.

There are several types of childcare available to serve parents' individual needs. The Texas Department of Family and Protective Services denotes these types based on listing, registration, or licensing requirements. *Listed family homes* provide care to children in the caregiver's own home for one to three unrelated children at least 4 hours per day, 3 or more days a week, for more than 9 consecutive weeks. A listed family home is given a certificate after the licensing office receives an application and background checks are conducted. These homes are typically not inspected. *Registered childcare homes* provide care for as many as six children under age 14 in the caregiver's home. Additionally, up to six more school-aged children may be given care. No more than 12 children may be given care at one time, including the caregiver's own children. Caregivers must complete an orientation class and undergo background checks. After an onsite inspection is passed, the caregiver is given a registration certificate. Subsequent inspections are conducted every 1 to 3 years. *Licensed childcare homes* provide care for 7 to 12 children under age 14 for less than 24 hours per day. *Licensed childcare centers* care for 13 or more children under age 14 for less than 24 hours per day. Providers for both licensed childcare homes and centers must undergo background checks and complete orientation classes before licenses are granted. Furthermore, an onsite inspection must be conducted to ensure minimum standards are in place. Subsequent inspections are typically conducted every 5 to 12 months.[57]

Licensed care also includes 24-hour care facilities, but this report will focus only on daycare facilities. For all types of care, any reports of child abuse or neglect are investigated, and any reports of standards violations (or in the case of listed family homes, conditions warranting registration certification) result in inspections.[58]

It should be noted that certain childcare providers do not meet the requirements for licensing, registration, or listing. For example, a caregiver who provides care for one child twice a week does not meet the stipulations for being a listed family home. Therefore, not every single case of childcare can be tracked. Furthermore, parents who stay at home with their children throughout the day are not recorded, but these parents may certainly involve their children in activities that are developmentally and educationally stimulating.

DALLAS COUNTY DAYCARE FACILITIES

According to data collected from the Texas Department of Family and Protective Services, there are 1,474 daycare facilities in Dallas County, including 683 registered childcare homes, 99 licensed childcare homes, and 692 licensed childcare centers. (Note that these numbers do not include listed homes.) Expressed as percentages, 46.3% are registered childcare homes, 6.7% are licensed childcare homes, and 46.9% are licensed childcare centers.

Table 3-6 shows the zip codes with the 10 highest numbers of daycare facilities. Some of the highest numbers of facilities were found in zip codes 75115 (DeSoto), 75052 (Grand Prairie, area of intersection of I-20 and State Highway 360), 75150 (Mesquite), 75216 (between I-35 and I-45, roughly from Illinois to Ledbetter), and 75040 (Garland, area of State Highway 78 and George Bush Freeway).

Table 3-7 shows the zip codes with the 10 highest numbers of registered childcare homes (RCCHs). Some of the highest numbers of these facilities were found in zip codes 75052 (Grand Prairie, area of intersection of I-20 and State Highway 360), 75042 (Garland, between Plano Rd. and Garland Ave.), 75040 (Garland, area of State Highway 78 and George Bush Freeway), 75150 (Mesquite), and 75115 (DeSoto).

Table 3-6. Dallas County Zip Codes with 10 Highest Numbers of Daycare Facilities

Zip Code	Total Facilities	Ranking
75115	61	1
75052	56	2 (tied)
75150	56	2 (tied)
75216	54	4
75040	53	5
75042	49	6
75217	44	7 (tied)
75241	44	7 (tied)
75104	42	9
75044	41	10

Table 3-7. Dallas County Zip Codes with 10 Highest Numbers of Registered Childcare Homes

Zip Code	Total RCCHs	Ranking
75052	43	1
75042	42	2
75040	39	3
75150	35	4
75115	34	5
75044	31	6
75104	25	7
75241	24	8
75217	22	9 (tied)
75243	22	9 (tied)

There are few licensed childcare homes in Dallas County. The highest numbers of these facilities are found in zip codes 75089 (Rowlett) and 75232 (south Dallas, east of intersection of U.S. Highway 67 and I-635), with seven each.

Table 3-8 shows the zip codes with the 10 highest numbers of licensed childcare centers (LCCCs). Some of the highest numbers of these facilities were found in zip codes 75216 (between I-35 and I-45, roughly from Illinois to Ledbetter), 75228 (east of White Rock Lake), 75115 (DeSoto), 75150 (Mesquite), 75217 (southeast of the Fair Park/South Dallas neighborhood), and 75224 (south Dallas, intersection of U.S. Highway 67 and 35, between South Hampton Rd. and South Marsalis Ave.).

As part of its commitment to quality early childhood education, the National Association for the Education of Young Children (NAEYC) has several accreditation programs, including a national, voluntary program for early childhood education facilities. This program provides a set of standards to guide staff for children's programs and to guide parents in choosing childcare.[59] In Dallas County, there are 80 childcare facilities that have achieved NAEYC accreditation. Table 3–9 shows zip code 75230 (between Dallas North Tollway and I-75) has

Table 3-8. Dallas County Zip Codes with 10 Highest Numbers of Licensed Childcare Centers

Zip Code	Total LCCCs	Ranking
75216	34	1
75228	24	2
75115	22	3
75150	21	4
75217	20	5 (tied)
75224	20	5 (tied)
75019	16	7 (tied)
75062	16	7 (tied)
75227	16	7 (tied)
75006	15	10 (tied)
75080	15	10 (tied)

Table 3-9. Dallas County Zip Codes with 10 Highest Numbers of NAEYC Accredited Facilities

Zip Code	Total NAEYC-Accredited Facilities	Ranking
75230	4	1
75040	3	2 (tied)
75081	3	2 (tied)
75203	3	2 (tied)
75208	3	2 (tied)
75212	3	2 (tied)
75215	3	2 (tied)
75219	3	2 (tied)
75227	3	2 (tied)
75246	3	2 (tied)

Source, Tables 3-6 to 3-9: Texas Online, Occupational and Professional Licenses, Child Care Administrators and Facilities. Retrieved February 7, 2007, from http://www.dfps.state.tx.us/child_care/Search_Texas_Child_Care/default.asp

Notes to Tables 3-6 to 3-9: These numbers include care for children under age 5 only and do not include 24-hour care facilities.

the highest number of NAEYC-accredited facilities (four), while nine zip codes have three NAEYC-accredited facilities each.[6]

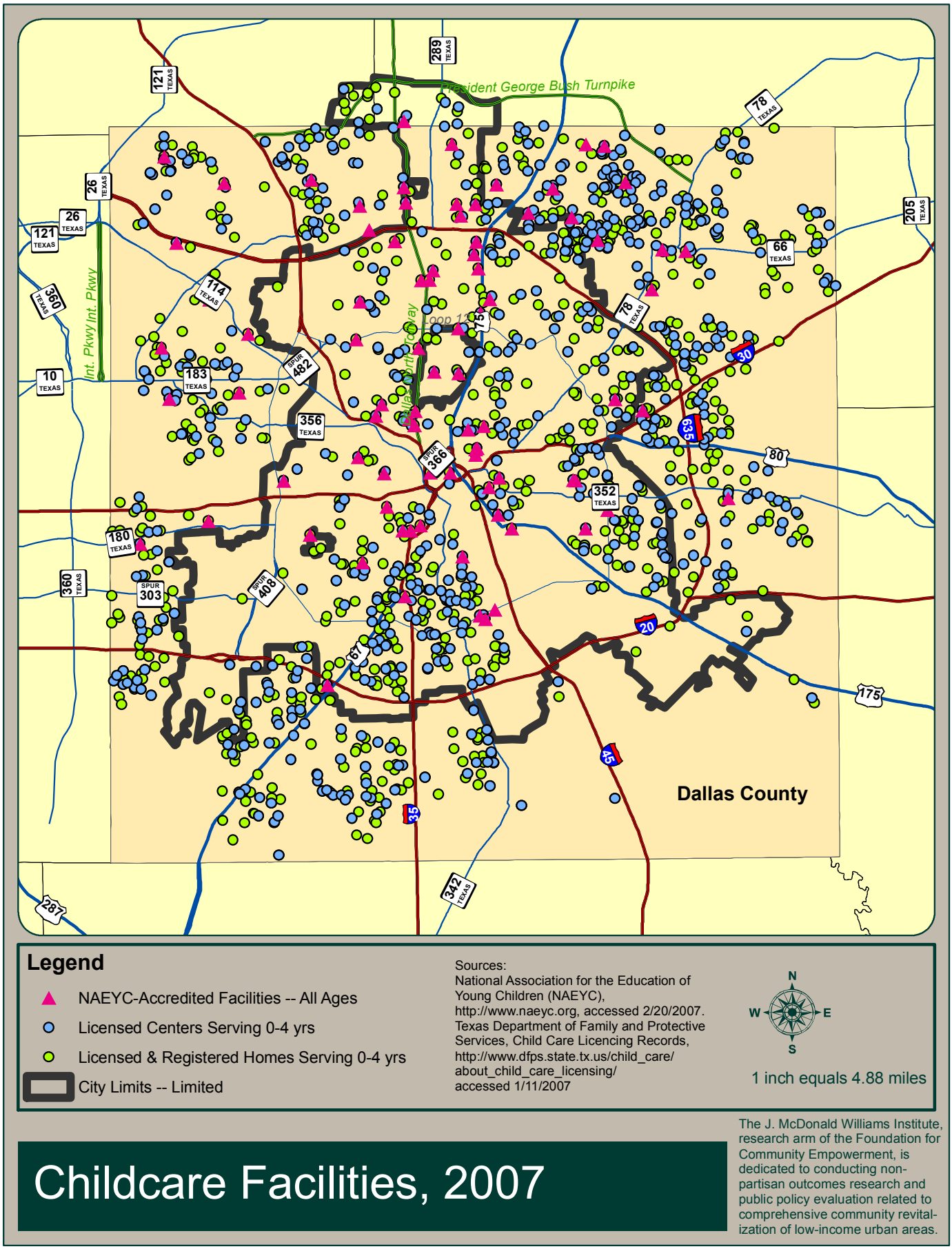
Figure 3-1 shows registered homes and licensed homes as green dots and licensed centers as blue dots. Facilities that have achieved NAEYC accreditation appear as pink triangles. As illustrated, the registered and licensed homes are scattered throughout the county, with clusters around the perimeter of the Dallas city limits. Also, there are high concentrations in the eastern and southern parts of the county. Licensed centers appear to be highly concentrated in the southern and eastern parts of the city as well as outside the city limits. There is also a concentration in the northeastern part of the county, just outside the city limits. NAEYC-accredited facilities appear to be located in the central and northern parts of the county, with fewer in the southern region.

CONCLUSION

The benefits of high-quality early education and childcare can have long-lasting effects on children's lives. Policymakers, educators, and social services workers must keep in mind the various factors contributing to effective early childhood programs. Efforts must be made to increase participation in early childhood education, particularly of children from low-income families. As illustrated in this chapter, programs incorporating activities that aid in children's language, social, cognitive, and emotional development have been shown to increase positive outcomes, such as graduation rates, and decrease negative outcomes, such as dropout rates. Gaps between disadvantaged children and their more advantaged counterparts can be narrowed if early intervention takes place. However, endeavors to increase participation in early childhood education must occur in tandem with efforts to intervene even earlier in children's lives and to improve the quality of education children receive as they enter the K–12 system. Furthermore, changes such as more stringent regulations for teacher training, as well as increased pay for early childhood education teachers, must also take place.

Despite debates about whether universal programs or programs targeted at low-income children should be instituted, it is clear that early childhood education and care must be established as a priority. Society as a whole can benefit, because children provided with quality education can grow into productive citizens. Therefore, it is in the best interest of our region to focus on improving the quality and availability of these programs.

Figure 3-1. Childcare Facilities, 2007



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CHAPTER FOUR: ECONOMIC & NEIGHBORHOOD FACTORS

By James Murdoch, Ph.D.

INTRODUCTION

The purpose of this chapter is to examine the independent effects of family and household income and neighborhood factors on childhood wellbeing. At the family and household level, identification of independent effects is particularly difficult because income levels are often codetermined with other factors that influence childhood wellbeing. For example, education levels of parents are an important driver in both earnings potential and childhood development (e.g., through how often parents read to children). In this example, it would be a mistake to attribute an increase in the frequency of reading to children to an increase in income, even though we may observe both at the same time. It is much more likely that the reading is driven by parental education. From a public policy point of view, the distinction is important—an income support program is not likely to increase the amount of time parents read to children and therefore may not have the predicted effect on childhood wellbeing.

Economic circumstances impact childhood wellbeing through two channels. The first is through the family's or household's budget, while the second is through "neighborhood effects" resulting from concentrations of poverty. Children in low-income families often experience both channels of negative effects. There are negative impacts because the family is poor, *plus* there are additional negative impacts because the poor tend to be concentrated in specific geographic areas, which generates adverse neighborhood conditions. Once again, at the policy level, however, it is important to distinguish between the two channels. The impact of a policy that increases household income (e.g., housing subsidy) will vary depending on the characteristics of the neighborhood where a household is located. The point is that families do not exist within a vacuum—neighborhood context can be just as important as the family context, especially as children begin school.[a] Understanding the extent of neighborhood effects is one of the most active areas in social science research.

Unfortunately, social scientists rarely know the income levels of individual households in particular places.[b] Hence, in practice, most of the academic research uses national samples to try to infer the relative importance of household-level and neighborhood-level contexts on children's wellbeing. These studies are informative for policy in the Dallas area to the extent that they can be transferred to local conditions. However, place-based idiosyncrasies, like the existence of Parkland Hospital, can invalidate transference of some results.

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a See, for example, Chase-Lansdale, P., Gordon, R. A., Brooks-Gunn, J., & Klebanov, P. K. (1997). Neighborhood and family influences on the intellectual and behavioral competence of preschool and early school-age children. In J. Brooks-Gunn, G. J., Duncan, & J. L. Aber (Eds.), Neighborhood poverty, volume I: Context and consequences for children. New York: Russell Sage Foundation.

b The only way to know household income is to conduct household surveys. Those done by the U.S. Census Bureau are not available at the individual level. Therefore, many urban areas routinely conduct household surveys to keep tabs on individual income levels and other important drivers of social outcomes. Dallas does not adhere to this practice.

Thus, as the Dallas area strives to optimally respond to the needs of young children living in poverty, we will simply need to conduct more local studies.

HOUSEHOLD INCOME & CHILD WELFARE

Household economic conditions have a profound impact on the wellbeing of young children.[c] By definition, poverty is a state without sufficient purchasing power for the basic necessities of food and shelter.[d] Children living in poor households often suffer from insufficient calorie intake; an unhealthy mix of protein, carbohydrates, and fats; and substandard housing that is susceptible to unhealthy environmental conditions. Healthcare can be one of the most expensive budget items, compounding the problem for low-income families. Using data from the 1992–94 National Health Interview Survey (NHIS), Newacheck and Halfron found that the prevalence of disabilities in children was greater for populations from low-income and single-parent families than for other families; they noted that the disabilities generally stemmed from respiratory and mental conditions, suggesting a link to environmental conditions and nutrition.[1] In another study, this time using the 1988 NHIS, Newacheck reported that low-income children were much more likely to have a chronic condition than other children.[2] Brooks-Gunn, McCormick, Klebanov, and McCarton compared the healthcare utilization rate of low-birthweight children from poor families with that of low-birthweight children from families who were not poor. They found that the group from poor families had a greater frequency of hospitalization and emergency room visits, which implies that family income, even controlling for initial health status, is correlated with severity of illness in children.[3]

This strain of literature makes it seem obvious that income is a key indicator of childhood wellbeing. Yet, measuring economic conditions and establishing the correct pathways between children's welfare and economic conditions are both problematic. To demonstrate, consider the welfare of a child in a family whose income clearly falls below the poverty line and who has no difficulty qualifying for Medicaid compared with that of a child in a working-poor family without insurance who does not qualify for Medicaid. The child from the uninsured family may actually be worse off. The Children's Health Insurance Program (CHIP)[e] is specifically designed for such children, but the extra layer of bureaucracy often means eligible children fail to get the services to which they are entitled. In 2004, 21.2% of children in Texas were without private healthcare coverage, Medicaid, or CHIP.[4] Current estimates suggest that approximately 45,000 Dallas County children are eligible for Medicaid but not enrolled in the program.[5] In testimony presented to the 80th Texas Legislature House Human Services Committee, Hagert described a system of overloaded case workers faced with an ever increasing demand for services. The result is that, in Texas, only half of the eligible households receive food stamps, and approximately half of uninsured children could receive Medicaid or CHIP but do not.[6]

Danziger, Heflin, Corcoran, and Oltmans analyzed survey data on single mothers who were on welfare in 1997. They found that by 1999, those who moved off welfare and began working were generally *financially* better off; however, of those working, more than a third did not have health insurance for themselves, and 13% had no insurance for their children. Conversely, almost all of those on some form of welfare had medical coverage for themselves and their children.[7] Therefore, better on the financial scale does not always translate into better in other dimensions that clearly affect wellbeing. The point is that the simple causal statement "childhood wellbeing is caused by family income" does not adequately capture the dimensions of

c *See* Bridgman, A., & Phillips, D., eds. (1998). New findings on poverty and child health and nutrition: Summary of a research briefing. Commission on Behavioral and Social Sciences and Education. The National Academies Press, Washington, DC.

d *See* http://www.census.gov/hhes/income/defs/poverty.html for information on the definition of poverty.

e *See* http://www.hhsc.state.tx.us/chip/index.html for more information.

economic conditions that impact childhood wellbeing. In short, measures of average family income, income per capita, and average household income are incomplete indicators of how economic conditions impact child welfare.

Even good data on income do not necessarily convey the economic condition of families without some reference to what it takes to live in a particular area. Deviney and Hagert have estimated that it takes a family of four more than $43,000 to cover the basic necessities of living in Dallas.[8] This is more than twice the poverty line for a family of four, suggesting that the federal poverty line may not provide the correct context for identifying needs in Dallas County.

A way to rationalize the study of economic conditions in relation to childhood welfare is to use a "household production" structure usually attributed to Gary Becker.[9,f] The "household" uses inputs and time to produce the outputs it wants, and the outputs determine the overall level of wellbeing. The inputs (e.g., food) must be purchased, and time has opportunity cost in terms of lost income. Actual household income is important to any household member's welfare because it enables the purchase of more inputs and time, and hence more of the outputs that improve welfare. With this structure, it is easy to see that there will be a lot of heterogeneity (or diversity) in how households produce outputs, and hence improve welfare. Some will have both husband and wife working and buy childcare inputs from explicit markets, while others will "purchase" childcare from grandparents. Others may form households of two or more families in order to optimize the utilization of inputs, given wages and other constraints. Therefore, to accurately indicate the wellbeing of young children with measures of income, they need to be parsed in such a way so as to control for the heterogeneity.

Since childhood wellbeing is the outcome of interest, the most important distinctions for income measures will be family type, family size, household type, and household size. Generally, the U.S. Census Bureau distinguishes between the household (people at the same address) and the family (related individuals), so some information is available to parse the income data. For the Wellbeing Ihas ndex, it is important to indicate what income and time is available to a child. One way to indicate available income would be to consider the aggregate household income per child. Similarly, one way to indicate time would be to look at household size per child. Either of these could be calculated from family data instead of household data in order to add more information to the measure.

As noted above, individual-level data are not available; therefore, these "per child" measures are theoretical at this point. However, data are available at the block-group level, making it reasonable to consider whether or not aggregate measures can partially contribute to an indicator of the wellbeing of young children. Aggregate household and family income data for the entire block group are available, which, coupled with block group population figures, yield a per child statistic for the block group. A corresponding measure could be computed to determine time available per child. Such measures are probably not unreasonable indicators of wellbeing attributable to income. However, as discussed in the next section, they are likely correlated with neighborhood effect measures, meaning that some care needs to be taken in order to determine how to attribute wellbeing to income/time.

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f We are just proposing to use the structure for organizing a study of the relationships. There is considerable controversy about Becker's assumptions and conclusions that is not relevant here. *See*, for example, Pollak, R. A. (2002). *Gary Becker's contributions to family and household economics* (Working Paper 9232). NBER Working Paper Series.

The identification of neighborhood effects is an active area of research in the social sciences. Sampson, Morenoff, and Gannon-Rowley noted the number of published articles with the words "neighborhood" and "social capital" in the title went from around 40 per year in the early 1990s to slightly more than 100 by the end of that decade.[10] While most empirical studies use census geographies to define neighborhoods (e.g., block groups or zip code tabulation areas), most of the actual research on perceptions of neighborhood boundaries finds that residents do not necessarily perceive their neighborhoods in the same way as the U.S. Census Bureau.[g] Still, most data are available for census geographies, and until additional work is done in Dallas to identify more appropriate boundaries, analyses will rely on these definitions. Spatial interpolation in GIS offers a technical way to reconfigure geographies, but field work on residents' perceptions is still a prerequisite before spatial interpolations can be calibrated.

Pebley and Sastry suggested that neighborhoods affect children's wellbeing through four broad mechanisms. The first mechanism is child- and family-related institutions. Such institutions include schools, churches, parks, and social service providers. Generally, the availability and/or quality of such institutions decrease with income so that there is a link to childhood wellbeing and income through these institutions. Not only are the institutions less available and/or less capable, but the ones that do exist are more likely to be overused in poorer neighborhoods, furthering the link to income.[11]

The second mechanism noted by Pebley and Sastry is social organization and interaction. To the extent that poorer neighborhoods are less socially organized, the residents are less likely to solve collective problems.[12] Sampson, Morenoff, and Gannon-Rowley measure this as "collective efficacy,"[13] while Wilson, among others, stresses "social capital."[14] Formal notions of social capital have interested researchers for more than two decades.[15] Social capital is most commonly understood to represent the investment of individuals in their networks, resulting in a cooperative benefit. Despite pervasive conventional wisdom on the subject, scholars have yet to reach definitional consensus. According to Putnam, social capital may be described as the "honesty and trust [that] lubricate the inevitable frictions of social life."[16] Paldam, on the other hand, noted that social capital is the "glue generating excess cooperation,"[17] and further emphasized the contrast of existing definitions stating that "glue is surely the reverse of a lubricant."[18] The concept of social capital is often applied to community studies that evaluate mechanisms for social capital investments, operational considerations associated with social capital, and effects of social capital on community life.[h]

In terms of the role of these mechanisms in childhood welfare, Pebley and Sastry note that collective efficacy drives active support for social control of children, including monitoring and correcting behavior.[19] Social capital in a neighborhood is associated with social ties between adults and children, providing children a foundation for a trusting environment. However, the relationship between social capital and community investment remains unclear. Consequently, Bowles and Gintis argue that social capital could be more aptly described as community because the concept focuses more on what groups do rather than on what individuals own.[20] The literature highlights four major instruments of social capital at the community level: neighborhood collective efficacy, coethnic networks, job networks, and friend effects in peer networks. Sampson, Raudenbush, and Earls studied 343 Chicago neighborhood clusters and found that increased concentrations of disadvantaged groups, higher immigrant concentrations, and lower residential stability all contributed to a decrease in collective efficacy.[21] Together, these three dimensions of neighborhood

g *See* Coulton, C. J., Korbin, J., Chan, T., & Su, M. (2001). Mapping residents' perceptions of neighborhood boundaries: A methodological note. *American Journal of Community Psychology, 29*(2), 371–383.

h Much of the section was contributed by Tammy Leonard, Richard Scotch, and Alicia Schortgen of the University of Texas at Dallas.

stratification explained 70% of the variation in neighborhood collective efficacy. Sampson et al. hypothesize that economic circumstances hinder collective efficacy formation despite the existence of strong personal ties. Quillian and Redd, however, has suggested that social capital may yet be a mechanism for facilitating collective value. [22]

Individual social capital affects communities in three discernible ways: income creation, resolution of collective action problems, and the persistence of racial poverty gaps. In their study of rural Canadian households, Tiepoh and Reimer divided measures of social capital into four groups: market, bureaucratic, associative, and communal. They found that all types of social capital except bureaucratic were positively related to income. Bureaucratic social capital, or social capital associated with impersonal, formal relationships based on authority structures, was negatively related to income creation. Tiepoh and Reimer concluded social capital influences income because it facilitates the exchange of income-related knowledge.[23]

Social networks within communities possess information unknown to higher levels of governance, thus allowing them to better enforce contracts and solve collective action problems in some situations.[24] Sampson et al. found that neighborhoods with higher levels of collective efficacy have lower reported rates of violence. Moreover, a two-standard deviation increase in collective efficacy results in a 30% reduction in the odds of victimization.[25]

Quillian and Redd cite many ways in which social capital may help explain persistent racial poverty gaps.[26] According to the authors, social capital may exacerbate racial inequalities. Racial homophily in friendship may induce peer effects that promote discrepancies in cohort characteristics that are correlated with race. Differences in neighborhood collective efficacy are often correlated along racial lines and may result in greater difficulty solving collective problems. Finally, the negative effects of coethnic networks may work to further engrain racial inequality.

The third way neighborhoods can impact childhood wellbeing is the normative environment. Understanding individual decisions, particularly involving network participation, requires specific attention to motivation to invest. Note that it matters what the collective beliefs are—a gang environment has a different effect than one where most in the neighborhood believe in respect for the law and legal institutions. Essentially, the collective beliefs in the neighborhood can affect children. The normative environment has a type of "epidemic" effect. An area of concentrated poverty increases children's contact with social problems (or goods) and, therefore, increases their probability of adopting the same norms.

Finally, Pebley and Sastry argue that labor and marriage markets condition neighborhoods and can, therefore, have an effect on children. Work translates into income and self-esteem, and both of these impact parenting and approaches to childrearing, while marriage is often one of the best "insurance" intuitions protecting against chronic poverty.[27]

Other neighborhood characteristics will impact children. For example, Jetter and Cassady compared the prices and availability of food in neighborhoods served by small grocery stores with those served by mainline stores. They found limited access to healthier foods and greater cost for healthier diets in neighborhoods served by smaller grocery stores.[28] Feather estimated that improving access to larger grocery stores would increase the welfare of food stamp recipients by up to $1.4 billion per year, or up to $11.00 per month per food stamp recipient (in 2005 dollars). To provide some context for this figure, Feather noted that the entire value of the food stamp program in 1992 was estimated to be approximately $21 billion.[29] Thus, accessibility is a rather significant increase in program benefits. Zenk et al. (2005) analyzed the food consumption of a sample of African American women living in an area of eastside Detroit with no supermarkets, and found that those who shopped at supermarket and specialty stores consumed fruit and vegetables more than those who shopped at independent grocers. They concluded that the pattern of few supermarkets in low-

income areas can have negative implications for dietary quality.[30]

A couple of recent studies have cast some doubt on the importance of neighborhood effects. They analyze data associated with the Moving to Opportunity (MTO) program implemented by the U.S. Department of Housing and Urban Development (HUD). The MTO program enrolled families living in subsidized public housing in Boston, Baltimore, Chicago, Los Angeles, and New York during the time period of 1994 through 1997. MTO used a lottery scheme to assign vouchers to families that allowed them to move out of their existing neighborhood. Some people's vouchers were restricted so that they had to move to low-poverty neighborhoods, while others got traditional Section 8 vouchers and had a wider choice of locations. A third group did not get a voucher. The random assignment of people to the three groups essentially eliminated biases often encountered in other studies where individuals self-select a policy that scholars want to study. There were approximately 4,200 families who participated in the MTO program. To be eligible, the family had to have at least one child under the age of 18.

Table 4-1. Dallas County Zip Codes with the Highest Rates of Texas Health & Human Services Clients 2004

City	Zip Code	HHSC Clients	2005 Population	Rate
Grand Prairie	75051	8069	31452	0.3
Dallas	75246	1204	4570	0.3
Wilmer	75172	875	3246	0.3
Dallas	75210	2937	9942	0.3
Dallas	75237	4876	16137	0.3
Dallas	75216	16584	52907	0.3
Dallas	75217	23626	74273	0.3
Dallas	75215	6594	20258	0.3
Dallas	75212	8244	24379	0.3
Dallas	75236	3179	8872	0.4

Source: University of Texas at Dallas calculations, 2004

Sanbonmatsu, Kling, Duncan, and Brooks-Gunn compared the educational readiness and achievement of the children from the families in the MTO program. They collected data in 2002, 4 to 7 years after the MTO enrollment. The voucher families did move to neighborhoods that were less poor and had better performing schools. However, the families did not move to neighborhoods that were primarily white and suburban, and the children did not necessarily attend top-performing schools. They did not find significant differences among the children from the three groups on the educational measures, suggesting that neighborhood effects are small or nonexistent for such outcomes.[31]

Kling, Liebman, and Katz also analyzed MTO associated data collected in 2002. Their focus was on the adults and older teenagers. In terms of adult economic self-sufficiency, they did not find any evidence of neighborhood effects—that is, no significant differences in earnings, participation in welfare, or the amount of government assistance. There was no broad pattern of neighborhood effects on various adult physical health outcomes. In particular, they did not find significant differences in self-reported health, hypertension, asthma, or trouble with common tasks like carrying groceries or climbing stairs. However, there was a significant effect for obesity.[32]

In terms of adult mental health, Kling et al. reported consistent neighborhood effects—that is, lower-poverty neighborhoods yielded less severe reported symptoms. They also noted that mental health may have driven the obesity finding. The mental health measures—distress, depression, anxiety, calmness, and sleep—were all positively influenced by moving to a lower-poverty neighborhood.[33]

For teens, the analysis indicated that females benefit across a wide range of outcomes, although less so in physical health. Somewhat surprisingly, the results were just the opposite for the teen males.

The Childhood Wellbeing Index must correctly indicate low-income areas on an annual basis. Because reliable income data are collected only during the decennial census, we need to use a measure that is highly correlated with income and is potentially observable every year. We first consider data from the Texas Health and Human Services Commission (HHSC) to calculate the rate of the total population receiving aid (TANF, Medicaid, food stamps) from an HHSC program, by zip code. The logic for this measure is that the HHSC clients are means tested and determined to have incomes below the threshold for qualification. Zip codes with higher population rates of utilization will almost certainly indicate zip codes with relatively high numbers of people living in poverty. The zip codes with the highest rates of HHSC services utilization in Dallas County are given in Table 4-1. More than 25% of the population in all 10 of these zip codes qualify for some type of means-tested state program. This measure will fail to indicate income correctly in areas where poor people do not apply for aid. Thus, areas with high concentrations of undocumented aliens will not be identified with this measure. Some correction for this omission is possible by including an ethnicity measure in the wellbeing index.

Table 4-2. The Relationship Between Family Type & Family Income in Dallas County Census Tracts, 2006

Income Level	Single-Parent Families
Low	27.6%
Moderate	19.3%
Middle	14.2%
High	8.0%

Source: Single-parent families figures calculated from the U.S. Census 2000. Census tract income level is from Federal Financial Institutions Examination Council.

A second way to consider income is to look at family status. As noted above, traditional families simply have more options for arranging time toward work activities and, therefore, increase their income. Table 4-2 shows the percentage of single-parent families with children for four income classes in Dallas County.[34,35] Clearly, family structure is highly correlated with family income. In fact, the simple Pearson Correlation Coefficient between median family income and percentage of single-parent families in Dallas County census tracts is -0.61 (p-value < 0.0001).

Neighborhood effects literature has also suggested "access to supermarkets" as an indicator of childhood wellbeing. In July 2006, the Williams Institute identified the location of all mainline chain grocery stores in the Dallas–Fort Worth Metropolitan Statistical Area. The Dallas County zip codes without a chain grocery are displayed in Table 4-3.

Table 4-3. Dallas County Zip Codes with No Mainline Chain Grocery

City Name	Zip Code
Irving	75039
Sachse	75048
Grand Prairie	75054
Richardson	75082
Ferris	75125
Hutchins	75141
Wilmer	75172
Sunnyvale	75182
Dallas	75201
Dallas	75202
Dallas	75203
Dallas	75207
Dallas	75209
Dallas	75215
Dallas	75226
Dallas	75233
Dallas	75236
Dallas	75246
Dallas	75247
Dallas	75249
Dallas	75251
Dallas	75253
Dallas	75261

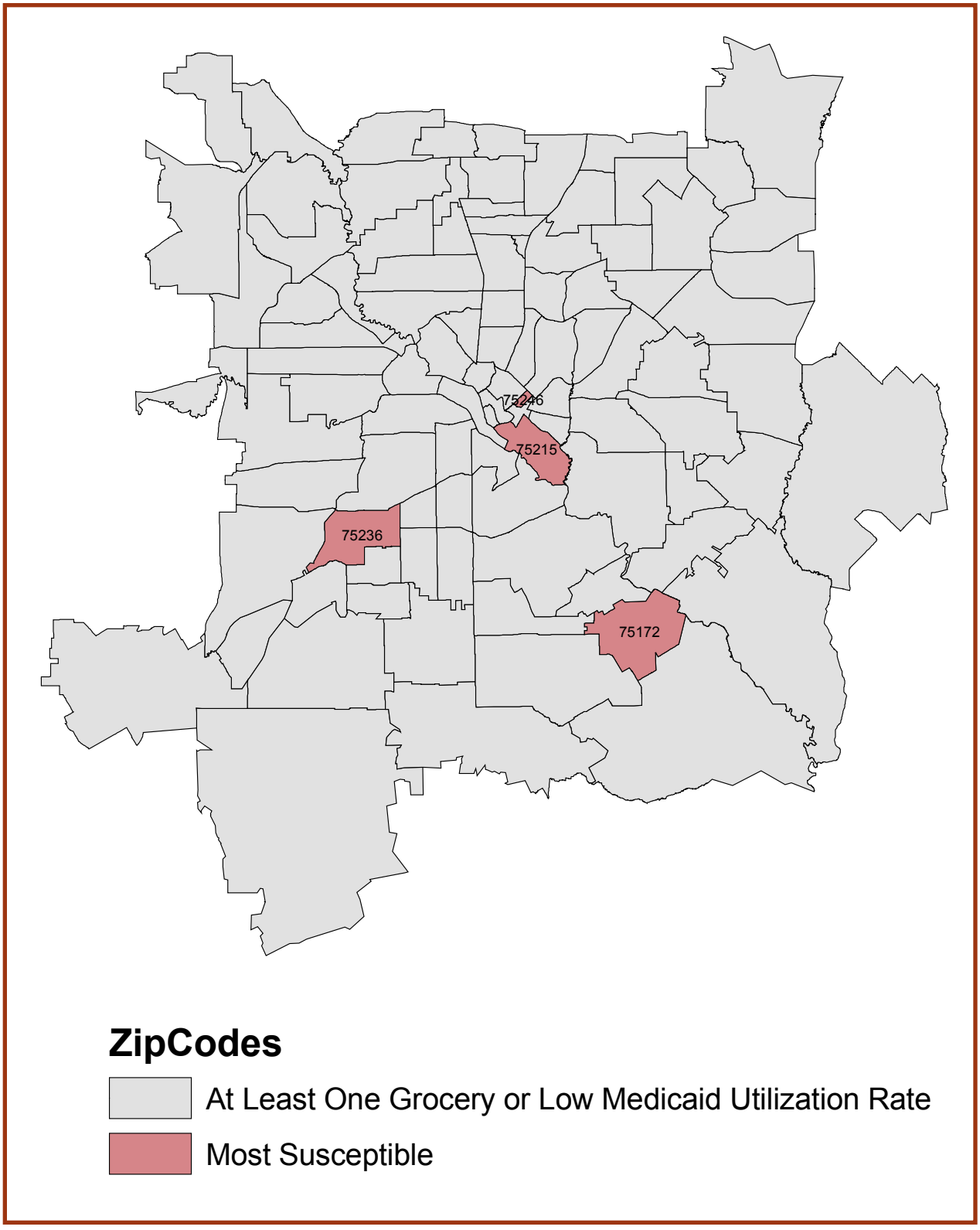
Source: Williams Institute Calculations

Looking at Table 4-1 and Table 4-3, note that zip codes appearing in both tables (75246, 75172, 75215, and 75238) are most likely to contain families with great need and children with potential nutritional problems. Low income means the budget is already stretched thin, while lack of accessible supermarkets means that healthy food is costlier. A comparison of these two tables also highlights that, in some sense, it is better to be poor in some areas than others. A poor family in a moderate income area will have access to better shopping, meaning food stamps can be used to purchase healthier products. In contrast, larger spatial concentrations of poverty will be associated with poor shopping alternatives, and safety nets such as food stamps will be less effective at mitigating nutritional deficiencies in children.

Figure 4-1 shows the spatial distribution of the most susceptible areas as identified in Table 4-1 and Table 4-3. Not surprisingly, these are some of the poorest areas

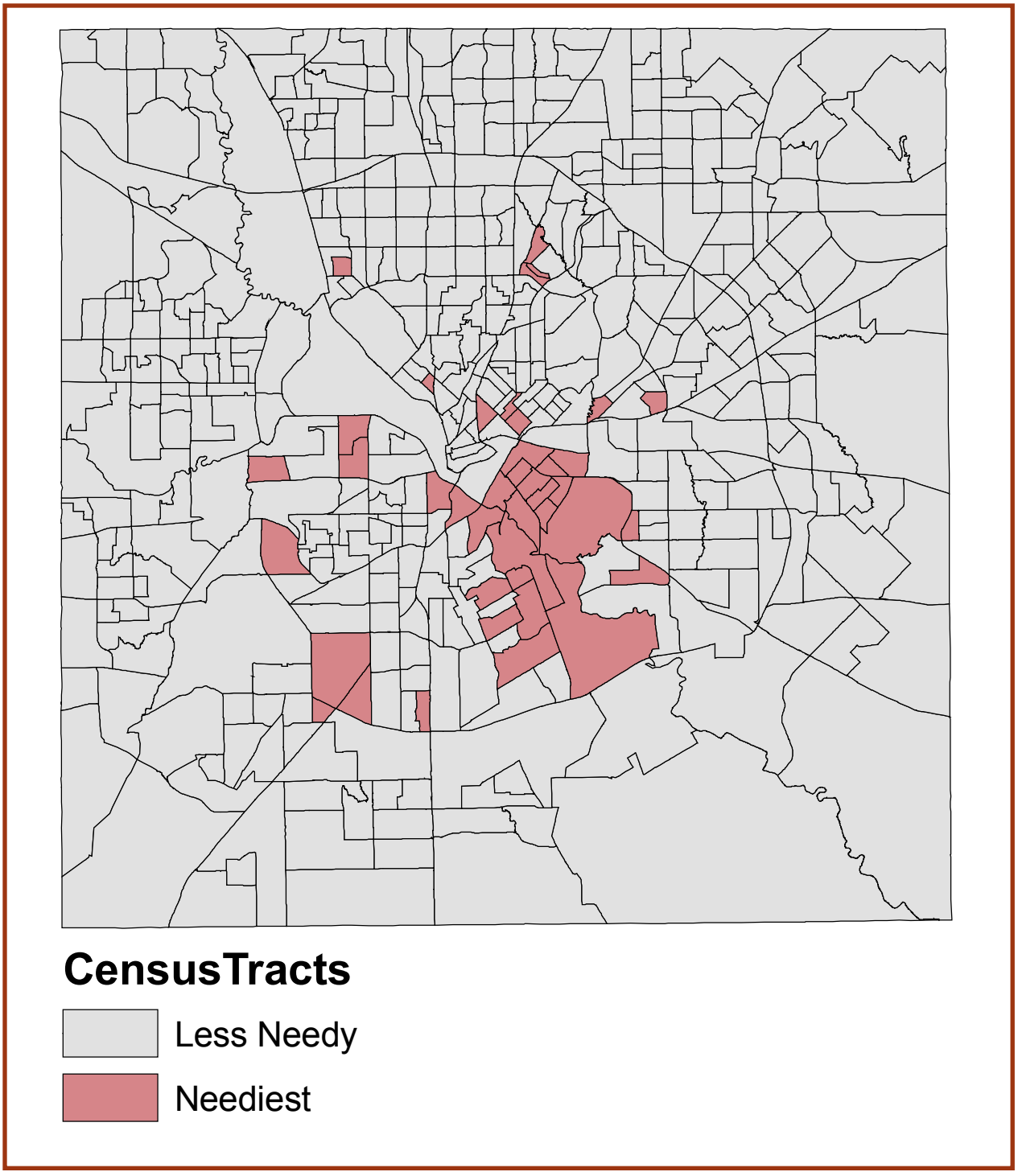
in Dallas County. The wellbeing of children, after all, is largely an economic issue. Figure 4-2 shows the census tracts with the lowest median family income and the greatest percentage of single parent families. Once again, the map highlights the neediest areas in Dallas County. While we cannot emphasize strongly

Figure 4-1. Dallas County Zip Codes with High Rates of Medicaid Utilization and Potentially High Costs of Food



enough the importance of economic development to improving wellbeing, the analysis begins to show the range of policy options that are available to improve childhood wellbeing. Marriage, for example, can be a powerful factor in increasing income. Reducing the spatial distribution of poverty and thereby enhancing market opportunities for a business like a supermarket is yet another.

Figure 4-2. Dallas County Census Tracts with High Rates of Single-Parent Families & Low Family Incomes



CONCLUSION

Clearly, family economic circumstances and neighborhood factors impact childhood wellbeing through a variety of mechanisms. While it is challenging to parse out the independent effect of these two drivers, their impact on a child's ability to succeed are profound. However, public policy solutions demand progress in the development of enhanced measurement tools and data to disentangle the effects of family-level versus neighborhood-level characteristics on childhood wellbeing. Low-income families frequently are concentrated in low-income neighborhoods, and both the family and the neighborhood circumstances can affect childhood wellbeing, potentially compounding a negative effect. For example, poor nutrition can be a result of both family income and neighborhood conditions working in concert: low-income families have less income available to purchase healthy foods for a balanced diet, while neighborhoods characterized by concentrated poverty frequently lack supermarkets. Family economic resources can have additional impacts on childhood wellbeing insofar as a lack of resources limits health care options, while employment-related time constraints limit how much time parents can devote to their children. Other ways in which neighborhood factors can influence childhood wellbeing include the social capital of the neighborhood; the quality of schools, parks, and other facilities and institutions serving families and children; the normative environment; and the overall employment and marriage conditions in the neighborhood.

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CHAPTER FIVE: CHILDREN'S SAFETY & SECURITY

By Donald Smith, Ph.D.

INTRODUCTION

Children experience a phenomenal number of events that can unalterably influence the course of their lives. Many of these events are positive and contribute to healthy development and growth. Traumatic events that jeopardize a child's safety and health, such as intentional or unintentional acts of aggression, can significantly influence a child's life immediately and well into the future. This report examines some of the most obvious factors that can impact the health and wellbeing of a child, as well as how Dallas County fares in its efforts to protect its population of children ages 0 to 3.

IMPACT

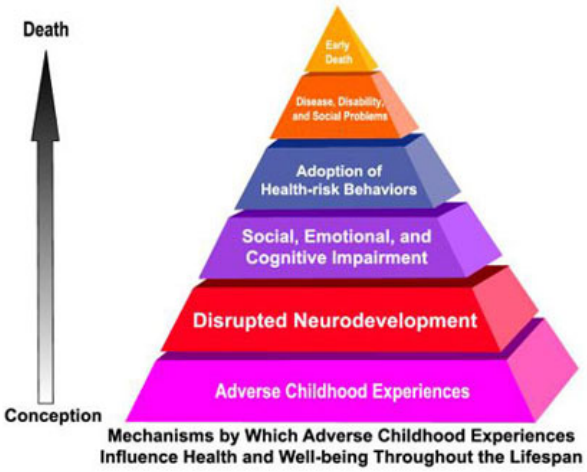
The influences of environmental factors related to the safety and security of this population can be widespread and significant. Physical, psychological, behavioral, and societal consequences can manifest themselves early in a child's life and persist throughout a lifetime. Physical injuries, the most obvious and often first indicator that a child is in a high-risk environment, can range from simple redness and bruising to debilitating injuries that leave a child without the functions of organs, limbs, or both. Cuts, fractures, burns, closed head injuries, and loss of limbs are included in the extensive list of physical injuries that can, and do, occur in children. Yet, while traumatic and dramatic, physical injuries can heal. Psychological consequences related to growth and development are long-term and permanent.

The early years of a child's life, between birth and age 3, are characterized by highly dynamic processes with far-reaching implications for future health, emotions, and ability to learn. Repeated exposure to harmful environmental influences, whether intentional or accidental, or as a victim or witness, has been implicated in the etiology of a variety of behavioral, emotional, psychological, and physical concerns that can follow the child into adolescence and adulthood.[1, 2, 3, 4, 5, 6, 7, 8, 9] These concerns become apparent when the child begins to exhibit signs of behavioral and academic problems, violent criminal activity, and/or the cycle of interpersonal violence that may begin during early adolescence.[10, 11]

Starting in utero, physiologic systems such as the nervous, immune, neuroendocrine, and musculoskeletal systems undergo rapid changes that ultimately impact healthy functioning for the remainder of the child's life. Maladaptive development of a child's brain can alter physiologic responses to stress, as well as emotional, cognitive, and immune functioning.[12, 13, 14, 15, 16, 17, 18, 19] The immune system, which undergoes a rapid maturation process during the first years of life, can be influenced by stress responses triggered by harmful environmental influences.[20] Even the system responsible for modulation of the stress responses can undergo developmental adaptations that alter how a person responds to stress situations later in life. Finally, failure to thrive (FTT) is a significantly prolonged cessation of appropriate weight gain compared with recognized norms for age and gender after having achieved a stable pattern (e.g., weight-for-age decreasing across two major percentile channels from a previously established growth pattern; weight-for-length less than 80% of ideal weight). This condition can arise from living in a hostile home enviroment.[21, 22]

A valuable study that has provided much evidence in support of the long-term implications of childhood experiences began in the mid-1990s. A group of scientists working with Kaiser Permanente in California published the results of the survey study, which indicated that policyholders with a history of exposure to "adverse childhood events" (ACE) tended to engage in risky behaviors as adults at a higher frequency than their peers who had not been exposed to these events.[23] Figure 5-1 details a sequence of events that may contribute to the negative impact of childhood exposure to trauma and violence.[24] Evidence presented by the authors of the study further indicated that the "exposed" population reported higher incidences of debilitating diseases such as cancer, chronic obstructive pulmonary disease (COPD), and diabetes, potentially contributing to early death. Their published findings indicated a significant correlation between early childhood exposure to adverse events (e.g., physical and sexual abuse, substance abuse, loss of a parent to suicide, and living with a parent with a criminal history) and physical or behavioral problems.[5]

Figure 5-1. Series of Adverse Childhood Experiences Influencing Health and Wellbeing



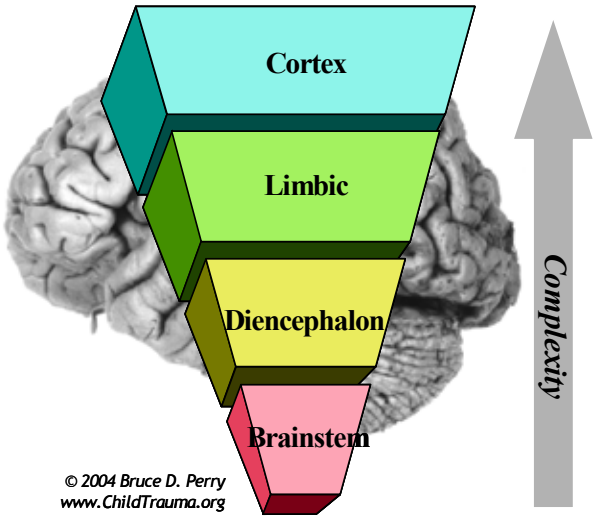
Source: The Adverse Childhood Events Study, http://www.acestudy.org/aboutacestudy.php

A growing body of evidence suggests events experienced by a young child can have harmful effects upon neurological development. Evidence in support of the long-term effects of trauma and violence has been demonstrated by the work of many researchers, including Dr. Bruce Perry of the Child Trauma Academy in Houston, Texas.[a] Perry's work has examined the link between traumatic events (Type I, referring to acute, severe exposure to a single event such as a sexual assault, or Type II, which refers to chronic, recurring exposure to events such as domestic abuse) and the far-ranging influences on a child's neurological development.[26, 27, 28] His work has suggested that trauma can influence brain development and contribute to delays in neurological development, which can occur at any of the multiple levels (brainstem, diencephalon/midbrain, limbic, or neocortex) of the structure of the brain (see Figure 5-2).[29, 30] Furthermore, a developmental delay in a less complex (more primitive) region of the brain can influence the subsequent development of the distal, more complex components of the brain. For example, abnormal development or regulation of systems originating in the brainstem, a finding in the vast majority of maltreated children evaluated by Dr. Perry and his colleagues[b], can alter the normal patterns of development in the diencephalon, limbic, and neocortical regions of the brain. Therefore, delays in the development of lower brain functioning must be overcome before optimal development of the distal components of the brain can occur.

Han Selye's groundbreaking report on the influences of "noxious agents" in the British journal *Nature* in 1936 gave birth to a field of science that examines the relationship between stress and immune function.[31] Since that time, a burgeoning body of research has examined the effects of stress and links to disease, and has attempted to identify the biochemical and functional signaling pathways triggered in response to internal and external stimuli. A broad body of work has examined the modulation of immune function before, during, and after a stressful event.[32, 33, 34, 35] This work has led researchers to examine the link between the neuroendocrine system and the role of the hypothalamus-pituitary-adrenal axis, as well as other components of this regulatory system with its extensive influences on the human body.[36]

a See the academy's Web site at http://www.childtrauma.org/
b Personal communication with Dr. Bruce Perry

Figure 5-2. Neurosequential Model of Brain Development



Source: ChildTrauma.org

The impact of trauma and neuroendocrine function has also been the focus of a growing field of scientific study by researchers such as Rachel Yehuda at the Mount Sinai School of Medicine in New York and Dr. Bruce McEwen at Rockefeller University in New York. These researchers and many others have examined the development and function of the neuroendocrine system under both healthy and challenging conditions.[37, 38] Studies have found stress can have a significant impact upon the neuroendocrine responses to stress. Further, this body of work has indicated stress may not only influence function; when experienced early in life, it can also irreversibly alter the development of this system with broad implications for the individual's ability to appropriately respond to trauma and stress.[39, 40]

The evidence supporting the significant impact of events and situations upon function and development is widespread and compelling. This report will examine some of the more prevalent forms of trauma (both intentional and unintentional) that can influence the growth and development of very young children, specifically those ages 0 to 3. The areas of focus for this report is violence in the home (domestic violence and child abuse) and the prevalence of infant deaths (intentional and unintentional), as well as the multiple factors contributing to infant mortality rates. These observations are by no means comprehensive and not intended to suggest this. Instead, these areas are the most widely documented for which data are available. Substance abuse, while not as well documented, can have a significant influence upon the growth and development of very young children—most particularly the use, manufacturing, and distribution of methamphetamines. This report emphasizes the need for professionals to consider environmental and social complexities as a vital component of children's growth and development and also their long-term impact on children's lives.

SAFETY & SECURITY FACTORS: VIOLENCE & ABUSE

The most obvious concerns related to childhood safety and security involve childhood exposure to violent incidents, including domestic violence and child abuse. Children who live with violent adults are often exposed to recurring, increasingly violent and traumatic acts of aggression between the adult caregivers[41, 42, 43]—those primarily responsible for their safety and security. In many cases, the child may also be a victim of correlated violence, namely child abuse.[44] The influence of exposure to violence can impact a developing fetus or a neonate, and continue through adolescence and into adulthood.

DOMESTIC VIOLENCE

Domestic violence is a complex and dynamic issue that many families face every day. Professionals in healthcare, law enforcement, social services, and justice who work with these families have different perspectives about violence in the home and the outcomes and prospects for victims. Therefore, it is not surprising that the differing perspectives contribute to diversity in defining domestic violence.

Defining domestic violence is the first step toward understanding the complexities of this pervasive social issue. Domestic violence is recognized by many different names, including *intimate partner violence,*

spousal abuse, and *battering*. The broad range of terminology contributes to difficulties experienced by the multiple disciplines working in the field of domestic violence.[45] Academicians and researchers seek a highly specific definition to establish parameters for research and education, while providers and advocates use definitions influenced by the client population they serve. As an example, consider the following definitions of "domestic violence" currently recognized by professional organizations around the world.

The Centers for Disease Control and Prevention has established a narrowly focused definition for "intimate partner violence":

> The term…describes physical, sexual, or psychological harm by a current or former partner or spouse. This type of violence can occur among heterosexual or same-sex couples and does not require sexual intimacy.[46]

The World Health Organization (WHO) in Geneva defines violence against women as:

> any act of gender-based violence that results in, or is likely to result in, physical, sexual or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life.[47]

Despite multiple definitions, key components indicative of a violent interpersonal, intimate relationship are uniformly found in all definitions. The criteria include:

- Actual or threatened violence (physical/emotional injury)
- Multiple forms of abuse
- Intimate nature of the relationship
- Unilateral power and control in the relationship

Table 5-1. Rates of Domestic Violence in Dallas County

City	2001	2002	2003	2004
Addison	1059	1048	1079	960
Balch Springs	893	938	1147	983
Carrollton	333	330	369	399
Cedar Hill	904	791	737	721
Cockrell Hill	248	271	67	180
Coppell	103	158	181	220
Dallas	1630	1476	1274	1187
Desoto	1121	1071	1085	971
Duncanville	626	586	883	717
Farmers Branch	520	425	453	491
Garland	812	849	904	847
Glenn Heights	1052	1238	1088	1265
Grand Prairie	1041	1172	1077	997
Highland Park	339	225	184	187
Hutchins	677	786	1345	860
Irving	1002	1021	1060	1049
Lancaster	1259	1451	1094	1435
Mesquite	940	800	889	851
Ovilla	441	113	360	109
Richardson	373	452	469	397
Rowlett	768	843	881	868
Sachse	328	491	423	481
Seagoviille	795	714	927	838
University Park	60	115	55	83
Wilmer	825	1439	769	1010
Dallas County Totals	1292	1218	1124	1064

Source: Dallas County Sheriff's Office
Note: Cities highlighted in blue have populations (estimates) that exceed 100,000, as reported by the State of Texas Demographer at Texas A&M University

Domestic violence incidents are not always single events. Often, recurring violent episodes increase in severity and frequency until the victim is seriously injured or killed. Across the United States, domestic violence affects millions of men, women, and children, with about half of all incidents going unreported to officials or service agencies working with victims of abuse.[48] In Texas, 182,000 incidents of domestic violence were reported to law enforcement officials in 2004.[49] Of these offenses, 115 resulted in fatalities. Local rates of abuse vary across Dallas County. Table 5-1 details the rates of domestic violence for each of the 26 municipalities in Dallas County between 2001 and 2004.[50, 51, 52, 53]

Table 5-2. Zip Code Analysis, Rates of Domestic Violence in Dallas

Zip Code	Rate of Abuse	Deviation from Mean
75201	85.7	(86.0)
75202	32.2	(94.7)
75203	408.7	(33.1)
75204	211.4	(65.4)
75206	144.4	(76.4)
75207	336.9	(44.8)
75208	401.1	(34.4)
75209	93.9	(84.6)
75210	394.7	(35.4)
75211	1316.9	115.5
75212	1434.4	134.7
75214	236.7	(61.3)
75215	1581.2	158.8
75216	1872.4	206.4
75217	2227.3	264.5
75218	292.8	(52.1)
75219	103.6	(83.1)
75220	816.0	33.5
75223	235.1	(61.5)
75224	309.3	(49.4)
75225	54.8	(91.0)
75226	113.6	(81.4)
75227	882.3	44.4
75228	731.7	19.7
75229	345.2	(43.5)
75230	130.9	(78.6)
75231	326.8	(46.5)
75232	661.3	8.2
75233	311.5	(49.0)
75234	476.7	(22.0)
75235	549.7	(10.1)
75236	925.5	51.5
75237	728.3	19.2
75238	433.2	(29.1)
75240	135.6	(77.8)
75241	4043.0	561.6
75243	678.2	11.0
75244	148.5	(75.7)
75246	30.1	(95.1)
75248	150.8	(75.3)
75249	328.6	(46.2)
75251	34.5	(94.4)
75253	1551.8	154.0
75254	105.1	(82.8)
Mean Rate		611.1

Source: Offense data provided by the Dallas Police Department.
Analysis conducted by Dr. Donald Smith, Generations Center, Dallas Texas

Exposure to domestic violence has been implicated as a factor leading to increased risk for child abuse.[54] In approximately half of homes experiencing domestic violence, children are also targets of abuse.[55] During 2004, the most recent year for which data are available, three agencies (including the Dallas Police Department) reported rates of abuse exceeding the mean rate of domestic violence for Dallas County (1,064 offenses per 100,000 population, indicated in Figure 5-3 with a red bar).

As detailed in Figure 5-3, the rates of domestic violence ranged from a low of 64 offenses to a high of 1,630 offenses per 100,000 population. These numbers, though disturbing because of their magnitude, represent only approximately half of all domestic violence incidents that occur. Many victims choose to endure violence in order to avoid disrupting their children's lives or do not report incidents out of fear of reprisals. Still others don't know where to turn for help.[56, 57, 58] All the while, children are silent witnesses, receiving the message that violence is acceptable—which later in life can contribute to an adolescent's entry into crime.

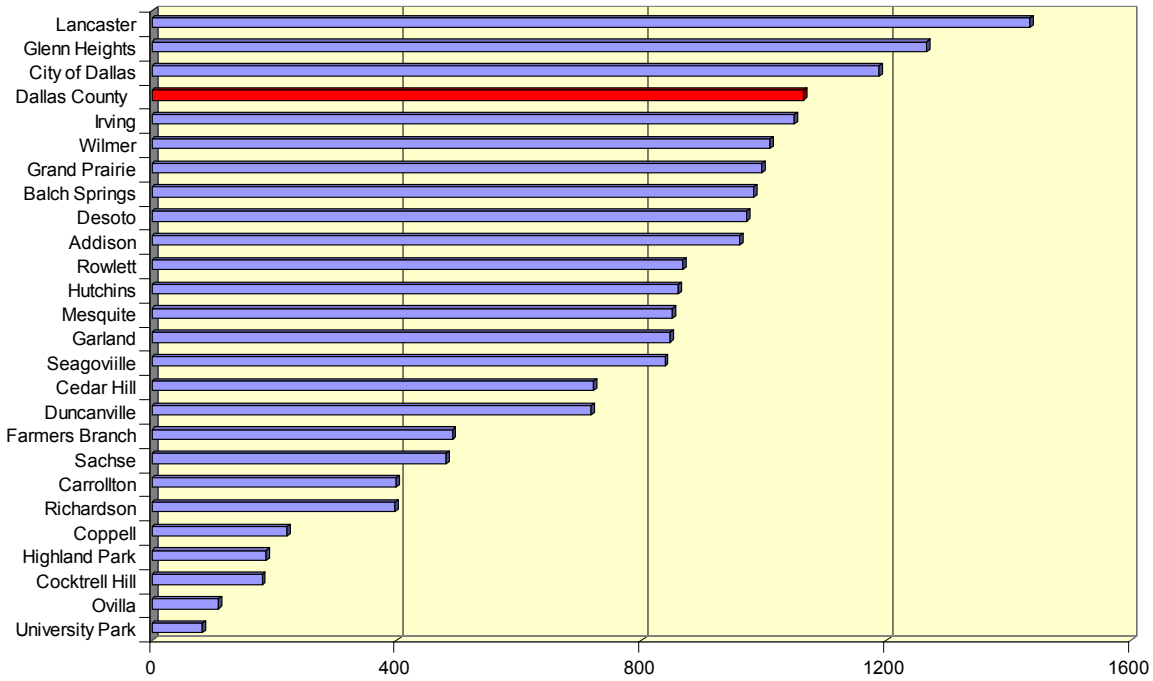
A 2001 analysis by zip code of domestic violence incidents conducted in the city of Dallas revealed eight areas with rates of violence that, in some cases, exceeded 200% of the mean rate of violence for the entire city. A follow-up analysis has identified zip codes exceeding the mean rate for the city. The results of this analysis are detailed in Table 5-2, which lists rates of domestic violence in 2004 for zip codes within the city of Dallas. This analysis has established the deviation from the mean for each zip code within the city mean during the reporting year (2004).

A comparison of city of Dallas domestic violence data with corresponding child abuse data has revealed that a number of zip codes with rates of domestic violence in excess of the mean rate for Dallas also have rates of child abuse investigations that exceed the mean value for Dallas. (This will be discussed later in this report.) This observation is consistent with other reported research about the coincidental occurrence of multiple forms of abuse in single families, and suggests areas of greatest need for these children and their adult caregivers.

CHILD ABUSE

Child abuse and neglect is defined as any recent act or failure to act on the part of a parent or caretaker that results in death, serious physical or emotional harm, sexual abuse, or exploitation. It is also defined as an act or failure to act which presents an imminent risk of serious harm.[59] Child abuse can also be defined as knowingly failing to protect a

Figure 5-3. Rates of Domestic Violence per 100,000 Population for Cities in Dallas County



Domestic violence offense data source: Texas Department of Public Safety, 2004 Crime in Texas-Domestic Violence (http://www.txdps.state.tx.us/crimereports/04/cit04ch5.pdf). Analysis conducted by Dr. Donald Smith, Generations Center, Dallas, TX.
Note: The mean rate of violence for Dallas County (red bar) in 2004 was calculated to be 1,064 reported incidents/100,000 population.

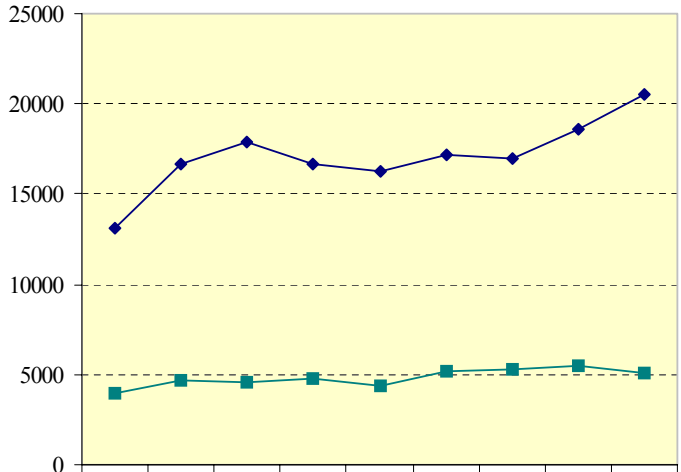
child suffering from mistreatment. In many homes, violence against a child is generally a closely guarded secret that, if revealed either intentionally or inadvertently, can have serious consequences for the child and adult victims. Abuse can occur in any family, regardless of social and economic status, ethnicity, or religious belief. Abuse can also target any child, regardless of age; however, statistics from the Texas Department of Protective and Regulatory Services (TDPRS) indicate that the group with the highest percentage of confirmed child abuse/neglect victims is children in the 0 to 3 age bracket. Data from Child Protective Services' (CPS) 2005 data book showed that 22,247 (36.2%) of the 61,433 confirmed cases of abuse and neglect involved this highly vulnerable population.[60] Data from TDPRS for 2005 and 2006 indicated that more than 50% of child victims being investigated by CPS were between the ages of 0 and 3. Furthermore, 1 in 5 (21.8%) of the children removed from potentially harmful environments and placed in foster care situations were between the ages of 0 and 2.[61]

Violence against a child can manifest as a broad range of signs and symptoms—many of which are nearly invisible and detectable only by the trained eye. Physical injuries of varying degrees of severity are the most obvious and often the most easily healed; however, invisible injuries—developmental impairment and psychological or emotional scarring—can have consequences lasting well beyond the physical injuries and pain.

Across the nation, an estimated 872,000 children were victims of child abuse and neglect in 2004. This number reflects a decrease from 2001, when the U.S. Department of Health and Human Services' (DHHS) Administration for Children and Families (ACF) reported that 906,000 children were victims of child maltreatment nationwide.[62] In 2004, however, abuse by a parent or caregiver claimed the lives of 1,490 children, an increase from 1,460 the previous year.[6]

In 2005, TDPRS confirmed 61,433 cases of child abuse and neglect, a number which reflects approximately one third of the total number of reports filed with the state agency.[64] Locally, Dallas County investigations

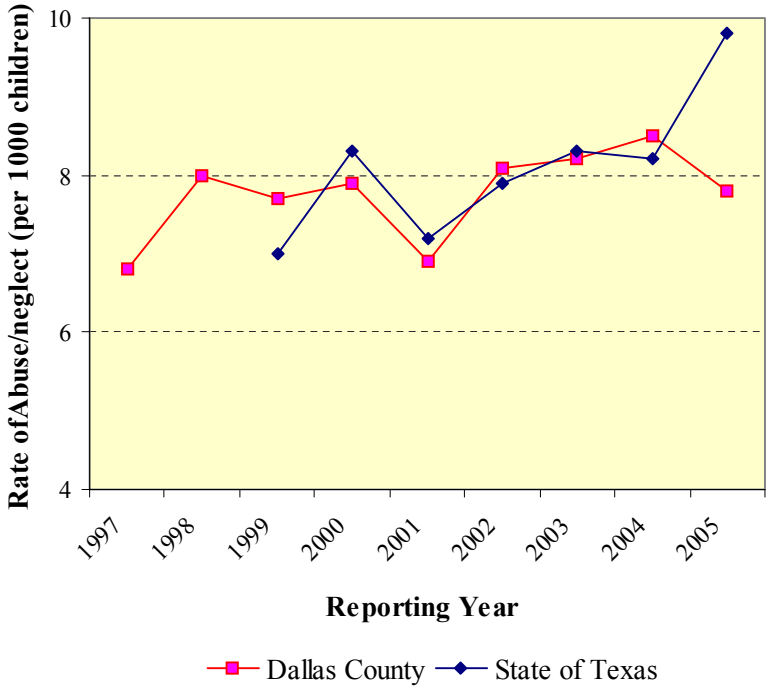
Figure 5-4. Child Protective Services Number of Investigations and Confirmed Cases of Child Abuse



Reporting Year	1997	1998	1999	2000	2001	2002	2003	2004	2005
Initial intakes	13091	16623	17867	16669	16210	17186	16927	18589	20479
Confirmed victims	3969	4709	4611	4802	4337	5138	5292	5518	5116

Child abuse and neglect data source: Texas Department of Family and Protective Services Data Books 1997–2005 (http://www.dfps.state.tx.us/About/Data_Books_and_Annual_Reports/default.asp). Analysis conducted by Dr. Donald Smith, Generations Center, Dallas, TX.

Figure 5-5. Child Protective Services Calculation of Rate of Abuse per 1,000 Children



Child abuse and neglect data source: Texas Department of Family and Protective Services Data Books 1997-2005 (http://www.dfps.state.tx.us/About/Data_Books_and_Annual_Reports/default.asp). Analysis conducted by Dr. Donald Smith, Generations Center, Dallas, TX.

confirmed 5,116 cases of abuse, a decrease from the number in 2004. Figure 5-4 details CPS investigation data from TDPRS for the past 9 years. As evidenced by the reported numbers, Dallas County has experienced an increase of approximately 20% in the numbers of confirmed cases of abuse. Over the same time period (1997–2005), Dallas County CPS officials have reported an increase in initial intakes of approximately 50%. Population increases do not seem to have much bearing on these numbers. According to the Texas State Data Center, the population of Dallas County increased only 3.7% between 2000 and 2005,[65] while the number of intakes increased 22.9% during that same time period.

An examination of the rates of abuse in Dallas County reveals the same upward trend. An analysis conducted in 2006 has shown the rates of child abuse ranged from 6.5 cases of abuse per 1,000 children in 1997 to a high of 8.5 cases per 1,000 children in 2004. In 2005, the number decreased to 7.8 cases per 1,000 children in Dallas County. Figure 5-5 details the 9-year period from 1997 to 2005 and compares the rates of abuse in Dallas County against the Texas rates from 1999 to 2005. As evidenced in Figure 5-5, the rates of abuse for Dallas County between 1999 and 2004 are comparable with statewide rates of abuse, with a divergence between the two occurring in 2005.

An analysis of the domestic violence data from the city of Dallas was described above. A similar analysis obtained from the state of Texas, examining child abuse and neglect data, has also been performed. Data from CPS were evaluated at the zip code level and compared against the mean value for the city. The correlation analysis of the

Table 5-3. Abuse & Neglect Investigations in 2005 for Victims Ages 0-3

Zip Code	City	Pop. Ages 0–3	Invest. Rate	% Above Mean
75202	Dallas	37	135.1	227.0
75215	Dallas	1137	130.2	215.0
75210	Dallas	717	96.2	132.9
75236	Dallas	654	93.3	125.7
75216	Dallas	3165	89.4	116.4
75246	Dallas	295	88.1	113.3
75180	Mesquite	1509	74.9	81.2
75172	Wilmer	262	68.7	66.3
75116	Duncanville	1095	63.0	52.5
75254	Dallas	927	62.6	51.4
75212	Dallas	2116	61.0	47.5
75253	Dallas	1435	60.6	46.7
75243	Dallas	4065	60.3	45.9
75062	Irving	2480	60.1	45.4
75051	Grand Prairie	2566	60.0	45.2
75159	Seagoville	854	59.7	44.5
75150	Mesquite	3232	57.6	39.3
75217	Dallas	5975	57.4	38.9
75233	Dallas	1324	55.1	33.4
75204	Dallas	1345	55.0	33.2
75237	Dallas	1457	54.9	32.9
75241	Dallas	1607	53.5	29.5
75228	Dallas	5389	53.3	28.9
75134	Lancaster	987	51.7	25.1
75231	Dallas	5196	47.2	14.1
75149	Mesquite	4127	45.3	9.7
75060	Irving	3415	44.5	7.7
75141	Hutchins	234	42.7	3.4
75249	Dallas	732	42.4	2.5
75050	Grand Prairie	2967	42.1	2.0

Child abuse and neglect data source: Texas Department of Family and Protective Services. Analysis conducted by Dr. Donald Smith, Generations Center, Dallas, TX.

Notes: The 2005 mean rate of investigations for Dallas County (all zip codes) was calculated at 41.3 investigations per 1000 children ages 0 to 3. This table identifies zip codes with rates that exceeded that mean rate.

Table 5-4. Abuse & Neglect Investigations in 2006 for Victims Ages 0-3

Zip Code	City	Pop. Ages 0–3	Invest. Rate	% Above Mean
75202	Dallas	37	162.2	288.0
75246	Dallas	301	116.3	178.2
75216	Dallas	3228	113.7	172.0
75215	Dallas	1106	113.0	170.4
75241	Dallas	1642	98.1	134.6
75226	Dallas	190	94.7	126.6
75210	Dallas	701	79.9	91.1
75236	Dallas	694	74.9	79.3
75237	Dallas	1565	73.5	75.8
75212	Dallas	2166	71.6	71.2
75141	Hutchins	241	70.5	68.8
75180	Mesquite	1469	66.0	58.0
75243	Dallas	4145	65.1	55.8
75204	Dallas	1342	60.4	44.4
75159	Seagoville	880	60.2	44.1
75150	Mesquite	3261	57.3	37.2
75001	Addison	770	57.1	36.7
75228	Dallas	5463	57.1	36.6
75217	Dallas	6080	56.9	36.1
75201	Dallas	141	56.7	35.7
75232	Dallas	1760	54.0	29.1
75254	Dallas	943	53.0	26.9
75051	Grand Prairie	2696	49.0	17.1
75224	Dallas	2886	48.5	16.1
75149	Mesquite	4005	48.2	15.3
75253	Dallas	1477	47.4	13.4
75060	Irving	3380	46.5	11.1

Child abuse and neglect data source: Texas Department of Family and Protective Services. Analysis conducted by Dr. Donald Smith, Generations Center, Dallas, TX.

Notes: The 2006 mean rate of investigations for Dallas County (all zip codes) was calculated at 41.8 investigations per 1,000 children ages 0 to 3. This table identifies zip codes with rates exceeding that mean rate.

domestic violence and child abuse data showed a significant correlation in zip codes with high rates of occurrence.

Data obtained from CPS for 2005 and 2006 were analyzed to establish rates of abuse investigations in Dallas County involving child victims ages 0 to 3.[c] The analysis examined the number of investigations by CPS and

c Note: The data received from CPS was not a comprehensive listing of all investigations. The data for these years required filtering to eliminate inconsistencies with matching of the zip code data. This filtering process resulted in the removal of approximately 20% to 30% of the total database entries. Therefore, the actual rates of abuse may be higher than indicated by this report.

confirmed cases of abuse and neglect for each zip code in Dallas County. Further, the data identified the number of children in the 0 to 3 age group who had been the subject of an investigation by CPS.

The data revealed that the 0 to 3 age group was the predominant age group that was the subject of investigation of alleged abuse and neglect, with more than 50% of all investigations involving this group. Further analysis revealed that approximately 17% of all investigations were confirmed. However, many investigations were still pending or could not be proved or disproved, and did not figure into estimates of confirmed abuse and neglect.

Numerous zip codes reported investigations exceeding the mean for the county. Table 5-3 and Table 5-4 summarize the data analysis for Dallas County and reflect only zip codes with rates of investigations exceeding the mean rates for all zip codes in the county (41.3 and 41.8 investigations per 1,000 children in the 0 to 3 age group in 2005 and 2006, respectively). However, for each year, six zip codes within the Dallas had rates of investigation that were at least twice the established rates for the entire county. It must be noted that the populations in zip code 75202 and 75246 are lower than 5,000 persons—a factor that contributes to the high rate of investigation reported, and which must be considered when drawing conclusions about these results. Furthermore, a number of zip codes with rates of investigations for abuse and neglect that are at least twice the county's mean also have elevated rates of domestic violence.

Table 5-5. Infant Mortality, 2005

Rank	State	Deaths per 1,000 Live Births	Rank	State	Deaths per 1,000 Live Births
	United States	6.7	25	Alaska	6.5
			26	Arizona	6.6
1	Vermont	4.7	27	Pennsylvania	6.8
2	Massachusetts	4.8	28	Kansas	6.9
2	Minnesota	4.8	28	West Virginia	6.9
2	New Hampshire	4.8	30	Idaho	7.0
5	California	4.9	31	Florida	7.2
6	Utah	5.1	31	Illinois	7.2
7	Maine	5.2	33	Virginia	7.3
7	Rhode Island	5.2	34	Missouri	7.4
9	Iowa	5.3	35	South Dakota	7.5
9	New Jersey	5.3	36	Ohio	7.6
9	Washington	5.3	37	Oklahoma	7.8
12	Connecticut	5.4	38	Indiana	8.0
13	Montana	5.6	38	Wyoming	8.0
14	Oregon	5.7	40	Delaware	8.1
15	New Mexico	5.8	41	Michigan	8.2
16	North Dakota	6.0	41	North Carolina	8.2
17	Colorado	6.2	41	South Carolina	8.2
17	Kentucky	6.2	44	Alabama	8.5
17	Nebraska	6.2	44	Georgia	8.5
17	Nevada	6.2	46	Arkansas	8.7
17	Texas	6.2	46	Maryland	8.7
17	Wisconsin	6.2	48	Tennessee	8.8
23	New York	6.3	49	Louisiana	9.6
24	Hawaii	6.4	49	Mississippi	9.6

Source: 2003–2004 provisional data, National Center for Health Statistics, Centers for Disease Control and Prevention

INFANT MORTALITY

Across the United States, 27,523 infants died during the first year of life in 2004. Nationally, the state of Texas is tied for 17th position with a rate of 6.2 deaths per 1,000 live births, as shown in Table 5-5. Over the period of 2002 through 2004, Texas reported an average of 2,417 infant deaths for each of the 3 years.

Table 5-6 further details the gender and ethnicity of infant deaths between 2002 and 2004. As shown in the table, the Hispanic population consistently had more reports of infant deaths than whites or African Americans, a trend likely linked to the increasing Hispanic population in Texas.

Locally, Dallas County reports of infant deaths have topped 500 per year over the past 2 years, and appear to be on the rise. Table 5-7 and Table 5-8 detail the incidence and rate of infant and

neonate deaths for each city within Dallas County. A comparison of the numbers and rates of abuse for these cities reveals that the numbers of incidences and rates of violence are trending upward. However, it cannot be determined whether these trends will be sustainable or whether the increase is an anomaly that will pass when the next data set is released.

Infant mortality can result from a broad range of incidents. In 2003, 45.1% of the deaths reported nationally were attributed to Sudden Infant Death Syndrome (SIDS), congenital malformations, or low birthweight[66] (often linked to recurring abusive behaviors against an adult victim during pregnancy[67]). Previous reports comparing physically and sexually abused women with a nonabused, high-risk group revealed a twofold increase in the number of infant deaths[68], while an independent study reported fetal death and infant mortality were significant health consequences experienced by domestic violence victims.[69]

Each year across Texas, thousands of infants die from a variety of causes ranging from illness or disease to injuries sustained from intentional acts of aggression or accidents. Table 5-9, Table 5-10, and Table 5-11 detail the causes of infant deaths related to intentional or accidental means. Data related to healthcare issues such as congenital malformations and other illnesses are outside the scope of this chapter, so are not included here.

Table 5-9 details the numbers of deaths related to pregnancy and early infancy. Many of the identified events have potential connections to abuse of an adult. For example, premature rupture of the membranes, placental abruption, and intrauterine hypoxia or anoxia are potential complications that can arise from direct attacks against the mother. Low birthweight and premature deliveries

Table 5-6. Gender & Ethnicity of Infant Fatalities (All Deaths)

	2002		2003		2004	
	Male	Female	Male	Female	Male	Female
Texas	1,307	1,062	1,407	1,076	1,300	1,098
	55.2%	44.8%	56.7%	43.3%	54.2%	45.8%
White	456	328	463	346	438	326
	19.3%	13.9%	18.7%	13.9%	18.3%	13.6%
African American	284	277	324	252	299	238
	12.0%	11.7%	13.1%	10.6%	12.3%	9.9%
Hispanic	543	443	581	451	540	503
	22.9%	18.7%	23.4%	18.2%	22.5%	21.0%
Other	24	14	39	27	23	31
	1.0%	0.6%	1.6%	1.1%	1.0%	1.3%

Source: 2003–2004 provisional data, National Center for Health Statistics, Centers for Disease Control & Prevention

Table 5-7. Live Births, Infant & Neonate Fatalities, Dallas County Cities, 2002

	Live Births	Infant Deaths		Neonatal Deaths	
	Number	Number	Rate	Number	Rate
Texas	372,369	2,369	6.4	1,452	3.9
Dallas	42,863	285	6.6	178	4.2
Addison	270	1	3.7	1	3.7
Balch Springs	363	3	8.3	2	5.5
Carrollton+	903	8	8.9	5	5.5
Cedar Hill+	600	3	5	2	3.3
Cockrell Hill	3	0	-	0	-
Coppell+	532	0	-	0	-
Dallas+	24,258	165	6.8	97	4
De Soto	546	5	9.2	4	7.3
Duncanville	536	7	13.1	3	5.6
Farmers Branch	410	2	4.9	2	4.9
Garland+	3,762	18	4.8	13	3.5
Glenn Heights+	105	0	-	0	-
Grand Prairie+	1,582	12	7.6	10	6.3
Grapevine+	2	0	-	0	-
Highland Park	8	0	-	0	-
Hutchins	52	0	-	0	-
Irving	4,081	28	6.9	18	4.4
Lancaster	462	7	15.2	6	13
Lewisville+	4	0	-	0	-
Mesquite	2,036	5	2.5	3	1.5
Richardson+	1,086	12	11	7	6.4
Rowlett+	634	6	9.5	4	6.3
Sachse+	149	0	-	0	-
Seagoville+	180	1	5.6	0	-
University Park	13	0	-	0	-
Wylie+	7	0	-	0	-
Rest of County	279	2	7.2	1	3.6

Source: Texas Department of State Health Services, Center for Health Statistics. http://www.dshs.state.tx.us/chs/datalist.shtm

Table 5-8. Live Births, Infant & Neonate Fatalities in Dallas County Cities, 2003

	Live Births	Infant Deaths		Neonatal Deaths	
	Number	Number	Rate	Number	Rate
Texas	377,374	2,483	6.6	1,649	4.4
Dallas	42,297	340	8.0	241	5.7
Addison	268	4	14.9	3	11.2
Balch Springs	377	3	8.0	0	-
Carrollton +	904	6	6.6	4	4.4
Cedar Hill +	587	2	3.4	1	1.7
Cockrell Hill	8	1	*	0	-
Coppell +	501	2	4.0	1	2.0
Dallas +	23,492	194	8.3	138	5.9
Desoto	537	3	5.6	1	1.9
Duncanville	480	2	4.2	0	-
Farmers Branch	394	2	5.1	2	5.1
Garland +	3,798	31	8.2	24	6.3
Glenn Heights +	96	0	-	0	-
Grand Prairie +	1,660	16	9.6	13	7.8
Grapevine +	1	0	-	0	-
Highland Park	9	0	-	0	-
Hutchins	50	1	20.0	0	-
Irving	4,154	29	7.0	20	4.8
Lancaster	457	2	4.4	1	2.2
Lewisville +	8	0	-	0	-
Mesquite	2,010	22	10.9	19	9.5
Richardson +	1,124	7	6.2	4	3.6
Rowlett +	710	6	8.5	6	8.5
Sachse +	172	1	5.8	1	5.8
Seagoville +	188	3	16.0	1	5.3
University Park	9	0	-	0	-
Wylie +	10	0	-	0	-
Rest of County	293	3	10.2	2	6.8

Source: Texas Department of State Health Services, Center for Health Statistics. http://www.dshs.state.tx.us/chs/datalist.shtm

Note to Tables 5-7 and 5-8: The '+' indicates cities located partially in Dallas County and partially in an adjacent county.

have been also been linked to abuse during pregnancy.[70, 71, 72] While the exact cause of infant deaths declared to be a result of SIDS is unclear, some literature has questioned the degree to which all of these deaths are truly accidental. It could be that some SIDS deaths are made to look like accidents but are really suffocation homicides of young children.[73, 74]

Table 5-10 details the numbers of incidents related to intentional deaths. Dallas County has seen a broad fluctuation between 2002 and 2004 in the number of intentional (homicide) deaths of infants, recording 41, 50, and 30 deaths in 2002, 2003, and 2004, respectively. The causes of many of these deaths have been determined and linked to asphyxia-type deaths, death by firearms, and neglect/abandonment. However, the causes of a significant number of deaths remain unknown, instead being classified as homicides by "any other unspecified means and their sequelae." Further examination of Table 5-10 reveals gender of the deceased infants is approximately equally distributed.

Finally, not all incidents related to safety and security are intentional events resulting in an infant's death or significant harm to an infant. Table 5-11 lists the causes of those fatalities that have been classified as unintentional. The list of factors could be used as a caution list for new parents—warnings about suffocation/asphyxia, firearms, electricity, transport, and falls. Again, the most prevalent form of death among this age group is a strangulation/asphyxiation event in bed. These lists clearly demonstrate the vulnerability of this population to a broad range of fatal incidents. However, as stated earlier, the list is incomplete and reflects a fraction of the complete list of causes of death.

ADDITIONAL RISKS

Additional factors may contribute to increase the vulnerability of the population ages 0 to 3, including substance abuse—often a comorbid condition in homes experiencing domestic violence and/or child abuse. Data from the Texas Department of State Health Services have indicated that numbers of substance abuse

Table 5-9. Causes of Death Related to Pregnancy, 2002–2004

	2004		2003		2002	
	Male	Female	Male	Female	Male	Female
ALL CAUSES OF DEATH	1,300	1,098	1,407	1,076	1,307	1,062
Anoxic brain damage, not elsewhere classified	4	1	4	0	2	1
Newborn affected by premature rupture of membranes	28	30	24	23	20	18
Newborn affected by multiple pregnancy	7	4	12	13	7	3
Slow fetal growth and fetal malnutrition	3	3	2	2	1	2
Disorders related to short gestation and low birth weight, not elsewhere classified	195	155	210	186	161	141
Extremely low birthweight or extreme immaturity	151	125	152	142	132	104
Other low birthweight or preterm	44	30	58	44	29	37
Disorders related to long gestation and high birthweight	0	0	0	0	0	0
Birth trauma	0	1	0	1	18	12
Intrauterine hypoxia and birth asphyxia	18	16	21	17	16	15
Intrauterine hypoxia	4	4	5	5	2	5
Sudden infant death syndrome	129	85	110	94	116	92

Table 5-10. Deaths Due to Intentional Injury or Neglect, 2002–2004

	2004		2003		2002	
	Male	Female	Male	Female	Male	Female
ALL CAUSES OF DEATH	1,300	1,098	1,407	1,076	1,307	1,062
ASSAULT (HOMICIDE)	14	16	34	16	20	21
Assault (homicide) by hanging, strangulation, or suffocation	1	2	3	3	3	2
Assault (homicide) by discharge of firearms	1	1	1	0	0	2
Neglect, abandonment, and other maltreatment syndromes	4	3	8	2	8	9
Assault (homicide) by other and unspecified means and their sequelae	8	10	22	11	9	8

Source for Tables 5-9 through 5-11: Texas Department of State Health Services, Center for Health Statistics.
http://www.dshs.state.tx.us/chs/datalist.shtm

Table 5-11. Fatalities Due to All Causes, 2002–2004

	2004		2003		2002	
	Male	Female	Male	Female	Male	Female
ALL CAUSES OF DEATH	1,300	1,098	1,407	1,076	1,307	1,062
ACCIDENTS	36	38	44	23	57	27
Transport accidents	9	9	8	5	11	5
-Motor vehicle accidents	9	9	8	5	11	5
-Unspecified transport accidents & their sequelae	0	0	0	0	0	0
Falls	1	0	1	0	2	1
Accidental discharge of firearms	0	0	0	0	0	0
Accidental drowning and submersion	2	4	3	1	8	0
Accidental suffocation and strangulation in bed	14	20	23	6	22	19
Other accidental suffocation and strangulation	3	3	2	0	4	1
Accidental inhalation and ingestion of food or other objects causing obstruction of respiratory tract	3	0	3	6	2	0
Accidents from exposure to smoke, fire, and flames	1	0	1	0	1	1
Accidental poisoning and exposure to noxious substances	0	1	0	2	4	0
Other unspecified accidents and their sequelae	3	1	3	3	3	0

related deaths[75] and arrests[76] have remained consistent or increased since 1998, a trend with significant implications for the youth of this county.

Documentation of the impact of substance abuse upon prenatal and postnatal development is extensive.[77, 78, 79, 80, 81, 82] More recently, methamphetamine manufacturing, use, and distribution and the impact upon child wellbeing and development has become an issue that has drawn national and international interest.[83] The methamphetamine world possesses a dynamic unique to the world of substance abuse. Young children, who are often found in these environments, experience horrendous neglect while a user is "tweaking" or when the crash after use of the drug occurs. Food and water become contaminated with highly volatile and toxic chemicals used in the manufacturing of methamphetamines. Children often become commodities to be traded and used to appease the insatiable sexual appetites of drug abusers. Many children become addicts themselves. Others do not survive the hostile environment of the meth lab/home.[84, 85]

Recent years have seen a decrease in meth manufacturing due to legislation limiting access to the precursors to the drug. However, a prolific Mexican drug manufacturing system has met the demand for the drug. The highly addictive drug is easily available and highly purified. Arrests for methamphetamines are increasing, as are deaths related to the use of the drug.[86] It is likely that childhood exposure to the appalling conditions

associated with methamphetamines is also on the rise. In particular, very young children are the most vulnerable in this devastating environment.

CONCLUSION

There has been much research on the possible consequences of child abuse and neglect. The effects vary depending on the circumstances of the abuse or neglect, personal characteristics of the child, and the child's environment. Consequences may be mild or severe, disappear after a short period or last a lifetime, and affect the child physically, psychologically, behaviorally, or in some combination of the three. Ultimately, because of related costs to public entities such as the healthcare, human services, and educational systems, abuse and neglect impact not only individual children and families, but society as a whole.

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CHAPTER SIX: A CHILDHOOD WELLBEING INDEX FOR DALLAS COUNTY

By Timothy M. Bray, Ph.D.

INTRODUCTION

While the concept of childhood wellbeing sounds, on the surface, simple to grasp, its measurement is in fact quite amorphous. Based on policy dictates, current events, or social and medical crises, one can measure childhood wellbeing on a variety of indicators. Often the needs of policy and the mandates of time result in indexes that are monolithic and narrowly defined. While these single indicators provide some ability to shape policy within limited domains, they do little in the way of a comprehensive effort.

A composite index of childhood wellbeing, drawing on information from the variety of dimensions important for the safety and wellbeing of children, is necessary for efficacious and efficient public policy decisions that advance the health and welfare of children. The chapter that follows is an attempt to provide such an index for Dallas County, Texas.

INDICATORS OF WELLBEING SELECTED FOR THE LOCAL INDEX

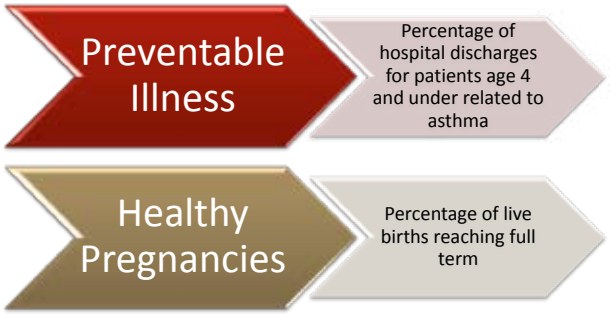
Selecting indicators for the Dallas County Index of Childhood Wellbeing necessitated a careful balance between two types of data. First, it is imperative that the data used in the index measure, as succinctly as possible, the important dimensions identified in the literature and in discussions with stakeholders in Dallas County. The precise focus on Dallas County also brings a second issue to the front—the necessity of data available at the sub-county level.

The Dallas County Childhood Wellbeing Index is composed of 10 indicators, which nest into four domains. As Figure 6-1 shows, these indicators include information about each of four areas of importance to the health and development of young children. The sections that follow provide a brief overview of each indicator and its geographic distribution throughout Dallas County.

Figure 6-1. Indicators of Childhood Wellbeing

The first of four domains of wellbeing indicators is related to the health of Dallas County's children during the critical years. Health is measured at the neighborhood level with two key indicators: preventable illness and healthy pregnancies. Figure 6-2 presents an overview of the dimensions of Healthy Infants and Children.

Figure 6-2. Dimensions of Healthy Infants & Children



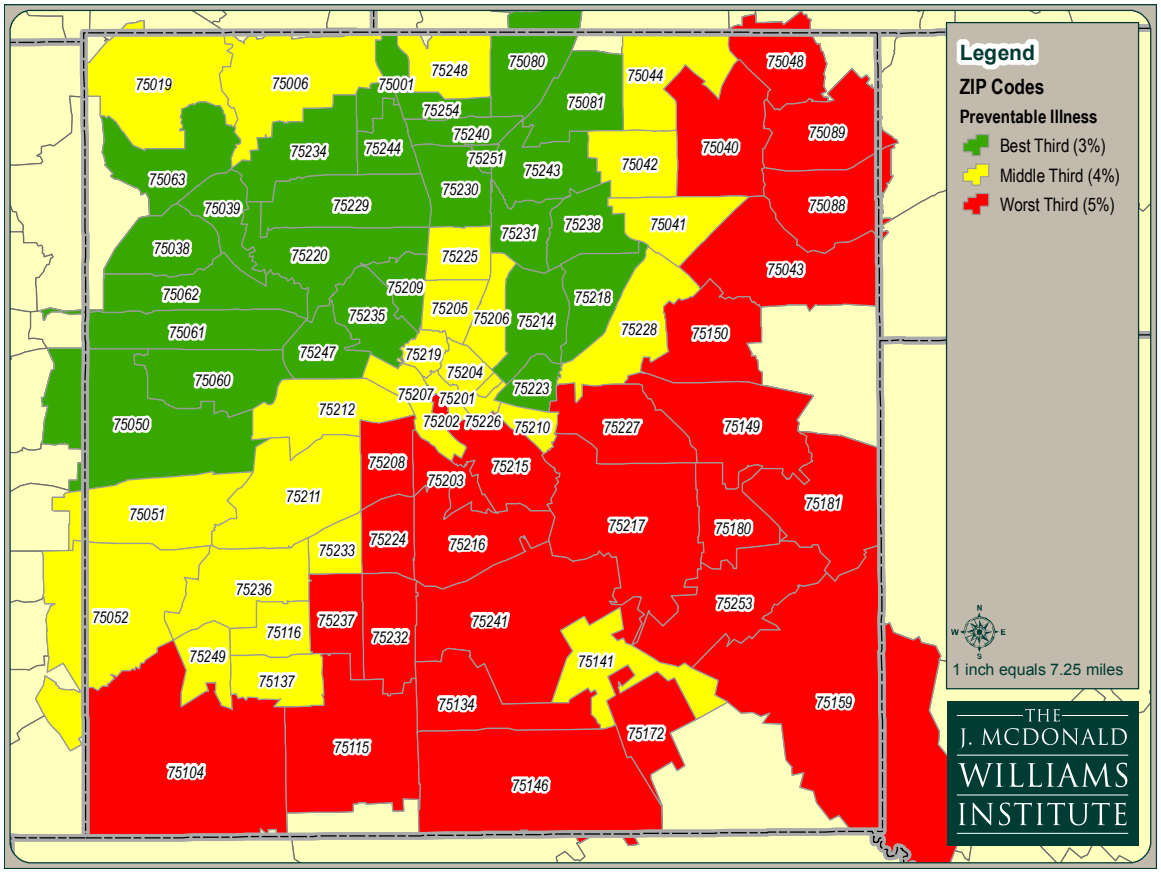
PREVENTABLE ILLNESSES

At the sub-county level, there are limited data related to the overall health and wellbeing of the population. This is particularly true for the population ages 0 to 3. Generally accepted measures of health for the whole population, such as levels of preventable illness, are inadequate to address the birth to age 3 subset of the population. While many preventable diseases are not diagnosed in early childhood, that is not the case for asthma. As a result, our measure of preventable illness for the 0- to 3-year-old population is focused on asthma.

Defining Preventable Illnesses

Using hospital discharge data provided by the Texas Healthcare Information Center, we examined the discharge information for all persons leaving the hospital who were ages 5 or under. In 2004, there were

Figure 6-3. Proportion of Hospital Discharges Related to Preventable Illnesses



Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

Figure 6-4. Highest & Lowest Scoring Zip Codes—Preventable Illness

The Best

- 75038
- 75251
- 75039
- 75229
- 75062
- 75220
- 75061
- 75060

The Worst

- 75159
- 75048
- 75088
- 75089
- 75043
- 75181
- 75149
- 75253
- 75180

51,231 such discharges reported for Dallas County, Texas. Of those, just over 3% (1,788) were related to hospitalizations for preventable illnesses.

What We See In Preventable Illnesses

Discharges related to asthma varied from 3% to 5% of all discharges of youth in Dallas County. As Figure 6-3 shows, however, the geographic concentration of these rates is striking. Generally, the lowest proportions are in the northern part of the county, with highest values in the south and east portions of the county. Middle values buffer the two groups, and extend into the northern area along the US-75 corridor. See Figure 6-4 for a listing of the highest and lowest scoring zip codes.

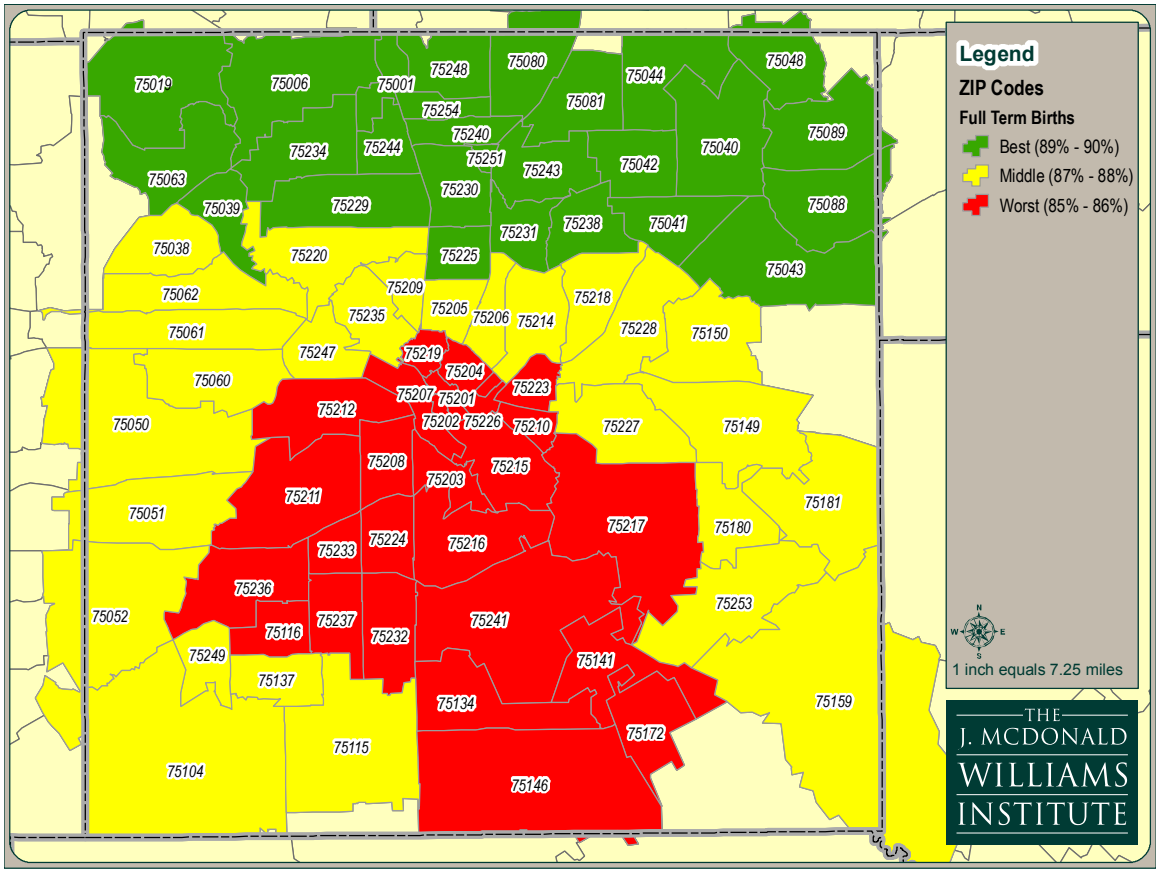
HEALTHY PREGNANCIES

A child's experience during the critical years begins with her experience in the womb. Healthy pregnancies produce children who are at reduced risk of health, learning, and emotional problems later in life. Perhaps the simplest indicator of a healthy pregnancy is a full term birth.

Defining Healthy Pregnancies

The Texas Department of State Health Services provides data on every birth in the state of Texas, including the number of weeks of gestation.

Figure 6-5. Proportion of Live Births Reaching Full Term



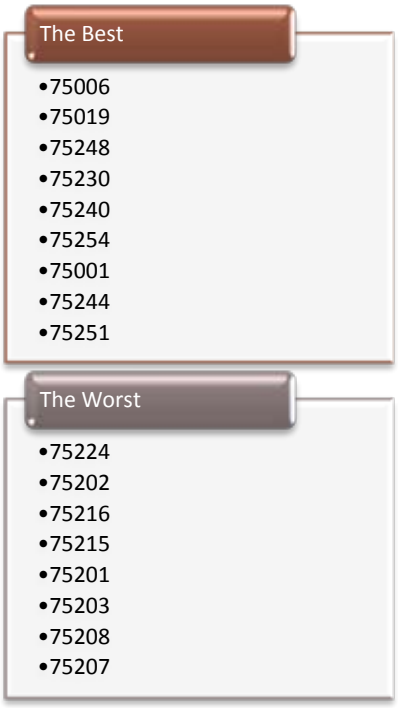
Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

As shown in Figure 6-5, in Dallas County 40,740 live births were recorded in 2003. Of those, 35,677, or 87.6%, were full term, defined as 37 weeks or more of gestation.

What We See In Healthy Pregnancies

Across Dallas County zip codes, full-term births ranged from 85% to 90% of live births. Unlike the spatial patterns we see with preventable illnesses like asthma, the lowest levels of premature births, while still found in the southern sector of Dallas County, are concentrated in the area immediately surrounding the downtown sector, extending along I-30, I-35, and I-45. However, southern extension of the lower rates is largely between I-35 and I-45. Areas of far southeast Dallas County fall into the middle range. Figure 6-6 presents the highest and lowest scoring zip codes on the Healthy Pregnancy indicator.

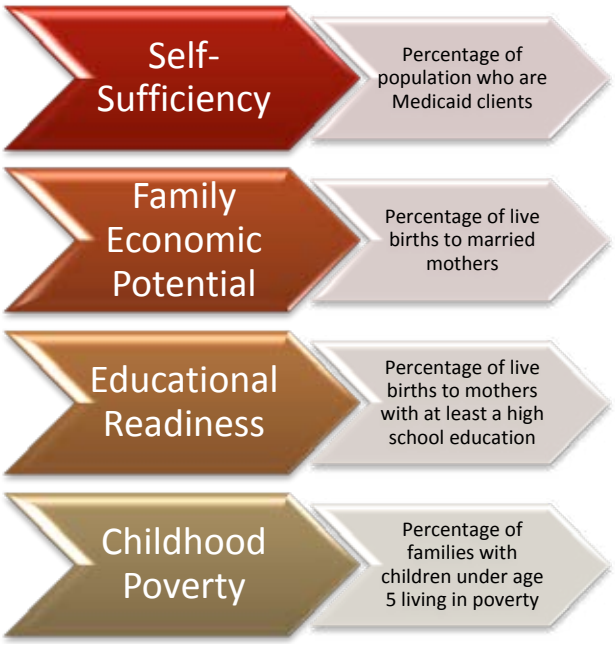
Figure 6-6. Highest & Lowest Scoring Zip Codes—Healthy Pregnancies



ECONOMIC SECURITY

The family's economic security is critical to a child's formative years. The additional resources made available by a parent's economic position serve to level the playing field for those with deficiencies, and provide developmental advantages to others. Figure 6-7 presents an overview of the dimensions of economic security.

Figure 6-7. Dimensions of Economic Security



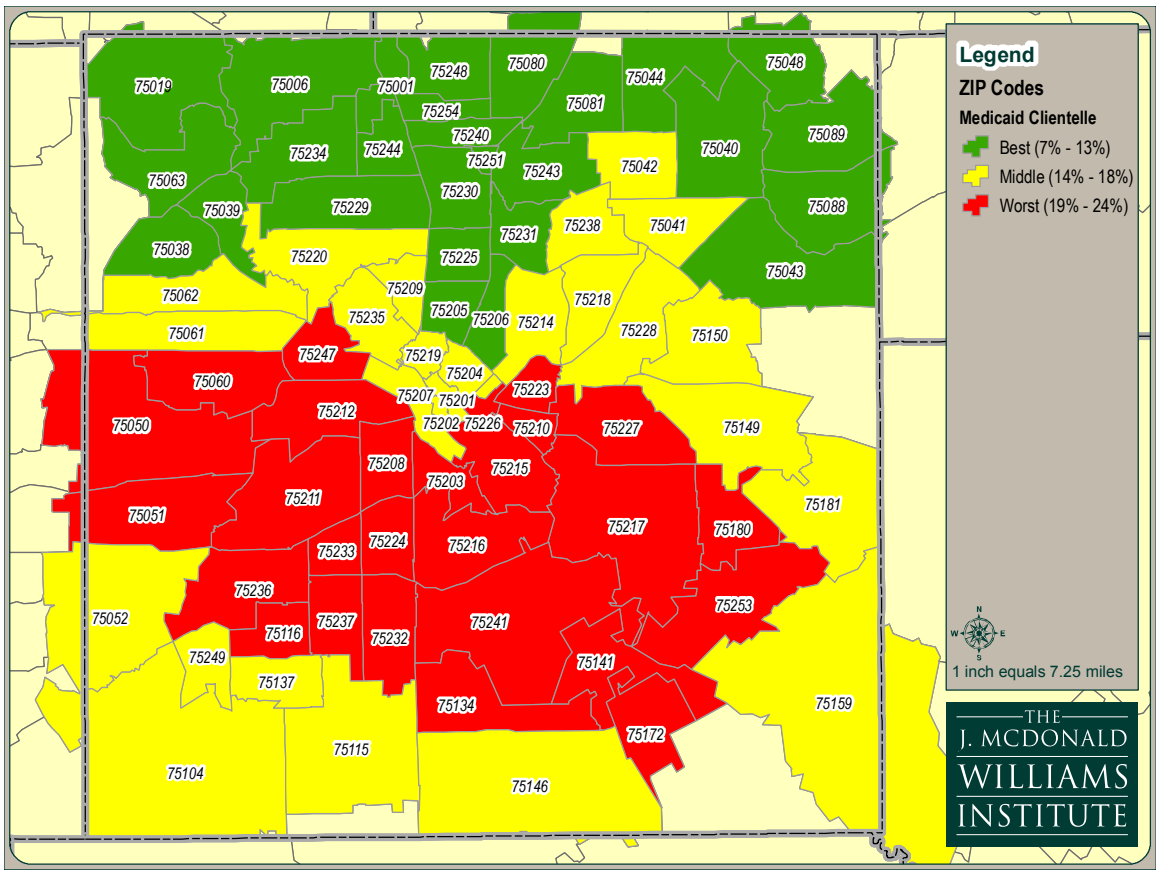
SELF-SUFFICIENCY

Families who are less reliant on government support have access to greater resources and are more easily able to take necessary steps to secure their children's future. These steps include access to medical care, educational resources, nutritious food, and healthy recreational opportunities.

Defining Self-Sufficiency

Self-sufficiency, when measured through dependence on government assistance, provides many options. A variety of federal and state assistance programs for food, medicine, and education are available. The Index reflects self-sufficiency by measuring the proportion of population represented on rolls for Medicaid. The

Figure 6-8. Proportion of the Population on Medicaid



Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

Figure 6-9. Highest & Lowest Scoring Zip Codes—Self-Sufficiency

The Best

- 75080
- 75063
- 75019
- 75248
- 75254
- 75001
- 75244
- 75006

The Worst

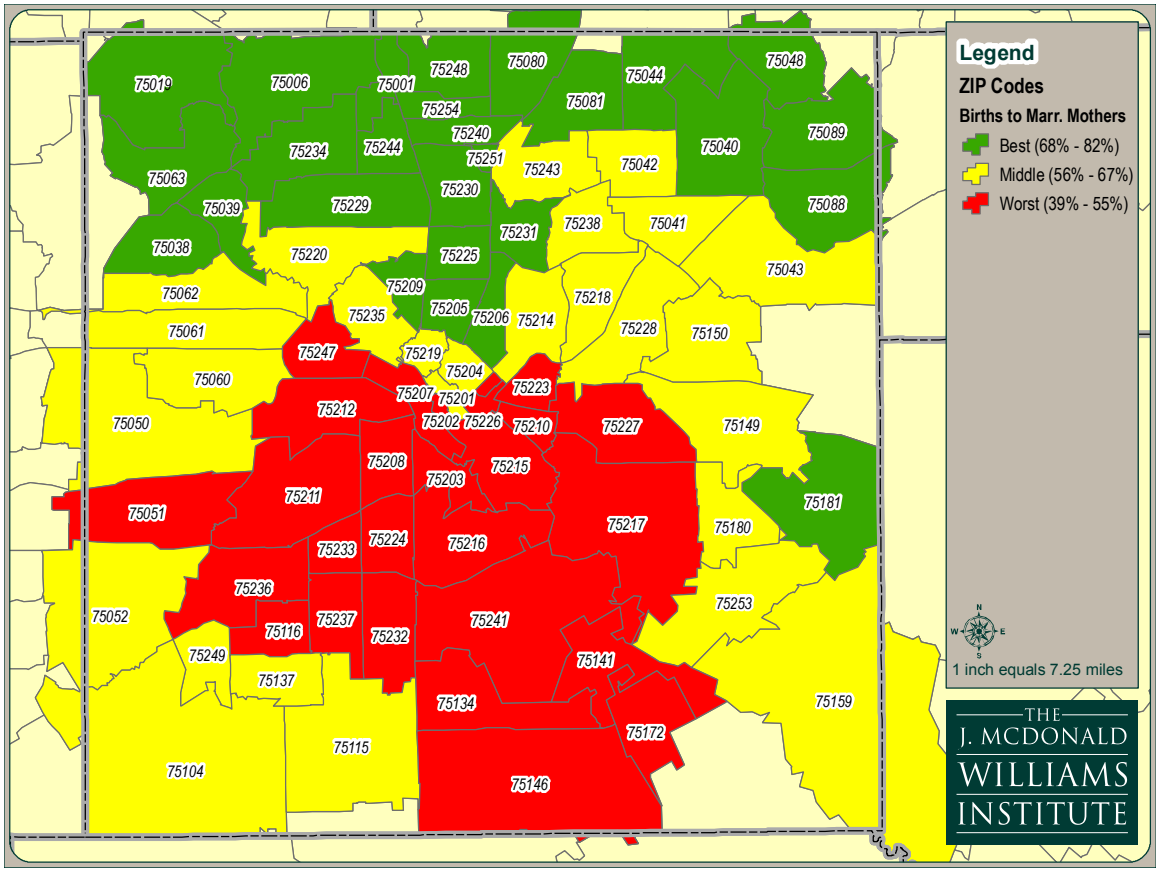
- 75217
- 75224
- 75216
- 75215
- 75241
- 75233
- 75210
- 75211
- 75227

U.S. Department of Health and Human Services provided information for Medicaid rolls in 2004. Areas with a higher proportion of population represented in the rolls have lower levels of self-sufficiency.

What We See In Self-Sufficiency

The proportion of the population on Medicaid rolls in Dallas County zip codes ranges in value from 7% to 24%. The northwestern portion of the county, particularly north of Walnut Hill and east to the US-75 corridor, share the county's lowest Medicaid enrollments with their far northeastern suburb neighbors (e.g., Sachse and Richardson). Values in the moderate range (14% to 18%) are seen in the eastern collar suburbs (e.g., Garland, Mesquite, Sunnyvale, etc.), as a small buffer on the western side of the county between the Trinity River and Walnut Hill, and in the southwestern suburbs such as Duncanville, DeSoto, and Lancaster. The southern portion of the county, radiating from the Dallas core west along the Trinity River, east along I-30 and White Rock Creek, and south to the southern suburbs, shows the highest representation on Medicaid rolls. Figure 6-8 shows the spatial distribution of Medicaid enrollment, while 6-9 lists the highest and lowest scoring zip codes on the Self-Sufficiency indicator.

Figure 6-10. Percentage of Live Births to Mothers Who Were Married



Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

FAMILY ECONOMIC POTENTIAL

While Self-Sufficiency taps a family's current economic state, Economic Potential highlights the family's potential for continuing economic stability in the future. At a basic level, families with two parents have the potential to bring two incomes to the family, better situating them for success by connecting them with the resources necessary for strong development. The American Community Survey's 2005 estimates for Dallas County reported that median family income for a married couple with children was $54,033, while median income for families headed by a single parent was $31,967 at best (for single fathers), and $23,908 at worst (for single mothers).[1, 2]

Defining Family Economic Potential

The Dallas County Childhood Wellbeing Index measures Family Economic Potential for families in a zip code by using the percentage of live births to married mothers, according to the Texas Department of State Health Services Birth Data for 2004. In 2004, the data reflected 40,740 live births in Dallas County.[a] Of those, 24,002, or 58.9%, were to married mothers.

Figure 6-11. Highest & Lowest Scoring Zip Codes—Family Economic Potential

The Best

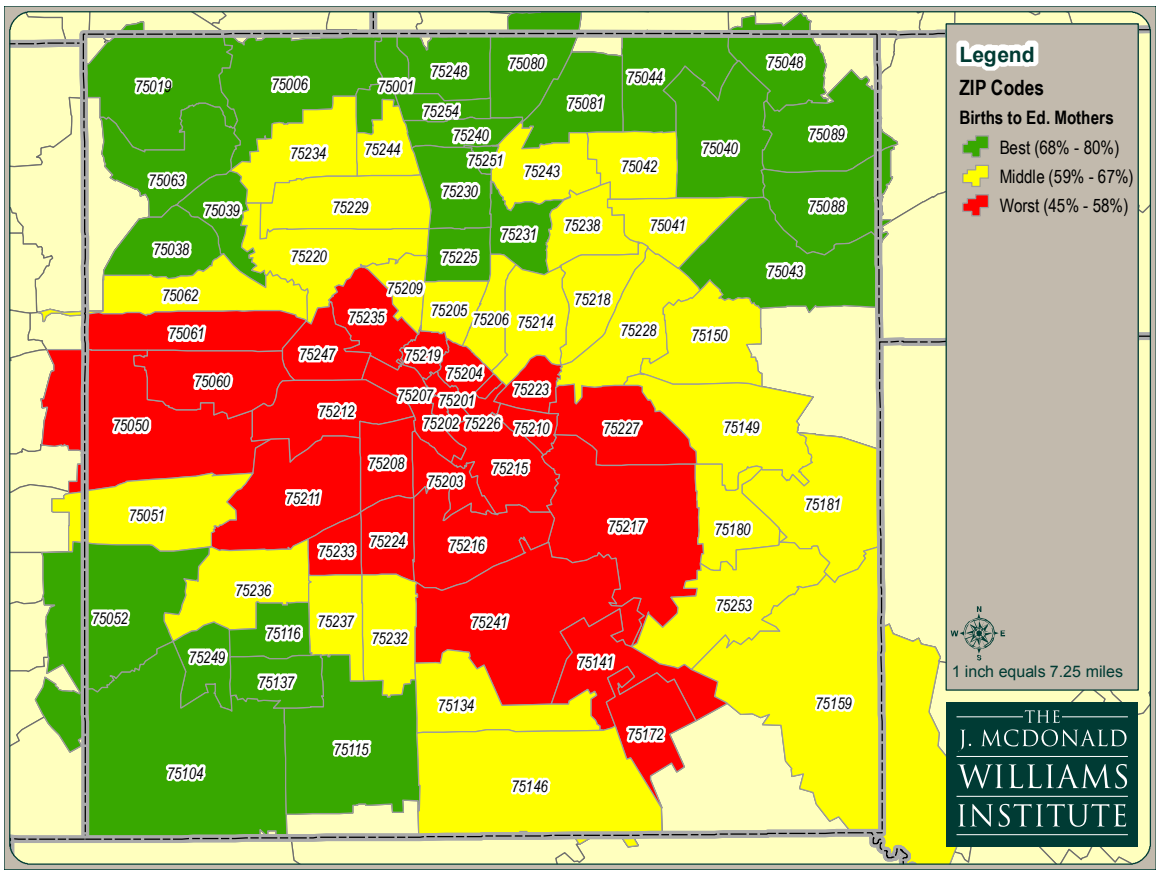
- 75048
- 75039
- 75040
- 75044
- 75089
- 75225
- 75080
- 75063
- 75019

The Worst

- 75224
- 75216
- 75215
- 75241
- 75210
- 75203
- 75232
- 75237

a In this context, Dallas County refers to the 81 zip codes selected for the Dallas County Childhood Wellbeing Index.

Figure 6-12. Percentage of Births to Mothers With At Least High School Education



Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

Figure 6-13. Highest & Lowest Scoring Zip Codes—Educational Readiness

The Best
•75019
•75137
•75115
•75249
•75104
•75088
•75089
•75063
•75048

The Worst
•75216
•75215
•75210
•75203
•75208
•75212
•75207
•75247

What We See In Family Economic Potential

The geographic distribution of births to married mothers in Dallas County displayed in Figure 6-10 looks strikingly similar to that displayed in the distribution of full-term births (see Figure 6-5). Dallas County zip codes ranged in value from 39% to 82% for births to married mothers. With the exception of zip code 75181, located in eastern Mesquite, the zip codes with the highest percentage of births to married mothers (68% to 82%) are located along the county's northeastern border, inside the central corridor between US-75 and the Dallas North Tollway, and in the northwestern portion of the county north of Walnut Hill. Middle range values (56% to 67%) were seen in the suburbs (e.g., Garland, Mesquite, and Seagoville). The zip codes with the lowest values (29% to 55%) were located in the city of Dallas's southern sector, extending south into the suburbs of Wilmer, Hutchins, and Lancaster. Figure 6-11 presents the highest and lowest score zip codes on Family Economic Potential.

EDUCATIONAL READINESS

Children born to educated families enjoy the benefits of the resources made available by their parents' education. Survey estimates from 2005 indicate that, over the course of a lifetime, high school graduates earn $265,050 more than high school dropouts, while the addition of even an associate's degree yields an additional $580,570 in lifetime earnings compared to those for a high school dropout.[3] Measured over the course

of a child's first 20 years of life, a parent who is a high school graduate will have, on average, an additional $122,500 in earnings when compared to a parent who is a high school dropout. The additional financial resources available to better-educated parents can substantially impact the wellbeing of their children insofar as these resources can be devoted to medical costs, extracurricular activities, and ultimately, a college education.

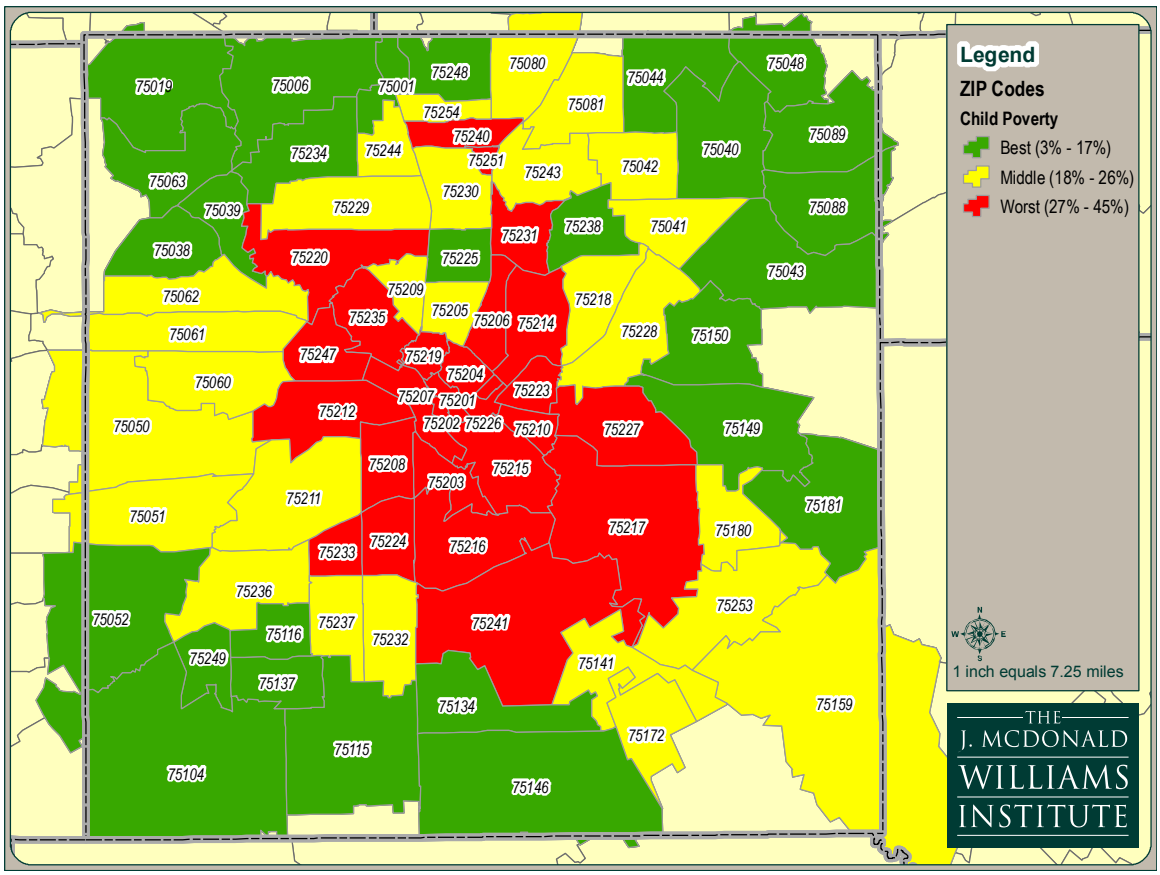
Defining Educational Readiness

Educational readiness is measured by assessing the education of the mother. Using birth data from the Texas Department of State Health Services for 2004, the Dallas County Childhood Wellbeing Index captures the percentage of live births to mothers with at least a high-school education. In 2004, there were 40,740 live births recorded in Dallas County, of which 24,000 (58.9%) were to mothers with at least a high school education.[b]

What We See In Educational Readiness

As shown in Figure 6-12, the highest levels of births to educationally prepared mothers (mothers with at least a high school education) in Dallas County were found along the county's northern border and in the far northwestern, northeastern, and southwestern suburbs. Again, low values of maternal education were concentrated in the urban core and southern sector of Dallas, extending west to Grand Prairie and Irving, and southeast to Wilmer and Hutchins. Figure 6-13 presents the highest and lowest scoring zip codes in Educational Readiness.

Figure 6-14. Percentage of Families With Children Under Age 5 Living in Poverty



b In this context, Dallas County refers to the 81 zip codes selected for the Dallas County Childhood Wellbeing Index.

CHILDHOOD POVERTY

Children in families living below the poverty level are at risk from a variety of relative and absolute factors. As a family's income shrinks relative to others in the community, children in the family begin to experience decreased exposure to educational and structured social opportunities, and their experience in the world qualitatively changes. From a perspective of *absolute* deprivation, living below the poverty line often means a child suffers from less-than-adequate nutrition, decreased quality and timeliness of medical care (particularly preventive care), and other negative impacts.

Defining Childhood Poverty

To assess the prevalence of childhood poverty, the Dallas County Childhood Wellbeing Index computes the percentage of families with children under age 5 that are living in poverty, using Claritas Population Estimates for 2006. In 2006, there were an estimated 145,652 families with children in the home under age 5 living in Dallas County. Of those, 26,549, or 18.2%, were estimated to be living in poverty. As Figure 6-14 illustrates, the poverty conditions in which children live were not uniformly distributed throughout the county.

Figure 6-15. Highest & Lowest Scoring Zip Codes—Childhood Poverty

What We See In Childhood Poverty

As has been seen with many of the indicators thus far, relatively few of the areas with the lowest levels of childhood poverty were found in the city of Dallas. The lowest rates (3% to 17% of families with children) were in the northwest suburbs (Coppell, Carrolton, Addison, Farmers Branch, and north Irving), northeast and east suburbs (Rowlett, Sachse, Mesquite, and northeastern Garland), and southwest suburbs (Cedar Hill, Duncanville, DeSoto, Lancaster, and southern Grand Prairie). Moderate levels of family poverty (18% to 26%) were seen along the US-75 and west I-30 corridors (in Richardson, southern Irving, and northern Grand Prairie), the southeast suburbs (Seagoville, Balch Springs, Wilmer, and Hutchins), and north and southwest Dallas. The highest levels of family poverty (27% to 45%) were within the city of Dallas. Specifically, these areas were concentrated in the eastern two thirds of the southern sector (south of I-30 and east of I-35), and in the central northern sector through roughly Loop 12. Figure 6-15 presents the highest and lowest scoring zip codes on the Childhood Poverty indicator.

A few geographic exceptions bear noting. Zip codes 75240 and 75251, northeast of the intersection of I-635 and US-75 and running west of Dallas North Tollway, at first appeared out of place. However, with poverty levels at 27% and 28% respectively, they were just beyond the range of the middle-level zip codes which surround them. Zip code 75238, which runs along I-635 in Dallas and abuts the city of Garland, was coded among the lowest values of family poverty. As with 75240 and 75251, however, it represented another example of falling close to the cutoff. At 17%, it was at the upper edge of the lowest rate category, and similar to the yellow-coded zip codes surrounding it.

CHILD SAFETY

Beyond a sound and stable economic environment, children require an emotionally and physically safe environment. Evidence presented elsewhere in this report stresses the importance of the family and social context to a child's physiological development, and so this index uses the dimensions identified in Figure 6-16 to quantify Childhood Safety.

SAFE & NURTURING ENVIRONMENTS

Children who grow up in safe and nurturing environments show greater success later in life, in emotional and educational channels, as well as others. Child abuse carries significant, lasting effects for children who live in abusive environments. These effects reach far beyond the physical, into the emotional and intellectual capacity of the child.

Figure 6-16. Dimensions of Child Safety

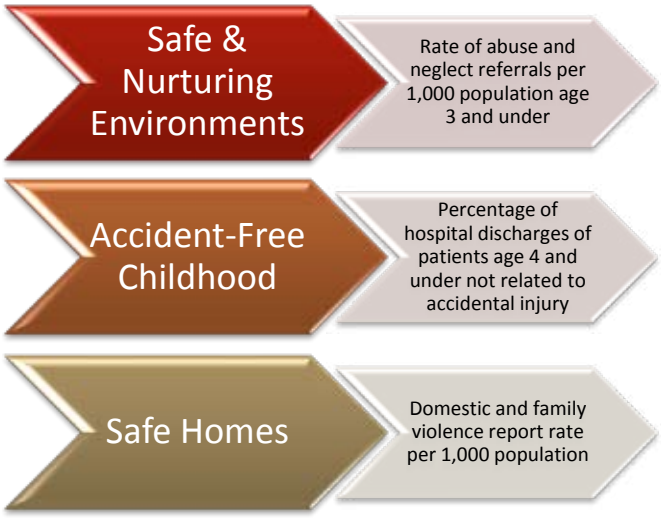
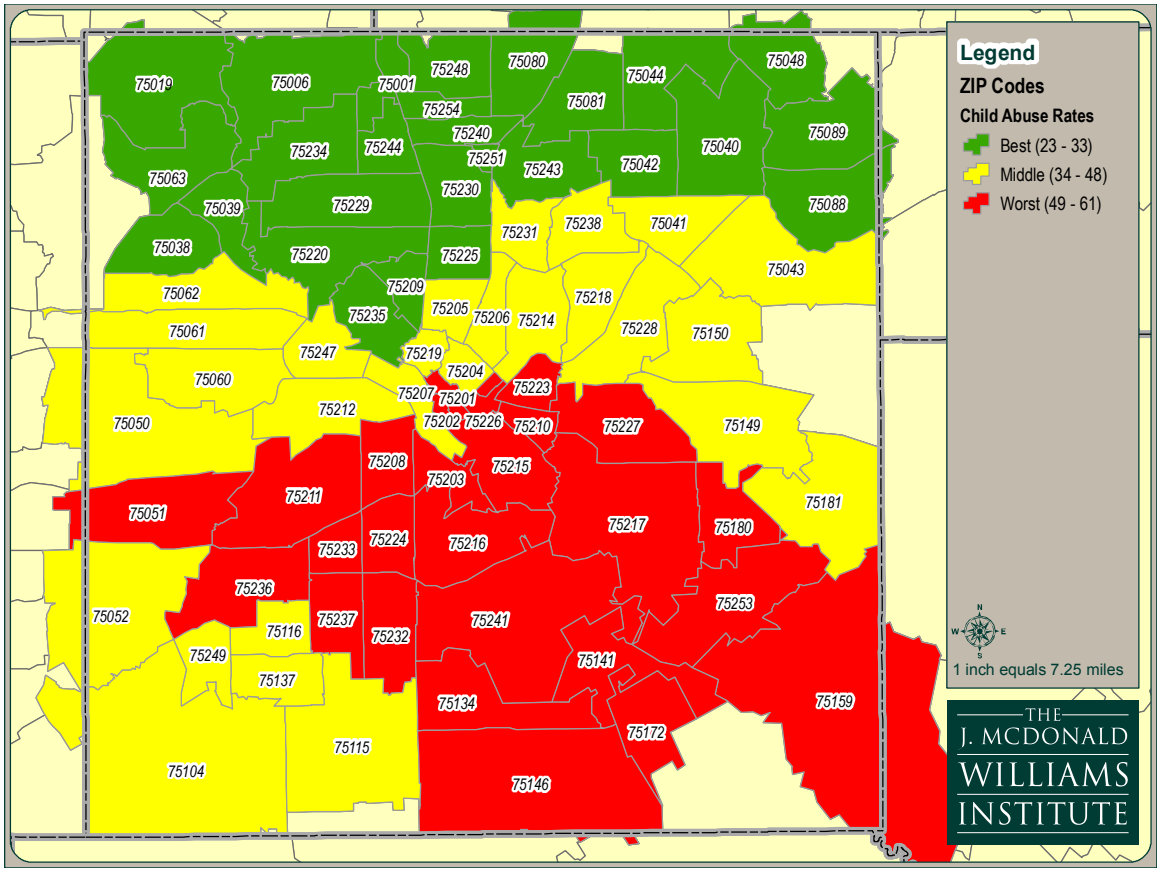


Figure 6-17. Child Abuse Rate for Victims Ages 0–3 per 1,000 Population



Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

Figure 6-18. Highest & Lowest Scoring Zip Codes—Safe & Nurturing Environments

Defining Safe & Nurturing Environments

To measure the prevalence of Safe & Nurturing Environments, the Index uses the child abuse rate (per 1,000 persons) for children ages 0 to 3, reported for Dallas County zip codes by the Texas Department of Family and Protective Services in 2005. In 2005, Texas DFPS reported 6,624 complaints of child abuse in Dallas County with victims ages 0 to 3. With an estimated population of 167,743, the resulting rate of child abuse complaints for these victims was 39.5.

What We See In Safe & Nurturing Environments

In Dallas zip codes, rates of child abuse complaints for the 0- to 3-year-old population ranged from 23 to 61 per 1,000. The lowest values (23 to 33 complaints per 1,000 population) were concentrated in northern Dallas and the northern suburbs (e.g., Carrolton, Farmer's Branch, northern Irving and Garland, etc.). Mid-range values, from 34 to 48 complaints per 1,000 population, were found toward the inner core of Dallas's northern sector, in addition to the mid-county suburbs of Mesquite, Irving, and Grand Prairie. The southwestern suburbs also ranked in the middle tier, including Duncanville, Desoto, and Cedar Hill. Highest rates of child abuse complaints (49 to 61 per 1,000) were largely clustered in the city of Dallas's southern sector, extending into the southeast suburbs, such as Lancaster, Hutchins, and Seagoville. Figure 6-18 presents the highest and lowest scoring zip codes for Safe & Nurturing Environments.

Figure 6-19. Injury Causes Included as Unintentional/Accidental

ACCIDENT-FREE CHILDHOOD

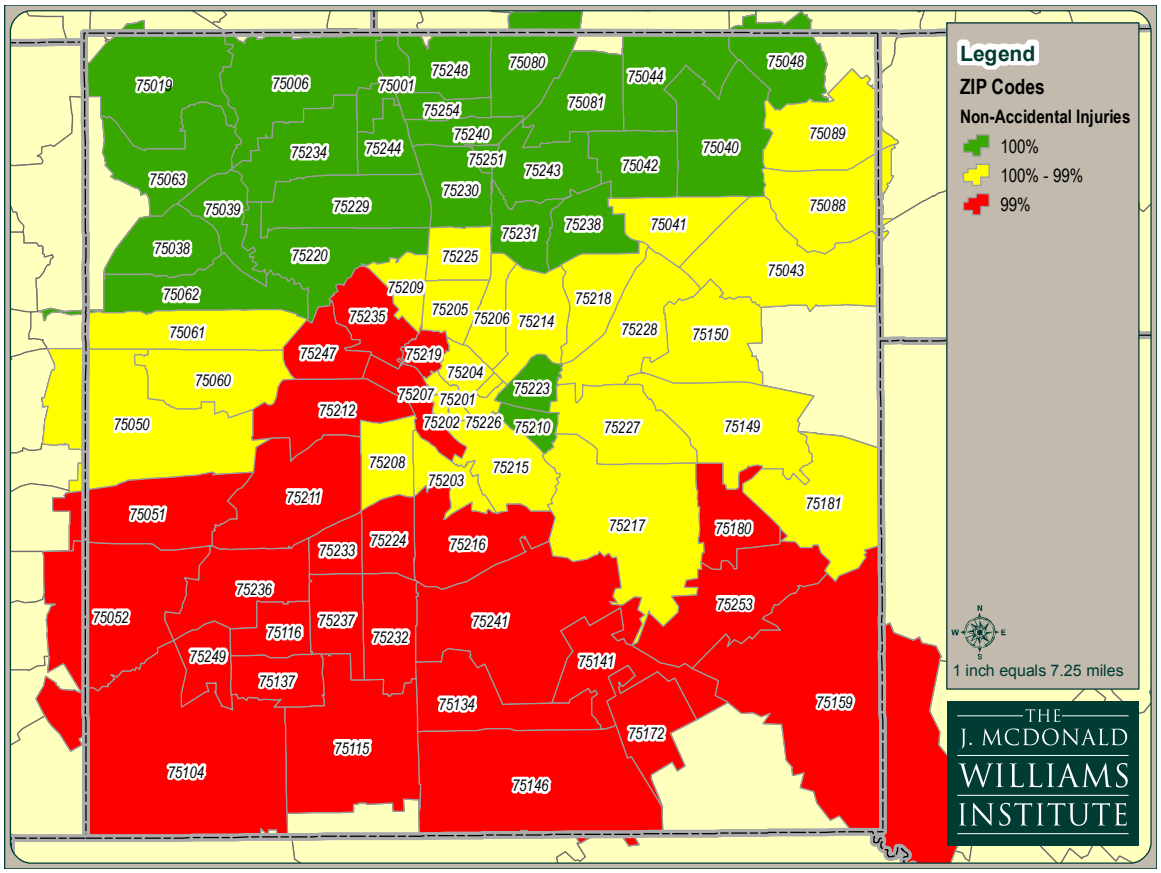
A significant part of child safety is related to the prevention of unintentional injuries and accidents. While access to quality medical care is vitally important to healthy development, the need for medical care is reduced by prevention-based activities designed to promote general health and wellbeing. At a very basic level, reduced injury and subsequent care means more time available in the home and care environments, where successful development can occur. Figure 6-19 presents the list of injury and illness codes selected for inclusion in the list of unintentional injury.

Defining Accident-Free Childhood

Using hospital discharge data from the Texas Health Care Information Collection (THCIC), the Accident-Free Childhood indicator measures safety by assessing the percentage of hospital discharges for patients ages 4 and under are not related to accidental injury. In 2004, the THCIC data reported 50,592 discharges of patients ages 0 to 4 in Dallas County.[c] Of those, 50,192 (99.2%) were not related to accidental injury.

c In this context, Dallas County refers to the 81 zip codes selected for the analyses.

Figure 6-20. Percentage of Hospital Discharges Not Related to Accidental Injuries



Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

What We See In Accident-Free Childhood

While the relative presence of unintentional injuries during the formative years is important, there is not sufficient variation geographically to permit an interesting inspection of cross-geographic differences. As shown in Figure 6-20, the difference between the lowest valued zip codes (shaded red) and highest valued zip codes (shaded green) is 1 percentage point. However, the county's better-scoring zip codes are clustered in the city of Dallas's northern sector, as well as the northern suburbs (north of northern Irving). Unlike previous indicators, however, the city of Dallas, south of Walnut Hill, is split east to west, rather than north to south, on levels of accidental injury. West Dallas, and the city's southwestern corridor, extending around and into the southern suburbs, showed the lowest values. A striking, counter-intuitive finding appears in the southeastern portion of the city. Zip codes 75210 and 75223, among the city's poorest, are rated among the best with respect to the presence of accidental injury to youth. Due to the compressed variation seen in the distribution, it is likely that this coding is an anomaly related to the smoothing processes used to estimate values for surrounding missing zip codes. Figure 6-21 presents the highest and lowest scoring zip codes with respect to intentional and unintentional injuries.

Figure 6-21. Highest & Lowest Scoring Zip Codes—Accident-Free Childhood

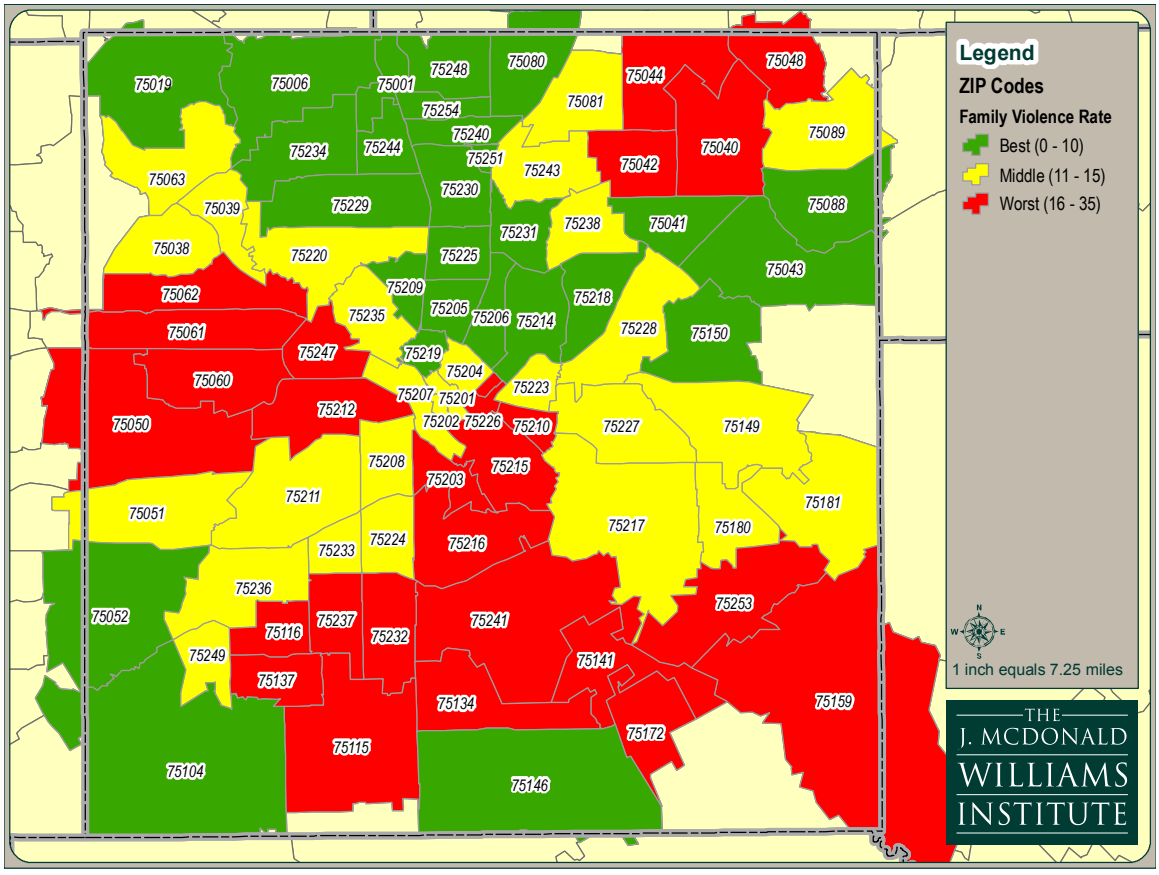
The Best

- 75244
- 75240
- 75254
- 75248
- 75001
- 75063
- 75019
- 75234
- 75006

The Worst

- 75224
- 75233
- 75211
- 75237
- 75236
- 75116
- 75115
- 75137

Figure 6-22. Family Violence Rate per 1,000 Population



Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

Figure 6-23. Highest & Lowest Scoring Zip Codes—Safe Homes

The Best

- 75146
- 75205
- 75225
- 75214
- 75080
- 75230
- 75248
- 75244

The Worst

- 75061
- 75115
- 75216
- 75247
- 75241
- 75060
- 75215
- 75210
- 75062

SAFE HOMES

Evidence presented elsewhere in this report shows that children who live in violence-free homes grow into healthier, more productive adults. Not only does violence in the home increase exposure to physical and emotional injury, it is a learned behavior that, when modeled by children and mimicked in their relationships, has lasting effects on their emotional and psychological development.

Defining Safe Homes

Due to the sporadic availability of geographically specific domestic and family violence data, the Index draws its information from the Dallas Police Department reporting rates at the block group level for 2004. For each block group in the city of Dallas, a rate per 1,000 residents is computed. That block group rate is then used to estimate what is happening in the rest of Dallas County. These estimates are shown in Figure 6-22.

What We See In Safe Homes

Based on the estimates discussed above, the areas of greatest concern in Dallas County, with rates estimated to be 16 to 35 reports per 1,000 population, lie in west Dallas, extending in to southern Irving and northern

Grand Prairie; south through the southern sector, between I-35 and I-45, and extending west to the suburbs of Desoto and Duncanville; and to the northeast in northern Garland and Sachse. Areas of lowest rates, estimated to be between 0 and 10 crimes per 1,000 population, fell generally in the city's northern sector, the northwestern suburbs (Coppell, Addison, Farmers Branch, etc.), southwestern suburbs (southern Grand Prairie and Cedar Hill), and the near eastern suburbs (northern Mesquite and southern Garland). Figure 6-23 presents the highest and lowest scoring zip codes on the Safe Homes indicator.

EARLY CHILDHOOD EDUCATION OPPORTUNITIES

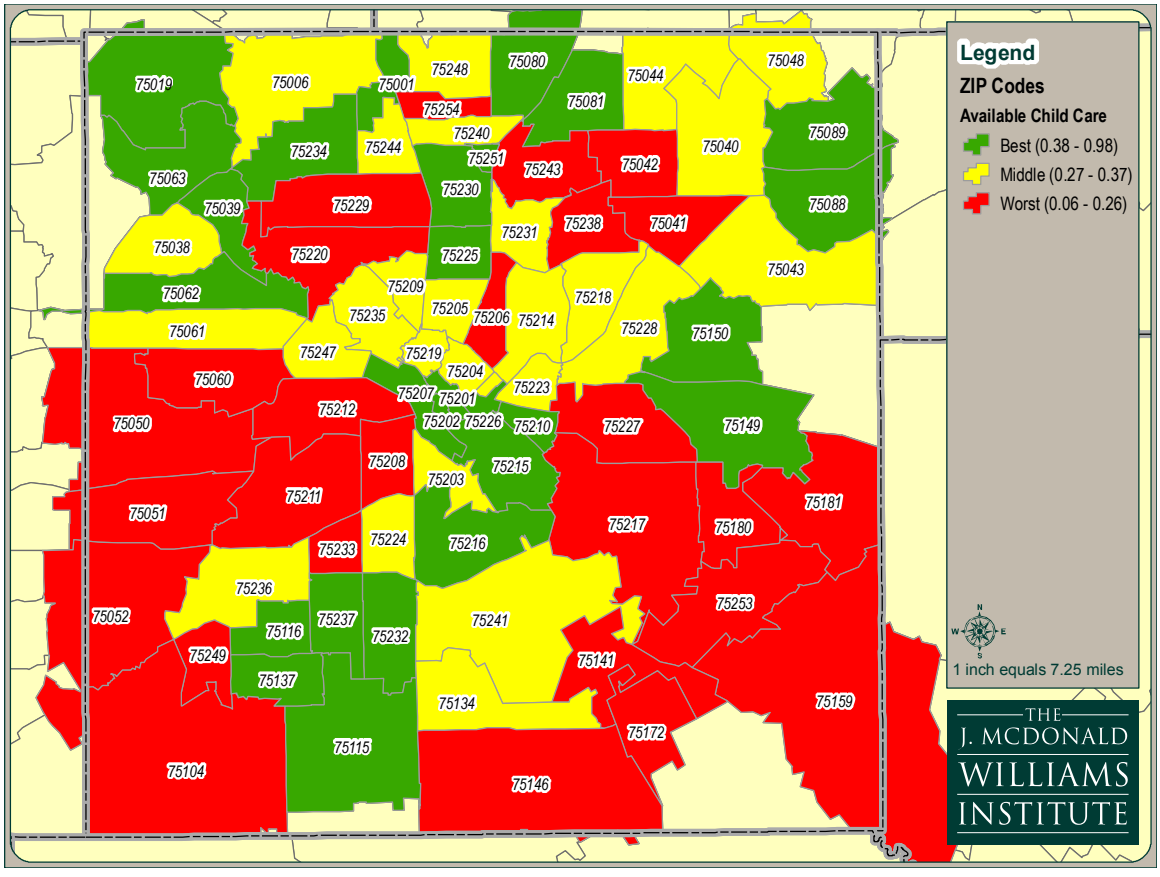
One of the most important gifts parents give their children is the ability to learn. Communities match that gift by providing opportunities to learn. Figure 6-24 provides closer detail on the measure of early childhood education opportunities selected for use in the Index.

Figure 6-24. Dimension of Educational Opportunity

AVAILABILITY OF ADEQUATE DAYCARE

Any mismatch in the availability of quality learning opportunities for children and the demand for those services has the potential to significantly disrupt the educational readiness of a child. In fact, learning begins at birth, and a child's first learning experiences can be the most formative.

Figure 6-25. Childcare Availability Factor



Note:
The values represented on this map are estimates produced using a spatial technique called kriging that incorporates information about the area surrounding each point on the map. For more discussion about this technique, see the final section in this chapter, "An overall index of childhood wellbeing."

Figure 6-26. Highest & Lowest Scoring Zip Codes—Availability of Adequate Daycare

Defining Availability of Adequate Daycare

To measure the availability of adequate daycare, the Index uses data from Texas Department of Family and Protective Services, in concert with population estimates from Claritas. This combination produces the ratio of licensed childcare capacity to children agess 5 and under for Dallas County in 2006. As such, a ratio is computed for each zip code. Values at or close to 1.0 represent an alignment of children and daycare programs. As values decrease and approach 0.0, there is an estimated demand that outpaces supply. Figure 6-26 presents the highest and lowest scoring zip codes on the Availability of Adequate Daycare indicator.

What We See In Availability of Adequate Daycare

Figure 6-25 presents the geographic distribution of child care availability in Dallas County. Unlike the previous indicators, where large areas of high, moderate, and low values were clearly demarcated, the patterns are not so clearly identified in access to adequate childcare. In part, it is due to the difficulties of site selection in the childcare industry. While some centers are located in suburban residential areas, others are located at, closer to, or on the way to larger places of employment. Note in the map that zip codes 75210 and 75215, which have scored among the worst in many of the other indicators, scored relatively highly on this measure. This is due, in part, to their geographic proximity to the central business district. In addition, several licensees with tremendous capacity, such as St. Phillips school, Baylor Medical Center, and the Science Place Head Start program are located within or in close proximity to these zip codes. Northern suburbs such as Coppell, Farmers Branch, and Rowlett scored well, but nearby neighbors Carrolton, Garland, and Sachse received only moderate rankings. Likewise, southern suburbs DeSoto and Duncanville scored well, while neighbors Cedar Hill, Grand Prairie, and Lancaster scored among the worst. A refined set of measures that truly capture the quality of the programming offered is clearly needed here. Such measures would provide a more thorough understanding of access to not only adequate daycare, but quality daycare as well.

AN OVERALL INDEX OF CHILDHOOD WELLBEING

As a cursory review of the data presented above indicates, there is a good deal of variability with respect to where each zip code lies on the dimensions of childhood wellbeing. Zip codes that rank well on some dimensions rank poorly on others, and vice versa. What is needed is a way to synthesize this divergent information to provide a singular, informed perspective on the state of childhood wellbeing in Dallas County.

The Dallas County Childhood Wellbeing Index provides such a tool. Combining information from each of the 10 indicators, the Index illuminates the conditions in which children live in Dallas County. More importantly, the Index provides a way to identify where strengths and weaknesses are most concentrated in the geographic areas of Dallas County.

PREPARING THE INDICATORS FOR THE INDEX

As is often the case with data on social phenomena, data on the 10 childhood wellbeing indicators come from geographies of different sizes and shapes. To make the Index useful, however, it must be able to accurately portray wellbeing conditions at a single, actionable level, such as a zip code, city, etc. In addition, dealing with these smaller levels of geography introduces issues of censorship and privacy in the manner in which the data are used.

To address these methodological issues, the Index uses a spatial smoothing and estimation technique. Briefly, the process uses those spatial units that meet the selection criteria to estimate values for those that do not, then provides the estimations in a standardized format that can be reaggregated to the analytical unit of choice. Table 6-1 presents the geography and exclusion rules for the 10 indicators of childhood wellbeing.

Table 6-1. Geography and Exclusion Rules for Wellbeing Indicators

Indicator	Geography	Exclusion Rule
Preventable Illness	Zip Code	Any zip code with fewer than 20 hospital discharges for the population ages 4 and under
Healthy Pregnancies	Zip Code	Any zip code with fewer than 20 live births
Self Sufficiency	Zip Code	Any zip code with fewer than 100 population
Family Economic Potential	Census Block Group	Any census block group with fewer than 100 population
Educational Readiness	Zip Code	Any zip code with fewer than 20 live births
Childhood Poverty	Census Block Group	Any census block group with fewer than 100 population
Safe & Nurturing Environment	Zip Code	Any zip code with fewer than 100 population ages 0 to 3
Accident-Free Childhood	Zip Code	Any zip code with fewer than 20 hospital discharges for the population ages 4 and under
Safe Homes	Census Block Group	Any census block group with fewer than 100 population
Availability of Adequate Daycare	Raster Calculation	N/A

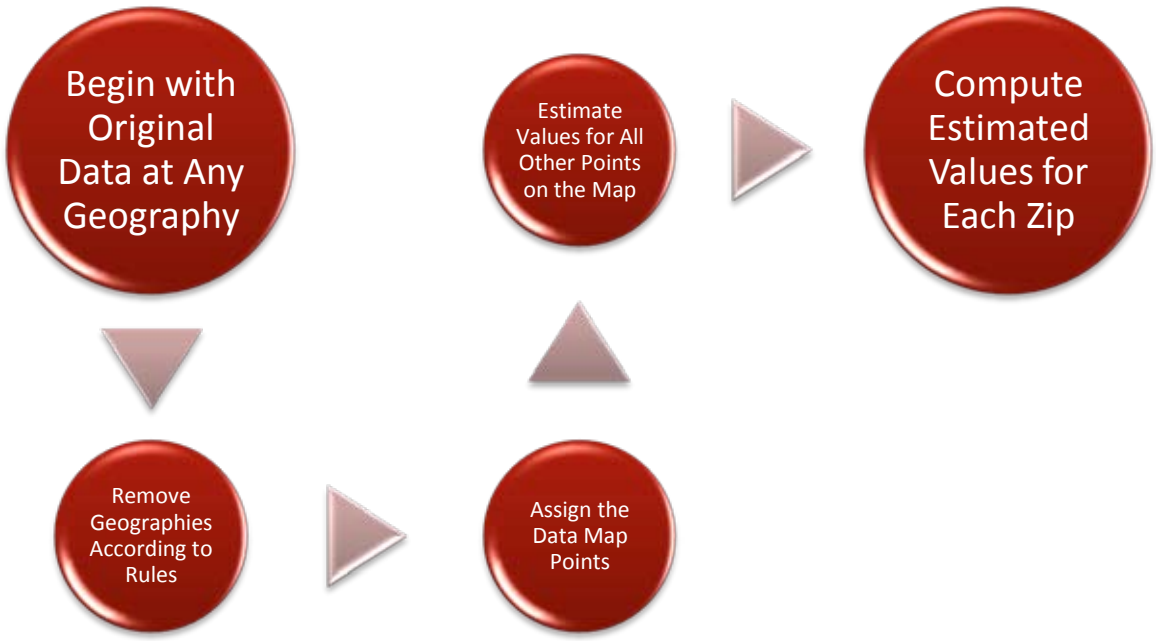
The general process described herein, and illustrated in Figure 6-27, is used for each indicator. First, data are collected at the most granular resolution possible. For the majority of these indicators, this was either the census block group or zip code. To make the smoothing and estimation process as accurate as possible, data was included for each unit within Dallas County and those whose centers were within three miles of the county line.

Once this raw data was identified and assembled, those spatial units that met the exclusion criteria were eliminated from the list. For instance, those indicators based on hospital discharge data had an exclusion rule that resulted in eliminating any unit with fewer than 20 discharges for the 0 to 4 age range. In zip code 75202, there were only nine discharges, so zip code 75202 was not used in the computation of estimates.

Once those units not meeting the criteria for inclusion had been removed, the data were transferred from their original "polygon" boundaries (i.e., the shape of the zip code or census block group) to a geographic point located at the center of the original boundary. With these points acting as the "known locations," a spatial tool know as "kriging" was used to estimate the value of the indicator at every other point on the map. This process is analogous to interpolation. One might, for instance, know the altitude at the bottom of a hill and the altitude at the top. With this information one might then estimate the altitude at any point going up the hill. In contrast to this simple interpolation procedure, kriging would estimate the altitude partially up the hill by using many more points of information that permit a non-linear approach.[d]

Finally, this surface of estimated values was used to compute estimated values for the zip codes in Dallas County. Each zip code was assigned the average value of the points located within it. Using this estimation and smoothing procedure, the Index was able to take data from disparate geographies, with appropriate safeguards for small numbers, and create smoothed, estimated values for each of the zip codes in Dallas county.

Figure 6-27. Indicator Estimation Process



d The kriging specification employed in this modeling approach used an ordinary krige with a spherical semivariogram model and a variable search radius based on 12 surrounding points.

THE DALLAS COUNTY CHILDHOOD WELLBEING INDEX

After estimates were prepared for each zip code on each indicator, the zip codes were assigned a decile rank. Table 6-2 presents the decile rankings for each of the 81 zip codes composing Dallas County. Larger decile rankings represent higher, or more positive scores on each indicator. Smaller decile rankings represent lower, or more negative scores on each indicator.

To compute the wellbeing index score for each zip code, the decile scores on each indicator are summed. Table 6-2 presents the overall score for each zip code, while Figure 6-28 presents the highest and lowest scoring zip codes on overall wellbeing score.

Figure 6-28. Highest and Lowest Wellbeing Scores

The 10 Best ZIP Codes (Scores in Parentheses)	The 10 Worst ZIP Codes (Scores in Parentheses)
•75063 (89)	•75217 (14)
•75019 (88)	•75216 (15)
•75006 (85)	•75203 (19)
•75248 (83)	•75241 (19)
•75244 (82)	•75233 (19)
•75230 (82)	•75224 (19)
•75234 (81)	•75215 (20)
•75001 (81)	•75141 (20)
•75080 (81)	•75211 (23)
•75039 (79)	•75212 (24)

Figure 6-29 presents the geographic distribution of overall childhood wellbeing. As with many of the indicators, it is visually apparent that the highest values of childhood wellbeing are located in the city of Dallas's northern sector, as well as the northern border suburbs. Moderate levels of wellbeing are found in the collar communities to the south, east, and west of Dallas, while the lowest values of childhood wellbeing are located in the city's southern sector.

Figure 6-29. Childhood Wellbeing Scores in Dallas County

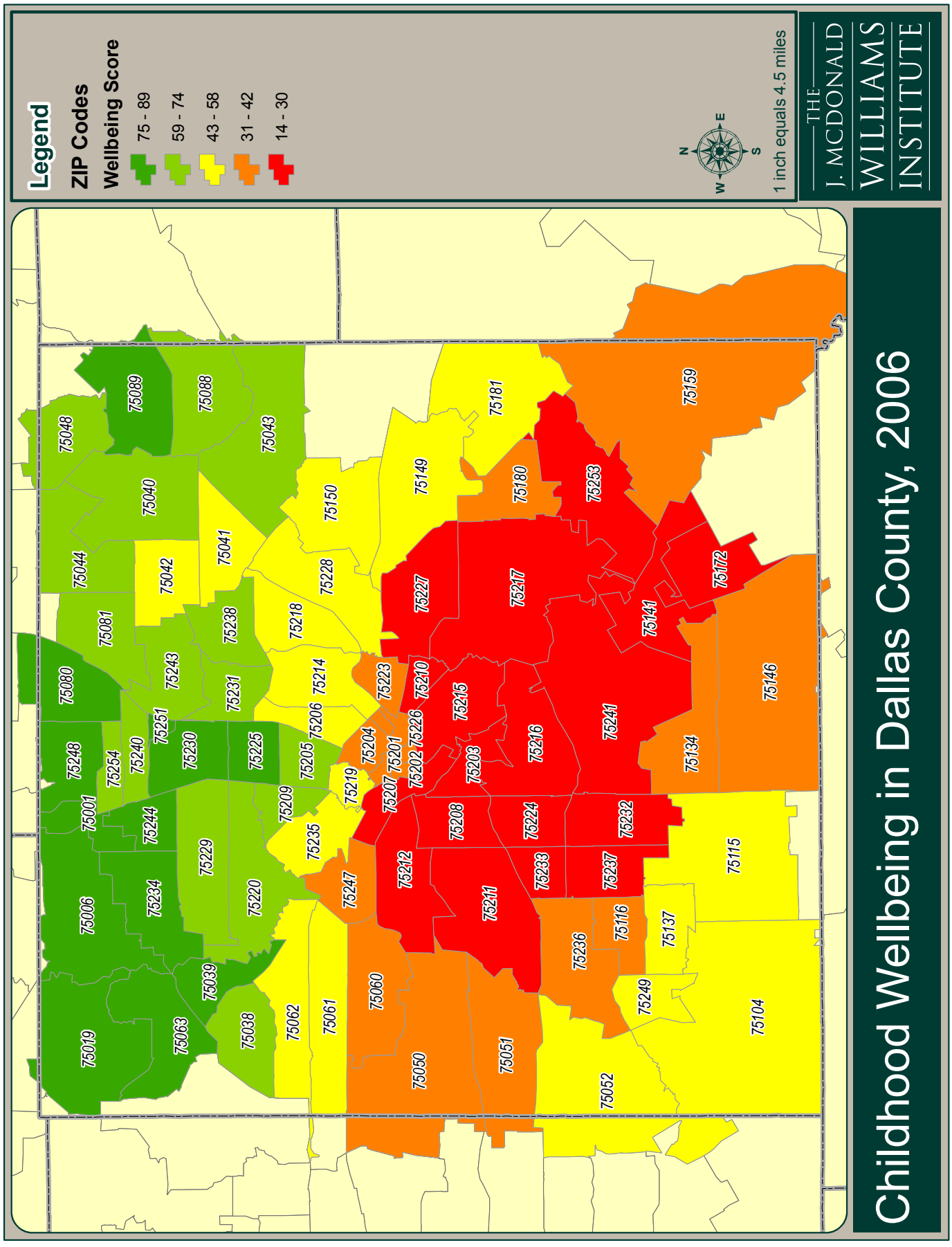


Table 6-2. Wellbeing Rankings and Overall Score by Zip Code

ZIP Code	Healthy Infants & Children		Economic Security				Child Safety			Early Childhood Educational Opportunities	Overall Wellbeing Score
	Preventable Illness	Healthy Pregnancies	Self-Sufficiency	Family Economic Potential	Educational Readiness	Childhood Poverty	Safe & Nurturing Environment	Accident-Free Childhood	Safe Homes	Availability of Adequate Childcare	
75001	8	9	10	6	6	9	9	9	9	6	81
75006	6	10	10	8	8	9	10	9	9	6	85
75019	5	9	10	9	10	10	9	9	8	9	88
75038	10	6	8	8	8	8	7	8	5	6	74
75039	10	6	8	9	7	9	9	8	4	9	79
75040	2	7	8	9	8	9	10	6	3	5	67
75041	4	6	6	5	5	7	6	5	7	0	51
75042	7	7	7	6	5	6	8	7	3	2	58
75043	1	7	7	6	8	8	7	5	8	4	61
75044	5	7	9	9	8	9	10	7	3	6	73
75048	1	8	9	10	9	10	10	7	2	5	71
75050	8	4	3	3	2	6	4	3	4	1	38
75051	6	4	3	3	3	5	3	1	6	0	34
75052	4	4	4	4	7	10	5	2	8	2	50
75060	10	5	3	3	1	5	5	4	1	1	38
75061	10	5	5	4	3	6	6	6	0	4	49
75062	10	6	6	6	4	6	6	7	1	6	58
75063	9	8	10	9	9	10	9	9	6	10	89
75080	7	8	10	9	7	6	8	8	10	8	81
75081	7	7	8	8	7	7	8	8	7	7	74
75088	1	8	8	8	9	10	9	6	8	7	74
75089	1	8	9	9	9	10	10	6	6	8	76
75104	3	4	6	5	9	9	6	1	7	1	51
75115	2	3	5	3	9	9	5	0	1	8	45
75116	5	3	3	2	6	8	4	0	2	9	42
75134	2	2	3	1	6	7	3	2	2	4	32
75137	5	3	4	3	9	10	5	0	2	9	50
75141	4	1	2	1	2	4	1	2	3	0	20
75146	3	3	4	2	6	8	3	1	10	2	42
75149	1	5	5	5	4	8	4	3	4	7	46
75150	2	6	6	4	5	8	5	5	8	9	58
75159	0	4	5	5	4	7	2	3	3	1	34
75172	3	2	2	2	3	6	2	2	3	0	25
75180	1	4	4	4	3	6	1	3	5	1	32
75181	1	5	6	6	6	9	4	3	4	1	45
75201	4	0	6	3	1	1	4	4	6	8	37
75202	3	0	5	3	1	2	3	6	6	9	38
75203	4	0	2	0	0	1	1	4	2	5	19
75204	6	2	6	4	2	2	4	3	6	4	39
75205	6	5	8	8	5	4	7	4	10	3	60
75206	7	6	7	7	5	3	6	5	9	3	58

ZIP Code	Healthy Infants & Children		Economic Security				Child Safety			Early Childhood Educational Opportunities	Overall Wellbeing Score
	Preventable Illness	Healthy Pregnancies	Self-Sufficiency	Family Economic Potential	Educational Readiness	Childhood Poverty	Safe & Nurturing Environment	Accident-Free Childhood	Safe Homes	Availability of Adequate Childcare	
75207	4	0	4	2	0	1	4	3	5	7	30
75208	4	0	3	1	0	3	3	3	6	2	25
75209	7	5	7	7	4	5	9	4	9	5	62
75210	6	1	1	0	0	1	1	7	1	7	25
75211	6	2	1	1	1	4	3	0	5	0	23
75212	7	2	2	2	0	1	6	1	2	1	24
75214	9	5	6	5	4	4	5	6	10	3	57
75215	3	0	1	0	0	0	1	5	1	9	20
75216	3	0	1	0	0	1	1	1	1	7	15
75217	2	1	0	1	1	1	0	4	4	0	14
75218	9	6	5	5	3	5	6	5	9	5	58
75219	5	3	7	5	2	2	6	2	8	3	43
75220	10	6	7	6	4	3	9	7	7	2	61
75223	8	1	3	2	2	2	2	6	5	3	34
75224	2	0	1	0	1	3	2	0	6	4	19
75225	6	8	9	9	7	7	8	4	10	8	76
75226	7	1	4	1	1	2	2	6	2	8	34
75227	2	3	1	1	2	3	1	5	4	3	25
75228	5	5	4	4	3	4	5	5	7	6	48
75229	10	7	8	7	5	5	10	8	9	2	71
75230	8	9	9	8	8	5	9	8	10	8	82
75231	8	8	8	7	7	4	7	7	7	3	66
75232	2	2	2	0	4	4	3	1	3	9	30
75233	5	1	1	1	1	3	2	0	5	0	19
75234	9	8	9	7	6	8	10	9	8	7	81
75235	8	4	5	5	2	2	7	2	5	5	45
75236	5	2	2	2	5	7	4	0	5	4	36
75237	3	2	2	0	4	4	3	0	2	8	28
75238	9	7	7	6	5	7	7	7	7	1	63
75240	8	9	9	7	7	3	8	9	9	4	73
75241	3	1	1	0	3	2	1	2	1	5	19
75243	9	7	7	6	6	5	7	8	4	3	62
75244	9	9	10	7	6	7	10	10	10	4	82
75246	6	1	5	2	2	2	2	4	4	5	33
75247	9	3	2	3	0	1	7	1	1	6	33
75248	7	9	10	8	8	8	8	9	10	6	83
75249	4	3	4	4	9	10	5	1	7	2	49
75251	10	9	9	8	8	3	8	8	8	7	78
75253	1	4	3	4	3	6	2	2	3	0	28
75254	8	9	10	7	7	5	8	9	9	2	74

ENDNOTES

1 U.S. Census Bureau. (2006). 2005 American Community Survey. Retrieved 2/07 from http://www.census.gov

2 See also: Acs, G. & Gallagher, M. (2000). Income Inequality Among America's Children. Washington: Urban Institute.

3 U.S. Census Bureau. (2006). 2005 Current Population Survey (no. PINC-03). Washington, DC: Bureau of Labor Statistics.

CHAPTER SEVEN: THE FINANCIAL IMPACT OF LOW LEVELS OF CHILDHOOD WELLBEING IN DALLAS COUNTY

By James Murdoch, Ph.D.

INTRODUCTION

In their introductory textbook on economics, Cornell University professor Robert Frank and current (as of 2007) Federal Reserve Chairman Ben Bernanke explained, "Economics is the study of how people make choices under conditions of scarcity and of the results of those choices for society."[1] Scarcity forces choices, which is why economists often say, "There's no such thing as a free lunch."

Faced with tradeoffs, we use rules to make decisions. For example, in the face of impending disaster, the age-old saying "women and children first" suggests a rule that puts more weight on the lives of women and children than it does on men. Frank and Bernanke suggest the following cost-benefit rule: "An individual (or a firm, or a society) should take action if, and only if, the extra benefits from taking the action are at least as great as the extra costs." [2] Fortunately, in the primarily market-oriented U.S. economic system, most economic decisions are made this way. The consumer looks at the price of a product and buys it as long as she gets a benefit that is more valuable, to her, than the price. Adam Smith's famous "invisible hand" guides a society of individual net benefit maximizers to a state of optimality.

The policy relevance of the cost-benefit rule is apparent once we admit there are times when the market system/invisible hand will unquestionably fail to reach optimality.[a] In these cases, individual calculations, while rational for individuals, may not yield a rational social outcome. There are numerous reasons to suspect childhood wellbeing is less than ideal in Dallas County. Improving the wellbeing of a young child not only yields direct benefits to the child, but also generates numerous spillover benefits, like lower community crime, more productive parents, and lower educational expenses. Such direct and indirect benefits can add up to substantial total benefits attributable to improving wellbeing.

The general economic argument for addressing childhood wellbeing in Dallas County is that relatively poor families are not able to provide the most favorable level of care for their young children. There are substantial possibilities for realizing positive net benefits (benefits exceeding costs) by implementing some of the policy options presented in the best practices section. Leaving the problem to individual families will not allow society to capture these net benefits; hence, it is reasonable to look for public policy options that do so. The economic problem, however, still remains. We need to determine how far to go in the public policy direction. Too much "good" public policy can be just as bad as too little. We need to get a sense of the size of the benefits and costs of various policy actions.

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a We are using the term "public policy" as a catchall phrase for nonmarket options—that is, government programs, philanthropic activities, and nonprofit activities.

The main operational problem with the cost-benefit rule in the public policy arena is that in order to compare benefits and costs, they need to be stated in a common "currency." Market transactions are naturally denominated in dollars. But families do not directly purchase schooling or health prevention in competitive markets. What, then, are the values for improving educational attainment or preventing asthma or diabetes? Economists use various techniques to make these calculations.

The general rule on the benefits side is to estimate willingness to pay, while on the cost side it is to estimate full opportunity cost.[b] The other general rule is that costs and benefits need to be stated in present values. This can be problematic because expressing future values in present values requires some agreement on the rate used to discount future values. Unfortunately, the discount rate can make a large difference, especially in the case of childhood wellbeing; most costs of wellbeing programs are incurred at the present time, but most benefits are realized later in life. A $100,000 benefit in 20 years is worth $55,368 today using a discount rate of 3%, and worth $14,864 using a discount rate of 10%. Within organizations, there is often agreement on a discounting policy, but there is usually disagreement *between* organizations. See Office of Management and Budget for information about the way the federal government handles discounting.[3]

SPECIFIC EXAMPLES OF COST-BENEFIT STUDIES

Using previously published analyses, Lynch summarized the benefits and costs of five specific Early Childhood Development (ECD) programs.[4] Three of the programs followed a fairly strict experimental design:

1. In 1962 through 1967, the Perry Preschool project enrolled 123 children ages 3 and 4 in a study in Ypsilanti, Michigan, and randomly assigned them to either a treatment group (provided with preschool) or a control group.

2. In 1978 through 1982, the Prenatal/Early Infancy Project (now the Nurse-Family Partnership) enrolled 400 first-time mothers in their second trimester of pregnancy from Elmira, New York, and randomly assigned them to one of two treatment groups or a control group. The treatment involved home visits by trained nurses before and after birth.

3. In 1972 through 1985, the Abecedarian ECD in North Carolina enrolled 112 children between 6 and 12 weeks old in the study and randomly assigned them to either a preschool group or a control group.

For these studies, benefits are calculated in relation to the control group, and costs are those associated with the treatment. The two other studies used by Lynch—the Chicago Child-Parent Center Program and Head Start—were much larger programs.[5] In these programs, the benefits were determined by comparing program participants to samples of other children who did not attend the program.

All of these programs are expensive. Lynch noted that the half-day Perry Preschool cost about $7,000 per child per year, the full-day Abecedarian program was about $15,000 per child per year, and even Head Start was approximately $5,000 per child per year. These figures were expressed in 1996 dollars. With overall inflation of about 31% since then, we can see that implementing such programs today would take significant financial resources. On the other hand, with the exception of Head Start, research seems to indicate even

b We do not need to always use dollars, however. In medical practice, it is not uncommon to compare actions in terms of risks. For example, consider a hypothetical case where there are two treatment options, A and B. Then, the benefit of treatment A is the change in risk of dying, for example, while the cost is the change in the risk of dying under treatment B—the patient "loses" the benefits of B if she chooses A. Choosing treatment A makes sense when it reduces risk more than treatment B. When dealing with a high degree of uncertainty, it can be easier to compare risk-for-risk rather than dollar-for-dollar.

larger benefits. Lynch reported cost-benefit ratios ranging from just over 1 for the low-risk group of the Prenatal/Early Infancy participants to more than 8.7 for the Perry Preschool program. (Lynch also notes that some Head Start analyses suggest cost-benefit ratios under 1.)

Benefits from these programs included better grade retention and graduation rates; lower arrest rates; less drug use; higher wages, employment, and homeownership; less reliance on welfare; and better employment opportunities for the mothers of the participants. By age 21, participants in the Abecedarian EDC were more likely to have attended college and to have had generally better educational outcomes. For the Abecedarian program, Masse and Barnett estimated benefits from a follow-up on program participants through age 21 to be between approximately $50,000 and $135,000, depending on the discount rate used to state future dollar figures in present values. [6]

One of the larger categories of benefits is maternal earnings. With the ECD, mothers received assistance with employment and a greater lifetime earnings stream. In analyzing the Perry Preschool program, Schweinhart[7] found that the largest category of benefits was reduction in crime and the resultant reductions in expenditures within the criminal justice system. The second largest category was benefits gained due to higher educational attainment. Rolnick and Grunewald calculated that the Perry project had an internal rate of return of 16%, with 12% accruing to "society" and the other 4% to the individual.[8]

> "All of these programs are expensive. On the other hand...research seems to indicate even larger benefits"

Lynch extrapolated the Perry project numbers to argue for a national ECD program.[9] He proposed that enrolling 20% of the nation's 3- and 4-year-olds in such a program beginning in 2005 would lead to $61 billion in estimated net benefits by 2050. In a similar extrapolation study, Rolnick and Grunewald estimated that a $1.5 billion investment to create a fund to support ECD programs would be enough to implement a state-wide program in Minnesota, and financial returns would easily cover the opportunity cost of the money.[10] Thus, they argued that ECD programs should be considered like other economic development projects.

Belfield calculated the net benefits of an early childhood care program in New York in several domains.[11] The savings in special education programs alone ranged from approximately $2,000 to $8,000 per child.[12] Other savings were attributable to less grade repetition and less abuse and neglect. Belfield offers a conservative range of cost savings of approximately $2,500 to $9,500 per student for a state-wide ECD program in New York. This is approximately 41% to 61% of the actual cost of an ECD, assuming the cost is $7,000 per child.[13] Given that Belfield has not quantified the longer term benefits associated with higher earnings, it is not hard to imagine that, as in the Minnesota proposal, the net benefits of such a program would be greater than zero.

Oppenheim and MacGregor estimated the benefits and costs of a national ECD program for 3- and 4-year-olds.[14] They estimate that the costs of the program would total $12,282 per year in 2003 dollars. The direct benefits to the participant would be approximately $17,500. For society (nonparticipants), the benefits are more than $100,000. In this study, the benefits from reductions in crime and criminal justice expenditures are more than 85% of the social benefits. They would offer a benefit/cost ratio of greater than 9.

AN ILLUSTRATION FOR DALLAS COUNTY

Is it reasonable to apply these benefits and costs estimates to Dallas County? We argue that they at least provide an economic context for public policy directed at 0- to 4-year-olds.[c] The internal rate of return identified by Rolnick and Grunewald or the benefit/cost ratios identified Lynch could be applied to Dallas County. The problem with economic simulations, however, is they can appear to convey more accuracy and certainty about the data than what actually exists. In our judgment, there is still considerable uncertainty about the upper range of net benefits for any program that improves childhood wellbeing. The main reason is the lack of any long-term health and life-expectancy information.

Given the type of gains reported in the three ECD studies with experimental controls, we should expect gains in lifetime health and longevity, and these benefits can be quite large. For example, Murphy and Topel reported, "From 1970 to 2000, gains in life expectancy added about $3.2 trillion per year to national wealth."[15] Because ECD programs target the wellbeing of the most compromised population, there is huge upside potential. None of the previous studies have actually considered health and longevity benefits. Murphy and Topel estimated the value of a life-year for a 50-year-old (the highest value) is $350,000.[16] In other words, a 50-year-old could be willing to pay $350,000 to extend his or her life expectancy by 1 year. This can imply large benefits resulting from a program that improves the lifetime health of individuals.

The second problem with the existing benefit measures is they fail to consider the change in the probability of death. Changing educational outcomes, employment, and criminal activity improves safety. Again, the values can be huge. Most estimates for a value of a statistical life have a mid-range of at least $5 million.[d] Small pilot studies may not detect a change in death rates because the population is too small, but at larger scales, we should expect to see such effects.

> "The lifetime earnings of a high school dropout are about $1 million...a person with a college degree earns 158% more, or $2,650,000"

On the other side of uncertainty about the benefits of improving childhood wellbeing, the low end is fairly easy to calculate. We can assume a program does nothing—hence, the worst case scenario is a public policy that yields no benefits.

If one fifth of the 0- to 4-year-olds in Dallas County, approximately 52,000 children, were enrolled in a program similar to the Abecedarian program, the costs would be about $20,000 per child, or just over $1 billion. What does it take in health and longevity to cover such an investment? There are several ways to think about it. First, 200 statistical lives are worth approximately $1 billion, using the estimated mid-range value. Presumably, the safety benefits spill over to more than the 52,000 children, but even if they did not, simply covering the benefits would require a change in death rates by about 4 out of 1,000. That is a large change in probability of death, but certainly not unreasonable given the populations we are dealing with.

Second, extending life by an average of *just over 1 month* and assuming the value for an additional life year is $200,000 (a low value) generates $1 billion. It is not hard to imagine that if the ECD program generated outcomes like the Abecedarian or Perry Preschool programs, participants would live longer.

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c In this section, we use 0- to 4-year-olds because the literature focuses on prekindergarten. From the existing studies, it would be difficult to extract the estimated benefits of a program that stopped with 3-year-olds.

d The value of a statistical life (VSL) is based on the willingness to pay to reduce the probability of dying. If a group of 1,000 people could reduce their probability of death by 1/1,000 (save one life) and the average willingness to pay for the change in probability is $1,000, then the implied VSL is $1 million.

A third way to think about covering the investment is to consider lifelong earnings. We know from the 2005 American Community Survey that the lifetime earnings of a high school dropout are approximately $1 million.[17] A person with some college education earns 70% more, or $1,746,000, while a person with a college degree earns 158% more, or $2,650,000. To get more than a $1 billion increment in lifetime earnings, we only need to imagine that an additional 1,000 children out of the 52,000 children need to get a college degree. Alternatively, imagine that only 2,000 more get at least some college. With the dropout rate for the most susceptible population being at least 30%, just reducing that rate to 25% puts an extra 2,600 high school graduates into the equation.[e]

This analysis is designed to illustrate the size of the potential benefits from addressing childhood wellbeing in Dallas County. In reality, there are several categories beyond health and longevity that would contribute to the benefits. Thus, increasing wellbeing will not only reduce death rates and increase longevity and educational attainment, but also impact criminal activity and save on special education programs. Therefore, the illustrations above actually underestimate the potential return of our hypothetical $1 billion investment in childhood wellbeing.

e None of these total dollar figures are discounted, but neither is any of the willingness to pay dollars that determine them inflated.

ENDNOTES

1 Frank, R. H., & Bernanke, B. S. (2006) *Principles of microeconomics (3rd ed.)*. Boston: McGraw-Hill, Boston, p. 4.

2 Ibid, p.4.

3 Office of Management and Budget. (1992). Circular No. A-94:Revised. Retrieved February 1, 2007, from http://www.whitehouse.gov/omb/circulars/a094/a094.html

4 Lynch, R. G. (2004). *Exceptional returns: Economic, fiscal, and social benefits of investment in early childhood development*. Washington, DC: Economic Policy Institute.

5 Ibid.

6 Masse, L., & Barnett, W. S. (2002). *A benefit cost analysis of the Abecedarian Early Childhood Intervention*. New Brunswick, NJ: National Institute for Early Education Research, Rutgers University.

7 Schweinhart, L. (1993). *Significant benefits: The High/Scope Perry Preschool Study through age 27*. Ypsilanti: MI: High/Scope Press.

8 Rolnick, A., & Grunewald, R. (2003, March). Early childhood development: Economic development with a high public return. *Fedgazette*. Retrieved February 1, 2007, from http://www.minneapolisfed.org/pubs/fedgaz/03-03/earlychild.cfm

9 Lynch, R. G. (2004). *Exceptional returns: Economic, fiscal, and social benefits of investment in early childhood development*. Washington, DC: Economic Policy Institute.

10 Rolnick, A., & Grunewald, R. (2003, March). Early childhood development: Economic development with a high public return. *Fedgazette*. Retrieved February 1, 2007, from http://www.minneapolisfed.org/pubs/fedgaz/03-03/earlychild.cfm

11 Belfield, C. (2004). Early childhood education: How important are the cost-savings to the school system? Center for Early Care and Education. Retrieved February 1, 2007, from http://www.winningbeginningny.org/databank/documents/belfield_report_000.pdf

12 Ibid, p. 9.

13 Ibid, p. 21.

14 Oppenheim, J., & MacGregor, T. (2003). The economics of education: public benefits of high-quality preschool education for low income children. New Orleans, LA: Entergy. Retrieved March 11, 2007, from http://www.state.ar.us/childcare/education_book.pdf, p. 2.

15 Murphy, K. M., & Topel, R. H. (2006). The value of health and longevity. *Journal of Political Economy, 114*(5), 872.

16 Ibid.

17 U.S. Census Bureau. (n.d.). 2005 American Community Survey. Retrieved February 1, 2007, from http://factfinder.census.gov/home/saff/main.html?_lang=en

CHAPTER EIGHT: THE LASTING IMPACT OF CHILDHOOD POVERTY ON ADULT WELLBEING

By Kathryn Cardarelli, Ph.D.

INTRODUCTION

Human development, health, and wellbeing are closely linked to each other, to socioeconomic position, and to educational attainment. While wellbeing and illness are influenced by biological, environmental, and social experiences that occur throughout the entire lifespan, the roots of learning, literacy, and the adaptive behaviors that sustain physical and mental health are established during the first few years of a child's life, exerting long-term influences on adult health and ultimately on community and societal function.[1, 2, 3, 4, 5] Childhood poverty has been increasing since the 1970s in most industrialized nations.[6] In North America, poverty affects one in three children under the age of 15, and one in six children experience sustained poverty of 10 years or more.[7]

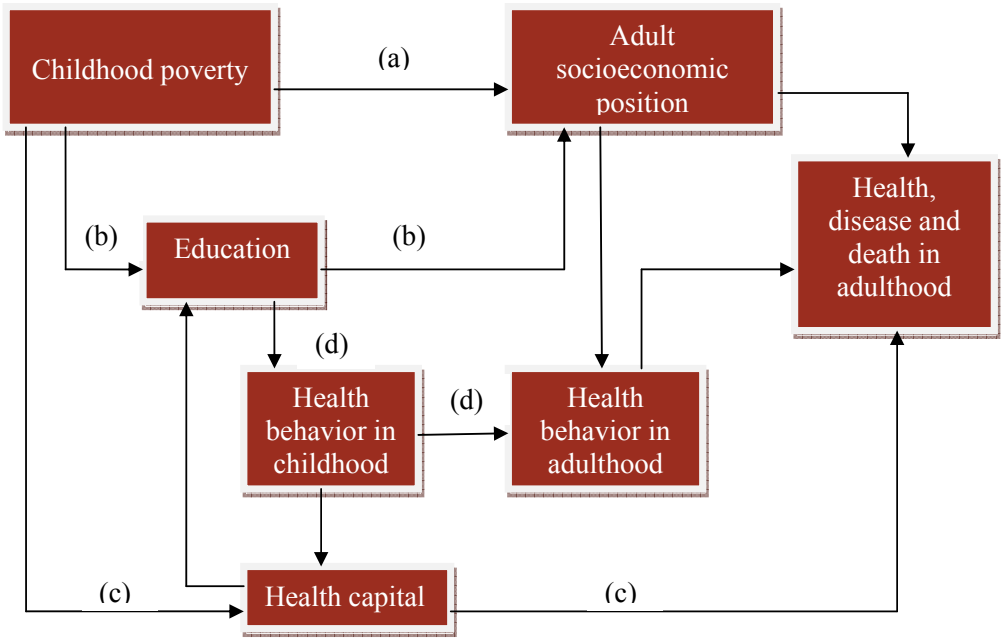
Childhood disadvantage has lasting negative effects on children's health and wellbeing. However, the impact of poverty and associated disadvantage on the lives of adults is less studied. Over the past 30 years, research has begun to demonstrate that the biologic and social risks that occur during childhood have lasting effects on adult wellbeing. For example, evidence exists to suggest that factors associated with childhood poverty, including infection, poor diet, and stress, are linked to coronary heart disease in adulthood.[8] This influence may begin in utero, with Barker[9] and others postulating that the environment during gestation—which is in turn affected by the health and nutritional status of the mother[10] and by environmental influences such as lead[11]—and in early infanthood biologically programs individuals for cardiovascular disease risk later in life. The cumulative effects of childhood poverty appear to persist across the life course into old age.[12] This chapter examines the unique contribution the experiences of children belonging to low socioeconomic families bring to adult social, economic, and health outcomes. The accumulation of multiple physical and psychosocial risks may be especially pathogenic for these outcomes.

PATHWAYS

What accounts for this longitudinal relationship between experiencing poverty in childhood and subsequent adverse outcomes in adulthood? According to Hertzman and colleagues,[13] health status across an individual's life course is influenced by the interaction between daily experiences and cumulative effects. At each stage of development, particularly during critical and sensitive periods such as the first 3 years of life, physiological growth and eventual maturation directly impact health status.[14] Over time, health is concurrently influenced by interactions within the environmental context of individual, societal, and broader socioeconomic factors. These influences must be considered in an integrated fashion to better relate policy to human development and health.[15]

Health development is shaped by the dynamic and continuous interaction between biology and experiences, and is framed by constantly changing developmental contexts over the lifetime. These nested contexts include child rearing; access to resources; employment and health care; and the psychological environment that mediates behavior and stress responses to the trials and tribulations of daily life. The dynamic interaction between biology and experience is shaped also by biobehavioral pathways that are genetically programmed and adaptively influenced by individuals, families, and social experiences and environments. Differences in the health development trajectories of individuals and populations reflect the cumulative and programmed effects of risk and protective factors on health development.[16]

Figure 8-1. Pathways Linking Childhood Poverty & Adult Wellbeing



Source: Adapted from Kuh et al., 2004, 374

Two main paths have been proposed.[17] First, childhood poverty is associated with known or suspected risk factors during gestation, childhood, or adolescence that are part of long-term biologic chains of risk. Second, poverty limits educational and other learning experiences that in turn lead to low adult socioeconomic position, which is associated with disease risk. Figure 8-1 illustrates these pathways, which are further described below.

The effects of parental education, father's occupation, and childhood poverty on adult wellbeing are largely mediated by a person's own education.[18] In other words, having parents with low levels of education or having a father with a blue collar job increases one's likelihood of low educational attainment (Paths A and B). There is a large volume of evidence to support that coming from a family of high socioeconomic position imparts a much better chance of achieving high socioeconomic position in adulthood.[19, 20, 21, 22, 23, 24, 25] Table 8-1

Table 8-1. Persistence of Poverty from Childhood Through Early Adulthood

Race & Poverty Status During Childhood	Percentage of Adults Ages 27 to 35 Who Were:		
	Never Poor	Poor 1% to 50% of Early Adult Years	Poor 51% to 100% of Early Adult Years
African American			
Never poor	74%	18%	8%
Poor 1 to 50% of childhood	63%	18%	20%
Poor 51 to 100% of childhood	54%	20%	26%
White			
Never poor	90%	9%	1%
Poor 1 to 50% of childhood	78%	19%	4%
Poor 51 to 100% of childhood	76%	14%	10%

Source: Corcoran, 1995

demonstrates the extent to which children who were raised in low socioeconomic households remained poor in adulthood. For illustrative purposes, the poor are divided into two groups: the transitory poor (i.e., those who experience half or fewer childhood years in poverty) and the long-term poor (i.e., poor more than half of childhood years).

The data show that children who were never poor are much less likely to experience poverty in early adulthood compared with children who grew up in long-term poverty. Furthermore, children who grew up in long-term poverty are more likely to continue to experience such poverty in adulthood compared with those who experienced transitory childhood poverty.

A powerful predictor of adult income and occupation, low educational attainment [26, 27, 28] is associated with poor physical health[29], greater risk of death[30], and worse mental health.[31] In addition to the influence well-educated parents have on their children's educational attainment, they also impart social and personal skills and provide social contacts to prepare their children for a similar position and capacity for earning.[32, 33]

Despite current employment and economic resources mediating the association between family socioeconomic background and adult physical health, a direct effect of poverty still remains.[18] There is an even stronger association between childhood poverty and adult mental health. Even after adjusting for current socioeconomic position, people who grew up in poverty feel more distressed. This may account for the persistent disparities in health status in the United States, regardless of a person's current socioeconomic position. For example, African American women with high levels of educational attainment have worse birth outcomes (including more low-birthweight infants, more preterm births, and higher infant mortality) than poor white women.[34]

Childhood poverty also affects exposures to known or suspected risk factors during gestation, early childhood, or adolescence, which are part of long-term biologic chains of risk and may negatively impact aspects of development (Path C). The term "health capital" refers to the accumulation of biological resources—a kind of health bank account—that may be inherited or acquired during earlier stages of life, and which determine current and future health potential, including resilience to future environmental insults.

Finally, childhood poverty shapes the development of behaviors that persist and have long-term effects on disease risk (Path D). Evidence confirms that childhood poverty is associated with a variety of psychological and behavioral disorders in adulthood.[35, 36, 37, 38, 39] As infants develop, they interact with their environment and, in turn, shape the experiences to which they must adapt mentally, physically, and socially. Through this process, the child's behavior influences genetic expression, and this is further reflected in altered behavior.[40, 41, 42] These conditions then predispose individuals to less favorable economic[43] and health outcomes.[44, 45] For example, an infant's nurturing experience with consistent, trusted, and affectionate caregivers positively influences development of neurobiological functioning, as well as secure relationships later in childhood, adolescence, and adulthood.[46, 47, 48, 49] Inability to cope with adverse circumstances may, in part, explain these associations.[50] Other assets that may shield youth from harm[51] are those that foster resilience, self-determination, self-efficacy, well-defined and positive identity, and future aspirations. Bell advocates the development of youth resiliency through promotion of community partnerships, physical health, family and school connectedness[52, 53, 54, 55], improved parenting and parental monitoring of children[56], youth social skills[57], and prevention/amelioration of the effects of violence and trauma.[5]

CHILDHOOD POVERTY & HEALTH IN ADULTHOOD

Scientists studying the effects of childhood poverty on adult health have found evidence to suggest that risks accumulate over one's lifetime.[59, 60, 61] Studies have identified a link between both childhood and adult

socioeconomic conditions and morbidity, both with all-cause mortality and with cardiovascular mortality.[62, 63, 64, 65, 66, 67, 68, 69] The effect of childhood poverty is particularly pronounced for death due to stroke and stomach cancer.[70] Relying on recall of childhood conditions from adults, studies have found independent associations of childhood conditions on adult mental health[71], cognitive function[72], hostility and hopelessness[73], self-rated health[74, 75], and cardiovascular and respiratory diseases.[76, 77, 78, 79, 80] Additional evidence drawing on longitudinal studies using prospective measures of childhood socioeconomic conditions has also demonstrated compelling relationships between such conditions and adult obesity[81, 82, 83], depression[84, 85], timing of menopause[86], and health behaviors.[8]

A good example of the cascading effects of adverse socioeconomic conditions is seen in early childhood readiness for learning.[88, 89] Differential status at birth is associated with varying levels of security, stability, and stimulation during early childhood that later influence the child's readiness to learn in school; this in turn puts children at risk for academic, social, and behavioral problems, including mental illness, school dropout, violence, criminality, teenage pregnancy, smoking, and substance use.[90, 91, 92, 93]

Another example of transmission of poverty from one generation to another involves nutrition. In utero, the child of an inadequately nourished mother is less likely to grow appropriately. Low-birthweight infants are much more likely to die than heavier infants, or to be stunted and underweight in early life. This can reduce the child's ability to fight off disease and thus increase the risk of poor health later in life. Further compounding the situation, malnourished and frequently sick children may have limited bodily resources for fighting infection, resulting in such resources being deprived from brain and cognitive development. Such impairment, particularly if occurring before age 2, may be irreversible regardless of later improvement in a child's nutrition or life circumstances. Children with impaired cognitive development may find learning more difficult, both in school and in terms of important life skills. This may, in turn, lead to greater challenges in identifying employment opportunities, and thus earning prospects may be constrained.[94] Another example of such intergenerational transmission of poverty and adverse health is seen in girls who grow up physically stunted or anemic due to malnutrition. They are more likely to be underdeveloped for childbirth, thus facing higher risks of maternal and child mortality, low-birthweight babies, and stunted growth among their own children.[95]

CHILDHOOD POVERTY & ECONOMIC AND SOCIAL WELLBEING IN ADULTHOOD

There is a large body of literature demonstrating a relationship between childhood family structure—single-parent (particularly divorced) versus two-parent—and achievement later in life.[96, 97, 98, 99] This trajectory begins with academic performance in childhood. Using nationally representative data on 21,255 American kindergartners from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–1999, the National Center for Children in Poverty[100] examined academic, social, and physical indicators of child development at the end of the kindergarten year. Significant disparity in school readiness was found between children from families with economic security and those from low-income families, defined as having an annual income between $18,400 per year—the federal poverty level (FPL) marker for a family of four—and $36,800, which represents 200% of the federal poverty level.[101] Most children from the poorest families achieved significantly lower test scores for reading, math, and general knowledge than their peers from families with incomes of $55,200 or more (over 300% of FPL), although 16% of the children from the lowest-income families scored in the upper range, compared with half of the children from the highest-income families.[102] Using the Panel Study of Income Dynamics, Duncan and colleagues found similar results, with family economic conditions during the first five years of childhood predicting achievement.[103]

Specifically, studies have found that disruption of the family structure during childhood predicts educational attainment, economic situation, partnership formation, relationship breakdown, and parenting style in

adulthood, all of which are worse than for children from intact families.[104, 105, 106, 107] A 4-year study of the effects of welfare services on U.S. children living in poverty found that maternal factors such as education level, marital status, and early childhood experiences predicted school performance and behavior problems at ages 10 and 11, but family economic stability emerged as a primary determinant.[108] Using data from the British National Child Development Study, Gregg and Machin found that economic and social disadvantages faced during childhood resulted in subsequent economic failure in the labor market.[109] The same data demonstrated that childhood poverty is strongly related to a number of adverse outcomes in adulthood, including single parenthood, lack of a telephone in the home, lower educational attainment, and worse health.[110] Similarly, investigators who used the British Household Panel Survey data found that living in a single-parent family and with jobless parents during childhood are associated with the following adverse outcomes in young adulthood: lower educational achievement, higher risk of physical inactivity, early birth, smoking, and mental distress.[111] The findings related to parental joblessness were similar in magnitude for young men and women, but the negative effects of family structure were greater for men than for women.

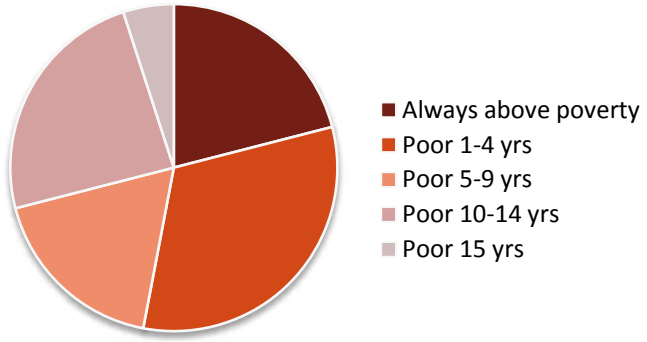
FUTURE INVESTIGATION

Nearly half of the children in the United States will find themselves in a vulnerable economic position at least once during their childhood.[112] Persistent poverty is a way of life for millions of children, and intermittent poverty affects millions more. The transitory nature of much childhood poverty underscores the need to better understand those factors associated with such transitions into and out of poverty. It remains to be seen whether the timing of poverty episodes differentially influences adult outcomes. This indicates the need for prospective, longitudinal studies using repeated measures to track an individual's trajectory. Future investigation into the intergenerational transmission of poverty should employ detailed information on parental and neighborhood disadvantage and child developmental characteristics in longitudinal studies. Few studies have specifically examined the effect of timing or duration of exposures, or whether later favorable circumstances can modify the effects of earlier exposures.[113] Furthermore, more specific markers of childhood adversity and behavior need to be incorporated. As Rank noted, "social realities, including family poverty, are nuanced and complex."[114] Research methods should reflect such complexity using a variety of methods and approaches, such as focus groups, interviews, life histories, and cohort studies.

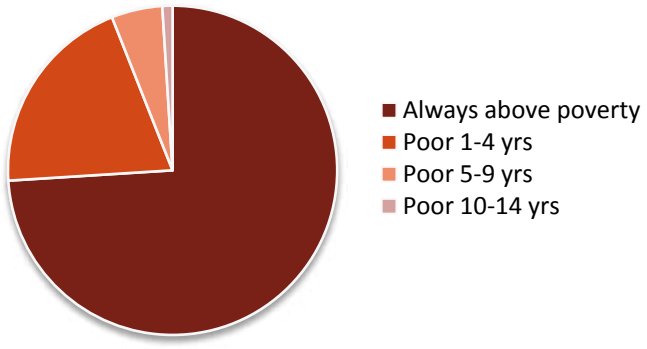
Further research is needed to examine the extent to which childhood poverty explains the socioeconomic, gender, and racial/ethnic differences in adult health, and whether the effect of childhood conditions on adult health differs by gender, race/ethnicity, time, or place. Currently foremost among factors predicting the experience of poverty in the United States is race/ethnicity. For example, the average African American

Figure 8-2. Fifteen-year poverty experiences of children who were under age four in 1968

African American Children



Non-African American Children



Source: Lewitt, E. M., 1993[116]

child growing up in the 1970s could expect to spend more than 5 years in poverty before age 15; the comparable average for white children was about 9 months.[115] The years of poverty experienced by this cohort of 1,000 children are shown in Figure 8-2. Over the 15-year period of this study, 75% of non–African American children were always above the poverty line, whereas only 21% of African American children escaped poverty.

Those who postulate that differences in family structure, location, and educational attainment between African American and white children account for these disparities in poverty level are largely incorrect.[111] Such demographic factors explain little more than a fraction of the difference. Concordant with racial disparities in poverty and health is residential segregation, which leads to deteriorating economic and social conditions within neighborhoods.[117]

Segregation concentrates poverty to build a set of mutually reinforcing and self-feeding spirals of decline into African American neighborhoods. When economic dislocations deprive a segregated group of employment and increase its rate of poverty, socioeconomic deprivation inevitably becomes more concentrated in neighborhoods where that group lives. Segregation represents the missing link in prior attempts to understand the plight of the urban poor.[118] Residential segregation limits opportunities available to African American families through social isolation and increasing levels of deprivation, leading to widespread poverty and social disorganization.[119, 120]

CONCLUSIONS

There is sufficient evidence to conclude that early life conditions, particularly poor socioeconomic conditions, affect the subsequent development in adulthood of cardiovascular diseases, obesity, respiratory diseases, some cancers, neuropsychiatric disorders, and disorders associated with musculoskeletal aging. Compared with their middle- and upper-income counterparts, poor children are disproportionately exposed to more adverse social and environmental conditions. They experience greater family turmoil, violence, and separation from their parents. They reside in more chaotic households with greater instability, and their parents are less responsive and use harsher discipline methods. Children in poor households have fewer learning opportunities at home or in their neighborhoods. They read less, have less access to books, and spend more time watching television. Poor children are more likely to reside in polluted environments and to be exposed to more safety hazards. These conditions cumulatively lead to adverse health, economic, and social outcomes in adolescence and often in adulthood.[121]

In view of the critical importance of early childhood conditions to human health and development, standards of equity and effectiveness should take precedence when considering policy action.[122] While there is a growing understanding in the United States of the foundational importance of early childhood to success later on, in education and in life, this critical aspect of human development has not yet been effectively linked with the rest of the educational process, either in the minds of national-level policymakers or the general public.[123, 124, 125] As a result, policies dealing with factors related to childhood poverty, such as family leave and the availability and cost of childcare, vary greatly from one region of the country to another.

The effectiveness of early childhood development programs offered in the United States has been extensively reviewed and summarized by Anderson and colleagues.[126] With a multidisciplinary team that included the Task Force on Community Preventive Services, Anderson et al. examined the impact of community-based interventions to improve population health in three broad categories: "*social institutions*, including cultural and religious institutions, economic systems, and political structures; *surroundings*, including neighborhoods, workplaces, towns, cities, and built environments; and *social relationships*, including position in social

hierarchy, differential treatment of social groups, and social networks."[127] A broad public policy approach is required to address these issues. Low and colleagues argue that one of the best ways to improve the health of the whole population is to focus policies on optimizing both early childhood development *and* education.[128] Efforts to improve poor children's access to high-quality, well-regulated childcare and preschools rest on the extension of childcare subsidies and childcare funding, despite the latter's increase since the initiation of welfare reforms. To address the achievement gap between low-income children and their more economically secure peers, more preschools are needed, especially those similar to Head Start that provide comprehensive services such as immunizations and parent education.[129]

People who move out of poverty are likely to move into the ranks of the slightly less poor.[130] The escape from poverty depends on a number of factors, including education, employment opportunities, role models, aspirations, health and nutrition,[131] and when in a child's life poverty occurs.[132] These factors, too, are candidates for intervention and policy action.

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CHAPTER NINE: SCANNING THE NONPROFIT COMMUNITY

By Rachael Jackson

INTRODUCTION

Clearly, early childhood wellbeing is critical to the lifelong success of each individual and, therefore, to our community as a whole. It is also clear that the wellbeing of our children differs greatly across the Dallas area, creating inequalities in opportunities, often from birth. The question becomes—what will we do about it? How will we act to improve the lives of our children? Before we begin to reinvent the wheel, however, we should examine the efforts already underway to improve the wellbeing of Dallas children.

NONPROFIT & GOVERNMENTAL ORGANIZATIONS

For this chapter, we searched the Community Council of Greater Dallas *2006 SourceBook*[1] and GuideStar.org[2] to identify nonprofit and governmental organizations in the Dallas area that directly serve young children and pregnant women. Although many of the organizations and programs described here also affect other subpopulations, we have largely limited the descriptions to those services related specifically to infants/children and their mothers.

Achievement Center of Texas

The Achievement Center of Texas provides day care and educational services, such as communication and life skills training and academic goal setting and follow-up, for persons between 18 months and 40 years of age with special needs. The center offers therapeutic recreation, summer camp, special events, and classes to help participants build self-confidence, manage their behaviors, communicate with one another, and learn in a developmentally appropriate manner. Parents are also provided with extensive support and advocacy services.[3] (www.achievementcenteroftexas.com)

Adventist Community Services—Metroplex (MACS)

Adventist Community Services aims to "serve the poor and hurting in Christ's name"[4] by helping homeless children in Grand Prairie and Arlington shelters through the provision of clothing, comfort kits, and supplies. The organization also holds Mobile Health Screening events for children and adults throughout the Metroplex. (www.communityservices.org)

Alliance for Infant Survival, Inc.

Alliance for Infant Survival works to educate the public about Sudden Infant Death Syndrome (SIDS) prevention and baby-safe care, as well as to promote scientific research on the subject. Personnel also provide grief

counseling and support for families who have experienced the sudden, unexpected, or accidental loss of a child between birth and 2 years of age.[5] (www.infantsurvival.org)

American Diabetes Association

The American Diabetes Association works to control diabetes through patient, public, and professional education and diabetes research support. It serves diabetic children (ages 4 through 12 years) by holding resident and day camps to allow the children to meet others with diabetes and learn more about controlling their disease.[6] (www.diabetes.org)

American Pregnancy Association

The American Pregnancy Association (APA) operates a hotline and Web site providing reproductive, pregnancy, and sexual health education for teenagers and young adults who are or may be pregnant. APA also provides pregnancy testing and helps link young women to resources they need for a healthy pregnancy.[7] (www.americanpregnancy.org)

Attorney General of Texas–Child Support Division

The Child Support Division of the Attorney General's Office helps establish paternity and assists parents in collecting the financial support needed to raise their children. It encourages both parents to be responsible and emotionally involved in the welfare of their child(ren).[8] (http://www.oag.state.tx.us/cs)

AVANCE-Dallas

AVANCE works to empower Hispanics by providing educational opportunities for their families. The organization provides early childhood education and emergency assistance to low-income Hispanic families with children ages 0 to 3, but the focus is on strengthening the family through parental education. Parent learning opportunities include ESL (English as a Second Language), literacy, GED preparation, and general parenting classes.[9] (www.avance-dallas.org)

Bryan's House

Bryan's House provides day and residential care to children infected with or affected by HIV/AIDS, as well as those with other serious medical issues. The organization also provides medically managed care for children ages 0 to 11 and counseling and social services for their families. These services include transportation, distribution of diapers, formula, and baby goods, and limited financial assistance for emergencies.[10] (www.bryanshouse.org)

Buckner

Buckner has two programs dedicated to children and families. The Buckner Adoption and Maternity Services program provides pregnancy counseling, maternity care, and adoptive placement of children. The Buckner Children and Family Services program provides group care for children, foster family care, and family-based care. These programs are designed to help heal and restore individuals and families.[11] (www.bucknerchildren.org/dallas)

Callier Center for Communication Disorders/University of Texas at Dallas

UTD/Callier works to improve the communication skills of children who have hearing, speech, and language disorders. It provides diagnostic testing, assistance with obtaining and learning to use auditory devices, group classes and interventions, psychological services, and research.[12] The Callier Center also collaborates with

the Dallas Independent School District/Dallas Regional Day School Program for the Deaf to provide preschool education to children with hearing loss. Classes use a variety of communication strategies (aural/oral and total communication) to develop interactional competencies at an early age.[13] (www.callier.utdallas.edu)

Catholic Charities' Professional Counseling and Children's Services

Catholic Charities' Professional Counseling and Children's Services program works to strengthen poor and vulnerable families within the diocese. They offer daycare services for children ages 3 months to 5 years, as well as maternity and adoption services for birth and adoptive parents, including the choice of open adoption.[14] (www.catholiccharitiesdallas.org)

Central Dallas Ministries

Central Dallas Ministries (CDM) is a community development/social justice ministry dedicated to building a strong, safe, supportive community by helping families overcome issues related to poverty. CDM's Children's Education Services include After-School Academy, Turner Courts classes and tutoring, and the University of Values program—a yearly value-based day camp for preschool and elementary school children. CDM also operates a food pantry that provides groceries and emergency assistance to over 40,000 people each year.[15] (www.cdm-hope.org)

Child Abuse Prevention Center

The Child Abuse Prevention Center (CAP) works to "break the cycle of child abuse by equipping parents for success."[16] CAP educates parents through parent mentoring/family support programs (Parent Aide and Healthy Families) and Families First, a divorce intervention/family strengthening program. (www.excap.org)

Child & Family Guidance Centers

Child and Family Guidance Centers offer a variety of diagnostic assessment, early intervention, and counseling services for children and families. The centers employ individual and family systems approaches designed to include both the child and parents in solution-focused therapy. Counseling services include marital and play therapy, psychiatric consultation, and medication therapy. Psychological diagnostic services are also offered, including intellectual, academic, and personality testing. The centers have a Family and Communication Education program, which offers parenting skills classes, children's psychoeducational play groups, Grandparents as Parents support groups, and divorce recovery classes.[17] (www.childrenandfamilies.org)

The ChildCareGroup

The ChildCareGroup (CCG) services children ages 0 to 3 in family day homes and children ages 3 to 5 in child development centers. CCG also offers assistance by linking children to appropriate day care through the Child Care Answers phone line. Most notably, the organization is responsible for the development of a unique relationship-centered model of childcare that strives to create a home-like atmosphere in childcare settings, which relies on continuity in care providers, low staff to child ratios, individualized curriculum and mixed-age classrooms. The program helps distribute childcare subsidies to eligible families and provides nutritious meals and snacks to family day homes.[18] (www.childcaregroup.org)

Child Placement Center/Agape Social Services

The Child Placement Center is a nonprofit, state-contracted foster care and child placement agency. It serves children and families by conducting home studies, placing children in short- and long-term foster

care and foster-to-adopt care, mediating adoptions, and providing postplacement services.[19] (www.childplacementcenter.com)

Children and Family Institute

The Children and Family Institute (CFI) is a Christian nonprofit adoption and human services agency. It provides adoptive services for minority children and children in foster care, as well as support services for birth mothers and adoptive parents as they go through the adoption process.[20] (www.cfiadopt.org)

Children First Counseling Center

Children First Counseling Center provides for the mental health needs of children, youth, and adults, with a focus on helping families prevent and recover from child abuse and neglect. Counseling services include play therapy, filial therapy, and individual, couple, and family therapy.[21] (www.childrenfirstinc.org)

The Children's Education Fund

The Children's Education Fund (CEF) provides scholarships for low-income families to help pay tuition for the school of their choice. CEF will pay up to half of the tuition for any school in Dallas County.[22] (www.todayfoundation.org)

Children's Medical Center of Dallas

Children's Medical Center of Dallas (CMC) is dedicated to "making life better for children." It provides pediatric healthcare for children from birth to age 18, with specialized care for childhood cancers, heart disease, and blood disorders. CMC also provides social services to families as needed.[23] (www.childrens.com)

Communities in Schools Dallas Region, Inc.

Communities in Schools (CIS) offers a stay-in-school program for children in prekindergarten through 12th grade who are at risk of failure in school and life. The program also offers personal and family support counseling and academic enhancement. CIS Dallas Region currently serves 39 campuses and two school-linked sites.[24] (www.cisdallas.org)

Community Dental Care

Community Dental Care provides dental care for low-income children living in Dallas, Garland, and Collin Counties. It also educates the public about dental health through programs offered at schools, day care centers, social agencies, community groups, and senior centers.[25] (www.dentalhealthprograms.org/index.html)

The Community School of the Park Cities

The Community School of the Park Cities believes children learn best through hands-on activities, so it provides childcare in a multisensory setting designed to nurture a child's creativity and sense of self-worth. The Community School uses degreed/certified preschool and kindergarten teachers, TEKS (Texas Essential Knowledge and Skills) curriculum standards, relationship-based care, low teacher-to-child ratios, and developmentally appropriate practices to encourage learning.[26] (http://www.community-school.org/)

Dallas Association for Parent Education

The Dallas Association for Parent Education provides parenting classes and prepared childbirth and refresher classes to the community. The programs range from baby basics, such as breastfeeding, to infant, child, and adult CPR and emergency first aid, to parent education workshops and support groups. A unique feature

of the program is the Warmline, a telephone support service to answer nonmedical, noncrisis concerns of parents who are in need of parenting advice.[27] (www.dallasparents.org)

Dallas Bethlehem Center, Inc.

Dallas Bethlehem Center provides day care for children ages 12 months through 5 years and has after-school programs for children ages 6 through 12 years. The Center has an emergency food voucher program for elderly people and women with children who reside in zip codes 75215 and 75210.[28] (www.dallasbethlehemcenter.org)

Dallas CASA (Court-Appointed Special Advocates)

Dallas CASA advocates for the best interests of abused and neglected children in protective care by training and supervising community volunteers as court-appointed special advocates (CASAs). CASAs monitor and make recommendations on behalf of their court-appointed children with the intent of helping the children find safe, permanent homes.[29] (www.dallascasa.org)

Dallas Center for the Developmentally Disabled

The Dallas Center for the Developmentally Disabled serves infants, children, and adults with developmental delays and disabilities. It provides services such as early childhood intervention, adult day activities, vocational programs, and a hot lunch program.[30] (www.dallascenterfordd.org)

Dallas Children's Advocacy Center

Dallas Children's Advocacy Center is a nonprofit collaboration that provides a coordinated, multiagency approach to investigating, intervening, and treating child victims of sexual and physical abuse. From a single location, personnel from the different agencies (including police, prosecutors, child protective workers, therapists, and medical staff) work together to provide immediate treatment and services to minimize each child's trauma.[31] (www.dcac.org)

City of Dallas Department of Environmental and Health Services

Human Services Division

The Human Services Division of the City of Dallas Department of Environmental and Health Services operates the Child Care Services program. This program helps the working poor and parents attending school pay for childcare expenses for a maximum of 18 months. They also offer workshops, referrals, and childcare information to participating parents and providers.[32] (www.dallascityhall.com/ehs/human_services.html)

Public Health Division

The Public Health Division of the City of Dallas Department of Environmental and Health Services runs a variety of programs, including Child Health Services, the Immunization Program, Low Birth Weight Services, Maternal Health Clinics, and the WIC Program. Child Health Services provides health maintenance services to children ages 0 to 10, such as health screenings, growth and development assessments, and immunizations. The Immunization Program provides immunizations for infants, toddlers, and school-aged children at low cost. The Low Birth Weight Services program provides clinic services and home visits for infants weighing less than 4 pounds at birth. The program serves these children until they are 36 months old. The Maternal Health Clinic provides prenatal care at Community Oriented Primary Care (COPC) clinics around the city, and helps pregnant and postpartum women access needed medical, education, nutritional, and social services. In addition, the WIC Program provides nutrition education and nutritious food to pregnant and postpartum women and their children.[33] (www.dallascityhall.com/ehs/health_services.html)

City of Dallas Police Department

Youth and Family Support Division

The Youth and Family Support Division of the City of Dallas Police Department serves children through its Child Abuse Squad. The squad investigates child abuse reports and acts to protect abused children.[34] (http://www.dallascityhall.com/html/police.html)

Dallas Cooperative Preschool, Inc.

The Dallas Cooperative Preschool (DCP) was established to provide a fun, developmentally appropriate environment to foster the emotional, social, and academic growth in 3- to 5-year-old children. Children engage in activities, such as art, music, dramatic play, or cooking, to foster oral language and emergent literacy, pre-math skills, large and small motor skills, listening skills, and social interaction. DCP uses multi-age groups, allowing children of all ages to interact with each other for the majority of the day. During development time, the children are divided into groups according to age and assigned to a teacher who leads them in age-appropriate activities.[35, 36] (www.dallascooperativepreschool.com)

Dallas County Family Court Services

Dallas County's Family Court Services serves the Family and Juvenile District Courts by providing family assessments and mediation services. The program focuses on the best interest of the children in responding to custody/visitation dispute and private placement, stepparent, or extended family adoptions.[37] (www.dallascounty.org/department/familycourt/familycourt_index.html)

Dallas Independent School District

The Dallas Independent School District offers public education, as well as some specialized services, to children in grades PreK through 12. Special service programs that aid PreK children include Child Find, a program that identifies unserved and underserved 0- to 21-year-old children with disabilities and places them in appropriate educational settings, and the Dallas Regional Day School for the Deaf, a program that provides education and instruction specific to the needs of deaf students, ages 0 to 21 years.[38] (www.dallasisd.org)

Dallas Metrocare Mental Health and Mental Retardation (MHMR) Services

Child and Adolescent Mental Health Services

DMS's Child and Adolescent Mental Health Services provide a variety of support services to meet the needs of children with severe emotional or social problems and their families. Services are provided in a child's home, school, and/or day care center, so the people and supports already in the child's life can learn how to best respond to the child's needs and can work together to build a treatment program for the child. Programs designed specifically for infants and toddlers include Birth to Six Specialist Services and Early Childhood Intervention Services.[39] (www.dallasmetrocare.com)

Dallas Pregnancy Resource Center

The Dallas Pregnancy Resource Center provides new and expectant mothers with a variety of goods and services needed to raise a healthy child. Services include pregnancy testing, medical consultations, and classes on nutrition, parenting, prenatal care, and budget planning. The center also provides maternity and baby clothes, diapers, and formula.[40] (www.dallaspregnancyresource.com)

Dallas Services

Dallas Services has three programs that serve children. The primary service unit, Dallas Day School, is a culturally and economically diverse educational program that prepares children for success in school. The school serves children from birth through kindergarten, with and without disabilities, providing them with hands-on activities to promote learning. The Dallas Therapy Center works with the Dallas Day School to provide occupational, speech and language, and physical therapy for children with special needs. The Low Vision and Eyeglass Clinics provide eye exams and eyeglasses for school-age, low-income children and homeless individuals.[41] (www.dallasservices.org)

Downtown Pregnancy Center

The Downtown Pregnancy Center provides pregnancy testing, counseling, and referrals to community services for expecting mothers. They also offer parenting courses and assist women in obtaining needed maternity and baby items.[42] (www.downtownpc.org)

East Dallas Cooperative Parish Open Door Preschool–Grace United Methodist Church

Grace United Methodist Church operates the Open Door Preschool in East Dallas. The school's goal is to provide a nurturing, developmentally appropriate learning environment for non-English-speaking 3- and 4-year-old children.[43] It is an affiliate school of the Educational First Steps program. The school employs experienced and highly-skilled bilingual teachers to prepare children to enter public school without the disadvantage of a language barrier. (http://www.opendoorpreschooldallas.org/)

Educational First Steps

Educational First Steps (EFS) works to improve the quality and quantity of early childhood education for low-income children in Dallas. To accomplish this, EFS works onsite with selected childcare centers and preschools in low-income Dallas neighborhoods, mentoring and training childcare directors and teachers to use developmentally appropriate curricula for 0- to 5-year-old children.[44] (www.educationalfirststeps.org)

Family Gateway Center

The Family Gateway Center provides transitional housing and support for families with children. At the center, children receive day care or schooling, while parents receive job training, employment assistance, and medical and legal aid, and can attend self-improvement classes, including budgeting, parenting, and nutrition training. Families are given clothing and nutritious meals during their stay.[45] (www.familygateway.org)

Family Outreach Centers of Dallas

The Family Outreach Centers of Dallas strengthen families by training and supervising volunteers to provide community-based parent mentoring. Parenting programs are offered throughout the Metroplex, and safety and empowerment programs and teen parenting classes are offered within the school setting.[46] (www.familyoutreacheastdallas.org)

The Family Place

The Family Place provides a variety of social services for battered women and their children, including counseling, transitional housing, support, and advocacy. The program also runs a 24-hour hotline for victims of physical abuse, incest, and child sexual abuse. Individual and group counseling is also offered for abusive men to help stop the cycle of abuse.[47] (www.familyplace.org)

Fort Worth/Dallas Birthing Project

The Fort Worth/Dallas Birthing Project is a community-based organization that works to reduce infant mortality in the DFW area. Two programs, the SisterFriend and Aintie-Tia Programs, match trained community volunteers with high-risk pregnant women to provide them with much needed emotional/social support. SisterFriends and Aintie-Tias also help the women identify and access community resources and services that can help them have a healthy pregnancy and take better care for their newborns.[48] (www.fwdbirthingproject.org)

City of Garland Health Department Immunization Clinic

The City of Garland Immunization Clinic provides a variety of immunization services, including Well Baby Clinics to ensure 0- to 5-year-old children remain up to date on their childhood immunizations.[49] (www.ci.garland.tx.us)

Good Shepherd Community Center

Good Shepherd Community Center aims to provide quality, affordable childcare and early developmental education to children living in the 75212 zip code. The childcare program serves children ages 18 months to 12 years. It includes day care, before- and after-school care, and summer and holiday programs. The Center also provides emergency food assistance to families in its catchment area.[50] (www.gdbea.org/gscc/contact.html)

Hannah's House Supervised Visitation and Exchange Center

Hannah's House works to reduce the emotional stress endured by children in the middle of custody disputes. It provides a safe place for children to visit their parents, who may otherwise be off-limits because of custody litigation, and a neutral place for parents to drop off and pick up their children without having to interact with one another.[51] (www.hannahshouse.org)

Head Start of Greater Dallas

Head Start of Greater Dallas strives to give children a strong foundation of knowledge and skills so they can succeed in school and in life. Head Start operates a variety of programs designed to meet the needs of children and their families. These programs include comprehensive educational, medical, dental, special needs, mental wellness, and nutritional services for children, and literacy, substance abuse prevention, social, and other services for parents. Head Start programs serve 3- to 5-year-old children, while Early Head Start serves pregnant women and 0- to 3-year-old children.[52] (www.hsgd.org/index.htm)

Hope Cottage Pregnancy and Adoption Center

Hope Cottage Pregnancy and Adoption Center serves pregnant women and their families, as well as adoptive parents and adoptees, as they go through the adoption process. Services provided by Hope Cottage include family counseling, support groups, mentoring programs, adoption services and education, retail skills training, home studies, and postplacement supervision.[53] (www.hopecottage.org)

Jewish Community Center of Dallas

The Jewish Community Center of Dallas operates a variety of social, educational, and recreational services for people of all ages. There are three programs geared specifically toward young children. The Taglit Preschool provides early education to children ages 16 months to kindergarten. Year-round childcare is

also available for preschool through school-aged children, and every year, thousands of children enjoy the J summer camp.[54] (www.jfgd.org/content_display.html?ArticleID=23505)

Jonathan's Place/Kid Net Foundation

Jonathan's Place was created to provide foster care for drug-addicted infants and young children, but has since expanded to provide emergency shelter for abused, abandoned, and neglected children. The program serves children ages 0 through 11.[55] (www.jpkids.org)

KERA Educational Resource Center

KERA uses television, radio, and the Internet to educate, enrich, and entertain North Texans. Its educational services include educational television for grades PreK through 12, a home school education program, and the Early Childhood Educational Program for childcare providers, parents, and families.[56] (www.kera.org/erc/)

The Lamplighter School

Lamplighter is a school for 3-year-old through 4th grade children that promotes excellence in teaching and learning the basic and academic skills needed to succeed in today's world. The Lamplighter School has created unique learning environments for studying the arts, science, literature, health, and recreation.[57] (www.thelamplighterschool.org)

Living Choice Crisis Pregnancy Center of Southwest Dallas

Living Choice provides social services and counseling for pregnant women. These services include pregnancy testing, childbirth and parenting classes, assistance referrals, provision of maternity and baby clothing, and sexually transmitted diseases (STD) education.[58] (no Web address available)

Low Birth Weight Development Center

The Low Birth Weight Development Center provides educational opportunities to parents of low-birthweight and premature infants and toddlers. These opportunities include ESL, computer, and GED classes, offered through El Centro College, and counseling, art therapy, and parenting classes. Children ages 0 to 3 attend a developmentally appropriate program while their parents attend classes.[59] (www.lowbirthweight.org)

Lucious Wagner Academy

The Lucious Wagner Academy serves extremely low-income Dallas families by providing day care to children between 0 and 6 years of age, and after-school care to children between 6 and 13 years of age. The Academy has created a diverse learning environment, using multicultural activities and materials throughout the center.[60] (no Web address available)

Lutheran Social Services of the South, Inc.

Lutheran Social Services presents unplanned pregnancy services, including traditional and open adoptions, adoptive parent support groups, and placement of infants and older children for adoption. It also provides postadoption services, training for foster parents, and case management for all foster families and children in its care.[61] (www.lsss.org)

March of Dimes Birth Defects Foundation

The March of Dimes works to "improve the health of babies by preventing birth defects, premature birth, and infant mortality"[62] by providing public health and professional education about birth defects, prenatal care, and school-age pregnancy. Two programs designed to educate women on proper prenatal care (Comenzando Bien and Stork's Nest) and two programs to educate youth on responsible sexual behavior and leadership development (Project Alpha and Chain Reaction) are available.[63] (www.modnt.org)

Methodist Children's Home

The Methodist Children's Home provides counseling and assistance to children and their families to help children remain in their homes. The Methodist Children's Home will also counsel children and parents regarding the appropriateness of placing children in the Methodist Children's Home and provide foster care for children in need of temporary homes.[64] (www.methodistchildrenshome.org/community-services.html)

Mi Escuelita

Mi Escuelita provides early childhood education, teaching English and early learning skills to at-risk children from a variety of cultural backgrounds. The program's goal is to prepare young children so they can succeed when they enter school. Mi Escuelita promotes healthy self-image, provides multiple language opportunities, and tries to preserve each child's cultural heritage.[65] (www.miescuelita.org/new/index2.php)

North Dallas Shared Ministries (NDSM)—NDSM Free Medical Clinic for the Working Poor

The NDSM Free Medical Clinic provides immunizations, well baby/child exams, physical exams, treatment of minor illnesses, and health screenings for children and adults without insurance and access to healthcare.[66] (www.ndsm.org)

Nurse-Family Partnership

Nurse-Family Partnership (NFP) provides nurse visitation to low-income, first-time mothers. Visitation begins during pregnancy and continues until the child is 2 years old, and works to improve mother and child health, the home and neighborhood environment, family and friend support, parent roles, and healthy transitions through major life events. NFP believes that by improving maternal, prenatal, and early childhood health and wellbeing, it can help achieve long-term improvements in the lives of at-risk families.[67] (www.nursefamilypartnership.org)

Our Children's Center at Irving

Our Children's Center works to improve the health and quality of life of developmentally delayed, multihandicapped, and medically fragile children between the ages of 6 weeks and 5 years. The Center provides year-round services, including childcare and developmental activities for children with special needs and their siblings, and support and resource provision for their families. The goal of Our Children's Center is to help these children achieve and sustain their highest possible level of functioning and independence.[68] (www.baylorhealth.com/locations/och/Irving.htm)

Parents as Teachers

Parents as Teachers works to provide parents with the child development knowledge and parenting support needed to help their children properly learn and develop during the early years. They partner with other child- and family-focused nonprofits and governmental organizations to teach parents about early childhood development and best practices in parenting. They help parents in the early detection of developmental

delays and health issues, prevent child abuse and neglect, and increase children's school-readiness and ability to succeed.[69] (www.parentsasteachers.org)

Parkland Health and Hospital System

Dallas Healthy Start

Dallas Healthy Start is a collaboration of service providers and individuals working to reduce infant mortality in Dallas. The program offers transportation and outreach services for medical and social service appointments related to infant and maternal care.[70] (www.parklandhospital.com/patients_visitors/healthy_start.html)

Infant Intervention Program: A Family Approach

The Infant Intervention Program helps pregnant and postpartum substance abusers and their children. Women are provided with obstetrical care, alcohol and drug assessments, treatment referrals, case management, and psychosocial and other social services, as needed, to promote the health of their unborn babies and to enhance their ability to provide for their children.[71] (no Web address available)

Park Cities Day School

Park Cities Day School helps children in their early childhood development by providing quality day care facilities and promoting cultural, ethnic, and economic diversity. The school's goal is to teach the joys of learning to children at an early age in a loving, nurturing environment. The school serves children between 6 weeks and 5 years of age.[72]
(www.parkcitiesdayschool.net/default.html)

Prestonwood Pregnancy and Family Care

Prestonwood Pregnancy and Family Care provides clinical and social services and pregnancy education to women experiencing unplanned pregnancies. Clinical services include pregnancy tests and sonograms. Social services include individual guidance; prenatal, childbirth, newborn, and parenting classes; and support groups for abuse and post-abortion recovery.[73] (www.prestonwoodpregnancy.org)

Prevent Blindness Texas

Prevent Blindness Texas offers vision screening, and eye safety and education programs for low-income individuals and families. Their child-specific program provides vision screenings for preschool children ages 6 months to 6 years and special needs children.[74] (www.preventblindness.org)

Rainbow Days, Inc.

Rainbow Days, Inc., serves children and youth living in high-risk situations by helping them overcome adversity and stay drug-free. The program engages children in positive extracurricular activities and teaches essential life skills within support group and classroom settings; it also provides training for service providers and educators.[75] (www.rdikids.org/cafs.shtml)

Region 10 Education Service Center

The Region 10 Education Service Center works with local school districts and private schools to ensure that students receive the best possible education. It encourages schools and districts to adhere to statewide initiatives, and aims to improve the efficiency and cost-effectiveness of campuses.[76] (www.region10.org)

Richardson Development Center for Children

The Richardson Development Center for Children possesses two programs targeting children with developmental difficulties or delays and their families. Early Childhood Intervention (ECI) focuses on children ages 0- to 3, helping parents and family members to better help their child address developmental challenges. ECI provides services in the child's natural environment, either in the home or in a community setting. Rollercoaster Kids focuses on 3- to 10-year-old children, providing assessment, therapy, social skills training, and consultation.[77] (www.rdcforchildren.org)

Ronald McDonald House of Dallas, Inc.

The Ronald McDonald House provides temporary housing for families with seriously ill children who have come to Dallas for medical care. In addition to housing, it provides daily meals, laundry facilities, transportation, and activities for children and families staying at the house.[78] (www.rmhdallas.com)

St. Philip's School and Community Center

St. Philip's School and Community Center strives to provide education and community services for children and their families, empowering them to get involved in their community. The school is a private prekindergarten and elementary school for children ages 3 through 6th grade. They offer before- and after- school care and social services to families.[79] (www.stphilips1600.org/education/school/school.php?sectionid=2)

Salesmanship Club Youth and Family Centers, Inc.–J. Erik Jonsson Community School

The J. Erik Jonsson Community School is a year-round private school that provides a relationship-centered, enriched academic setting. The school serves children from 3 years of age through the 6th grade.[80] (www.salesmanshipclub.org/jejcs.aspx)

SER Child Development Center

SER Child Development Center prepares children to succeed in school by engaging them in literacy-rich curriculum and activities. The program offers childcare and two meals per day for children between 6 weeks and 5 years of age.[81] (www.serkids.org)

Special Care and Career Services

Special Care and Career Services has two programs dedicated to serving children with developmental disabilities and delays. The Child Development Enrichment Services program helps 3- to 5-year-old children and their families adapt to and succeed in special education preschool settings. The program provides child development seminars to childcare professionals and parents so they can continuously improve their support of the child. The Early Childhood Intervention program provides parent/caregiver training and case management services, as well as occupational, physical, speech, and nutrition therapists for 0- to 3-year-old children and their families.[82] (www.specialcarecareer.org)

Texas Department of Family and Protective Services

The Texas Department of Family and Protective Services aims to "protect children, the elderly, and people with disabilities from abuse, neglect, and exploitation."[83] Services to children and families include Child Protective Services, which investigates and intervenes in reported cases of abuse or neglect, and Child Care Licensing, which supervises the activities of all child care facilities.[84] (www.dfps.state.tx.us)

Texas Foundation for Educational Advancement

The Texas Foundation for Educational Advancement operates the da Vinci School, a private school that serves children from 18 months of age to kindergarten. The school provides children with age-appropriate educational opportunities designed to increase their love of learning, ability to learn, and acquisition of life skills.[85, 86] (www.davincischool.org/mission.htm)

Texas Scottish Rite Hospital for Children

The Texas Scottish Rite Hospital for Children provides orthopedic and neurological services for children between the ages of 0 and 18 years. It also provides comprehensive social services for patients, as needed, and conducts research on diseases and treatments affecting children.[87] (www.tsrhc.org)

Tyler Street Christian Academy

Tyler Street Christian Academy is a nondenominational private school for prekindergarten through 12th grade students. The school ultimately prepares students for college and is committed to providing a Christian education with academic rigor, a Biblically integrated curriculum, and balanced extracurricular activities.[88] (www.tsca.org)

United Cerebral Palsy of Metropolitan Dallas

United Cerebral Palsy of Metropolitan Dallas provides a variety of services for children and adults with cerebral palsy and their families. Services focused on children include case management and early intervention for 3- to 6-year-olds who have or are at risk for developmental delays. It also helps families identify and enroll in childcare/respite services within the community.[89] (www.ucpdallas.org)

University of North Texas–Dallas Counseling Clinic

The University of North Texas Dallas Counseling Clinic provides free counseling and play therapy for children ages 2 years and older, as well as some couples and group counseling, while training master's level students in the school's counseling program.[90] (www.coe.unt.edu/CDHE/Centers.htm)

University of Texas Southwestern Medical Center

The University of Texas Southwestern Medical Center focuses on serving children and pregnant women through two programs. The Child and Adolescent Psychiatry program provides evaluation and treatment of children with emotional and behavioral disorders. The Maternal Fetal Medicine program provides genetic counseling and prenatal testing and diagnosis.[91] (www.utsouthwestern.edu)

Urban Inter-Tribal Center of Texas Family Services

The Urban Inter-Tribal Center of Texas Family Services serves North Texas residents of American Indian descent. It provides parenting skills classes; individual, group, and family counseling; emergency food and transportation; and crisis intervention. It also provides outpatient substance abuse and mental health counseling services.[92] (http://www.aicct.com/Urban%20Inter-Tribal%20Center%20Info.htm)

The Visiting Nurse Association of Texas (VNA) Child and Maternal Services

VNA's Child and Maternal Services program addresses a number of health needs encountered by high-risk pregnant women and children ages birth to 17 years old. They provide skilled nursing visits; physical, occupational, or speech therapy; social services; and case management services to attend to the needs of the entire family.[93] (www.vnatexas.org)

Vogel Alcove Childcare Center for the Homeless

The Vogel Alcove Childcare Center for the Homeless serves homeless families with children by providing free childcare for 0- to 3-year-olds; social services, including developmental screening, speech therapy, and play therapy for children; and family support groups to improve parenting skills. The center also provides medical services, such as well baby/child checkups, immunizations, and treatment of illness in partnership with Parkland Hospital's Homeless Outreach Medical Services Mobile Van.[94] (www.vogelalcove.org)

Washington Street Presbyterian Mission, Booker T. Washington Day Care Center

Booker T. Washington Day Care Center is a preschool for children ages 18 months to 5 years. The preschool's goal is to prepare children to be eager and effective students when they enter school.[95] (no Web site available)

YMCA of Metropolitan Dallas

The YMCA offers programs designed to strengthen kids, families, and communities. Although the Y provides a variety of services, two specifically focus on young children and families. The Teen Parenting program supports the whole family through preschool child care, family case management, group activities, parent support groups, and referrals to other services. The program also encourages teen parents to stay in school. Family Counseling Services provides short-term family counseling to families with children.[96] (www.ymcadallas.org)

YWCA of Metropolitan Dallas

The YWCA works to "improve women's lives and remove barriers to self-sufficiency."[97] To accomplish this, the YWCA has a number of programs focused on mothers and their children. The YWCA/Citigroup Financial Empowerment Program helps women and their families gain financial security by teaching financial literacy. The School-Age Mother–Positive Enrichment for Teens (SAM-PET) program helps young, high-risk mothers improve parenting skills, raise self-esteem, stay in school, avoid drug and alcohol abuse, and maintain health. These programs create stronger, more stable families in which children can grow. The YWCA also provides affordable child care to infants, toddlers, and children throughout Dallas County.[98] (www.ywcadallas.org)

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CHAPTER TEN: BEST PRACTICES ADDRESSING ISSUES OF CHILDHOOD & MATERNAL WELLBEING

By Danielle Lavin-Loucks, Ph.D.

DEFINING BEST PRACTICES

Although policy and outcomes research consistently refers to *best practices*[a] in identifying programs and policy initiatives that provide appreciable benefits to individuals, social groups, communities, and even countries, no uniform definition of the term exists. While some researchers and organizations refer to "best practices" or "promising practices," others use the terms "lessons learned" or "evidence-based," and still others employ "good practices" research. Regardless of the nomenclature, best practices imply the existence of some innovative, promising initiative producing verifiable results that can be applied in other communities or in other circumstances. *Good practices* and *promising practices* generally refer to programs and policies for which there are no long-term evaluation results, although initial results or the innovative nature of programming has led researchers to conclude they show potential or promise in addressing social problems.

The approach to best practices adopted by UNESCO[1] considers four characteristics that define best practices. First, best practices must be innovative; they should rightly consider new approaches to addressing persistent problems. Second, best practices should make an appreciable difference in the wellbeing of individuals, families, communities, and the like. Third, they should have sustainable effects, such that their application and effects are long-term. Fourth and finally, best practices should serve as models that can be adopted and replicated in other environments and contexts. Ultimately, best practices are research-based and identifiable by the four aforementioned characteristics, but are also substantiated by empirical evidence that attests to their sustainability, practicality, and applicability to a range of situations and social problems.

According to Thornton et al., "[b]est practices are the elements and activities of intervention design, planning, and implementation that are recommended on the basis of the best knowledge currently available."[2] Although this same report indicates that a superior approach to best practices would rely on rigorous evaluation reported in peer-reviewed publications, in particularly new fields this is both impractical and implausible. Other organizations—intentionally avoiding the term "best practices"—have opted for a different approach to identifying superior initiatives, programs, and policies. For example, instead of "best practice," the United Nations' Inter-Agency Committee on Women and Gender Equality uses the term "good practice." Good practices are those satisfying at least two of the following conditions: (a) generates tangible change; (b) influences policy; (c) demonstrates a pioneering or reproducible approach; or (d) demonstrates sustainability.

a Although the focus here is on best practices, some of the practices detailed in this report are designated *promising practices*. In part, this is because the programs have not been in operation long enough to be subjected to rigorous and long-term evaluations. Nonetheless, the promising practices herein represent innovative, theory-based programming that has a marked impact on the target population.

Table 10-1. Best Practices Matrix for 0- to 3-Year-Olds: Program Classification

	Research/Theory-Base	Evaluation Results	Long-Term Impact	Innovative	Multi-Component	Linkages/Referrals	Implementation	Benefit-Cost Ratio	Intensive	Home -Based	Center-Based	Program Focus
Best Practices												
Homeless Prenatal Program*	✓	✓		✓	✓	✓	✓	N/A	✓		✓	Parent Education/ Health
Nurse-Family Partnership*	✓	✓	✓	✓	✓	✓	✓	$5.70[1]/ $1.00[8]	✓	✓		Parent Education
Incredible Years*	✓	✓		✓	✓	✓	✓	N/A	✓		✓	Parent Education
Chicago Child-Parent Centers (CPC)*	✓	✓	✓	✓	✓	✓	Single Site	$7.14/ $1.00[9]	✓		✓	Child Education
Judith P. Hoyer Centers*	✓	✓		✓	✓	✓	Single State	N/A	✓		✓	Comprehensive
Carolina Abecedarian Project*	✓	✓	✓	✓		✓	Single Site	$3.23/ $1.00[10]	✓		✓	Daycare/ Early Education
MOMobile*	✓	Initial		✓	✓	✓	✓	N/A		Mobile Unit		Parent Education/ Health
West Los Angeles Preterm Birth Prevention Project *	✓	✓		✓	✓	✓	Single Site	N/A	✓		Clinic	Maternal Education/ Health
Seattle Birth to Three Program*	✓	✓	✓	✓	✓	✓	Single Site	N/A	✓			Parent Education
Colorado's Prenatal Plus Program*	✓	✓		✓	✓	✓	Single Site	$2.48/ $1.00[11]	✓	2+ visits	Clinic	Maternal Counseling/ Health
Healthy Start*	✓	✓	✓	✓	✓	✓	✓	$4.25[2]/ $1.00[12]	✓	Depends on program site		Comprehensive
First Breath*	✓	✓		✓	✓	✓	✓	$6.00[3]/ $1.00[13]	✓			Maternal Counseling
Baby Friendly Hospital Initiative (BFHI)*	✓	✓		✓		✓	✓	N/A			Hospital	Education/ Hospital Policy
Teen Outreach Program (TOP)*	✓	✓	✓	✓	✓	✓	✓	N/A	✓		Classroom	Teen Education
Carrera Adolescent Sexuality and Teen Pregnancy Prevention Program*	✓	✓	✓	✓	✓	✓	✓	N/A	✓		Classroom	Teen Education/ Social Skills
High/Scope Perry Preschool Project	✓	✓	✓	✓	✓	✓	Single Site	$2.00/ $1.00[14]	✓	✓	✓	Early Childhood Education
Head Start	✓	✓	✓	✓	✓	✓	✓	N/A[4]	✓		✓	Early Childhood Education
Early Head Start	✓	✓		✓	✓	✓	✓	N/A[5]	✓	✓	✓	Parent/ Early Childhood Education
HIPPY (Home Instruction Program for Preschool Youngsters)	✓	✓	✓	✓	✓	✓	✓	$1.80/ $1.00[15]	✓	✓		Early Childhood Education/ Parent Education
Infant Health and Development Program (IHDP)	✓	✓	✓	✓	✓	✓	✓	N/A		✓	✓	Early Childhood Education/ Parent Education/ Health
Project CARE (Carolina Approach to Responsive Education) w/Early Childhood Education	✓	✓	✓	✓	✓	✓	Single State	N/A	✓	✓	✓	Early Childhood Education/ Parent Education
Syracuse Family Development Research Program (FDRP)	✓	✓	✓	✓	✓	✓	Single Site	N/A	✓	✓	✓	Prenatal/ Family Strength/ Education

While relying primarily on similar criteria to those developed by UNESCO's best practice approach[3], the good practice label is far more inclusive. This allows for the consideration of relatively new programs and practices for which little evaluation data or evidence-based support exists.

Best practices and definitions thereof also vary by discipline and research area. In business, a best practice implies outperforming other businesses. In education, the term can mean programs or processes substantiated through either experience or research, implying a subjective component to assessing the utility of specific

	Research/Theory-Base	Evaluation Results	Long-Term Impact	Innovative	Multi-Component	Linkages/Referrals	Implementation	Benefit-Cost Ratio	Intensive	Home -Based	Center-Based	Program Focus
Promising Practices												
SISTERS*	✓	✓		✓	✓	✓	Single State	N/A		✓		Drug/ Peer Counseling
Go!Kids*	✓			✓	✓	✓	2 Sites	N/A	✓		✓	Nutrition & Exercise/ Parent Education
SKIP*	✓			✓	✓	✓	Single Site	N/A				Parent/Child Bonding/ Transportation
Reminder, Recall, Outreach (RRO)*	✓	✓		✓		✓	✓	N/A				Physician Protocol/ Immunization
Emergency Room (ER) Immunization*	✓	✓		✓		✓	✓	N/A			ER	Child Immunization/ Health
Mother to Mother Support Program*	✓	✓		✓	✓	✓	✓	N/A				Parents/Peer Counseling
Ready! for Kindergarten	✓	✓		✓			✓	N/A[6]			✓	Parent Education
Reach Out and Read	✓	✓		✓		✓	✓	N/A			Clinic	Outreach/ Parent Education
Parents as Teachers (PAT)	✓	✓		✓	✓	✓	✓	N/A	✓	✓	✓	4 Models/ Parent Education
Newborn Individualized Developmental Care & Assessment Program (NIDCAP)	✓	✓		✓			✓	N/A			NICU[7]	Professional Training/ Newborn Support & Care

Note: Not all best and promising practices considered for this report are detailed in this volume, nor are all best or promising practices included here. An exhaustive, up-to-date list of all of the innovative and promising initiatives currently in effect across the nation is not available. This matrix represents only a sampling of the models available that target the birth to 3 year old population. Those for which detailed descriptions are provided are marked by an asterisk (*).

1 The $5.70/$1.00 benefit-cost is based on a sample of higher-risk participants. Among lower-risk participants, the benefit-cost is $1.26/$1.00

2 According to a study of Oregon Healthy Start. Healthy Start is a curriculum implemented by many agencies across the country, and results may differ by program location.

3 This is a general figure applicable to many programs of a similar nature, and not specific to First Breath.

4 No specific benefit-cost data is available since Head Start programs operate in multiple sites in all 50 states, and with starkly different offerings and components. In addition, Head Start functions as a funding source as opposed to a specific curriculum.

5 No specific benefit-cost data is available since Early Head Start programs operate in multiple sites, and with starkly different offerings and components.

6 Program materials contend that the program is cost effective, but do not provide specific dollar-per-dollar returns on investment. See Kennewick School District's Ready!For Kindergarten at http://www.k12.wa.us/EarlyLearning/EarlyLearningToolkit/EffectivePractices/Kennewick/KennewickFINAL.pdf

7 Neonatal Intensive Care Unit.

approaches to problems. In medicine and healthcare, best practice can even signify a "treatment that experts agree is appropriate, accepted, and widely used."[4] This diversity is precisely what has created confusion in identifying and applying best practice programs. Moreover, critics of the best practices approach point to methodological issues that confound the definition of a best practice,[5] the overuse of the term, cultural variability and the potential adaptability of specific best practices[6], and the notion that reputation alone can influence the designation of a best practice.[7] However, notwithstanding these criticisms, the best practices approach to programming provides a means of ensuring individual and community problems are addressed such that intervention has the most impact, and is likewise as efficient and cost-effective as possible.

For the purposes of this report, we have created a matrix that details a combination of elements that, taken together, represent the evaluation criteria used to identify best practices for children ages 0 to 3. The programs detailed here, as well as programs not included, but some of which were considered for this report, are identified in the matrix (Table 10-1). In addition, some of the most innovative programs are too new to have longitudinal data or substantial evaluations. As such, they are included as promising practices; despite this designation, the character of the program, research base, or initial findings suggest that these programs will have a positive impact on participants. All of these programs should be taken, however, as general models that are suggestive of successful approaches to improving infant and child health and wellbeing.

CHARACTERISTICS OF SUCCESSFUL EARLY CHILDHOOD INTERVENTIONS

The promise of early childhood intervention lies in addressing the risk factors that, when left unchecked, produce trajectories over the life course fundamentally detrimental to children, parents, and families.[16] The majority of these risk factors are well documented in the academic literature, and even anecdotal evidence supports not only their existence but also their implications. As such, addressing risk factors in a meaningful way requires a more serious consideration of how mechanisms underlying these factors can be addressed, as well as how the existence of multiple risk factors produces a cumulative level of risk that necessitates multifaceted early intervention approaches.

Undoubtedly, "an intervention in early childhood that can evince sustained positive changes will necessarily reap benefits for a longer period than will treatments given later in the life course."[17] This provides the impetus for intervening early in the lives of all children, as well as specifically targeting those who can be defined as high risk. However, all early intervention and prevention programs are not created equal. That is, a number of characteristics define successful programs that truly promote child wellbeing and can thus sustain long-term change in the lives of individual children. Identifying particular programs that provide the most benefit to children requires consideration of not only the outreach techniques, specific curriculum employed, level and quality characteristic of the program, and program delivery methods and personnel, but also the convenience, intensity, duration, and sustainability of the intervention and its effects.

QUALITY

Across the country, countless early education, childcare, and intervention programs exist. Some provide high quality services delivered by personnel specifically trained in child development, education, nursing, and counseling, among other vocations and areas of expertise. Other programs do not afford children the same quality experiences, programming, or personnel, meeting only the minimum state requirements and providing little consistency for children. This quality designation is perhaps most closely related to whether or not an early childhood program is successful at producing positive and lasting effects.[18]

The designation of a program as quality necessarily implies a multifaceted evaluative component. For curriculum, quality implies not only developmentally and age-appropriate programming rooted in research-based theory and practice,[19] but also individualized programming tailored to the specific needs of the target population and each child's unique situation, experiences, shortcomings, and strengths. According to the National Academy of Early Childhood Programs, high quality programs support and enhance the physical, emotional, social, and cognitive development of children.[20] Likewise, a high quality curriculum utilizes activities intended to nurture development, are language-rich, and, perhaps more fundamentally, are sensitive to the varying needs and strengths of individual children.[21]

> "The promise of early childhood intervention lies in addressing the risk factors that, when left unchecked, produce trajectories over the life course fundamentally detrimental to children, parents, and families."

Indeed, program personnel effectively determine how services and programming are delivered and experienced by infants and children. Better-trained personnel who exceed the qualifications required by state agencies are associated with more successful programming.[22] Those educated in theories of child development and learning and those possessing knowledge of the most innovative strategies and curriculum to promote child development will be poised to deliver the most effective programming strategies. This presupposes rigorous licensing and training procedures, participation in continuing education, and oversight by state and local agencies as well as individual organizations. However, individual characteristics of teachers, caregivers, and other staff also determine the degree to which any education and teaching program enjoys success.[23] Positive relationships cultivated between personnel and the children they teach, mentor, counsel, protect, and nurture inevitably contribute to a program's designation as high quality. Not only will quality personnel possess specialized knowledge of child development and early childhood education, but they will also come to know the children they teach and interact with on a daily basis.[24] It is through this knowledge and sensitivity, and through positive and nurturing relationships, that staff are able to provide individualized services to children and their parents.[25] Inherent in the establishment of close relationships between staff, families, and children is the need for a small staff-to-child ratio, which research indicates is present in high quality early childhood programming.[26]

Finally, quality childcare, education, and programming implies that services are delivered in an environment that is safe, secure, and outfitted with the materials and equipment necessary to create a comfortable facility where children can learn and flourish.[27] Clearly, the designation of high quality exists as a dimension of the facilities, curriculum, staff, and relationships typical of successful early childhood education and intervention.

COMPREHENSIVE SERVICES

The scope of services available to infants and children should be comprehensive in nature. If an intervention's resources are limited, then the organization should be linked to additional services for both parents and their children, especially healthcare, which proves elusive for many low-income children and their families.[28] Other support services, in particular those targeting low-income, at-risk populations, should be closely integrated with early childhood education and programming as well. Research suggests that quality programs will either offer multiple services or have referrals available for parents and children.[29] Some of the support services included in successful early childhood programming are the aforementioned healthcare component, dental services, parent education, parenting and life skills, teen pregnancy prevention, support networks, mentoring, early childhood education, nutrition, and exercise/recreation.[30] The presence of comprehensive

services either in-house or through community partnerships also necessitates outreach efforts. Especially in the arena of healthcare services, outreach improves the probability that the individuals most in need of primary and ancillary services will receive those services. [31]

FAMILY/PARENTAL INVOLVEMENT

Family involvement in early childhood education and intervention represents a cornerstone of successful program delivery.[32, 33] If parents do not support programming, it is unlikely to have any substantial impact on children, in part because the goals of the program are not reinforced in the home. Positive relationships between service providers and parents ensure effective communication regarding the needs, competencies, and successes of individual children.[34] Without a close partnership with parents, teachers and service providers alone cannot make a lasting difference in children's lives.

SERVICE DELIVERY MODEL

Research confirms that "the best early childhood education results are seen in center-based programs."[35] In addition, other forms of early childhood intervention confirm the convenience and other benefits of a center-based approach, where all services are located conveniently under one roof. However, while center-based models prove to be the most effective strategies for a number of early childhood education and intervention programs, other programs designed to intervene during infancy (and even beyond) benefit from the home visitation model. In particular, nurse home visitation programs designed to improve birth outcomes, develop parenting skills, reduce abuse and neglect, and enhance attachment between infants and their mothers show particular promise.[36] While both models offer distinct advantages, both forms of service delivery provide programming in a convenient location, where parents can access comprehensive services.

"the best early childhood education results are seen in center-based programs"

LONG-TERM IMPACT

Finally, early intervention is unilaterally referred to as the key for successful interventions. Research consistently indicates that children need a learning-rich environment prior to entering formal, compulsory education. However, many interventions for infants and young children are short lived. Although the interventions begin early in life, services are discontinued once children reach school. The implications of this limited duration for a long-term program effect, especially in high-risk populations, are profound. Even Head Start, recognized by teachers, academics, politicians, and families as the quintessential early childhood program, which yields substantial improvements in school readiness, social adjustment, and even IQ, falls victim to a drop-off effect. A meta-analysis of Head Start evaluations indicates that, despite short-term gains, later in life the "cognitive and socioemotional test scores of former Head Start students do not remain superior to those of disadvantaged children who did not attend Head Start."[37] In fact, the founder of Head Start, Edward Zigler, has contended that the program could not possibly undo the consistent deprivation faced by children who attend.[38] This is not to say that the program is without merit—merely that a more sustained, multiyear intervention extending through the transition to grade school could produce more lasting effects. Short-term early childhood interventions may level the playing field so that children can enter school at less of a disadvantage,[39] but long-term, sustained interventions *keep* that playing field level so children can continue to excel and flourish educationally, cognitively, socially, and emotionally.

Although many programs satisfy the aforementioned requirements for successful programming, the push toward research-based programming and outcome evaluations has left numerous promising programs at a significant disadvantage in terms of recognition and funding. Notwithstanding the lack of evaluations for the majority of programs serving children ages 0 to 3, the basis for the creation of these programs nonetheless lies in a proven approach to early childhood. In other words, even those programs for which there are no evaluation data rely on the essential, well-substantiated body of knowledge surrounding child development and early childhood education. While evaluation and outcomes research is essential to identifying those successful programs that can provide the best outcomes for our children, in both a cost-effective and sustainable way, innovative programs that have not yet been formally evaluated over an extended period of time may also hold promise.

BEST PRACTICES IN MATERNAL HEALTH

Maternal health is the primary foundation of infant health, and thus, improving maternal health has a significant impact on birth outcomes. Nutrition during pregnancy and appropriate pregnancy-related weight gain significantly impact the health of the developing fetus, and in turn, infant health during the initial days and months of life. Likewise, some research suggests that maternal mental health problems and high stress levels can have a negative effect on the health of the developing fetus as well as on birth outcomes. There are a number of behavioral changes pregnant women can make that fundamentally alter their lifestyle. Among these factors are stress reduction, proper nutrition, smoking cessation, and adherence to weight gain guidelines, which all have a demonstrable effect on infants' health.

PRENATAL CARE, NUTRITION, & MATERNAL WEIGHT GAIN

The recommended figures for weight gain during pregnancy largely depend on the mother's size prior to pregnancy. However, the March of Dimes recommends that women of normal weight prior to pregnancy should gain from 25 to 35 pounds during pregnancy, whereas women who are underweight should gain from 28 to 40 pounds; in contrast, overweight women should gain significantly less during pregnancy, approximately 15 to 25 pounds.[40] Proper nutrition during pregnancy not only ensures appropriate and healthy weight gain, but also contributes to healthy fetal development, thereby increasing the probability of full-term birth and decreasing the risk of low birthweight.

Similarly, quality prenatal care provides the context in which expectant mothers' behavior and growth, as well as fetal development, are assessed and monitored. Consistent, high quality prenatal care can also reduce the incidence of birth defects. Although little is known about the cause of many birth defects, some can be affected through behavioral interventions, such as prenatal visits. According to Katz, over 4,000 babies are born each year with spina bifida or other neural tube defects.[41] Research consistently concludes that increasing folate and folic acid intake during pregnancy could reduce the risk of these defects by up to 50%.[42] Thus, prenatal care and clinician-patient dialogue, along with the dissemination of information detailing the importance of proper nutrition and the elimination of risky behaviors during pregnancy, can reduce the risk of certain birth defects.

The Homeless Prenatal Program

The Homeless Prenatal Program (HPP) provides services to more than 2,400 families in the San Francisco Bay area[43] and has been widely recognized as "one of the first programs in the country to provide comprehensive prenatal services to homeless pregnant women."[44] The goal of the program is to offer a continuum of care, or "wrap around" services, while following an empowerment approach focused on two main tenets:

(a) supporting and cultivating the mother-child relationship and (b) giving back to other families and the community.[45] Although the program is managed by a small nonprofit organization, the founder of the program, Martha Ryan, has created a comprehensive set of services modeled after outreach programs in Africa.

Services offered by HPP focus on:

- Perinatal services
- Drop in childcare
- Mental health
- Community health worker training /employment
- Technology center
- Safe families
- Advocacy/policy
- Housing assistance and placement and
- Substance abuse services

In addition to these nine focus areas, a new jail outreach program has been established that assists in securing transition services and solidifying relationships between incarcerated women and their children. According to the founder, despite the multitude of services offered by the program, the overarching goal is quite simply to "help women have healthy babies."[46] The prenatal/perinatal care element of HPP is rooted not only in establishing healthy behaviors and providing medical services, but also in supporting the mental, emotional, social, and financial wellbeing of pregnant homeless women. More direct prenatal services, including no-cost healthcare, home visits, education courses, and individualized case management, offer a client-based experience. In addition, workshops on the importance of prenatal care, prenatal yoga, parenting skills, and family violence prevention round out the services directly related to prenatal care.

Community health outreach workers (CHOWs) are former clients who work with nurses, social workers, and other personnel to meet the homeless women's health needs. Thus, former clients are encouraged to volunteer and help others—a part of the empowerment agenda of the organization that inspires its mission and may account for its success stories. The empowerment approach also emphasizes the importance of the individual client in the intervention, rejecting the traditional approach which assumes clients are not able to direct an assessment of their needs and the resulting intervention. Research indicates that the empowerment approach in health and social services helps clients avoid feelings of powerlessness and alienation which characterizes many traditional interventions.[47] Peers currently receiving services, but further along in the program, and women who have completed the program frequently engage in outreach efforts to recruit new clients to the centers. A CHOW group is also responsible for the administration and delivery of a support group, which is considered one of the most essential elements of the empowerment approach.[48] Volunteers also offer transportation to and from prenatal visits and other social service appointments, provide childcare, and act as individual peer counselors to program participants.

Although there is no large-scale, longitudinal evaluation of the organization's long-term success, initial results for program participants showed immense promise. The 1992 initial report on the HPP program indicated the model was successful in improving birth outcomes and fundamentally changing the life trajectories of participants.[49] Likewise, a 1994 report on the HPP program demonstrated the strength of such an empowerment approach, showing that giving birth to a healthy child had a profound impact on women, many times giving them the motivation to transform their lives and gain a sense of control over their environment. The two key strengths identified by the qualitative evaluation were the improvement in the mother–child bond and the empowerment element.[50] Finally, a 2005 report revealed that more than 90% of

participants in the HPP program gave birth to healthy, normal birthweight infants. In addition, 95% of these infants were drug-free at birth, a startling improvement over the prevalence of drug-addicted births in the homeless pregnant population.[51]

MOMobile of Philadelphia

Established in 1980 by practitioners and Philadelphia residents concerned about the elevated rate of infant mortality among the city's high-risk populations, the Maternity Care Coalition (MCC) has been advocating for and providing services to more than 60,000 high-risk mothers and their families in the greater Philadelphia region for the past quarter-century.[52] In 1989, MCC expanded its operations, and ultimately defined its organization, by establishing its famed MOMobile program.[53]

Currently operating out of eight area locations, MOMobile helps "low-income families get vital support and services . . . and the information they need to make healthy choices."[54] With funding sources ranging from corporate foundations to the Pennsylvania Department of Health, MOMobile's $3 million annual budget subsumes the salaries of MOMobile Advocates, who shuttle at-risk pregnant and expectant mothers to and from doctor appointments and provide assistance to families in developing family plans, receiving parenthood education, and securing healthcare. Furthermore, MOMobile's budget provides for adult education, job skills training, childcare, help with public housing benefits, and health/wellness and child development education. The program provides food and baby supplies to low-income families and offer participants a general sense of empowerment and emotional wellbeing through counseling and informal mentoring, as would an encouraging family friend.[55] Because increasing a high-risk mother's sense of empowerment may have an incalculable, yet indisputably positive impact on both the mother and the child, the mother's ability to make decisions, and the family's capacity for goal setting,[56] the personal component of the Advocate's effect may be the program's most notable trait.

On any given day, a MOMobile client may attend a lesson on breastfeeding and nutrition or receive information targeting the prevention and confrontation of domestic violence. An expectant mother may also receive advocate referrals to specialists to help her quit smoking or receive drug and alcohol treatment, while a new mother may receive clothing and emergency formula for her newborn child.[57] Facilitated by interpreters as needed, MOMobile either provides direct services or ameliorates the barriers preventing families from seeking outside services for virtually any prenatal/postnatal need faced by low-income families with young children.

"On any given day, a MOMobile client may attend a lesson on breastfeeding and nutrition or receive information targeting the prevention and confrontation of domestic violence."

Since its inception, the MOMobile concept has spread to other states, such as California[58], and even into prisons.[59] The program has also joined forces with organizations such as Early Head Start, the YMCA, and the Philadelphia Workforce Development Corporation's Family Start partnership to provide an even more comprehensive service offering.[60] Due to its innovative approach and the lack of longitudinal data on program impact, the efficacy of MOMobile specifically has yet to be subject to a rigorous evaluation. However, the efficacy of community health workers' services in general, delivered by trained peers, has been evaluated. It is this research that forms the basis for designating this program as a promising practice, with the potential to emerge in the future as a best practice.

MOMobile personnel, similar to Homeless Prenatal Program personnel, employ a Community Health Workers (CHW) approach. Studies of the CHW approach in general, defined as community advocates and

peers working without master's-level training,[61] reveal that the intimate relationships built through this social service delivery model are more than adequate, and are in fact superior to traditional models staffed by credentialed personnel. For example, a study of CHW by Rodewald et al. of 2,741 subjects showed that immunization rates of at-risk infants can be increased by 20% through racking and outreach efforts such as those conducted by MOMobile.[62] Furthermore, they found these efforts also decreased the mean delay of immunization by 63 days and increased well visits by 0.44 visits per child.[63] Likewise, Navaro et al. found that these same types of outreach programs were able to increase Latino women's rate of mammograms and reporting of breast self-exams.[64] In evaluations, MOMobile, specifically, has been shown to increase a mother's perceived decision-making skills, self-sufficiency, and self-determination.[65]

BEST PRACTICES IN IMPROVING INFANT HEALTH & MORTALITY

The causes of premature birth[b] and low birthweight[c] are complex and multifaceted, as are their implications. Premature labor and delivery frequently result in low birthweight infants and are significant contributors to infant mortality; however, the causal mechanisms that predict and initiate preterm labor remain poorly understood. As a result, identifying "best practice" programs that achieve consistent reduction in the rates of premature birth, low birthweight, and infant mortality is challenging. Much of the research to date produces conflicting results, aside from the suggestion that consistent prenatal care improves overall pregnancy outcomes, which mirrors the aforementioned focus on maternal health as an imperative for ensuring healthy mothers and infants. Yet, research also consistently implies that the majority of single-focus programs achieve minimal, if any, appreciable gains, while multicomponent programs show more promise in addressing the multiple correlates of poor pregnancy outcomes.

REDUCING PRETERM/PREMATURE BIRTH

In spite of unparalleled medical advances over the past few decades, the rate of preterm birth has risen steadily; in fact, the rate of preterm birth increased more than 30% between 1981 and 2003, according to the March of Dimes.[66] Premature birth represents one of the leading causes of infant death, and in approximately half of cases, cause is unknown. For cases where cause is determinable, the possible routes to preterm birth range from maternal stress to infection, among others. According to Goldenberg and Rouse[67], "a substantial reduction in preterm delivery is unlikely to be achieved until there is a better understanding of the mechanisms leading to preterm labor." Moreover, the majority of interventions that show somewhat consistent evidence of effectiveness, such as treatment of infection (urinary tract, bacterial vaginosis) and cerclage[d], are applicable to only a small proportion of those at risk.[68, 69] Hall asserts that "there is a substantial body of data repetitively documenting high-risk factors for prematurity that have not been widely subjected to primary preventive approaches."[70] While these approaches hold more long-term promise, creating a comprehensive evaluation of teen pregnancy programs and other primary prevention strategies, as they are related to patterns in preterm birth, poses significant methodological problems.

The West Los Angeles Preterm Birth Prevention Project

The West Los Angeles Preterm Birth Prevention Project is a targeted initiative that focuses on improving pregnancy outcomes for women with multiple risk factors. By combining education, more frequent prenatal

b Babies born prior to 37 weeks of pregnancy.

c Low birthweight implies a newborn weighs less than 5 pounds, 8 ounces (2,500 grams), whereas very low birthweight indicates a newborn weighs less than 3 pounds, 5 ounces (1,500 grams).

d Cerclage is a procedure where a stitch or suture is used to keep the cervix closed and prevent miscarriage or early labor.

care, and health counseling with concerted efforts to reduce psychosocial and nutritional stress, the program strives to systematically eliminate risk factors and, in cases where preterm labor does occur, prepare expectant mothers with the knowledge about how to detect it.

The initial West Los Angeles Preterm Birth Prevention Project involved eight county medical facilities. Five were designated program facilities and three were control sites. Women assigned to the program sites received almost twice as many prenatal visits as the control group, in addition to prevention education courses on the identification of preterm labor signs and what to do if preterm labor occurred.[71] Additional secondary interventions supported by the program included bed rest, counseling, stress management, and oral progestin.[72] Beyond this, women participating in the program were provided additional social support from program staff, which was enhanced by the presence of a social worker, a nurse, and a health educator.

The preterm delivery rate among the control group was 9.1%, compared with 7.4% for program participants.[73] Likewise, participating women were less likely to deliver during or prior to their 32nd week of pregnancy than women in the control group (16% vs. 20%), although the majority of preterm births were spontaneous in nature.[74] While race was not included in the evaluation of program outcomes, despite statistically disproportionate rates of preterm labor among races, a similar number of African Americans appeared in both groups, and the study's authors suggest that the program may hold more benefits for African American women because of their higher rates of risk.[75, 76, 77]

> "Premature birth represents one of the leading causes of infant death, and in approximately half of cases, cause is unknown."

Research on the cost-effectiveness of the intervention conducted by Ross et al. indicated that the program significantly reduced expenditures on newborn care, even in light of additional prenatal care.[78] Ross et al. examined prenatal, inpatient, delivery, postpartum, and newborn care costs and determined that, on average, high-risk program participants saved approximately $2,196, which represented $1,768 per mother and newborn pair.[79] The majority of cost difference was attributed to women who gave birth before 32 weeks of gestation.

Shore contends that part of the success of the West Los Angeles Preterm Birth Prevention Program in reducing preterm births by 19% in the study population (despite increases elsewhere in the city) can be attributed to the content and timing of the intervention and prenatal care.[80] Additionally, by addressing the behavioral risk factors of preterm birth and educating expectant mothers about the signs of preterm labor, the program encouraged behavioral modification, which may also have contributed to more positive outcomes.[81] Other research also supports the notion that combining nutritional counseling with education, behavioral modification, and coordinated care has an overall positive impact on gestational length.[82]

Healthy Start

Healthy Start, a program initiated by the Health Resources and Services Administration (HRSA) to improve perinatal outcomes and newborn and maternal health, exists across the nation and in Dallas. In operation since 1991 in various regions of the United States, the Healthy Start program serves primarily at-risk pregnant women and infants and draws on the support of multiple agencies and individuals to improve pregnancy outcomes. Despite the fact that cities, counties, states, and hospitals/health departments undertake the Healthy Start program as grantees, they maintain a significant amount of discretion in determining how the program is implemented and what type of model or curriculum is used.

Currently, the program recognizes nine intervention models, none of which are mutually exclusive. These nine models are:

1. Adolescent programs on teen pregnancy,
2. Training and education,
3. Service facilitation and coordination,
4. Risk reduction and prevention,
5. Clinical service improvement,
6. Family resource centers,
7. Case management,
8. Outreach, and
9. Recruitment and community-based consortia.

Aside from medical personnel (OB/GYN and nurses), the programs utilize the services of nutritionists, mental health counselors/psychological counselors, family counselors, social workers, health educators, and community members in a culturally sensitive, coordinated care environment.[83] Although each program site is allowed to tailor the program to the needs of the service population, research demonstrates that Healthy Start programs with stable program leadership focused on coordinating services for enrollees, while simultaneously empowering community residents to be involved in the program, are generally more successful in achieving positive gains.[84]

Evaluations of Healthy Start, targeting program sites with between 1,000 and 7,000 participants in 15 separate locales, revealed significant gains when viewed in light of comparison sites with similar demographics. Although the majority of program sites evaluated included predominantly urban locations, some were located in rural areas as well. Among the locations included were Baltimore, Birmingham, Boston, Chicago, Cleveland, Detroit, the District of Columbia, East Chicago, Gary, Hammond (Indiana), Lake Station (Indiana), New Orleans, New York City, Oakland, Pee Dee (South Carolina), Philadelphia, Pittsburgh, and a number of tribal organizations in four Midwestern states. According to Devaney et al., in more than half of the Healthy Start program sites studied, a substantially higher percentage of women received prenatal care that could be characterized as adequate or better.[85] Likewise, in over half of the program sites, the number of prenatal care visits women completed was adequate or better than those in the comparison sites. The preterm birth rate for four of the studied program locations was also significantly lower than for comparison groups,[86] although in the other 11 program locations, there was no statistically significant difference. However, in those sites where a difference in birth outcomes was present, the difference ranged from 1.3% to 2.9%. Part of the reason for the differential impact among program sites could be attributed to differences in program development and coordination. Cost data from an Oregon site indicate that the return on investment is $4.25 for every dollar spent on the program.[87]

ADDRESSING LOW BIRTHWEIGHT

The March of Dimes has reported that low birthweight infants account for 1 of every 13 babies born annually in the United States. Like preterm labor, low birthweight has multiple causes, and in many cases, these are unknown. However, a number of prevention and treatment options can decrease the odds of delivering a low birthweight infant. Some of the more widely recognized means of lowering risk include nutritional supplements like folic acid[88], prepregnancy planning, consistent and high quality prenatal care, medication to reduce preterm delivery (tocolytic) that lowers the risk for low birthweight, and overall maintenance and management of mother's health (diabetes, high blood pressure, etc.).

Colorado's Prenatal Plus Program

Recognizing the multiple pathways to low birthweight, Colorado's Prenatal Plus Program (CPP) responds to two of the primary sources—intrauterine growth retardation (frequently related to maternal smoking) and preterm delivery.[89] The CPP program is funded by Medicaid and advocates a multidisciplinary approach to minimizing the risks of delivering low birthweight infants. In an environment of coordinated care, Prenatal Plus teams consist of a care coordinator, a mental health professional, and a dietician, complemented by the standard medical component of prenatal care. As part of the program, enrolled women are required to complete 10 visits with the Prenatal Plus team, which must begin before 28 weeks' gestation, in addition to regularly scheduled visits with medical personnel. While most of the visits take place at local health agencies, two of the visits must occur in-home or off-site, and only one of the 10 visits can be by telephone. Care services are based on client assessments and, as such, are largely individualized and focused on the behavioral and psychosocial elements of improving pregnancy outcomes. Care coordinators and other team personnel closely supervise progress and counsel clients on nutrition, behavior change, smoking cessation, and resolution of psychological issues.

Evaluations of the CPP program assess changes within three categories of risk, including smoking, psychosocial risk (homelessness, depression, domestic violence), and inadequate maternal weight gain. Initially, 3,569 program participants were enrolled in the program, although only 2,377 remained for the duration of their pregnancy. Enrollees were more likely to be minority, in their teens, have a low level of education, and have one or more risk factors for low birthweight delivery than other pregnant women in Colorado. More than half of the women with mental health or psychosocial problems who enrolled in the program were able to resolve their risk. Likewise, 62% of participants were able to increase their maternal weight gain during pregnancy to the recommended level, and more than 50% quit smoking.[90]

> "Low birthweight infants account for 1 of every 13 babies born annually in the United States"

Research also found that in the CPP group, negative pregnancy outcomes for all pregnant women who were able to successfully eliminate their risk factors were significantly lower than for Prenatal Plus participants who were unable to successfully resolve their risk. Taken together, the low birthweight rate of participating women who resolved one or more risk factors was 7.0%, compared with 13.2% for Prenatal Plus participants who did not achieve risk resolution.[91] Currently in its ninth program year, the Colorado Department of Public Health and Environment reports that the low birthweight rate for pregnant women who completed the program was 10.3%, which is markedly lower than the 13.6% estimated rate for nonrecipients of programming.[92] According to Glazner and Beaty and the Colorado Department of Public Health and Environment, "for every $1 spent on Prenatal Plus services, $2.48 is saved in Medicaid costs annually;" this also represents a savings of $6 million when compared with high-risk pregnant women who did not receive services and consequently required higher Medicaid expenditures.[93, 94] Notably, the CPP program is one of the social determinants/behavioral intervention models recognized as effective and promising in the Institute of Medicine's new book on preterm birth.[95]

First Breath

According to Mathews, the financial implications of birth complications related to smoking (such as preterm labor, low birthweight, and spontaneous abortion) approach $1.4 billion to $2 billion annually.[96] Smoking doubles the risk of giving birth to a low birthweight infant.[97] Although the risks of smoking during pregnancy are widely publicized, a staggeringly small proportion of women (18 to 25% of smokers) quit smoking when they became pregnant.[98] Maloni et al. contend there is currently sufficient evidence to support the notion

that smoking cessation is effective in the reduction of low birthweight[99]—a sentiment echoed by other studies.[100, 101, 102] The First Breath program represents one such smoking cessation intervention.

The First Breath program, developed in Wisconsin as an intervention for low-income pregnant women, has four main objectives:[103]

1. To increase smoking cessation among pregnant women
2. To reduce smoking frequency for women who are not able to quit
3. To significantly improve newborn health
4. To decrease postpartum smoking relapse

To achieve these goals, First Breath adopted a client-centered approach that relies on individualized counseling in a nonjudgmental atmosphere. Following the "5 A's" counseling approach (Ask, Advise, Assess, Assist, Arrange) endorsed by the National Cancer Institute, the U.S. Public Health Service, and the Smoke-Free Families program created by the Robert Wood Johnson Foundation, smoking cessation counseling is integrated into all of the stages of routine prenatal care.[104]

The First Breath program begins with an initial tobacco screening, which assesses a pregnant woman's motivation to quit and her current level of tobacco consumption. However, one of the most unique features of the First Breath program is that it offers mothers who smoke tangible incentives to quit. In addition to self-help materials and access to a toll-free support line to reinforce cessation efforts, each participant receives a welcome gift. Initial counseling interventions focus on "meeting clients where they are" and developing an approach that has the highest likelihood of encouraging cessation. At follow-up visits, clients receive incentive gifts to reward their efforts and motivate them to continue. Additional counseling (in person and via telephone) continues throughout their pregnancy, along with the dissemination of information regarding support groups and peer mentoring programs in their area. Following delivery, participants receive a thank-you gift as well as coupons for newborn diapers.

Results of the initial pilot study revealed that the rate of cessation for First Breath enrollees was significantly higher at every stage of pregnancy than for the comparison group, and more than 60% of participants indicated that the program's focus on social support was one of the most helpful elements.[105] Overall, the rate of smoking cessation rose throughout pregnancy, reaching 43.8% after delivery.[106] A more recent evaluation of the program conducted in 2005 reported that the quit rate during pregnancy was 37%—an improvement over the reported rate of 34.7% for participants in the prior year and markedly higher than the rate of 22% for the comparison group.[107] Program evaluations also indicated a potential Medicaid cost savings of $1,274 per quitter,[108] which translates into $937,664 in healthcare savings.[109] Since the creation of the program in 2001, First Breath has grown from 7 program sites to 111 in 2006, despite its shoestring budget; it is now considered a model program and has served as the inspiration for other programs developed across the country.

REDUCING DRUG & ALCOHOL USE/ABUSE AMONG PREGNANT WOMEN

Alcohol and drug use in pregnant women unequivocally increases the risk of low birthweight, preterm birth, and birth defects. Moreover, in pregnant women, alcohol use frequently occurs in tandem with drug use, multiplying the negative impact of the behaviors on the developing fetus.[110] Although substance abuse has a long history as a social dilemma, the degree to which drugs and alcohol infiltrate the lives of infants via the addiction of their expectant mothers only became epidemically framed with the advent of crack-cocaine in the mid-1980s.[111] In a report published by the Substance Abuse and Mental Health Services

Administration's (SAMHSA) Office of Applied Studies, an estimated 9.6% of all women between the ages of 17 and 44 reported having used illicit drugs[e] within a month prior to answering the survey; just fewer than 4% of pregnant women reported the same. Moreover, 12.3% of pregnant teens between the ages of 15 and 17 reported the use of illicit drugs. The problem of illicit drug use is even more pronounced among non-Hispanic black pregnant females, reported at 6.8%. Additionally, 21.8% of Americans between the ages of 18 and 24 participating in at least one government assistance program reported substance dependency or abuse in the prior year.[112] While the problem of illicit drug dependency and abuse, more specifically that which occurs during pregnancy, is most certainly a widespread issue, efforts toward prevention and drug rehabilitation for racial minorities and low-income adults is of great importance to both the communities where they live and to the health and wellbeing of the expectant mothers' unborn children.

> "Maternal substance abuse is the most common factor involved when children come to the attention of the child welfare system."

Although primary prevention strategies, designed to prevent the use of drugs and alcohol during pregnancy before they manifest themselves in fetal harm, represent the most effective means of improving birth outcomes, here we focus on secondary prevention. Primary prevention programs, such as warning labels on alcoholic beverages, media campaigns, and public service announcements are more systemic approaches that provide *general* information and education to a *general* audience. In contrast, secondary prevention programs provide a targeted approach, focusing on women of child-bearing age or pregnant women who are already using drugs and alcohol and attempting to minimize this impact, reduce the harm to the fetus, and eliminate or greatly reduce drug and alcohol use before it becomes severe.

"Maternal substance abuse is the most common factor involved when children come to the attention of the child welfare system."[113] Parental chemical dependency is involved in 53% of out-of-home placements by child welfare agencies.[114] This issue affects all ages, races, genders, and socioeconomic groups; but, arguably, the population most affected by parental substance abuse is children. Approximately 67% of parents with children in the child welfare system require substance abuse intervention.[115] Additionally, American mothers give birth to more than 40,000 babies with prenatal alcohol exposure symptoms each year.[116] Of the five most prevalent primary addictions listed upon entry to substance abuse programs (alcohol, opiates, marijuana, cocaine, and stimulants), which total 95% of total primary addictions, alcohol constitutes 40%.[117] Furthermore, 12% of pregnant women reported drinking alcohol during pregnancy in 2004–2005; 3.9% reported binge drinking.[118]

SISTERS

SISTERS Intervention Services, a SAMHSA evaluated Promising Program, is one such effort to reduce substance use during pregnancy. The Center for Substance Abuse Prevention (CSAP), a division of the U.S. Department of Health and Human Services, funded this program based in the Bronx, New York, with a grant from 1991 to 1996, when the Lincoln Medical and Mental Health Center in New York assumed its financial and operational responsibilities.[119] More than simply connecting peer counselors with substance-abusing expectant mothers, SISTERS is a "comprehensive paraprofessional case management program for substance-abusing pregnant and postpartum women".[120] Peer counselors, all of whom were in recovery from substance abuse or physically abusive relationships, or had histories with child protective services, provided support services to pregnant women at high risk of engaging in behaviors known to lead to birth complications. Though the program

e Illicit drugs include marijuana/hashish, cocaine (including crack), heroin, hallucinogens, inhalants, or prescription-type psychotherapeutics used nonmedically as defined by the National Survey on Drug Use & Health.

served primarily African American and Latino women, clients included women mandated to participate in treatment by the criminal justice system, victims of violent trauma, and crack-cocaine users.[121]

One of the most crucial elements of the program's success was its attention to the selection process of its peer counselors. Though paraprofessionals, their individual commitment to the position was the most vital element of the program. In an effort to achieve the highest level of professionalism, SISTERS chose their peer counselors based on five criteria: (a) professional experience or education; (b) race, ethnicity, and culture; (c) experience, age, and maturity; (d) gender; and (e) interpersonal and helping skills.[122] Additionally, peer counselors demonstrated a strong passion for the position, had given birth to a baby with positive drug toxicology, had successfully completed drug treatment themselves, and had remained sober for a minimum of 1 year.

As a controlled experimental study, SISTERS Intervention Services was more than simply an attempt to better the lives of substance-abusing pregnant women and their children; it was also an experiment into the effectiveness of peer counseling with pregnant substance abusers.[123] Peer counselors became New York State licensed acupuncturists to facilitate the program's pregnancy-friendly choice of primary detoxification service. They also accompanied their clients to prenatal appointments, moderated relationships with child welfare agencies on behalf of their clients, and served as labor coaches at the births of their clients' children for those without partners.[124] Furthermore, through training and real-life experience, peer counselors also became public assistance advisors, helping their clients find their way through the maze of public support services such as the Women, Infants, and Child Nutrition Program (WIC).[125]

> "Each SBTP advocate's small caseload of 12 to 15 women resulted in highly individualized advocacy services."

Client satisfaction surveys and an analysis of conversational transcripts of peer counselor–client interactions suggest that SISTERS was quite effective in many ways. SISTERS clients were more likely to use offered public assistance, detoxification, and prenatal services than their control group counterparts (5.6 services used vs. 3.8).[126] In regard to these services, 64% of clients rated the peer counselor herself as the most beneficial service (as opposed to 23% from the control group who experienced non-peer counseling).[127] The program also assisted clients in achieving normal birthweights for their babies; more than 75% of clients had babies weighing more than 5.5 pounds, and only 1% had babies weighing less than 3.3 pounds. Additionally, the client's level of participation in the program was directly correlated with an increase in birthweight. That is, the more involved the mother, the heavier the baby.[128] This same direct correlation was observed with retention of custody. Among highly active clients, 87% were able to retain custody of their infants once born; correspondingly, only 73% of less active clients retained custody.[129] Finally, required urine samples following birth were significantly cleaner for the SISTERS group than for the control group, and SISTERS clients performed significantly better on self-reported scales of depression.[130]

In short, though the program has not been proven effective in a large-scale, longitudinal study, results have suggested the methods it endorses are promising. More importantly, the program follows a social learning model and has a strong foundation in proven research on the principles of peer learning.[131] By providing pregnant women with coping skills and strategies to deal with their addictions, the SISTERS program offers women a chance to improve their lives and their infants' lives. For this reason, programs such as SISTERS are integral to improving the overall wellbeing of women, families, and communities by paying close attention to the potential and promise held by the newest members of society.

Seattle Birth to Three Program

Surveys of child welfare and substance abuse professionals have suggested that maternal substance abuse is treatable, and 11% of these professionals believe the problem can be rectified within 1 month. Combating the reality of maternal substance abuse and fueled by the promise that treatment works, countless maternal/parental substance abuse programs nationally have sought to improve the lives of infants by improving treatment options for their mothers.[132] Nevertheless, although clinical trials evaluating such programs are plentiful, few researchers have systematically evaluated parenting programs specifically for drug-dependent mothers in a controlled manner.[133] The Seattle Birth to Three Program (SBTP) is one of the few parenting programs aimed at servicing pregnant mothers and mothers with substance abuse; for this reason, it has been widely scrutinized. From these evaluations stems an academic consensus that SBTP is among the best that prenatal and perinatal substance abuse programs have to offer.

SBTP is unique among even controlled experimental treatment programs in that its outcome measures comprise the only study of a long-term parental substance abuse treatment program that assigned its control and experimental groups randomly and placed their clients with advocates based on potential intervening variables such as substance abuse history, but also along cultural, racial, and linguistic variables.[134] As such, SBTP exists as an intensive case management approach to treating drug dependency in mothers, with a focus on the individual underlying issues faced by the pregnant and new mothers. SBTP's culturally matched advocates provide indirect service to mothers and expectant mothers at high risk of substance abuse by connecting them with community-based services. Maintaining strong relationships with their clients, SBTP's advocates dedicate themselves to maternal support by making in-home consultation visits and developing independent relationships with the client's extended family as well.[135]

Each SBTP advocate's small caseload of 12 to 15 women resulted in highly individualized advocacy services for their clients over the 3-year duration of the program's controlled evaluation study.[136] As a result of the highly individualized approach to case management, advocates were able to offer clients much more than social services networking, providing family planning expertise, advice on available options for treatment, assistance in the maintenance of their abstinence from alcohol, and wellbeing support for the target child.[137] Each advocate was trained in the utilization of the Seattle paraprofessional advocacy model, a motivational interviewing technique based on the stages of change theory. The utilization of this model treats motivation for treatment as its primary priority. Essentially, motivation is viewed as a process, not a personality characteristic. As such, the development of motivation toward treatment is truly developmental in nature, allowing an advocate's various clients to be at different stages at different times—hence, the need for small caseloads with an enormous degree of service personalization.[138] The model furthers its motivation-centered approach by recognizing that client ambivalence to the changes resulting from treatment is expected and is an obstacle to surmount. Motivation is thought to stem best from interpersonal relationships, a tenet that leads the program to utilize its intensive home-visitation component as a deterrent for the expected resistance to treatment.[139] Central to the efficacy of the program, then, is the client's eventual realization that her behaviors are not judged, and that her perceptions of her situation are not only valid, but crucial to the betterment of her condition.

Upon evaluation at 4, 12, 24, and 36 months into the program, marked impacts on mothers and children affected by substance abuse were demonstrated. The five efficacy domains assessed were (a) drug/alcohol dependency treatment, (b) drug/alcohol abstinence, (c) family planning, (d) health and wellbeing of the target child, and (e) connection to service.[140] Positive results were demonstrated in all five of these outcome measures.

Ultimately, 85% of the program's clients completed a substance abuse program. Furthermore, the intensity of program involvement was directly proportional to a client's success in completing inpatient programs

insofar as the most involved clients were twice as likely as the least involved to complete the requirements of the program. Of the clients with no prior substance abuse treatment histories (47% of clients; 8% of controls), half of the clients entered inpatient treatment following the recommendations of their advocate; none of the control subjects without treatment histories entered inpatient treatment. Moreover, every client who entered an inpatient treatment program for the first time completed it successfully.[141]

As with the completion of treatment programs, the intensity of a client's involvement was also proportional to their ability to remain abstinent from alcohol/drug use. Of the clients who were most involved, 53% abstained from alcohol/drugs for at least 6 months following treatment; the least involved clients abstained at a rate of 27%. Though drug use was not entirely eliminated from the populations served, more than 77% of the most involved clients experienced at least 1 year's worth of abstinence during their 36-month participation; correspondingly, 40% of the least involved remained abstinent for at least 1 year during the program duration. The most notable contribution in the area of abstinence from alcohol and drug use is demonstrated, not by most involved–least involved client comparisons, but by comparing the client group with the control group. Only 32% of the control group abstained for 1 year during the program's 3-year duration. Therefore, even minimal involvement in the program produced modest gains in abstinence.[142]

In regard to family planning, SBTP clients demonstrated regular use of birth control at a rate of 73% by the end of their 36-month participation. Moreover, 47% choose either tubal litigation or reliable contraceptive implants and shots as their primary pregnancy prevention strategy. Once more, the most involved participants were less likely to become pregnant during the program and were subsequently less likely to experience childbirth (20%).[143]

Though the incidence of doctor's visits varied little between the various groups studied, the client group experienced vast gains in the improvement of the health and wellbeing of their children through the appropriate placement of their children's custody responsibilities. Surprisingly, at 36 months, only 52% of clients' children remained in their parent's care when the original issue with child welfare services stemmed from substance abuse, compared with 67% of control children. Nevertheless, the health and wellbeing of client children improved drastically when viewed through the lens of "appropriate custody." Appropriate custody was defined as "either the child being in the custody of a mother who had been in recovery for at least 6 months, or the child not being in the custody of a mother who was unable to maintain abstinence."[144] By this measure of success, SBTP was immensely successful. By the end of the program, 69% of client children were in appropriate custody situations, as opposed to 29% of control group children.[145]

> "Despite all the positive health benefits to infants, in 2003 only 62% of U.S. mothers were exclusively breastfeeding their infants at 7 days old and only 14% were exclusively breastfeeding 6 months postpartum."

The client group also utilized many more community services than the control group, as well as expressed much more satisfaction with the services they received. The most prevalent services utilized by SBTP clients, in order of reported satisfaction, were as follows: family healthcare provider, drug/alcohol treatment, food bank, family planning clinic, Children's Protective Services, legal services, parenting classes, other healthcare services, daycare/childcare, public housing, emergency bill-paying assistance, public health nurses, vocational training classes, mental health counseling, and domestic violence services.[146]

As facilitating community connections is the ultimate goal of a social services advocate, these findings were quite promising and demonstrate that through an approach such as that used by the Seattle Birth to Three Program, existing community services can achieve higher utilization rates, becoming more widespread and effective.

In a meta-analysis of maternal substance abuse treatment approaches, Health Canada summarized the focus area's literature and identified four components of an effective, broad, and flexible continuum of substance abuse services: (a) outreach efforts, (b) case management and flexible scheduling, (c) attention to family issues, and (d) the continuity of care following treatment.[147] The efforts of the Seattle Birth to Three Program embody these characteristics and demonstrate that a comprehensive program incorporating all these ideals is not only achievable, but can also be effective in improving the lives of substance-abusing mothers and their children, prenatally and beyond.

BEST PRACTICES IN INFANT HEALTH: BREASTFEEDING

Breastfeeding is widely acknowledged as the most beneficial source of infant nutrition; the American Academy of Pediatrics refers to exclusive breastfeeding as "the reference or normative model against which all alternative feeding methods must be measured with regard to growth, health, development, and all other short- and long-term outcomes."[148] Breastfeeding improves developmental outcomes in preterm births, improves resistance to infectious diseases, enhances neurodevelopment, and potentially reduces the incidence of Sudden Infant Death Syndrome (SIDS).[149] Despite all the positive health benefits to infants, in 2003 only 62% of U.S. mothers were exclusively breastfeeding their infants at 7 days postpartum, and only 14% were exclusively breastfeeding 6 months postpartum.[150] However, the "universal" benefits of breastfeeding are also tempered by a consideration of the mother's diet while breastfeeding, as well as potential maternal drug and alcohol use, which may undermine the health benefits associated with the practice.

Research suggests hospitals play a key role in influencing a mother's willingness to breastfeed,[151] as do friends, family, and support networks.[152] Equally important is education, generally within the hospital setting, which either tacitly or overtly supports breastfeeding through instruction and practice, or may even discourage the practice unknowingly. Until recently, few intervention programs had directly targeted high-risk groups—including minorities, low-income mothers, and mothers with low levels of education—that traditionally have lower rates of breastfeeding.[153] In recent years, WIC and other state and federally funded programs have explicitly promoted the practice. However, a more universal, hospital-based policy may provide a more extensive and effective approach to addressing low rates of breastfeeding among all women, with additional specialized services at the local level to target high-risk groups.

Baby-Friendly Hospital Initiative—USA (BFHI) & Ten Steps to Successful Breastfeeding

Developed by the World Health Organization (WHO) and UNICEF, the Ten Steps to Successful Breastfeeding and the Baby Friendly Hospital Initiative (BFHI), as a whole, attempt to improve the maternity experience for women and their infants. Implemented in 1991 in response to growing concerns over the dissemination of free or low-cost formula and other alternatives to breast milk, the Baby Friendly Hospital Initiative identifies ways in which hospitals can transform the birthing experience and encourage proper breastfeeding for new infants.[154] To date, over 16,000 hospitals have been deemed baby-friendly under these guidelines.[155] However, despite the widespread acceptance of many of the approach's tenets, countless hospitals across the globe have not yet formally adopted all aspects of the guidelines, or have adopted the guidelines in an ad hoc manner leading to inconsistent application. Moreover, adoption of the core principles in the United States has been slow; as of 2001, only 27 of the 16,000 hospital sites were in the United States.[156] In fact,

many hospitals engage in practices diametrically opposed to the recommendations provided by the BFHI. For example, many hospitals in Dallas continue to dispense free ready-to-feed formula and promotional materials created by formula makers to new mothers prior to hospital discharge, despite breastfeeding education during the hospital stay.

The Ten Steps to Successful Breastfeeding have established clear and concise guidelines for hospitals such that personnel are aware of ways they can positively influence new mothers and encourage breastfeeding in a supportive environment. The program focuses on the development and formal implementation of the following policies:

1. A written breastfeeding policy expressly communicated to all healthcare personnel
2. Personnel training to support policies surrounding breastfeeding
3. Dissemination of information regarding the benefits of breastfeeding to all pregnant women
4. Assistance offered to new mothers in initiating breastfeeding within the first hour postnatal
5. Individual instruction on how to breastfeed and maintain milk supply
6. The provision of breast milk, exclusively, to newborns unless supplements are medically necessary
7. Rooming-in[f] option provided to all mothers
8. Breastfeeding encouragement and social support by all personnel
9. No pacifiers or other substitutes to breast milk offered by hospital staff
10. Breastfeeding support groups and lactation consultant referrals upon discharge

The BFHI training program promotes awareness and provides detailed instructions on how hospital staff, nurses, lactation consultants, and even doctors can have a positive influence on breastfeeding rates. With relatively low implementation costs, roughly the cost associated with training staff, the potential for the policy's success is dependent on the hospital's ability to effectively shift its standards of practice. Research suggests that training is fundamental to promoting implementation; hospitals that went through training increased their utilization of the 10 steps from an average of 2.4 steps to 7.7 steps after the third phase of the training protocol.[157] Training takes approximately 3 days and involves counseling, education, and instruction in principles and policies, as well as practical implementation sessions.[158] For women who cannot breastfeed, the notion of "donor milk" is compatible with the BFHI approach.[159] It can be incorporated into 6 of the 10 aforementioned steps, and if a milk bank is available, per the WHO and UNICEF recommendations, donor milk would serve as a viable option for many women, especially those with HIV.[160]

In one study of the BFHI, exclusive breastfeeding rates upon hospital discharge increased from 41% to 77% for one group and 23% to 73% for another group after personnel received training in BFHI principles.[161] Similar results were visible in other program sites. A 3-year longitudinal study in 12 hospitals with 4,614 women (experimental and control groups) has indicated that the experimental group in hospitals with the BFHI in place was more likely to exclusively breastfeed, breastfed their child longer, was more knowledgeable about the benefits of breastfeeding, placed more positive value on breastfeeding, and was more likely to have a positive attitude and assessment of breastfeeding.[162] Overall, during the hospital stay, breastfeeding rates in the experimental group ranged from 92 to 95%, when both exclusive and mixed breastfeeding were included; at 2 months postpartum, the experimental group's overall breastfeeding rate was 11 to 21%, but the control

f Rooming-in not only allows mothers to develop a strong bond shortly following birth, but also encourages breastfeeding insofar as mothers have easy access to the infant and can respond to his/her feeding needs immediately. Some hospitals still discourage rooming-in, advising the new mother that she will sleep better if the infant remains in the nursery overnight.

group's was approximately 7 to 14%. [163] Another survey of more than 1,000 mothers found that the practices associated with the BFHI significantly improved rates of breastfeeding, even 6 weeks postpartum.[164]

An evaluation of the BFHI Breastfeeding Program at the Boston Medical Center assessed breastfeeding rates before, during, and after program implementation and showed a 17% increase in breastfeeding following delivery under the BFHI model.[165] An inner-city hospital, Boston Medical Center was the first hospital in Massachusetts to adopt the recommendations and implement the steps of the program.[166] Moreover, Boston Medical Center's BFHI has been identified as a best practice by the Assistant Secretary for Health because implementation has transformed the hospital experience for mothers and their infants, fostering an environment of education, support, and, ultimately, superior infant health in a teaching hospital serving traditionally underserved, inner-city populations.[167]

Mother-to-Mother Support Programs: Volunteer Peer Counselors

Research suggests that expert-led breastfeeding programs are less effective than peer-led programs.[168] Thus, in response to the staggeringly low rates of breastfeeding—in particular low breastfeeding rates after multiple months postpartum—many communities and states have implemented peer counseling programs to encourage the sole use of breast milk in infant feeding. In collaboration with WIC (Women, Infants, and Children), many of the support programs target women at risk—those from groups that historically have lower rates of breastfeeding. Women on public assistance and those in poverty are less likely to breastfeed than their nonpoverty, nonassistance counterparts,[169] and as such, additional support interventions addressing the multiple barriers to breastfeeding experienced by this demographic are warranted. Breastfeeding and nutrition-focused peer support networks have been implemented by humanitarian and other agencies that encourage the health and wellbeing of infants worldwide.[170]

> "Even in traditionally hard-to-reach populations...peer counseling interventions have been shown to be effective at encouraging breastfeeding rates."

The notion of mother-to-mother support is a position advocated by the La Leche League, an organization that has long supported the notion of mother-to-mother peer counseling to promote breastfeeding.[171] Through these programs, La Leche League has sought to capitalize on the wisdom of mothers and encourage them to model breastfeeding behavior and assist new mothers in breastfeeding successfully.[172] Because the peer counselors in mother-to-mother support programs are volunteers, it is one of the most cost-effective ways attempted by many nonprofits, hospitals, and social service agencies to put the last of the 10 steps to successful breastfeeding into action. Instead of relying on the services of lactation consultants or other hospital personnel, which are generally confined to the duration of the hospital stay unless the mother initiates additional contact, support programs relying on the mother-to-mother approach utilize the experiences and skill sets of more experienced mothers to instruct, educate, and support breastfeeding in new mothers.

Mother-to-mother support groups show a demonstrable impact on breastfeeding at 3 months postpartum, with a significantly higher proportion of participants in peer support programs continuing to breastfeed when compared with control group mothers (approximately 81% vs. 70%).[173] Even in traditionally hard-to-reach populations who may be at a higher risk (e.g., WIC recipients), peer counseling interventions have been shown to be effective at encouraging breastfeeding rates.[174] Likewise, in rural populations, peer counseling/mother-to-mother groups increased rates of breastfeeding initiation and the duration of breastfeeding.[175] In general, research consistently indicates that breastfeeding duration in general is longer among women who attend a peer support group, perhaps because of the practical advice and the emotional support provided, which functions to allay fears and minimize frustrations.[176,177]

The Linkages Project provides detailed training requirements for effective mother-to-mother peer counseling and breastfeeding support groups.[178] The technical aspects and training for the program are provided by healthcare professionals, although the peer counselors are community volunteers. Technical program aspects and educational elements are provided to train the trainers, who then function as trainers to the peer counselors and facilitators. Training focuses on the following components[179]:

- Advantages of breastfeeding
- Practical elements in the initiation of breastfeeding
- Benefits of exclusive breastfeeding
- Basis for the Lactational Amenorrhea Method (LAM) of family planning, which discusses which factors relating to breastfeeding indicate a risk of pregnancy when no alternative birth control method is used, and how to effectively prevent a pregnancy while breastfeeding using scientifically based, natural birth control methods
- Complementary feeding options at 6 to 8 months, 9 to 11 months, and 1 to 2 years
- A consideration of the local health situation and policies related to infant feeding
- Education on breast milk production
- Proper attachment and positioning
- Common difficulties involved with breastfeeding and related coping strategies
- Breastfeeding myths
- The Baby-Friendly Hospital Initiative (BFHI)
- How to breastfeed in special situations
- Characteristics of effective support groups and their facilitators
- How to select effective facilitators
- Formal facilitator selection
- Administration and organization of support groups

Because the volunteer peer counselors are the key to the support system, programming emphasizes the creation of a tightly knit community of mothers, a supportive and nurturing environment, a free and open environment that accepts questions and provides practical answers, participation by all attendees, active listening, and an environment characterized by a caring attitude and respect.[180]

BEST PRACTICES IN PREVENTION OF TEEN PREGNANCY

Teen births, although steadily declining over the past decade, remain higher in the United States than in most industrialized countries. The Texas Department of State Health Services reports that a Texas teen becomes pregnant every 10 minute[181]; Medicaid's annual cost for births to mothers ages 13 to 17 is $41 million dollars annually, which does not include mothers who are able to pay for their own medical care during pregnancy and childbirth. The Brookings Institution places the overall cost of teen pregnancy to taxpayers at $7 billion per year.[182] The social costs are even more devastating. Teen mothers, especially those whose pregnancies are unintended, face substantial barriers to emotional, developmental, and financial success.[183] On average, teen mothers are more likely to have lower rates of educational attainment, live in poverty, and have higher rates of some forms of disease and illness. Moreover, children born to teen mothers also show significantly lower levels of educational attainment, financial success, and emotional stability, as well as poorer health

and higher levels of incarceration.[184] For African American teen girls, rates of early pregnancy are significantly higher than their non-Hispanic, white counterparts, suggesting a racial disparity in the prevalence of births to teens.

The U.S. Department of Health and Human Services' Family and Youth Services Bureau has identified four primary ways to encourage life skills development and minimize risk-taking behaviors among adolescents.[185] These development areas include

- The creation of a stable identity;
- A feeling of connectedness and belonging;
- A sense of competency; and
- A belief in their individual agency, or the ability to take control over the direction of their lives.

Taken together, these suggestions imply the importance of acquiring general life skills, not only those related to minimizing risk-taking or early sexual behaviors, but rather a larger set of characteristics such as self-esteem, decision-making competencies, and identity. This perspective has been broadly termed the *youth development* approach, and research has consistently demonstrated that it is one of the most effective interventions for reducing teen pregnancy.[186, 187, 188, 189]

PREVENTING BIRTHS TO TEENS

Teen Outreach Program (TOP)

The Teen Outreach Program (TOP) is a youth development program that incorporates mentoring and service learning, or volunteerism, with reflection, preparation, and small group discussion time prior to and following participation in activities.[190] Other elements of the TOP program include skills training, tutoring, goal-specific classroom activities, and curriculum designed to foster self-esteem and independent thinking. Although the TOP program primarily serves adolescents ages 12 to 17 who are enrolled in school, and as such, was traditionally considered a school-based intervention, many of the program activities now occur within the community.

The core of the TOP curriculum is rooted in three program essentials. First, students participate in classroom instruction and group activities. The classroom portion of the program uses small peer group interaction and activities, guided by an adult moderator, to engage students and guide them in a discussion of values, issues, and decisions they are facing, as well as general life circumstances. This includes, among other things, self-esteem, relationships, school performance, drugs/alcohol, work, and so on. The second component of the program requires students to actively engage in community service. Through volunteering, students are fundamentally challenged as they gain a sense of self-pride and worth and build on their individual strengths by helping others, which ultimately leads to a strong connection with community members. Third and finally, student participants take an active role in service learning projects. Service learning is inextricably linked to volunteerism, but the discussion of community service and reflection on how it has altered students personally takes place within an intimate group setting and provides the foundation for introspection.

In operation since 1976, TOP is currently administered at approximately 400 program locations across the United States, Virgin Islands, and United Kingdom, reaching an estimated 20,000 youth.[191] The transition of the program from part of a health education curriculum or other core course program to one which incorporates all elements of the surrounding community represents a fundamental shift in the program's focus. Participants are expected to attend weekly meetings and complete at least 20 hours of community service per year.

A random assignment outcome evaluation conducted at five program sites compared participants in the TOP program with a control group. Arrest records, school truancy records, and self-reports indicated lower levels of delinquency, drug and alcohol use, and school failure and truancy, as well as higher grades and more frequent use of contraceptives among participants when compared with control groups.[192] Another evaluation of 25 TOP program sites reported significant reductions in not only pregnancy rates, but also school and course failure.[193] The authors found that the risk of pregnancy among TOP participants was roughly 41% that of the control group, after controlling for demographic variables.

A third evaluation, targeting primarily at-risk participants (those at risk for dropping out and becoming pregnant), revealed similar, but even more pronounced, results.[194] Teen participants had a 53% lower risk of pregnancy than those in the control group and showed similar reductions in risk of school failure and dropping out.[195] In addition, teen parents who participated in the program had a risk level of repeat pregnancy that was approximately one fifth that of nonparticipants. The program thus showed the most promise as a means of prevention among those at the highest level of risk.[196]

Ultimately, the benefit of the program can be seen not only in its impact on teen pregnancy outcomes, but also on sexually and socially responsible behaviors. Given that most researchers agree that life skills, youth development, and relationship education is far more effective than abstinence-only programs, the TOP program appears to be a way to instill responsibility, a sense of community, and self-esteem in youths, while simultaneously building strong bonds with peers, parents, neighbors, and even strangers.

Children's Aid Society—Carrera Adolescent Sexuality and Teen Pregnancy Prevention Program

The Children's Aid Society—Carrera Adolescent Sexuality and Teen Pregnancy Prevention Program, referred to as the Carrera model, is another youth development approach, and was initially piloted in 1984 in Harlem (New York City). The program remains 1 of fewer than 10 programs to achieve substantial reductions in teen pregnancy and birth rates. The purpose of the Carrera model is to provide adolescents with a comprehensive set of services that include sports and recreational activities, personal development, and employment assistance. Ideally, enrollees begin participating in the program at age 11, although many start between the ages of 13 and 15, and continue in the program through high school.

The Carrera model is based on a number of key principles that support the overall goal of positive youth development. Furthermore, the principles guide staff-student interactions and provide a framework for effective program implementation. These principles embrace:

- A parallel family structure where staff interact with participants in a nurturing way;
- The view of each individual participant in terms of their potential, in a nonjudgmental and positive way;
- A multifaceted approach to intervention that addresses the multiple interests and needs of participants;
- Long-term commitment to the maintenance of contact and relationships through high school;
- Parental and family involvement;
- Service offerings provided in a centralized location; and
- Service provisions delivered in a gentle, forgiving, and nonpunitive nature.[197, 198]

Program activities, organized around these principles, are equally multifaceted and include seven focal areas. Family life and sex education is the first focal area for the Carrera program, and although the program creator believes social support and positive relationships ultimately lead to responsible sexual behaviors,

nonetheless, sex education is an integral part of the program. More than this, the program goes beyond the standard curriculum of advocating abstinence to instructing adolescents in responsible sexual behavior. Employment assistance is also offered to participating teens, intended to assist them in learning responsibility and gaining work experience. Education is also stressed and supported insofar as students are able to receive additional help with homework. Program evaluations indicate that academic performance also improved with participation in the Carrera program.[199]

Mental health and medical care are also provided for participating students. Given the realization that many students do not receive adequate mental health services or standard medical and dental care, especially those in low-income families who may lack insurance, the Carrera program ensures that adolescents receive necessary services or counseling. Finally, Carrera participants are encouraged to engage in individual sports and forms of creative expression (e.g., art, dance, etc.) as part of their program involvement. The purpose of these activities is not only to keep adolescents occupied, thereby reducing the amount of unsupervised time, but also to build self-esteem, provide a creative outlet, and develop hobbies.[200]

"The program goes beyond the standard curriculum of advocating abstinence to instructing adolescents in responsible sexual behavior."

Evaluation results of the Carrera program indicate that not only do participants have lower rates of teen pregnancy, but they also are more likely to perform better in school, postpone sexual intercourse, and, if engaging in sexual intercourse, use safer sex practices and contraception. A longitudinal program evaluation using random assignment of participants to control groups indicated that 3 years after the inception of the program, almost 80% of participants remained in the program, and of those who were no longer participating, 8% had moved out of the area.[201] Of the control group participants assigned to other programs, only 36% were still actively participating in any programming after 3 years. Aside from the low attrition rates for program participants, Carrera students also displayed a more comprehensive base of knowledge on issues of sexual and reproductive health, as evidenced by an 11% higher score on health knowledge questionnaires. Female program participants were less likely to report succumbing to pressure to have sex than control group members (75% vs. 36%), more likely to delay intercourse (46% vs. 34%), and more likely to use a second form of contraception in addition to a condom, according to Philliber, Kaye, Herrling, and West.[202] Follow-ups at 3 years revealed lower rates of pregnancy and childbirth in the female participant group when compared with control group females.

Another evaluation conducted revealed that at a 3-year follow-up, participating female students were significantly more likely to have used injection contraception, such as Depo-Provera, and had consistently lower rates of pregnancies and childbirths, when compared with control group females.[203] However, one of the most disappointing results for Carrera participants was evident in follow-ups with males, who showed no appreciable difference in age of first intercourse, frequency of sexual encounters, or number of sexual partners, although they did show a modest reduction in the initiation of marijuana use.[204, 205] However, the authors suggest that the impact on male participants could be improved if intervention began earlier in their adolescence, prior to first intercourse.[206] In addition, some experts have criticized the program for its lack of cost-effectiveness—at $4,000 per child annually, the program is one of the most expensive of its kind. However, it is also one of the most intensive and comprehensive programs available.

The Carrera model's synergistic approach to preventing pregnancy is another example of a comprehensive youth development program. It also signifies a substantial departure from the limited focus of abstinence programs, which have traditionally focused solely on preventing adolescents from engaging in sex. Instead, the Carrera model relies on a combination of peer support, counseling, healthcare services, and education,

utilizing multiple elements in a coordinated and targeted intervention and prevention approach that shows a significant impact on female program participants.[207, 208]

BEST PRACTICES IN CHILD IMMUNIZATION

Child immunization rates have significantly increased over the past 10 years. However, despite substantial improvements in up-to-date immunizations, significant socioeconomic, racial, and ethnic disparities persist.[209] Many childhood illnesses that once devastated communities and families are now vaccine-preventable. However, medical advances in disease prevention alone do not guarantee that individuals can access these vaccines. Rather, a number of important barriers prevent parents from vaccinating their children. Among the most pronounced impediments to vaccination are cultural beliefs, a lack of knowledge and information about the importance of vaccinating, inconsistent medical care, costliness, and time constraints.[210] Up-to-date vaccination requirements for early education, prekindergarten, or childcare centers help encourage parents to vaccinate their children, as do entrance requirements for compulsory education. However, not all children attend early education programs. Moreover, even when parents do vaccinate their children, they may not keep those vaccinations up to date.

IMMUNIZING OUR CHILDREN

Reminder, Recall, and Outreach Approach (RRO)

The Reminder, Recall, and Outreach Approach (RRO) is not a program, but rather is a generalized approach to encouraging timely childhood vaccinations. According to the Centers for Disease Control and Prevention (CDC), the RRO approach can be implemented in a cost-effective manner, and the National Immunization Program (NIP) currently provides support to local health departments interested in adopting the system.[211] Especially with the variety of avenues available to engage in outreach (telephone, mail, e-mail, automated messaging), an RRO approach can serve both physicians and patients.[212] For example, physicians can benefit from computer-automated messaging systems, which are low-cost and reduce the amount of time required to contact patients. The RRO system, then, represents a low-cost solution to conducting outreach efforts to increase immunizations.

The RRO approach is a relatively simple, tiered intervention design. The first tier is the reminder, which involves initial contact to the child's parents to inform them that their child's immunization is coming due. Reminders can co-occur with other physician visits; if pediatricians make a conscious effort to check immunization status at every visit, there are no missed opportunities for clinic-based intervention and reminders.[213] Likewise, clinicians and primary care physicians can set up their own individual software-linked reminder systems, such that the process is automated and can serve as a reminder for them as well. The second tier of intervention, the recall, is a follow-up to the initial contact for parents who either fail to show up for their child's immunization appointment or for those who do not respond to initial contacts. The last portion of the intervention, outreach, is generally the most expensive part of intervention, and is utilized to address the most at-risk and difficult to reach population that has not responded to other interventions.[214] Outreach models utilize an array of techniques, including door-to-door methods, the provision of escorts to bring children to and from their visits, and other community-based efforts and drives to encourage participation in immunization programs.[215] Though, to be truly effective, the RRO approach requires a data source to determine which children need what immunizations and when; this need for data and up-to-date immunization records has led to a national push for registry systems incorporating data from multiple sources.

Regardless of the specific method of contact—whether by telephone,[216] mail,[217] or computer-generated letter[218]—substantial evidence supports the implementation of RRO systems in immunization. Thus, the general efficacy of the standard RRO, or clinic-based RRO, is well documented. A review of all clinical trials and pilot RRO programs reveals that patient reminder systems were effective at increasing rates of immunization in 80% of the studies; in addition, the reminders appeared to be successful for multiple forms of vaccination, including standard childhood vaccinations, influenza vaccinations, and tetanus, as well as other vaccinations available to adults.[219] Moreover, other research indicates this approach was successful at minimizing many disparities associated with immunizations. For example, a study of the RRO system in New York found that this type of strategy minimized the gap between urban and suburban children's immunization rates (from 18% to 4%), and at the same time decreased the difference between Hispanics and whites from 15% to 1%.[220]

> "Despite substantial improvements in up-to-date immunizations, significant socioeconomic, racial, and ethnic disparities persist."

Other applications of the RRO system shift the burden away from clinics to community organizations, which then maintain registries and are responsible for making and maintaining contacts with families. The impetus for this shift is primarily because in some underserved, distressed communities, many families do not have access to telephones or e-mail, and traditional mail service frequently proves unreliable given the volume of mail that most individuals receive. [221] Community organizations have the capacity to deliver reminder-recall messages on foot, keeping detailed immunization and pediatric visit records and returning to visit families again immediately before immunizations are due.[222] A program evaluation of this specific variant of the RRO system found that immunization rates increased from 37% to 50% after intervention. Children ages 19 to 35 months, not yet formally subjected to immunization requirements as a part of compulsory education, showed an 8% increase in immunization following contact. However, the cost of RRO on-foot programs is approximately $170,000 per year to serve 500 children (in 1996 dollars), the majority of which covers personnel expenses and salaries.[223] Yet, it is plausible that much of this expense could be eliminated if community members themselves were enlisted as volunteers to provide program support.

Emergency Rooms: A Captive Audience

Although emergency rooms are not intended to provide primary care or routine pediatric care, for many families, emergency rooms are the only available healthcare option. Many poor, inner-city residents rely on emergency rooms for their healthcare needs, especially for their children. Thus, it seems logical that locating immunization services within emergency care settings would address many of the barriers to accessing immunizations, while at the same time targeting populations with traditionally lower rates of immunization. Oddly, to date, many emergency-care-centered immunization programs have been used with adult populations; there is no reason to assume they would be less effective with infants, children, and youth.

During the 1960s, Wingert, Larsen, Lenoski, and Friedman proposed that many children visiting emergency rooms are not immunized; because many of them show up in the emergency room without serious illnesses, this visit provides ample opportunity for on-the-spot immunization.[224] More recently, according to Slobodkin et al., a feasibility and impact study of emergency room immunization availability for adults in need of the pneumococcal vaccine demonstrated great promise. In their study, only 10% of the high-risk adult population in the emergency room had received a pneumococcal vaccine; the intervention effort successfully immunized 1,173 of 1,493 high-risk patients, with a median 1.62 immunizations given per nurse per shift.[225] The success of this effort was mirrored in another similar intervention with adults using the influenza and pneumococcal

vaccines.[226] Of high-risk patients in the ER, 61% were immunized for influenza, and 35% were immunized with the pneumococcal vaccine; the frequency of immunizations ranged from 0 to 24 per nurse per shift.

Vaccination services delivered in the ER following a brief screening, delivered by nurses to high-risk populations, demonstrate a missed opportunity in immunizing children. Like primary care settings, any doctor-patient or nurse-patient interaction, especially with high-risk groups with traditionally low rates of immunization, should be utilized as an opportunity for education, outreach, and ultimately, vaccine delivery.

BEST PRACTICES IN EARLY CHILDHOOD EDUCATION, QUALITY CHILDCARE, & SCHOOL READINESS

Quality childcare is widely acknowledged as the number one predictor of child behavior.[227] Likewise, quality care is an important contributor to school readiness and subsequent elementary school performance.[228] Children who participate in higher quality childcare programs early in life have been found to be less distractible, more considerate and friendly to peers, more socially competent, less aggressive, and more task-oriented later in childhood.[229] Moreover, the benefits of quality childcare are exponentially more pronounced in families in which the parents have attained low levels of education.[230, 231] Clearly, the search for quality childcare is important to communities and families, and arguably even more imperative to families with low levels of education and income. One of the most classic examples (from the 1960s) of a best practice in early childhood education is the High/Scope Preschool program, which, although not highlighted here, is consistently referred to as a cost-effective, model approach.[232] Outcome evaluations of the Perry Preschool project provide a longitudinal perspective on the positive effects of quality preschool participation, such as increased lifetime earnings, a higher likelihood of stable employment, lower rates of crime commission, and higher high school graduation rates among preschool enrollees.[233, 234, 235] That is, the Perry preschoolers were more likely to achieve life success despite social and economic barriers.

EARLY EDUCATION, CHILDCARE, & SCHOOL READINESS

Carolina Abecedarian Project

From 1972 to 1985, the Carolina Abecedarian Project provided young, at-risk children in North Carolina with comprehensive early childhood education. Families with children under 6 months of age who were referred to the program via multiple sources and qualified for services received educationally oriented daycare intended to stimulate cognitive and language development and increase school readiness. The majority of program participants were low-income, African American households headed by single-parent females. The program, in operation for 50 weeks each year, offered parents quality childcare, educational enrichment and school readiness, pediatric care, nutritional supplements, diapers, and a case worker to respond to their needs.[236] The complementary school-age program built upon these fundamental offerings, expanding the scope of services to include a resource teacher who advocated on the child's behalf and provided other support services, the provision of additional activities and instruction designed to help parents continue instruction in the home, classroom visits, home visitation, and individualized tutoring.

Credited with firmly establishing the notion that quality early childhood educational intervention produces positive life outcomes and benefits extending well into adulthood, the Abecedarian Project followed a set of principles that created a rich educational environment for children, scaffolding learning and promoting cognitive and social development. To minimize some of the barriers to traditional early education programs, transportation was offered to all participating parents. A home visitation model enhanced the level of

support for both infants and parents, while maintaining a clear child focus. Beginning at 6 months of age, programming concentrated on games and activities designed to foster development of social and cognitive skills. In each stage of the program, parental involvement was encouraged, and additional seminars for parents, social services, housing assistance, and individualized counseling sessions provided social support mechanisms for enrolled families.

Later, individualized and structured educational plans, instituted around age 3, provided instruction in a more traditional, kindergarten-like environment. Programs such as *Bridge to Reading*[237] and the GOAL math program[238] constituted standard curriculum, and the establishment of prephonics skills and communication proficiency were emphasized. However, much of the instruction remained game-based[239] or interaction-based, with students gaining the majority of their instruction through standard communication in groups and one-on-one conversation, as well as daily reading. Individualized education plans tailored to the specific needs and developmental age of students increasingly formed the basis for instruction and student–teacher interaction.

Because children were randomly assigned to experimental control groups and had similar levels of risk at project inception, outcome evaluations paint a clear picture of the positive impact of the Abecedarian Project. In the first systematic evaluation, Ramey and Campbell found a significant increase in developmental functioning, general verbal cognitive, perceptual/performance, and memory skills for program participants when compared with control group children.[240] Likewise, when controlling for primary caregiver (mother) IQ and variables related to the home environment, another study of the Abecedarian model found that IQ scores for the intervention group remained higher than those of the control group; this was particularly noticeable with low IQ mothers.[241] When compared with the control group and another local daycare program, the Abecedarian children outperformed both groups on measures of IQ and cognitive skill up to 4 years of age. At age 8, these positive effects persisted, with the preschool intervention group scoring higher than the control group and the later intervention group (primary school) on standardized intelligence tests.[242] At age 21, the preschool intervention group was less likely to smoke cigarettes (39% vs. 55%), less likely to have used marijuana in the past 30 days (18% vs. 39%), more likely to have attended or be attending a 4-year postsecondary academic institution (35.9% vs. 13.7%), and less likely to have become a teen parent (26% vs. 45%).[243]

The program's cost per child was almost $14,000 (in 2002 dollars); however, an assessment of the economic feasibility of the Abecedarian model indicates that the cost savings and long-term benefits visible in participants' earnings, maternal earnings, and lower health costs far outweigh the costs incurred.[244] Overall, the program provides a return of $3.23 for every $1 invested.[245] Despite the vast achievements of the program, it was initiated in only one program site in one state; the model and proven status of the program, however, offer a plausible means of addressing the crisis in quality early child education.

> "Quality childcare is widely acknowledged as the number one predictor of child behavior."

The Chicago Child-Parent Centers

The Chicago Child-Parent Center (CPC), the nation's second oldest federally funded preschool program, was founded in 1967 to provide comprehensive school readiness services to 24 select high-poverty neighborhoods in Chicago.[246] Funded by federal Title I funds and state funding through the U.S. Departments of Education and Health and Human Services, the program serves more than 5,600 children and offers three component programs: half-day preschool, half- or full-day kindergarten, and 1st to 3rd grade support.[247] The rationale fueling the program's continued implementation is the presupposition that school readiness requires a stable

and enriched learning environment during early childhood that must involve active parental participation.[248] Each child's highly customized education plan focuses on educational continuity from ages 3 to 9, early intervention, structured language-based instructional models, and parental involvement.[249]

Like Project Head Start, CPC is a comprehensive, child-centered program for high-risk children from low-income households. It is, nevertheless, distinct in three ways:

1. As part of the Chicago public school system, CPCs are administered entirely by the school district and housed in either separate buildings or wings of affiliated elementary schools. Each center is staffed by a head teacher, teacher's aides, and a parent-resource teacher. Head Start generally relies on social services or community agencies rather than school districts to provide these additional services.

2. Eligibility is based on neighborhood poverty criteria rather than family-level income.

3. Services extend from ages 3 to 9 rather than terminating after preschool. The CPCs are allocated their own budgets and are coordinated and implemented by the head teacher. This person generally reports to an affiliated elementary school principal.[250]

As a comprehensive school readiness and development program, CPC emphasizes early literacy and math skills through the implementation of accepted teaching tools (e.g., Language Lotto, Alpha Time, and Peabody Language Development Kits).[251] In addition to direct service to preschool children at a low child-to-staff ratio of 17:2, CPC preschools utilize aggressive resource mobilization, home visitation, and outreach activities to maximize student and parent participation.[252] CPCs also offer informational services on health and nutrition, health screenings, and speech-language pathology services.[253]

A central operating principle of the CPC program is that parental involvement is the most crucial component to the effective socialization of children during early development.[254] Arguably its most distinguishing feature, CPCs offer parents extensive training in cognitive and social development, access to a staffed parent-resource room with services targeting the facilitation of parent-child interaction, consumer education, nutrition, and personal development.[255] Parents are encouraged to play an active role in their child's education by attending school events and field trips;[256] additionally, parents are encouraged to further their own education by attending GED courses conducted inside the centers.[257] Moreover, participant parents are required to volunteer in the classroom for a minimum of one half-day per week and are invited to serve on the School Advisory Council, thus assisting in the planning and implementation of educational curricula.[258]

> "Despite the program's longevity, it has remained a progressive and innovative solution to school readiness in neighborhoods with concentrated poverty in Chicago, evolving over time to meet the varied needs of families within the community, while maintaining a strong commitment to the principles of early childhood development and education."

As intuitive as the benefits of a program such as CPC may seem, the community gains in select Chicago neighborhoods are also quantifiable. Since 1986, the National Institute of Child Health and Human Development and the National Institute for the Education of At-Risk Students in the Office of Educational Research and Improvement have been funding the Chicago Longitudinal Study to evaluate the program's impact on communities over time and how this impact is manifested.[259] The study's findings regarding the efficacy of CPCs are as promising as they are solid.

Relative to the preschool control group, children who participated in the CPC's preschool program for 1 or 2 years completed high school at higher rates (49.7% vs. 38.5%) and dropped out at lower rates (46.7% vs. 55.0%).[260] Furthermore, students who continued through the program until 2nd or 3rd grade demonstrated a lower need for special education services (13.5% vs. 20.7%) and lower rates of grade retention (21.9% vs. 32.3%).[261]

The effects of CPCs were not limited to the classroom domain and academic achievement. Relative to the control group, children who participated in CPC preschool were 52% less likely to be victims of child maltreatment as compared with children who did not attend preschool.[262] Later in life, these program participants have been shown to be significantly less likely to engage in violence as well, as demonstrated through lower violence-related arrests (9.0% vs. 15.3%).[263]

Cost-benefit analyses of CPCs are equally promising. The federally funded Chicago Longitudinal Study found that all levels of participation in the program are directly correlated with economic benefits surpassing the program's costs.[264] In fact, for every dollar invested in the preschool program resulting in higher educational attainment and lower juvenile arrest rates, $4 was returned to the community in savings on criminal justice and crime-victim expenditures, as well as special education and child welfare service costs; an additional $7 for every dollar invested was returned in reduced public expenditures in general and increased community economic wellbeing estimates.[265] All told, the preschool program's annual cost per child in 2002 dollars was $4,989; a child who participates in the CPC program for all 6 years costs the community $11,387 in total. However, taken in the context of lower arrest rates and educational remediation needs, combined with an increased tax base attributed to higher academic achievement, the Chicago Longitudinal Study estimates that the government saves an average of $22,897 per child.[266]

In every sense, the Chicago Child-Parent Centers exemplify a best practice in early childhood education. Despite the program's longevity, it has remained a progressive and innovative solution to school readiness in neighborhoods with concentrated poverty in Chicago, evolving over time to meet the varied needs of families within the community, while maintaining a strong commitment to the principles of early childhood development and education. With modest yet solid results in curbing juvenile arrests, child maltreatment, and high school dropout rates, juxtaposed with increased academic achievements, educational attainment, and future earnings potential, CPCs are a consistent model of early childhood education worthy of acclaim, and consideration as the prototype for new efforts toward improving school readiness in high-poverty urban neighborhoods.

The Judith P. Hoyer Early Child Care and Family Education Centers (Judy Centers)

Maryland credits the late Judith P. Hoyer with revolutionizing early childhood education and curricula for high-risk children in the state. Her innovative ideas called for unprecedented collaboration of child services with the intentions of providing unparalleled education and care services for children in need.[267] In 2001, the State of Maryland began applying Hoyer's philosophy through their funding of the Judith P. Hoyer Early Child Care and Family Education Centers located across the state of Maryland.[268]

The Judy Centers are uniquely effective at servicing high-risk children through integrating early childhood care and education, as well as family education, support, and health programs.[269] The amalgamation of services so crucial to the success of low-income families is the key to the Judy Centers' success. These programs are made possible, in part, through the collaborative efforts of multiple community-based organizations housed within the centers themselves and within close proximity to sponsoring elementary schools.[270]

The Judy Centers provide comprehensive development and early care services for children birth to age 5 and their families.[271] Typically, these centers offer prekindergarten, preschool special education, kindergarten,

> "Infant and maternal poverty significantly limit the degree to which mental, physical, and social development can occur in children."

infant and toddler programs, and before and after school programs for older children.[272] In addition to partial- and full-day childcare services with meals provided, Judy Centers house early intervention services; health services for children such as immunization, pediatric care, and vision and hearing testing; and family literacy and GED programs for parents.[273] These coordinated services are made possible through collaboration with Head Start, Family Support Centers, and Healthy Families, and rely on additional support provided through early childhood education programs associated with colleges or universities, parent involvement programs, and public libraries.[274]

In contrast to the Chicago Parent-Child Centers, Judy Centers have been in operation for only a few years. As such, any results from studies can be viewed only as preliminary with respect to long-term outcomes; nevertheless, the short-term effects look promising. A study by Fontaine, Torre, and Grafwallner of 990 kindergarteners—43.8% of whom had received Judy Center services (JC) prior to entry—found that the program provided the most benefit to members of three groups of high-risk kindergarteners: those receiving special education services (SPED), those receiving free and reduced meals (FARM), and those with limited English proficiency (LEP).[275]

In the fall of their kindergarten year, 26.6% of JC SPED students were deemed ready for entry into the 1st grade, as compared with 45% of the non-JC control group.[g] By the end of kindergarten, 87.7% of JC SPED students were determined ready for 1st grade, compared with 84.2% of non-JC SPED students. These numbers suggest that, despite beginning kindergarten substantially less prepared for school, the skills gained through participation in a JC preschool program allowed students the opportunity to catch up.

FARM students received similar benefits from the Judy Centers. They began the year comparatively more ready (52.8% for JC students and 46.6% for non-JC students). Moreover, the JC group concluded kindergarten more ready for first grade (91.7% for JC students and 86.5% for non-JC students). However, findings for LEP students were the most promising. JC LEP students began their kindergarten year significantly more prepared than their non-JC LEP peers (57.6% and 34.3%, respectively). Additionally, they maintained higher levels of readiness by demonstrating 95% readiness as compared with the 84.5% readiness demonstrated by their non-JC LEP peers. This finding is impressive on multiple levels: (a) JC LEP students were able to enter kindergarten significantly more ready that their non-JC LEP counterparts; (b) they were able to improve their performance by the end of their kindergarten year to levels that were much higher than their non-JC LEP peers; and (c) they improved their performance in that time period to levels much higher than that of the entire sample average of 91.5% readiness.

Though the outcomes from Judy Center services are still in their formation, the outlook is bright. Through the combination of high quality childcare services, family education, and community services coordination, the Judith P. Hoyer Early Child Care and Family Education Centers are arguably improving the lives of Maryland's high-risk children today, and initial studies suggest that these benefits will continue to present themselves over the long term.

g School readiness and information was acquired through use of the Work Sampling System (WSS), a performance-based school readiness assessment tool evaluating success relative to 30 school success indicators.

Infant and maternal poverty significantly limit the degree to which mental, physical, and social development can occur in children. Poverty also has profound health consequences, especially for children who miss out on routine checkups, immunizations, and preventative care, as well as dental care. Moreover, poverty places strains on families and creates high levels of parental stress, in turn influencing children's stress levels and their overall wellbeing. The ability of a child to succeed is dependent upon his or her ability to not only have basic needs met, but to also have access to opportunities to thrive and grow.

CREATING SELF-SUFFICIENCY

Waterloo Region Opportunities Planning

In 1993, the Waterloo Region Opportunities Planning program undertook a massive effort to eradicate poverty and long-term welfare dependence in the Waterloo region of Canada by helping individuals become economically independent. This approach later became the basis for a larger campaign to eradicate poverty, Opportunities 2000. Relying on an empowerment model, program participants were intimately involved in the evolution of the program, as were community residents. Through a collaboration of multiple community groups and neighborhood residents, the program engendered increased civic participation, enhanced economic development, and created job opportunities and stability for families.

Counseling services were offered at 18 separate locations in the most distressed neighborhoods within the Waterloo region. According to the New Economy Development Group,[276] the program incorporates the following core elements:

- A participatory/empowerment model
- Client input and evaluation
- Employment and entrepreneurial counseling
- Public education campaign
- Economic development
- Life skills training
- Handbook of community resources
- Capacity building of nongovernmental organizations
- Creation of a women's co-op, new immigrant services, and a job resource center

In the initial pilot program, more than half of the committee members managing the program were welfare recipients, who oversaw the needs assessment and all other aspects of program management and implementation.

In just 4 years, the Opportunities Planning program was able to assist upwards of 1,100 individuals, who had previously been reliant on public assistance, to gain independence, either through stable employment or through the development of small businesses. Businesses were started by 189 of the program participants. Moreover, the welfare recipients were able to find employment much faster than those who relied solely on public assistance. During the first 2 years, the estimated savings generated by the program was approximately 2.2 million Canadian dollars, with a savings of more than $5.3 million during the 3rd and 4th year.[277] The cost

of the program varied from year to year. Initially, the cost of services averaged almost $6,000 per person who obtained employment, whereas by the final year of the program the cost was just over $2,000 per person.

Annie E. Casey Foundation's Family Economic Success Program

Families living in poverty are faced with a whole set of problems unknown to the middle and upper class populations. Barriers to obtaining the basic necessities of life such as food, shelter, and clothing are at times insurmountable. Notwithstanding these obvious challenges, low-income families must also combat less visible economic barriers. More than simply being poor, these families frequently live in "economic isolation," alienated from the larger, mainstream economy.[278] Apart from having no money, these families possess limited means of obtaining wealth. Often, they live in neighborhoods where the potential homebuyers needed for economic revitalization are discouraged from areas with high levels of concentrated poverty because of poor school performance, high crime rates, and damaging public perceptions.[279] The lack of adequate public transportation systems, which causes many low-income families to become "locked" within their own communities, coupled with the geographic mobility of the modern workplace and workforce at large, means many of these community "castaways" are left to compete with one another for the remains of an already depleted job supply.[280] Aimed at addressing these issues, public policies, though well intentioned, are often poorly integrated and mismanaged; likewise, the practices of many financial institutions (e.g., predatory lending, high-cost transactions, and exorbitant rates) function to worsen an already desperate situation.[281] The Annie E. Casey Foundation (AECF), though admittedly a single answer to a problem that requires the integration and collaboration of multiple solutions and organizations, proposes at least one program to minimize the strains induced by "economic isolation" and the lack of opportunity for future financial security—the Family Economic Success (FES) program.

FES is a proactive approach designed to assist low-income families in building more financially secure futures. Endorsed by the AECF, the foundation promotes this community/family building effort through three interrelated components: workforce development, family economic support, and community investment.[282]

Through workforce development, clients receive job training, job placement assistance, and many of the skills necessary to succeed in their new job, including computer training, job retention and advancement advice, and workforce support.[283] FES encourages the use of a variety of resources, including the AECF Jobs Initiative (JI) program. Contrary to many job placement programs in the past, JI endorses "long-run labor market retention, career advancement and family self-sufficiency, and not just job placement."[284] By targeting high-need industries and teaching employers and potential employees cultural sensitivity, JI has been able to increase the average wage of its 9,000 clients by almost 19% over previous earnings. Furthermore, prior to enrolling in the program, a mere 11.6% of workers had family medical benefits; following placement and development activities, workers had family medical benefits at a rate of 41.4%.[285] Currently, JI operates in St. Louis, Milwaukee, Seattle, Philadelphia, New Orleans, and Denver, with an annual budget of $30 million.[286]

> "Despite having credit cards, low-income families frequently do not have bank accounts."

Family economic support requires programs that assist families in building and maintaining assets (i.e., homeownership and savings account matching), securing high quality lending services (i.e., those void of exorbitant interest rates and predatory lending practices), connecting with nonprofit tax services, and obtaining public benefits for workers (e.g., food stamps, childcare, transportation, and healthcare).[287] The most fundamental issue addressed through family economic support programs is financial education. Education regarding credit card usage and fringe financial services is becoming increasingly important to low-income families. In 1989, 48% of families earning between $10,000

and $25,000 had credit cards with balances, with about half revolving their balances; in 1998, those numbers had increased to 57% and 64%, respectively.[288]

Furthermore, despite having credit cards, low-income families frequently do not have bank accounts. More than not being able to establish credit for future large purchases such as homes, families who use credit cards and lack bank accounts typically spend 3 times more for basic services due to their limited economic freedom.[289] Additionally, due to a lack of credit and cash, many families resort to making large purchases through fringe financial services such as rent-to-own and payday loan services. The average family making $20,000 per year could spend as much as $500 a year financing such services; corresponding charges from mainstream banks would fall somewhere between $30 and $60 per year.[290] The family economic support component under the AECF's FES program recommends the use of organizations such as the American Savings Education Council (ASEC)[291], Consumer Action[292], the Consumer Federation of America[293], the National Foundation for Consumer Credit (NFCC)[294], and other national, state, and local organizations to assist in these economic support efforts.[295]

The efforts required to improve the third integral component of FES, community investment, are essential in order for the former components to be effective. Families who do achieve a certain level of economic freedom are likely to flee their former communities for the same reasons that make outside investment in those communities so difficult: poor schools, infrastructure, safety, and so on.[296] Therefore, investing in communities is as important to the success of families as investments in the families themselves. Community investment requires attention to housing, business facilities, and community infrastructure; such investment strategies are typified by the AECF's Rebuilding Communities Initiative (RCI).

Since its establishment in 1993, RCI has been providing support services for economically distressed communities with the broad objective of improving safety, economic support, and productivity of low-income families.[297] The framework of RCI is contingent upon five key elements:[298]

1. Maximizing capacity and impact of neighborhood resources and institutions
2. Reforming existing investment streams to maximize positive neighborhood economic impacts
3. Developing capable and effective neighborhood collaboratives to which governance authority could gradually be devolved
4. Improving housing and infrastructure development and maintenance
5. Increasing public and private capital investments in the neighborhoods

Through these goals, RCI improves lives in cities across the country.

Another contributing partner toward community investment is the AECF's Centers for Working Families (CWF). The CWFs are an innovative concept in neighborhood service delivery, offering economic and job-related support and resource services to low-income families. Located in conveniently placed centers, CWFs employ inventive strategies to provide traditional outreach, workforce coaching, and financial service bundles to communities in economic isolation.[299] The flexible and entrepreneurial framework intrinsic to CWFs provides workers with career advisors, links to public assistance programs, and access to responsible, low-cost lending services. In collaboration with the Jobs Initiative, the Rebuilding Communities Initiative, and many more, CWFs help families integrate the services they are receiving through AECF's Family Economic Success model and ultimately assist them in becoming secure, contributing members of the mainstream economy at large.

A truly comprehensive resource for family success, the FES model has provided many low-income families with hope for a better future and the means to finally realize those dreams. From Proyecto Azteca, a home-

building program in San Juan, Texas, that allows more than 100 families per year to purchase affordable, new housing (including the Alvarado family, whose finances had been exhausted treating their 9-year-old son following an accident causing burns to 70% of his body)[300], to Operation ReachOut Southwest in Baltimore, Maryland[301], from whose efforts resident Cathy Hill (a part-time student and grandmother of 14) saves over $600 per year through a tax-preparation service, the principles established by FES have been incorporated in communities across the country.

Though it is difficult to assess the specific outcomes attributable to each service, especially due to each participating component's reliance on the amalgamation of other services, the Annie E. Casey Foundation's Family Economic Success Program is worthy of not only investigation and future research, but also consideration as a best practice. In part or as a whole, the programs and initiatives contained within its framework are beneficial, as evidenced in the lives of those who have finally, after years of trial and struggle, achieved what they have always desired—economic freedom.

BEST PRACTICES IN THE PREVENTION OF ACCIDENTAL INUJURY, ABUSE, & NEGLECT

Once harkened as a rite of passage for children, accidents and injuries have more recently become the focus of prevention efforts, public service campaigns, and increased parental attention. Falls are now the number one cause of nonfatal unintentional injuries among children ages 0 to 14, accounting for the majority of emergency room visits each year. For children over the age of 1, unintentional injuries represent the leading cause of death.[302] The annual cost of routine childhood injuries to the healthcare system in the United States is approaching $350 billion.[303]

Clearly, a large proportion of accidents and injuries during early childhood are preventable. Injuries and child deaths resulting from abuse, maltreatment, and neglect are among the most tragic preventable sources. An estimated 1,400 child deaths in 2002 were attributed to child abuse and maltreatment.[304] However, these statistics are likely an underrepresentation, as are indicators of the prevalence of abuse and neglect, insofar as the data are dependent on reporting. Regardless, statistics also show that African American children are significantly more likely to become victims of various forms of abuse; African American children experience the highest rates of abuse and maltreatment (19.9 per 1,000), while Asian children have the lowest rate (2.9 per 1,000).[305] This trend is important to recognize, as abuse and maltreatment also place children at a greater risk for depression, obesity, drug abuse, alcoholism, delinquency, and a host of other medical, social, and developmental problems.[306] Although it is impossible to assess the cost of child abuse for the individual child, the direct costs related to hospitalization, chronic health problems, and the child welfare system signal the magnitude of the problem. Conservative estimates of the cost of child abuse cite a figure of well over $6 billion spent annually in hospitalizations, almost $3 billion in covering chronic health problems[307], and more than $14 billion spent on the child welfare system.[308]

CREATING SAFE ENVIRONMENTS

The U.S. Advisory Board on Child Abuse and Neglect contends that "only a universal system of early intervention, grounded in the creation of caring communities, could provide an effective foundation for confronting the child abuse crisis."[309] Accordingly, a number of other programs, including those detailed in the best practices in effective parenting and prenatal care sections, attempt to reduce the prevalence of abuse and neglect through home visitation, outreach, and parenting courses. In following with a more

comprehensive approach to child wellbeing, multiple programs aim to prevent abuse and neglect and follow the general strategies outlined in the programs detailed below.

Nurse-Family Partnership

The Nurse-Family Partnership was created nearly 30 years ago with the goal of reducing antisocial behavior by improving birth outcomes, improving the health and wellbeing of children by emphasizing effective parenting strategies, and enhancing lifecourse development in first-time mothers.[310] As such, the program is generally considered a prenatal intervention, but NFP's scope is more extensive than simply providing prenatal services. Additional goals of NFP, such as accident and injury reduction, a reduction in child abuse and neglect, and family economic self-sufficiency, are equally significant. Although it is included as a best practice for these reasons, as with many of the other best practices the program effects are widespread and include improved pregnancy outcomes, child health and safety, and a reduction in future delinquency and behavior/conduct problems.

The Nurse-Family Partnership is firmly entrenched in research-based practice, with a theoretical basis spanning attachment theory, human ecology theory, and a self-efficacy/empowerment model. [311] The three main goals of the program represent three target risk areas: neurodevelopment and healthy fetal development as it relates to maternal behavioral risk factors, dysfunctional caregiving, and insufficient maternal self-sufficiency and lifecourse development.[312] Thus, all program activities are oriented toward reducing these risks. Beginning early in pregnancy, visiting nurses strive to establish relationships with first-time mothers-to-be, educating them about development of the fetus and the impact of high-risk behaviors on this development. Although this follows a general program model, it is entirely adaptable and individualized according to the first-time mother's needs.[313] Following delivery, nurses maintain contact with the mothers, assisting them in responding to their newborns' needs, demonstrating effective childrearing in a safe and loving environment, and educating them on how to identify health problems, seek care, and ultimately foster child development. It is this element that is focused on the prevention of abuse and neglect, minimizing injuries, enhancing the safety of the infant's surroundings, and ideally reducing frustration and stress among first-time mothers.[314]

Evaluations of NFP consistently find that the program significantly reduces accidents, injuries, and hospital admissions among children. An evaluation of the New York site by Olds, Henderson, and Kitzman demonstrated that participants' homes were significantly safer, posing fewer hazards to children; likewise, children who were visited by nurses had significantly fewer (35%) emergency room visits during early childhood.[315] Injury reports confirm a similar trend, with children visited by a nurse having 40% fewer injury incidents; physician records mirror these findings, with a reduced rate of child behavior reports noted by the clinic.[316] Similar evaluations of the Memphis program, with predominantly African American participants, have found that children in the experimental group experienced 25% fewer injuries and more than 75% fewer days spent hospitalized for injuries/ingestions.[317]

> "For children over the age of 1, unintentional injuries represent the leading cause of death."

Because the program is so client-centered and the visits are conducted frequently by nurses with specialized training, program costs can be prohibitive. Thus, one of the only apparent drawbacks of the program is the high level of financial resources required for implementation, which may prevent many communities from adopting such an approach; the cost is approximately $9,100 (in 2003 dollars) per family served, and more in areas where local nurses' salaries are significantly higher. However, a cost-benefit analysis of the program has shown that for every dollar spent on the NFP program, there is a $2.88 public return on the investment and a savings to the government of $17,180 per family.[318] RAND has reported an even higher return of $4 for every dollar spent in the NFP program by the time children reached age 15.[319] More importantly, some

estimates have indicated that by the time children are 4 years old, the program has already paid for itself when considering the cost savings associated with public assistance, hospitalizations, child protection, and other social services.[320] Generally, 100 families are served by the program, with variations according to program site and available resources.

Healthy Families New York

As part of the Healthy Families America initiative, the Healthy Families New York (HFNY) model is one of the first of a host of state-funded programs to be recognized for innovative approaches to reducing the risk of child abuse and neglect among high-risk populations. HFNY is an early intervention initiative, targeting expectant parents and parents with an infant in the home younger than 3 months old. Trained personnel conduct home visits with expectant and new parents, which continue through the child's fifth birthday. The purpose of the home visits is to provide parents with information and education services, as well as emotional and social support services via referrals to local agencies, with the ultimate goal of creating healthy and happy families with a low risk of abuse or neglect.

> "Research indicates a direct link between lack of insurance coverage and lower rates of early detection and prevention of illnesses, prescription use, and use of a regular healthcare provider."

HFNY recruits participants through social service agencies, hospitals, and referrals, screening them for child abuse and neglect risk factors. Risk factors are varied and include teen and single parenthood, alcohol and drug abuse, low education levels, poverty, and poor mental health, among others. Using a screening tool, the program assesses the level of family stress and the degree to which families are at risk of becoming abusive toward their infant, and if deemed appropriate, offers family or individual services.

Within the program, there are four levels of contact; the levels initially correspond to the child's age, but later reflect progress through the various service levels. These contact levels, implied by routine assessments conducted during home visits, determine the frequency of visits. The corresponding levels are

- *Level 1:* From pregnancy to 6 months old, home visits occur one or more times per week
- *Level 2:* Biweekly
- *Level 3:* Monthly
- *Level 4:* Quarterly

Although levels of contact are age-graded to some degree, there is considerable discretion guiding visit frequency. Moreover, quarterly visits can continue through age 5 or when the child enters an approved preschool program or Head Start, as opposed to many programs that terminate services at 18 months or 3 years.

Evaluations of program participants indicate a positive impact in terms of both birth outcomes and general parenting strategies. For HFNY families, the average number of self-reported severe or very severe acts of physical abuse acts was significantly lower (0.06) than for the control group (0.42); the HFNY group also had a substantially lower rate of self-reported neglect, lower frequency of minor physical aggression, and a lower frequency of psychological aggression toward children.[321] However, Mitchell-Herzfeld, Izzo, Greene, Lee, and Lowenfels found no statistically significant differences between the participant and control groups in the number of substantiated reports of abuse, maltreatment, or neglect to Child Protective Services

(CPS); this is likely due to the increased level of scrutiny that participant groups face. That is, the increased level of surveillance accorded to HFNY participants also meant that they were twice as likely to have a CPS report as the parents in the control group.[322] This implies that incidents of maltreatment, abuse, and neglect committed by participating parents were not only more likely to be detected, but also more likely to be officially reported to CPS, compared with control group parents. Thus, while there was not a significant reduction in the number of abuse reports, the program was still deemed an effective intervention.[323]

In the 2nd year progress report, HFNY mothers made considerable gains. They were more likely to have a primary care provider for their children, more likely to have health insurance, less likely to have their children's medical needs go unmet, and more likely to set appropriate limits for their children.[324] They also reported 33% fewer instances of severe physical abuse than control group mothers. The average cost of the program remains between $3,000 and $3,500 per family annually[325], although in many areas of New York, this funding level is insufficient because of the cost of living.

BEST PRACTICES IN THE PROVISION OF HEALTHCARE TO INFANTS & CHILDREN

The importance of healthcare to the overall health and wellbeing of infants and children is indisputable. Research indicates a direct link between lack of insurance coverage and lower rates of early detection and prevention of illnesses, prescription use, and use of a regular healthcare provider; in addition, the lack of insurance for children increases the risk of hospitalization, while simultaneously having a negative impact on school attendance and performance, as well as an increase in parental stress.[326] Insurance coverage and healthcare increases with income, as does the scope of that coverage. Although federal and state programs designed to provide infants and children with the healthcare they need do exist, many families who need assistance either do not qualify, are not aware of the services, or have not signed up for benefits.

CREATING HEALTHY KIDS

Los Angeles Healthy Kids Program

The Los Angeles Healthy Kids Program began in 2003, with the goal of providing health coverage to all uninsured children, ages 0 to 5, who have family incomes below the poverty line. The program relies intensively on the communities in which the children live, based on the assumption that their community clinics, public hospitals, and health facilities have more experience serving the target population and can more effectively promote health and develop support services for disadvantaged families.[327, 328] Services are provided by a network of primary, acute, and specialty providers overseen by L.A. Care, a nonprofit community health plan with extensive experience serving uninsured families. Also included in the array of services are dental and vision care, provided by agencies subcontracted by L.A. Care. If a child has a disability or chronic illness, they also qualify for specialized treatment programs offered by California Children's Services. Accordingly, other services allowable through the program involve the following[329]:

- Well child and preventive services
- Physician, outpatient, and surgical services
- Specialists—physical, occupational, and speech therapy
- Inpatient hospital, mental health, and inpatient and outpatient substance abuse services
- Emergency care

- Prescription drugs
- Medical equipment and hearing aids
- Medically necessary nursing facility care, home health, and hospice care
- Diagnostic X-ray and laboratory services
- Health education services
- Skilled nursing care
- Medical transportation
- Organ transplants

The services are intended to provide comprehensive coverage for children in an environment that is aware of cultural, financial, and language barriers to traditional healthcare access. By the summer of 2005, almost 40,000 children had secured insurance due to the Healthy Kids Program, and approximately 8,000 of the enrollees were children age 5 and under. An evaluation of the program revealed that physicians and other healthcare providers involved were very satisfied with the range and scope of the services, and were not aware of instances where children needed services that were not covered by Healthy Kids.[330] Moreover, the families of the children covered were generally pleased with the scope and access of services for their children. The ultimate goal of Healthy Kids is to provide for universal coverage of their targeted population. So far, in the 2 years since implementation, more than 50% of their target goal has been achieved.

Focus groups with parents involved in the Los Angeles Healthy Kids program indicate that the outreach efforts were well organized and effective in alerting parents to the program and providing continuous referrals for their uninsured children.[331] Parents also felt that enrollment in the program was easy and they did not hesitate to use the services, bringing their children for care an average of three times or more in the prior year, and utilizing the service for prescription drug benefits. Premiums for the program were free for low-income families, and parents reported that the small copayments were affordable for parents with limited income.[332] Despite the overwhelming satisfaction parents expressed about the program, some parents indicated that portions of the program could be improved in the future. Among their list of concerns were lack of language interpreters, long waits, and confusion about services covered under the plan. Despite these criticisms, parents believed that the plan provided valuable services and allowed them to obtain affordable healthcare services for their children, including dental, immediate medical, and preventive care.[333]

Young and Healthy

Confronted with a substantial population of children ages 0 to 18 lacking health insurance, the Young and Healthy program is an initiative that set out to expand free healthcare access to all children in the Pasadena, California, area. With a focus on children in childcare centers, homeless shelters, and area schools, Young and Healthy provides dental, medical, and psychological/mental health services, as well as case management to uninsured children free of charge. The program is made up of volunteer physicians, nurses, and other medical personnel who are willing to offer their time and expertise to improve children's health, impacting the more than 30% of uninsured children within their community.

Working from the idea that neighbors should assist neighbors, Young and Healthy recruits other community members as volunteers. These community members provide translation services, transportation to and from medical visits, and other resources necessary to eliminate barriers to service.[334] Although the organizer of the program initially encountered resistance, the program now boasts 50 dentists, 300 pediatricians and specialists, 50 mental health professionals, 150 community volunteers, 13 pharmacists, and other social service providers.[335] The services offered by these professionals are vast, and include the following:

1. Dental—acute dental services, monthly dental education, and a mobile dental clinic that services children with the greatest need
2. PreK Dental Initiative—a new program offering in 2004 that focuses its efforts on the prekindergarten population
3. Physicians and Specialty Services—volunteer pediatricians, physical therapists, podiatrists, optometrists, surgical specialists, and other physicians offering services to children depending on their needs
4. Mental Health Programming—mental health services for children, adults, and families in the form of individual counseling, small group counseling and support, parent education, and through the "I Think I CAN!" resiliency model, which is a school-based curriculum geared toward older students
5. Case Management—full-time case management services, including individualized needs assessment, follow-up, and community resource information
6. The Healing Fund—provides additional funding for X-rays, testing, lab work, and other specialized medical services
7. Pharmacist and Lab Services—local pharmacies provide free prescriptions and labs offer free testing services
8. Community Volunteers—local community members assist in the provision of all forms of social support, transportation, language translation, and even fundraising for the program
9. Parent Enrichment and Education—classes for parents in each of the specialty areas (dental, pediatric, mental health, child development, etc.) are offered to parents on a rotating basis
10. Allen Advocacy Program—outreach and enrollment in the Pasadena area, in which each family is assigned a family insurance advocate who helps them navigate social services and access the resources necessary to ensure that their children are healthy and happy

Calls for medical services come from parents, school teachers, nurses, childcare providers, or other social service agencies that notice a child's illness or need for medical treatment or care. If situations require, nurses and other staff are sent out to locations. During one school year, the program assisted nearly 1,200 children, many of whom were taken on as permanent clients, free of charge, by volunteer physicians. In addition, approximately 2,000 children receive preventive care services from this program.[336] For children with serious chronic illnesses, medical homes are available, where a doctor agrees to take over all forms of medical care at no cost to the family; to date, 41 children have been placed in the medical homes.[337]

The Young and Healthy program has made an appreciable difference in the lives of Pasadena children, despite its insistence on not accepting federal assistance. To reduce administrative costs and bureaucratic "red tape," the executive director actively avoids the utilization of federal funds and instead minimizes the burden to taxpayers by relying on the volunteerism of residents and professionals in the area.[338] Using private sources of funding and the human capital already present in the community, Young and Healthy has created a new model to address the underinsurance problem in the local child population.

BEST PRACTICES FOR CHILDREN WITH INCARCERATED PARENTS

According to the Administration for Children and Families, nearly 2 million children in the United States have a parent who is incarcerated.[339] As a result, children are forcibly separated, both physically and emotionally, from a parent for an indeterminate length of time. The implications of this separation include the experience

> "Nearly 2 million children in the United States have a parent who is incarcerated."

of the stigma inherently attached to having an incarcerated parent, unstable family situations, and lack of a close parent-child relationship. For family members left behind, parental incarceration poses multiple barriers to life success. Children of incarcerated parents are more likely to suffer academic failure, are substantially more likely to be involved in delinquency and become incarcerated themselves, are at a higher risk of becoming dependent on drugs and alcohol, and more generally suffer from higher rates of emotional stress.

Successful programs for these families require a multitude of services to mentor children with parents behind bars, repair broken relationships, and sustain strained relationships, while providing incarcerated parents with parenting skills they can implement both while incarcerated and upon release. This challenge requires a partnership approach, offering a continuum of care. Although many programs assisting children with an incarcerated parent are relatively new, a number of promising practices that satisfy the need for a comprehensive program have emerged. These programs have the potential to improve the lives of children who have silently suffered as a result of the imprisonment trend in the United States. The Bureau of Justice Statistics estimates that some 2.3 million children are affected by a parent being incarcerated in jail or prison, an alarming increase from 500,000 in 1991.[340] Furthermore, more than 75% of all women incarcerated in the United States are mothers, with 66% mothers and 55% fathers to children under the age of 18.[341] According to Reed and Reed, "The national trend to use incarceration to punish even minor offenses guarantees that children will continue to be adversely affected by policies enacted with no consideration of the harm done to family systems."[342] Inevitably, when parents are incarcerated, children are often left unparented.

RESTORING RELATIONSHIPS

Save Kids of Incarcerated Parents (SKIP)

Save Kids of Incarcerated Parents (SKIP) emerged as a service provider for infants and children up to age 18 in Alabama. The idea for the organization began in 1979 when, while participating in a research study for the International Year of the Child, Florida resident Gloria Jean Canty realized there were no established programs to aid children of incarcerated individuals. To combat the issues associated with a child's parent serving time behind bars, Canty has spent the past three decades developing strategies and services to support such children and promote public awareness of the problems they face. Today, Save Kids of Incarcerated Parents (SKIP) operates out of Alabama, with state chapters in Michigan, Georgia, and Texas.[343]

SKIP's primary objectives are to assist children of incarcerated parents (referred to as "Skippers") and their families overcome the difficulties of separation and to help maintain family ties with incarcerated parents. Moreover, SKIP proposes to break the cycle of incarceration by educating families about available resources and by advocating for these families through the promotion of community support.[344] Essentially, SKIP is a networking referral agency providing information for public assistance to families of incarcerated parents.[345]

Among SKIP's most notable efforts are linking children of all ages with caring adults and peers through its Mentoring and Peer programs, offering etiquette and behavior management classes through its Character Development program, and arranging professional individual and family counseling services. It also arranges tutoring for children and families with general educational and personal enrichment development (reading, writing, math, family living skills, and fine arts).[346]

In communities where SKIP has been established, numerous accolades have been presented in recognition of service excellence. Tampa Bay awarded the organization the Urban League award for meritorious

service; it has received the equivalent from Pontiac, Michigan. It has been mentioned in Who's Who in American Education from the National Reference Institute, has received an Exemplary Volunteer Service to the Community Award from the Volunteer and Information Center and the Junior League of Montgomery, Alabama, and has been given the JC Penney Golden Rule Award.

The benefits of SKIP are incalculable when assessed through the eyes of a child who has been given an opportunity to see a parent in prison, and are commonsensical when SKIP provides a child with instruction culminating in spelling his name for the first time. However, longitudinal data regarding the efficacy of this tenured program remain elusive. Nevertheless, Canty's concept and her efforts toward improving the lives of children adversely affected by parental incarceration deserve praise, admiration, and consideration as a model program for child wellbeing.

BEST PRACTICES IN OBESITY PREVENTION

Universally referred to as a growing epidemic, the obesity problem in the United States is best understood as a public health crisis, and this crisis is more pronounced among low-income and minority children. Because "the highest rates of obesity occur among the population groups with the highest poverty rates and the least education"[347], obesity prevention and management programs are potentially even more essential in impoverished communities. Obesity is simply defined as the presence of excess fat.[348] Outside of this simple definition, researchers and health practitioners disagree about how much excess body fat is needed to constitute obesity.[349, 350] One issue regarding child obesity that is relatively uncontested, however, is that diabetes, hypertension, and other obesity-related chronic diseases previously considered adult ailments are becoming alarmingly more prevalent in children.[351]

A normal child's percentage of body fat varies by gender (females tend to have a higher proportion than males) and by age (about 12% at birth, 25% at 5 months, and 15 to 18% at puberty).[352] Based on the definitions accepted by the American Obesity Association, overweight children have a Body Mass Index (BMI) in the 85th percentile, and obese children are in the 95th percentile.[353] By these definitions, approximately 30.3% of children between ages 6 and 11 are overweight, and 15.3% are obese.[354] Children between ages 12 and 19 are overweight and obese at a rate of 30.4% and 15.5% respectively.[355] The U.S. Department of Agriculture recommends that interventions begin as early as possible due to the increased incidence of early childhood obesity.[356]

Despite the nutritional and physical activity shortcomings of many childcare facilities, preschools are widely recognized as a largely untapped resource for the battle against early childhood obesity and subsequent weight issues throughout the child's lifespan.[357] Moreover, preschools constitute easy targets for disseminating nutritional information and establishing healthy eating behaviors. Because most children acquire the eating and activity habits of their parents[358], obesity prevention programs aimed at preschool-age children also attempt to improve the lifestyles of families by encouraging healthy eating habits and exercise for parents as well. The two programs highlighted in this section are included as innovative illustrations of early intervention programs to combat obesity.

"Diabetes, hypertension, and other obesity-related chronic diseases previously considered adult ailments are becoming alarmingly more prevalent in children."

ENCOURAGING HEALTHY EATING, ACTIVITY, & EXERCISE

Go!Kids

Although most obesity prevention programs target school-age children, more recently a host of programs have emerged that seek to establish solid nutrition, recreation, and exercise/activity among preschool children. Go!Kids is one such early childhood obesity program spearheaded by the Children's Aid Society, and although no evaluation results exist, the program appears to be a promising early intervention to prevent obesity. The program exists as a complement to Head Start programming and serves children ages 3 to 5 and their families.

Participating parents attend a 24-week series of classroom lessons augmented by take-home assignments.[359] During these bilingual (English and Spanish) sessions, parents are taught the importance of self-esteem, body awareness, nutrition, fitness, and stress reduction. Additionally, the Bronx Early Childhood Center has opened its schools to the entire community for weekly workshops focusing on nutrition, food choices, and parenting skills related to food.[360] Children participating in the program are offered periodic health screenings and the opportunity to participate in yoga-like exercise classes with their parents.[361] In short, the Go!Kids obesity prevention program assists willing families in creating a healthy lifestyle. Though efficacy studies and cost-benefit analyses of the program are unavailable due to the program's present limited scope and tenure, as a practice, it is sure to provide benefits for the overweight children of New York for years to come.

Hip-Hop to Health Jr.

Though outcome studies from early childhood intervention programs such as Head Start are presently in abundance, there are "few published obesity-prevention studies with preschool children."[362] In fact, of the multitude of outcome studies evaluating the efficacy of Head Start programs in general, Hip-Hop to Health Jr. (HHHJ) is one of the few associated programs ever evaluated that addresses preschool obesity.[363]

Targeting predominantly minority, preschool-age children, Hip-Hop to Health Jr. is an obesity prevention and recreational program funded by the National Heart, Lung, and Blood Institute of the National Institutes of Health.[364] Based on its predecessor, Hip Hop to Health, which targeted cardiovascular risk reduction in 6- to 10-year-old African American children, HHHJ dedicates itself to eliminating risk factors associated with childhood obesity in preschool children in the greater Chicago area.[365] Affiliated with Head Start, HHHJ is a proven method for reducing BMI[366] and provides an excellent potential resource for any community struggling with childhood obesity problems.

The principal objectives of the program comply with the recommendations set forth by the U.S. Department of Agriculture's Dietary Guidelines for Americans[367] of "increased physical activity, increased daily fruit and vegetable intake with a goal of five servings per day, and decreased dietary fat with a goal of no more than 30% of daily energy intake."[368] HHHJ is unique, however, in the overt attention afforded to BMI and fat reduction; most school-based obesity prevention programs focus more generally on healthy eating and health risk behavior reduction.[369] Additionally, the program is sensitive to the unique challenges posed by differing cultures, especially those of Latinos and African Americans. In response to the specific barriers faced by children from varying racial and ethnic backgrounds, HHHJ produces culturally sensitive materials, addressing cultural parameters and helping families live a healthier lifestyle within the comfort of their cultural identity.[370, 371]

Children enrolled in the intervention are invited to participate in a 14-week nutrition and health program conducted on-site at a Head Start affiliated facility, three times per week for 40 minutes. The first 20 minutes of the session allows children to learn about nutrition through engaging, hands-on, interactive learning,

targeting one particular aspect of nutrition per session. A key component of the educational instruction is that foods are not overtly labeled "bad" or "unhealthy," but rather, teachers promote the positive effects of healthy eating. Topics designed to engage preschoolers include those such as "slow food" versus "go food," and each topic is taught with the aid of appealing puppets such as Miss Fruit and Mr. Vegetable. For the final 20 minutes, children participate in fun, creative, and often musically accompanied aerobic activity.[372]

Parents of participating children are privy to a weekly newsletter detailing lessons learned and suggesting homework assignments to reinforce them. A key component of the newsletters is that along with advice and recommendations regarding nutrition, they include easy-to-understand rationales and rewards for compliance. For example, one newsletter, which corresponded to a lesson on milk, encouraged parents to make the switch to 1% milk. With this newsletter, HHHJ included a coupon for 1% milk and a homework assignment to purchase the milk on the family's next trip to the grocery store. Parents and children were asked to rate the experience of trying the new type of milk and were subsequently awarded $5 when they submitted the response form.[373]

"Teaching parents how to nurture and support their children's development appears to be one of the most effective ways to enhance child wellbeing and prevent problem behaviors such as substance abuse, delinquency, and poor school performance in the future."

In addition to participating in two 30-minute low-impact aerobics classes themselves, conveniently held at their child's Head Start facility, parents are also taught to take responsibility for their family's nutritional wellbeing. Parents who report that they are physically active are 6 times more likely to have children who are physically active.[374] Based on the findings of Eck, Klesges, Hanson, and Slawson and others that, like many behaviors, parental nutrition and exercise habits strongly influence the future and present eating and physical activity behaviors of their children[375, 376, 377, 378], HHHJ seeks to change detrimental parental behaviors by encouraging them to micro-evaluate their own food choices and thus pass on positive eating patterns to their children.[379]

With childhood obesity increasing and low-income minority children disparately affected, community leaders must be as proactive as the issue is pressing. Because obesity in childhood leads to future medical complications, causing pain and suffering to families and taxing both families and communities financially, the issue of childhood obesity is not only crucial, but its management is an ethical and financial imperative. Hip-Hop to Health Jr. is a promising and innovating vehicle within which communities can begin their journey toward having healthy, vibrant, and active children today, and healthy, productive, and happy adults in the future.

BEST PRACTICES IN EFFECTIVE PARENTING

The well-known adage that children do not arrive with a handbook is both understood and experienced by most parents as they attempt to adapt to the challenges of being a parent. This is especially true for first-time parents and teen parents who may be unprepared for the experience. Effective parents foster the cognitive, social, emotional, and physical development of their children in an environment that is safe, healthy, and characterized by love and support. Teaching parents how to nurture and support their children's development appears to be one of the most effective ways to enhance child wellbeing and prevent problem behaviors such as substance abuse, delinquency, and poor school performance in the future. Although a host of programs in this area can be designated as best practices, with proven evaluation results, many of these

intervene during late childhood as opposed to birth to age 3. For example, the Department of Health and Human Services Center for Mental Health Services identifies 19 family-based programs in this category as exemplary.[380] None of these exemplary programs, with the exception of the visiting nurse program discussed in an earlier section, is targeted at parenting skills for the 0 to 3 age group. As such, some of the programs discussed in this section are model programs as opposed to best practices.

SUPPORTING QUALITY PARENTING PRACTICES

The Incredible Years

Designed to enhance the betterment of children, parents, and teachers, the Incredible Years is a versatile, comprehensive curricula-based program intended to remediate the social and emotional incompetencies that lead to behavioral delinquency in young children.[381, 382] Possibly the most distinctive quality of the Incredible Years is that it utilizes a series of videotapes of appropriate behaviors, presented by a trainer to parents, children, and teachers. From children with "learning difficulties, problems with language and symptoms of attention deficit and hyperactivity disorder," to "parents who are stressed through poverty, parenting alone, mental health problems, substance abuse and marital problems" [383], the Incredible Years attempts to address all of the risk factors associated with future deviant behavior.

Through training and encouraging parents to bring a "positive, sensitive, and caring attitude to parenting," to "use nonviolent methods of discipline with close monitoring," and to set clear limits with their children [384], Dr. Carolyn Webster-Stratton, the program's award-winning developer and key researcher, teaches parents "the skills necessary to manage their child's aggressive and defiant behavior, and to prevent more severe antisocial behavior."[385] With the occurrence of early onset conduct problems as high as 35% in low-income households[386], programs assisting parents in the correction and prevention of socially deviant and aberrant behavior are exponentially more important for impoverished communities.

Targeted maladaptive behaviors such as aggression have been correlated with incidence of criminal behaviors (e.g., rape, murder, robbery, arson, etc.) as adults[387], as well as substance abuse, school dropout, and violence during adolescence.[388] "Conduct problems . . . are one of the most costly mental disorders to society because such a large proportion of antisocial children remain involved with mental health agencies or criminal justice systems throughout the course of their lives."[389] Additionally, the elimination of behavior problems is recognized by early intervention specialists as the first step to treating concomitant issues related to education.[390] Therefore, any program with proven success in the remediation and prevention of such issues should be near the top of a list of cures for a community's social ills.

"Possibly the most distinctive quality of the Incredible Years is that it utilizes a series of videotapes of appropriate behaviors."

The Incredible Years is presented in a variety of distinct yet complementary programs for parents, teachers, and children. The Department of Health and Social Services, Center for Substance Abuse Prevention has named The Incredible Years a Model Program and listed it in the National Registry of Effective Prevention Programs. It has been selected as a "Blueprint Program" for early violence prevention by the U.S. Department of Justice's Office of Juvenile Justice and Delinquency Prevention. Furthermore, it was chosen as the best prevention program of 1997 by the National Mental Health Association and as an exemplary and promising practice in the treatment of childhood behavior problems by the Center for Substance Abuse Prevention. More specifically, the parent programs have been recommended by the American Psychological Association

Task Force as meeting the "Chambless criteria" for evidence-based intervention for children with conduct problems.[391]

Of the many core and supplementary programs, Dr. Webster-Stratton has put forth three parent training programs: the Early Childhood BASIC Program, the School-Age BASIC Program, and the ADVANCE Program. The Early Childhood BASIC Program is aimed at teaching parents of children ages 2 through 7 interactive play, reinforcement skills, and nonviolent discipline techniques such as "timeout."[392] During this 12- to 14-week program, parents will view approximately 250 video vignettes in a group setting to better their parenting skills.[393] Session leaders are provided with the videotapes, a 500-page leader manual consisting of group discussion questions, home activities, interpretation, and guidance on how to converse with parents about the tapes, and a book for parents titled *The Incredible Years: A Troubleshooting Guide for Parents,* available in audio book, among other resources.[394] For parents in need of further instruction, Webster-Stratton has developed two supplementary programs to assist in advancing school readiness skills.[h] These programs are ideal for parents of children with attachment disorders, those who have experienced neglect, are new immigrants, have language or academic delays, or who have emotional regulation difficulties.[395]

The School-Age BASIC Program for parents with children between ages 5 and 12 is similar to the Early Childhood BASIC Program, but it targets older, more developmentally mature children and focuses on issues such as developing the knowledge of logical consequences for behaviors, parental monitoring, and problem solving with children.[396] Though many of the same or corresponding materials are included in this program, it is generally offered for 10 to 12 weeks.[397] The supplemental program to this focus area, *Supporting Your Child's Education*, is intended for children who are experiencing academic delays in addition to behavioral problems.[398]

The ADVANCE Program builds on the BASIC program foundation and promotes "adult interpersonal skills, such as effective communication skills, anger management, problem solving between adults, and ways to give and get support."[399] This 8- to 10-week series, as with the previous programs, is available in multiple languages, such as Spanish and English dialects. For parents of children between ages 4 and 10, this program culminates in the comprehensive training of parents and is a proven method for remediation of behavior problems in children.[400]

Many early parent training programs focus on "didactic lectures, brochures, and group discussions"[401]; however, these delivery models have been shown to be largely ineffective in promoting behavioral change in parents.[402] Moreover, "such methods are not optimal for parents whose level of literacy, educational, or general intellectual ability is limited."[403] The Incredible Years program model is based on videotaped presentations of paradigmatic behavior; therefore, they are not only more palatable to a less educated audience, but also much more cost-effective.[404] Because of this innovative delivery model, complete with superior content, the parent programs have a demonstrated record of decreasing negative behaviors in both parents and children and increasing maternal perceptions of children's behavior improvement. Furthermore, at 12-month follow-up studies, the skills learned have been maintained and even improved upon.[405, 406]

The dissemination and implementation of the Incredible Years is as meticulously elaborate as the programs themselves. Under the rubric established by Webster-Stratton, there are four levels of competency that may be obtained[407]:

1. Group Leader (actual deliverer of the program)

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h The two supplementary programs to the Early Childhood BASIC Program are titled Child-directed Play: Strengthening Children's Social, Emotional and Cognitive Skills and Encouraging Social, Emotional, Academic and Problem Solving Skills Through Interactive Reading.

2. Coordinator (responsible for obtaining service grants and serving as "internal advocate" for group leaders)
3. Mentor (a person with extensive experience in program and additional mentor training to provide continuing training to new group leaders)
4. Trainer (the Incredible Years program developer and six other individuals who work for the Incredible Years organization)

Program implementation and cost details for the program vary. The first step toward incorporating these methods into a community is to train individuals to manage the program. Organizations can elect to send their personnel to Seattle for a 3-day initial training seminar at a cost of $400 plus travel costs per person (estimated budget of $1,100 to $1,500 per leader). Alternatively, they may choose to have their personnel trained in-house at a cost of $1,500 per day plus travel and hotel expenses for 3 to 4 days. Regardless of where an organization's personnel are trained, the organization must purchase the program of interest with all the necessary materials for dissemination (approximately $1,000 to $1,300 per series) and a leader manual for each trainee ($150). Following initial training, prospective group leaders are encouraged to attend annual workshops to continue to refine their skills. The Incredible Years recommends budgeting $500 per year per group leader to subsume the costs of continuing consultation, certification, and the like.[408] Operational costs of program implementation are front-loaded, with training and materials constituting the majority of the initial cost. Based on groups of 12 parents, the Incredible Years recommends a budget of $5,712, or $476 per parent per series. These funds pay for daycare during the evening sessions, provide food and refreshments as well as materials for parents, and cover costs associated with securing a location and room.[409]

The Incredible Years provides parents with invaluable training in how to better their parenting skills and, at the same time, provides children with models for more acceptable behavior. These skills help curb the incidence of deviance in the future and provides low-income parents with an outlet for their frustrations, a base for improving their emotional conditions, and a platform from which they can create a new, stronger relationship with their children. Moreover, the detailed organization of the program presents service providers with certainties not afforded by other programs. The costs are well documented and easily budgeted; the effects are equally reliable.

Healthy and Fair Start (HFS)

The Healthy and Fair Start (HFS) program is a family-strengthening program, designed to empower parents of children ages 0 to 5 and help them establish effective parenting strategies to create a solid family unit. However, it has also been referred to as a delinquency prevention program, a program for parents of developmentally delayed children, and a child abuse prevention program as well. Created by the Center for Development, Education, and Nutrition (CEDEN), and supported by the Any Baby Can Child and Family Resource Center and delivered as a free service to parents in Austin, Texas, HFS prepares parents for the challenges of parenting, thereby reducing child abuse and neglect, while simultaneously preparing children for the challenges of school. Topics covered by the parental educational component of HFS include basic parenting skills, coping strategies, family support, nutritional counseling, home safety, and child development education. [410]

The majority of the program's services are delivered through an in-home service delivery model; however, parents are also encouraged to attend scheduled parenting and childcare provider classes, where they receive additional training in child development and basic parenting skills, in addition to targeted modules on dealing with behavior problems.[411] The notion of in-home service is loosely defined, in that service delivery can co-occur with traditional daycare, at the homes of relatives, in homeless shelters, or at temporary housing facilities for battered women. Thus, the "in-home" dimension also satisfies a practical concern of making the program convenient and easy for families to use.

Before the program offers services to a family, educators and program personnel conduct an initial needs assessment. Once this is complete, Any Baby Can educators and program personnel set tangible goals, with input from parents, for children's developmental progress. Home instruction relies on principles of child development, encouraging parents to get down on the floor and play with their children, so that children can reap the benefits of a stimulating environment that promotes cognitive development. Weekly home visits by educators monitor parental progress in achieving the goals set at the initial assessment. Throughout the program, educators instruct parents on how to introduce sharing and turn-taking, enhance communication skills, and read to their children. Equally important is the instruction parents receive in how to effectively discipline their children in a way that strengthens the parent-child bond and rewards positive behavior, while discouraging negative behavior through appropriate forms of positive discipline.[412] The program also offers specialized services for parents with children at risk of developmental delay.

> "Parent to Parent relies on a matching strategy, where referral parents are assigned to support parents who not only have been individually trained in the elements of mentoring, but also have specific experience with the types of challenges faced by referral parent."

Evaluations of the HFS program indicate that program participation increases the developmental progress of children and effectively increases up-to-date immunizations, indicating that parents are potentially more vigilant in their role.[413] Likewise, following program participation, Hispanic parents felt less socially isolated while also reporting higher levels of self-esteem; parents in general were more confident in their role as parents and appreciative of instruction in new methods of effective discipline.[414] Although this program has not been officially designated as a best practice, largely because there are few longitudinal studies of the effects, the program has gained significant recognition. The Corporate Fund for Children designated the Healthy and Fair Start Program as a "Best of Texas" program in parental education and support.[415] In addition, the Texas Youth Commission selected the HFS program as a model program in family strengthening interventions[416], as did the Office of Juvenile Justice and Delinquency Prevention.[417]

Parent to Parent USA

Parent to Parent USA is a peer mentoring program designed to assist parents of children with pervasive developmental disorders, chronic illnesses, or other special needs. With over 20,000 parents enrolled across the nation, the program currently operates in 47 states.[418] Although each region independently operates its program, the national umbrella provides the general vision, mission, training support, and curriculum for the program. The underlying program strategy is rooted in a self-help ideology, combined with support mechanisms that encourage parents to deal honestly with their problems adjusting to caring for special needs children.

Within 8 weeks of being matched with the referral parent, the support parent is instructed to make a minimum of four contacts to establish a relationship. Although the relationships are unstructured, initial contact recommendations are regulated by the Parent to Parent program. Training is also provided for the support parents by the regional program center. According to the Parent to Parent guidelines for effective practice[419], support parent training includes the following components:

- Program orientation
- Referral parent matching
- Cultural diversity and sensitivity

- Self help, self-awareness, and self-reflection
- Advocacy and leadership
- Confidentiality
- Cultural diversity, sensitivity, and awareness training
- Grief and adjustment education
- Education specific to the disability of the referral parent
- Positive philosophy
- Communication skills

Programming in Parent to Parent relies on a matching strategy, where referral parents are assigned to support parents who not only have been individually trained in the elements of mentoring, but also have specific experience with the types of challenges faced by referral parents.[420] The fundamental strength of the program is represented in this matching approach, insofar as referral parents report that they share an experiential commonality with their support parents. This characteristic strengthens their bond and generates a level of trust and support presumably absent in more formalized mentoring programs involving professionals.[421] Moreover, referral parents retain the discretion to identify matching criteria, and all attempts are made to match parents with one another within 24 hours of the request for services or program referral. In this way, immediate sources of social support are available to parents who find themselves overwhelmed by dealing with the problems attached to raising children with disorders and special needs. If support parents are unable to deal with some of the problems being experienced by the participating parent, they are instructed to refer them to outside resources and support services, available through the Parent to Parent program.[422]

An evaluation of the Parent to Parent program in five states reveals positive results along multiple dimensions. Parents participating in the program experienced positive gains in perceived ability to cope with life situations, acceptance of family and disability of the child, adaptation to disability, and progress in meeting the needs they initially identified as having difficulty in meeting.[423] Almost 90% of parents reported that the program was helpful, and the level of helpfulness increased as the number of contacts with the support parent increased, indicating that those who were able to form a closer bond with their mentor had a more positive experience.[424] Qualitative evaluations using in-depth interviews with Parent to Parent participants indicate a significant shift in attitude following program participation, perhaps because parents were able to see how the support parent was able to overcome the challenges and negative attitude they once had.[425] Moreover, participants have indicated that it was a unique experience that allowed them to have a solid support system, a person to talk with about their personal problems, and someone to call when they had questions or needed something.

CONCLUDING REMARKS

Our children represent our future. And yet, for many children, this future appears bleak. Despite attempts to ensure that no child is left behind, many children *are* left behind, and with profoundly disturbing frequency. As our most vulnerable and valuable population, children deserve to be healthy, to grow in an environment without violence, to learn and prepare in early education programs that provide them with the tools necessary to succeed, to play and flourish in safe neighborhoods, and to be nurtured in supportive households.

As a society, we will indeed be judged by our ability to protect our children. The extent and success of our efforts to guarantee that each child has the opportunity to succeed—emotionally, educationally, socially, and

financially—is not only a mark of what we value as a society, but a demonstration to each child that he or she is valued. If we ignore this responsibility, then we have forsaken our future.

The best practices presented herein are an initial attempt to bring hope and promise to the individuals, families, neighborhoods, and school districts that have been left behind. They do not simply represent specific programs, but rather the more general characteristics and approaches that have come to embody effective programming. Evidence-based practices shown in both proven and promising programs producing marked successes in organizations, cities, and school districts across the United States possess the capacity to transcend social inequality and provide a better future for children and families. In defining what works, these programs also serve as a call to action, casting a light on the ways in which we can and do affect the lives of children in a positive way.

Increasingly, these intervention and prevention programs employ multidimensional strategies, in keeping with the widely acknowledged links between multiple barriers to health and wellbeing and the need to provide comprehensive, multifaceted service offerings. As such, many of the practices intended to improve birth outcomes also continue in the provision of services following birth, providing a continuum of care. When considering the adoption of specific forms of programming, addressing the multiple dimensions of child health and wellbeing and identifying those programs that have the capacity to meet a variety of children's needs provides a way in which nonprofits, government agencies, and community organizations can most effectively promote the future of our children.

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CHAPTER ELEVEN: PUBLIC POLICY SUGGESTIONS

By Marcus Martin, Ph.D.

SUMMARY OF FINDINGS

This report has adopted a *lifecourse perspective* approach to childhood wellbeing. The lifecourse perspective, as defined by the sociological and epidemiological literature, posits that wellbeing is influenced by biological, sociological, and environmental experiences that occur throughout one's life span.[1] Because early childhood experiences can significantly affect future life circumstances, public policy interventions must be comprehensive and flexible, recognizing that the potential impact of interventions in early years is not limited to childhood outcomes. It is essential to intervene early in the developmental process of a child, even prior to birth. Not only is adequate prenatal care essential to a child's future wellbeing, but one could even argue that preconception health, that is, protecting the health of women before they become pregnant, is an effective approach to promoting childhood wellbeing.[2] Low et al. suggest that the most effective method of reducing health disparities and income inequalities is a focus on policies addressing early childhood development and education, while linking early childcare, family support, and developmental enrichment with K–12 education.[3] The authors contend that early intervention is not only best for children's wellbeing, but also best for everyone insofar as early childhood interventions constitute an investment in the lifecourse of high-risk children that will reap significant savings as the children grow older:

> ...[d]espite incomplete data on how to change developmental trajectories and limited availability of measurement tools for early child development, we submit that federal, state, and local policies in the domain of early childhood education, early child care and welfare, and health would best serve the needs of the most vulnerable as well as the more advantaged members of society by acting as early as possible in the life course *before* costly health and social problems are incurred.[4]

A Yale University study exemplifies the long-lasting impacts of unhealthy pregnancy outcomes on children's later wellbeing. The longitudinal study found that 50% of infants who were born prematurely were in special education or needed extensive resource room help once they reached school. One fifth of these premature infants had already repeated a grade in school.[5] In Dallas County, nearly 50,000 infants were born prematurely and more than 43,000 infants were born with low birthweight between 1990 and 2004.[6] Being able to intervene in the earliest stages of a pregnancy is imperative if we are to improve childhood wellbeing in Dallas County—too many children in Dallas County are being exposed to disadvantages in childhood wellbeing from the first day of life.

"Being able to intervene during the earliest stages of a pregnancy is imperative if we are to improve childhood wellbeing in Dallas County."

Inaction and ineffective public policy can no longer be the norm when it comes to caring for our most precious resource, our youngest children. Broad public policies that comprehensively address the critical issues of long-term poverty, unhealthy pregnancies, and lack of opportunity for adequate early childhood

education experiences are needed. Furthermore, new policies must be designed to work within the context of changing family dynamics. Equally important are public policies that address the unequal distribution of negative childhood wellbeing across various racial/ethnic groups and various geographies within Dallas County. In addition, public awareness campaigns highlightling key issues in childhood wellbeing, aimed at parents, service providers, government officials, and citizens, are having some success in other areas of the country and should be an integral part of any concerted effort to improve childhood wellbeing in Dallas County.

In summary, four major themes with consequences for childhood wellbeing have emerged from this study. Advocates for change in childhood wellbeing in Dallas should carefully consider the importance of these four themes.

1. Neighborhood context and the geographical residence of young children
2. Investment in child development and the earliest years of life
3. Public policies for childhood wellbeing
4. Strengthening local programs that focus on childhood wellbeing among 0- to 3-year-olds

NEIGHBORHOOD CONTEXT

Your neighborhood can place you at an advantage or disadvantage from the day you are born. This is clearly illustrated in the findings throughout this report and quantified in the Williams Institute/Dallas Foundation Childhood Wellbeing Index. Where children are growing up in Dallas County can place them at not only a present disadvantage, but at a long-term disadvantage as well. Moreover, some locations (e.g., certain zip codes) in Dallas County experience disadvantages across several aspects of wellbeing. These geographic areas within Dallas County experience higher rates of childhood poverty, lower rates of prenatal care, higher rates of childhood injuries, and other deleterious conditions. The presence of multiple negative impacts has a compounding effect on childhood wellbeing.

> "Your neighborhood can place you at an advantage or disadvantage from the day you are born."

Across most indicators contained in the Childhood Wellbeing Index, children living in the Southern Sector of the city of Dallas, as well as in southern Dallas County, are more disadvantaged than children in other areas of the county. Children in these zip codes are experiencing higher rates of disadvantage discussed throughout this report—long-term poverty, a lack of family self-sufficiency, unhealthy pregnancies, child abuse—than children in other parts of the city.

The 2007 Childhood Wellbeing Index is a useful tool that has captured initial baseline data. Our next step is to begin tracking these data from year to year to assess the state of overall childhood wellbeing in Dallas County. The Childhood Wellbeing Index has the potential to direct which areas of Dallas County are in greatest need of efforts and resources to address childhood wellbeing.

INVESTING IN EARLY CHILDHOOD DEVELOPMENT

An investment in children has clear benefits beyond the tangible cost savings of enacting preventative rather than reactive measures to ensure child wellbeing. Unfortunately, when compared with other economically advanced countries, the United States does not fare well on measures of childhood wellbeing. Yet, as a UN Children's Fund (UNICEF) report on childhood wellbeing in wealthy countries recently stated:

> [T]he true measure of a nation's standing is how well it attends to its children—their health and safety, their material security, their education and socialization, and their sense of being loved, valued, and included in the families and societies into which they are born.[7]

The United States was ranked second to last, followed by the United Kingdom, in the UNICEF study, which measured six dimensions of childhood wellbeing:

- Material health
- Health and safety
- Education
- Peer and family relationships
- Behaviors and risks
- Young people's own subjective sense of wellbeing[8]

The United States was ranked in the bottom third on five of the six childhood wellbeing dimensions measured. When state level data for Texas are compared with national data on measures of childhood wellbeing, Texas typically fares even worse. Currently, our state's immunization rates are below the national average. Texas has a higher rate of teen births than the national average, and the average weekly salary for a Texas childcare worker is $269 per week, compared with an average of $352 per week for the nation.[9, 10]

Sadly, Dallas County consistently underperforms on some of these measures when compared with the state as a whole. According to the most recent edition of the *Beyond ABC* report, children in Dallas County are facing significant economic security issues. For example, the report suggests that:

- More than half of the homeless people in Dallas County are women and children.
- An estimated 30,000 children in Dallas County experience hunger because of inadequate family resources.
- 26,000 families are on the waiting list in Dallas County for housing subsidies.[11]

PUBLIC POLICIES FOR CHILDHOOD WELLBEING

Sound public policy is needed to meaningfully address some of these critical issues related to childhood wellbeing. Some broad recommendations can include the following:

1. **Reducing disparities in healthy birth outcomes in Dallas County.** African American women experience significantly more pregnancy and delivery complications that other racial groups, although these mothers tend to have higher rates of public insurance than Hispanic mothers. The African American infant mortality rate in Dallas County is almost twice that of Hispanic and white mothers. Since 1991, more than 1,400 African American infants in Dallas County have died before reaching age 1.[12] As

mentioned previously, there is a cumulative lifelong impact from being born prematurely, not having received adequate prenatal care, and/or being born underweight.

2. **Expanding proven program models such as the Nurse-Family Partnership.** Enlarging this program and other best practice programs to reach more first-time low-income mothers would likely yield tremendous social and economic benefits for the citizens of Dallas County. Some evaluation studies demonstrate that the Nurse-Family Partnership nets $4 for every $1 invested in the program.[13]

3. **Expanding programs such as CHIP (Children's Health Insurance Program), WIC (Women, Infants and Children), and TANF (Temporary Assistance for Needy Families).** The Center for Public Policy Priorities has extensively documented how a significant number of families are having difficulty enrolling in these public benefits programs.[14] Large caseloads, inadequate staffing, and qualification barriers prevent many of these families from receiving the benefits they desperately need.

4. **Expanding early childhood education, especially in those low-income areas highlighted in the Childhood Wellbeing Index.** Often, low-income families do not possess the resources or proximity to access formal, early childhood educational institutions. The local school system typically has a small number of slots for early childhood education of low-income 3- and 4-year-olds; but these programs are insufficient in size and number to serve all of the children who meet the eligibility requirements. Likewise, many children residing in near-poor families who are on the cusp of eligibility may not qualify for services that could be desperately needed. In addition, it is expected that the need for subsidized childcare for low-income parents will continue to increase at a rate that far exceeds any projected expansion in local school programs targeting this age group.[a]

5. **Advocating for more childcare centers in Dallas County to become accredited.** Currently, very few childcare facilities in Dallas County have achieved some form of accreditation. According to the most recent *Beyond ABC* report, less than 4% of childcare facilities in Dallas County are accredited nationally, and only 179 have received the Texas Rising Star Status.[b] Improvements in the rating of childcare centers must also be one of our goals. Parents in Texas may have a difficult time selecting an appropriate childcare center for their child because state standards specify only the minimum requirements, which are primarily concerned with basic safety, as opposed to elements that define quality care. Not only would appropriate standards increase the quality of childcare centers in Texas, but could also increase the quality of childcare workers. It is important to note that there are several accreditation bodies for childcare centers, and there are differing opinions as to which accreditation is the best. Therefore, a consensus among childcare providers or public education as to the differences among accreditations will need to be a first step on the path to greater childcare center accreditation.

"Parents in Texas may have a difficult time selecting an appropriate childcare center for their child because state standards specify only the minimum requirements, which are primarily concerned with basic safety, as opposed to elements that define quality care."

6. **Increasing the affordable housing stock in Dallas County.** The city of Dallas has a shortage of 30,000 affordable housing units. Affordable, decent, and safe housing contributes to the safety and security of children and is essential to

a Based on a Williams Institute analysis of current school capacity and projected population growth.

b Childcare providers in Texas who voluntarily exceed minimum childcare standards can participate in the Texas Rising Star provider certification program. Providers who exceed the minimum childcare standards are eligible for reimbursement at a subsidized rate that is 5% higher than the rate paid to providers offering care that meets only minimum standards.[15]

childhood wellbeing. A number of scholars suggest that old housing stock contributes to the poor level of childhood wellbeing that exists in our country. Older housing stock may not provide the indoor environmental quality that 0- to 3-year-olds need to thrive. An affordable housing plan that encompasses the local, county, and regional levels must be developed.

7. **Investing more resources during the first 3 years of life.** Many of the above recommendations may require additional funding from federal, state, or local dollars. However, the cost of not addressing these issues early on and in a systematic manner will be significantly higher in the long run. The 2006 annual cost for incarcerating a young person by the Texas Youth Commission is $59,451.[16] In 2006, a total of 320 individuals from Dallas County were incarcerated in a Texas Youth Commission facility. The potential cost to Texas taxpayers for incarcerating the 320 individuals from Dallas County could be $19,024,384 per year. Interestingly, 71% of all offenders committed to the Texas Youth Commission resided in single-parent or divorced-parent households as children. That same $19 million investment during the first 3 years of life for at-risk 0- to 3-year-olds in Dallas County would yield significant social and economic benefits for taxpayers in the long run. More importantly, the likelihood of producing citizens who become hardworking, educated, and self-supporting family members is much greater when investments are made earlier in the lifecourse. This report has documented some of the returns that could be realized from investing in early childhood. For example, Chapter 7 highlights how an additional 1,000 Dallas County children graduating from college would increase the lifetime earnings of those citizens by over $1 billion. The value or return from increased longevity, stronger families, and safer communities because of the increased educational attainment by 1,000 of our citizens would be priceless.

8. **Developing and funding partnerships among researchers and community organizations.** This report has demonstrated the need to evaluate the results of interventions while also carefully considering community context. More public and private research funding should be directed to research-community partnerships, as they are are in the best position to find solutions that are both evidence-based and community-centered.

9. **Fostering programs targeting parental involvement in early childhood education.** As the Best Practices presented in this report show, parental involvement is critical to proper child development and child wellbeing. Programs that educate and equip parents to accept their responsibility as their child's "first teacher" provide many benefits for the child, the parents, and the community.

9. **Increasing access to more programs that reduce the likelihood of linguistic isolation among limited English proficient (LEP) 0- to 3-year-olds**. In Texas, LEP students are often considered synonymous with Hispanic students—however, many other languages are spoken in homes throughout Dallas. For non-Hispanic LEP mothers and children, early intervention and immersion English programs for both parents and children are the best course of action. While children who live in homes where the primary language is not English face unique challenges, if at least some English is spoken in the home, the children can counteract these challenges with unique opportunities in acquiring language. Many of these children will become fully bilingual, placing them at a distinct advantage in education and in the workforce as adults.

   On the other hand, children in linguistically isolated homes—where no household member over age 14 is proficient in English—are likely to suffer significant disadvantages when learning English. Students who enter elementary school with poorly developed English skills will join the growing population of LEP students. LEP students face substantial obstacles to academic success when compared with their English-speaking peers. In addition, LEP students are likely to suffer other disadvantages—nationwide, approximately two thirds of LEP students are from low-income families, and about half of elementary-aged LEP children have parents with no high school diploma.[17] Valenzuela et al.'s in-

depth analysis of LEP student achievement in Texas found that LEP students were more than twice as likely to disappear[c] from the school system as their non-LEP peers.[18]

The prevalence of Hispanics in the LEP and linguistically isolated population means that a number of programs can be tailored specifically to this Spanish-speaking population. For example, the latest *Beyond ABC* report recommends expanding bilingual parenting education programs for pregnant teens.[19] Hispanic females account for 58% of teenage pregnancies in Dallas County. As the first years of a child's life are critical for language acquisition, residing in a home where English is not the primary language undoubtedly has profound implications for school readiness.

STRENGTHENING LOCAL PROGRAMS THAT FOCUS ON CHILDHOOD WELLBEING AMONG 0- TO 3-YEAR-OLDS

Chapter Ten of this report extensively documents the characteristics of outcomes-driven programs across the country that have demonstrated results in improving childhood wellbeing. Meanwhile, Chapter Nine documents the many programs and agencies in Dallas County whose primary purpose is to address childhood wellbeing. Local evaluation research is needed to determine the effectiveness and outcomes of those programs. Agencies operating programs with proven outcomes can not only feel confident they are effectively working towards improvements in childhood wellbeing, but will also be able to generate more investment from both public and private sources.

In addition to the usual sources of government and philanthropic funding, advocates for childhood wellbeing must explore alternative, targeted funding campaigns. Miami-Dade County, for example, has implemented legislation levying a small property tax on homeowners in the county to fund The Children's Trust. The owner of a median-price home in Miami-Dade County pays about $51.76 a year in additional tax—less than a dollar a week—to support this fund.[20] As a result of this tax, $85 million is raised annually to improve childhood wellbeing in the county. Roughly half of that sum is allocated to help children before birth through age 5, while the other half funds programs for children between the ages of 6 and 18. Interestingly, the first time this idea was proposed to the voters of Miami-Dade County, it was defeated. Several years later, when it was proposed to the voters of the county for a second time, it passed by a 2:1 margin.[21] Programs that receive funding from the Trust must conduct annual evaluations.

Finally, greater collaboration would strengthen the network of early childhood programs and care providers, while improving the efficacy of these programs. One of the strengths of The Children's Trust, in addition to the significant funding it provides, is that it was built on a collaborative model. Coordinating programmatic efforts by various agencies has the possibility of increasing efficiency, expanding the reach, and reducing the duplication of children's services in Dallas County.

c The authors calculate a "disappearance" rate which provides a methodological alternative to the "dropout" rate calculated by TEA, which has been subject to criticism of underestimating the number of dropouts.

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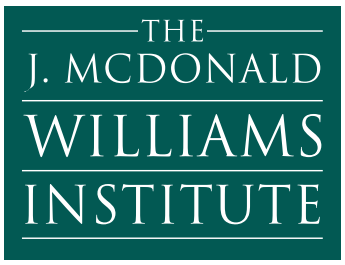
ABOUT THE DALLAS FOUNDATION

Established in 1929, the Dallas Foundation is a publicly-supported charitable foundation consisting of named funds established by many separate donors for the benefit of the Dallas area, although the Foundation's grantmaking extends nationally. The Foundation's grants include the arts, education, health, and social services. Because the Dallas Foundation receives support from such a broad range of donors, the IRS considers the Foundation to be a publicly-supported charity. Gifts to the Foundation accordingly qualify for the most favorable tax treatment possible and the Foundation simultaneously avoids the complicated regulations that govern private foundations. As a community foundation, the Dallas Foundation offers favorable tax treatment and regulatory simplicity, along with enormous flexibility to meet donors' financial and charitable goals.

ABOUT THE WILLIAMS INSTITUTE



The J. McDonald Williams Institute was established by the Foundation for Community Empowerment (FCE) in 2005 as a source of objective research and policy recommendations relevant to urban revitalization and quality of life. The Institute's roots in a community-building organization give its research a spirit unique among its peers. While many institutes engage in "research for the sake of research," the Williams Institute truly believes that the fruits of its research must serve the underserved by motivating the caliber of sustainable change necessary to improve quality of life and build a better city, nation, and world. The Williams Institute takes a holistic approach to understanding and examining the complex issues faced by the residents of distressed urban communities. Our atypical research strategy is centered around the concept of quality of life. We utilize the interdisciplinary perspectives of six focal areas—Education, Crime and Safety, Health, Housing, Social Capital, and Economic Development—to underpin our research initiatives. Yet we recognize that the many strands woven into the fabric of community do not exist independently, and so we must study them as they are, linked to one another in ways we do not fully appreciate. Because quality of life is multidimensional, we know the policies and programs that will improve it must also be multidimensional. The Institute not only seeks to better understand the mechanisms whereby indicators of quality of life interact with one another, but also to apply that understanding to generate lasting revitalization across all dimensions of quality of life in distressed urban neighborhoods.

ABOUT DALLAS INDICATORS

Dallas Indicators is a user-friendly community website dedicated to putting data about the Dallas community back into the hands of community members--a concept we call the democratization of data. Dallas Indicators enables non-profits, grassroots leaders, and members of the public to obtain timely data about all aspects of wellbeing. The data available on Dallas Indicators enables its users to confirm anecdotal knowledge, develop and target local solutions, secure funding, and make the case for broader policy changes. Through the simple sharing of information, the Dallas Indicators Project creates a better community. The Dallas Indicators Project is a collaborative partnership between the Dallas Foundation and the Williams Institute.

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