

A Framework for Child Health Services

Supporting the Healthy Development and
School Readiness of Connecticut's Children

Prepared for the Child Health and Development Institute by

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About the Child Health and Development Institute of Connecticut

The Child Health and Development Institute of Connecticut (CHDI), a not-for-profit organization, promotes and maximizes the healthy physical, behavioral, emotional, cognitive and social development of children throughout Connecticut. CHDI’s work focuses on ensuring that children in Connecticut will have access to and make use of a comprehensive, effective, community-based health and mental health care system.

CHILD HEALTH EXPERT ROUNDTABLE

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March 2009

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EXECUTIVE SUMMARY

Connecticut, through the Early Childhood Education (ECE) Cabinet, has devoted considerable resources to setting and achieving school readiness goals for the state's young children. These goals are captured in the ECE Cabinet's 2006 publication, *Ready by 5 & Fine by 9*.¹ It has been shown nationally that more than half of the children who enter kindergarten are found to be lagging in health, socio-emotional, and/or cognitive development. Physical and mental health-related issues, alone or in combination, account for all but 6% of the children each year who are not ready to begin academic learning.² In recognition of the role that health services play in ensuring school readiness, this report is written to benefit advocates, providers and policymakers by providing a Framework as a basis for action to improve delivery of child health services for infants, toddlers and pre-school age groups. The report draws upon the child health literature including work on early brain development.

Underlying the necessity of focusing on children during their earliest years of life is an explosion in knowledge of early brain development that points to the extraordinary influence of the early years on children's healthy development and learning. Indeed, research in neuroscience and the developmental and behavioral sciences proves unequivocally that the experiences of the first few years of life have a direct and enduring impact on children's future learning, behavior, and health, all important determinants of a child's readiness to succeed in school.³

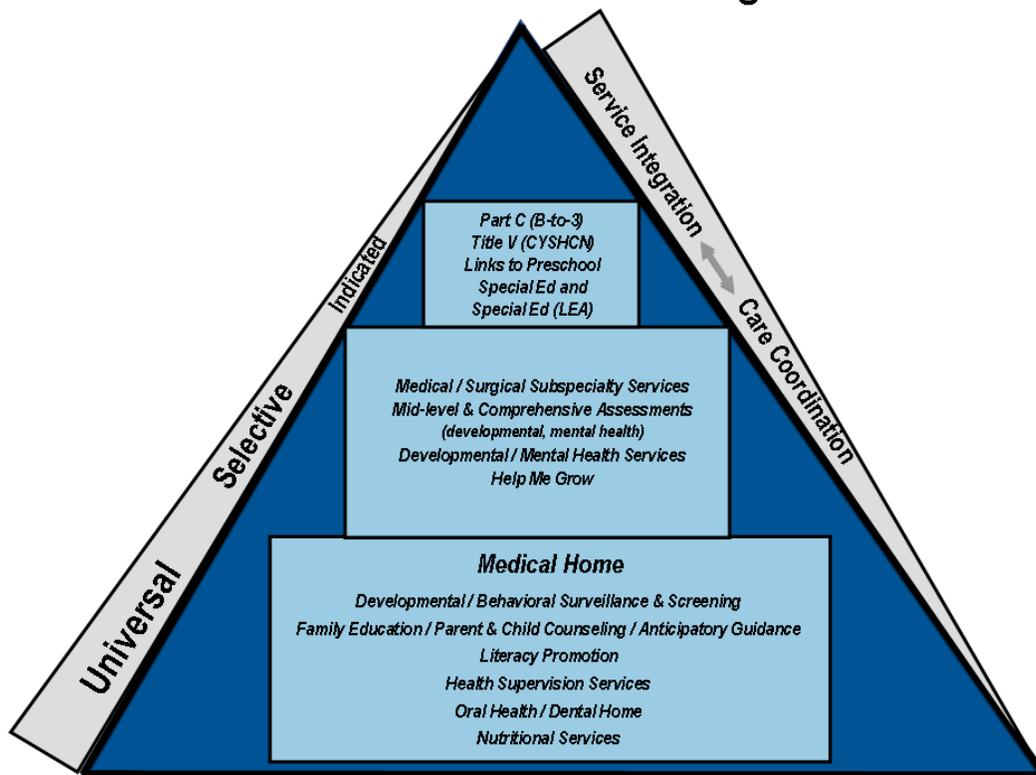
The Framework, based on best practices, articulates the full continuum of child health services, from primary care to highly specialized services. It places health services within a broader system with other sectors that serve children and families. The Framework suggests how child health services may contribute to children's school readiness through connecting with early care and education programs and family services and supports. The resulting system, when integrated, should ensure optimal healthy child development and school readiness. The Framework itself consists of "building blocks" describing the array and nature of child health services needed for three levels of care.

The Framework emphasizes the critical importance of linkages across the sectors. In particular, the Framework identifies care coordination, both within the child health services sector and across sectors, as the integrative component to a successful system.

The Framework, depicted in the figure below, identifies the essential components of child health services broken down by level of need as follows:

- **Universal services** provided to all children and families to support optimal healthy development and early identification of health and developmental concerns, ideally through a medical home;
- **Selected services**, including developmental, medical, and mental health services, available to all children and families and likely to be accessed by some for early intervention for health and developmental problems;
- **Indicated services**, such as those available through Birth to Three and Title V (for children with special health care needs), provided to those children that have identified difficulties and fulfill certain eligibility criteria.

Child Health Services Building Blocks



The children and families of Connecticut benefit from a robust set of medical resources ranging from primary care to subspecialty services. In addition, several statewide and local initiatives support and promote the delivery of child health services and contribute to the school readiness of the state’s children. One key child health asset in Connecticut is the United Way’s 211 Child Development Infoline. This resource serves as the single point of entry for several important early childhood services including: Help Me Grow, Children with Special Health Care Needs, Birth to Three, and Preschool Special Education Services. Connecticut’s child health services also are enriched by collaboration between the Department of Social Services (DSS) and the Department of Children and Families to address access to mental health services for children. Initiatives within DSS and the Department of Public Health promote care coordination and developmental monitoring in primary care settings. The Child Health and Development Institute supports several of these initiatives with practice education through the Educating Practices in the Community (EPIC) program.

Despite the abundance of services in Connecticut, capacity is limited in many of the programs that serve young children. This is especially true for indicated services. Modest investments in the child health system can have a major impact on school readiness for Connecticut’s children. The following represent the most cost beneficial recommendations:

1. **Increase access to child health services**, including primary and preventive care and dental care, to improve child health outcomes, promote children’s school readiness, and reduce health care costs.
2. **Provide care coordination services for children and their families** to increase the early detection of problems, improve management of acute and chronic disorders, promote adherence to interventions and treatment plans, and achieve efficiencies and cost savings in health care delivery.
3. **Implement developmental surveillance and screening** to ensure that children who require intervention services are identified as young as possible.
4. **Expand office-based education activities** through the EPIC (Educating Practices in the Community) program to better enable practices to function as effective medical homes.
5. **Improve mid-level assessment capacity** to enable more rapid and more efficient evaluation of at-risk children, facilitate access to helpful programs and services, and ensure the most appropriate use of expensive and scarce resources for comprehensive evaluations.
6. **Align and support state and local early childhood initiatives**, particularly those focusing on the integration of health into school readiness.

The following table outlines costs associated with implementing the above recommendations, totaling about \$14 million. At a time when Connecticut is facing extreme budget deficits, it is difficult to consider the increased expenditure. However, many of the benefits of these service investments will result in cost savings over the long term. Costs for more intensive services will decline as early preventive care and utilization of community-based interventions will lessen the need for more expensive tertiary care services.

Estimated Annual Costs of Recommended Service Enhancements for All Eligible Children from Birth to Age Five

<u>Service</u>	<u>Assumed Average Reimbursement</u>	<u>Total Visits per Year</u>	<u>Annual Cost (in millions)</u>
Well-child visits for uninsured children	\$90 per visit	11,900	\$2.75
Care coordination	\$7.50 per member per month	N/A	\$6.17
Developmental screening	\$18 per screening	77,600 screenings	\$1.62
Mid-level assessment	\$250	11,200	\$3.42
Educating Practices in the Community (EPIC)	Not applicable	85 practices	\$0.25
		Total Cost	\$14.21

In addition to yielding recommendations for immediate action, this report can also serve as the basis for the design of future strategies to promote children’s healthy development and resulting school readiness. The Framework conceptualization offers provocative, but realistic, implications for program development, public policy, and resource allocation. Indeed, the Framework can serve as the unifying vision to guide Connecticut’s efforts to strengthen its system in support of young children’s healthy development. Connecticut’s work can also serve as a model for other states in their own planning efforts.

¹Connecticut Early Childhood Education Cabinet and Co-published with Connecticut State Department of Education. Ready by 5 & Fine by 9. Connecticut’s Early Childhood Investment Framework. October 2006.

²Wertheimer R, Croan T, Moore KA, Hair EC. Attending kindergarten and already behind: a statistical portrait of vulnerable young children. Washington, DC: Child Trends; 2003.

³Center on the Developing Child at Harvard University (2007). A science-based framework for early childhood policy: Using evidence to improve outcomes in learning, behavior and health for vulnerable children. <http://www.developingchild.harvard.edu>.

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I. INTRODUCTION

Connecticut, through the Early Childhood Education (ECE) Cabinet, has devoted considerable resources to setting and achieving school readiness goals for the state's young children. These goals are captured in the ECE Cabinet's 2006 publication, *Ready by 5 & Fine by 9*.¹ It has been shown nationally that more than half of the children who enter kindergarten are found to be lagging in health, socio-emotional, and/or cognitive development. Physical and mental health-related issues, alone or in combination, account for all but 6% of the children each year who are not ready to begin academic learning.² This suggests that each year in Connecticut up to 20,000 children enter kindergarten with health and/or mental health issues that will keep them from achieving academic success. Mindful of the Cabinet's work, a Healthy Child Development Work Group concluded that an analytic review of the current organization of child health services and development of realistic recommendations for improvement would contribute significantly to school readiness in Connecticut.

To that end, this report is written to benefit advocates, providers and policymakers by offering a Framework as a basis for action to improve delivery of child health services for infants, toddlers and pre-

schoolers. The report draws upon the child health literature including work on early brain development. The Framework itself consists of "building blocks" describing the array and nature of services needed for optimal levels of care as well as a listing of Connecticut's child health services assets. While Connecticut's assets compare favorably to other states and the nation as a whole, many of the state's children still experience suboptimal health outcomes, and the delivery of child health services has many shortcomings. The Framework provides a basis for addressing the challenges to optimal delivery. Based on this conceptualization, the report offers a series of specific recommendations regarding access, coordination and integration of care and related services. Finally, there is a discussion of projected costs and offsetting benefits of these recommendations.

Recognized by the ECE Cabinet and local planning initiatives, the Framework provides a blueprint for a more robust child health services sector that is integrated within a comprehensive state system for young children's healthy development. It also suggests that implementing key recommendations for child health services should be a high priority in promoting school readiness.

II. BACKGROUND

The development of Connecticut’s Framework for Child Health Services has been informed by scientific advances in the neurosciences and key concepts in developmental theory.

Early Brain Development and Children’s Healthy Development

Underlying the necessity of focusing on children during their earliest years of life is an explosion in knowledge of early brain development that points to the extraordinary influence of the early years on children’s healthy development and learning. Indeed, research in neuroscience and the developmental and behavioral sciences proves unequivocally that the experiences of the first few years of life have a direct and enduring impact on children’s future learning, behavior, and health, all important determinants of a child’s readiness to succeed in school.³ Enhanced appreciation of such critical concepts in brain

development as neural plasticity, critical periods, sequential development, and the role of early relationships and experiences has profound implications for programs and services, as well as for public policy and funding priorities. If children do not start out on the right path from birth, much of what follows is compensation for what was missed.

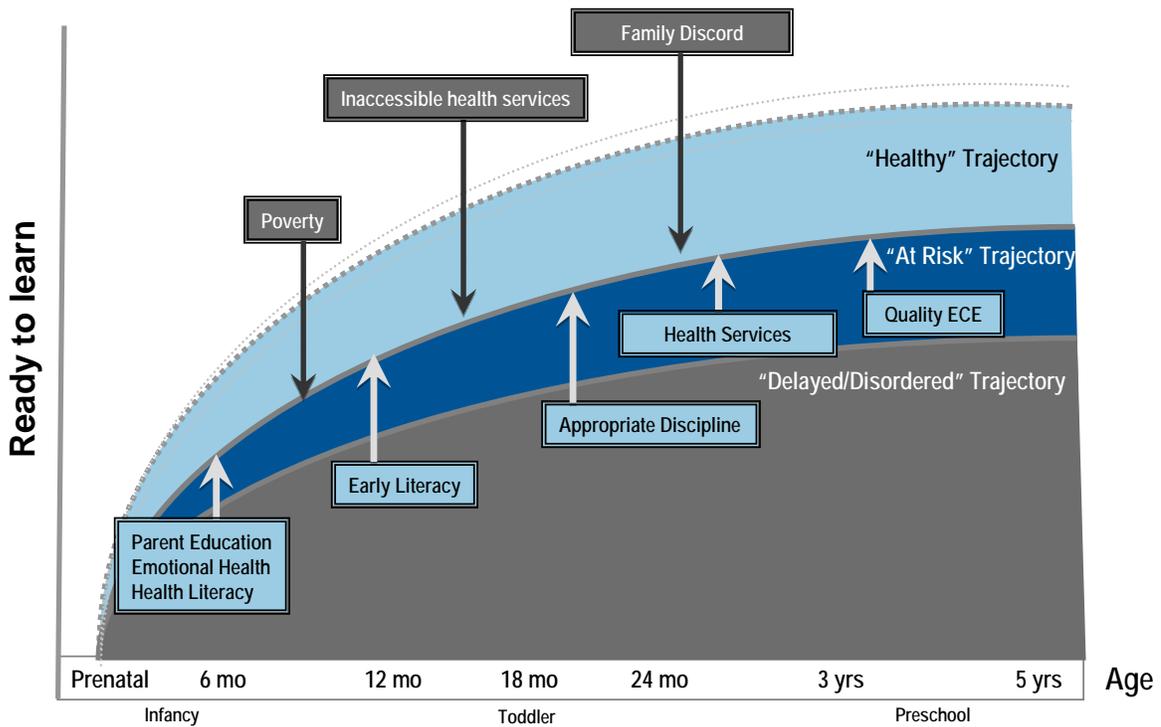
As the oft-quoted Frederick Douglass said, “It is easier to build strong children than to repair broken men.”

The Concept of School Readiness Trajectories

The Framework draws from a developmental perspective articulated in the work of UCLA pediatrician, Neal Halfon, who speaks to the concept of “school readiness trajectories.” Halfon believes children progress towards school readiness along three trajectories. (Figure 1)

Figure 1. School Readiness Trajectories and Influence of Developmental Factors

School Readiness Trajectories



Graphic Concept Adapted from Neal Halfon, UCLA

- A **healthy trajectory** in which children are ready to learn by kindergarten entry
- An **at risk trajectory**, in which children are exposed to negative influences that may interfere with their acquisition of school readiness skills
- A **delayed or disordered trajectory**, in which children are ill-prepared for success in school

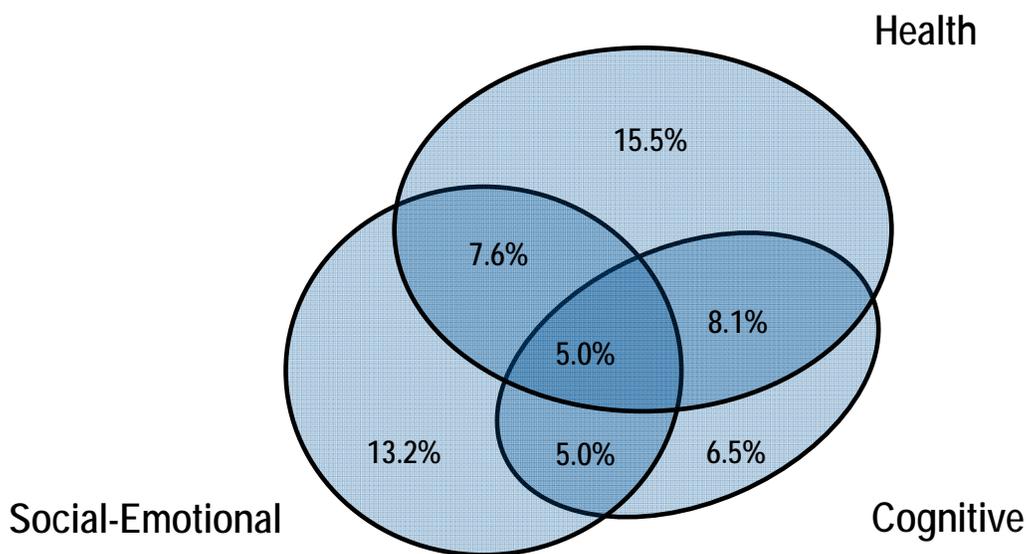
Beginning with the prenatal period and at all developmental stages, different factors have an impact on children’s school readiness.

Certain factors serve to favorably promote children’s readiness to learn. Examples include parents’ education, mental health, and health literacy; early childhood literacy promotion; appropriate discipline; access to high quality health services; and quality early care and education. Conversely, other factors may deleteriously affect children’s acquisition

of school readiness skills. Examples include the devastating impact of poverty; lack of access to health services; and family violence, discord, and stress. Children exposed to these conditions experience toxic stress that affects their developing brain at a critical time and subsequently all other aspects of their development. The more stressors a child experiences, the greater the impact, though it is possible that a child’s resiliency may allow him or her to defy simple prediction and overcome even the most unfavorable of circumstances.

The importance of a comprehensive developmental perspective is also underscored by a large national study of incoming kindergarten students deemed not ready for school. The 1998 Early Childhood Longitudinal Study of children in kindergarten used teacher- and parent-completed questionnaires asking about children’s abilities, temperaments and medical information, as well as standardized assessments to identify kindergarteners who were lagging in essential

Figure 2. Health, Social / Emotional and Cognitive Concerns in Children Who Lagged Behind Upon Kindergarten Entry



skills. Key findings were the following:

- Fifty-six percent of all children in the sample of 40,000 children were deemed not ready for kindergarten.
- Twenty-five percent of these children manifested delays in their cognitive development.
- A mere 6.5% of children lagged *only* in cognitive development.
- More than 30% of children lagged in socio-emotional development.
- More than 36% of children had one or more health concerns.

Typically, interventions to improve school readiness focus on the cognitive domain despite the fact that by itself it accounts for such a small percentage of

children who are not ready for kindergarten. For the majority of children, physical, social and emotional, *and* cognitive factors contributed to a lack of readiness to learn.² (Figure 2)

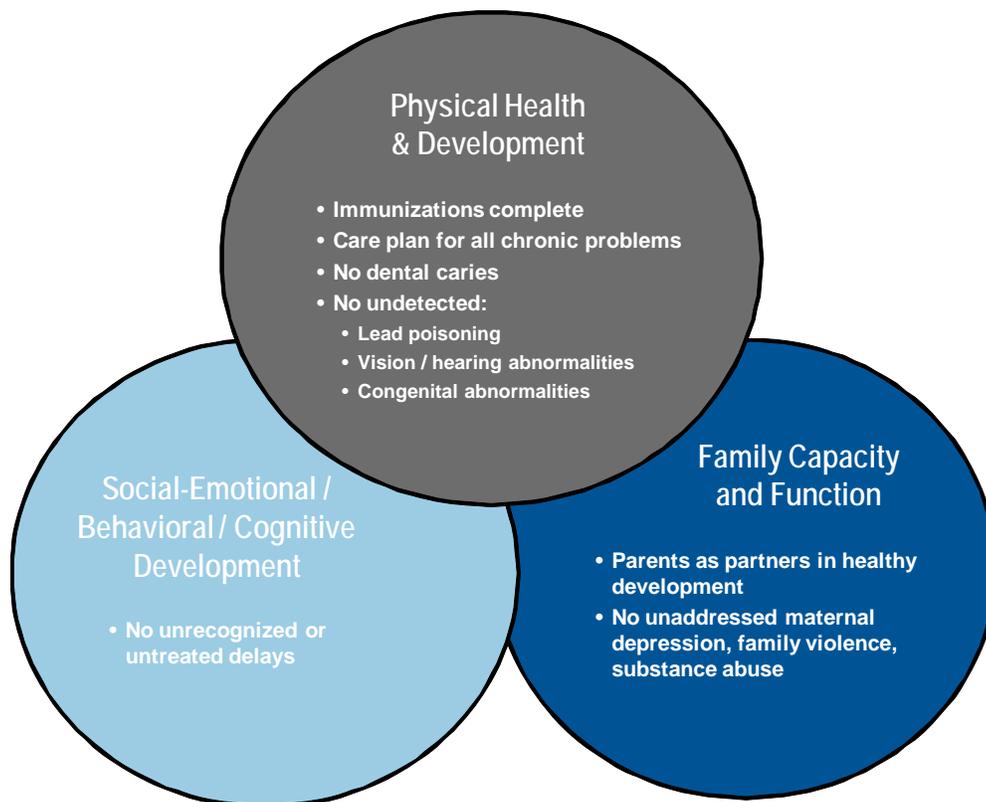
Health Related Outcomes for School Readiness

Given the multitude of factors that determine school readiness, such as secure attachment and early exposure to developmentally stimulating activities, the richest opportunities may well reside within the early care and education and family support sectors. Nonetheless, child health services offer the opportunity to address certain prerequisites for school success, particularly since they are the one point of contact that is nearly universal for children during the infant, toddler and preschool years.

Ed Schor, pediatrician and vice president of The

Figure 3.

Minimum Health-Related Outcomes for School Readiness



Commonwealth Fund, has identified key outcomes for school readiness that have particular relevance for child health services (**Figure 3**). Examples within the realm of physical health and development include such outcomes as: immunizations being complete; all children having care plans for management of chronic problems; healthy teeth and gums; and no undetected lead poisoning, vision or hearing abnormalities, or congenital abnormalities (i.e., birth defects).

With respect to family capacity and function, key outcomes particularly influenced by child health services include parents serving as active partners in promoting children’s healthy development and no undetected or untreated maternal depression, family violence, or substance abuse. Similarly, a relevant outcome for social-emotional, behavioral, and cognitive development is no unrecognized or untreated delays.

III. CHILD HEALTH SERVICES WITHIN A COMPREHENSIVE SYSTEM

What is the Child Health Framework?

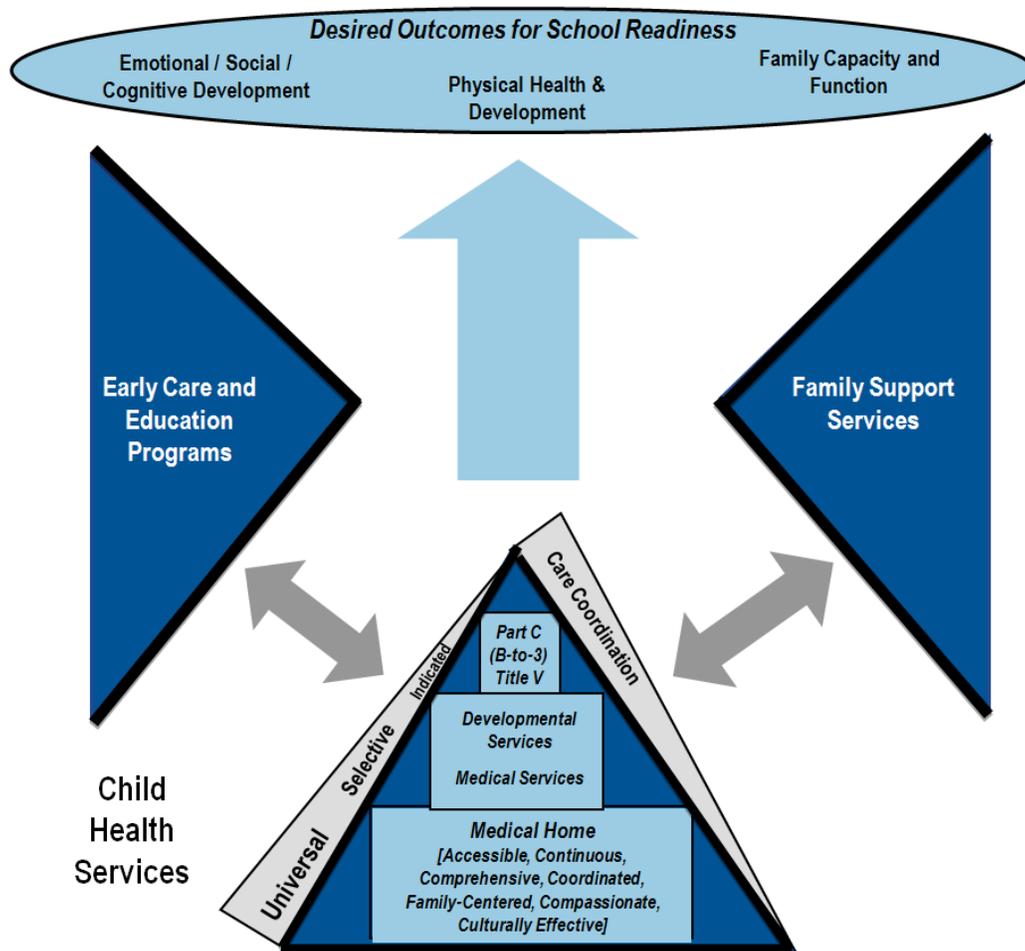
The Connecticut Framework, based on best practices, articulates the full continuum of child health services from primary care to highly specialized services. It also places health services within a broader system with other sectors that serve children and families, namely, early care and education and family support. (Figure 4) The Framework suggests how child health services may contribute to children’s school readiness

through connecting with early care and education programs and family services and supports. The resulting system, when fully integrated, should ensure optimal healthy child development and readiness for kindergarten and ongoing school success.

The Framework emphasizes the critical importance of linkages across the sectors. In particular, the Framework identifies care coordination, both within the child health services sector and across sectors, as the integrative component to a successful system. Indeed, the importance of such care coordination cannot be overemphasized.

Figure 4. Relationship Between Child Health Services, Family Support, and Early Care and Education

Health Services in the Early Childhood System



Child Health Services Building Blocks

The Framework conceptualizes child health services as a series of three building blocks: (Figure 5)

- **Universal services** provided to all children and families to promote optimal healthy development and the early identification of developmental concerns;
- **Selective services** available to all children and families in need and likely to

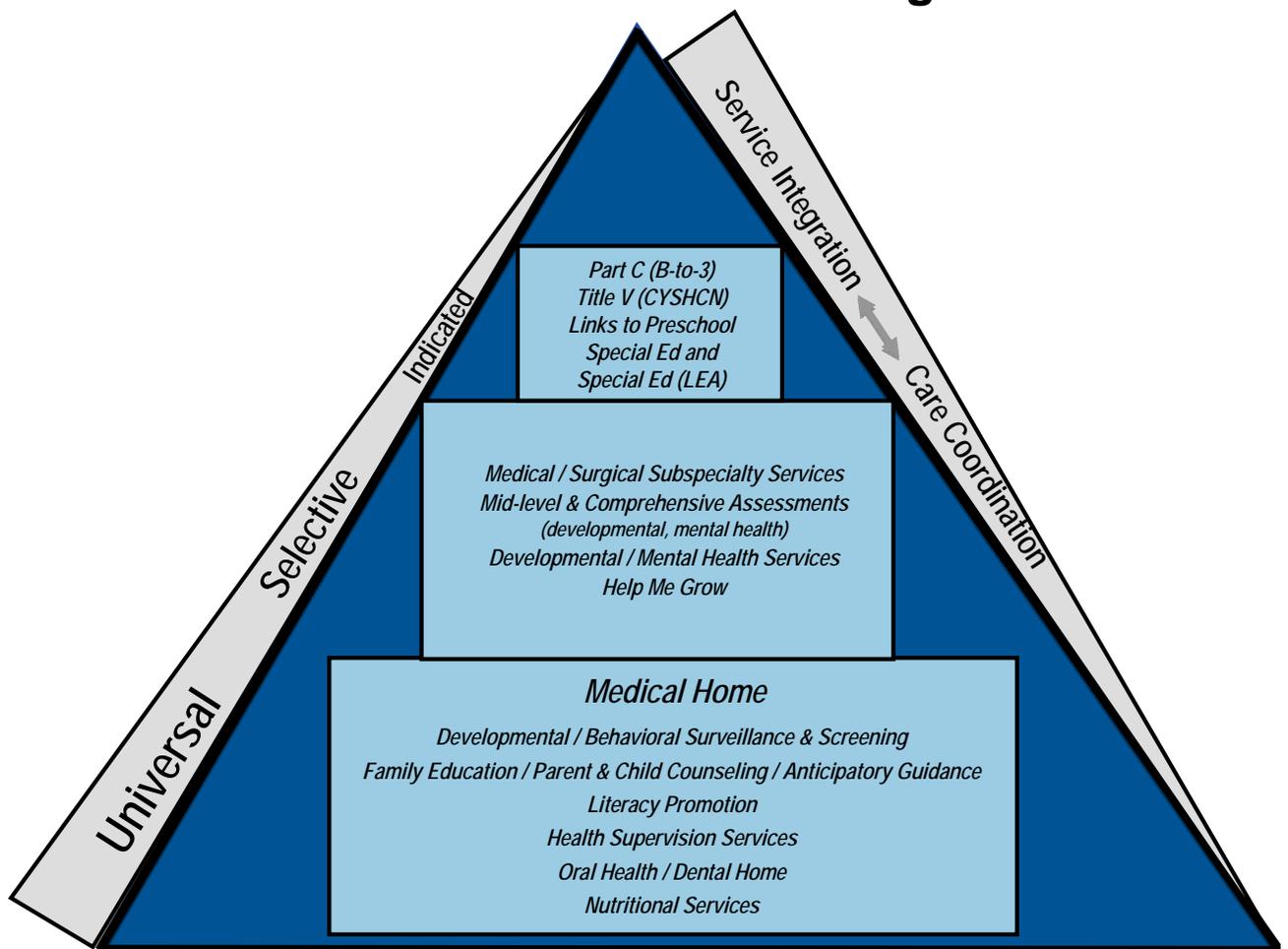
be accessed by some to promote early intervention;

- **Indicated services** provided to those children that have identified difficulties and fulfill certain eligibility criteria.

The Framework emphasizes the importance of care coordination and the critical need for linkages across the three building blocks as well as across service sectors (early care and education, family support).

Figure 5. The Framework for Child Health Services

Child Health Services Building Blocks



Universal services are accessible and provided to all children and their families to promote optimal healthy development and early identification of health and developmental concerns. The Framework proposes that pediatric primary health care services, delivered through a medical home, reach all children and are an opportune entrée to several aspects of care that are necessary for children’s healthy development.

Health promotion should be the primary goal within the medical home since it supports families in ensuring optimal growth and development of children. Despite this emphasis, some proportion of children will develop illnesses and/or remain at risk for developmental delays. The medical home is responsible for identifying these children as young as possible and connecting them to services.

WHAT IS A MEDICAL HOME?

A model for health care delivery that ensures that families and children receive accessible, continuous, coordinated, comprehensive, family-centered and culturally competent services. The term was developed by the American Academy of Pediatrics (AAP) and was formerly applied to the care of children identified as children and youth with special health care needs (CYSHCN). The concept of medical home has been broadened to describe the optimal health care delivery approach for all children and a model for practice improvement.

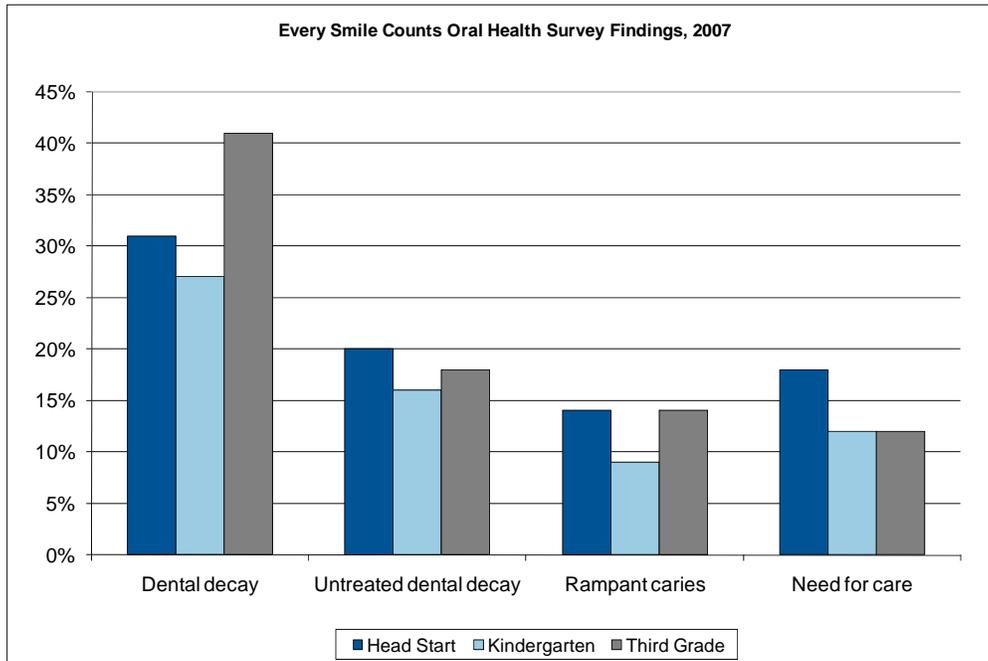
Primary care services best provided within a medical home to promote development include:

- **Developmental and behavioral surveillance and screening** to monitor children’s behavior and development to identify children at risk for delays or disorders and to intervene when children manifest such delays as early as possible. Surveillance is performed at all health supervision visits and should include opinions of others familiar with a child. Formal developmental screening is recommended at select ages (9, 18, and 24 or 30 months).⁴

Developmental surveillance can accurately identify children with delays. However, formal screening can identify children at an earlier age. Few child health providers use standardized tools to screen their patients for developmental problems; the use of clinical impressions alone can delay identification of children’s developmental needs.

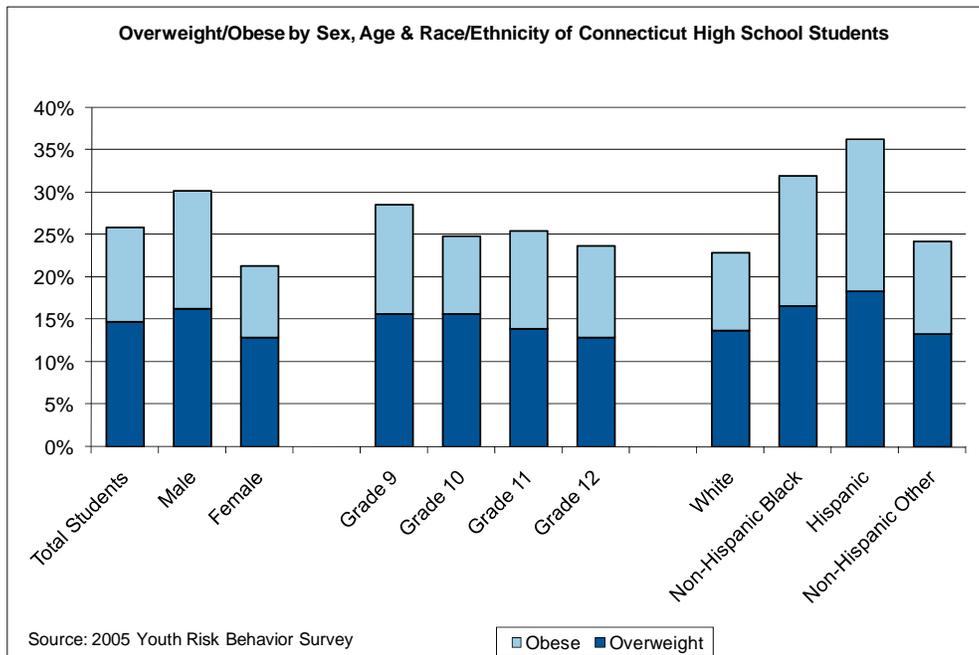
- **Anticipatory guidance**, which is the provision of information to parents or children with the expected outcome being a change in parent attitude, knowledge, or behavior. Telzrow describes such counseling as discussions of “...ideas and opinions about normal parental responses to development,” while Brazelton speaks of anticipatory guidance as “...the mechanism for strengthening a child’s developmental potential.”^{5,6}
- **Literacy promotion** through such efforts as the *Reach Out and Read* program, which provides free books to children at health supervision visits and parent counseling on the importance of reading to children. Such activities are associated with gains in children’s language development.⁷
- **Oral health guidance and monitoring** to ensure early preventive dental care and to link children to a dental home at an early age. (**Figure 6**)
- **Nutritional services** to promote healthy eating and active lifestyles, prevent obesity and to monitor growth. (**Figure 7**)

Figure 6.



Source: Connecticut Department of Public Health, December 2007

Figure 7.



Source: 2005 Youth Risk Behavior Survey

According to a body mass index analysis conducted in 2007 by the Norwalk Health Department and the Norwalk Public Schools, 14.7% of kindergarteners were overweight and 15.9% were at risk for being overweight.

Source: Norwalk Early Childhood Council

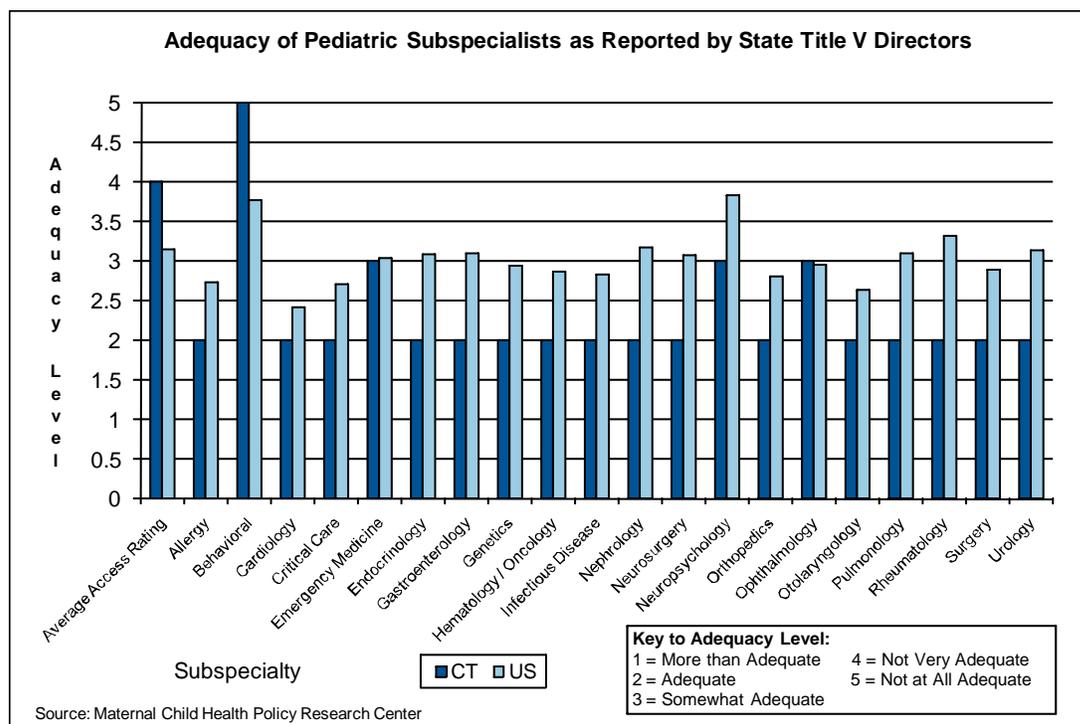
Selected services are conceptualized as those which are available to all children and families and likely to be accessed by some to promote early intervention for health and developmental problems. These services include:

- **Developmental and behavioral health services** for children who are experiencing delayed or disordered development or who are at increased risk for such delays and difficulties and require specialized intervention. If untreated, such disorders will adversely impact self-esteem, mood, behavior, relationships, academic performance, and family stability. Access to such services is facilitated by *Help Me Grow*, a program of the Connecticut Children’s Trust Fund, to promote the early detection of at-risk children and the linkage of such children and their families to community-based programs and services.
- **Mid-level and comprehensive assessments** to ensure that children identified through surveillance and screening will receive timely evaluations that efficiently and effectively use scarce resources. Forty-two percent of children referred to the state’s Birth to Three program in

2007 did not qualify for early intervention services.⁸ Families typically learn of this after waiting for and ultimately receiving a full evaluation. A mid-level assessment program could triage such children to intervention services accessed through *Help Me Grow* more quickly and at lower cost, while preserving the capacity to conduct comprehensive evaluations for those children most likely to benefit. Similarly, mid-level assessments of children with behavioral problems could rapidly triage some children into community-based therapeutic support services, while preserving scarce and much more expensive and intensive children’s mental health services for children with more serious and complex needs.

- **Pediatric medical and surgical subspecialty services** to address acute and chronic disorders of childhood through the most appropriate treatments by professionals who are specially trained to address the unique developmental needs of children and their families. Access to such services is facilitated by care coordination, particularly for children with complex conditions. (Figure 8)

Figure 8. Connecticut has many pediatric sub-specialists, yet access to services, particularly behavioral health services, is still not optimal.



Indicated services are interventions provided to those children with identified difficulties, delays, and disorders who fulfill certain eligibility criteria. While residing within the early care and education and family support sectors, these programs and services may be accessed via the child health sector. Examples include:

- **Birth to Three**, a program of the Department of Developmental Services, which serves children with qualifying, documented disabilities or developmental delays during infancy and the toddler years and is authorized under Part C of the Individuals with Disability Education Act (IDEA). (**Figure 9**)
- **Preschool Special Education**, which is provided by local school districts (i.e., local education authorities - LEAs) to those children requiring individualized, special instruction by virtue of manifesting significant delays in at least one area of development. Provision of such services is mandated by Part B of federal IDEA legislation.
- **The Children with Special Health Care Needs (CSHCN)** program of the Department of Public Health, which services children who experience a chronic physical, developmental, behavioral, or emotional condition and require health and related services beyond that required for children in general. Children who meet this broad description and have family incomes below 300% of the federal poverty level are eligible for care coordination, technical support, and consultation for family advocacy, respite services for families, special equipment, and financial reimbursement to providers of subspecialty services. The program is funded under Title V of the state Maternal and Child Health Block Grant. (**Figure 10**)

The Framework emphasizes the critical importance of care coordination and the value of linkages within and across child health, early care and education, and family support service sectors.⁹ Indeed, without such care coordination, children and families are unlikely to locate and access needed services and are more likely to seek episodic care within such expensive venues as hospital emergency departments. Ideally, providers work in collaboration with families to develop, implement, and monitor written care plans.

Children must be connected to both medical services beyond the primary care office and to such services as preschool and family centers that fall outside of the child health services sector. Although such care coordination demands special consideration, all attributes of a medical home are important to ensure that care is accessible, family-centered, compassionate, culturally effective, and comprehensive.

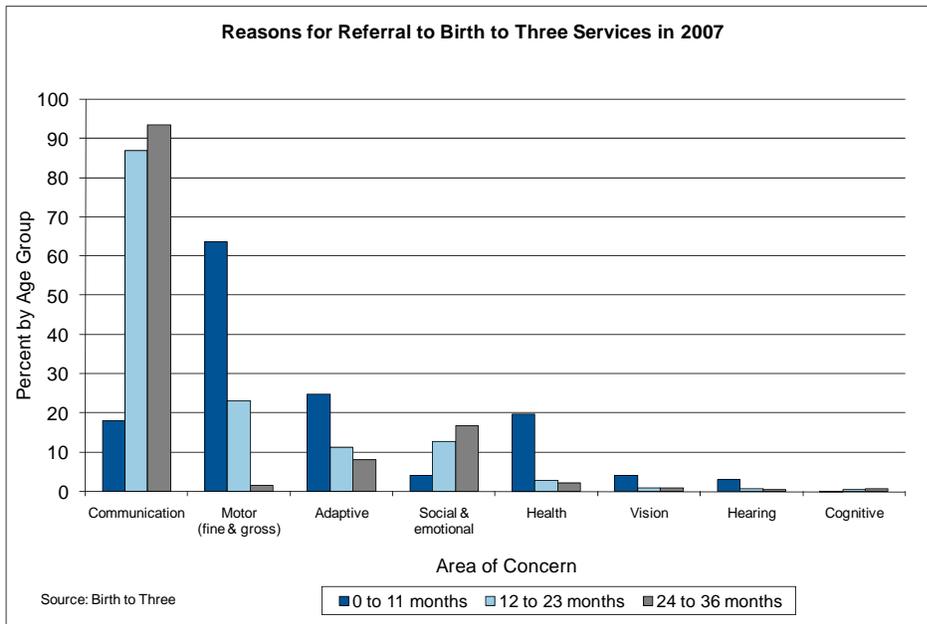
- 35.2% of Connecticut parents with children ages birth to five express one or more concerns about their child's learning, development or behavior, and 9.2% of parents with children three to 17 report moderate or severe difficulties in the area of emotions, concentration, behavior, or getting along with others.

Source: National Survey of Children's Health, 2003

- A survey of 48 pediatric and family medicine providers in Connecticut reported that 90% of their patients experience difficulty obtaining mental health services.

Source: Child Health and Development Institute, 2007

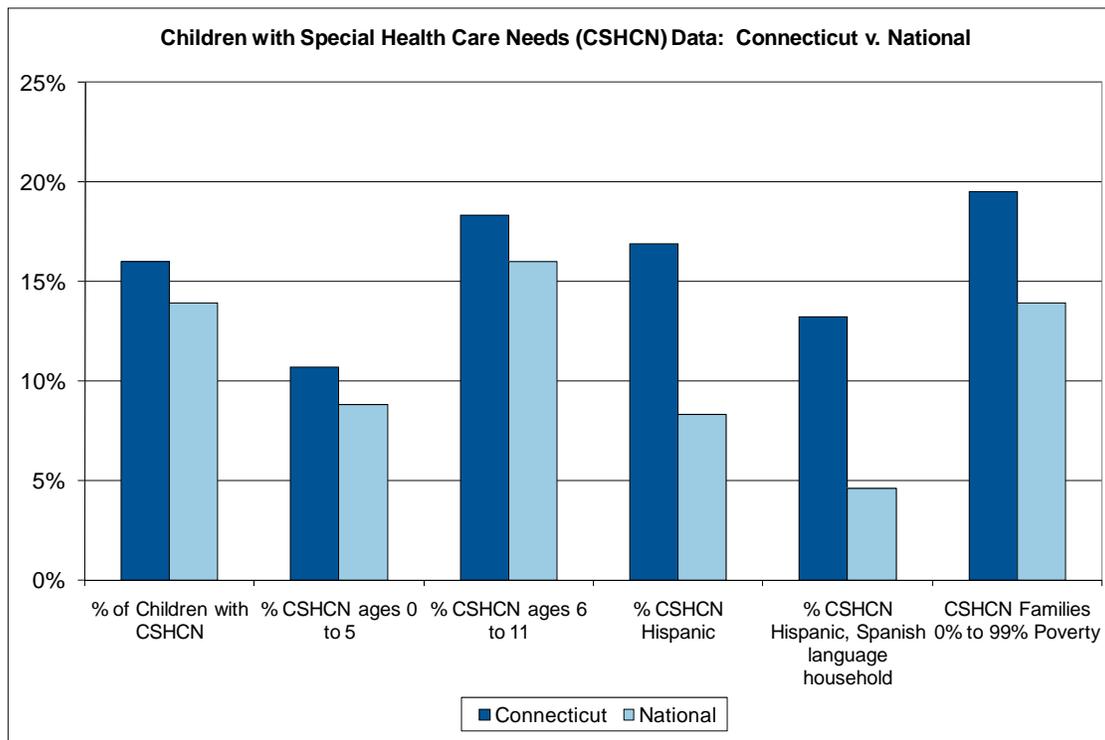
Figure 9.



Families, foster families, relatives or friends represent the most likely (62%) source of referral for Birth to Three followed by health care providers and hospitals (30%) and state agencies (5%). Sixty-seven percent of parents learned about the Birth to Three system from their primary health care provider.

Source: Birth to Three 2007 Annual Report

Figure 10.



Source: National Survey of Children's Health, 2003

IV. CONNECTICUT'S CHILD HEALTH SERVICES ASSETS

The children and families of Connecticut are fortunate to benefit from several statewide and local initiatives that support and promote the delivery of child health services and contribute to the school readiness of the state's children. These assets facilitate the integration of child health services with other key sectors within a comprehensive system. They include:

- Child Development Infoline
- Help Me Grow
- EPIC (Educating Practices in the Community)
- Connecticut Behavioral Health Partnership
- Children with Special Health Care Needs
- Primary Care Case Management
- Payment for Developmental Screening
- Pay for Performance
- Connecticut's Child Health Workforce

These unique assets should be key elements in the development of a statewide system of child health services in support of young children's healthy development.

Child Development Infoline (CDI) (1-800-505-7000) is maintained by Connecticut United Way's 211 information and referral program. CDI provides a single portal of entry to programs and services for families of children at risk for developmental and behavioral problems. Children, depending on their needs, are linked to a variety of early childhood programs and services, including Birth to Three, the Children with Special Health Care Needs (CSHCN) program, and Preschool Special Education.

For at-risk children ineligible for these programs, a referral to *Help Me Grow* identifies geographically- and culturally-appropriate programs and services and facilitates linkage to such resources. The statewide triage program is supported by regional *Help Me Grow* child development liaisons, who locate services and maintain regional resource inventories and facilitate access for children and families. *Help Me Grow/Child Development Infoline* is an exemplary model of blended funding

(Children's Trust Fund, Department of Public Health, Department of Education, Department of Developmental Services, United Way of Connecticut) supporting a multi-sector system that cuts across state agencies to services for all children for whom there are concerns.

During 2006-2007, the number of parents, pediatricians and other providers (2,774 in total) who contacted *Help Me Grow* to discuss a concern about a child's behavior, learning or development increased by 16%. Most calls were from parents (63%) followed by calls from pediatricians (17%).

Source: Children's Trust Fund, *Help Me Grow* Annual Report, 2008

Educating Practices in the Community (EPIC) is a program of the Child Health and Development Institute of Connecticut, with support from the state chapters of the American Academy of Pediatrics and American Academy of Family Physicians. EPIC uses so-called *academic detailing* to provide practice-based education to pediatric and family medicine providers on a wide range of issues and topics. EPIC presentations are delivered to the entire practice team, including nurses, physicians, and office staff. Current EPIC modules that support primary care practice improvement within the context of the Framework include: care coordination; family-centered care; infant oral health; developmental surveillance and screening; connecting children to behavioral health services; and brief, office-based counseling for common behavioral issues. An evaluation of the module on surveillance and screening showed a significant increase in the identification of children with developmental and behavioral concerns and an increase in referrals to Child Development Infoline.¹⁰

The **Connecticut Behavioral Health Partnership** is a collaboration between the State's Departments of Social Services (DSS) and Children and Families (DCF). The Partnership employs a single administrative entity to manage the provision of behavioral health services to children insured by Medicaid and also those within DCF's Voluntary Services program. Among several initiatives, the Partnership has designated a subset of behavioral health agencies as **Enhanced Care Clinics (ECCs)**. Such clinics are

required to ensure access to their services for referred children according to specific criteria: two hours for emergency care; two days for urgent care; and two weeks for routine care. As of September 2008, ECCs are also required to develop formal memoranda of understanding with primary care practices to ensure seamless referral, coordination of services through communication protocols, and periodic education of primary care providers. Clinics designated as ECCs receive payment that is 25% more than prevailing Medicaid reimbursement rates.

Services for [Children with Special Health Care Needs \(CSHCN\)](#), supported by the Title V Maternal and Child Health Block Grant, were reorganized by the State Department of Public Health (DPH) in 2005. DPH now funds five regional care coordination contractors. Contractors work in their region’s primary care sites to ensure the linkage of children to specialized medical services, as well as respite and community resources. The care coordination contractors are also expected to support practices in their regions in implementing medical home principles. A statewide [Family Support Network](#), also funded by Title V, works with families and practices to support parents and other caretakers of children with special health care needs.

In 2009, the State Department of Social Services began supporting practice-based care coordination through a pilot program of [Primary Care Case Management \(PCCM\)](#). Providers who enroll in the PCCM Medicaid pilot program receive \$7.50 per member per month for those patients who select this option, as well as fee for service reimbursement for services rendered. Providers are expected to offer timely preventive visits, authorize referrals, offer weekend and evening hours, develop care plans, perform periodic risk assessments, and implement an electronic medical record or patient registry. Families can enroll in PCCM rather than the plan of a managed care organization. A provider advisory group working with DSS will assess family and providers participating in PCCM as well as the program’s impact on health service utilization and costs.

DSS has recently begun two other initiatives to increase the effectiveness of child health supervision services within the Medicaid (HUSKY) program. DSS has authorized payment for developmental

screening performed with a standardized tool at the American Academy of Pediatrics’ recommended ages of 9, 18, and 24 (or 30) months. Providers can bill for this screening performed on the same day as a health supervision visit. DSS also will be providing an additional incentive to child health providers to perform screening under a [Pay for Performance Program](#). Funding to support this is included in contracts with Medicaid managed care providers.

[Connecticut’s child health workforce](#) is also an important and strong asset. Connecticut averages 127 pediatricians per 100,000 children, which compares favorably to other states which range from 28 per 100,000 in Idaho to 165 in Massachusetts.¹¹ Pediatric medical and surgical sub-specialists are primarily, although not exclusively, based in the state’s two children’s hospitals (Connecticut Children’s Medical Center and the Yale-New Haven Children’s Hospital) and their affiliated medical schools (University of Connecticut and Yale University). **Table 1** shows that in most pediatric disciplines, Connecticut experiences higher ratios of subspecialists per 100,000 children than the nation as a whole. Connecticut’s child health workforce facilitates access to pediatric medical and surgical subspecialty services - critical components of the Framework’s *selective services*.

Subspecialty Area	CT	US
Cardiology	2.0	1.9
Developmental	1.8	0.7
Endocrinology	2.2	1.2
Gastroenterology	1.0	1.2
Hematology / Oncology	2.7	2.1
Infectious Diseases	2.2	1.3
Neonatal/Perinatal	7.2	4.8
Nephrology	0.9	0.6
Pulmonology	1.8	0.9
Rheumatology	0.4	0.3

Source: American Board of Pediatrics Workforce Data 2007

V. CHALLENGES TO THE EFFECTIVENESS OF CHILD HEALTH SERVICES

Although the State of Connecticut compares favorably to other states and the nation with respect to such child health services benchmarks as access, quality, family costs, and children's potential to lead healthy lives (**Table 2**), the health of Connecticut's children is not optimal. Too many children live in poverty. Not enough children receive follow-up or coordinated services. The health insurance premiums that families pay are high, as is personal health care spending. Several factors converge to compromise the potential of child health services to meet children's needs. These include:

- Lack of access to primary care services
- Demographic changes
- Increase in chronic diseases
- Lack of coordination of services within the health sector
- Limited behavioral health capacity
- Inadequate reimbursement for primary care services, including care coordination
- Lack of integration of health with other sectors serving young children

As a result, more than one third of children are estimated to use emergency departments for conditions that can be treated in primary care settings. Also, fewer than 2% of children in need of behavioral health services actually receive them. Access to mental health services is a problem for all children and families, but poor children disproportionately experience several health problems, such as dental decay, obesity, and asthma. Connecticut is a state of contrasts, having the highest per capita income in the nation while housing three of the nation's ten poorest cities. These contrasts are clearly reflected in the health status of Connecticut's children.

Access is one factor that contributes to suboptimal outcomes. Despite impressive gains in the number of children insured by Medicaid, the State's Child Health Insurance Program (SCHIP), almost 50,000 of Connecticut's children still lack health insurance. Such children use fewer primary care visits,¹² setting

the stage for inefficient, uncoordinated care within emergency departments and other episodic care settings. Only 15% of Connecticut's dentists accept Medicaid due to poor reimbursement rates, significantly impeding access to dental care for many of the state's children.

The impending shift in the demographic make up of Connecticut's population can also be expected to affect the content and delivery of health services to children. The Connecticut State Data Center estimates that the percentage of Hispanic residents will increase from 9.4% of the state's population in 2000 to 20.4% in 2030. The median age of the Hispanic population is much younger than that of other races, meaning that an unprecedented number of Hispanic children will be served by the early childhood system over the next ten years. Culturally and linguistically competent and family-centered care will be increasingly important to ensure that all children can benefit from child health services.

Increases in such childhood chronic diseases as obesity and asthma, as well as the high prevalence of developmental and behavioral problems also have significant implications for the delivery of the state's child health services. The percent of children requiring care for asthma increased by 20% between 2005 and 2006. Twenty-five percent of the state's children are obese. Children with chronic illnesses are more likely to rely on hospital-based services (emergency department, subspecialty, and inpatient) than healthy children.

The coordination of subspecialty services with primary care services remains challenging in parts of the state that are far from the two major medical centers. Improved care coordination and co-location of subspecialty services, such as child psychiatric services, in outlying health care sites is beginning to improve access and outcomes for families. It is also strengthening the ability of primary care services to provide follow-up and ongoing management of acute and chronic illnesses. Care coordination plays a critical role in enabling co-management of conditions that involve subspecialty and primary care specialists.

Table 2. Variations in Child Health System Performance: Connecticut v. National Benchmarks

Indicator	CT	CT Rank	National Average	Best
Access				
Percent of children at or below 200% poverty who are uninsured, two year average, ages 0 -17	20.1%	36	19.0%	7.0%
Percent of children who are uninsured, two year average, ages 0 -17	6.8%	11	11.3%	4.9%
Quality				
Percent of children ages 19 - 35 months receiving all recommended doses of five key vaccines	86.1%	4	80.8%	93.5%
Percent of children ages 0 -17 with both a medical and dental preventive care visit in the past year	71.6%	4	58.8%	74.9%
Percent of children ages 1-17 with emotional, behavioral, or developmental problems receiving some mental health care in the past year	74.1%	3	58.7%	77.2%
Percent of children ages 0 -17 with a medical home	59.1%	4	46.1%	61.0%
Percent of children ages 0 -17 whose personal doctor or nurse follows up after they get specialty care services	57.5%	29	57.8%	68.0%
Percent of children ages 0 -17 with special health care needs who have problems getting referrals to specialty care services, 2001	18.8%	17	21.9%	13.5%
Hospital admissions for pediatric asthma per 100,000 children ages 0 -17	**	**	187.6	54.9
Family Costs				
Personal health care spending per capita, 2004	\$6,344	46	\$5,283	\$3,972
Average family premium per enrolled employee for employer-based health insurance, FY 2005	\$11,717	49	\$10,728	\$8,334
Potential to Lead Healthy Lives				
Infant mortality, deaths per 1,000 live births	6.5	21	7.0	4.3
Percent of children ages 1-5 years at moderate/high risk for developmental delay	23.4%	22	24.5%	16.4%
The shaded areas reflect where Connecticut ranks in the bottom half of states. Source: The Commonwealth Fund: U.S. Variations in Child Health System Performance: A State Scorecard, 2008				

Access to behavioral health services is particularly problematic, with 90% of child health providers believing that their patients have difficulty getting an appointment with a behavioral health specialist.¹³ Children with behavioral health disorders and their families use more types of pediatric health care services more often and at higher overall costs than other children and families. Demand for behavioral health services exceeds supply and results in lengthy waiting times for appointments and low levels of follow-through with evaluation and intervention.

The delivery of child health services is also constrained by inadequate reimbursement for primary care and subspecialty services. HUSKY provides relatively low reimbursement for physician services, especially evaluation and management, resulting in physicians limiting the number of children served who are poor. As a result, families turn to more expensive emergency department services even for conditions amenable to primary care management. Furthermore, the inability to perform early detection and intervention results in the need for more costly testing and treatments later in life. For example, untreated obesity leads to diabetes and hypertension, which require more costly care.

The lack of reimbursement for care coordination also inhibits efficient utilization of services and increases costs. With the anticipated exception of the

implementation of Primary Care Case Management (PCCM) within the Medicaid program, neither HUSKY nor private insurers reimburse child health providers for coordination of care for their patients. When care is not coordinated through a single provider, duplication of services and utilization of unnecessary services are inevitable consequences, and children are less likely to receive necessary interventions.

Finally, child health services are not effectively integrated either within the health services sector or across the critical sectors of early care and education and family support. Children grow, learn, and develop within a variety of settings, including traditional and extended families, neighborhoods, and child care facilities. Yet such community-based services are often delivered in isolation, dampening the potentially positive impact of such services on children's optimal development. Similarly, opportunities to share opinions on and concerns for children's development across the sectors in which children live and learn are limited, undermining the effectiveness of developmental surveillance and hindering the earliest detection of children at risk for developmental and behavioral problems and delays. An additional consequence of the lack of integration of services across sectors is that parents and early care and education providers do not have the opportunity to learn about the health sector's role in promoting healthy growth and development.

VI. RECOMMENDATIONS

Connecticut's Framework for child health services can serve as the basis for the development of a robust child health services sector that is integrated with early care and education and family support services within a comprehensive system in support of young children's healthy development. The following discussion describes how this system may best ensure that the state's children are "ready by five and fine by nine," and how child health services may specifically promote certain prerequisites for school success.

Despite the acute challenges of limited resources and the state's enormous fiscal challenges, the following recommendations deserve timely and thoughtful consideration:

1. **Promote increased access to child health services, including primary and preventive care and dental care, to improve child health outcomes, promote children's school readiness, and reduce health care costs.**

As previously noted, despite gains in Medicaid and SCHIP enrollment, almost 50,000 of Connecticut's children lack health insurance. The strengthening of child health services and integration of such services within a state system to support young children's healthy development cannot have the desired impact unless all children, particularly those at increased risk for adverse developmental and behavioral outcomes as a consequence of poverty, have access to such services. Advocacy must be focused on achieving universal coverage and access for *all* children.

Expanding insurance coverage is critical to addressing access, but not sufficient. Additional strategies such as eliminating deductibles and co-payments for child health supervision visits and improving reimbursement may also enhance access in the private sector.

2. **Provide care coordination services for children and their families to increase the early detection of problems, improve management of acute and chronic disorders, promote adherence to interventions and treatment plans, and achieve efficiencies and**

cost savings in health care delivery. Care coordination, which includes written care plans developed and implemented in collaboration with families and all service providers, is critical. Care coordination ensures that at-risk children and their families are effectively linked to programs and services.

Experience with Connecticut's *Help Me Grow* program has demonstrated the critical importance of such efforts. Even when at-risk children are detected and appropriate programs and services are identified, approximately seven contacts are required to ensure the successful linkage of children and their families to programs and services.¹⁴

Despite the importance of such activities, neither HUSKY nor private insurance have reimbursed providers for their efforts in coordinating their patients' care. Although such reimbursement will now be introduced through the PCC Management option within the HUSKY program, the impact of such a reimbursement strategy remains to be determined and the program will not enhance care coordination efforts within the private sector. Pilot programs in select locales, such as the HOME (Health Outreach for Medical Equality) program in Hartford, are evaluating the effectiveness of different care coordination models. (See page 20 for a description of Project HOME.)

- One study of care coordination in pediatric practice estimated that it costs \$23,000 - \$28,000 for a practice with 5,800 patients to provide care coordination services.
- An investment of \$400 per child for care coordination services can significantly decrease the number of days parents miss work because of caring for their children with special health care needs.
- Studies have indicated decreased emergency room usage and per-member-per-month Medicaid costs associated with pediatric practices that have added dedicated care coordination staff.

Source: CHDI, 2007¹²

3. **Expand developmental surveillance and screening to ensure that children who require intervention services are identified as early as possible.** The early identification of and intervention for developmental delays represents a critical component of pediatric health services. The American Academy of Pediatrics (AAP) recommends that child health providers perform developmental surveillance at every well child visit by gathering and maintaining longitudinal and cumulative knowledge about each patient’s development. The AAP further recommends that this process be flexible and supplemented with formal screening with a standardized and validated tool at the 9, 18 and 24 (or 30) month well child visits.⁴ Child health providers need to be supported with reimbursement and training to perform developmental surveillance, including soliciting input from families and early childhood professionals, and screening to meet AAP guidelines.
4. **Expand office-based education activities through the EPIC (Educating Practices in the Community) program to better enable practices to function more effectively as medical homes, strengthen developmental and behavioral services, enhance early and ongoing detection of developmental and behavioral problems, and expand prevention and intervention strategies.** EPIC has demonstrated success in changing practice behavior and increasing the effectiveness of early detection efforts. This program should be expanded in both scope and content to strengthen child health services within both pediatric and family medicine practices.
5. **Develop mid-level assessment capacity to enable more rapid and more efficient evaluation of at-risk children, facilitate access to helpful programs and services, and ensure the most appropriate use of expensive and scarce resources for comprehensive evaluations.** A mid-level assessment program would promote earlier intervention for some children by allowing them to bypass full diagnostic evaluations and begin services right away. Currently, children wait several weeks for full evaluations or for appointments with specialists, such as neurologists and

psychiatrists. For many of these children, their intervention needs could be determined with a less comprehensive and extensive work up. Such an alternative route to services would facilitate earlier interventions and preserve access to scarce child psychiatry services for those children with more extensive needs. Pilot programs in select locales, such as the *Child FIRST* program in Bridgeport, are evaluating the effectiveness of different mid-level assessment models.

Bridgeport’s *Child FIRST* provides a local “system of care” for young children and their families identified with socio-emotional concerns. The program screens children and mothers in a variety of early childhood settings, including pediatric primary care. Mental health providers follow up with those who screen positive. A system of intensive care coordination ensures that families do not fall through the cracks and continue to have their needs addressed through local service providers.

6. **Align state and local early childhood initiatives, particularly those focusing on the integration of health into school readiness.** In addition to yielding implications for program development, public policy, and financing at the state level, the Framework is also pertinent to planning of early childhood services at the community level. For example, when the Hartford Blueprint for Young Children¹⁵ is considered within the context of the Framework, the need for care coordination services and mid-level assessment capacity is quickly apparent. The Framework components identify needs, service gaps and capacity issues, and emphasize the critical importance of linkages across the key sectors of early care and education, family support, and child health services. Illustrations of how health is addressed in community plans in Hartford and Norwalk are provided on page 20.

Hartford's Blueprint for Young Children, Building Block 6: Universal Access and Use of Primary Health Care

- Create a comprehensive system that reaches every family with a young child (outreach), organizes care at the places where families obtain health services (care coordination), and helps families to manage the care (case management), thus providing children a "Medical Home."
- Consolidate and unify into a single delivery network, hospital and community-based primary care providers, creating a multi-site, single primary care model in Hartford.
- Advocate changes in the HUSKY program to remove barriers that deny children uninterrupted access to health services.
- Assure key preventive and behavioral health services are in place to address issues affecting children, including early prenatal care services to every pregnant woman in Hartford.
- Create a comprehensive system to link school-based clinics with hospital and community-based primary care centers in Hartford.

Early Childhood Health Goals from Norwalk's Early Childhood Action Plan

Goal 2: All Norwalk children have healthy bodies, healthy teeth and healthy minds.

Now: Too many Norwalk children are obese, suffer from dental decay and have behavioral or developmental problems that seriously hurt overall health and wellbeing.

By 2010: 95% of children in Norwalk ages birth to eight will have their own pediatrician, regular dental care, and be appropriately screened for behavioral/developmental health issues.

Measurable health objectives for young children in Norwalk by 2010

- 95% children ages birth to eight have their own pediatrician
- Behavioral health screening is a regular part of pediatric health care practice
- Health care providers refer young patients (ages birth to eight) and their families to services as needed
- All children have a dental screening before kindergarten
- A decrease in obesity of kindergarten students

Project HOME (Health Outreach for Medical Equality) intends to demonstrate the feasibility and effectiveness of practice-based care coordination at the Connecticut Children Medical Center's Primary Care Center in Hartford. HOME uses practice-based care coordinators and community outreach workers to improve access to primary care and other services, medical and non-medical, for inner-city families, largely of Hispanic origin. HOME staff contact families when children do not show up for scheduled well child visits or important follow-up visits and re-connect them to their medical home. HOME staff conduct family needs assessments to identify barriers for using well child services as well as needs for and barriers to other services. HOME staff develop care plans with families, link them to services, and monitor progress in collaboration with families and the primary care, medical specialty and community service providers. The Children's Fund of Connecticut, the Hartford Foundation for Public Giving, and the Connecticut Department of Social Services fund Project HOME through grants. The Project HOME sustainability and replication plan will rely on public and private reimbursement for practice-based care coordination.

VII. COST ESTIMATES

The costs of addressing key recommendations in this report are difficult to assess prior to the design and implementation of the specific solutions. Nonetheless, estimations are possible based on certain assumptions. For example, cost estimates of improving access for all children may be based on the number of uninsured children from birth to age five years. The cost of care coordination services may be estimated on a capitated per member per month amount based on experience in other states. The need for mid-level assessment may be assumed for 20% of the population. **Table 3** outlines cost estimates using a set of simple assumptions.

These costs represent the provision of recommended services to all targeted children and would likely be phased in over several years, as practices adopt recommended protocols and programs are designed to facilitate service delivery. The full cost of \$14 million would represent a mere 1.5% increase in the total annual budget of \$800 million for HUSKY A (state and federal). Furthermore, federal reimbursement is available to cover an estimated 50% of the additional cost for HUSKY services, resulting in a cost to the state of less than \$7 million.

At a time when Connecticut is facing extreme budget deficits, it is difficult to consider the increased expenditure. However, many of the benefits of these service investments will accrue over the long term. Costs for more intensive services will decline as early preventive care and utilization of community-based interventions will lessen the need for more expensive

tertiary care services. For example, with the implementation of *Help Me Grow* and *Child Development Infoline*, 67% of referrals are to services at no cost to either family or health plan.¹⁴ Furthermore, as children arrive at school ready to learn, the demand for special education services will be reduced, as will other societal costs associated with school failure. In a 2007 report, the Child Health and Development Institute (CHDI) has summarized recent studies of the shorter term cost savings of care coordination and has estimated the potential for short term cost savings in two specific areas: reduction in emergency department usage for ambulatory conditions and reduction in hospitalizations.⁹ Based on HUSKY encounter data and estimated costs of emergency department care and hospitalization, full implementation of care coordination could result in savings of \$6.4 million, offsetting the entire estimated cost of care coordination and greater than 50% of the costs of all service enhancements.

Cost estimates for the additional recommendations at the system and practice levels are based on the experiences of CHDI in supporting EPIC and local planning efforts. The cost to continue the successful work in EPIC to promote a number of high impact practice changes are estimated at \$250,000 per year for trainers and related expenses, in order to reach 85% of the child health providers in the state (255 of 300 pediatric and family medicine practices). This cost estimate is based on the experience with EPIC over the past three years and the need to revisit practices as new systems are put in place to support primary care practice change.

Service	Assumed Average Reimbursement	Total Visits per Year	Annual Cost (in millions)
Well-child visits for uninsured children	\$90 per visit	11,900	\$2.75
Care coordination	\$7.50 per member per month	N/A	\$6.17
Developmental screening	\$18 per screening	77,600 screenings	\$1.62
Mid-level assessment	\$250	11,200	\$3.42
Educating Practices in the Community (EPIC)	Not applicable	85 practices	\$0.25
Total Cost			\$14.21

The Children's Fund of Connecticut and the Graustein Memorial Fund awarded grants to eight communities in 2008 to integrate health components into comprehensive local early childhood planning efforts. Additional funding will allow the eight communities to put their plans into action. Costs are

estimated at \$350,000 (\$40,000 per community with \$30,000 to support the administration and evaluation of the initiative). A portion of these costs can be born by the continued investments of private funders.

VIII. FURTHER IMPLICATIONS

The forgoing analysis of the Framework for Child Health Services should serve as the basis for the development of additional recommendations to promote children’s school readiness and healthy development. A number of potential opportunities to strengthen such services by addressing gaps and capacity issues and implementing evidence-based innovations proven to enhance children’s developmental outcomes are evident. Several of these are outlined in detail with supporting documentation in a series of technical reference documents available from the Child Health and Development Institute. Select examples include:

- Enhancing geographical access to pediatric subspecialty services
- Expanding oral health assessments and access to pediatric dental services

- Promotion of the use of electronic health records and the sharing of data across sectors
- Implementing a pediatric primary care quality improvement initiative
- Promoting co-management of chronic disorders by primary care and subspecialty providers
- Increasing family-centered care and cultural competence

Such strategies should be critically considered within the context of state and community goals for child health services in promoting school readiness, and child health services assets and challenges. Such analysis should readily yield priorities for future program development and funding.

IX. SUMMARY

Profound advances in our understanding of early brain development have stimulated and informed Connecticut's ambitious efforts to promote young children's healthy development and learning. The focus of the State's Early Childhood Education (ECE) Cabinet on early care and education and family support and complementary planning efforts at the community level have encouraged the Healthy Child Development Work Group to similarly focus on the role of child health services in ensuring that the state's children are "ready by five and fine by nine." Their work has resulted in the development of a vision and a Framework for child health services that has been endorsed by the ECE Cabinet and embraced by local planning initiatives.

The Framework for Child Health Services in a Connecticut system in support of young children's healthy development is designed to achieve the desired health related outcomes for school readiness. The Framework provides a conceptualization of child health services and recognizes the critical interrelationships among child health, early care and education, and family support services, and emphasizes the crucial importance of linkages across sectors. More specifically, the Framework conceptualizes child health services as a series of three building blocks: *universal services*; *selective services*; and *indicated services*, while emphasizing the critical need for linkages across service sectors (ECE, family support) through care coordination. This report has proposed implementation of the Framework in the context of Connecticut's unique child health assets, while addressing the many challenges to the effectiveness of the state's child health services.

The Framework serves as the basis for the development of a robust child health services sector that is integrated with early care and education and family support services within a comprehensive state system for young children's healthy development. This work can inform and guide the state's program and policy development, as well as the commitment of resources in support of young children and their families. It also suggests key recommendations for child health services as a high priority in promoting

school readiness. Such recommendations focus on ensuring all children's *access* to child health services, strengthening *care coordination* within and across sectors, promoting *training* of child health providers in developmentally enhancing best practices, creating *mid-level assessment* capacity, and aligning state and local *planning efforts*. The incremental costs associated with such activities are ultimately offset by savings across the key sectors of the system.

In addition to yielding recommendations for immediate action, this report can also serve as the basis for the design of future strategies to promote children's school readiness and healthy development. The Framework conceptualization offers provocative, but realistic, implications for program development, public policy, and resource allocation. Indeed, the Framework can serve as the unifying vision to guide Connecticut's efforts to strengthen its system in support of young children's healthy development. In addition to benefiting the state's children, Connecticut's work can also serve as a model for other states in their own planning efforts.

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