



**THE INFLUENCE OF CHILD CARE HEALTH  
CONSULTANTS IN PROMOTING CHILDREN'S  
HEALTH AND WELL-BEING:  
A REPORT ON SELECTED RESOURCES**

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## EXECUTIVE SUMMARY

### Introduction

This executive summary presents the key findings from a synthesis of 79 published and unpublished resource documents—evaluations, presentations, monographs etc.—related to health consultation to early care and education (ECE)\* programs. The full *Report on Selected Resources* on which this summary is based seeks to map the current landscape of child care health consultant (CCHC) services and to identify CCHCs’ impact on ECE programs’ health and safety practices and child health outcomes. The report is not a meta-analysis. It was beyond the scope of the authors’ task to screen the included documents for rigor of methodology. Consequently, the report and this summary make no representation as to the generalizability of the findings presented.

### The Growing Need for Child Care Health Consultation

Based on data from the National Survey of America’s Families, nearly three-fourths (73%) of children under five years of age with employed mothers are regularly cared for by someone other than their parents.<sup>1</sup> The emerging literature on early brain development and on school readiness emphasizes the importance of high-quality ECE programs in achieving the goal of having all children enter school ready to learn. Research on high-quality ECE programs demonstrates that children who attend such programs enjoy a variety of positive effects including better cognitive and social skills, better interpersonal skills—including behavioral self-regulation—and stronger math and reading skills than do children in lower quality care.<sup>2</sup> Gains made through ECE programs can extend into the elementary school years.<sup>3</sup>

ECE programs offer significant opportunities to promote the health and well-being of children and families. However, these programs also present inherent health risks. Best practices in ECE minimize health risks and enable out-of-home care programs to promote healthy behaviors and link families to community-based health and development services.

Health professionals, parents, and ECE professionals recognize the need for and potential benefits of health consultation and collaboration across disciplines. CCHCs can support ECE programs with best practices for teaching good health behaviors and creating safe environments; ECE providers can assist health professionals with early identification of children’s health and social-emotional needs. Despite the promise of this model, however, the literature suggests that substantial numbers of ECE providers do not have access to child care health consultation. In addition, there appear to be several areas of unmet need where CCHCs could support ECE programs including developmental surveillance,<sup>4,5</sup> oral health,<sup>6</sup> and nutrition.<sup>7</sup>

### The Scope of CCHC Services

The Maternal and Child Health Bureau (MCHB) has funded and directed national initiatives to link health professionals with ECE programs. In doing so, MCHB has sought to ensure that out-of-home care environments protect and promote the health of enrolled children and families. The Bureau’s Healthy Child Care America (HCCA) initiatives were efforts to develop and deploy a cadre of CCHCs to support ECE programs.

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\* In this document, the term early care and education (ECE) refers to full- and/or part-time out-of-home care provided in center-based and family child care settings.



The national standards articulated in *Caring for Our Children*<sup>8</sup> provide a comprehensive description of the role and activities of CCHCs in ECE programs. Descriptions in the literature of CCHCs' responsibilities reflect the role and activities outlined in the standards. However, it is also clear that there is much variation in CCHCs' work at the state and program levels. In addition, the literature indicates that a CCHC's scope of practice may involve multiple, interrelated spheres of influence. These spheres range from interventions with individual children and families to support of program policy and staff training that will impact the health and safety of all the children in the program to the creation of linkages between programs, families, health professionals, and community health resources.

Nursing professionals provide the majority of health consultation. However, professionals with credentials in such disciplines as mental health, oral health, and nutrition provide specialty consultation in these areas.

## Effective Outcomes and Impact of CCHC Services: What Works

Evidence that demonstrates the impact of child care health consultation on the quality of child care is emerging. For example, comprehensive systems of quality improvement interventions—including those that incorporate a CCHC element—were found to improve overall child care quality and school readiness.<sup>9,10</sup> Findings that are consistent across multiple studies show positive outcomes in the following five areas:

### 1. Policy

Child care health consultation appears to have a positive impact on the development and use of standards-based health and safety policies in ECE programs.

#### State Compliance with National Standards

As a result of HCCA activities, 36 states conducted a comparison of their ECE-related health and safety regulations with the national standards set forth in *Caring for Our Children*. Nineteen states made statutory changes to bring state regulations in line with national standards.<sup>11</sup>

#### ECE Program Policies

ECE programs that have active health consultants were more likely to have written health and safety policies that are consistent with the national standards set forth in *Caring For Our Children*.<sup>12,13,14,15,16</sup>

### 2. Practice

Child care health consultation appears to be effective in promoting specific health practices in ECE programs including nutrition and safe food handling, infection control (handwashing, diapering, and toileting procedures), infant sleep position, and safe and active play.

#### Specific Health and Safety Practices

ECE programs that receive health consultation showed improvements in health and safety practices in areas including safe and active play, sanitation, and infection control.<sup>17,18,19</sup> ECE providers also reported increased confidence and self-efficacy in several areas as a result of receiving health consultation.<sup>20,21,22</sup>

#### Prevention of Communicable Disease

Training ECE providers on proper handwashing and other sanitation practices reduced the rate of respiratory and diarrheal illness.<sup>23,24,25</sup>

#### Reducing the Risk of Sudden Infant Death Syndrome (SIDS)

Researchers found that targeted training for ECE providers about infant sleep practices increased the number of children providers put to sleep on their backs, thereby reducing the risk of SIDS.<sup>26</sup>

### Absences

After receiving CCHC services, programs report that enrolled children experience fewer absences.<sup>27,28</sup>

### 3. Regular Source of Care

Relatively few evaluations link enrollment at an ECE program that receives CCHC services to specific child health improvements. However, several reports articulate a promising theme that demonstrates that programs with CCHCs show an increased number of children with up-to-date immunizations and a regular source of medical care.

#### Immunizations/Regular Source of Care

ECE programs that receive health consultation had improvements in the percentage of enrolled children with up-to-date immunizations, as well as children with a medical home, dental home, and a well-child physical exam on file.<sup>29,30,31</sup>

### 4. Specialty Consultation

Health consultation to child care appears to be beneficial in a number of specialty areas including mental health, nutrition and physical activity, and oral health.

#### Mental Health Consultation

A research synthesis of 31 evaluations of mental health consultation to ECE programs shows a variety of positive findings.<sup>32</sup>

- Child Outcomes: Increases in social skills, improved behavior and resilience scores, decrease in problem behaviors, and retention of children at risk of expulsion.
- Staff Outcomes: Consistent findings of increased staff confidence and improvements in self-efficacy.
- Mixed results with respect to the impact of mental health consultation on overall program quality as measured by the Early Childhood Environment Rating Scale (ECERS-R).

### 5. Process of Consultation

A collaborative relationship between the ECE program director and CCHC or specialty area consultant appears to facilitate the effectiveness of consultation.

#### Consultant Relationships with Director and Staff

“Lessons learned” from multiple consultation sites suggest that a trusting, mutually respectful relationship between a consultant and the ECE program director is a critical element in effective consultation practice.<sup>33,34</sup>

## New Resources and Trends

An additional source of information about child care health consultation at the state level will be available by September 2006 from the Healthy Child Care Consultant Network Support Center (NSC) at EDC. Resources available from the NSC will include a searchable national database of CCHCs as well as information profiles that describe the status of child care health consultation efforts at the state level.

The new NAEYC Early Childhood Program Standards (September 2006) include working with a CCHC as an emerging practice in their accreditation criteria. As high-quality programs adopt this practice in higher numbers, it will be an opportunity for additional research to fill in knowledge gaps about the practice and impact of child care health consultation.

<sup>1</sup>Capizzano, J., and Adams, G. *Snapshots of America's Families III, No. 16*. Washington D.C.: The Urban Institute. November 2003.

<sup>2</sup>American Academy of Pediatrics Committee on Early Childhood, Adoption, and Dependent Care. *Quality early education and child care from birth to kindergarten*. Pediatrics. (2005) 115:187–191.

<sup>3</sup>Peisner-Feinberg, E.S., Burchinal, M.R., Clifford, R.M., Culkin, M.L., Howes, C., Kagan, S.L., Yazejian, N., Byler, P., Rustici, J., and Zelazo, J. *The Children of the Cost, Quality, and Outcomes Study Go To School: Executive Summary*. Chapel Hill, North Carolina: University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center. June 1999.

<sup>4</sup>Glascoc, F.P. *Screening for developmental and behavioral problems*. Mental Retardation and Developmental Disabilities Research Reviews. (2005) 11:173–179.

<sup>5</sup>Halfon, N., Regalado, M., McLearn, K., Kuo, A., and Wright, K. *Building a Bridge from Birth to School: Improving Developmental and Behavioral Health Services for Young Children*. New York: The Commonwealth Fund. May 2003.

<sup>6</sup>Steffensen, J. *Enhancing Partnerships for Head Start and Oral Health: Professional Dental Organizations Synthesis Report*. Washington, DC: Health Systems Research. 2004.

<sup>7</sup>Story, M., Kaphingst, K., and French, S. *The role of child care settings in obesity prevention*. The Future of Children. (Spring 2006) 16(1):143–168.

<sup>8</sup>American Academy of Pediatrics, American Public Health Association, and National Resource Center for Health and Safety in Child Care. *Caring for Our Children, 2nd edition*. Elk Grove Village, IL: American Academy of Pediatrics and Washington DC: American Public Health Association. 2002.

<sup>9</sup>McGrady Heath, J. *Creating a statewide system of multi-disciplinary consultation for early care and education in Connecticut*. Farmington, CT: Child Health and Development Institute of Connecticut. 2005. (reference to Abbot Preschools)

<sup>10</sup>Bagnato, S. *Quality Early Learning: Key to School Success. A First Phase Program Evaluation Research Report for Pittsburgh's Early Childhood Initiative*. SPECS Program Evaluation Research Team, Children's Hospital of Pittsburgh, The UCLID Center at the University of Pittsburgh. [www.pitt.edu/~uclid](http://www.pitt.edu/~uclid). Accessed February 15, 2006.

<sup>11</sup>John Snow, Inc., *Maternal and Child Health Bureau: Transitioning Healthy Child Care America Grantees. Summary of Progress Report Data*. Boston, MA: John Snow, Inc. December 2003.

<sup>12</sup>Kotch, J. *The Quality Enhancement Project for Infants and Toddlers: Executive Summary*. Chapel Hill, North Carolina: University of North Carolina at Chapel Hill. November 2002.

<sup>13</sup>Aronson, S. Personal Communication (letter) to Maxine Hayes, March 21, 1998.

<sup>14</sup>Alkon, A., Sokal-Gutierrez, K., and Wolff, M. *Child care health consultation improves health knowledge and compliance*. Pediatric Nursing. (2002) 28(1): 61–65.

<sup>15</sup>Becker, K., Mueller, E., and Rider, S. *Evaluation of the Child Care Health Consultation Demonstration Program: Phase II Final Report*. Portland, Oregon: Pacific Research and Evaluation LLC. August 2005.

<sup>16</sup>California Child Care Health Program. *Child Care Health Linkages Project Evaluation Summary*. Oakland, CA: CCHP. December 2004. [http://www.ucsfchildcarehealth.org/pdfs/training\\_etc/Linkages\\_ExecSummary\\_FINAL.pdf](http://www.ucsfchildcarehealth.org/pdfs/training_etc/Linkages_ExecSummary_FINAL.pdf). Accessed February 17, 2006.

<sup>17</sup>See note 12, Kotch.

<sup>18</sup>See note 13, Aronson.

<sup>19</sup>Eliot, S. *Outcome Evaluation: Healthy Child Care Colorado 2002*. (May 2003). <http://www.educarecolorado.org/resources/16/OutcomeStudyHCCC.pdf>. Accessed November 7, 2005.

<sup>20</sup>See note 15, Becker, Mueller, and Rider.

<sup>21</sup>Alkon, A., Ramler, M., and MacLennan, K. *Evaluation of mental health consultation in child care centers*. Early Childhood Education Journal. (2003) 31(2): 91–99.

<sup>22</sup>Trujillo, G. *Blanket of Wellness Project Evaluation*. Anchorage, Alaska: Prevention Associates. November 2004.

<sup>23</sup>Roberts, L., Smith, W., Jorm, L., Patel, M., Douglas, R.M., and McGilchrist, C. *Effect of infection control measures on the frequency of upper respiratory infection in child care: A randomized controlled trial*. Pediatrics. (April 2000) 105(4 Pt1): 738–42.

<sup>24</sup>Roberts, L., Smith, W., Jorm, L., Patel, M., Douglas, R.M., and McGilchrist, C. *Effect of infection control measures on the frequency of diarrheal episodes in child care: A randomized controlled trial*. Pediatrics. (April 2000) 105(4 Pt1): 743–6.

<sup>25</sup>Niffenegger, J.P. *Proper handwashing promotes wellness in child care*. Journal of Pediatric Health Care. (January/February 1997) 11(1): 26–31.

<sup>26</sup>Moon, R., and Oden, R. *Back to sleep: Can we influence child care providers*. Pediatrics. (2005) 112(4): 878–882.

<sup>27</sup>See note 12, Kotch.

<sup>28</sup>See note 19, Eliot.

<sup>29</sup>See note 12, Kotch.

<sup>30</sup>See note 15, Becker, Mueller, and Rider.

<sup>31</sup>Kropp, N., Kotch, J., and Harris, S. UNG-FPG Smart Start Evaluation Team. *The Effect of Smart Start Health Interventions on Children's Health and Access to Care*. The University of North Carolina at Chapel Hill. (October 2001). [www.fgp.unc.edu/smartsstart](http://www.fgp.unc.edu/smartsstart). Accessed February 15, 2006.

<sup>32</sup>Brennan, E., Bradley, J., Allen, M.D., Perry, D., and Tsega, A. *The evidence base for mental health consultation in early childhood settings: Research synthesis and review*. Presentation at the Establishing the Evidence Base for Early Childhood Mental Health Consultation Conference. Tampa, Florida. March 4, 2005.

<sup>33</sup> See note 9, McGrady Heath.

<sup>34</sup> Crowley, A. *Collaborative health consultation: A developmental-symbolic interactionist model*. Presented at the STTI International Research Congress. Dublin, Ireland. July 22, 2004.

## I. INTRODUCTION

Based on data from the National Survey of America's Families, nearly three-fourths (73%) of children under five years of age with employed mothers are cared for regularly by someone other than their parents.<sup>1</sup> The emerging literature on early brain development and on school readiness emphasizes the importance of high-quality early care and education (ECE)\* in achieving the goal of having all children enter school ready to learn. Research on high-quality ECE programs demonstrates that children who attend such programs enjoy a variety of positive effects including better cognitive and social skills, better interpersonal skills—including behavioral self-regulation—and stronger math and reading skills than do children in lower quality care.<sup>2</sup> Gains made through ECE programs can extend into the elementary school years.<sup>3</sup>

The National Association for the Education of Young Children (NAEYC) reported that there were 420,098 licensed/regulating ECE programs in the United States (including the District of Columbia, Puerto Rico, and U.S. Virgin Islands) in 2002. Of these, 27% were licensed child care centers, 62% were regulated small family child care homes, and 11% were regulated group family child care homes.<sup>4</sup> In addition, in fiscal year 2004, there were 905,851 children enrolled in the 20,050 Head Start centers operating in the U.S.<sup>5</sup>

As more children enter child care at younger ages, caregivers have substantial responsibility for the health of the children in their care. Yet, as Crowley noted:

...no national child care policy has been established to ensure developmentally appropriate, healthy, and safe care for children. Consequently, state child care regulations range from minimal to adequate and contribute to an uneven system of child care quality...<sup>6</sup>

The Maternal and Child Health Bureau (MCHB) has funded and directed national initiatives to link health professionals with ECE programs to ensure that out-of-home care environments protect and promote the health of enrolled children and families. Among these initiatives were efforts to develop and deploy a cadre of child care health consultants (CCHCs). Regulations governing the practice of child care health consultation vary from state to state. Indeed, the majority of states do not require health consultation for all programs serving young children as a requirement for program licensure. While 26 states require health care consultation, 6 require it only for centers caring for mildly ill children. Only 5 states (Colorado, Connecticut, Minnesota, Rhode Island, and Washington) mandate on-site visits by CCHCs.<sup>7</sup>

### Report Purpose, Scope, and Methodology

The purpose of this Healthy Child Care Consultant Network Support Center (NSC) report is to present the key findings from a synthesis of 79 published and unpublished resource documents—evaluations, presentations, monographs etc.—related to health consultation to ECE programs (see Matrix on page 28 for a complete list of all resources that were reviewed). The report seeks to map the current landscape of CCHC services and to identify CCHCs' impact on ECE programs' health and safety practices and child health outcomes. It was beyond the scope of the authors' task to screen the included documents for rigor of methodology. Thus, this report does not contain a meta-analysis and the authors make no representation as to the generalizability of the findings presented. The report was, however, reviewed for accuracy by multiple experts in the fields of child care health consultation.

\* In this document, the term early care and education (ECE) refers to full- and/or part-time out-of-home care provided in center-based and family child care settings.

## Methods

In researching this report, the NSC used a broad definition of child care health consultation and included specialty consultation areas such as mental health, nutrition, and oral health. A broad definition was also utilized for the impact of consultation and included effects on ECE practice, policy, and regulation.

The NSC used two strategies to identify material to include in this report. First, the NSC posted a request for unpublished literature on listservs and bulletin boards sponsored by the American Academy of Pediatrics' (AAP) Child Care and Health Partnership Program, the National Resource Center for Health and Safety in Child Care and Early Education (NRC), and the National Training Institute for Child Care Health Consultants (NTI). Second, the NSC conducted a systematic search of the last ten years of published literature using the following search engines/databases:

- Combined Health Information Database (CHID)
- Cumulative Index to Nursing & Allied Health (CINAHL)
- Education Resources Information Center (ERIC)
- Google
- Medline/PubMed
- PsychINFO
- Social Work Abstracts

The NSC used the following words to guide the literature search:

### Primary Key Search Words

- Childcare
- Child care
- Early childhood
- Preschool
- Head Start
- Pre-K

### Secondary Key Search Words

- Consultation
- Health
- Health and safety
- Health intervention
- Inclusion
- Mental health
- Nutrition
- Oral health

## II. HEALTH AND SAFETY NEEDS

### A. Health and Safety Needs of Children and Families in ECE Programs

Out-of-home early care and education has health risks. A number of researchers have documented higher rates of infectious diseases among children in ECE programs. Walker and Bowie reported, "Overall, the literature indicates that children in child care have more upper and lower respiratory infections... more gastroenteritis, and more infections caused by viruses such as Hepatitis A than other children. And children in center-based care are at greater risk of contracting these illnesses than children in other forms of child care."<sup>8</sup> In addition, Alkon and Chamberlain Boyce found that, "Children in child care centers have higher rates of infectious illnesses than children cared for at home. More specifically, center attendance is associated with increased rates of respiratory illness, otitis media, gastrointestinal illness, skin infection, and invasive bacterial disease."<sup>9</sup> The potential hazards of group care make it imperative that ECE programs implement best practices in infection control and injury prevention.

While there are health risks for children in ECE programs, group care also offers significant opportunities to promote children's health and to increase families' access to health and developmental services. ECE programs can introduce children and families to good health practices and provide a gateway to health and developmental services and interventions. Good health practices and intervention in the early years can prevent or ameliorate health problems and threats to development that are more difficult to address at older ages.

Many authors cite the potential role of ECE programs as an access point to information about health insurance and a medical home.<sup>10,11,12,13</sup> Access to a medical home ensures early identification of problems and delivery of critical preventive care including up-to-date immunizations. In 2000, the families of most (93%) children between four and 35 months of age in the U.S. had some form of health insurance.<sup>14</sup> The vast majority (95%) of children from birth to three years of age in the U.S. have a regular source of health care.<sup>15</sup> There is disparity, however, with only 85% of uninsured families reporting a regular source of care for their young children. Community programs, including ECE, can help provide pathways to care for children without insurance and/or a medical home.

Even for children with medical insurance and a regular source of care, it appears that there is an unmet need for developmental screening and surveillance. The unmet need for developmental surveillance is demonstrated by the fact that only 20–30% of children with disabilities are identified before school entrance, suggesting that critical opportunities for early intervention are missed.<sup>16</sup>

ECE programs also offer potential to address parents' unmet health guidance needs. In a national survey, Gupta et al. found that nearly 95% of parents reported "one or more unmet needs for parenting guidance, education, or screening by pediatric clinicians" and discovered that nearly 90% of parents believed that health education in ECE programs could improve the health knowledge and behaviors of preschool children and their families.<sup>17</sup>

## B. Health and Safety Needs of Early Care and Education Programs

There is broad agreement that it is critical for ECE programs to create safe and healthy environments for children and staff and to link families to needed community-based services. However, the literature suggests there may be gaps in the capacity of ECE providers to meet this standard. Gaines et al. reported, “Experts nationwide agree that child-care providers are increasingly facing the challenge of caring for children who are in need of proper health, social, and educational services.” They also noted, “Providers often are inadequately prepared to handle these challenges and may lack knowledge of how to access support services.”<sup>18</sup> Similarly, Crowley commented, “With the high percentage of young children in out-of-home settings, early childhood teachers are playing an important role in the day-to-day lives of children and families.” However, she also found that, “...communication and collaboration between these professionals [early childhood teachers and health professionals] is often limited and insufficient.”<sup>19</sup>

In some cases, ECE providers have identified specific child health and safety concerns. For example, in a survey of Head Start and Early Head Start staff in Rhode Island, Walders et al. reported, “Responsibility for administering medication (65.6%) and responding to asthma attacks (41%) was common; however, only 44.3% of staff reported receiving formal asthma training.” In addition, they noted, “Many [staff] reported feeling uncomfortable and ill-prepared for this intense degree of hands-on management.”<sup>20</sup> In a similar survey of Head Start directors and staff in Baltimore, the findings of Huss et al. pointed to:

*...a need for registered nurses or other health care professionals to be available as a resource for Head Start programs. Such individuals could provide current information on asthma treatment as well as how to communicate with parents and primary care providers to obtain asthma action plans for every child.*<sup>21</sup>

Oral health professionals have also identified gaps in the capacity of ECE providers to recognize and address children’s oral health needs. At a 2003 forum of the American Academy of Pediatric Dentistry (AAPD) and the American Dental Hygienists’ Association (ADHA), participants identified five issues and strategies related to the oral health needs of children in the Head Start and Early Head Start programs, including the need for better oral health screening and awareness. On the latter issue, Steffensen stated, “Many non-dental health professionals...do not realize the importance of oral health and its relationship to overall health.”<sup>22</sup> Similarly, Steffensen reported that participants identified a need for improved referrals of pediatric patients to oral health providers.<sup>23</sup> The potential of ECE programs to increase access to dental health care is well illustrated by successes in Head Start. Low-income preschoolers in Head Start are nearly three times more likely to obtain dental screening than other low-income children.<sup>24</sup>

In addition, recent studies suggest that ECE programs need support to provide an optimal food environment in child care. The Child and Adult Care Food Program (CACFP) subsidizes meals for almost 3 million children in child care each day. While most of the subsidized meals (90% of breakfasts and 87% of lunches) comply with the CACFP meal pattern requirements, they frequently do not comply with the Dietary Guidelines for Americans recommended by the U.S. Department of Health and Human Services (HHS) and the U.S. Department of Agriculture (USDA). CACFP-subsidized meals tend to be too high in fats and saturated fats and offer inadequate quantities of fruits and vegetables.<sup>25</sup> In one Texas study, food service staff in child care centers did not always understand the CACFP requirements and had limited nutrition knowledge.<sup>26</sup>

Researchers have also suggested that ECE providers need support in working with children who have behavioral and emotional problems. For example, Knitzer reported, “Estimates are that between one-quarter and one-third of young children are perceived as not being ready to succeed in school. For a significant number of these children, concerns center on emotional development.”<sup>27</sup> In an evaluation of mental

health consultation in child care centers in California, Alkon et al. noted, “Teachers in child care centers and family day care homes find the most challenging work is with children who exhibit behavioral and/or emotional problems.”<sup>28</sup> The need for support in the area of social-emotional development is supported by the multi-state survey of 2,753 ECE and child care directors conducted by The Center for Child Health Research of the AAP. Parental smoking is the top health concern, reported by 46% of directors as affecting children in their care. The next 3 most frequently cited concerns are discipline and behavioral concerns (39% and 35% respectively) and child development (26%).<sup>29</sup>

## C. Responding to Program Needs: Child Care Health Consultation

The literature suggested that ECE providers are aware of their health-related professional development needs and are positive about and receptive to child care health consultation. In a survey of child care providers in Indiana, Cole reported, “Child care providers concur there is a need for health and safety consultative services, staff training, and health related services or referrals.”<sup>30</sup> Gupta et al. found that, “...child care directors (88%)...believe that health education in child care centers could improve the health knowledge and behaviors of preschool children and their families.”<sup>31</sup>

Further, the literature suggested that ECE providers would be positive about child care health consultation regardless of cost. For example, in a study of Connecticut child care center directors and their health consultants, Crowley found that child care directors were positive about child care health consultation. She noted, “A majority (84%) rated health consultation as important or very important for the operation of child care programs,” and “...despite financial constraints, directors recognized health consultation as an essential service for operating their programs.”<sup>32</sup> Gaines et al. reported similar results in their survey of child care programs in Georgia. They stated, “...there would be high acceptance of health consultation by child-care directors, regardless of services being free or fee-based.”<sup>33</sup> Yet, in another study, Gupta et al. found that lack of funds was the most significant barrier to providing health education in child care.<sup>34</sup>



### III. CHILD CARE HEALTH CONSULTATION

From 1995 to 2005, MCHB funded the Healthy Child Care America (HCCA) initiative. Through state and national partnerships, HCCA developed and worked to implement a “Blueprint for Action.” The Blueprint was designed to: “(1) create and maximize linkages between health care providers and the child care community; and (2) develop comprehensive and coordinated services to benefit children across the country.”<sup>35</sup> The development and deployment of health professionals serving as CCHCs is central to this work. As part of the HCCA initiative, the MCHB funds several national projects that support state CCHC efforts. The National Training Institute for Child Care Health Consultants (NTI) at the University of North Carolina, Chapel Hill (<http://www.sph.unc.edu/courses/childcare>) offers training-of-trainers designed to prepare participants to return to their home states and train CCHCs. The National Resource Center for Health and Safety in Child Care (NRC) at the University of Colorado Health Sciences Center (<http://nrc.uchsc.edu>) provides technical assistance (TA) and standards-based resources to consultants, child care providers, regulators, and parents. In September 2006, a searchable national database of CCHCs as well as information profiles that describe the status of child care health consultation efforts at the state level will be available through the NSC (<http://hccnsc.edc.org>).

#### A. Role and Activities of CCHCs

CCHCs have historically “focused primarily on improving children’s health and safety within the child care environment.”<sup>36</sup> The national performance standards and guidelines for health and safety in out-of-home care are articulated in *Caring for Our Children*. The standards address the skills, activities, and knowledge base recommended for CCHCs. The standards state:

*The skills of the child care health consultant shall include the ability to perform or arrange for performance of the following activities:*

- a) Teaching child care providers about health and safety issues;*
- b) Teaching parents about health and safety issues;*
- c) Assessing child care providers’ needs for health and safety training;*
- d) Assessing parents’ needs for health and safety training;*
- e) Meeting on-site with child care providers about health and safety;*
- f) Providing telephone advice to child care providers about health and safety;*
- g) Providing referrals to community services;*
- h) Developing or updating policies and procedures for child care facilities;*
- i) Reviewing health records of children;*
- j) Reviewing health records of child care providers;*
- k) Helping to manage the care of children with special health care needs;*
- l) Consulting with a child’s health professional about medication; and*
- m) Interpreting standards or regulations and providing technical advice, separate and apart from the enforcement role of a regulation inspector.<sup>37</sup>*



## Activities of CCHCs

In the literature, many authors described the activities of CCHCs as consistent with these standards. Commonly cited activities include on-site and telephone consultation, training, and program and community development. For example, in Minnesota, researchers found that the most commonly reported activity was “assessment of a program’s health, safety and nutrition practices.”<sup>38</sup> In the Child Care Health Consultation Demonstration Program (CCHCDP) in Oregon, the most common activities were training, site visits, and meetings with the centers’ core teams.<sup>39</sup> In North Carolina, Kotch reported that CCHCs spent the majority of their time providing on-site consultation and preparing for or following up on on-site consultation. Other CCHC activities described in the North Carolina study include telephone consultation, training, health education, and requests for information.<sup>40</sup> In Pennsylvania, Bucklen et al. found that CCHCs spent the majority of their time preparing for and teaching providers about child care health and safety issues and providing telephone consultation or referrals.<sup>41</sup> Based on a survey of licensed family day care providers, Lie reported that the activities of family day care public health nurses included general health consultation (via telephone calls and home visits), health and safety consultation (via home visits), and group training/health education classes.<sup>42</sup>

In a formative evaluation of 32 CCHCs working in 20 California counties, Alkon and colleagues found that CCHCs reported their activities to include consultation, program development, community and professional development, and training and education. The same study detailed the child care program directors’ description of CCHC activities.

*Directors noted the CCHC activities as helping develop health and safety policies and procedures, providing workshops for parents and staff, providing informational materials for parents and staff, consultation via site-visit, telephone, and e-mail, referrals for children and families to local agencies, and in some cases direct services.*<sup>43</sup>

While national standards and training and technical assistance (T/TA) providers offer model definitions of qualifications, desired skill sets, and activities of CCHCs, the literature suggested that, in practice, there is variation in CCHCs’ involvement with ECE programs. For example, Evers reported that CCHC involvement ranges from “a maximum involvement of being on-site on a daily basis to minimal involvement of being available only for telephone consultation whenever the center is open.”<sup>44</sup>

State licensing regulations vary considerably. As of March, 2006, 23 states have no requirement for health consultation. Several of the remaining states require health consultation only for centers serving mildly ill children or children with special health care needs. Other states have different requirements based on the ages of children served or the size of the facility. For those with mandated consultation, required involvement ranges from a review of policy every two years to regular on-site visits. A summary of mandated health consultant requirements in state licensing regulations is available on the NRC’s website (<http://nrc.uchsc.edu/states.html>).

## Knowledge Base and Content Addressed by CCHCs

The recommended knowledge base for CCHCs is defined in the national standards. In *Caring for Our Children, 2<sup>nd</sup> edition*, the authors stated:

*The knowledge base of the child care health consultant (personally or by involving other health professionals) shall include:*

- a) National health and safety standards for out-of-home child care;
- b) How child care facilities conduct their day-to-day operations;
- c) Child care licensing requirements;

- d) Disease reporting requirements for child care providers;
- e) Immunizations for children;
- f) Immunizations for child care providers;
- g) Injury prevention for children;
- h) Staff health, including occupational health risks for child care providers;
- i) Oral health for children;
- j) Nutrition for children;
- k) Inclusion of children with special health needs in child care;
- l) Recognition and reporting requirements for child abuse and neglect; and
- m) Community health and mental health resources for child and parent health.<sup>45</sup>

The content of health consultation to ECE programs as reported in the literature is consistent with the knowledge base recommended in *Caring for Our Children*.

Kotch in North Carolina and Alkon and colleagues in California found that the content of child care health consultation was primarily health promotion topics, defined by Alkon as including infection control, sanitation and hygiene, caring for children with special health care needs, the care of mildly ill children, and exclusion for illness. Both studies also report that CCHCs spend considerable time on topics grouped in the category “administration,” which *Caring for Our Children* defines as including the development of health policies, development of safety and emergency plans, and maintenance of health related records.<sup>46,47</sup> In addition to those content areas, Kotch reported that North Carolina CCHCs were addressing health programs, staff health, and facilities, equipment, and transportation.<sup>48</sup> Alkon noted that, in addition to health promotion and administration, California CCHCs spent more than 15% of their time on staffing and program activities for healthy development.<sup>49</sup>

In Oregon, Becker found that the most common issues addressed by CCHCs were communicating with parents and immunizations.<sup>50</sup> Bucklen et al. reported that the most common issues addressed by CCHCs were asthma, behavior problems, allergies, and developmental delays.<sup>51</sup>

## CCHC Role/Intervention Model

The literature on the role and potential benefits of child care health consultation suggests that CCHCs may work on multiple levels. Consultation may be focused on the needs of a specific child or children, on overall program functioning and practices, or on the larger system including the legislative and regulatory environment. As Evers states, a CCHC “can influence not only the immediate environment, but also has the potential to positively affect the total well-being of the children and staff at the center.”<sup>52</sup>

At the individual level, a CCHC may design an intervention to support a program’s capacity to serve a particular child and family. For example, a CCHC may, in collaboration with medical providers, parents, and ECE staff, develop an individualized medication administration plan for a child with chronic illness or a behavior management plan for a child demonstrating social-emotional challenges.

At the program level, a CCHC may design an intervention that impacts the current and future health and safety of *all* enrolled children. For example, some CCHCs may deliver training for ECE providers on infection control practices or develop policies and protocols in compliance with national health and safety standards. Other CCHCs may design interventions that improve the overall quality and work environment of the ECE program such as consulting with the program director about improving management and personnel systems or supporting staff health.

Finally, CCHCs may serve in a capacity that Crowley described as a “...critical link between and among child care providers, parents, primary care health providers, and other community health resources for the

purpose of promoting child and family health and development.”<sup>53</sup> For example, CCHCs may work with families, staff, and policymakers to increase access to medical homes and build systems that link families to community services.

A few authors have suggested models that articulate how CCHCs help achieve desired program quality and child health outcomes.

Alkon and her colleagues at the California Child Care Health Program (CCHP) found that a stepwise model (Figure 1) of child care health consultation emerged from their formative evaluation. In this model, training of CCHCs leads to effective consultation, which leads to health and safety policies in compliance with national standards, which leads to improvements in provider practices and ultimately staff and child health and safety.<sup>54</sup>

**Figure 1: CCHP’s Stepwise Model of How Health Consultation Improves Children’s Health**



In Crowley’s ecological model of child care health consultation (Figure 2),<sup>55</sup> the CCHC is a “supportive link among families, child care providers, and the health care system.” Crowley describes a family-centered model based on Bronfenbrenner’s ecological theory of human development. In this model, the child and family move between microsystems including child care and health care. These microsystems exist within a context of regulatory infrastructure ultimately influenced by social policy and culture. Positive child and family development is supported by “the degree of mutual trust, positive orientation, and goal consensus among these microsystems.” Family and child development is enhanced when the larger context of regulations and policy is influenced.

In this model, there is a paradigm shift away from focusing solely on health and safety within the child care program. Child care health and safety is one component of a broader context that addresses overall child and family health and development. With a family-centered perspective, the CCHC promotes health and safety within the child care program and encourages constructive interactions and partnerships among families, child care teachers, primary care providers, and other health resources, thus positively influencing not only program health and safety but child and family health and development.

**Figure 2: Crowley’s Ecological Model of Child Care Health Consultation**

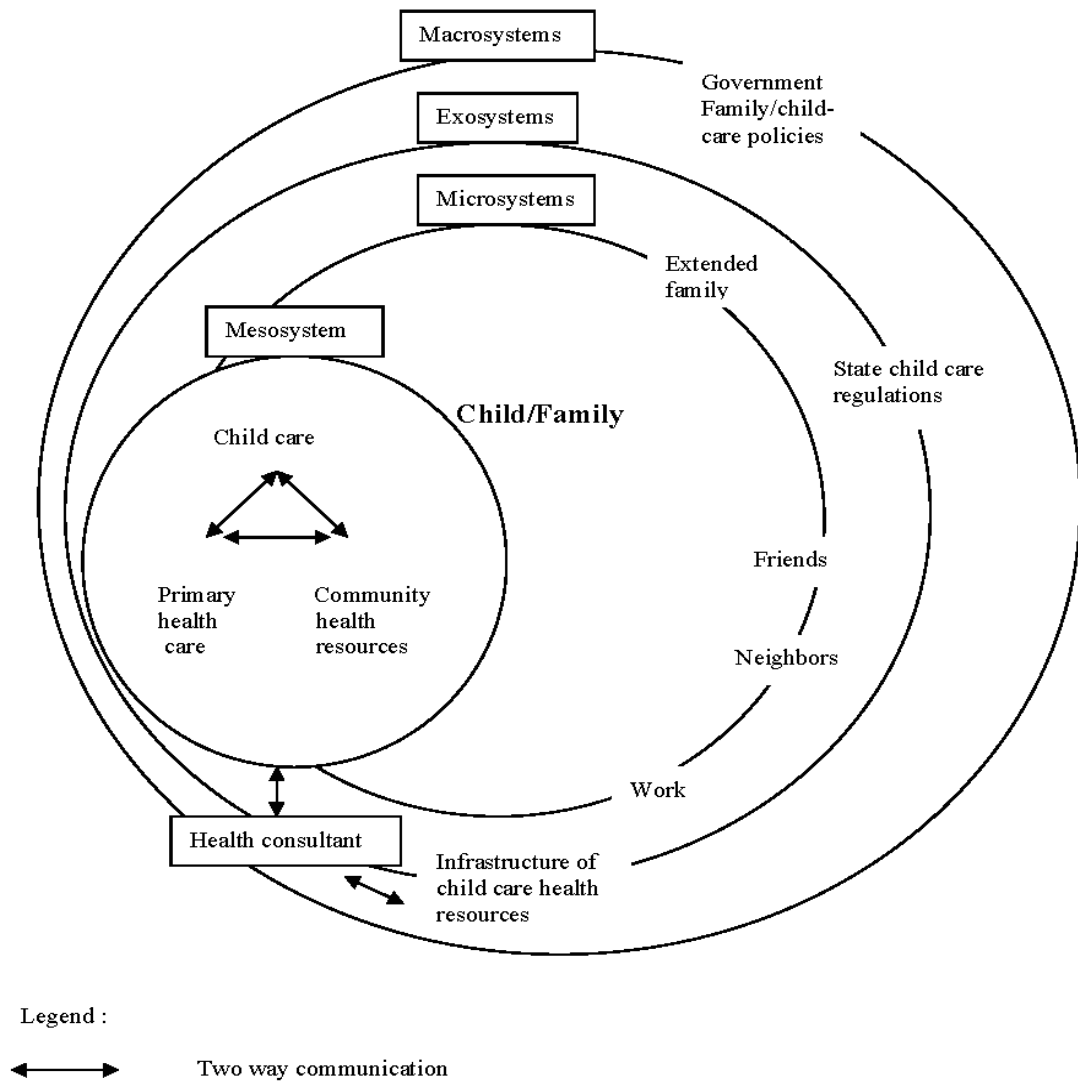


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## B. Qualifications and Professional Affiliations of CCHCs

In *Caring for Our Children, 2<sup>nd</sup> edition*, a CCHC is defined as a “health professional with training and experience as a CCHC. Graduate students in a discipline related to child health shall be acceptable as CCHCs supervised by faculty knowledgeable in child care.”<sup>56</sup> In addition, it states, “a child care health consultant shall either have the full knowledge base and skills required for this role, or arrange to partner with other health professionals who can provide the necessary knowledge and skills.”<sup>57</sup>

Although Gaines and Leary defined CCHCs as “public health professionals,” CCHCs were typically defined as “health professionals” in the literature.<sup>58,59,60</sup> Lucarelli provided one of the most comprehensive lists of health professionals. She defined CCHCs as:

*...health professionals with pediatric, public health, infectious disease, health education, school health, and/or maternal-child expertise including: registered nurses; nurse practitioners; physicians; registered dietitians; social workers; dentists and dental hygienists; physical, occupational, speech, and respiratory therapists; and mental health professionals.*<sup>61</sup>

In a survey of CCHCs in Pennsylvania, Bucklen et al. identified other health professionals including “environmental health professionals, infection control, and EMS personnel.”<sup>62</sup>

Few states specify necessary professional qualifications for CCHCs in regulatory language. Those that do (Colorado, Connecticut, Minnesota, and Washington) specify that CCHCs are pediatric health professionals, specifically RNs, PNPs, and MDs.<sup>63</sup> In the documents reviewed for this summary, the majority of the CCHCs whose work was described were nursing professionals.

Alkon and colleagues reported that California was training child care health advocates (CCHAs) to complement the work of CCHCs. Alkon describes CCHAs as “experienced in ECE and child development and ...interested in learning more about health and safety and implementing health and safety practices in ECE programs.” CCHAs were often employed by a child care center and became the staff lead for health and safety issues at that site. They also worked at community-based agencies such as child care resource and referral agencies (CCR&Rs). In California, CCHAs were trained to work with CCHCs to support health and safety in ECE programs.<sup>64</sup>

## C. Specialty Consultation

### Mental Health

While nurses provide the majority of general health and safety consultation to ECE programs, mental health consultation is more likely to be provided by social workers, psychologists, marriage and family therapists, and other mental health professionals. The literature included a few evaluations of mental health consultation, and several reports described the roles and activities of mental health consultants. For example, Alkon et al. evaluated mental health consultation services provided by four agencies to 25 urban child care centers in California.<sup>65</sup> McGrady Heath examined several programs that emphasized social-emotional health in their consultation models.<sup>66</sup> Trujillo profiled the Blanket of Wellness project in southeast Alaska, which linked mental health professionals with ECE programs to support providers working directly with children who are at risk for behavioral and emotional problems. Based on these and other descriptions, mental health consultant activities have included on-site visits, as well as program-level work (e.g., work with parents, community trainings, trainings for ECE providers). During on-site visits, consultants observed classrooms and individual children, provided consulting related to behavioral challenges observed, fostered reflective supervision for teachers, and supported relationship-based practices in teaching and pro-

gram practice. In some, but not all cases, the consultation model can include direct clinical mental health services to individual children, families, or groups of children.<sup>67</sup>

### Nutrition

Child care health consultation specific to nutrition may be performed by registered dietitians. The American Dietetic Association’s position statement on nutrition programs in child care settings states that “Dietetics professionals should be accessible to child care programs to assist with menu planning and evaluation and to provide nutrition information and training for food service workers and caregivers. ...Other important tasks the dietetics professional can perform to ensure high-quality nutrition in child care settings include screening and assessment, information and education activities, and counseling that takes into account physical as well as psychosocial constraints of the child care program.”<sup>68</sup>

An emerging model of nutrition and physical activity consultation to ECE programs is the Nutrition and Physical Activity Self Assessment for Child Care (NAP SACC). The NAP SACC pilot evaluation examined, among other things, the feasibility of using CCHCs to conduct child care nutrition and physical activity assessments and provide training workshops and consultation based on those findings. The pilot evaluation found that the NAP SACC program helped child care centers improve their nutrition and physical activity environments and policies.<sup>69</sup> In North Carolina, where the pilot evaluation took place, the consultation was provided by CCHCs who were RNs. All participating CCHCs reported that they were confident in their ability to carry out project activities, demonstrating the feasibility of using CCHCs to provide nutrition and physical activity consultation. The NAP SACC assessment tool is being used in 11 states, and in 4 of those states (Arkansas, New York, North Carolina, and Washington) the nutrition and physical activity consultation is being provided by CCHCs.<sup>70</sup>

## IV. BEST PRACTICES AND LESSONS LEARNED

### A. Best Practices in Child Care Health Consultation

#### Frequency and Duration of Consultation

There was no clear consensus in the literature about the optimum frequency or intensity of health consultation. State licensing regulations display a significant range of required frequency in those few states where frequency is mandated.<sup>71</sup> The NAEYC accreditation criteria include a written agreement with a health consultant as an emerging practice. NAEYC's criteria specify that a health consultant visit the program at least 2 times each year for programs serving children 3-5 years of age and at least 4 times each year for programs serving children 0–2 years of age.

In Crowley's study of 100 child care center director and CCHC pairs in Connecticut, 78% of directors and 84% of consultants thought that weekly or more frequent visits would be beneficial if cost was not an issue.<sup>72</sup> Several authors observed that it takes time to develop trusting relationships between a CCHC and program, and, therefore, CCHCs should have ongoing relationships with programs. McGrady Heath noted, "It is very important to build a relationship between the program and the specialists, and it takes times for programs to get comfortable allowing outsiders in. Directors and staff need to trust specialists before they take their advice."<sup>73</sup>

#### Scope of Practice

As noted earlier, the literature suggested that CCHCs may have multiple interrelated spheres of influence and work on several levels from individual to program to community. Reporting on lessons learned from multiple programs, McGrady Heath noted that consultants may be brought in to address an issue at one level, but may expand their role to include additional levels as they assess the needs of the program and build relationships with management and staff.<sup>74</sup> For example, the Area Cooperative Educational Services (ACES) multi-disciplinary team consultation program in New Haven, Connecticut reported:

*In many centers structural and organizational issues must be addressed for improvements in practice and quality to take hold. Often, the multi-disciplinary team (MDT) will be invited into a program for a specific issue, but once they are in a program, the consultants realize there is much more going on around issues such as leadership and supervision, policies, and the relationship between the board and staff. The MDT also tries to address these "systemic" issues so that their recommendations can be implemented and sustained.<sup>75</sup>*

In a survey of Connecticut child care center directors and their health consultants, Crowley found:

*...health consultants and early childhood providers considered the most mutually satisfying role one in which the consultant provided not only health- and safety-focused services, but also acted as a liaison and advocate between and among the child care staff, primary care providers, parents, and community resources.<sup>76</sup>*

#### Multi-Disciplinary Consultation

As outlined earlier, ECE programs, together with the children and families they serve, have a broad range of health and safety needs. Therefore, CCHCs must have expertise in multiple areas. The literature also included recommendations from health professionals other than CCHCs (e.g., nutritionists, oral health professionals) who suggested that ECE programs and enrolled children would benefit from their special-

ized consultation.<sup>77,78</sup> Accordingly, some consultation models provided for a multi-disciplinary approach. Head Start, Early Head Start, and the Department of Defense network of ECE programs were examples of programs that frequently used multi-disciplinary health consultation. Connecticut was also identified as a state that was exploring what it would take to implement a statewide system with multi-disciplinary expertise available to ECE programs. McGrady Heath described several programs that had emerging models of multi-disciplinary consultation practice:<sup>79</sup>

- The Comprehensive Child Care Services Program in Rhode Island
- The ACES multi-disciplinary team project in New Haven, Connecticut
- Day Care Plus in Ohio
- New Jersey ECE school sites governed by Abbot vs. Burke

Other multi-disciplinary consultation models identified by the literature include the Early Childhood Initiative (ECI) in Pittsburgh and Smart Start communities in North Carolina. Bagnato reported that ECE programs participating in the ECI receive weekly mentoring aiming to improve program quality as defined in the NAEYC accreditation standards. While this mentoring was not exclusively focused on health, health was one of 6 domains where key performance indicators were set forth as benchmarks.<sup>80</sup>

Smart Start is North Carolina's Early Childhood Initiative. County Partnerships for Children administers state funds to support the primary goal of school readiness. In their evaluation report on the initiative, Kropp, Kotch, and Harris noted that, "Because of Smart Start's focus on child care, Smart Start health interventions are often offered in the context of child care programs."<sup>81</sup>

### Specific Consultant Practices

While the literature identified variation in consultation practice, it also revealed consistent themes about the process elements that contribute to the effectiveness of consultation practice. Several authors noted that the relationship between the ECE program director and consultant is critical. Programs consistently described the importance of confidence in the consultant and a goodness-of-fit between the consultant and program. Reporting on an evaluation of Healthy Child Care Colorado, Eliot described the qualities of a good consultant-director relationship:

*...directors and nurses agree completely on the three ingredients required for an ideal nurse-director relationship... (1) good and open communication between directors and nurses; (2) mutual willingness and availability of each to participate in the consultation process; (3) a good relationship between nurse and staff.*<sup>82</sup>

The Colorado experience corroborated Crowley's finding that collaborative CCHC and ECE director dyads have relationships characterized by: (1) open, active communication; (2) a comprehensive commitment; (3) mutual respect; and (4) congruent philosophy and values.<sup>83</sup>

Some authors also noted that CCHCs' educational background and the degree to which they are familiar with ECE are critical. McGrady Heath stated that, among "lessons learned," many programs found that consultants needed to have knowledge not only of their health discipline, but of ECE and the dynamics of group care.<sup>84</sup> In addition, McGrady Heath noted, "It is extremely valuable for the consultant to have an ECE background with classroom experience to engender legitimacy with the program staff."<sup>85</sup>

### Consultation Systems

Beyond the practices of the consultants, Alkon and colleagues described factors that they believed supported the development of a child care health consultation *system* in a community. They identified the following characteristics that were facilitators of or barriers to CCHC systems:<sup>86</sup>

### Facilitators to implementing CCHC programs

1. Linkages between community agencies and ECE programs
2. Strong commitment to the CCHC program by the lead agency
3. Ample community health resources
4. Good communication and personal relationships

### Barriers

1. Lack of available community health and safety resources
2. ECE providers unfamiliar with CCHC or unable/unwilling to participate
3. Geographic barriers (access to resources for rural programs)<sup>87</sup>

## B. Promising Practices in Child and Family Health with Potential Application to ECE

The literature on health interventions in ECE programs included promising practices that—while not specifically described as delivered by health consultants—were well within the scope of practice for CCHCs.

### Health Literacy

Herman et al. reported on an intervention designed to increase parents' health literacy and enhance their ability to respond appropriately to their children's mild illnesses. *What To Do When Your Child Gets Sick*, a book written for readers with lower levels of literacy (third to fifth grade reading level) and low health literacy, was distributed with a brief training session in four Head Start sites. After the intervention, there was a significant decline in parents' use of the emergency department as well as clinic visits, suggesting that parents were more able to appropriately manage mild illnesses at home.<sup>88</sup>

### Reducing the Risk of Sudden Infant Death Syndrome

Moon et al. reported on an AAP-sponsored effort to reduce the risk of sudden infant death syndrome (SIDS) in ECE programs. Trained health educators conducted a 60-minute training program for ECE providers on implementing the AAP recommendations for SIDS risk-reduction (back-to-sleep positioning and use of safe sleep practices). Providers were significantly more likely to report that they exclusively place infants to sleep in the supine position after training (44.8% before training to 78.1% after training) and report that they sustained this practice six months after the intervention. Moon et al. concluded that training about infant sleep practices is effective in increasing knowledge, changing self-reported provider behavior, and promoting the development of written sleep position policies.<sup>89</sup>

### Mental Health Consultation

Mental health consultants have been at the forefront of developing models that broaden the focus of consultation. As Simpson et al. noted, "Theoretical frameworks based in ecological theory have led professionals in the field of early childhood mental health to broaden their focus from the child alone to the mutual transactions among the child, the family, and the community."<sup>90</sup>

Zeanah et al. specifically addressed approaches to integrating best practices in infant mental health into statewide early comprehensive care systems. They described a spectrum of care from universal preventive services, to focused services for "at-risk" populations, to diagnosis and treatment. Providing staff development and mental health consultation support to ECE programs was the first of several strategies they cited to deliver this spectrum of care.<sup>91</sup> Additional strategies included mental health consultation to home visiting programs, working with pediatricians to promote healthy relationships in early health care (medical home),

and taking a systemwide state-level approach to take interventions to scale. Zeanah et al. concluded:

*Early childhood mental health partnerships that build capacity within the early childhood community to promote the emotional wellness of young children and their families, regardless of the levels of risk they face, as well as to strengthen the skills of staff who work with them, represent a flexible and potentially powerful way of achieving multiple outcomes related to the broader early childhood agenda.*<sup>92</sup>

Many authors echoed the call for state and local collaboration and planning to build mental health systems of care that include, but are larger than, the practice of consultation to child care.<sup>93,94,95</sup>

In addition, the emphasis on the role of the consultant-director relationship in effective consultation practice emerged as a critical “lesson learned” in mental health consultation, perhaps because the work of promoting mental health is so focused on relationships.

### **Oral Health Policy and Consultation**

Head Start and Early Head Start demonstrate the power of including access to oral health services as part of a program’s explicit requirements. Dental disease is very common among young children. In the United States, more than one-quarter of 2- to 5-year-olds have cavities, and three quarters of those children are untreated.<sup>96</sup> Federal regulations require Head Start grantees to find a dental home for children without a regular source of care, provide access to oral screenings by dental professionals, and assist families in seeking treatment to follow up with identified oral health problems. Head Start has been successful in increasing access to oral health care for enrolled children. Low-income preschoolers in Head Start are nearly three times more likely to obtain a dental screening than other low-income children.<sup>97</sup>

Few articles in the literature described models of consultation to support oral health in ECE programs. Dental professional groups identified ECE programs as sites for preventive care and early screening.<sup>98</sup>

One promising practice identified was the use of dental hygiene students to deliver oral health services in Head Start and other ECE programs. For example, a dental hygiene program at a private university and an Early Head Start Program partnered to develop and implement a project that was highly productive and of reciprocal benefit. With a general focus on infant oral care and specific focus on early childhood caries, dental hygiene students were able to provide much needed oral health services to 45 families with children enrolled in the Early Head Start Program at multiple rural locations in Maine. Beaulieu et al. reported that, in addition to meeting the needs of the Early Head Start program, the project created a foundation for student exchange on the issues of dental caries in very young children and the complexity of factors contributing to dental caries.<sup>99</sup>

## **V. AREAS OF UNMET NEED**

### **A. Access to CCHC Services**

Substantial numbers of ECE providers do not have access to child care health consultation. In a 2003 report on HCCA grantees who were funded by the MCHB, John Snow, Inc. (JSI) reported that 43% of child care providers were “covered” by CCHCs. In the JSI report, using self-reports from state HCCA projects, “covered” meant that ECE providers had access to health consultation based on geographic proximity to a CCHC who served their type of program (family, center-based, or other).<sup>100</sup> Several experts cautioned that this estimate may be optimistic and suggests better access to health consultation than actually exists. The fact that a particular geographic area has some CCHC resources does not necessarily mean that the CCHC workforce is sufficient to provide consultation to all ECE providers in that geographic area.<sup>101</sup> Cole’s survey of child care directors in Indiana found that 48% of ECE providers report their access to health consultation as less than adequate or non-existent.<sup>102</sup>

Families seek care in a variety of child care settings including not only center-based care but family child care, kith and kin care, and “nanny” care. Walker and Bowie caution that it is important to include all locations of care in child care health consultation and health intervention models, because rates of enrollment in center-based programs are low for some populations of children. Specifically, infants, toddlers, and Latino children are under-represented in center-based programs compared to other types of care.<sup>103</sup>

### **B. Developmental Screening**

The policy of the AAP calls for universal developmental screening of infants and young children as a routine part of well-child care.<sup>104</sup> While virtually all pediatricians report assessing developmental milestones as part of routine care,<sup>105</sup> there are barriers to conducting valid and reliable screening in the context of pediatric practices that must accomplish a great deal in limited time. Relatively few pediatricians (23%) report the consistent use of standardized and validated developmental screening instruments.<sup>106</sup> The unmet need for developmental surveillance is demonstrated by the fact that only 20–30% of children with disabilities are identified before school entrance.<sup>107</sup> Missed opportunities to initiate early intervention could be overcome by developmental screening in a setting where caregivers observe children day-to-day and can compare their development and behavior with that of typically-developing peers. Halfon and colleagues noted that ECE programs could fill such a role:

*Communities might consider the benefits of extending developmental surveillance to the WIC program, pre-schools, and child care programs to take advantage of their early contact with children and families. Developmental surveillance information collected at these sites could be transmitted to child health providers or used in making direct referrals to diagnostic, preventive, and treatment services.*<sup>108</sup>

### **C. Oral Health**

Unmet oral health needs for young children are distressingly common. The Children’s Dental Health Project has reported that cavities affect 5 times more children than asthma, and that unmet need for dental care is 3 times greater than for medical care. They have also suggested that early childhood caries may be a sentinel for health-behavior related disease.<sup>109</sup>

At a 2003 forum of the American Academy of Pediatric Dentistry and the American Dental Hygienists' Association, participants concluded that "additional education in child oral health is needed for Head Start staff, parents and caregivers."<sup>110</sup> Beaulieu et al. described potential early childhood interventions including referral for dental exams, fluoride recommendations, and parent training on dietary practices and oral care.<sup>111</sup> While the Head Start program has demonstrated success in facilitating access to dental care through ECE programs, the authors found no published reports describing oral health delivery or consultation to ECE programs other than Head Start.

#### **D. Nutrition**

There has been much recent attention to childhood overweight and its contribution to the development of chronic disease. A recent issue of the *Future of Children* focusing on childhood obesity pointed out that the knowledge base with respect to child care nutrition is limited.

*Relatively little is known about the dietary quality and types of foods and beverages offered in child care facilities, especially those that are not licensed or do not participate in the Child and Adult Care Food Program. More research is needed on the current food environment in child care, including what foods are served, their nutritional quality, and staff training on nutrition. It has been ten years since any national survey described the nutrient content of meals and snacks in child care centers and day care homes participating in CACFP, and that survey included only children older than five.*<sup>112</sup>

## **VI. EFFECTIVE OUTCOMES**

In this review, the NSC included outcomes reported in all of the relevant published and unpublished materials identified. As noted earlier, the NSC did not assess or screen for rigor of methodology in the work that identified these outcomes, and, therefore, is not making any representation as to the generalizability of these findings.

### **A. Outcomes Specific to Child Care Health Consultation**

#### **Selected HCCA National Outcomes**

In 2003, John Snow, Inc. (JSI) published a report on the status of HCCA grantees. JSI found that 36 states had completed a comparison of their ECE-related health and safety regulations against the national standards set forth in *Caring for Our Children*. Nineteen states made statutory changes to more closely align their state regulations with national standards.<sup>113</sup> HCCA grantees reported using trainers from NTI to train 2,648 CCHCs. Of these 2,648 CCHCs, approximately 29% were described as "active."<sup>114</sup>

#### **Effectiveness of Training for CCHCs**

Standards-based training specific to the practice of child care health consultation is available from NTI. NTI-prepared trainers then train consultants at the state level. Two evaluations of state-level CCHC specific training show that providing child care consultation specific training to health professionals increases knowledge and improves the consultation experience.

Alkon and colleagues evaluated the impact of training on 80 health professionals in California who received nine days of training. There was a statistically significant knowledge gain for CCHCs, from a 71% correct response on pre-training knowledge tests to 80% correct at post-training knowledge tests.<sup>115</sup>

In Connecticut, Crowley conducted an evaluation of training offered to 42 CCHCs, ECE directors, and other specialists using a modified version of the NTI curriculum. Participants were offered 30 hours of training over five months. Participants showed a statistically significant increase in knowledge in 8 of 13 modules. Directors and CCHCs reported that training improved their consultation experience. CCHC practice post-training showed that they broadened their scope of practice and showed significant increases in utilization of *Caring for Our Children* standards and activities in the areas of behavioral/developmental health, staff health, and health promotion.<sup>116</sup>

#### **Compliance with Health and Safety Standards and Improved Program Health Policies**

Evaluations in California, North Carolina, Oregon, and Pennsylvania documented that child care health consultation improved the health and safety policies of participating ECE programs. Based on a study of 15 urban child care centers in California, Alkon et al. reported that "health consultation services can improve child care staff understanding of health issues in child care centers and center compliance with health standards." They found that ECE staff who received health consultation for seven months showed a general increase in knowledge of health standards. In addition, their centers showed a significant improvement in compliance with National Performance Health Standards compared to sites that did not receive consultation.<sup>117</sup>



Data from Early Childhood Education Linkage System (ECELS) in Pennsylvania showed specific improvements at sites linked with a nurse consultant. Sites that were matched with a nurse consultant completed a health and safety assessment, and the nurse consultant then worked with them, based on the results of that assessment. One of the improvements specifically associated with working with a nurse consultant was the development of appropriate written health policies.<sup>118</sup>

In an evaluation of the CCHCDP in Oregon, positive changes were found in policy development over the course of 6 to 10 months of consultation services. Policy in the areas of guidance and behavior, emergency plans, handwashing, and health exclusion were more likely to be in written form, be posted, and have been reviewed.<sup>119</sup>

In North Carolina, Kotch found that CCHCs had a positive impact on written health policies in the areas of handwashing, medication administration, care of mildly ill children, exclusion, cleaning and sanitizing, transportation, inclusion of children with special health care needs, emergency preparedness, and staff health.<sup>120</sup>

### Specific Health and Safety Practices

In addition to the improvements in written policies described above, evaluations of child care health consultation documented specific improvements in child care provider practices in a number of areas.

Aronson's findings from the work of ECELS showed the following specific improvements at sites linked with a nurse consultant:

- Safe playground equipment (specifically slides)
- Safe hot water temperature
- Proper food handling (refrigerator temperature, handling formula, cutting boards, etc.)
- Improved age-appropriate screenings<sup>121</sup>

Kotch's evaluation of the Quality Enhancement Project in North Carolina found significant improvement on scores (based on Child Care Evaluation Summaries and Worksheets administered every 6 months for each site and CCHC Daily Encounter Forms) in the areas of sanitation, safe and active play, emergency preparedness, nutrition, and SIDS prevention.<sup>122</sup>

Based on interviews with child care center directors and nurse consultants in Colorado, Eliot reported that child care center directors and nurse consultants agreed on seven impacts that nurse consultants were having on health and safety in child care centers. These impacts were "... (1) fewer child sick days; (2) fewer staff sick days; (3) better adherence to universal precautions; (4) higher immunization rates; (5) improved immunization record keeping; (6) children screened and referred for additional services; and (7) staff and parents knowing when to keep a sick child home."<sup>123</sup>

In Oregon, Becker et al. found that CCHCs improved the confidence of child care providers in the areas of childhood illnesses, immunizations, guidance, communication with parents, and child development.<sup>124</sup> Cole stated, "Current research shows child care health consultants can have an impact on the health status of children as well as the quality of care provided by the child care."<sup>125</sup> Cole also indicated, "In states with critical masses of Child Care Health Consultants, data showed improvements in the quality of child care and indicators of child health status, such as increased immunization rates, decreased injuries requiring medical attention, and decreased absences due to illness."<sup>126</sup>

### Immunization

Among the 28 sites served by CCHC and CCR&R specialist teams in Oregon, Becker found that the percentage of children with up-to-date immunization records increased from 40% at pre-intervention assessment to 78% at post-intervention assessment.<sup>127</sup> In Kotch's North Carolina evaluation, children who were enrolled at participating child care sites showed increases from baseline to follow up in up-to-date immunizations.<sup>128</sup> Evaluation findings from North Carolina's Smart Start show that Smart Start children are twice as likely to have their DPT vaccinations as children not served by Smart Start. Smart Start children also tended (not statistically significant) to have had their last vaccination on time.<sup>129</sup>

### Access to a Regular Source of Care

Becker's Oregon and Kotch's North Carolina evaluations found that children who were enrolled in programs with CCHCs had positive outcomes related to access to a regular source of medical care. In the Oregon study, children enrolled in programs served by CCHCs were more likely to have known medical and dental homes post-intervention as compared to pre-intervention. At the pre-intervention assessment, 89% had a medical home and 58% a dental home. At the post-intervention assessment, 94% had a medical and 67% a dental home.<sup>130</sup> In Kotch's North Carolina evaluation, children who were enrolled at participating child care sites showed increases from baseline to follow up in documentation of well-child physicals and having a medical home of record.<sup>131</sup>

Children served by Smart Start reported a significantly higher (86%) use of a regular source of medical care than children not (77%) participating in Smart Start.<sup>132</sup>

### Days Absent

The North Carolina Quality Enhancement Project reported that participating sites demonstrated a decrease (not statistically significant) in annual child absentee rate from 2.79 days per child at baseline to 2.04 days one year later.<sup>133</sup>

## B. Outcomes for Health Interventions in Child Care That Are Not Specific to Child Care Health Consultation

### Overall Child Care Quality

Preschools in low-income school districts in New Jersey are bound by *Abbot vs. Burke*, a court decision that requires the state to provide high-quality ECE in those districts. These preschools are referred to as "the Abbots." Abbot schools have master teachers, curriculum specialists, family service workers, and a school nurse. Abbot school districts must conduct health examinations and screenings for every child upon entry to the district. McGrady Heath reported that, after two years of these services, program quality was improving. McGrady Heath also reported that results on the Early Childhood Environment Rating Scale (ECERS-R) showed particularly strong gains in areas linked to school readiness, as well as improvements in children's social, communication, and problem-solving skills. However, she noted that it is difficult to separate out the impact of health consultation from the comprehensive system of quality improvement interventions employed in Abbot school districts.<sup>134</sup>

The Early Childhood Initiative in Pittsburgh uses weekly visits from ECE mentors to support NAEYC quality criteria as well as interventions to build parent participation and community-based leadership and involvement. In two years of intervention, 50% of participating programs met quality standards for NAEYC accreditation. While this intervention is not specifically a health intervention, health criteria are an important piece of the overall accreditation standards.<sup>135</sup>

### Prevention of Communicable Disease

Several studies confirmed the effectiveness of handwashing in reducing the incidence of communicable disease and demonstrated the effectiveness of training ECE providers on proper handwashing, proper diapering and toileting, and aseptic nose wiping technique. Roberts et al. reported on a controlled trial in Australia. Intervention group child care providers received training in handwashing and sanitary nose wiping. The control group maintained baseline handwashing procedures. Providers were observed implementing infection control procedures, and parents were interviewed about illness every two weeks. The investigators found a 17% reduction in respiratory illness among children 24 months of age and younger and a 50% reduction in diarrheal illness among children over 24 months of age.<sup>136,137</sup> In the U.S., Niffeneger's earlier research reported similar positive outcomes when child care providers and young children were trained in proper handwashing techniques. Niffeneger specifically pointed out the potential role of CCHCs:

*The significance of these results could be helpful to pediatric nurse practitioners who are consultants to child care centers. Pediatric nurse practitioners could teach the developmentally appropriate unit plan activities on handwashing and germs to young children with minimal expense or training.<sup>138</sup>*

### Reducing the Risk of SIDS

As noted previously, Moon et al. reported on the effectiveness of an AAP-sponsored effort to reduce the risk of SIDS in ECE programs. They found that providers were significantly more likely to report that they exclusively place infants to sleep in the supine position after training (44.8% before training to 78.1% after training) and reported that they sustained this practice six months after the intervention. Based on this study, it appears that training on infant sleep practices is effective in increasing knowledge, changing self-reported child care provider behavior, and promoting the development of written sleep position policies.<sup>139</sup>

### Mental Health

In a study conducted at 25 child care centers receiving mental health consultation, Alkon et al. reported that centers with more than one year of consultation showed increases in overall quality and teacher self-efficacy and competence. In addition, staff expressed satisfaction with the mental health consultation services provided.<sup>140</sup>

Teachers who worked with mental health consultants through the Blanket of Wellness project in Southeast Alaska completed self-assessments before and after consultation using the "Inventory of Practices for Promoting Children's Social and Emotional Competence." After consultation, teachers self-reported that they were more likely to consistently employ best practices in all three domains: (1) developing relationships (e.g., develops meaningful relationships with children and families and examines personal, family, and cultural views of challenging behavior); (2) classroom preventive practices (e.g., designs the physical environment, develops schedules and routines, and provides social skills instruction); and (3) social-emotional teaching (e.g., promotes identification and labeling of emotions in self and others, creates a planned approach for problem-solving processes in the classroom, ensures smooth transition).<sup>141</sup>

Green et al. reported on characteristics of mental health consultation that lead to prosocial behavior. They found that culturally competent practice and degree of parent involvement were critical ingredients. They noted, "The extent to which mental health consultants were perceived by staff to provide services consistent with best practices was important to outcomes. All best practices were important, but only culturally competent practices and parent involvement contributed variance once the degree of the other practices and the type of consultant activities were held constant."<sup>142</sup>

A research synthesis of 31 evaluations of mental health consultation compiled by Brennan and colleagues at Portland State University and Perry and Tsega at Georgetown University show a variety of positive findings. The authors of the synthesis note that there are methodological shortcomings in the included studies that limit the strength of the findings. This review notes the following outcomes:<sup>143</sup>

- Child Outcomes: Increases in social skills, improved behavior and resilience scores, decrease in problem behaviors, retention of children at risk of expulsion.
- Staff Outcomes: Consistent findings of increased staff confidence and improvements in self-efficacy.
- Mixed results with respect to the impact of mental health consultation on overall program quality as measured by the ECERS.

An interesting aspect of the report by Green et al. was a list of the following factors that did not contribute to variance in outcomes:<sup>144</sup>

- Hours of consulting time per child
- Percentage of budget
- Size of Head Start program
- Setting: urban, rural, suburban
- Ethnicity of families or staff
- Credentials of consultant

Bagnato's evaluation of Pittsburgh's ECI reported amelioration of children's social skill delays and behavioral symptoms as a result of program quality consultation. Eighteen percent of children in participating programs demonstrated social skills delays and behavioral problems severe enough to merit a mental health diagnosis. At the end of nearly three years of ECI, these children showed normal social skills and behavior patterns.<sup>145</sup>

## VII. SUMMARY

Health consultation to ECE programs is a critically important practice for a number of reasons. Consultation supports practices in ECE programs that reduce the health risks inherent in group care. CCHCs also assist programs to promote positive health behaviors, provide health education and anticipatory guidance to staff, children, and parents, and serve as a vital link bringing families together with community health and developmental services.

A growing body of literature describes the practice of child care health consultation and explores its impact on ECE programs. Much of this literature is not publicly available in peer-reviewed journals.

The articles and reports reviewed for this document present a fairly detailed picture of the activities and roles of the CCHC. Most of the CCHCs described in this literature are nurses, although physicians and health professionals from specialty disciplines also provide consultation to ECE programs. In some cases, child development professionals with additional health training work as child care health advocates, a role that complements that of CCHCs. The literature also indicates that there is great variation in utilization of health consultants and regulations governing the practice of child care health consultation. Access to CCHCs is far from complete for ECE programs throughout the United States.

Nationwide, states and communities use multiple models to deliver health consultation, with practitioners working as self-employed consultants as well as under a variety of auspices including (but not limited to) local health departments, CCR&Rs, and school districts. Several authors pointed out that health consultation is valued and well-received by ECE programs.

Evidence demonstrating the impact of child care health consultation on the quality of child care is emerging. Findings that are consistent across multiple studies show positive outcomes in the following five areas:

- **Policy:** Child care health consultation appears to have a positive impact on the development and use of standards-based health and safety policies in ECE programs.
- **Practice:** Child care health consultation appears effective in promoting specific health practices in ECE programs including nutrition and safe food handling, infection control (handwashing, diapering and toileting procedure), infant sleep position, and safe and active play.
- **Regular Source of Care:** Relatively few evaluations link enrollment at an ECE program that receives CCHC services to specific child health improvements. However, several reports articulate a promising theme that demonstrates that programs with CCHCs show an increased number of children with up-to-date immunizations and a regular source of medical care.
- **Specialty Consultation:** Health consultation to child care can be beneficial in a number of specialty areas including mental health, nutrition and physical activity, and oral health.
- **Process of Consultation:** A collaborative relationship between the ECE program director and CCHC or specialty area consultant appears to facilitate the effectiveness of consultation.

An additional source of information about child care health consultation at the state level will be available by September 2006 from the NSC at EDC. Resources available from the NSC will include a searchable national database of CCHCs as well as information profiles that describe the status of child care health consultation efforts at the state level.

The NAEYC has included working with a CCHC as an emerging practice in the accreditation criteria of its September 2006 Early Childhood Program Standards. As high-quality programs adopt this practice in higher numbers, it will be an opportunity for additional research to fill in knowledge gaps about the practice and impact of child care health consultation.

## CCHC RESOURCE DOCUMENT MATRIX

| Author   | Title   | Source  | Published | Access to Care | Health and Safety Practices | Mental Health | Need for Consultation | Oral Health | Policy and Standards | Role of CCHC | Other |
|--|---|---|-----------|----------------|-----------------------------|---------------|-----------------------|-------------|----------------------|--------------|-------|
| Administration for Children and Families   | Head Start Program fact sheet   | Washington, DC: U.S. Department of Health and Human Services, Head Start Bureau   | 2005      | ♦              |                             |               |                       |             |                      |              | ♦     |
| Alkon, A., Ramler, M., and MacLennan, K.   | Evaluation of mental health consultation in child care centers  | Early Childhood Education Journal   | 2003      |                |                             | ♦             |                       |             |                      | ♦            |       |
| Alkon, A. and Boyce, J.C.  | Health assessment in child care centers: Parent and staff perceptions   | Pediatric Nursing   | 1999      |                |                             |               | ♦                     |             |                      |              | ♦     |
| Alkon, A., Bernzweig, J., Farrer, J., Wolff, M., Elman, J., Kunitz, J., and Frank, R.  | Child Care Health Consultation Programs in California: Results of a formative evaluation  | San Francisco, CA: University of California, San Francisco School of Nursing (Under Review)   | 2006      | ♦              |                             |               | ♦                     |             | ♦                    | ♦            |       |
| Alkon, A., Farrer, J., and Bernzweig, J.   | Child care health consultants' roles and responsibilities: Focus group findings   | Pediatric Nursing   | 2004      |                |                             |               |                       |             |                      | ♦            |       |
| Alkon, A., Sokal-Gutierrez, K., and Wolff, M.  | Child care health consultation improves health knowledge and compliance   | Pediatric Nursing   | 2002      |                |                             |               | ♦                     |             | ♦                    |              |       |
| American Academy of Pediatrics, American Public Health Association, and National Resource Center for Health and Safety in Child Care | Caring for Our Children: National health and safety performance standards: Guidelines for out-of-home child care programs, 2nd Ed           | Elk Grove Village, IL: American Academy of Pediatrics and Washington, DC: American Public Health Association                                | 2002      |                |                             |               |                       |             | ♦                    | ♦            |       |
| Aronson, S.  | Personal Communication (Letter) to Maxine Hayes, March 21, 1998   | Personal Communication  | 1998      | ♦              |                             |               |                       |             | ♦                    |              |       |
| Bagnato, S.  | Quality early learning: Key to school success. A first phase program evaluation research report for Pittsburgh's Early Childhood Initiative | Pittsburgh, PA: SPECS Program Evaluation Research Team, Children's Hospital of Pittsburgh, The UCLID Center at the University of Pittsburgh | 2002      |                |                             |               | ♦                     |             | ♦                    |              | ♦     |
| Beaulieu, E., Dufour, L.A., and Beaudet, R.  | Better oral health for infants and toddlers: A community based program  | Journal of Dental Hygiene   | 2000      | ♦              |                             |               |                       | ♦           |                      |              | ♦     |
| Becker, K., Mueller, E. and Rider, S.  | Evaluation of the Child Care Health Consultation Demonstration Program: Phase II final report   | Portland, OR: Pacific Research and Evaluation LLC   | 2005      |                |                             |               |                       |             | ♦                    | ♦            |       |
| Bell, K.N.   | Strategies for promoting health and assuring access to health care in child care settings   | New York: National Center for Children in Poverty   | 1995      | ♦              |                             |               | ♦                     |             | ♦                    |              |       |
| Benjamin, S., Ammerman, A., Sommers, J., Dodds, J., Neelon, B., and Ward, D.   | Results from the NAP SACC Pilot Intervention  | Chapel Hill, NC: UNC Center for Health Promotion Disease Prevention, NC-DHHS Division of Public Health (Under Review)                       | 2006      |                |                             |               |                       |             |                      |              | ♦     |
| Blanket of Wellness Project  | Mental health consultation to early care and learning programs  | Southwest Alaska: Blanket of Wellness Project   | 2003      |                |                             | ♦             |                       |             |                      |              |       |
| Brennan, E., Bradley, J., Allen, M.D., Perry, D., and Tsega, A.  | The evidence base for mental health consultation in early childhood settings: Research synthesis and review                                 | Presented at Establishing the Evidence Base for Early Childhood Mental Health Consultation Tampa, FL  | 2005      |                |                             | ♦             |                       |             |                      |              |       |
| Bucklen, K., Bogen, D., Aronson, S., and Miller, E.  | Child care health consultants in Pennsylvania   | Available through author(s)   | 2005      |                |                             |               |                       |             |                      | ♦            |       |
| California Childcare Health Program  | Child Care Health Linkages Project: Evaluation summary  | San Francisco, CA: California Child Care Health Program, UCSF School of Nursing   | 2004      | ♦              |                             |               | ♦                     |             | ♦                    | ♦            |       |
| Capizzano, J. and Adams, G.  | Snapshots of America's families III (Report no. 160)  | Washington, DC: The Urban Institute   | 2003      |                |                             |               | ♦                     |             |                      |              |       |

## CCHC Resource Document Matrix

| Author   | Title  | Source   | Published | Access to Care | Health and Safety Practices | Mental Health | Need for Consultation | Oral Health | Policy and Standards | Role of CCHC | Other |
|--|--|--|-----------|----------------|-----------------------------|---------------|-----------------------|-------------|----------------------|--------------|-------|
| Centers for Disease Control and Prevention                           | Nutrition and the health of young people   | Washington, DC: Centers for Disease Control and Prevention, Division of Adolescent and School Health | 2005      |                |                             |               |                       |             |                      |              | ◆     |
| Children's Dental Health Project                                     | Keeping health in Head Start: Lessons learned from dental care   | Washington, DC: U.S. Department of Health and Human Services, Head Start Bureau                      | 2006      | ◆              |                             |               |                       | ◆           |                      |              |       |
| Cole, P.   | Healthy Child Care Indiana Child Care Health Consultant Project: Child care provider survey                  | Healthy Child Care Indiana   | 2001      |                |                             |               | ◆                     |             |                      | ◆            |       |
| Crowley, A.A.  | Child care health consultation: An ecological model  | Journal of the Society of Pediatric Nurses   | 2001      |                |                             |               | ◆                     |             |                      | ◆            |       |
| Crowley, A.A.  | Child care health consultation: The Connecticut experience   | Maternal and Child Health Journal  | 2000      |                |                             |               |                       |             | ◆                    |              |       |
| Crowley, A.  | Collaborative health consultation: A developmental-symbolic interactionist model                             | Dublin, Ireland: STTI International Nursing Research Congress July, 2004                             | 2004      |                |                             |               |                       |             | ◆                    | ◆            |       |
| Crowley, A. and Kulikowich, J.                                       | Impact of training on child care health consultant knowledge and practice                                    | Presented at APHA Washington, DC November 10, 2004   | 2004      |                |                             |               |                       |             | ◆                    | ◆            |       |
| Dooling, M.V. and Ulione, M.S.                                       | Health consultation in childcare: A partnership that works   | Young Children   | 2000      |                |                             |               |                       |             | ◆                    |              |       |
| Edelstein, B. and Foley, M.  | Improving early childhood oral health  | Web Conference on Children's Dental Health Project Presentation for AMCHP, ASTHO, NCSL               | 2006      |                |                             |               |                       | ◆           |                      |              |       |
| Eliot, S.  | Outcome evaluation: Healthy Child Care Colorado 2002   | Healthy Child Care Colorado  | 2003      |                |                             |               | ◆                     |             |                      | ◆            |       |
| Emel, B. and Alkon, A.   | Health and school readiness: A literature review of selected programs, components, and findings in the U.S.  | Oakland, CA: California Childcare Health Program, UCSF School of Nursing Oakland, CA (Under Review)  | 2006      |                |                             |               |                       |             |                      |              | ◆     |
| Evers, D.B.  | The pediatric nurse's role as health consultant to a child care center                                       | Pediatric Nursing  | 2002      |                |                             |               | ◆                     |             |                      | ◆            |       |
| Farrer, J.   | Background information on states with child care health consultation programs                                | Personal Communication   | 2005      |                |                             |               |                       |             | ◆                    | ◆            |       |
| Flynn, M., Hayes, C.D., Uyeda, K., and Halfon, N.                    | Partnering schools, communities and Proposition 10: Financing considerations for early childhood initiatives | Los Angeles, CA: UCLA Center for Healthier Children, Families and Communities                        | 2002      |                |                             |               |                       |             | ◆                    |              |       |
| Gaines, S.K. and Leary, J.M.   | Public health emergency preparedness in the setting of child care  | Family & Community Health  | 2004      |                |                             |               | ◆                     |             | ◆                    | ◆            |       |
| Gaines, S.K. Wold, J.L., Spencer, L., and Leary, J.M.                | Assessing the need for child-care health consultants   | Public Health Nursing  | 2005      |                |                             |               | ◆                     |             | ◆                    |              |       |
| Gaines, S.K., Wold, J.L., Bean, M.R., Brannon, C.G., and Leary, J.M. | Partnership to build sustainable public health nurse child care health support                               | Community Health   | 2004      |                |                             |               | ◆                     |             | ◆                    |              |       |
| Glascoe, F.  | Screening for developmental and behavioral problems  | Mental Retardation and Developmental Disabilities Research Reviews                                   | 2005      |                |                             |               |                       |             |                      |              | ◆     |

## CCHC Resource Document Matrix

| Author  | Title   | Source   | Published | Access to Care | Health and Safety Practices | Mental Health | Need for Consultation | Oral Health | Policy and Standards | Role of CCHC | Other |
|---|---|--|-----------|----------------|-----------------------------|---------------|-----------------------|-------------|----------------------|--------------|-------|
| Green, B., Everhart, M. A., Gordon, L., and Friesen, B.                                   | Management strategies for positive mental health outcomes: What early childhood administrators need to know       | Portland, OR: Research and Training Center on Family Support and Children's Mental Health                    | 2004      |                |                             | ◆             |                       |             |                      | ◆            |       |
| Gupta, R., Shuman, S., Taveras, E., Kulldorff, M., and Finkelstein, F.                    | Opportunities for health promotion education in child care  | Pediatrics   | 2005      |                |                             |               | ◆                     |             | ◆                    | ◆            |       |
| Halfon, N., Olson, L., Inkelas, M. et al.   | Summary statistics from the National Survey of Early Childhood Health, 2000                                       | Washington, DC: National Center for Health Statistics  | 2002      | ◆              |                             |               |                       |             |                      |              |       |
| Halfon, N., Regalado, M., McLearn, K., Kuo, A., and Wright, K.                            | Building a bridge from birth to school: Improving developmental and behavioral health services for young children | New York: The Commonwealth Fund  | 2003      | ◆              |                             |               |                       |             |                      |              |       |
| Halfon, N., Regalado, M., Sareen, H., Inkelas, M., Reuland, C., Glascoe, F. and Olson, M. | Assessing development in the pediatric office   | Pediatrics   | 2004      | ◆              |                             |               |                       |             |                      |              | ◆     |
| Healthy Child Care Minnesota: Minnesota Department of Human Services                      | Child care health consultation In Minnesota, September 2005   | St. Paul, MN: Healthy Child Care Minnesota: Minnesota Department of Human Services                           | 2005      |                |                             |               |                       |             |                      | ◆            |       |
| Herman, A. and Mayer, G.G.  | Reducing the use of emergency medical resources among head start families: A pilot study                          | Journal of Community Health  | 2004      | ◆              |                             |               | ◆                     |             |                      |              | ◆     |
| Huss, K., Winkelstein, M., Calabrese, B., Butz, A., Reshef, S., Rand, C., and Gilpin, A.  | Asthma management practices and education needs of head start directors and staff                                 | Journal of School Health   | 2002      |                |                             |               | ◆                     |             |                      | ◆            |       |
| Illinois Network of Child Care Resource and Referral Agencies                             | Data tracking program CCNC provider training - Statewide aggregate reports  | Bloomington, IL: Illinois Network of Child Care Resource and Referral Agencies                               | 2005      |                |                             |               |                       |             |                      | ◆            | ◆     |
| Illinois Network of Child Care Resource and Referral Agencies                             | Child care nurse consultant report fiscal year 2005   | Bloomington, IL: Illinois Network of Child Care Resource and Referral Agencies                               | 2005      |                |                             |               |                       |             |                      | ◆            | ◆     |
| Inkelas, M., Regalado, M., and Halfon, N.   | Strategies for integrating developmental services and promoting medical homes                                     | Los Angeles, CA: National Center for Infant and Early Childhood Health Policy                                | 2005      | ◆              |                             |               | ◆                     |             | ◆                    |              |       |
| John Snow, Inc  | MCHB transitioning healthy child care america grantees summary of progress report data                            | Boston, MA: John Snow, Inc.  | 2003      |                |                             |               | ◆                     |             |                      | ◆            | ◆     |
| Kisker, E. E. and Kuhns, C.   | Health and disabilities services in Early Head Start: Are families getting needed health care services?           | Princeton, NJ: Mathematica Policy Research   | 2004      |                |                             |               |                       |             |                      |              | ◆     |
| Knitzer, J.   | Using mental health strategies to move the early childhood agenda and promote school readiness                    | New York: Carnegie Corporation of New York, and National Center for Children in Poverty, Columbia University | 2000      |                |                             | ◆             | ◆                     |             | ◆                    | ◆            |       |
| Kotch, J.   | The Quality Enhancement Project for infants and toddlers: Executive summary 2001-2002                             | Chapel Hill, NC: University of North Carolina at Chapel Hill   | 2002      |                | ◆                           |               |                       |             | ◆                    | ◆            |       |
| Kropp, N., Kotch, J., and Harris, S. UNG-FPG Smart Start Evaluation Team.                 | The effect of Smart Start health interventions on children's health and access to care                            | Chapel Hill, NC: The University of North Carolina at Chapel Hill   | 2001      | ◆              |                             |               |                       |             | ◆                    | ◆            |       |
| Lie, L.   | Health consultation service to family day care homes in Minneapolis, Minnesota                                    | The Journal of School Health   | 1992      |                |                             |               |                       |             |                      |              | ◆     |
| Lucarelli, P.   | Raising the bar for health and safety in child care   | Pediatric Nursing  | 2002      |                |                             |               | ◆                     |             |                      | ◆            |       |

## CCHC Resource Document Matrix

| Author  | Title  | Source   | Published | Access to Care | Health and Safety Practices | Mental Health | Need for Consultation | Oral Health | Policy and Standards | Role of CCHC | Other |
|---|--|--|-----------|----------------|-----------------------------|---------------|-----------------------|-------------|----------------------|--------------|-------|
| Maternal and Child Health Bureau and Healthy Child Care America   | Telling the Healthy Child Care America story: Making a positive difference in the health of children in child care                 | Washington, DC: Healthy Child Care America. American Academy of Pediatrics                                 | 2004      | ♦              |                             |               |                       |             |                      | ♦            | ♦     |
| McGrady, H.J.   | Creating statewide system of multi-disciplinary consultation for early care and education in Connecticut                           | Farmington CT: Child Health and Development Institute of Connecticut                                       | 2005      |                |                             | ♦             |                       |             | ♦                    | ♦            |       |
| Moon, R.Y. and Oden, R.P.   | Back to sleep: Can we influence child care providers   | Pediatrics   | 2005      |                | ♦                           |               |                       |             |                      |              | ♦     |
| National Association for the Education of Young Children  | Critical facts about young children and early childhood programs in the United States  | National Association for the Education of Young Children   | 2002      |                |                             |               | ♦                     |             |                      |              |       |
| Niffenegger, J.P.   | Proper handwashing promotes wellness in childcare  | Journal of Pediatric Health Care   | 1997      |                | ♦                           |               |                       |             |                      | ♦            | ♦     |
| Peisner-Feinberg, E.S., Burchinal, M.R., Clifford, R.M., Culkin, M.L., Howes, C., Kagan, S.L., Yazejian, N., Byler, P., Rustici, J., and Zelazo, J. | The children of the cost, quality and outcomes study go to school: Executive summary   | Chapel Hill, NC: University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Center | 1999      |                |                             | ♦             |                       |             |                      |              | ♦     |
| Rassin, G.M., Beach, P.S., McCormick, D.P., Niebuhr, V.N. et al.  | Health and safety in day care: Parental knowledge  | Clinical Pediatrics  | 1991      |                | ♦                           |               |                       |             |                      |              | ♦     |
| Roberts, L., Jorm, L., Patel, M., Smith, W., Douglas, R.M., and McGilchrist, C.   | Effect of infection control measures on the frequency of diarrheal episodes in child care: A randomized, controlled trial          | Pediatrics   | 2000      |                | ♦                           |               |                       |             |                      |              |       |
| Roberts, L., Smith, W., Jorm, L., Patel, M., Douglas, R.M., and McGilchrist, C.   | Effect of infection control measures on the frequency of upper respiratory infection in child care: A randomized, controlled trial | Pediatrics   | 2000      |                | ♦                           |               |                       |             |                      |              |       |
| Segal, A.   | Improving school readiness outcomes: Lessons from six communities  | Baltimore, MD: Annie E Casey Foundation  | 2004      |                |                             |               |                       |             |                      |              | ♦     |
| Shope, T.R. and Aronson, S.   | Improving the health and safety of children in nonparental early education and child care  | Pediatrics in Review   | 2005      |                | ♦                           |               |                       |             |                      |              |       |
| Simpson, J.S., Jivanjee, P., Koroloff, N., Doerfler, A., and Garcia, M.   | Promising practices in early childhood mental health   | Washington, DC: Center for Effective Collaboration and Practice, American Institute for Research           | 2001      |                |                             | ♦             |                       |             |                      |              | ♦     |
| Stang, J. and Bayerl, C.T.  | Position of the American Dietetic Association: Child and adolescent food and nutrition programs                                    | Journal of the American Dietetic Association   | 2003      |                |                             |               |                       |             | ♦                    |              |       |
| Steffensen, J.  | Enhancing partnerships for Head Start and oral health: Professional dental organizations synthesis report                          | Washington, DC: Health Systems Research  | 2004      | ♦              |                             |               | ♦                     | ♦           |                      |              |       |
| Story, M., Kaphingst, K., and French, S.  | The role of child care settings in obesity prevention  | The Future of Children   | 2006      |                | ♦                           |               | ♦                     |             |                      |              | ♦     |
| Stubbs-Wynn, P. (Ed.)   | Building healthy child care partnerships: Success stories from health systems development in child care projects                   | Denver, CO: National Resource Center for Health and Safety in Child Care                                   | 1999      |                |                             |               |                       |             | ♦                    |              |       |
| The United States Bureau of the Census  | Income, poverty, and health insurance coverage in the United States: 2003  | Washington, DC: The United States Bureau of the Census   | 2004      | ♦              |                             |               |                       |             | ♦                    |              |       |
| Trujillo, G.  | Blanket of Wellness Project Evaluation   | Anchorage, AK: Prevention Associates   | 2004      |                |                             | ♦             |                       |             |                      |              |       |

## CCHC Resource Document Matrix

| Author   | Title   | Source   | Published | Access to Care | Health and Safety Practices | Mental Health | Need for Consultation | Oral Health | Policy and Standards | Role of CCHC | Other |
|--|---|--|-----------|----------------|-----------------------------|---------------|-----------------------|-------------|----------------------|--------------|-------|
| U.S. Department of Health and Human Services   | Healthy Child Care America blueprint for action   | Washington, DC: U.S. Department of Health and Human Services, Maternal and Child Health Bureau | N/A       | ♦              | ♦                           | ♦             | ♦                     |             | ♦                    | ♦            |       |
| U.S. Department of Health and Human Services, Maternal and Child Health Bureau       | Stepping stones to using Caring for Our Children, 2nd edition                               | Washington, DC: U.S. Department of Health and Human Services, Maternal and Child Health Bureau | 2005      |                |                             |               |                       |             | ♦                    | ♦            |       |
| U.S. General Accounting Office   | Child care: State efforts to enforce safety and health requirements                         | Washington, DC: U.S. General Accounting Office   | 2000      |                |                             |               |                       |             | ♦                    |              |       |
| US Department of Health and Human Services, Administration for Children and Families | Head Start Impact Study, first year findings  | USDHHS, ACF Office of Planning, Research and Evaluation  | 2005      | ♦              |                             |               |                       | ♦           |                      |              | ♦     |
| Walders, N., McQuaid, E., and Dickstein, S.  | Asthma knowledge, awareness, and training among head start and early head start staff       | Journal of School Health   | 2004      |                |                             |               | ♦                     |             |                      | ♦            |       |
| Walker, K. and Bowie, A.   | Linking the child care and health care systems: A consideration of options                  | Philadelphia, PA: Public Private Ventures  | 2004      |                |                             |               | ♦                     |             | ♦                    |              |       |
| Zeanah, P. D., Stafford, B. S., Nagle, G. A., and Rice, T.                           | Addressing social-emotional development and infant mental health in early childhood systems | Los Angeles, CA: National Center for Infant and Early Childhood Health Policy                  | 2005      | ♦              | ♦                           |               |                       |             | ♦                    |              |       |

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