

Implementing Bright Futures Guidelines for Well-Child Care in North Carolina

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The Bright Futures guidelines published by the American Academy of Pediatrics offer a comprehensive agenda for improving the health of people from birth to age 21 years. The guidelines are the culmination of a century of multidisciplinary, multiorganizational efforts in the United States to prevent illness and promote health in children and adolescents, and, in turn, the adults they become. Regulations interpreting the Patient Protection and Affordable Care Act (ACA) specifically state that group health plans must, at a minimum, provide coverage for the preventive services recommended in the Bright Futures guidelines. Thus the ACA will be an impetus for implementation of the guidelines. This issue brief describes the genesis, history, and development of the guidelines. In addition, it briefly touches on each of the commentaries and other articles contained in this issue of the NCMJ dedicated to the implementation of Bright Futures guidelines.

As part of its Bright Futures national health promotion initiative, the American Academy of Pediatrics (AAP) publishes guidelines for the health supervision of infants, children, and adolescents. The most recent edition of the Bright Futures guidelines [1], published in 2008, includes recommendations that are based on rigorous scientific study, as well as recommendations informed by the opinions of experts, including young people affected by chronic illness and their families. The guidelines cover the periodicity and content of routine physical examinations, screening activities, immunizations, and anticipatory guidance in the primary care medical home. The guidelines also address the environment of services and organizational partnerships necessary to support the pediatric medical home and those people the pediatric medical home serves: typical children, children and youth with special health care needs, and their families.

North Carolina has been a state leader in the implementation of Bright Futures guidelines; however, there is much work to be done. The commentaries in this issue of NCMJ highlight a number of the successes North Carolina has experienced in providing preventive services to children and adolescents. They also discuss the challenges that lie ahead.

Bright Futures and the Affordable Care Act

In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act (ACA). Within this law is an extraordinary provision—section 2713—that requires all nongrandfathered health plans to cover—with no cost-sharing by families—all immunizations recommended by the Advisory Committee on Immunization Practices of the Centers for Disease Control and Prevention (CDC) and “the evidence-informed screenings provided for in the comprehensive guidelines supported by the Health Resources and Services Administration” [2]. This brief provision was subsequently translated into approximately 75 pages of regulations, issued in July of 2010, including language affirming that this provision of the ACA refers to the 3rd edition of Bright Futures: Guidelines for Health Supervision of Infants, Children and Adolescents [1, 3]. The periodicity schedule in the Bright Futures guidelines was actually reprinted in the regulations. Thus the full array of preventive and health promotion services recommended in the guidelines—including periodic physical exams; medical, developmental, and behavioral screenings; and anticipatory guidance—will be a required preventive benefit in new insurance plans beginning January 1, 2014.

Over time, as health plans predating the ACA make changes that eliminate their grandfathered status, more and more plans will be required to provide the Bright Futures benefits. Thus the ACA will effectively remove a major financial barrier to implementation of a comprehensive health promotion and disease prevention strategy for US citizens from birth to age 21 years. A review of the history of pediatric preventive health care places this historic accomplishment in context.

Historical Background

The professions of public health and pediatrics have a long history of supporting the healthy growth and development of children. In the late 19th and early 20th centuries,

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pediatric providers such as Abraham Jacobi and Job Lewis Smith created milk stations and child health dispensaries to meet the basic health and nutritional needs of infants and young children [4]. In an effort to promote healthy child-rearing practices, Jacobi wrote pamphlets about hygiene and breastfeeding [4]. The Children's Bureau within the US Department of Health and Human Services was created by President Taft in 1912 to improve the lives of children and families [5]. During the early 1930s, a publication of the bureau titled *Infant Care* sold more than 8 million copies, reflecting the interest of young families in replacing old wives' tales and suspect child-rearing practices with an authoritative source of guidance on caring for children [6].

The AAP was formed in 1930 [7], and began to compile expertise in well-child care from the clinical experience of its member pediatricians, and as the years went by, from scientific inquiry. The science of epidemiology advanced understanding of the circumstances leading to disease and health, such as poverty, housing, and access to care. As the public health community began identifying populations at risk for certain health threats, pediatricians began screening children at risk for anemia, lead toxicity, and tuberculosis [4].

In 1967 the AAP published *Standards of Child Health Care*, a 132-page document covering the range of pediatric care, with 15 pages devoted to preventive pediatrics [8]. These standards have been updated periodically since 1972, along with a recommended schedule for well-child visits, commonly known as the periodicity schedule [9]. Beginning in 1985, the AAP developed more focused and extensive guidelines specifically for preventive care and health supervision, which are referred to as guidelines for health supervision or guidelines for health maintenance. These were updated periodically through 2002 [9].

The 1980s saw an increase in single parenthood, drug use, domestic and community violence, homelessness, and HIV/AIDS. In the early 1990s, fueled by a sense that it was urgently necessary to mitigate the effects of these factors on young families and children, the leadership of the Bureau of Maternal and Child Health implemented the *Healthy People 2000* public health interventions, setting targets for improvement of health measures over the following decade [4]. Medicaid, in an effort to extend the benefits of well-child supervision to underserved populations, initiated the *Early Periodic Screening, Diagnosis, and Treatment (EPSDT)* program, which defined the elements of well-child supervision for its beneficiaries [4]. Working together, Medicaid and the Bureau of Maternal and Child Health funded a large-scale review, referred to as "*Bright Futures*." Their aims were to gather information about the interventions and tools available to pediatric health professionals; to expand the role of families and communities in assuring the health of children; and to expand the concept of health maintenance to include health promotion [4].

The initial *Bright Futures* project, headed by physician Morris Green, was housed at the National Center for

Education in Maternal and Child Health at Georgetown University. Its advisory board established 4 multidisciplinary panels and charged them with developing health supervision guidance reflecting the epidemiologically based health risks and family needs of 4 age groups: infancy, preschool, middle childhood, and adolescence. The panels' recommendations were based on the evidence available and on the opinions of an impressive group of experts. Their recommendations were reviewed by more than 1,000 people including representatives from community-based organizations, parent groups, and organizations of physicians, nurses, nutritionists, and dentists. The first edition of the *Bright Futures* guidelines was published in 1994, along with the *Bright Futures Children's Health Charter* [10]. These documents are a call to action, placing responsibility for the health and well-being of children with everyone: children and families, community agencies, health professionals, local and state governments, and the business sector [4].

An implementation phase followed the development of the recommendations. The Bureau of Maternal and Child Health established the *Building Bright Futures* team, chaired by physician Judith Palfrey and enriched by the participation of leaders of family organizations such as *Family Voices* and the *National Parent Network for Children and Youth with Special Health Care Needs*. The team developed and piloted practical tools and prepared and disseminated a series of monographs to assist practitioners with implementation. Curricular materials were developed for pediatric training. The *Building Bright Futures* team and staff participated nationally in many multidisciplinary forums to disseminate *Bright Futures'* ideas and implementation methods [4].

In 2000, responding to the emerging obesity epidemic and a revision of the immunization schedule of the CDC, the *Bright Futures* team carried out a modest revision of the central *Bright Futures* document. In 2002, the Bureau of Maternal and Child Health entered into a cooperative agreement with the AAP to undertake an extensive revision of the *Bright Futures* guidelines. That revision was published in 2008 as the 3rd edition of the guidelines. An ambitious and comprehensive work, it integrates the initiatives of the Bureau of Maternal and Child Health (eg, *Healthy People 2010*), the *EPSDT* program, the health supervision guidelines and medical home initiatives of the AAP, and the 1994 *American Medical Association Guidelines for Adolescent Preventive Services* [4, 11].

Processes Used to Develop the Latest *Bright Futures* Guidelines

The depth and breadth of the collaborative processes that undergirded the 3rd edition of the *Bright Futures* guidelines set the stage for its extraordinary influence on public policy. To develop the guidance, the *Project Advisory Committee* appointed a multidisciplinary panel of 38 experts from the fields of pediatrics, mental health, public health, nutrition, oral health, family medicine, nursing, and education. Along

with family representatives, these experts developed recommendations for the content of 33 preventive visits during childhood and adolescence. The panelists relied on the evidence available, and when evidence was not available or was inconclusive, they relied on the expertise and clinical experience of panel members. Throughout the process, the committee consulted with individuals and organizations that have expertise and experience in a wide range of topic areas [1].

The committee appointed an evidence panel comprised of experts in finding and evaluating evidence from clinical studies. This panel conducted literature searches on key questions, drawing from such sources as the Cochrane Collaboration and the US Preventive Services Task Force [1].

More than 1,000 health care and public health professionals, educators, parents, and child health advocates reviewed the document and provided comments. The Project Advisory Committee incorporated the feedback and ultimately published the following recommendations for clinical practice [1]. The full set of recommendations (ie, guidelines) is available through the American Academy of Pediatrics' Bright Futures Web site [12].

Clinical Recommendations From Bright Futures, 3rd edition

Physical examination. There was insufficient evidence to support many of the components of physical examination as effective screening procedures, but US Preventive Services Task Force recommendations were presented when available. The Project Advisory Committee's decision to recommend a physical examination at every visit reflected the importance to parents of receiving reassurance about their child's physical health. The guidelines also recommend that clinicians monitor growth parameters (length or height, weight, head circumference, weight-for-length in infants, and body mass index [BMI] beginning at age 24 months).

Screenings. The guidelines recommend universal screening for newborn metabolic disorders, hemoglobinopathy, delays in development, autism, psychosocial strengths and difficulties, eye abnormalities (amblyopia, strabismus, defects in visual acuity), hearing deficits, anemia, oral health problems, blood pressure measurement at age 3 years and up, and lead exposure at certain ages. Under specific circumstances, screening is recommended for tuberculosis, dyslipidemia, chlamydia, gonorrhea, HIV, syphilis, cervical dysplasia, alcohol or drug use, and elevated blood pressure in children younger than 3 years of age.

Immunizations. The Bright Futures guidelines recommend that health care professionals follow the recommendations published each January by the CDC's Advisory Committee on Immunization Practices.

Anticipatory guidance. The evidence experts found that many anticipatory guidance topics have not been studied in a randomized controlled trial. They used morbidity and mortality data for each age group and scientific studies related

to risk factors and prevention when available. From a broad set of topics in healthy development, nutrition, physical activity, safety, oral health, mental health, family support, and injury and disease prevention, they selected 5 anticipatory guidance topics of particular importance to each of the 33 visits. For example, the 5 priority topics for the first visit in infancy are family readiness, infant behaviors, feeding, safety, and routine baby care. The 5 priority topics for an adolescent visit are physical growth and development, social and academic competence, emotional well-being, risk reduction, and violence and injury prevention. The guidance emphasizes that parental (and youth) concerns should predominate in prioritizing anticipatory guidance for a particular visit.

Bright Futures Guidelines and Community Child Health

In recognition of the fact that good health requires more than clinical encounters, the Bright Futures guidelines provide tools and resources to enhance the community-based system of care that surrounds the child and family. As stated in the Bright Futures 3rd edition, community-based care "recognizes the critical role of the environment in influencing child health and in promoting family well-being" [1]. The comprehensive care needed by each child consists of primary care provided in a medical home and an array of additional services including substance abuse treatment, language assistance, respite care, recreation opportunities, services for children and youth with special health care needs, and services relating to housing, employment, education, and mental health. The guidelines mention state Title V (Maternal and Child Health) agencies, early care and education providers, schools, the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), and parent support programs such as Family Voices as key partners in improving the child health system of care. It is critical for primary care providers to link parents and children to these and other community organizations in order to successfully implement the guidelines.

Implementation of the Bright Futures Guidelines

To establish feasibility and to support implementation of the guidelines, the Bright Futures team has developed a toolkit for practitioners and parents [12], which includes previsit questionnaires, documentation templates, and anticipatory guidance handouts. The team has also identified and tested national practice-based quality improvement (QI) strategies. Results have not yet been published, but early reports indicate that these strategies appear to be promising ways of improving care [13].

The articles in this issue of the NCMJ cover the implementation of select Bright Futures guidelines. Some commentaries relay North Carolina-specific information, while others delve more deeply into a particular aspect of the guidelines.

The North Carolina Community Care Network has been an invaluable asset: This network of Medicaid providers assures a medical home for each Medicaid beneficiary and offers a framework for practice improvements such as adherence to the Bright Futures guidelines. That said, we know that some infants, many children, and even more adolescents do not receive all of the recommended care, all of the time, in effective ways.

North Carolina Medicaid's Health Check program covers the preventive services outlined in the guidelines and has been a national leader in implementing bundled rates for financing the menu of services. In his sidebar, Skwara [14] reports on the participation rates of North Carolina's eligible children and the strategic partnerships formed to increase participation in underserved and at-risk populations.

Several commentaries in this issue of the NCMJ highlight opportunities for improving developmental and behavioral outcomes for North Carolina's children. Earls [15] underscores the emphasis of the Bright Futures guidelines in identifying child and family strengths, as well as the child's or adolescent's developmental delays, learning and behavior problems, and social-emotional needs. Also in her commentary, she points to the "primary care advantage" in providing timely anticipatory guidance, identifying and addressing emerging psychosocial problems, facilitating referrals for further assessment and intervention, and managing the child's care with other specialists. In addition, Earls describes several of North Carolina's effective quality-improvement initiatives to facilitate implementation of screening for developmental and behavioral problems. Shapiro [16] summarizes recent advances in brief parenting interventions that can be feasibly delivered in primary health care settings in response to parental concerns or observed problems. Miller [17] comments on the benefits of integrating a social worker into the pediatric medical home to promote mental health across the pediatric age span and to provide, coordinate, and monitor mental health services.

Overweight and obesity remain a problem for youth in North Carolina and the nation. It is imperative that providers incorporate screening and appropriate interventions for youth who face these issues. Perrin and Skinner [18] voice concern about the high rates of overweight and obesity among North Carolina children and the low rates of healthy behaviors such as physical activity and sound dietary choices. The authors make a strong case that primary care providers can improve outcomes for their patients by measuring BMI (as recommended in the guidelines), communicating the results to parents, implementing interventions to prevent obesity, and using effective methods to change behaviors of children with abnormal BMIs.

Immunization is an important preventive strategy to improve population health by reducing communicable disease, and vaccinations have been proven to save lives. Despite this, however, not everyone who should get vaccinated does. In their commentary, Walter and Chung [19]

highlight the rationale for immunizing preteens with recently developed vaccines and strategies for improving North Carolina's preteen vaccination rates. Shapley-Quinn [20] describes in her sidebar the management of a pertussis outbreak in an Alamance County elementary school.

Children face other concerns such as lead exposure. While this public health problem is less of an issue—in terms of prevalence—than it has been historically, it is entirely preventable. Crotty and Eldridge [21] highlight recommendations for lead screening and discuss new thresholds for counseling, abatement services, and chelation therapy.

Just as with adults, certain behaviors such as substance use and sexual behavior also impinge on the health of youth in North Carolina. These behaviors can lead to serious short and long-term consequences. Erausquin, Essick, and Hildebrand [22] report on the prevalence of some sexual and substance use behaviors as measured by the 2011 North Carolina Youth Risk Behavior Survey. They note that results of the survey confirm the need to screen sexually active adolescents for sexually transmitted infections (STIs) and the need to screen North Carolina's school-aged populations for substance use. In her commentary, Matkins [23] focuses on sexually transmitted infections (STIs), reviewing their epidemiology in North Carolina adolescents and summarizing current recommendations for STI screening, testing, and treatment.

Several articles discuss community-level interventions to complement the clinical activities recommended in the Bright Futures guidelines. Mims and Lisenbee [24] highlight North Carolina's low breastfeeding rates and discuss strategies for improving them through a hospital-based initiative. Lazorick, Crawford, and Hardison [25] describe an effective interdisciplinary, school-based obesity treatment program that combines a nutrition, physical activity, and technology curriculum with a Web-based resource system; early results indicate that the program brings about substantial and sustained improvements in healthy weight and improvements in fitness. Goodwin [26] describes the efforts of Safe Kids North Carolina to enlist the Governor's Highway Safety Program, fire stations, the US Drug Enforcement Administration, the State Bureau of Investigation, North Carolina Riverkeepers, and media outlets in preventing injuries to North Carolina's children.

Finally, North [27] offers practical guidance on delivering recommended preventive services in a child- and family-centered way that recognizes both the opportunities and limitations of the clinical encounter.

A Cautionary Note

A number of issues deserve the attention of child advocates as section 2713 of the ACA is implemented, in North Carolina and elsewhere. First, children's access to preventive services will be harmed if health care providers are required to absorb the elimination of cost-sharing for families. Advocates will need to work assertively to prevent

insurers from passing the cost of copayments on to health care providers. Second, the impact of pediatric preventive services coverage on insurance premiums should be minimal, and such concerns should not be used to delay or deny these benefits for children. Third, clarification will be needed about which governmental entities will be responsible for enforcing the various parts of section 2713. And finally, assistance and coordination will be necessary to incorporate Bright Futures guidelines into electronic medical records.

In North Carolina there is an additional concern. The North Carolina General Assembly has recently discontinued the state's 16-year-old universal vaccine program. This state-federal-private partnership, built on the federally supported Vaccine for Children program for publicly insured children, made possible the administration of childhood vaccines in the medical home to children of any insurance status, and it significantly improved children's vaccination rates in North Carolina [28]. The universal vaccine program also strengthened pediatric medical homes as one-stop locations for preventive services. Discontinuation of the universal vaccine program means that pediatric providers must absorb the expense of purchasing and managing a separate supply of vaccines for privately insured patients, while also meeting all of the storage, monitoring, and documentation requirements of the Vaccine for Children program. This burden is causing some pediatric practices to discontinue part or all of their immunization services. Between 2009 and 2011, as funding for the universal vaccine program decreased, North Carolina's immunization ranking among states dropped from 4th to 24th, according to the National Immunization Survey [29]. Furthermore, without immunizations to incentivize families' participation in other preventive services of the medical home, there is a real risk that the full array of benefits called for by the Bright Futures guidelines will be underused.

On January 1, 2014, the ACA will begin requiring new insurance plans to cover the immunizations recommended by the CDC's Advisory Committee on Immunization Practices, without copayments. It will be important to advocate for coverage of vaccines by all insurance plans so that immunizations (as well as other recommended preventive services) will be available in pediatric medical homes.

Final Thoughts

The agenda for the current Bright Futures guidelines is bold and comprehensive. Critics have argued that the guidelines are overly ambitious and that recommendations should have been limited strictly to those for which there is the highest level of evidence. To its credit, the Bright Futures team has put into place a lively research agenda to advance the evidence base. To the credit of those authoring the regulations that interpreted section 2713 of the ACA, the stakes were considered too high to wait for definitive findings of this research.

The height of these stakes was affirmed in papers recently published in the journal *Pediatrics* [30, 31]. Drawing

from the diverse fields of neuroscience, molecular biology, genomics, developmental psychology, epidemiology, sociology, and economics, Shonkoff and colleagues [30] describe how early childhood experiences and environmental influences affect brain architecture. They report that toxic stress—caused by chronic adverse influences such as recurrent physical and emotional abuse, poverty, absence of both biological parents, or alcoholism, drug abuse, and mental illness in household family members—is likely to cause impairments in learning, behavior, and both physical and mental health across the life span. The authors state that “many adult diseases should be viewed as developmental disorders that begin early in life,” and they note that “persistent health disparities associated with poverty, discrimination, or maltreatment could be reduced by the alleviation of toxic stress in childhood” [30]. These transformational findings of brain science affirm the importance of offering support and guidance to families of young children about the most effective ways to nurture and care for their children; identifying, as early as possible, problems that emerge in the children themselves and in their physical and emotional environment; and intervening with appropriate health and human services when problems are identified.

For all of these reasons, implementation of section 2713 of the ACA offers North Carolina an extraordinary opportunity to improve the health of its young people and the adults they will become. We should position ourselves to take full advantage of this opportunity. **NCMJ**

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