

PERFORMING PREVENTIVE SERVICES

A Bright Futures Handbook

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FOREWORD

This book is addressed and dedicated to those health professionals who provide our children with their preventive health care services. It has been designed to accompany the newly revised Bright Futures Guidelines published by the American Academy of Pediatrics. In fact, those individuals who wrote and edited the new Bright Futures Guidelines spent countless hours offering the editors of this book useful guidance and reviewing multiple drafts, and for this we are truly grateful. This book has been designed to provide guidance about how best to actually provide the preventive services suggested in the Bright Futures Guidelines. Nationally renowned experts were chosen to review the scientific and medical literature about the most effective and efficient ways to deliver the preventive services suggested by the Bright Futures Guidelines.

The content of this book has been arranged for ease of use and to accompany the Bright Futures Guidelines. Topics vary from how to perform and bill for office-based screening for vision and hearing, obesity and its complications, child development, depression, and behavior problems, to tobacco dependence and parental literacy or depression, as well as how to provide counseling about topics critical to children's health and development. It has been designed for ease of use as well as to offer the very best suggestions about how to provide our children with the very best preventive services currently available. If it helps those clinicians providing these vitally important services, we will have achieved what we set out to do. Good luck!

Michael Weitzman, MD, Editor

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PRIORITIES IN WELL-CHILD CARE

Well-child care accounts for 25% of visits to primary care practitioners for children younger than 15 and 40% for children younger than 1 year.¹ These visits constitute a large percentage of pediatricians' time, with the average time for preventive care visits ranging from 16 to 19 minutes²⁻⁴ (slightly more for adolescent visits⁵).

Although pediatricians and parents are generally satisfied with the time available for these visits,⁴ some ambivalence remains. Most pediatricians (53%) report that they have enough time,⁶ but many say lack of time (85%) and the need to prioritize among preventive care topics (47%) are barriers to implementing recommended preventive care services.⁵ Parents do not always have sufficient time to have their needs fully addressed. Though most (88%) report having enough time during preventive care visits, a significant number of parents (34%) say they were not able to ask all of their questions.⁷

Responding to the Population Served

Pediatricians individualize care by making choices about what to include and omit during well-child care visits. Little information is available about what guides these decisions but, ideally, pediatricians are considering (1) the needs of the families and community they serve, (2) the needs of the child and family, (3) the outcomes they intend to achieve, and (4) the preferences of the parents and child.

Successful pediatric practices prioritize care based on a general understanding of their patient populations. This means they are able to respond not only to the needs of individual families, but also to the community as a whole. Practices can structure their care to be efficient and effective by knowing the demographics of the families they serve, the resources available in their community, and through relationships with other professionals who serve or care for their patients.

Meeting the specific needs of the individual child and family requires that the practitioner first gather information and then provide services that are appropriate for the child's level of risk and development. Some information is obtained through standardized assessments, with a special focus on child development and behavior and the psychosocial issues faced by the family. In general, lower-risk families receive services primarily intended to promote optimal development to prevent the onset of illness or injury. Higher-risk families may receive similar primary prevention services and, in addition, are given detection and intervention services to reduce the likelihood of health or developmental problems becoming clinically apparent. Preventive care for children with established, chronic problems should also include services to minimize the progression of their conditions so they do not further limit the child's physical, emotional, or social functioning.⁸

Making the Most of the Well-Child Care Visit

Decisions regarding which issues to address must be made jointly by the family and the health care practitioner. Research has shown that patient satisfaction and compliance increase when the patient—or the patient and family—play an active role in determining the purpose of the visit, identifying problems of concern, and planning a management strategy.⁹ Given the many services available during a well-child visit, patients and parents can help prioritize by identifying topics that need not be covered.

To further prioritize among the possible care options in a time-limited visit, the family and health care practitioner should agree on the specific, desired outcomes of the visit and of well-child care during the current developmental stage. In general, the outcomes of well-child care include

- The child's physical health and development
- Emotional, social, and cognitive development
- The family's capacity and functioning

Although outcomes can focus on both the long and short term, it is important to remember that well-child care can affect the seemingly distant future for both child and family. For example, altering dietary habits in childhood or adolescence can help prevent heart attacks during middle age. Positive parenting can avoid adult depression and substance abuse.¹⁰ Researchers are increasingly recognizing the importance and impact of early life experience and health behaviors on health and well-being in later life.¹¹

Alternatively, short-term outcomes focus on current development. In early childhood, one outcome of well-child care is being ready for school entry. According to a recent consensus document, school readiness includes the 6 domains of physical well-being; social, emotional, cognitive, and language development; and acquisition of general knowledge.¹²

Building on these concepts, Box 1 proposes outcomes of well-child care that should be achieved by or for children by the time they are 5 years old. Not all of these outcomes are the sole responsibility of the pediatric practitioner.

The outcomes in italics are ones to which *well-child care ideally should contribute, but for which it should not be held accountable*. During well-child care visits, the practitioner should determine how the child and family are progressing toward the desired outcomes. Specifying the outcomes for well-child care, assessing progress, and using the outcomes to help prioritize the content of care will help improve the quality and value of preventive pediatric care. It is the equivalent of developing a care management plan for children with acute or chronic health problems.

What About Evidence?

Some argue that one way to prioritize the content of well-child care is to only offer services that have evidence of effectiveness. Although this approach may be effective in other areas of pediatric care, much of well-child care has not been subjected to the scrutiny of researchers.¹³ Further, most of the existing research does not adhere to high methodological standards.¹⁴ Some important preventive services have been studied, however, and found effective, and should be provided in accordance with the recommendations cited in Box 1.^{15,16} Even when evidence supports the provision of a service, individual differences in patients' or parents' receptivity and in the practitioners' skills may limit its effectiveness.

Changing the Structure of Well-Child Care

Providing appropriate and effective well-child care efficiently will require systemic changes in how that care is organized.¹⁷ Some suggestions include

- Improve appointment and reminder systems to reduce missed appointments and wasted time. Mail and telephone reminders can improve appointment-keeping. Advanced access systems decrease the interval between when appointments are made and when they occur.
- Waiting time should be reduced and used in a structured way to collect clinical data. The time patients spend alone in waiting rooms and examination rooms is approximately equal to the time they spend with clinical staff.¹⁸

Box 1. Outcomes of Well-Child Care at Age 5

Physical Health and Development

- No undetected hearing problem
- No undetected vision problem/normal vision or corrected optimally
- No chronic health problem without a management plan (eg, asthma, neuromotor disability)
- Immunization complete for age
- No undetected lead poisoning
- No undetected congenital anomalies/birth defects
- *No untreated dental caries*
- *Good nutritional habits and no obesity; attained appropriate growth and weight*
- *No exposure to tobacco smoke*
- *Physically safe environments for living and traveling*

Emotional, Social, and Cognitive Development

- No unrecognized or untreated developmental delays (ie, emotional, social, cognitive, communication)
- *Child has good self-esteem*
- *Child recognizes relationship between letters and sounds*

- *Child has positive social behaviors with peers and adults*

Family's Capacity and Functioning

- Parents are knowledgeable about child's physical health status and needs
- No unrecognized maternal depression, family violence, or family substance use
- No undetected early warning signs of child abuse or neglect
- Parents feel valued and supported as child's primary caregiver and function in partnership with the child's health care practitioner
- Parents understand and are able to fully use well-child care services
- *Parents read regularly to the child*
- *Parents are knowledgeable and skilled to anticipate and meet a child's developmental needs*
- *Parents have access to consistent sources of emotional support*
- *Parents are linked to all appropriate community services*

- A variety of screening instruments is available to assess biopsychosocial risks and strengths, health and developmental status, and health behaviors. These instruments should be used routinely, according to a schedule appropriate to the age and circumstances of the patients and their families. Some of this information is available during the prenatal period and should be obtained then, if possible.
- Health records should be computerized, but even hard copy records should include preventive services summary sheets to prompt clinical staff to provide essential services and record their provision.
- The schedule for well-child care should be individualized, and the contents of preventive care packaged into a series of modules. The provision of these modules will be determined by the patient's age, health status, previously received services, biopsychosocial risks, and the desired outcomes of care as determined jointly by the health care practitioner and family.
- At the conclusion of a well-child care visit, the family should receive an explicit care plan, including any necessary referrals and follow-up.

- Practices must know the referral resources in their community and have an organized approach to using them.
- Finally, responsibility for the various processes involved in well-child care should be reviewed by each practice and assigned to the staff member best able to complete that task effectively and efficiently.

References

1. Hing E, Cherry DK, Woodwell DA. National ambulatory medical care survey: 2003 summary. *Adv Data*. 2005;(365):23–24
2. LeBaron CW, Rodewald L, Humiston S. How much time is spent on well-child care and vaccinations? *Arch Pediatr Adolesc Med*. 1999;153:1154–1159
3. Norkin Goldstein EN, Dworkin PH, Bernstein B. Time devoted to anticipatory guidance during child health supervision visits: how are we doing? *Ambul Child Health*. 1999;5:113–120
4. Olson LM, Inkelas M, Halfon N, Schuster MA, O'Connor KG, Mistry R. Overview of the content of health supervision for young children: reports from parents and pediatricians. *Pediatrics*. 2004;113:1907–1916
5. American Academy of Pediatrics Division of Health Policy Research. Periodic Survey of Fellows: Executive Summary. Periodic Survey #56. Pediatricians' Provision of Preventive Care and Use of Health Supervision Guidelines. American Academy of Pediatrics Web Site. 2004. <http://www.aap.org/research/periodicsurvey/ps56exs.htm>
6. Cheng TL, DeWitt TG, Savageau JA, O'Connor KG. Determinants of counseling in primary care pediatric practice: physician attitudes about time, money, and health issues. *Arch Pediatr Adolesc Med*. 1999;153:629–635
7. Halfon N, Inkelas M, Mistry R, Olson LM. Satisfaction with health care for young children. *Pediatrics*. 2004;113:1965–1972
8. E. Schor. Should Children with Special Health Care Needs Have Separate Preventive Care Visits? *Arch Pediatr Adolesc Med*.
9. Starfield B, Steinwachs D, Morris I, Bause G, Siebert S, Westin C. Patient-doctor agreement about problems needing follow-up visit. *JAMA*. 1979;242:344–346
10. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: the Adverse Childhood Experiences (ACE) study. *Am J Prev Med*. 1998;14(4):245–258
11. Halfon N, Hochstein M. Life course health development: an integrated framework for developing health, policy, and research. *Milbank Q*. 2002;80(3):433–479
12. Rhode Island KIDS COUNT. *Getting Ready: Findings from the National School Readiness Indicators Initiative: A 17-State Partnership*. Providence, RI: Rhode Island KIDS COUNT; 2005
13. R. D. Sege and E. De Vos, Evidence-Based Health Care for Children: What Are We Missing?, The Commonwealth Fund, April 2010.
14. Moyer VA, Butler M. Gaps in the evidence for well-child care: a challenge to our profession. *Pediatrics*. 2004;114(6):1511–1521
15. Regalado M, Halfon N. Primary care services promoting optimal child development from birth to age 3 years. *Arch Pediatr Adolesc Med*. 2001;155:1311–1322
16. Gielen AC, McDonald EM, Wilson MEH, et al. Effects of improved access to safety counseling, products, and home visits on parents' safety practices: results of a randomized trial. *Arch Pediatr Adolesc Med*. 2002;156:33–40
17. D. Bergman, P. Plsek, and M. Saunders, A High-Performing System for Well-Child Care: A Vision for the Future, The Commonwealth Fund, October 2006
18. American Academy of Pediatrics Division of Health Policy Research. Periodic Survey of Fellows: Executive Summary. Periodic Survey #43—Part 1. Characteristics of Pediatricians and Their Practices: The Socioeconomic Survey. American Academy of Pediatrics Web Site. 2000. <http://www.aap.org/research/periodicsurvey/ps43aexs.htm>