Rethinking Well-Child Care
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Pediatrics 2004;114:210-216
DOI: 10.1542/peds.114.1.210

This information is current as of December 16, 2005

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http://www.pediatrics.org/cgi/content/full/114/1/210


ABBREVIATIONS. AAP, American Academy of Pediatrics.

Well-child care is a core service of pediatrics, but it receives little emphasis in pediatric training, reluctant consideration by insurers, and rare attention from researchers. Although it encompasses a variety of health-promoting and disease-preventing services, the desired outcomes of well-child care and quality standards for its provision have not been specified. It is not surprising, then, that preventive care services, as they are being provided currently, are not meeting the needs of many families, especially families with the most vulnerable children. The quality of child health supervision varies greatly among physician practices, and parents are signaling their dissatisfaction by failing to obtain approximately one-half of recommended preventive care services. In addition, evidence of effectiveness is lacking for much of the content of well-child care, which may jeopardize both its place as a covered insurance benefit and its reimbursement. It is time for major revision of well-child care, taking into account the varying needs of individual children and families, the operation of child health care practices, and the broad issues of access to primary care and payment for services within the US health care system. Because preventive health care for children, at least as it occurs within well-child visits, is authoritative guided by the American Academy of Pediatrics (AAP) Recommendations for Preventive Pediatric Health Care, otherwise known as the periodicity schedule, review and revision of well-child care must begin with that document.

BACKGROUND

Historically, the field of pediatrics has been as concerned with promoting children’s health and development as with treating children’s diseases. The current need to return to this holistic approach is evident in the trends in children’s health status. Children’s physical health is better than it ever has been. Scientific progress has led to substantial reductions in many of the acute morbidities of the early 20th century and increasing survival from acute illness and premature birth. However, increasing survival has led to a higher prevalence of “new morbidities” such as obesity, attention-deficit/hyperactivity disorder, behavior disorders, depression, and adolescent risk behaviors has become more obvious, and the incidence is increasing. Applying a broad definition of health would lead to the conclusion that there are many unmet needs among children and families and the term “well-child care” is applicable to fewer children.

Other changes within the profession have significantly altered how general pediatricians spend their time. Although pediatric training has emphasized the care of seriously ill children, current trends are increasingly putting the care of such children in the hands of hospitalists, emergency care physicians, and pediatric subspecialists. Unfortunately, the remaining and emerging functions of general pediatricians have been relatively neglected in their professional education. This neglect is not based on a lack of knowledge. During the period in which these changes have occurred, the amount of information about how to promote children’s health and development has been dramatically increasing.

The quality of preventive care for children varies greatly. Among a Medicaid population, only approximately one-fifth of children received preventive and developmental services that met a basic threshold of quality for each aspect of care assessed. A national survey of parents found that >94% of parents reported ≥1 unmet need for parenting guidance, education, or screening by pediatric clinicians in ≥1 of the content of care areas. In general, substantially less than one-half of children and adolescents receive developmental and psychosocial surveillance, disease screening, and anticipatory guidance (P. J. Chung, MD, et al, unpublished data, 2003). More than deficiencies in the education of pediatricians account for these findings. Lack of standards of care and sometimes-unrealistic expectations about the content of well-child care contribute to this variability. Also prompting a reexamination of well-child care is the national attention being placed on reducing medical errors of commission and omission and improving quality by relying on evidence-based medical care approaches. The need to be able to justify or at least rationalize preventive health care for children is rapidly increasing. That rationale must be apparent in the documents guiding the provision of preventive child health care. Therefore, it is time for a serious review of the process of well-child care and the periodicity schedule that guides it.

From the *Commonwealth Fund, New York, New York.
Received for publication Jun 23, 2003; accepted Oct 27, 2003.
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THE PERIODICITY SCHEDULE

The structure of well-child care in pediatrics is provided by the Recommendations for Preventive Pediatric Health Care,1 the periodicity schedule, produced by the Committee on Practice and Ambulatory Medicine of the AAP. This document recommends scheduled well-child visits and is a matrix of potential categories of preventive services, organized according to the age of the child. The matrix is accompanied by a preamble and by a large number of footnotes that provide important guidance and caveats for its use.

It is difficult to overstate the importance of this document in shaping the schedule and content of well-child care in the United States. The periodicity of the schedule is reflected in the organization of the 2 leading references on the content of preventive care for children, ie, Bright Futures2 and Guidelines for Health Supervision,3 and in pediatric screening forms and medical record systems, parent-held records, and numerous booklets and brochures for parent education. Federal regulations require state Medicaid programs to set their own schedules for periodic screening and to consult with “recognized medical organizations involved in child health care” in developing these standards.4 Consequently, state Medicaid program early periodic screening, diagnosis, and treatment services frequently draw directly from the recommendations of the AAP. In the past, private insurers based their well-child care benefits on the AAP periodicity schedule; however, some managed care organizations, such as HealthPartners in Minnesota, have questioned the value of many of the visits and have decided to cover fewer visits during the first year of life.5

Despite its importance, the current periodicity schedule has become anachronistic and, like its predecessors, it is not a scientific document. The first schedule for preventive child health care was produced in 1967 by the Council on Pediatric Practice of the AAP.6 The council acknowledged its subjective origins and anticipated that revision would be needed. They wrote, “The Schedule for Preventive Child Health Care represents an amalgamation of schedules used in various clinics and private offices and may not prove feasible for all situations. Modifications will, no doubt, be made in the future.”7 The original council and its successors also designed the schedule to allow preventive care to be individualized to suit the patient and the practice. The current recommendations commence, “Each child and family is unique; therefore these Recommendations for Preventive Pediatric Health Care are designed for the care of children who are receiving competent parenting, have no manifestations of any important health problems, and are growing and developing in a satisfactory fashion. Additional visits may be necessary if circumstances suggest variations from normal.”8 A large proportion of children and families certainly fall into the latter category, but there is no evidence that pediatricians often individualize the visit schedule.

It is difficult to ascertain the extent to which promoting children’s development has guided the structure of well-child care. The original periodicity schedule seems to have been strongly influenced by the schedule for immunizations recommended in the report of the Committee on the Control of Infectious Diseases.9 The immunization schedule at that time called for 15 visits between birth and 16 years of age, 6 of which were for skin testing for tuberculosis. The preventive care schedule recommended 28 visits during the same period, including annual visits beginning at age 3 years. The influence of the immunization schedule may be inferred from the concordant recommendations for only alternate-year immunizations and tuberculosis testing after age 4 years and the later recommendations by the council, in 1977,10 for only alternate-year preventive care visits after age 6 years. The significant overlap between the immunization and well-child visit schedules may account for the belief of many parents that receiving immunizations is equivalent to receiving well-child care and for the decrease in attendance at well-child visits when no immunizations are scheduled.

The periodicity schedule has been modified by the AAP many times since its introduction. Each change led to a more extensive document and often to more responsibilities for child health care professionals. In addition, many of the components of well-child care that are noted in the schedule can be linked to extensive policy statements and other recommendations about the content of care. Decades of accretion have led to a rich but unwieldy document and to unreasonable expectations of practicing pediatricians.

Even the original council expected preventive care visits to be a challenge to accomplish well. They recognized that the quality of care they outlined would require close to 30 minutes per visit, but they thought that other staff members in the practice could perform approximately one-half of the examination and the physician could complete the remainder in ~15 minutes. The need to rely on other health care personnel and to omit certain items of the physical examination during some visits was acknowledged, but the importance of continuity of care by “the child’s personal physician” was also clear.11

PARENTS’ EXPECTATIONS

Most parents acknowledge that they need advice on raising children,12 and several recent surveys found that parents expect pediatricians to provide information on child development and parenting as well as on physical aspects of health.13–15 There also is evidence that parents adhere to child-rearing recommendations they receive from child health care providers, such as breastfeeding their infants, putting infants to sleep on their backs, avoiding the use of physical discipline, and reading to their children.16–18

Furthermore, when queried, parents seem to be quite satisfied with the care they receive. In 1 study, the majority (67%) of parents whose children had a regular source of care reported that their child’s physician did an excellent job of providing overall pediatric care and listening carefully to and answering
questions. Physicians seem to be meeting the expectations of white, nonpoor, and insured families better than those of other families, who are 2 to 4 times more likely to be dissatisfied with the care their children receive, especially in the areas of the child’s growth and development and listening to and answering questions.

Regarding the quality of care, there is evidence that physicians are not using fully their opportunities to provide preventive developmental and psychosocial services during well-child care. Thirty-six percent of parents of young children who responded to a national survey reported that they had discussed none of 6 important topics that were of strong interest to them and were recommended for inclusion in preventive care visits by the AAP. Nearly all of the parents had ≥1 unmet need for child health-related parenting guidance, education, or screening by pediatric clinicians in ≥1 of the 4 areas assessed, ie, anticipatory guidance and parent education, family psychosocial risks, substance use, and family-centered care. Another study found that 40% of parents were not asked whether they had concerns about their children’s learning, development, or behavior. Opportunities to help parents are being missed, because parents are ≥3 times as likely to receive information to address their concerns if the pediatric clinician inquires about their concerns. Parents whose questions are answered report being more confident in their parenting and less concerned about their children’s development.

In addition, it seems that parents have not received sufficient information to understand or appreciate well-child care, because they are not using preventive services to the extent they are recommended. Current recommendations suggest a total of 6 well-child visits from birth through 1 year of age. On average, families report attending only 2.2 preventive visits and 1.7 other visits during the child’s first year and 0.98 preventive visits during the following year, when 3 preventive visits are recommended (E.L.S., data from the Medical Expenditure Panel, 2000). Nationally, only 26.9% of young children are up-to-date with their immunizations (≥3 doses of diphtheria-pertussis-tetanus vaccine, ≥3 doses of poliovirus vaccine, and ≥1 dose of a measles-containing vaccine) by the end of their 12th month; that rate reaches 82.7% by 2 years of age.

**EXPERIENCE IN PRACTICE**

Well-child care comprises a substantial portion of pediatric practice, accounting for 22% of an average pediatrician’s patient contacts; for children 0 to 1 year of age, well-child care comprises 57% of all ambulatory visits (E.L.S., data from the Medical Expenditure Panel, 2000). A large portion of the recommended content of preventive pediatric health care is devoted to developmental services, such as obtaining a developmental history and eliciting parental concerns, screening for developmental and behavioral risks and problems, providing anticipatory guidance, assessing identified risks and problems, counseling about or otherwise treating problems, initiating necessary referrals, and coordinating related and subsequent care. These services represent the primary opportunity for prevention or early intervention for the vast array of developmental and behavioral problems that are so prevalent in American society and are of great concern to parents. However, pediatricians seem to be ambivalent about these aspects of well-child care. Pediatricians spend 18.3 minutes during an average preventive care visit for children <36 months of age, and 79% think that this amount of time is about right; paradoxically, only 46% of pediatricians agree that there is sufficient time to perform developmental assessments, and only 16.3% agree that there is enough time to address family psychosocial problems. It can reasonably be concluded that the majority of pediatricians are not addressing developmental and psychosocial issues adequately.

**BARRIERS TO HIGH-QUALITY PREVENTIVE CARE**

Queries of pediatricians yield a convincing list of barriers to providing the preventive services that are recommended, barriers that urgently need to be addressed. Time constraints, low levels of reimbursement for preventive pediatric care, lack of reimbursement for specific developmental services, lack of training in child development, lack of trained nonphysician staff members, limited access to community services to support families and children, and few external incentives have all been reported as reasons why the needs of children and families for preventive pediatric care services are not being fully met. Most of these barriers are systemic rather than personal. As a group, pediatricians are committed to providing high-quality care to their patients; it seems there simply is too much to do.

**THE RIGHT THING FOR EACH CHILD AT THE RIGHT TIME**

A recent study suggested that it is not possible, in the time available, to provide even the few preventive services most highly recommended by the US Preventive Services Task Force. Nor is it possible to respond effectively to the myriad recommendations for the content of well-child care, such as those in Bright Futures, or to the new recommendations that committees of the AAP frequently suggest. However, one can hardly argue with any of the thoughtfully proposed recommendations, and practicing pediatricians are left having to decide what not to do. A national report made the point quite succinctly, “The current care system cannot do the job. Trying harder will not work. Changing systems of care will.” Pediatricians cannot squeeze more into the limited time they have available for each well-child visit. The approach to preventive care, including the timing and content codified by the current periodicity schedule and the processes by which care is provided, needs to be changed.

**CHANGING WELL-CHILD CARE: A ROAD MAP TO QUALITY**

Many experts in the field of preventive care balk at the idea of tampering with the current periodicity schedule and related recommendations for care.
They know that the current system of preventive care for children is not very scientific, and they also know that only a few of the recommendations for the content and processes of well-child care are supported by evidence of effectiveness.25 Some fear that opening the system to scrutiny may promote its demise. However, few would argue that the principles of prevention on which well-child care is based are ill founded or that a lack of evidence is equivalent to evidence of inefficacy. To a large extent, the evidence does not exist because the research has not been performed. There is a pressing need for better, more rational, scientific guidance regarding preventive care for children, especially as it affects their development. However, much can be done to justify well-child care and to improve its quality while awaiting the generation of evidence.

CHANGING THE PERIODICITY SCHEDULE

Basing Periodicity on Child Development

It is time to rethink the content and processes of well-child care, to improve both efficiency and effectiveness. To begin, although there has been little research on the effectiveness of preventive pediatric care, there is a rich scientific base available to guide practice.26 Much of that guidance comes from the field of child and family development and is readily applicable to the structure and content of well-child care.27 Those findings and the changing lives of children and families in the United States should be used as the basis for a complete revision of the AAP Recommendations for Preventive Pediatric Health Care, the periodicity schedule. The revised visit schedule should include visits whose timing reflects or coincides with key transition points in the development and adaptation of children and their parents. An approximation of such a system, based on personal observations, has been advocated by T. Berry Brazelton28 for many years. As with the current schedule, additional visits may be necessary for some children and families who are having or are likely to have greater difficulty achieving a normal developmental trajectory. Some families may need fewer visits. Therefore, it should be possible to justify each visit on the basis of scientific findings while evidence of effectiveness is accumulating. Such a schedule should readily accommodate recommended immunizations, which are likely to change substantially during the coming decade, but the schedule for immunizations would no longer drive the timing of well-child care.

Naming Each Periodic Visit

The content of well-child visits must remain sufficiently flexible to allow parents to raise and clinicians to elicit and address current concerns. Education of parents is likely to be most effective during these teachable moments. However, the current system is not doing well conveying to parents the purpose and importance of each well-child visit. It is unlikely that the current, age-based schedule, which uses labels such as “the 6-month visit,” has any intrinsic meaning to parents. The fact that children attend fewer than one-half of the recommended well-child visits, even when financial barriers do not exist, suggests that parents do not value pediatric preventive services as they are currently provided.21 One way to give meaning and potentially greater value to well-child visits would be to name them. Each visit could be named to indicate the developmental issue that would be its focus, although not its exclusive content. For example, the 9-month visit might become the “Understanding Your Child’s Personality” visit, at which issues of temperament are discussed. Naming visits accomplishes several useful things. It allows pediatricians to prioritize the content of each visit without predetermining the exact content of anticipatory guidance and parent education. Naming is also a marketing device, making the value of each visit more clear. Named visits allow parents and their older children to anticipate some of the content of the visit and to formulate questions about the focus topic. The use of named visits also can facilitate negotiations between pediatricians and parents or adolescent patients, not only about the content of each visit but also about the necessity of each visit for that particular child and family, ie, truly family-centered care. Experienced parents may think they already know what they need to know about a particular topic, whereas the pediatrician may want to emphasize the need to individualize approaches to child-rearing. Negotiating the content of care increases agreement between the practitioner and the patient regarding problems that need to be addressed and is associated with a greater likelihood that the problem will be monitored by the practitioner, with greater improvement reported by the patient.29

Eliminating Inefficiencies

The need to improve the efficiency and effectiveness of well-child care is indisputable. One approach is to eliminate unnecessary procedures. Some routine well-child care content, such as performing a physical examination at each visit, likely is without value in identifying physical problems, although a modified examination can yield reliable information about children’s development.30,31 Similarly, developmental screening using a structured, validated, developmental screener needs to be performed but only a few times during the first several years of life if developmental surveillance is integrated into each preventive care visit.32 A revised schedule can give practitioners permission to omit routine but sometimes unnecessary care. A revision also could facilitate the sequential provision of services. Not every service needs to be provided to every child at every visit, and some services can occur at acute care visits. Some services can be provided individually, such as at a “shot clinic,” or provided outside the office setting, such as vision screening performed by some school systems. Preventive child health care should be a flexible and additive process, so that at the end of some interval comprehensive care has been provided and documented.
LOW-COST CHANGES TO OFFICE SYSTEMS
Using Time Before and After the Visit
It is not possible, in the time available, for pediatricians to adequately assess children and families for the large number of physical and psychosocial concerns that exist. The time periods before and after the face-to-face encounter between the child and the pediatrician should be structured parts of care. First, parents should be informed about the focus of the next visit and about other developmental issues they may anticipate and want to discuss. Such prompting, often provided in written form, can enhance the value of each visit, help identify concerns, save physician time, and cue the parent to raise important issues and the physician to discuss them. Such cueing is known to improve the quality of care. Second, standardized paper-and-pencil or computerized screening can routinely be performed in the office or at home before the family sees the physician. This can help parents organize their concerns, increase the amount of information that is available to the clinician, and can increase the efficiency of office visits. Screening should be guided by the periodicity schedule, and specific screening instruments should be recommended. Screening also should follow a logic model, so that some circumstances might prompt and others preclude completion of various screening instruments. Structured screening usually involves office or clinic staff members other than the physician, which can increase efficiency and promote teamwork, although communication within a practice requires time, which must be managed carefully. Third, advice, guidance, and counseling given during a preventive care visit should routinely be reinforced and enhanced with the judicious use of appropriate printed material and other media. Unfortunately, the volume of available printed material for parent education is staggering and the effectiveness of most material is unknown. The process of revising the periodicity schedule should include reviewing and recommending specific material associated with each visit.

Reminding Patients and Physicians
Research on various aspects of office practice and preventive care has identified a number of other changes that can improve the quality of well-child care. The relatively long interval between the time when parents make a preventive care appointment and the occurrence of that appointment is a problem, resulting in high “no-show” rates and missed opportunities for care. Shorter intervals between making an appointment and receiving care are ideal and can be achieved by using advanced accessing scheduling systems. In addition, mailed and/or telephone-delivered appointment reminder systems are effective in reducing missed appointments. For providers, a preventive services flowsheet in each child’s chart, on which the provision of preventive services can be documented, serves as an effective prompt to remind staff members and the pediatrician what services ought to be provided at a given visit.

STANDARDS FOR PREVENTIVE CARE QUALITY
To guide practice and to allow measurement of quality of care, a single authoritative source of standards for well-child care needs to be developed by the profession. Such a compendium would provide specific guidance on how to perform each preventive care procedure appropriately. A full spectrum of topics would be addressed, ranging from measuring and plotting the head circumference of an infant to performing a chlamydia screen for a sexually active adolescent. Little of this guidance is likely to be evidence-based, but there are sufficient scientific findings and experience to draw on. Much authoritative advice already exists in policy statements of the AAP and other professional organizations, but the sources are disparate and often difficult to access. Such a manual would be useful in the education of pediatricians and other child health care providers. It not only would serve as a source of standards for preventive care services but also would provide the basis for continuing and increased (it is hoped) support for these services.

THE COMMUNITY OF CHILD AND FAMILY ADVOCATES
Even the best pediatric practices cannot possibly expect to be able to meet all of the needs of children and families that must be met for children to achieve their optimal health and developmental potential. Pediatricians must make effective use of all of the resources in their communities that can serve their patients. Bright Futures, the most recent major effort to revise child health supervision, explicitly intended to engage not only health care professionals but also educators and families in providing well-child care in a “variety of settings and arrangements.” The AAP, through its Bright Futures activities, is currently partnering with other child health care organizations and agencies, but it needs to reach out even more. Intervention for a child identified as developmentally delayed rests with the early childcare and special education systems. The remediation system for severe behavioral problems is the juvenile justice system. Families without adequate income depend on the welfare system. Children whose parenting is considered to be harmful reside in the foster care system. The costs of hampered early development are borne by the education system and the national labor market. These systems and others are natural partners for pediatrics and pediatricians and should be enlisted not only in caring for individual children but also in formulating national policies that define the desired outcomes of, and thus support the need for, high-quality well-child care.

CONCLUSIONS
The high rates of children’s developmental problems, especially in the cognitive, emotional, and social domains of development, cannot be ignored; they indicate that children and families are not coping with the physical and emotional stresses in their lives. The pervasiveness of these morbidities and the burdens they place on families, society, and the chil-
dren themselves call for a concerted response to prevent them or at least to intervene early to ameliorate them. Pediatricians have a responsibility and an opportunity to help solve these problems, by providing high-quality, family-oriented, preventive health care, in the context of long-term relationships with children and their parents, and by enlisting the aid of other service providers in their communities on behalf of their patients.

There is evidence, however, that simply providing more of the well-child care that is currently available is unlikely to succeed. First, the current quality of preventive care for children is quite variable, and the needs of many children and parents are not being met. Second, developmental and behavioral problems of all types seem to be increasing and to be met. Second, developmental and behavioral problems of all types seem to be increasing and to be occurring at younger ages. Third, even parents who are satisfied with their children’s care report many unmet needs. Finally, the low rate of attendance at well-child visits is alarming and should be seen as evidence of a system of care that needs to be substantially overhauled. The existing guidance and approaches to well-child care are inadequate to the task and stand as barriers to effective and efficient care.

As a first step toward addressing these issues, the AAP should begin the much-needed process of thoroughly revising its Recommendations for Preventive Pediatric Health Care, on the basis of children’s development and families’ needs for education and support. This revision should incorporate the recommendations noted above and should integrate this work into the recently begun Bright Futures initiatives at the AAP. Those initiatives should look beyond schedules and their content and should consider that well-child care is, or should be, more than well-child visits. That consideration has broad implications for the organization, financing, and provision of child health care. The AAP also should continue with its efforts to help clinicians improve the efficiency of their practices, while sustaining and enhancing its efforts to define standards of high-quality preventive care.

Undertaking these activities is a daunting proposition, because the current approach to well-child care draws on a long tradition and is intimately associated with the education and practice of general pediatricians, insurance benefits and reimbursement policies, and the effectiveness of other systems, such as childcare and public education systems, on which families rely. If performed poorly, efforts at revision could jeopardize much that is central to pediatrics. In the absence of a rational scientific approach to and basis for preventive services for children, the future of primary care pediatrics is tenuous. If performed well, however, revisions could enhance the effectiveness not only of child health care but also of the other systems affecting children. The consequences of adopting a new periodicity schedule, more efficient care processes, and explicit standards for well-child care would include structured assessments, improved quality, and more individualized care.

ACKNOWLEDGMENTS

I gratefully acknowledge the substantial contributions of the anonymous reviewers of this manuscript.

REFERENCES

OUR PRODUCT-ORIENTED SOCIETY

“In recent years, more children are being named for luxury products. According to the Social Security Administration’s database of popular names given to babies, in 2000 there were 353 Lexuses, 298 Armanis, 269 Chandels, 24 Porsches, and 3,285 Tiffany’s.”


Submitted by Student
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Pediatrics 2004;114;210-216
DOI: 10.1542/peds.114.1.210

This information is current as of December 16, 2005

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