

Physical Education and Physical Activity: Results From the School Health Policies and Programs Study 2006

SARAH M. LEE, PhD^a
CHARLENE R. BURGESON, MA^b
JANET E. FULTON, PhD^c
CHRISTINE G. SPAIN, MA^d

ABSTRACT

BACKGROUND: Comprehensive school-based physical activity programs consist of physical education and other physical activity opportunities including recess and other physical activity breaks, intramurals, interscholastic sports, and walk and bike to school initiatives. This article describes the characteristics of school physical education and physical activity policies and programs in the United States at the state, district, school, and classroom levels.

METHODS: The Centers for Disease Control and Prevention conducts the School Health Policies and Programs Study every 6 years. In 2006, computer-assisted telephone interviews or self-administered mail questionnaires were completed by state education agency personnel in all 50 states plus the District of Columbia and among a nationally representative sample of districts ($n = 453$). Computer-assisted personal interviews were conducted with personnel in a nationally representative sample of elementary, middle, and high schools ($n = 988$) and with a nationally representative sample of teachers of required physical education classes and courses ($n = 1194$).

RESULTS: Most states and districts had adopted a policy stating that schools will teach physical education; however, few schools provided daily physical education. Additionally, many states, districts, and schools allowed students to be exempt from participating in physical education. Most schools provided some opportunities for students to be physically active outside physical education. Staff development for physical education was offered by states and districts, but physical education teachers generally did not receive staff development on a variety of important topics.

CONCLUSIONS: To enhance physical education and physical activity in schools, a comprehensive approach at the state, district, school, and classroom levels is necessary. Policies, practices, and comprehensive staff development at the state and district levels might enable schools to improve opportunities for students to become physically active adults.

Keywords: physical education; physical activity; schools; school policy; surveys.

Citation: Lee SM, Burgeson CR, Fulton JE, Spain CG. Physical education and physical activity: results from the School Health Policies and Programs Study 2006. *J Sch Health*. 2007; 77: 435-463.

^aHealth Scientist, (skeuplee@cdc.gov), Division of Adolescent and School Health, Centers for Disease Control and Prevention, 4770 Buford Highway, NE (MS K-12), Atlanta, GA 30341.

^bExecutive Director, (cburgeson@aahper.org), National Association for Sport and Physical Education, 1900 Association Dr, Reston, VA 20191.

^cEpidemiologist, (jklf2@cdc.gov), Division of Nutrition and Physical Activity, Centers for Disease Control and Prevention, 4770 Buford Highway, NE (MS K-46), Atlanta, GA 30341.

^dDirector, Research, Planning, and Special Projects, (cspain@osophs.dhhs.gov), President's Council on Physical Fitness and Sports, 200 Independence Ave SW, #738H, Washington, DC 20201.

Address correspondence to: Sarah M. Lee, Health Scientist (skeuplee@cdc.gov), Division of Adolescent and School Health, Centers for Disease Control and Prevention, 4770 Buford Highway, NE (MS K-12), Atlanta, GA 30341.

Regular physical activity can reduce risk for the development of chronic diseases among adults,¹ including cardiovascular disease,² cancer,³ and diabetes.⁴ Because participation in physical activity as a young person influences participation in physical activity as an adult, it can contribute to decreased risk for the development of such chronic diseases.⁵ Regular participation in physical activity as a young person contributes to healthy bone and muscle development, reduces feelings of depression and anxiety, and promotes psychological well-being.⁵ Further, regular physical activity reduces risk for the development of overweight among youth. In 2004, 18.8% of 6- to 11-year-olds and 17.4% of 12- to 19-year-olds were considered obese, and an additional 20.4% of 6- to 11-year-olds and 15.3% of 12- to 19-year-olds were considered overweight.⁶ (Note that these classifications of obese and overweight do not reflect the classifications used in the article cited but rather the June 2007 recommendations from the Expert Committee on the Assessment, Prevention, and Treatment of Child and Adolescent Overweight and Obesity convened by the American Medical Association [AMA] and co-funded by AMA in collaboration with the Health Resources and Services Administration and the Centers for Disease Control and Prevention [CDC].) Many youth become less active as they move from childhood into adolescence and adulthood.⁷⁻¹⁰

The US Dietary Guidelines for Americans recommend that young people (ages 6-19) participate in at least 60 minutes of moderate-to-vigorous physical activity on most, if not all, days of the week.¹¹⁻¹³ A substantial percentage of each student's recommended amount of physical activity can be provided through a comprehensive school-based physical activity program. The Institute of Medicine's *Preventing Childhood Obesity: Health in the Balance* report recommends that students be given the opportunity to participate in at least 30 minutes of physical activity during the school day.¹³ In 1997, the CDC published research-based *Guidelines for School and Community Programs to Promote Lifelong Physical Activity Among Young People*.¹⁴ These guidelines outline a comprehensive school-based approach to promoting physical activity through quality, daily physical education and other physical activity opportunities including recess and other physical activity breaks, intramurals, and interscholastic sports.^{14,15}

Quality physical education provides the unique opportunity for students to obtain the knowledge and skills needed to establish and maintain physically active lifestyles throughout childhood, adolescence, and into adulthood. A quality physical education program meets the needs of and is an enjoyable experience for all students. Additionally, it keeps students active for most of physical education

class time, teaches self-management as well as movement skills, and emphasizes knowledge and skills for a lifetime of physical activity.^{16,17} Through a rigorous review of physical activity intervention research, the Task Force on Community Preventive Services recommended school-based physical education as 1 intervention strategy for increasing physical activity among youth.¹⁶ The interventions reviewed provided specific strategies to increase active time during physical education and improve physical fitness among students. These specific strategies include improving curriculum and instruction, making physical education classes longer, and incorporating fitness activities into physical education classes. Other components of a comprehensive school-based physical activity program (eg, recess and intramural programs) reinforce what is taught in physical education by providing additional opportunities to apply physical activity knowledge and skills.^{14,17,18}

To support quality physical education, the National Association for Sport and Physical Education (NASPE) published the second edition of the *National Standards for Physical Education* in 2004.¹⁷ NASPE also has published other key documents on quality physical education, including *Opportunity to Learn Standards* and *Appropriate Practices* documents for physical education at the elementary, middle, and high school levels.¹⁹⁻²⁴

The importance of physical education and activity among young people is also supported by the following *Healthy People 2010* national health objectives:²⁵

- Objective 15-31: Increase the proportion of public and private schools that require use of appropriate head, face, eye, and mouth protection for students participating in school-sponsored physical activities.
- Objective 22-6: Increase the proportion of adolescents who engage in moderate physical activity for at least 30 minutes on 5 or more of the previous 7 days.
- Objective 22-7: Increase the proportion of adolescents who engage in vigorous physical activity that promotes cardiorespiratory fitness 3 or more days per week for 20 or more minutes per occasion.
- Objective 22-8: Increase the proportion of public and private schools that require physical education for all students.
- Objective 22-10: Increase the proportion of adolescents who participate in daily school physical education.
- Objective 22-12: Increase the proportion of the nation's public and private schools that provide access to their physical activity spaces and facilities for all persons outside of normal school hours.

Selected Federal Support and Related Research

The CDC currently funds education and health agencies in 23 states to support coordinated school health programs that emphasize the prevention of health-risk behaviors, including physical inactivity, associated with chronic diseases. The CDC also funds health agencies in 28 states to prevent obesity and other chronic diseases through a variety of nutrition and physical activity strategies and settings, including schools. In 2001, Congress authorized the US Department of Education to administer the Physical Education for Progress program as part of Title X of the Elementary and Secondary Education Act of 1965. Now titled the Carol M. White Physical Education Program (PEP), the program provides grants to local education agencies and community-based organizations to initiate, expand, and improve physical education for students in kindergarten through grade 12. The President's Council on Physical Fitness and Sport (PCPFS) serves as a catalyst to develop, implement, disseminate, and promote information and resources on physical activity, physical fitness, and sports programs for Americans of all ages and abilities. Following the 1996 launch of the Surgeon General's Report on Physical Activity and Health,⁵ the PCPFS added the Health Fitness Award (criterion-referenced standards) and Active Lifestyle Program (PALA) to the President's Challenge program, a presidential recognition program for physical activity and fitness that can be used within physical education settings. Finally, as part of the Child Nutrition and the Special Supplemental Food Program for Women, Infants, and Children (WIC) Reauthorization Act of 2004, school districts participating in the federal school meals program were required to develop local wellness policies.²⁶ These policies must address physical activity as well as nutrition education and nutrition guidelines.

In 1993, 1997, 2001, and 2006, NASPE conducted the Shape of the Nation Survey to examine the availability of and policies associated with physical education programs in each state.²⁷ In the 2001 and 2006 Shape of the Nation Surveys, existing physical education practices were also described for each state. The School Health Policies and Programs Study (SHPPS) was previously conducted in 1994²⁸ and 2000.²⁹ In 1994, SHPPS measured physical education and physical activity policies in kindergarten through grade 12 at the state and district levels and related practices in middle and high schools at the school and classroom levels. For SHPPS 2000, the study was expanded to include school- and classroom-level data from elementary schools. SHPPS 2006 expands the examination of school-based physical activity policies and practices outside physical education and recess, such as walk and bike to school programs and physical activity breaks.

This article describes for the first time findings from SHPPS 2006 about physical education at the state and district levels, including standards and guidelines, elementary school instruction, middle school instruction, high school instruction, physical education for students with disabilities, professional preparation, staffing and staff development, collaboration, evaluation, and physical education coordinators. The article also describes findings related to physical activity and interscholastic sports at the state and district levels, including elementary school recess, physical activity breaks, walk and bike to school programs, interscholastic sports coaches, and use of protective gear. At the school level, this article describes findings related to the following physical education topics: requirements, standards and guidelines, instruction, student assessment, physical education for students with disabilities, staffing and professional preparation, physical education coordinators, physical activity and discipline, and facilities. It also describes findings related to physical activity and interscholastic sports, including elementary school recess, physical activity breaks, walk and bike to school programs, intramural activities and physical activity clubs, interscholastic sports, and community use of facilities. At the classroom level, this article describes general course characteristics, teaching methods and topics, student assessment, physical education for students with disabilities, and staffing and staff development. In addition, it describes changes in key policies and practices from 2000 to 2006. While this article is primarily descriptive in nature, the CDC intends to conduct more detailed analyses and encourages others to conduct their own analyses using the questionnaires and public-use data sets available at www.cdc.gov/shpps.

METHODS

Detailed information about SHPPS 2006 methods is provided in "Methods: School Health Policies and Programs Study 2006" elsewhere in this issue of the *Journal of School Health*. The following section provides a brief overview of SHPPS 2006 methods specific to the physical education and activity component of the study.

SHPPS 2006 assessed physical education and activity at the state, district, school, and classroom levels. State-level data were collected from education agencies in all 50 states plus the District of Columbia. District-level data were collected from a nationally representative sample of public school districts. School-level data were collected from a nationally representative sample of public and private elementary schools, middle schools, and high schools. Classroom-level data were collected from teachers of randomly selected classes in elementary schools and

randomly selected required physical education courses in middle and high schools.

Questionnaires

The state-level questionnaire assessed school physical education policies and practices for grades K-12. Specifically, this questionnaire assessed school physical education standards and guidelines; required physical education instruction at the elementary, middle, and high school levels; elementary school recess; requirements for physical education for students with disabilities; student assessment; use of protective gear; use of physical activity for discipline; staffing and staff development for physical education teachers and interscholastic sports coaches; collaboration; and the educational background and credentials of the person who oversees or coordinates school physical education.

Because the district-level questionnaire took longer than 20-30 minutes to complete and covered such a wide range of topics that a single respondent might not have sufficient knowledge to complete it, the questionnaire was divided into 5 modules: (1) standards and guidelines, (2) elementary school instruction, (3) middle/junior high school instruction, (4) high school instruction, and (5) students with disabilities, use of protective gear, physical activity and discipline, staffing and staff development, collaboration, promotion, evaluation, interscholastic sports coaches, and characteristics of physical education coordinators.

The school-level physical education questionnaire was also divided into 2 modules: (1) standards, guidelines, and objectives; required physical education; instructional content; student assessment; use of protective gear; physical activity and discipline; students with disabilities; facilities; staffing and staff development; collaboration and promotion; intramural activities and physical activity clubs; community use of school facilities; and characteristics of physical education coordinators and (2) interscholastic sports.

The classroom-level questionnaire assessed general characteristics of physical education classes and courses and specific content taught; time spent teaching specific physical activities; teaching and evaluation techniques; and the educational background, credentials, and recent staff development of physical education teachers.

Data Collection and Respondents

State- and district-level data were collected by computer-assisted telephone interviews or self-administered mail questionnaires. Designated respondents for each of 7 school health program components (ie, health education, physical education and activity, health services, mental health and

social services, nutrition services, healthy and safe school environment, and faculty and staff health promotion) completed the interviews or questionnaires. At the state level, the state-level contact designated a single respondent for each component. At the district level, the district-level contact could designate a different respondent for each module. All designated respondents had primary responsibility for, or were the most knowledgeable about, the policies and programs addressing the particular questionnaire or module.

After a state- or district-level contact identified respondents, each respondent was sent a letter of invitation and packet of study-related materials. Each packet contained a paper copy of the questionnaire, so that respondents could prepare for the interview(s), and provided a toll-free number and access code that respondents could use to initiate the interview. Respondents were told that the questionnaire(s) could be used in preparation for their telephone interview or completed and returned if self-administration was preferred. One week after packets were mailed to respondents, trained interviewers from a call center placed calls to them to schedule and conduct telephone interviews. In April 2006, telephone interviewing ceased and most of the remaining state- and district-level data collection occurred via a mail survey. All remaining respondents were mailed paper questionnaires and return envelopes; however, interviewers remained available for any respondents who chose to contact the call center.

At the end of the data collection period (October 2006), 86% of the completed state-level physical education questionnaires had been completed via telephone interviews and 14% as paper questionnaires. For the completed district-level questionnaires, module 1 was completed via telephone interview 51% of the time; module 2, 53%; and modules 3, 4, and 5, 50%.

School- and classroom-level data were collected by computer-assisted personal interviews. During recruitment, the principal or another school-level contact designated a faculty or a staff respondent for each questionnaire or module, who had primary responsibility for or the most knowledge about the particular component. The most common respondents for module 1 were physical education teachers. The most common respondents for module 2 were physical education teachers and athletic directors.

At the classroom level, respondents to the computer-assisted personal interviews were those physical education teachers whose elementary school class or middle or high school course was selected during the sampling process. All school- and classroom-level interviews were completed between January and June 2006.

Response Rates

One hundred percent ($n = 51$) of the state education agencies completed the state-level physical education questionnaire. District eligibility for each module was determined prior to beginning the interview; 720 districts were eligible for module 1, 703 for module 2, 698 for module 3, 664 for module 4, and 719 for module 5. Of the 720 districts eligible to complete any physical education questionnaire module, 63% ($n = 453$) completed at least 1 module. School eligibility for each module was determined prior to beginning the interview; 1394 schools were eligible for module 1 and 1037 for module 2. Of the 1394 schools eligible to complete any physical education questionnaire module, 72% ($n = 988$) completed at least 1 module. At the classroom level, 1260 courses or classes were selected for the physical education interview; 95% ($n = 1194$) of teachers of these courses or classes completed the interview.

Data Analysis

Data from state-level questionnaires are based on a census and are not weighted. District-, school-, and classroom-level data are based on representative samples and are weighted to produce national estimates. Two weights were constructed for analysis of classroom data. The first weight is appropriate for making inferences to schools nationwide based on the aggregation of classroom data within each school. The second weight is appropriate for making inferences to required elementary school classes or required middle and high school courses nationwide based on the data about the individual classes or courses.

Because of missing data, the denominators for each estimate vary slightly. Figures 4-6 in Appendix 1 of this issue of the *Journal of School Health* show the estimated standard error associated with an observed estimate from the district-, school-, and classroom-level physical education questionnaires.

To analyze changes between SHPPS 2000 and SHPPS 2006, many variables from SHPPS 2000 were recalculated so that the denominators used for both years of data were defined identically. In most cases, this denominator included all states, districts, or schools, rather than a subset of states, districts, or schools. As a result of this recalculation, percentages previously reported for SHPPS 2000²⁹ might differ from those reported in this article. Only estimates from 2000 and 2006 based on this same denominator should be compared.

Because state-level data are based on a census, statistical tests for differences between 2000 and 2006 are not appropriate. Therefore, this article highlights changes over time, meeting at least 1 of 2 criteria: (1) the difference was greater than 10 percentage points or (2) the 2006 estimate increased by at least a factor of 2 or decreased by at least half as

compared with the 2000 estimate. At the district, school, and classroom levels, t tests were used to compare SHPPS 2000 and SHPPS 2006 prevalence estimates. However, to account for multiple comparisons, this article only highlights changes over time, meeting at least 2 of 3 criteria: (1) a p value less than .01 from the t test, (2) a difference greater than 10 percentage points, or (3) the 2006 estimate increased by at least a factor of 2 or decreased by at least half as compared with the 2000 estimate. A p value less than .01 was used as the sole criterion for reporting on statistically significant differences based on means and medians between 2000 and 2006. Note that not all variables meeting these criteria are presented in this article.

RESULTS

Physical Education at the State and District Levels

Standards and Guidelines. Most (70.5%) states had adopted a policy stating that districts or schools will follow national or state physical education standards or guidelines. An additional 11.8% of states had adopted a policy encouraging districts or schools to follow national or state physical education standards or guidelines. Among all states, 76.0% required or encouraged districts or schools to follow physical education standards or guidelines based on NASPE's *National Standards for Physical Education*.¹⁷ To improve district or school compliance with any national or state standards or guidelines, 76.2% of the 42 states that required or encouraged standards or guidelines used staff development for physical education teachers, 48.8% included physical education when the state did onsite reviews in school districts for overall compliance with educational standards or guidelines, 31.0% used written reports from districts or schools to document compliance, and 7.1% included physical education in statewide assessments or testing.

Districts were more likely to require schools to follow physical education standards or guidelines. Nationwide, 81.4% of districts had adopted a policy stating that schools will follow national, state, or district physical education standards or guidelines. An additional 2.4% of districts had adopted a policy encouraging schools to follow national, state, or district physical education standards or guidelines. Among all districts, 55.1% required or encouraged schools to follow physical education standards or guidelines based on the *National Standards for Physical Education*.¹⁷ To improve school compliance with national, state, or district physical education standards or guidelines, 88.7% of the 83.8% of districts that required or encouraged schools to follow standards or guidelines used teacher evaluations or classroom monitoring, 79.8% used staff development for physical education teachers, 73.9% used teachers to

mentor other teachers, and 51.4% used written reports from schools to document compliance.

Sixteen percent of states prohibited schools from using physical activity to punish students for bad behavior in physical education class, and 56.0% actively discouraged this practice. Only 6.0% of states prohibited but 54.0% discouraged schools from excluding students from all or part of physical education class as punishment for bad behavior in another class. Nationwide, 20.5% of districts prohibited schools from using physical activity to punish students for bad behavior in physical education class, and 45.1% actively discouraged this practice. In addition, 36.5% of districts prohibited and 33.9% discouraged schools from excluding students from all or part of physical education class as punishment for bad behavior in another class.

Elementary School Instruction. Nationwide, 76.5% of states and 81.9% of districts that provided elementary school instruction had adopted goals, objectives, or expected outcomes for elementary school physical education. More than two thirds of all states and more than three fourths of all districts had adopted goals and objectives that specifically addressed student outcomes from the *National Standards for Physical Education*¹⁷ (Table 1).

Nationwide, 80.4% of states and 93.3% of districts had adopted a policy stating that elementary schools will teach physical education. Thirty-six percent of all states and 75.8% of all districts specified time requirements (eg, minutes per week, hours per quarter, or hours per year) for elementary school physical education. In addition, 31.4% of all states

and 24.5% of all districts had adopted a policy specifying a maximum student-to-teacher ratio for elementary school physical education.

Among the 80.4% of states that required elementary school physical education, 25.0% had adopted a policy describing reasons for which students could be exempted from physical education. The most common reasons for which students could be exempted from physical education requirements for 1 grading period or longer were long-term physical or medical disability and religious reasons (Table 2). Among the 93.3% of districts that required elementary school physical education, 45.7% had adopted a policy describing reasons for which elementary school students could be exempted from physical education. The most common reasons for which students could be exempted from physical education requirements were cognitive disability, long-term physical or medical disability, and religious reasons.

Only 7.8% of all states required and 3.9% recommended that districts or schools use 1 particular curriculum (defined as a written course of study that generally describes what students will know and be able to do by the end of a single grade or multiple grades and for a particular subject area; often presented through a detailed set of directions, strategies, and materials to facilitate student learning and teaching of content) for elementary school physical education. Curriculum requirements were more common at the district level. Among all districts, 29.5% required and 34.4% recommended that schools use 1 particular curriculum for elementary school physical education. The state education

Table 1. Percentage of All States, Districts, and Schools That Had Physical Education Goals or Objectives Addressing Student Outcomes From the *National Standards for Physical Education*, by School Level, SHPPS 2006

Student Outcome	% of All States			% of All Districts			% of All Schools		
	Elementary Schools	Middle Schools	High Schools	Elementary Schools	Middle Schools	High Schools	Elementary Schools	Middle Schools	High Schools
Competence in motor skills and movement patterns	76.5	78.4	80.4	79.0	74.8	72.9	85.2	75.2	75.1
Understanding of movement concepts, principles, strategies, and tactics as they apply to learning and performance of physical activity	74.5	78.4	80.4	79.2	73.3	70.9	83.7	78.5	78.0
Regular participation in physical activity	74.5	78.4	78.4	81.0	76.4	77.3	86.9	78.3	83.1
Achievement and maintenance of a health-enhancing level of physical fitness	74.5	78.4	80.4	77.6	72.7	76.3	84.0	77.6	80.9
Responsible personal and social behavior	74.5	76.5	78.4	80.6	77.1	78.4	87.1	78.9	83.4
Value for physical activity for health, enjoyment, challenge, self-expression, and/or social interaction	70.6	72.5	74.5	78.6	77.3	78.2	86.5	79.3	83.3

Table 2. Percentage of States, Districts, and Schools That Allowed Students to Be Exempted From Physical Education Requirements, by School Level, SHPPS 2006

Reason for Exemption	% of States*			% of Districts [†]			% of Schools [‡]		
	Elementary Schools	Middle Schools	High Schools	Elementary Schools	Middle Schools	High Schools	Elementary Schools	Middle Schools	High Schools
Cognitive disability	5.0	2.6	9.5	25.2	23.1	24.3	46.3	45.1	38.5
Enrollment in other courses (eg, math or science)	NA	2.6	9.5	NA	9.7	7.4	NA	7.9	10.8
High physical competency test score	0.0	2.6	2.4	4.9	10.5	8.8	8.1	6.8	11.1
Long-term physical or medical disability	20.0	23.7	35.7	42.4	44.7	52.4	88.9	86.9	77.3
Participation in community service activities	0.0	0.0	0.0	4.3	7.7	4.1	10.4	5.6	6.4
Participation in community sports activities	0.0	2.6	7.1	8.9	10.5	6.2	9.5	7.9	7.8
Participation in school activities other than sports (eg, band or chorus)	2.5	7.9	14.3	10.4	19.2	18.8	10.9	14.1	20.2
Participation in school sports	NA	7.9	21.4	NA	14.1	25.3	NA	11.7	24.8
Participation in vocational training	NA	2.6	4.8	NA	7.9	8.0	NA	4.0	9.4
Religious reasons	15.0	15.8	23.8	17.0	17.7	23.9	55.0	44.7	48.1

NA, not asked at this level.

*Among the 80.4%, 78.4%, and 86.3% of states that had adopted a policy stating that elementary, middle, and high schools, respectively, will teach physical education.

[†]Among the 93.3%, 78.6%, and 88.8% of districts that had adopted a policy stating that elementary, middle, and high schools, respectively, will teach physical education.

[‡]Among the 69.3% of elementary schools, 83.9% of middle schools, and 95.2% of high schools that required physical education.

agency contributed to the development of this curriculum in 30.4% of the districts that had a requirement or recommendation. The district itself contributed to the development of this curriculum in 31.9% of the districts, academic institutions did so in 5.7%, a commercial company did so in 3.1%, and other state agencies did so in 3.1%.

Nationwide, 3.9% of states required and 37.3% recommended that elementary schools give written tests of students' knowledge related to physical education, 3.9% of states required and 43.1% recommended skill performance tests related to physical education, and 11.8% of states required and 35.3% recommended tests of students' fitness levels. Among all states, 29.4% required or recommended using the Fitnessgram for fitness testing, 21.6% required or recommended the Physical Fitness Test from the President's Challenge, 13.7% recommended the Health Fitness Test from the President's Challenge, and 2.0% recommended the Youth Fitness Test from the Young Men's Christian Association (YMCA).

Nationwide, 5.2% of districts required and 19.8% recommended that elementary schools give written tests of students' knowledge related to physical education, 20.9% of districts required and 33.6% recommended skill performance tests related to physical education, and 28.1% of districts required and 40.2% recommended tests of students' fitness levels. Among all districts, 53.6% required or recommended

the Physical Fitness Test from the President's Challenge, 30.7% required or recommended the Health Fitness Test from the President's Challenge, 21.5% required or recommended using the Fitnessgram for fitness testing, and 5.0% required or recommended the Youth Fitness Test from the YMCA.

During the 2 years preceding the study, states and districts provided a variety of information and materials for elementary school physical education. For example, 33.3% of states and 48.0% of districts provided a chart describing the scope and sequence of instruction, 21.6% of states and 55.4% of districts provided a physical education curriculum, 29.4% of states and 46.4% of districts provided a list of recommended physical education curricula, 39.2% of states and 50.0% of districts provided lesson plans or learning activities for physical education, and 51.0% of states and 46.4% of districts provided plans for how to assess or evaluate students in physical education.

Middle School Instruction. Nationwide, 78.4% of states and 78.6% of districts that provided middle school instruction had adopted goals, objectives, or expected outcomes for middle school physical education. More than two thirds of all states and districts had adopted goals and objectives that specifically addressed student outcomes from the *National Standards for Physical Education*¹⁷ (Table 1).

Nationwide, 78.4% of states and 89.5% of districts had adopted a policy stating that middle schools will

teach physical education. In addition, 37.3% of all states and 76.0% of all districts specified time requirements (eg, minutes per week, hours per quarter, or hours per year) for middle school physical education. Further, 31.4% of all states and 26.0% of all districts had adopted a policy specifying a maximum student-to-teacher ratio for middle school physical education.

Among the 78.4% of states that required middle school physical education, 34.1% had adopted a policy describing reasons for which students could be exempted from physical education. The most common reasons for which students could be exempted from physical education requirements for 1 grading period or longer were long-term physical or medical disability and religious reasons (Table 2). Among the 89.5% of districts that required middle school physical education, 50.8% had adopted a policy describing reasons for which middle school students could be exempted from physical education. The most common reasons for which they could be exempted from physical education requirements were cognitive disability, long-term physical or medical disability, participation in school activities other than sports (eg, band or chorus), participation in school sports, and religious reasons.

Only 9.8% of all states required and 5.9% recommended that districts or schools use 1 particular curriculum for middle school physical education. Curriculum requirements were more common at the district level. Among all districts that provided middle school instruction, 36.1% required and 22.6% recommended that schools use 1 particular curriculum for physical education. The district itself contributed to the development of this curriculum in 31.5% of the districts, and the state education agency did so in 32.5% of the districts.

Nationwide, 2.0% of states required and 39.2% recommended that middle schools give written tests of students' knowledge related to physical education, 2.0% of states required and 43.1% recommended skill performance tests related to physical education, and 13.7% of states required and 35.3% recommended tests of students' fitness levels. Among all states, 35.3% required or recommended using the Fitnessgram for fitness testing, 25.5% required or recommended the Physical Fitness Test from the President's Challenge, 17.6% recommended the Health Fitness Test from the President's Challenge, and 3.9% recommended the Youth Fitness Test from the YMCA.

Nationwide, 11.7% of districts required and 32.9% recommended that middle schools give written tests of students' knowledge related to physical education, 21.0% of districts required and 34.9% recommended skill performance tests related to physical education, and 26.1% of districts required

and 39.0% recommended tests of students' fitness levels. Among all districts, 51.6% required or recommended the Physical Fitness Test from the President's Challenge, 29.3% required or recommended the Health Fitness Test from the President's Challenge, 24.1% required or recommended using the Fitnessgram for fitness testing, and 8.1% required or recommended the Youth Fitness Test from the YMCA.

During the 2 years preceding the study, states and districts provided a variety of information and materials for middle school physical education. For example, 31.4% of all states and 43.6% of all districts provided a chart describing the scope and sequence of instruction, 21.6% of states and 57.8% of districts provided a physical education curriculum, 25.5% of states and 45.0% of districts provided a list of recommended physical education curricula, 37.3% of states and 43.3% of districts provided lesson plans or learning activities for physical education, and 49.0% of states and 45.8% of districts provided plans for how to assess or evaluate students in physical education.

High School Instruction. Nationwide, 80.4% of states and 79.7% of districts that provided high school instruction had adopted goals, objectives, or expected outcomes for high school physical education. More than two thirds of all states and districts had adopted goals and objectives that specifically addressed student outcomes from the *National Standards for Physical Education*¹⁷ (Table 1).

Nationwide, 86.3% of states and 88.8% of districts had adopted a policy stating that high schools will teach physical education. Fifty-eight percent of all states and 81.0% of all districts specified time requirements (eg, minutes per week, hours per quarter, or hours per year) for high school physical education. In addition, 31.4% of all states and 31.1% of all districts had adopted a policy specifying a maximum student-to-teacher ratio for high school physical education.

Among the 86.3% of states that required high school physical education, 25.0% had adopted a policy describing reasons for which students could be exempted from physical education. The most common reasons for which students could be exempted from physical education requirements for 1 grading period or longer were long-term physical or medical disability, participation in school activities other than sports, participation in school sports, and religious reasons (Table 2). Among the 88.8% of districts that required high school physical education, 59.6% had adopted a policy describing reasons for which high school students could be exempted from physical education. The most common reasons for which they could be exempted from physical education requirements were

cognitive disability, long-term physical or medical disability, participation in school activities other than sports, participation in school sports, and religious reasons.

Only 13.7% of all states required and 2.0% recommended that districts or schools use 1 particular curriculum for high school physical education. Curriculum requirements were more common at the district level. Among all districts that provided high school instruction, 33.9% required and 27.2% recommended that schools use 1 particular curriculum for physical education. The district itself contributed to the development of this curriculum in 37.6% of the districts, and the state education agency did so in 31.4% of the districts.

Nationwide, 3.9% of states required and 39.2% recommended that high schools give written tests of students' knowledge related to physical education, 2.0% of states required and 43.1% recommended skill performance tests related to physical education, and 15.7% of states required and 33.3% recommended tests of students' fitness levels. Among all states, 31.4% required or recommended using the Fitnessgram for fitness testing, 25.5% required or recommended the Physical Fitness Test from the President's Challenge, 19.6% recommended the Health Fitness Test from the President's Challenge, and 3.9% recommended the Youth Fitness Test from the YMCA.

Nationwide, 21.7% of districts required and 37.6% recommended that high schools give written tests of students' knowledge related to physical education, 18.9% required and 43.6% recommended skill performance tests, and 24.6% of districts required and 41.9% recommended tests of students' fitness levels. Among all districts, 48.8% required or recommended the Physical Fitness Test from the President's Challenge, 29.7% required or recommended the Health Fitness Test from the President's Challenge, 21.2% required or recommended using the Fitnessgram for fitness testing, and 6.2% required or recommended the Youth Fitness Test from the YMCA.

During the 2 years preceding the study, states and districts provided a variety of information and materials for high school physical education. For example, 31.4% of all states and 43.5% of all districts provided a chart describing the scope and sequence of instruction, 19.6% of states and 55.8% of districts provided a physical education curriculum, 21.6% of states and 47.2% of districts provided a list of recommended physical education curricula, 41.2% of states and 43.9% of districts provided lesson plans or learning activities for physical education, and 49.0% of states and 43.5% of districts provided plans for how to assess or evaluate students in physical education.

Physical Education for Students With Disabilities. Most states required schools to implement measures to meet the physical education needs of students with long-term (defined as ongoing, not a temporary disability like a broken bone) physical, medical, or cognitive disabilities. Specifically, states required schools to include physical education in 504 plans (defined as documents that describe a program of instructional services to assist students with special needs who are in a regular educational setting) or individualized education programs (IEPs) (defined as documents written by school administrators, teachers, and parents that identify annual goals, strategies, or services provided for students with special educational needs) (91.5%), to mainstream students with disabilities into regular physical education (89.6%), to provide adapted physical education as appropriate (87.5%), to use modified equipment or facilities in regular physical education (87.0%), to use modified assessment (81.6%), and to use teaching assistants in regular physical education (74.5%).

Nearly all districts required schools to implement measures to meet the needs of students with long-term disabilities. In 98.5% of all districts, schools were required to mainstream students with disabilities into regular physical education, 96.3% required the inclusion of physical education in 504 plans or IEPs, 93.8% required the use of modified assessment, 93.2% required the use of modified equipment or facilities in regular physical education, 92.7% required schools to provide adapted physical education as appropriate, and 86.5% required the use of teaching assistants in regular physical education.

Professional Preparation. Nationwide, 64.7% of states and 76.8% of districts had adopted a policy stating that newly hired staff who teach physical education at the elementary school level will have undergraduate or graduate training in physical education; 86.3% of states and 81.2% of districts had adopted this policy for newly hired staff who teach physical education at the middle school level and 88.2% of states and 88.5% of districts had adopted this policy for newly hired staff who teach physical education at the high school level.

All states offered at least 1 type of certification, licensure, or endorsement to teach physical education. Specifically, 52.9% of states offered certification, licensure, or endorsement to teach physical education for grades K-12, 52.9% offered it for elementary school, 56.9% offered it for middle school, and 60.8% offered it for high school. In addition, 47.1% of states offered a combined physical education and health education certification, licensure, or endorsement for grades K-12, 27.5% offered it for elementary school, 33.3% offered it for middle school, and 33.3% offered it for high school.

Many states and districts required newly hired staff to be certified, licensed, or endorsed by the state to teach physical education. Specifically, 68.6% of states and 84.2% of districts had adopted a policy stating that newly hired elementary school physical education teachers will be certified, licensed, or endorsed by the state to teach physical education, 88.2% of states and 86.5% of districts had adopted such a policy for newly hired staff at the middle school level, and 90.0% of states and 92.6% of districts had adopted such a policy for newly hired staff at the high school level.

Staffing and Staff Development. Nationwide, 14.0% of states had adopted a policy stating that all districts will have someone to oversee or coordinate physical education, and 8.0% had adopted a policy stating that each school will have someone to oversee or coordinate physical education at the school (eg, a lead physical education teacher). Among all districts, 54.0% had adopted a policy stating that each school will have someone to oversee or coordinate physical education at the school.

Nationwide, 66.0% of states had adopted a policy stating that teachers will earn continuing education credits on physical education topics to maintain state certification, licensure, or endorsement to teach physical education. Among all districts, 47.4% had adopted a policy stating that those who teach physical education will earn continuing education credits on physical education topics.

Staff development was defined as workshops, conferences, continuing education, graduate courses, or any other kind of in-service on physical education topics. During the 2 years preceding the study, 77.6% of all states and 90.9% of all districts provided funding for staff development or offered staff development for physical education teachers on at least 1 of the topics listed in Table 3. Specifically, more than half of all states provided funding for staff development or offered staff development for physical education teachers on administering or using fitness tests; assessing or evaluating student performance in physical education; encouraging family involvement in physical activity; methods to increase the amount of class time students are physically active; teaching movement skills and concepts; teaching physical education to students with long-term physical, medical, or cognitive disabilities; teaching team or group activities or sports; using physical activity monitoring devices; and using technology such as computers or video cameras for physical education (Table 3).

During the 2 years preceding the study, more than half of all districts provided funding for staff development or offered staff development for physical education teachers on administering or using fitness tests; assessing or evaluating student perfor-

mance in physical education; chronic health conditions; encouraging family involvement in physical activity; injury prevention and first aid; methods to increase the amount of class time students are physically active; teaching individual or paired activities or sports; teaching movement skills and concepts; teaching physical education to students with long-term physical, medical, or cognitive disabilities; teaching team or group activities; and using physical activity monitoring devices (Table 3).

Collaboration. During the 12 months preceding the study, state physical education staff worked on physical education activities with state school nutrition or food service staff in 88.2% of states, with state health education staff in 84.3% of states, with state health services staff in 82.4% of states, and with state mental health or social services staff in 50.0% of states. State physical education staff also worked with colleges or universities in 88.2% of states, with state affiliates of the American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD) in 88.2% of states; with a state-level school health committee, council, or team in 84.3% of states; with state affiliates of the Action for Healthy Kids in 84.0% of states; with state-level health organizations (eg, the American Heart Association or American Cancer Society) in 78.0% of states; with a state-level school nurses' association in 62.7% of states; with the Governor's Council on Physical Fitness and Sports in 60.0% of states; with a state-level physicians' organization (eg, the American Academy of Pediatrics) in 43.1% of states; with businesses in 43.1% of states; and with a state parks or recreation department in 41.2% of states.

During the 12 months preceding the study, district physical education staff worked on physical education activities with district-level general curriculum coordinators or supervisors in 61.0% of districts, with district-level health education staff in 54.8% of districts, with district-level school health services staff in 48.1% of districts, with district-level nutrition services staff in 46.0% of districts, and with district-level mental health or social services staff in 27.1% of districts. District physical education staff also worked with a health organization in 59.2% of districts, with a local health department in 34.3% of districts, with local parks or recreation departments in 31.2% of districts, with a local college or university in 29.7% of districts, with a local youth organization (eg, YMCA, Boys or Girls Clubs, or the Boy Scouts or Girls Scouts) in 24.4% of districts, with a local hospital in 24.2% of districts, with a local mental health or social services agency in 22.5% of districts, with a local business in 21.5% of districts, with a local health or fitness club in 19.9% of districts, and with a local service club (eg, the Rotary Club) in 16.4% of districts.

Table 3. Percentage of All States and Districts That Provided Funding for Staff Development or Offered Staff Development for Physical Education Teachers* and Percentage of Required Physical Education Classes or Courses That Had a Teacher Who Received Staff Development* and Who Wanted Staff Development on Physical Education Topics, SHPPS 2006

Physical Education Topic	% of All States That Provided Funding for or Offered Staff Development	% of All Districts That Provided Funding for or Offered Staff Development	% of Classes or Courses That Had a Teacher Who Received Staff Development	% of Classes or Courses That Had a Teacher Who Wanted Staff Development
Administering or using fitness tests	61.2	62.5	46.5	29.2
Assessing or evaluating student performance in physical education	71.4	62.2	48.1	39.4
Chronic health conditions (eg, asthma or diabetes), including recognizing and responding to severe symptoms or reducing triggers	44.9	59.3	43.6	48.7
Developing and using student portfolios for physical education	35.4	27.8	17.5	33.3
Encouraging family involvement in physical activity	59.2	51.0	33.1	41.5
Helping students develop individualized physical activity plans	41.7	47.2	24.9	42.2
Injury prevention and first aid	42.9	72.0	67.6	31.1
Methods to increase the amount of class time students are physically active	55.1	54.3	48.0	35.3
Methods to promote gender equity in physical education and sports	39.6	48.9	31.3	26.1
Teaching individual or paired activities or sports	49.0	59.7	55.7	31.4
Teaching methods to promote inclusion and active participation of overweight children during physical education	35.4	47.5	34.7	52.0
Teaching movement skills and concepts	55.1	62.8	58.1	33.5
Teaching physical education to students with long-term physical, medical, or cognitive disabilities	52.1	55.9	31.7	38.1
Teaching team or group activities or sports	53.1	68.9	60.2	31.3
Using physical activity monitoring devices (eg, pedometers or heart rate monitors) for physical education	65.3	59.0	42.4	42.7
Using technology (eg, computers or video cameras) for physical education	55.1	49.1	37.1	39.9

*During the 2 years preceding the study.

Evaluation. During the 2 years preceding the study, 63.9% of all districts evaluated their physical education curricula, 54.1% evaluated their physical education policies, and 52.7% evaluated their staff development or in-service programs.

Physical Education Coordinators. Among the 88.2% of states that had someone to oversee or coordinate physical education at the state level, 86.7% had that person serve as the respondent to the state-level physical education questionnaire. Among those respondents, all had an undergraduate degree. More than three fourths (76.9%) majored in physical education, and 46.1% majored in health education. In addition, 66.7% had an undergraduate minor, and 7.7% minored in physical education,

30.8% minored in health education, 7.7% minored in other areas of education, and 65.4% minored in other disciplines. Most (87.2%) of the state-level coordinators who served as the respondents had a graduate degree. The most common graduate degrees were in physical education (32.4%); health education (29.4%); other areas of education (20.6%); and kinesiology, exercise physiology, or exercise science (8.8%). Among the state-level coordinators who served as the SHPPS respondents, 86.1% had an undergraduate major, an undergraduate minor, or a graduate degree in physical education; 64.1% were certified, licensed, or endorsed by their state to teach elementary school physical education; 69.2% were certified, licensed, or endorsed

to teach middle school physical education; 69.2% were certified, licensed, or endorsed to teach high school physical education. However, 30.8% were not certified, licensed, or endorsed to teach physical education at any of the 3 school levels.

Nationwide, 68.9% of districts had someone to oversee or coordinate physical education. Unfortunately, the number of these coordinators who served as the respondents to the district-level physical education SHPPS questionnaire was too small for meaningful analysis of the data about their qualifications.

Physical Activity and Interscholastic Sports at the State and District Levels

Elementary School Recess. Few (11.8%) states required and 25.5% recommended that elementary schools provide students with regularly scheduled recess, whereas 57.1% of all districts required and 33.1% recommended that elementary schools provide students with regularly scheduled recess. Among all districts, 38.5% required or recommended 30 minutes or more of recess per day, 23.0% required or recommended 20-29 minutes per day, and 15.9% required or recommended 10-19 minutes per day. Nationwide, 8.0% of states and 19.7% of districts prohibited elementary schools from excluding students from all or part of recess as punishment for bad behavior, and 49.0% of states and 23.9% of districts actively discouraged this practice.

Physical Activity Breaks and Walk and Bike to School Programs. Districts were more likely to require or recommend that elementary and middle schools, compared with high schools, provide regular physical activity breaks (outside physical education class and recess) during the school day. Specifically, 15.5% of all districts required and 25.0% recommended that elementary schools provide regular physical activity breaks, 10.0% of all districts required and 23.7% recommended that middle schools provide regular physical activity breaks, and 3.8% of all districts required and 8.6% recommended that high schools provide regular physical activity breaks.

States and districts were also asked about their policies related to supporting or promoting walking and biking to and from school, such as promotional activities, designated "safe routes" or "preferred routes," and storage facilities for bicycles and helmets. Among all states, 13.7% had adopted a policy encouraging districts or schools to support or promote walking or biking to and from school, and 17.5% of all districts had adopted a policy that supported or promoted walking or biking to and from school.

Interscholastic Sports Coaches. Some states and districts had adopted policies stating that head

coaches of interscholastic sports will complete a coaches' training course (50.0% of states and 61.5% of districts), be certified in first aid (47.7% of states and 61.3% of districts), be certified in cardiopulmonary resuscitation (CPR) (47.7% of states and 57.7% of districts), be employed by the school or by the school district (39.1% of states and 56.8% of districts), have a teaching certificate (32.7% of states and 46.0% of districts), have previous coaching experience in the sport they will coach (15.2% of states and 28.7% of districts), and have previous coaching experience in any sport (12.8% of states and 33.5% of districts). Nationwide, 31.1% of states and 55.0% of districts required assistant coaches or volunteer athletic aides (defined as a person who assists the coach but is not paid for doing so and who may or may not be a school employee) to complete a training course. During the 2 years preceding the study, the state education agency provided funding for staff development or offered staff development to coaches of interscholastic sports in 20.8% of states. Another state-level organization or agency provided funding for staff development or offered staff development to coaches of interscholastic sports in 60.0% of states. Among all districts, 72.3% provided funding for staff development or offered staff development to coaches of interscholastic sports during the same time period.

Use of Protective Gear. Nationwide, 12.0% of states and 43.6% of districts had adopted a policy requiring students to wear appropriate protective gear during physical education; 14.0% of states and 44.8% of districts had adopted this policy for students engaged in intramural activities or physical activity clubs and 49.0% of states and 84.2% of districts had adopted this policy for students engaged in interscholastic sports.

Changes Between 2000 and 2006 at the State and District Levels. Many changes were detected in state- and district-level policies and practices related to both physical education and physical activity and interscholastic sports between 2000 and 2006. For example, changes were detected in the percentage of states and districts that had adopted policies regarding physical education standards and guidelines. Between 2000 and 2006, the percentage of states that required or encouraged districts or schools to follow standards or guidelines based on the *National Standards for Physical Education*¹⁷ increased from 59.2% to 76.0%. In addition, the percentage of districts that had adopted a policy stating that schools will follow national, state, or district physical education standards or guidelines increased from 66.5% to 81.4%.

Between 2000 and 2006, positive changes were detected in the percentage of states and districts with policies and practices supporting elementary school

physical education instruction. For example, the percentage of districts that had adopted a policy stating that elementary schools will teach physical education increased from 82.6% to 93.3%. Further, the percentage of states that had adopted goals, objectives, or expected outcomes for elementary school physical education increased from 64.7% to 76.5%, and the percentage of districts that had done so increased from 71.5% to 81.9%. Increases were also detected in the percentage of states and districts in which goals or objectives for elementary school physical education specifically addressed achievement and maintenance of a health-enhancing level of physical fitness (from 62.0% to 74.5% among states), regular participation in physical activity (from 61.2% to 74.5% among states and from 70.3% to 81.0% among districts), and responsible personal and social behavior that respects self and others in physical activity settings (from 62.0% to 74.5% among states and from 68.5% to 80.6% among districts).

Between 2000 and 2006, states adopted policies allowing fewer exemptions from required physical education in elementary schools. Specifically, the percentage of states that had a policy stating that elementary school students can be exempted from physical education requirements for 1 grading period or longer for religious reasons decreased from 30.6% to 15.0%. However, among districts, the percentage allowing exemptions for elementary school students for high physical competency test scores increased from 0.5% to 4.9% as did the percentage of districts allowing exemptions for participation in community sports activities (from 2.1% to 8.9%).

Also, between 2000 and 2006, an increase was detected in the percentage of states providing plans during the 2 years preceding the study for how to assess or evaluate students in elementary school physical education (from 35.3% to 51.0%).

Changes were also detected in the percentage of states and districts with policies and practices supporting middle school physical education instruction. Between 2000 and 2006, the percentage of states with goals and objectives that addressed responsible personal and social behavior that respects self and others in physical activity settings increased from 62.7% to 76.5%. Regarding student exemptions from required physical education, the percentage of states that had adopted a policy stating that middle school students could be exempted from physical education requirements for 1 grading period or longer for religious reasons decreased (from 35.0% to 15.8%), and the percentage of districts that had adopted a similar policy also decreased (from 32.4% to 17.7%). However, the percentage of districts that had adopted policies allowing middle school students to be exempted from physical education for high

physical competency test scores increased (from 2.0% to 10.5%) as did the percentage of districts allowing exemptions for participation in community sports activities (from 3.7% to 10.5%) and the percentage of districts allowing exemptions for participation in community service activities (from 1.8% to 7.7%). In addition, the percentage of states that provided plans for how to assess or evaluate students in middle school physical education during the 2 years preceding the study increased from 33.3% to 49.0%, while the percentage of districts that provided lesson plans or learning activities for middle school physical education decreased from 55.7% to 43.3%.

A few changes were also detected in the percentage of states and districts with policies and practices supporting high school physical education instruction. Between 2000 and 2006, the percentage of states that had adopted goals, objectives, or expected outcomes for high school physical education increased from 66.7% to 80.4%. Increases were also detected in the percentage of states with goals or objectives for high school physical education that specifically addressed achievement and maintenance of a health-enhancing level of physical fitness (from 66.7% to 80.4%) and regular participation in physical activity (from 62.7% to 78.4%). In addition, the percentage of states providing lesson plans or learning activities for high school physical education during the 2 years preceding the study increased from 30.6% to 41.2%, and the percentage of states providing plans for how to assess or evaluate students in physical education increased from 32.0% to 49.0%.

Both states and districts increased requirements and recommendations for fitness tests between 2000 and 2006. For elementary schools, the percentage of states that required or recommended that elementary schools use Fitnessgram increased from 16.0% to 29.4%, and the percentage of districts that required or recommended that elementary schools use the Youth Fitness Test from the YMCA increased from 1.5% to 5.0%. For middle schools, increases were detected in the percentage of states and districts that required or recommended that middle schools use Fitnessgram (from 17.6% to 35.3% among states and from 9.5% to 24.1% among districts) and in the percentage of districts that required or recommended that schools use the Youth Fitness Test from the YMCA (from 1.7% to 8.1%). Similarly, the percentage of states and districts that required or recommended that high schools use Fitnessgram increased from 17.6% to 31.4% among states and from 8.3% to 21.2% among districts.

Between 2000 and 2006, the percentage of states that actively discouraged schools from excluding students from physical education for bad behavior in another class increased from 20.4% to 54.0%, and

the percentage of districts that prohibited schools from this practice increased from 19.2% to 36.5%. The percentage of states that had adopted a policy prohibiting schools from using physical activity to punish students for bad behavior in physical education increased (from 2.1% to 16.0%), and the percentage of states actively discouraging schools from this practice also increased (from 25.5% to 56.0%).

Between 2000 and 2006, both states and districts adopted policies to help meet the needs of students with long-term physical, medical, or cognitive disabilities. For example, the percentage of states that had adopted policies requiring schools to meet the physical education needs of students with long-term disabilities using teaching assistants in regular physical education increased from 55.8% to 74.5%. At the district level, the percentage of districts that had adopted policies requiring schools to meet the physical education needs of students with long-term disabilities using teaching assistants in regular physical education increased (from 57.2% to 86.5%), as did the percentage of districts that had adopted policies requiring schools to provide adapted physical education (from 74.6% to 92.7%) and the percentage of districts that had adopted policies requiring schools to meet the needs of students with long-term disabilities by mainstreaming them into regular physical education as appropriate (from 82.3% to 98.5%).

Between 2000 and 2006, the percentage of districts that evaluated their physical education policies during the 2 years preceding the study increased from 43.0% to 54.1%, and the percentage that evaluated their staff development or in-service programs increased from 40.4% to 52.7%.

Collaboration between state and district physical education staff and staff from within their own and other agencies and organizations increased in many ways between 2000 and 2006. For example, collaboration between physical education staff and nutrition services staff increased from 42.0% to 88.2% among states and from 12.1% to 46.0% among districts, and collaboration between physical education staff and health services staff increased from 48.0% to 82.4% among states and 29.8% to 48.1% among districts. In addition, collaboration between physical education staff and mental health and social services staff increased from 34.0% to 50.0% among states and from 12.4% to 27.1% among districts, and collaboration between physical education staff and health education staff increased from 72.0% to 84.3% among states and from 40.9% to 54.8% among districts.

Increases were also seen in the percentage of states in which physical education staff worked on physical education activities with state-level health organizations (from 64.6% to 78.0%), the state-level AAHPERD (from 70.0% to 88.2%), the Governor's

Council on Physical Fitness and Sports (from 42.9% to 60.0%), the state parks or recreation department (from 26.7% to 41.2%), colleges or universities (from 70.6% to 88.2%), and businesses (from 31.3% to 43.1%). Finally, increases were detected in the percentage of districts in which physical education staff worked on physical education activities with the local health department (from 24.1% to 34.3%) and the local health organizations (from 46.4% to 59.2%).

Positive changes were detected in professional preparation expectations. Between 2000 and 2006, the percentage of states that had adopted a policy stating that newly hired staff who teach physical education at the elementary school level will have undergraduate or graduate training in physical education increased from 51.1% to 64.7%. In addition, the percentage of districts that had adopted a policy stating that newly hired staff who teach physical education at the high school level will have undergraduate or graduate training in physical education increased from 78.4% to 88.5%, and the percentage of districts that had adopted a policy stating that these teachers will be certified by the state to teach physical education increased from 78.6% to 92.6%. Similarly, the percentage of states that had adopted a policy stating that teachers will earn continuing education credits on physical education topics to maintain state certification, licensure, or endorsement to teach physical education increased from 51.0% to 66.0%.

Positive changes were also detected in staffing. Between 2000 and 2006, the percentage of states that had someone who oversees or coordinates physical education increased from 68.6% to 88.2%, and the percentage of states that had adopted a policy stating that each school will have someone to oversee or coordinate physical education increased from 3.9% to 8.0%.

Between 2000 and 2006, increases were detected in the percentage of states and districts that offered funding for staff development or provided staff development during the 2 years preceding the study to those who teach physical education on administering or using fitness tests (from 30.6% to 61.2% among states and from 49.8% to 62.5% among districts), assessing or evaluating student performance in physical education (from 54.0% to 71.4% among states and from 48.0% to 62.2% among districts), encouraging family involvement in physical activity (from 24.5% to 59.2% among states and from 28.0% to 51.0% among districts), methods to increase the amount of class time students are physically active (from 28.0% to 55.1% among states and from 32.6% to 54.3% among districts), teaching individual or paired activities or sports (from 32.7% to 49.0% among states and from 46.4% to 59.7%

among districts), teaching movement skills and concepts (from 38.8% to 55.1% among states and from 51.6% to 62.8% among districts), and teaching team or group activities or sports (from 36.7% to 53.1% among states and from 54.9% to 68.9% among districts). Additional increases were detected in the percentage of states that offered funding for staff development or provided staff development during the 2 years preceding the study to those who teach physical education on injury prevention and first aid (from 27.1% to 42.9%); teaching physical education to students with long-term physical, medical, or cognitive disabilities (from 32.7% to 52.1%); and using technology such as computers or video cameras for physical education (from 40.0% to 55.1%). Further, the percentage of districts that provided funding for staff development or offered staff development during the 2 years preceding the study on helping students develop individualized physical activity plans and on methods to promote gender equity in physical education and sports increased from 35.1% to 47.2% and from 35.4% to 48.9%, respectively.

Between 2000 and 2006, states and districts both adopted policies to support elementary school recess. Specifically, the percentage of states that required elementary schools to provide students with regularly scheduled recess increased from 4.1% to 11.8%, and the percentage of districts with such a requirement increased from 46.3% to 57.1%. Further, the percentage of districts that required or recommended 30 or more minutes per day of recess for elementary school students increased from 25.5% to 38.5%.

Between 2000 and 2006, the percentage of states and districts requiring head coaches of interscholastic sports to complete a coaches' training course increased from 34.0% to 50.0% among states and from 48.5% to 61.5% among districts. In addition, increases were detected in the percentage of districts that had adopted a policy stating that head coaches will be certified in first aid (from 44.4% to 61.3%), certified in CPR (from 41.3% to 57.7%), and employed by the school or by the school district (from 44.9% to 56.8%). Further, the percentage of states that had adopted a policy requiring students to wear appropriate protective gear when engaged in interscholastic sports increased from 38.3% to 49.0%, and the percentage of districts that had adopted such a policy increased from 73.4% to 84.2%.

Physical Education at the School Level

Physical Education Requirements. Nationwide, 78.3% of schools required students to take some physical education. Specifically, in 69.3% of elementary schools, 83.9% of middle schools, and 95.2% of

high schools, students had to take physical education as a requirement for graduation or promotion to the next grade or school level. In 15.6% of all schools (8.6% of elementary schools, 13.3% of middle schools, and 38.8% of high schools), physical education was required but not in a specific grade, and in 63.4% of schools, physical education was required in specific grades. About half of all schools that had students in kindergarten required physical education in kindergarten (Table 4). A similar percentage of schools that required physical education in a particular grade was seen for each of grades 1 through 9, but the percentage of schools that required physical education in grades 10, 11, and 12 was markedly lower.

Daily physical education was defined as physical education that occurred for 36 weeks (ie, a typical school year) per school year for 150 minutes per week in elementary schools and for 225 minutes per week in middle and high schools. Few schools provided daily physical education or its equivalent for students in all grades in the school for the entire school year. Specifically, 3.8% of all elementary schools (excluding kindergarten, which has physical education requirements that are consistently lower than those for grades 1 through 5), 7.9% of all middle schools, and 2.1% of all high schools provided daily physical education or its equivalent for the entire school year for students in all grades in the school. More schools—4.7% of elementary schools (excluding kindergarten), 14.5% of middle schools, and 6.6% of high schools—provided daily physical education or its equivalent for at least 18 weeks (ie, half of a typical school year) for students in all grades in the school. Further, 13.7% of elementary schools (excluding kindergarten), 15.2% of middle schools, and 3.0% of high schools provided physical education at least 3 days per week or its equivalent for the entire school year for students in all grades

Table 4. Percentage of All Schools* That Required Physical Education in Each Grade, SHPPS 2006

Grade	% of All Schools
Kindergarten	49.7
1st	57.2
2nd	57.7
3rd	58.0
4th	58.2
5th	61.1
6th	68.1
7th	67.1
8th	65.5
9th	55.3
10th	33.2
11th	20.2
12th	20.4

*Among schools that had students in the grade.

in the school, and 17.1% of elementary schools (excluding kindergarten), 24.7% of middle schools, and 8.6% of high schools provided physical education at least 3 days per week or its equivalent for at least half of the school year for students in all grades in the school.

Many elementary, middle, and high schools allowed students to be exempted from required physical education for 1 grading period or longer. The most common reasons for which elementary and middle schools allowed students to be exempted from required physical education were cognitive disability, long-term physical or medical disability, and religious reasons (Table 2). The most common reasons for which high schools allowed students to be exempted from required physical education were cognitive disability, long-term physical or medical disability, participation in school activities other than sports, participation in school sports, and religious reasons.

Among the 78.3% of schools that required physical education, 36.0% had a maximum allowable student-to-teacher ratio for required physical education. The median maximum allowable ratio among these schools was 29.6 students per teacher.

Finally, in 76.8% of the 78.3% of elementary, middle, and high schools that required physical education, students were required to wear appropriate protective gear during physical education.

Standards and Guidelines. Most (88.2%) schools followed national, state, or district physical education standards or guidelines. About two thirds (65.1%) of all schools used standards or guidelines based on the *National Standards for Physical Education*.¹⁷ Schools provided physical education teachers with a variety of materials. Nationwide, 75.5% of schools provided a physical education curriculum, 55.4% provided a chart describing the scope and sequence of instruction for physical education, 52.8% provided plans for how to assess or evaluate students in physical education, and 42.2% provided lesson plans or learning activities for physical education. Further, 84.2% of all schools provided their physical education teachers with goals, objectives, and expected outcomes for physical education. Among all schools, three fourths or more had goals and objectives that specifically addressed student outcomes consistent with the *National Standards for Physical Education*¹⁷ (Table 1).

Physical Education Instruction. Among the 69.3% of elementary schools that required physical education, 94.8% taught movement concepts and skills in required physical education. Among the 78.3% of schools at all levels that required physical education, 98.5% taught group or team activities, 95.1% taught individual or paired activities, 63.2% taught dance activities, and 8.5% taught aquatic

activities in required physical education. The most common group or team activities were baseball, softball, or whiffleball; basketball; football; soccer; and volleyball (Table 5). Additionally, 68.1% of schools that required physical education taught dodgeball or bombardment, while more than half of elementary schools that required physical education taught king of the hill or steal the flag, elimination tag, and duck duck goose. The most common individual or paired activities were Frisbee or Frisbee golf, jumping rope, running or jogging, track and field, and walking. The most common dance activities were line dances and rhythmic, folk, or cultural dances.

Student Assessment. Among the 78.3% of schools that required physical education, 77.2% gave students a letter or a numerical grade, 11.9% used a pass/fail system, 14.6% gave other types of grades, and 1.9% did not give grades for physical education. In 59.0% of these schools, grades for required physical education were considered the same as those from other subject areas when determining grade point averages, honor roll status, or other indicators of academic standing. More than one third (35.6%) of schools required students to repeat required physical education if they received a failing grade.

Physical Education for Students With Disabilities. Nationwide, 62.4% of schools had students with long-term physical, medical, or cognitive disabilities. Among these schools, 87.2% included physical education in the IEPs or 504 plans for these students. Further, 58.9% of these schools had students with long-term disabilities who participated in required physical education. Among these schools, 77.2% had students participate only in regular physical education, 43.8% had students participate in both adapted and regular physical education, and 31.3% had students participate in a separate adapted physical education class. Among schools that taught adapted physical education, it was taught by a regular physical education teacher in 45.5% of these schools, by an adapted physical education teacher or specialist in 44.1% of these schools, by a physical or occupational therapist in 26.0% of these schools, by a special education teacher's aide in 17.8% of these schools, by a special education teacher in 13.7% of these schools, by a regular classroom teacher in 2.9% of these schools, and by another individual in 3.0% of these schools. Among schools that had students with long-term disabilities participate in regular physical education classes, the physical education teacher was assisted by a special education teacher's aide in 60.9% of these schools, by a physical education teacher or specialist in 30.7% of these schools, by a special education teacher in 30.2% of these schools, by a physical or occupational therapist in 28.0% of these schools, by an adapted physical education teacher or specialist in 19.9% of these

Table 5. Percentage of Schools* That Taught Activities in Required Physical Education Classes or Courses and Median Number of Contact Hours Students Spent on the Activities,[†] SHPPS 2006

	% of Schools	Median Number of Contact Hours
Group or team activity		
Baseball, softball, or whiffleball	92.6	2.0
Basketball	95.6	3.0
Dodgeball or bombardment	68.1	0.7
Duck duck goose [‡]	58.9	0.0
Elimination tag [‡]	56.4	0.2
Football	85.3	0.3
Hockey	65.8	0.0
Kickball	81.8	1.4
King of the hill or steal the flag [‡]	55.0	0.0
Lacrosse	20.5	0.0
Red rover [‡]	29.8	0.0
Relay races [‡]	90.8	2.0
Soccer	88.3	2.4
Student-designed games	64.1	0.5
Ultimate Frisbee	50.7	0.0
Volleyball	90.3	1.5
Individual or paired activity		
Aerobics	62.7	0.9
Badminton	49.7	0.0
Bowling	45.0	0.0
Cardiovascular exercise machines	31.0	0.0
Climbing ropes or wall ladders	19.7	0.0
Climbing walls	12.0	0.0
Frisbee or Frisbee golf	67.8	0.6
Golf	28.3	0.0
Gymnastics	41.3	0.0
Hiking, backpacking, or orienteering	10.6	0.0
Jumping rope	83.7	2.5
Martial arts	9.1	0.0
Nonstationary bicycling	4.7	0.0
Racquet sports other than tennis	49.4	0.0
Running or jogging	91.1	5.7
Skating	11.7	0.0
Skiing	4.4	0.0
Student-designed games	62.3	0.7
Tennis	38.8	0.0
Track and field	66.7	0.8
Walking	82.5	2.0
Weight training	36.3	0.0
Wrestling	7.2	0.0
Yoga or flexibility	60.3	1.5
Dance activity		
Ballet, jazz, tap, or modern dances	20.9	0.0
Ballroom dances	7.4	0.0
Line dances (eg, the electric slide)	43.8	0.7
Rhythmic, folk, or cultural dances	39.2	0.5
Square dances	32.9	0.0
Aquatic activity		
Diving	3.5	0.1
Stroke instruction or swimming skill practice	6.6	3.8
Team water sports (eg, basketball, volleyball, or water polo)	4.8	0.0
Water aerobics	3.6	0.0
Water safety or lifesaving	5.7	0.4

*Among the 78.3% of schools that required physical education.

[†]Among those physical education classes or courses in which teachers taught each type of activity (ie, group and team activities, individual and paired activities, dance activities, and aquatic activities). Included lead-up skills, skills specific to the activity, and modified versions of the activity.

[‡]Only asked among elementary schools.

schools, by a regular classroom teacher in 13.4% of these schools, and by another individual in 12.4% of these schools.

Collaboration. During the 12 months preceding the study, physical education staff worked on physical education activities with health education staff in 51.5% of schools, with health services staff in 41.9% of schools, with mental health or social services staff in 29.9% of schools, and with nutrition or food service staff in 23.4% of schools. School physical education staff also worked with organizations outside the school. The organizations with which physical education staff most commonly collaborated were a health organization (46.5% of schools), a local parks or recreation department (27.8% of schools), a local college or university (23.4% of schools), and a local youth organization (20.6% of schools). Physical education staff from fewer schools collaborated with a local business (16.8% of schools), a local health department (15.7% of schools), a local health or fitness club (12.1% of schools), a local hospital (11.3% of schools), a local service club (9.4% of schools), and a local mental health or social services agency (9.0% of schools).

Staffing and Professional Preparation. Among all elementary schools, physical education was taught by a physical education teacher or specialist in 88.7% of schools, by a regular classroom teacher in 17.8% of schools, and by other individuals in 2.5% of schools. Among all middle schools, physical education was taught by a physical education teacher in 94.0% of schools, by a health education teacher in 13.4% of schools, by a teacher of other subjects (eg, science or social studies) in 12.8% of schools, and by other individuals in 2.9% of schools. Among all high schools, required physical education was taught by a physical education teacher in 94.0% of schools, by a health education teacher in 19.9% of schools, by a teacher of other subjects (eg, science or social studies) in 13.7% of schools, and by other individuals in 4.4% of schools. In 80.1% of all elementary schools, physical education was taught only by a physical education teacher or specialist, and in 73.3% of all middle schools and 66.3% of all high schools, physical education was taught only by a physical education teacher.

Nationwide, 80.0% of schools required newly hired physical education teachers to have undergraduate or graduate training in physical education or a related field, 77.3% required newly hired physical education teachers to be state certified, licensed, or endorsed in physical education, and 62.9% required newly hired physical education teachers to earn continuing education credits on physical education topics.

Physical Education Coordinators. Most (91.2%) schools had someone to oversee or coordinate physical

education. Among schools that had a coordinator, 83.6% had that person serve as the respondent to the school-level physical education questionnaire. Among respondents, the average number of years of physical education teaching experience was 14.1. About half (49.1%) also coached an interscholastic sport. Among respondents, 96.4% had an undergraduate degree. Almost two thirds (64.2%) majored in physical education, while 19.7% majored in health education; 13.5% majored in other areas of education; 6.6% majored in kinesiology, exercise physiology, or exercise science; and 21.2% majored in other disciplines. In addition, 59.0% had an undergraduate minor, and 9.2% minored in physical education; 24.6% minored in health education; 19.4% minored in other areas of education; 1.9% minored in kinesiology, exercise physiology, or exercise science; and 53.5% minored in other disciplines. In addition, 43.5% of respondents had a graduate degree. About one fourth (25.9%) had a graduate degree in physical education; 6.2% had a graduate degree in health education; and 6.7% had a graduate degree in kinesiology, exercise physiology, or exercise science. Among the school-level coordinators who served as respondents, 91.9% had an undergraduate major, an undergraduate minor, or a graduate degree in physical education. In addition, 76.3% were certified, licensed, or endorsed to teach physical education at the elementary school level, 78.6% at the middle school level, and 71.6% at the high school level.

Facilities for Physical Education. The availability of indoor and outdoor physical education facilities may help determine the quality of physical education. Nationwide, more than three fourths of all elementary schools had access to a gymnasium, general use field, playground equipment, and outdoor basketball court for physical education (Table 6). More than three fourths of all middle schools had access to a gymnasium, baseball or softball field, general use field, and soccer or football field for physical education. More than three fourths of all high schools had access to a gymnasium, weight room, baseball or softball field, general use field, and soccer or football field for physical education. Excluding general use fields and outdoor basketball and volleyball courts, high schools were more likely than elementary and middle schools to have access to each facility listed in Table 6 for indoor and outdoor physical education. In addition, 38.9% of all elementary schools, 25.9% of all middle schools, and 26.2% of all high schools used regular classrooms for indoor physical education; 54.9% of all elementary schools, 37.8% of all middle schools, and 25.3% of all high schools used a cafeteria, auditorium, or other multipurpose room for indoor physical education; and 4.7% of all elementary schools, 3.2% of all middle schools, and 5.0% of all high schools used trailers or

Table 6. Percentage of All Schools That Had Access to Facilities for Indoor and Outdoor Physical Education, by School Level, SHPPS 2006

	% of All Elementary Schools	% of All Middle Schools	% of All High Schools
Indoor facility			
Cardiovascular fitness center	7.1	18.1	32.7
Dance studio	5.7	6.5	20.8
Gymnasium	77.4	90.8	97.0
Indoor pool	6.7	6.9	18.5
Indoor track	2.5	1.5	9.4
Racquetball or squash court	3.0	1.9	5.9
Weight room	10.5	46.1	87.6
Wrestling room	4.9	15.1	39.9
Outdoor facility			
Baseball or softball field	74.2	79.6	88.4
General use field	93.2	89.6	90.0
Playground equipment	93.9	NA	NA
Outdoor basketball court	80.7	73.6	51.8
Outdoor pool	5.5	9.3	12.7
Outdoor tennis court	24.3	34.2	60.2
Outdoor volleyball court	34.1	33.5	29.3
Soccer or football field	68.5	78.8	87.8
Track for walking, jogging, or running	45.6	59.2	71.5

NA, not asked at this level.

mobile buildings for indoor physical education. Among schools that used a gymnasium, cafeteria, auditorium, or other multipurpose room for indoor physical education, 45.4% reported their facility to be less than 50% full, 33.3% reported it to be 50-75% full, 18.0% reported it to be 76-100% full, and 3.3% reported it to be over capacity during a typical physical education class. Further, 60.9% of all elementary schools, 49.8% of all middle schools, and 21.0% of all high schools used a parking lot or black top area for outdoor physical education. Nationwide, 10.6% of all elementary schools, 62.5% of all middle schools, and 87.1% of all high schools had locker rooms with showers.

Physical Activity and Discipline. Nationwide, in 32.3% of schools, school staff were allowed to use physical activity (eg, running laps or doing push-ups) to punish students for bad behavior in physical education, while in 8.9% of schools, staff were actively discouraged from using this practice. In 22.6% of schools, staff were allowed to exclude students from all or part of physical education as punishment for bad behavior in another class, while in 11.4% of schools, staff were actively discouraged from using this practice.

Physical Activity and Interscholastic Sports at the School Level

Elementary School Recess. Nearly all (96.8%) elementary schools provided regularly scheduled recess for students in at least 1 grade. Among these schools,

students were scheduled to have recess an average of 4.9 days per week for an average of 30.2 minutes per day. Most (82.1%) elementary schools provided regularly scheduled recess for students in kindergarten, 90.4% provided it for first grade students, 92.0% for second grade students, 93.7% for third grade students, 94.4% for fourth grade students, and 86.6% for fifth grade students. Seventy-four percent of all elementary schools provided regularly scheduled recess for students in all grades in the school. Recess was regularly scheduled immediately before lunch for all classes in 10.4% of the 96.8% of schools that provided recess and immediately after lunch for all classes in 49.6% of these schools. In addition, 81.5% of schools allowed faculty or staff to exclude students from participating in all or part of recess for bad behavior, while 17.4% actively discouraged this practice.

Physical Activity Breaks and Walk and Bike to School Programs. Participation in regular physical activity breaks during the school day, outside physical education class and recess, was more common among middle schools than among elementary or high schools. Specifically, 43.6% of elementary schools, 66.8% of middle schools, and 22.2% of high schools had students participate in regular physical activity breaks during the school day. Nationwide, 44.3% of all schools supported or promoted walking or biking to and from school.

Intramural Activities and Physical Activity Clubs. Almost half (48.4%) of all schools offered intramural activities or physical activity clubs to students. Specifically, 49.5% of elementary schools, 48.5% of middle schools, and 44.8% of high schools offered intramural activities or physical activity clubs. More than one fourth of all elementary schools offered baseball, softball, whiffleball; basketball; and running or jogging; more than one fourth of all middle schools offered baseball, softball, and whiffleball; basketball; football (eg, touch or flag); running or jogging; soccer; and volleyball; and more than one fourth of all high schools offered basketball, volleyball, and weight training (Table 7).

Among the 48.4% of schools that offered intramural activities or physical activity clubs, 89.1% provided information about intramurals or physical activity clubs to students during school announcements; 80.0% did so in a school newsletter, newspaper, or other school publication; and 74.4% did so through posters or other materials on display in the school. More than half (54.6%) of these schools paid staff to supervise intramural activities or physical activity clubs. Further, 22.9% provided transportation home for students participating in after-school intramural activities or physical activity clubs. Specifically, 16.9% of these elementary schools provided transportation home for students, 31.0% of these

Table 7. Percentage of All Schools That Offered Intramural Activities or Physical Activity Clubs, by School Level, SHPPS 2006

Intramural Activity or Physical Activity Club	% of All Elementary Schools	% of All Middle Schools	% of All High Schools
Aerobics (eg, step or low impact)	11.7	13.0	14.7
Badminton	5.6	10.0	15.6
Baseball, softball, or whiffleball	27.7	28.0	22.2
Basketball	38.3	42.4	37.2
Bowling	7.7	10.4	10.6
Cardiovascular fitness	23.9	20.6	24.0
Dance (eg, ballroom, folk, or square dance)	15.0	16.2	13.6
Football (eg, touch or flag)	23.0	30.4	19.7
Frisbee, Frisbee golf, or ultimate Frisbee	10.8	15.9	14.5
Golf	4.2	11.0	11.3
Gymnastics	11.3	8.2	4.6
Hiking, backpacking, or orienteering	3.4	4.5	7.5
Hockey (eg, field, floor, roller, or ice)	16.6	17.2	13.5
Jump rope	22.9	19.1	16.2
Lacrosse	3.4	6.0	5.5
Martial arts	5.6	4.5	4.1
Nonstationary bicycling	1.5	3.5	6.3
Racquet sports other than tennis (eg, racquetball, handball, squash, or paddleball)	6.8	9.3	13.1
Running or jogging	28.6	29.0	24.1
Skating (eg, roller, in-line, or ice)	3.3	6.1	4.2
Skiing (eg, cross-country, downhill, or water)	3.1	6.0	7.1
Soccer	28.6	27.7	18.8
Swimming, diving, or water polo	2.1	7.6	6.3
Tennis	8.6	10.7	12.4
Volleyball	24.6	35.5	27.4
Walking	20.0	19.2	20.4
Weight training	4.1	13.9	28.6
Wrestling	5.5	9.5	6.8
Yoga or flexibility	12.7	11.0	9.9

middle schools provided transportation home, and 28.0% of these high schools provided transportation home. Among the 48.4% of schools that offered intramural activities or physical activity clubs, 35.0% required students to pay an activity fee to participate, but 86.1% of these schools waived the fee for students who could not afford to pay. Among the 48.4% of schools that offered intramural activities or physical activity clubs to students, 88.6% offered activities that might require protective gear. Among these schools, 85.8% required students to wear appropriate protective gear when engaged in these activities.

Interscholastic Sports. Nationwide, 77.0% of middle schools and 91.3% of high schools offered students opportunities to participate in at least 1 of the interscholastic sports listed in Table 8. More than half of all middle schools offered interscholastic basketball, cheerleading or competitive spirits, cross-country, fast pitch or slow pitch softball, football,

track and field, and volleyball (Table 8). More than half of all high schools offered interscholastic baseball, basketball, cheerleading or competitive spirits, cross-country, fast pitch or slow pitch softball, football, golf, soccer, tennis, track and field, and volleyball.

Among the 82.6% of middle and high schools that offered interscholastic sports, 33.2% required students to pay an activity fee to participate, but 86.1% of these schools waived the fee for students who could not afford to pay. Further, 29.1% of the schools that offered interscholastic sports provided transportation home for participating students.

Among the 82.6% of middle and high schools that offered interscholastic sports, 86.7% distributed a handbook containing policies, regulations, rules, and enforcement measures for students who participated in interscholastic sports. In addition, 63.9% of middle and high schools that offered interscholastic sports did not allow the practice of using physical activity to punish students for poor performance or bad behavior in interscholastic sports, and an additional 9.1% actively discouraged this practice. Among the middle and high schools that offered interscholastic sports, more than 90% almost always or always strictly enforced prohibitions against dangerous athletic behaviors such as spearing in football, high sticking in hockey, or bat throwing in baseball; strictly enforced prohibitions against vio-

lence and aggression by students, spectators, coaches, and other persons during sporting events; strictly enforced prohibitions against alcohol or drug use; actively discouraged student use of steroids, hormones, or other substances to enhance athletic performance; reported all sports-related injuries to the appropriate authority; and avoided excesses in training regime that may result in injuries such as heat stroke, exhaustion, dehydration, sprains, or strains. Additionally, 88.5% almost always or always required physical examination by a health care provider before participation, and 66.4% almost always or always rewarded students for good sportsmanship. Finally, among the middle and high schools that offered interscholastic sports, 97.9% established criteria, including clearance by a health care provider, before allowing further participation in practice or reentry into game play after a head injury; 97.0% established criteria for safe playing conditions (eg, avoiding extreme temperature or dangerous field conditions); and 98.7% required students to wear appropriate protective gear when engaged in interscholastic sports.

Among the 82.6% of middle and high schools that offered interscholastic sports, 57.7% required head coaches to be certified in first aid, 55.5% required them to have certification in CPR, 58.4% required them to complete a coaches' training course, 43.7% required them to be employed by the school or by the school district, 39.3% required them to have previous coaching experience in any sport, 36.4% required previous coaching experience in the sport they would be coaching, and 25.7% required head coaches to have a teaching certificate. In addition, 44.3% required assistant coaches or volunteer athletic aides to complete a training course, and 47.6% of schools had certified athletic trainers to provide services for the interscholastic sports teams.

Facilities for Physical Activity. Schools may allow the use of indoor and outdoor school facilities for programs sponsored by community organizations such as YMCAs, parks and recreation departments, and Boys and Girls Clubs. This does not include use of these facilities for interscholastic sports, intramural activities, or physical activity clubs. Outside school hours or when school was not in session, children and adolescents used the school's physical activity or athletic facilities for community-sponsored sports teams in 68.9% of all schools, for supervised "open gym" or "free play" in 40.3% of all schools, and for community-sponsored classes or lessons (eg, tennis or gymnastics) in 33.3% of all schools. Among all schools, 59.6% made their physical activity facilities available for children and adolescents in the evenings, 57.6% made them available after school, 52.2% made them available on the weekends, 46.0%

Table 8. Percentage of All Middle and High Schools That Offered Interscholastic Sports, by School Level, SHPPS 2006

Interscholastic Sport	% of All Middle Schools	% of All High Schools
Badminton	4.2	7.2
Baseball	35.7	79.6
Basketball	76.4	90.9
Bowling	3.0	17.2
Cheerleading or competitive spirits	50.9	77.3
Cross-country	38.9	68.4
Downhill or cross-country skiing	3.2	5.9
Fast pitch or slow pitch softball	45.2	77.9
Field hockey	7.1	10.2
Football	53.0	71.0
Golf	22.1	68.4
Gymnastics	5.2	10.1
Ice hockey	2.4	14.3
Lacrosse	3.7	12.8
Rifflery	2.1	3.8
Soccer	32.3	60.3
Swimming or diving	6.9	37.8
Tennis	12.6	53.0
Track and field	52.1	73.2
Volleyball	57.3	71.4
Water polo	0.5	2.6
Weight lifting	9.9	23.8
Wrestling	28.7	49.6

offered them during school vacations, and 11.3% made them available before school.

Schools also provided access to physical activity or athletic facilities for community-sponsored programs for adults who were not school employees. Outside school hours or when school was not in session, adults used the school's physical activity or athletic facilities for community-sponsored sports teams in 47.3% of all schools, for open gym in 30.8% of schools, and for physical activity classes or lessons in 23.2% of schools. Among all schools, 45.1% made their physical activity facilities available for adults in the evenings, 38.1% made them available on the weekends, 32.8% made them available during school vacations, and 6.7% made them available before school.

Children or adults in the community had access to the use of outdoor physical activity and athletic facilities, without being in a supervised program, in 65.2% of all schools. Among all schools, 62.0% allowed facilities to be used in the evenings, 62.5% on the weekends, 61.5% after school, 62.0% during school vacations, and 46.4% before school.

Changes Between 2000 and 2006 at the School Level. Only a few changes between 2000 and 2006 were detected at the school level. Among schools that required physical education, the percentage allowing students to be exempted from required physical education for 1 grading period or longer for a cognitive disability increased from 31.4% to 44.1%, and the percentage allowing exemptions because of a long-term physical or medical disability increased from 66.3% to 85.7%. Among schools that required physical education, the percentage requiring students who fail required physical education to repeat it increased from 25.1% to 35.6%. The percentage of schools in which physical education teachers were provided with lesson plans or learning activities for physical education decreased from 52.6% to 42.2%.

Between 2000 and 2006, increases were detected in the percentage of schools that taught in required physical education climbing walls (from 4.4% to 12.0%), cardiovascular exercise machines (from 19.4% to 31.0%), and ultimate Frisbee (from 39.5% to 50.7%).

In addition, between 2000 and 2006, the percentage of schools with intramural activities or physical activity clubs that required students to pay a fee for these activities increased from 23.0% to 35.0%.

Physical Education at the Classroom Level

General Course Characteristics. In middle and high schools, 27.0% of required physical education courses were taught as a combined health and physical education course. Among all physical education classes and courses, 28.6% had fewer than 20 stu-

dents enrolled, 54.2% had between 20 and 30, and 17.3% had more than 30. During a required physical education period, physical education teachers at all 3 school levels had students spend a mean of 17.7 minutes engaged in games, sports, or dance; 9.0 minutes doing skills drills; 6.3 minutes doing warm-up activities; 4.6 minutes receiving instruction through lecture or demonstration; and 2.6 minutes doing cool-down activities. In addition, middle school teachers allowed an average of 3.8 minutes and high school teachers an average of 5.6 minutes for students to change clothes before class, and teachers allowed an average of 3.3 and 6.3 minutes for students in middle schools and high schools, respectively, to shower or change clothes after activities. In addition, teachers at all school levels spent an average of 1.9 minutes doing administrative tasks while students were not physically active. These tasks included taking roll, listening to announcements, and doing other administrative tasks while students were not active. The total amount of active time spent in a typical physical education period was 35.6 minutes among all required physical education classes or courses, 34.9 minutes among elementary school classes, 39.7 minutes among middle school courses, and 44.6 minutes among high school courses.

Teaching Methods and Topics. More than half of teachers of required physical education classes or courses used the following practices almost always or always when teaching physical education: active supervision (94.6%); use of safe, age-appropriate equipment (90.2%); encouraging prosocial behaviors (ie, cooperation, conflict resolution, and helping others) (90.4%); minimizing exposure to sun, smog, and extreme temperatures (57.3%); and providing students with options for performing physical activities at varying skill levels (58.1%). About one fourth (25.7%) almost always or always offered activities that took into account gender and cultural differences in students' interests. Among classes in which students participated in activities requiring protective clothing or safety gear, 46.1% had teachers who almost always or always used protective clothing and safety gear that was appropriate to the student's size and was in good shape. Among classes in which teachers had to handle blood and other bodily fluids, 86.5% had teachers who almost always or always used infection control practices for handling blood and other bodily fluids. More than half of teachers of required physical education classes or courses used the following practices rarely or never when teaching physical education: organizing activities in which fewer than half of the students were physically active (83.1%), allowing highly skilled students to dominate activities and games (86.3%), organizing games that eliminated students (74.7%), having

team captains choose team members (78.7%), selecting team captains (67.0%), and having many students stand in line or on the sidelines watching others and waiting for a turn (66.4%).

Contact hours for each activity included time spent on lead-up skills, skills specific to the activity, and modified versions of the activity. Among required elementary school physical education classes in which movement concepts and skills were taught, students spent a median of 7.0 contact hours on manipulative skills (eg, throwing, catching, kicking, or striking), 4.6 contact hours on locomotor skills (eg, walking, skipping, or hopping), 4.6 contact hours on combination movement skills (eg, combining traveling, balancing, and weight transfer), 3.6 contact hours on space awareness (eg, space, directions, or levels), and 2.7 contact hours on nonlocomotor skills (eg, bending, twisting, or rocking).

Among all required physical education classes or courses in which group or team activities were taught, students spent the most time (a median of 3.0 contact hours) on basketball (Table 5). Among classes or courses in which individual or paired activities were taught, students spent the most time (a median of 5.7 contact hours) on running or jogging. Among classes or courses in which dance activities were taught, students spent the most time (a median of 0.7 contact hours) on line dances. Among

classes or courses in which aquatic activities were taught, students spent the most time (a median of 3.8 contact hours) on stroke instruction or swimming skill practice.

Teachers in more than three fourths of all elementary schools taught about the following topics in at least 1 required physical education class: the difference between moderate and vigorous physical activity; the difference between physical activity, exercise, and fitness; health-related fitness; phases of an exercise session; physical, psychological, or social benefits of physical activity; preventing injury during physical activity; role of physical activity in reducing risk for chronic diseases; and skill-related fitness (Table 9). Teachers in more than three fourths of all middle schools taught the following topics in at least 1 required physical education course: the difference between moderate and vigorous physical activity; the difference between physical activity, exercise, and fitness; health-related fitness; phases of an exercise session; physical, psychological, or social benefits of physical activity; preventing injury during physical activity; role of physical activity in reducing risk for chronic diseases; and skill-related fitness. Teachers in more than three fourths of high schools taught the following topics in at least 1 required physical education course: the difference between moderate and vigorous physical activity; the difference

Table 9. Percentage of All Schools in Which Teachers Taught Physical Education Topics in at Least 1 Required Physical Education Class or Course, by School Level, SHPPS 2006

Physical Education Topic	% of All Schools	% of All Elementary Schools	% of All Middle Schools	% of All High Schools
Balancing food intake and physical activity	63.6	64.3	60.1	67.5
Dangers of using performance-enhancing drugs and supplements such as steroids	41.6	28.6	51.2	64.8
Developing an individualized physical activity plan	51.1	NA	46.7	58.3
Difference between moderate and vigorous physical activity	86.0	84.9	86.3	88.9
Difference between physical activity, exercise, and fitness	81.3	80.1	82.5	83.2
Health-related fitness (ie, cardiovascular endurance, muscular endurance, muscular strength, flexibility, and body composition)	88.9	87.4	91.9	88.4
How to find valid information, services, or products related to physical activity and fitness	44.2	40.7	46.1	51.5
How much physical activity is enough (ie, determining frequency, intensity, duration, and type of physical activity)	71.1	67.4	73.2	79.1
Identifying and overcoming barriers to physical activity	64.4	61.4	66.5	70.2
Mechanics of movement (eg, the role of muscles in movement, force absorption, or throwing mechanisms)	69.7	71.3	68.6	66.7
Monitoring progress toward reaching goals in an individualized physical activity plan	57.6	NA	54.7	62.6
Opportunities for physical activity in the community	72.6	73.4	74.5	67.0
Phases of an exercise session (ie, warm-up, workout, and cool down)	89.2	88.9	88.3	91.3
Physical, psychological, or social benefits of physical activity	86.2	85.6	86.3	87.5
Preventing injury during physical activity	91.4	91.3	92.8	89.5
Role of physical activity in reducing risk for chronic diseases (eg, diabetes, heart disease, and osteoporosis)	76.2	75.9	75.6	78.0
Skill-related fitness (ie, agility, power, balance, speed, and coordination)	86.6	86.2	87.8	85.9
Weather-related safety (eg, avoiding heat stroke, hypothermia, and sunburn) while physically active	66.0	63.0	70.3	67.9

NA, not asked at this level.

between physical activity, exercise, and fitness; health-related fitness; how much physical activity is enough; phases of an exercise session; physical, psychological, or social benefits of physical activity; preventing injury during physical activity; role of physical activity in reducing risk for chronic diseases; and skill-related fitness.

Physical education teachers used a variety of teaching methods. In more than two thirds of all schools, teachers in at least 1 required physical education class or course sometimes, almost always, or always used cooperative group activities (97.7%), skills drills (87.3%), competitive group activities (86.9%), and physical activity stations (70.8%). Physical education teachers in fewer schools sometimes, almost always, or always used peer teaching (40.8%), pledges or contracts for behavior change (23.0%), student physical activity logs or journals (21.8%), heart rate or physical activity monitors (20.2%), the Internet (15.0%), guest speakers (10.3%), and computer-assisted instruction (7.0%).

Physical education teachers used a variety of materials to plan and teach their classes or courses. In 90.7% of all schools, teachers used state-, district-, or school-developed curriculum, standards, or guidelines in at least 1 required physical education class or course; in 59.4% of schools, they used materials from a health organization; in 58.1% of schools, they used the *National Standards for Physical Education*;¹⁷ in 34.0% of schools, they used a commercially developed teacher's guide; in 27.5% of schools, they used a commercially developed curriculum; and in 12.0% of schools, they used a commercially developed student textbook.

Student Assessment. To assess student performance in physical education, in 95.8% of all schools, teachers used level of participation as a criterion in at least 1 required physical education class or course; in 89.3% of schools, they used student attitude; in 69.4% of schools, they used appropriate clothing for physical activity; in 56.9% of schools, they used attendance; in 53.7% of schools, they used improvement in movement skills test scores; in 49.3% of schools, they used final scores on movement skills tests; in 45.9% of schools, they used physical fitness test scores; in 45.7% of schools, they used performance on knowledge tests; in 39.7% of schools, they used demonstration of self-management skills; and in 11.8% of schools, they used participation in physical activity outside physical education.

Teachers also used tests as a method of student assessment. Teachers in 42.2% of all schools gave written tests of students' knowledge related to physical education in at least 1 required class or course. Teachers gave skill performance tests and fitness tests in at least 1 required class or course in 69.7% and 73.8% of schools, respectively. Teachers in

48.6% of all schools used the Physical Fitness Test from the President's Challenge in at least 1 required class or course, teachers in 13.3% of schools used the Fitnessgram, teachers in 3.5% used the Health Fitness Test from the President's Challenge, and teachers in 0.6% used the Youth Fitness Test from the YMCA. Teachers in more than half of the 73.8% of schools that conducted fitness tests in at least 1 required class or course compared student fitness test scores to national, state, or local criterion-referenced standards (71.9%); to national, state, or local normative standards (61.6%); to the students' prior fitness test scores (70.9%); and to the student's goals (52.9%). Further, in 88.2% of schools that conducted fitness tests, teachers in at least 1 required class or course provided students with an explanation of what their fitness test scores meant, and in 90.8% of schools, they shared students' fitness test scores with students' parents or guardians. Finally, in 88.2% of schools that gave fitness tests in at least 1 required class or course, teachers scheduled time during class periods for students to practice for the fitness tests.

In 25.6% of all middle and high schools, teachers in at least 1 required physical education class or course required students to develop individualized physical activity plans. Among these schools, 80.1% of teachers in at least 1 required physical education class or course had students use their fitness test scores to help develop their plans, 91.8% provided students with individual feedback on their plans, and 90.8% provided students with instruction on how to monitor adherence to their plans. Further, 89.2% of teachers required students' plans to include fitness goals, 86.4% required students' plans to include physical activity goals, 84.7% required students to identify a process for assessing progress toward goals (eg, self-monitoring or self-management), 81.6% required students to have scheduled times for engaging in physical activity, 59.4% required students to identify barriers to physical activity, and 49.8% required students' plans to include specific rewards for meeting their goals. Among the 25.6% of schools with teachers that required students to develop individualized physical activity plans in at least 1 required physical education course, 16.4% of teachers assessed students on the basis of the quality of their plans. In addition, physical education teachers in 16.6% of all schools required students to keep a log of the physical activities they engaged in outside physical education in at least 1 required class or course.

Physical Education for Students With Disabilities. Nationwide, 22.9% of all required physical education classes or courses had students with long-term physical, medical, or cognitive disabilities. About half (52.9%) of these classes or courses had

a teacher or aide who came in to assist these students, 39.2% had a physical education teacher who coordinated activities for these students with a special education teacher, 32.2% had a physical or occupational therapist who came in to assist these students, and 29.1% had an adapted physical education teacher or specialist who taught students with disabilities. When teaching students with disabilities, physical education teachers in 84.4% of these classes or courses used simplified instructional content or variations in the amount of difficulty of the material taught; 76.8% used more skill modeling, practice, or repetition; 72.8% used modified assessment; 69.4% used peer teaching or coaching, and 57.4% used modified equipment or facilities.

Staffing and Staff Development. Nationwide, teachers of required elementary school physical education classes had a median of 12.0 years of experience teaching physical education, and teachers of required middle and high school physical education courses had a median of 11.7 years. In most required physical education classes or courses, the teacher was certified, endorsed, or licensed by the state to teach physical education. Specifically, 85.7% of elementary school physical education classes had a teacher who was certified to teach physical education at the elementary school level, 80.4% of middle school physical education courses had a teacher who was certified to teach physical education at the middle school level, and 89.5% of high school physical education courses had a teacher who was certified to teach at the high school level. One third (33.1%) of elementary school physical education classes, 67.1% of middle school physical education courses, and 72.7% of high school physical education courses had a teacher who also coached an interscholastic sport.

Almost all (94.9%) elementary school physical education classes had a teacher with an undergraduate degree: 64.4% majored in physical education; 20.2% in health education; 13.4% in another area of education; and 8.2% in kinesiology, exercise physiology, or exercise science. About half (53.3%) of elementary school physical education classes had a teacher with an undergraduate minor: 27.4% minored in another education field; 19.2% in health education; 11.7% in physical education; and 1.3% in kinesiology, exercise physiology, or exercise science. Nationwide, 38.2% of elementary school physical education classes had a teacher with a graduate degree. Almost half (46.4%) of their graduate degrees were in another area of education: 28.3% were in physical education; 5.7% in health education; and 2.5% in kinesiology, exercise physiology, or exercise science.

Almost all (97.6%) middle and high school physical education courses had a teacher with an under-

graduate degree: 71.6% majored in physical education; 20.5% in health education; 9.7% in another area of education; and 6.3% in kinesiology, exercise physiology, or exercise science. About half (54.7%) of middle and high school physical education classes had a teacher with an undergraduate minor: 24.2% minored in health education; 19.7% in another area of education; 7.4% in physical education; and 2.7% in kinesiology, exercise physiology, or exercise science. Nationwide, 37.1% of middle and high school physical education courses had a teacher with a graduate degree. More than one third (36.5%) of their degrees were in another area of education, 34.4% in physical education, 7.1% in health education, and 7.2% in kinesiology, exercise physiology, or exercise science.

During the 2 years preceding the study, physical education teachers from 87.7% of required physical education classes or courses received staff development on at least 1 of the physical education topics listed in Table 3. Teachers from at least half of required physical education classes or courses received staff development on injury prevention and first aid, teaching individual or paired activities or sports, teaching movement skills and concepts, and teaching team or group activities or sports (Table 3). Teachers from more than one third of required physical education courses wanted to receive further staff development on assessing or evaluating student performance in physical education; chronic health conditions; developing and using student portfolios for physical education; encouraging family involvement in physical activity; helping students develop individualized physical activity plans; methods to increase the amount of class time students are physically active; teaching methods to promote inclusion and active participation of overweight children during physical education; teaching movement skills and concepts; teaching physical education to students with long-term physical, medical, or cognitive disabilities; using physical activity monitoring devices for physical education; and using technology for physical education.

Changes Between 2000 and 2006 at the Classroom Level. Some changes in general course characteristics were detected between 2000 and 2006. Specifically, the mean number of minutes students participated in games, sports, or dance increased from 15.3 to 17.7, while the mean number of minutes teachers provided instruction through lecture or demonstration decreased from 5.7 to 4.6, and the mean number of minutes students spent doing cool-down activities decreased from 3.2 to 2.6.

Between 2000 and 2006, changes were detected in teaching methods and topics. An increase was detected in the percentage of schools that used, in at least 1 required physical education class or course,

pledges for behavior change (from 35.2% to 64.1% of schools), computer-assisted instruction (from 12.1% to 25.4%), and the Internet (from 22.4% to 35.0%). (Note that the 2006 estimates presented here do not match those presented earlier in this paper. In SHPPS 2000, teachers were asked only whether they used a particular teaching method. In SHPPS 2006, teachers were asked whether they never, rarely, sometimes, or almost always or always used a particular teaching method. To compare 2000 and 2006 responses, 3 2006 response options [*rarely, sometimes, and almost always or always*] were collapsed to produce a dichotomous variable more similar to the 2000 response options). Further, the percentage of schools in which teachers used a commercially developed teacher's guide in at least 1 required class or course decreased from 52.6% to 34.0%.

In addition, a decrease was detected in the median number of contact hours students in required physical education classes or courses spent on baseball, softball, or whiffleball (from 3.2 to 2.0); basketball (from 4.8 to 3.0); soccer (from 3.9 to 2.4); group or team student-designed games (from 1.3 to 0.5); volleyball (from 2.9 to 1.5); gymnastics (from 1.4 to 0.0); individual or paired student-designed games (from 1.6 to 0.7); and track and field (from 1.9 to 0.8). Decreases were also detected in the median number of contact hours students in required elementary school physical education classes spent on locomotor skills (from 11.0 to 4.6), manipulative skills (from 11.0 to 7.0), nonlocomotor skills (from 5.0 to 2.7), and space awareness (from 5.8 to 3.6).

Between 2000 and 2006, changes were also detected in student assessment practices. Among schools using fitness tests, the percentage in which teachers in at least 1 required class or course compared fitness test scores with students' prior fitness test scores decreased from 81.2% to 70.9%, and the percentage in which they compared scores with students' goals also decreased from 65.6% to 52.9%. Among schools in which teachers had students develop individualized activity plans in at least 1 required class or course, the percentage in which teachers provided instruction on how to monitor adherence to these plans increased from 79.4% to 90.8%. Also, the percentage of schools in which teachers assessed students based on attendance decreased from 67.0% to 56.9%.

Among required physical education classes or courses containing students with long-term physical, medical, or cognitive disabilities, the percentage in which a teacher or an aide came in to assist these students increased from 37.7% to 52.9%.

Finally, a decrease was detected in the percentage of required physical education classes or courses that

had a teacher who received staff development during the 2 years preceding the study on using technology for physical education (from 47.4% to 37.1%) and developing and using student portfolios for physical education (from 28.3% to 17.5%).

DISCUSSION

Physical Education Policies and Programs

With many efforts underway to improve the quality of physical education in our country, such as the Carol M. White PEP, it is essential to monitor the status of physical education policies, programs, and practices among our states, districts, and schools. According to SHPPS results, many positive changes occurred in physical education policies, programs, and practices between 2000 and 2006. Additionally, according to SHPPS 2006 data, components of physical education policies and aspects of the quality of physical education across the nation appear promising. While progress is being made, the need remains to implement stronger policies and programs from the state to the school level.

For example, most states and districts required physical education at all school levels, and almost all schools required students to take some physical education. However, 30.7% of elementary schools, 16.1% of middle schools, and 4.8% of high schools, or 21.7% of schools overall, did not have a physical education requirement. As grade level increased among schools that required physical education in at least 1 grade, physical education requirements decreased from 50% or more in grades 1 through 9 to only 20.4% in grade 12. Further, only 3.8% of elementary schools (excluding kindergarten), 7.9% of middle schools, and 2.1% of high schools provided daily physical education or its equivalent for all grades in the school for the entire school year. The prevalence of daily physical education has not significantly decreased since 2000, but neither has it increased. Because physical activity participation among young people declines as they progress through childhood into adolescence,⁷⁻¹⁰ it is essential that schools provide regular opportunities for students to participate in physical education.

Daily physical education from kindergarten through grade 12 is recommended by NASPE,^{17,18} PE4Life,³⁰ Action for Healthy Kids,³¹ and more than 30 other collaborating organizations (including the American Heart Association, National Association for State Boards of Education, and American Academy of Pediatrics) that established the *Health, Mental Health, and Safety Guidelines for Schools* document.³² In addition, *Healthy People 2010*²⁵ Objective 22-8 aims to increase the proportion of the nation's public and private schools that require daily physical education for all students to 25% of middle schools and

5% of high schools. Neither middle schools nor high schools has met this objective. Because of the rising rate of childhood obesity⁶ that increases risks for chronic diseases as young people enter adulthood, it is critical that states and districts enable schools to provide daily physical education. Further, states, districts, and schools should minimize the reasons for which students can be exempted from participating in physical education. More than 20% of the high schools that required physical education allowed exemptions for other school-based activities (eg, band, chorus) and school-based sports. Allowing exemptions decreases the perceived importance of and support for participation in physical education among all students.³³

In 2004, NASPE published the second edition of the *National Standards for Physical Education*¹⁷ that identified what physically educated students should know and be able to do. These standards increase accountability and provide districts and schools with outcomes for student achievement at all grade levels. Most states and districts required schools to follow these national or other state-developed physical education standards or guidelines. In addition, most states and districts required or recommended and most schools followed the *National Standards for Physical Education*.¹⁷ Between SHPPS 2000 and 2006, the percentage of states that had a policy stating that districts or schools will follow the *National Standards for Physical Education*¹⁷ increased from 49.2% to 76.0%, and the percentage of districts with this policy increased from 66.5% to 81.4%. This change is encouraging and likely reflects increased commitment to and recognition of the importance of physical education at the state and district levels.

At the classroom level, most physical education teachers used state-, district-, or school-developed physical education curriculum or guidelines and the *National Standards for Physical Education*.¹⁷ While this is promising, only 55.4% of schools provided teachers with a scope and sequence chart and only 24.5% provided them with a curriculum. Without a curriculum, it is difficult for teachers to deliver quality instruction, as a written curriculum serves as the foundation for the delivery of age-appropriate content and student assessment. In 2006, the CDC released the *Physical Education Curriculum Analysis Tool (PECAT)*.³⁴ The PECAT helps school districts and schools conduct clear, complete, and consistent analyses of written physical education curricula, based upon the *National Standards for Physical Education*.¹⁷ Results from a PECAT analysis can help schools enhance an existing curriculum or develop their own curriculum for the delivery of quality, standards-based physical education.³⁴

Although it is critical for states, districts, and schools to require daily physical education, this

requirement alone does not guarantee quality physical education instruction. It is promising that the percentage of states that required newly hired staff who teach elementary school physical education to have undergraduate or graduate training in physical education increased from 51.1% in 2000 to 64.7% in 2006. However, more states and districts need similar policies to ensure that physical education at all levels is taught only by adequately prepared teachers. Further, not enough states and districts had policies that prohibited the use of physical activity as punishment or that prohibited the exclusion of students from all or part of physical education for bad behavior in another class. Both of these practices, if not prohibited, can lead to negative attitudes toward physical activity and physical education and can lessen the importance of regular participation in physical education. Fortunately, the percentage of states and districts that actively discouraged schools from excluding students from physical education for bad behavior in another class increased from 20.4% to 54.0% among states and from 19.2% to 36.5% among districts between 2000 and 2006.

Some inappropriate practices at the classroom level were also reported. For example, some teachers used bombardment or elimination games and activities such as dodgeball, elimination tag, or king of the hill as part of required physical education courses. Other inappropriate classroom practices during physical education included having students stand in lines or on the sidelines watching others and waiting for a turn, having team captains choose teams, and organizing games that eliminated students. These types of activities and practices reduce opportunities for students to be physically active during physical education class and typically eliminate first those students most in need of both more activity and more confidence in their ability to be physically active.³⁵ Of further concern is the topics taught during required physical education classes or courses. For example, less than 70% of high schools taught about the dangers of performance-enhancing drugs or supplements (eg, steroids), weather-related safety (eg, avoiding heat stroke, hypothermia, and sunburn during physical activity), how to find valid information about physical activity, or identifying opportunities for physical activity in the community.

In only 59.0% of schools that required physical education, grades for physical education were considered the same as grades from other subject areas. The most common forms of student assessment by physical education teachers were skill performance tests and fitness tests. Less common was the use of written knowledge tests. Most teachers used level of participation, attitude, appropriate clothing, and attendance as criteria for assessing students in

physical education. Not enough teachers used movement skills test scores, physical fitness test scores, knowledge test scores, and demonstration of self-management skills as assessment criteria, and only 11.8% used physical activity participation outside physical education class. The skills of developing an individualized physical activity plan and identifying and monitoring progress toward achieving goals outlined in such a plan should be significant components of middle and high school physical education, but only 25.6% of all middle and high schools required students to develop such a plan, and among those schools, only 57.6% taught students how to monitor their progress. In addition, only 16.4% assessed students based on the quality of their plans. Among all schools, only 59.4% taught students to identify and overcome barriers to being active. While states and districts provided funding for staff development or offered staff development on student assessment or evaluation during the 2 years preceding the study, most physical education teachers were not using a diverse set of criteria to assess students.

Staff development for physical education teachers might influence the types of teaching and student assessment methods used by physical education teachers. Many states and districts provided funding for staff development or offered staff development on a variety of physical education topics. However, many required physical education courses were taught by a physical education teacher who had not received recent staff development on important topics. For example, although 41.7% of states and 47.2% of districts provided funding for staff development or offered staff development on helping students develop individualized physical activity plans during the 2 years preceding the study, only 24.9% of required physical education courses had a teacher who had received staff development on this topic, and only 51.1% of teachers in all middle and high schools actually included this topic in at least 1 required physical education course or class. Similarly, most states and districts provided funding for staff development or offered staff development on student assessment or evaluation, but less than half of teachers of required physical education received staff development on this topic. Further, many teachers wanted staff development on important topics. For example, only 34.7% of teachers received staff development on teaching methods to promote inclusion and active participation of overweight children during physical education, but 52.0% of teachers wanted staff development on this topic. With increasing rates of childhood obesity, it is critical that physical education teachers receive the staff development they need to promote inclusion and active participation of overweight students.

Nonetheless, physical education alone cannot adequately address the childhood obesity epidemic. Greater collaborative efforts are needed among physical education and nutrition services staff at all levels to enable schools to create consistent messages throughout the school environment about healthy eating and physical activity. It is encouraging to see an increase in collaboration between state- and district-level physical education and nutrition services staff between 2000 and 2006. Specifically, collaboration between physical education and nutrition services staff increased dramatically from 42.0% to 88.2% at the state level and from 12.1% to 46.0% at the district level. This change is especially encouraging in the context of the childhood obesity epidemic facing our nation. Additionally, this increase in collaboration between physical education and nutrition services staff might be a result of the local wellness policy requirement set forth through the Child Nutrition and WIC Reauthorization Act of 2004.²⁶ This legislation requires school districts to establish local wellness policies that must address physical activity as well as nutrition education and nutrition guidelines.

Physical Activity Policies and Programs

With quality physical education serving as the foundation for students to become and stay physically active, other physical activity program components provide opportunities to apply the knowledge and skills acquired in physical education. State- and district-level policies can support efforts to promote physical activity in schools. Encouraging changes in recess policies occurred among states and districts between 2000 and 2006. Specifically, the percentage of states requiring elementary schools to provide students with regular recess increased from 4.1% to 11.8%, and the percentage of districts with a similar policy increased from 46.3% to 57.1%. Further, most elementary schools provided regularly scheduled recess from kindergarten through grade 5. A recent study from the US Department of Education provides additional information about the status of recess among the nation's elementary schools. That study found that city schools, schools in the Southeast, and schools in areas with high concentrations of poverty were less likely than those in other areas to have scheduled recess for elementary school students.³⁶ In addition to enabling young people to accumulate minutes of physical activity, recess can also provide the opportunity for children to enhance cooperation and negotiation skills and improve attentiveness and concentration in the classroom.³⁷⁻⁴⁰

Many schools offered, supported, or promoted additional opportunities for physical activity. More

than 40% of elementary and nearly half of middle and high schools included regular physical activity breaks, outside physical education and recess, during the school day. Regular physical activity breaks can enhance the school environment and help establish social norms for active lifestyles.⁴¹ With recently passed federal legislation that provides funding to states to create Safe Routes to School,⁴² walk and bicycle to school programs have grown in popularity. It is encouraging that nearly half of all schools supported or promoted walk and bicycle to school programs. Most schools also offered at least some intramural or physical activity clubs and interscholastic sports. However, a much larger proportion of schools (77.4% of middle schools and 91.7% of high schools) offered interscholastic sports compared with intramural or physical activity clubs (48.4% of all schools). While both of these types of opportunities provide structured time to accumulate minutes of physical activity, establish cooperative and competitive skills, and, in some cases, learn sport-specific and performance-based skills, a greater availability of intramural or physical activity clubs would provide more students with noncompetitive, skill-building opportunities. Further, participation in organized physical activity, including interscholastic sports or intramural programs, may be related to higher levels of participation in overall physical activity, and girls tend to be more active during structured physical activity time than during free playtime.⁴³⁻⁴⁵ Participation in sports programs is also associated with improved mental health and a reduction in risky health behaviors.^{46,47}

To enhance and expand physical education and physical activity programs for young people, a comprehensive approach at the state, district, school, and classroom levels is necessary. States and districts can provide more leadership by requiring schools to provide daily physical education and other physical activity opportunities before, during, and after school and by enabling schools to establish health-promoting environments that support physical activity. Overall, great strides must be made in improving the quality of physical education and physical activity programs within schools. With strong multilevel policies and practices, many more of our young people will be given the opportunity to become physically educated individuals and thereby establish healthy, active lifestyles as they enter adulthood.

REFERENCES

1. US Department of Health and Human Services. The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity. Rockville, Md: US Department of Health and Human Services, Public Health Service, Office of the Surgeon General; 2001.
2. Lichtenstein A, Appel L, Brands M, et al. Diet and lifestyle recommendations revision 2006: a scientific statement from the American Heart Association Nutrition Committee. *Circulation*. 2006;114(1):84-96.
3. Jemal A, Siegel R, Ward E, Murray T, Xu J, Thun M. Cancer statistics, 2007. *CA Cancer J Clin*. 2007;57(1):43-66.
4. Centers for Disease Control and Prevention. National Diabetes Fact Sheet: General Information and National Estimates on Diabetes in the United States, 2005. Atlanta, Ga: US Department of Health and Human Services, Centers for Disease Control and Prevention; 2005.
5. US Department of Health and Human Services. Physical Activity and Health: A Report of the Surgeon General. Atlanta, Ga: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion; 1996.
6. Ogden CL. Prevalence of overweight and obesity in the United States, 1999-2004. *JAMA*. 2006;295(13):1549-1555.
7. Caspersen CJ, Pereira MA, Curran KM. Changes in physical activity patterns in the United States, by sex and cross-sectional age. *Med Sci Sports Exerc*. 2000;32(9):1601-1609.
8. Sallis JF. Age-related decline in physical activity: a synthesis of human and animal studies. *Med Sci Sports Exerc*. 2000; 32(9):1598-1600.
9. Gordon-Larsen P, Nelson MC, Popkin BM. Longitudinal physical activity and sedentary behavior trends: adolescence to adulthood. *Am J Prev Med*. 2004;27(4):277-283.
10. Nelson MC, Neumark-Sztainer D, Hannan PJ, Sirard JR, Story M. Longitudinal and secular trends in physical activity and sedentary behavior during adolescence. *Pediatrics*. 2006;118(6): 1627-1634.
11. Strong WB, Malina RM, Blimkie CJ, et al. Evidence-based physical activity for school-age youth. *J Pediatr*. 2005;146(6):732-737.
12. US Department of Health and Human Services and US Department of Agriculture. Dietary Guidelines for Americans, 2005. 6th ed. Washington, DC: US Government Printing Office; 2005.
13. Institute of Medicine of the National Academies. Preventing Childhood Obesity: Health in the Balance. Washington, DC: The National Academies Press; 2004.
14. Centers for Disease Control and Prevention. Guidelines for school and community programs to promote lifelong physical activity among young people. *MMWR Morb Mortal Wkly Rep*. 1997;46(RR-6):1-36.
15. National Association for Sport and Physical Education. Understanding the Difference: Is It Physical Education or Physical Activity? Reston, Va: National Association for Sport and Physical Education; 2005.
16. Kahn EB, Ramsey LT, Brownson RC, et al. The effectiveness of interventions to increase physical activity. A systematic review. *Am J Prev Med*. 2002;22(4 suppl):73-107.
17. National Association for Sport and Physical Education. Moving Into the Future: National Standards for Physical Education. 2nd ed. Reston, Va: National Association for Sport and Physical Education; 2004.
18. National Association for Sport and Physical Education. Physical Education Is Critical to a Complete Education. Reston, Va: National Association for Sport and Physical Education; 2001.
19. National Association for Sport and Physical Education. Opportunity to Learn Standards for Elementary School Physical Education. Reston, Va: National Association for Sport and Physical Education; 2000.
20. National Association for Sport and Physical Education. Appropriate Practices for Elementary School Physical Education. Reston, Va: National Association for Sport and Physical Education; 2000.
21. National Association for Sport and Physical Education. Appropriate Practices for Middle School Physical Education. Reston, Va: National Association for Sport and Physical Education; 2001.

22. National Association for Sport and Physical Education. Opportunity to Learn Standards for High School Physical Education. Reston, Va: National Association for Sport and Physical Education; 2004.
23. National Association for Sport and Physical Education. Opportunity to Learn Standards for Middle School Physical Education. Reston, Va: National Association for Sport and Physical Education; 2004.
24. National Association for Sport and Physical Education. Appropriate Practices for High School Physical Education. Reston, Va: National Association for Sport and Physical Education; 2004.
25. US Department of Health and Human Services. Healthy People 2010. 2nd ed. Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: US Government Printing Office; 2000.
26. Child Nutrition and WIC Reauthorization Act of 2004. Pub L No. 118-265, Stat 729, §101-502.
27. National Association for Sport and Physical Education. 2006 Shape of the Nation Report: Status of Physical Education in the USA. Reston, Va: National Association for Sport and Physical Education; 2006.
28. Pate RR, Small ML, Ross JG, Young JC, Flint KH, Warren CW. School physical education. *J Sch Health*. 1995;65(8):312-318.
29. Burgeson CR, Wechsler H, Brener ND, Young JC, Spain CG. Physical education and activity: results from the School Health Policies and Programs Study. *J Sch Health*. 2001;71(7):279-293.
30. PE4Life. Blueprint for Change. Kansas City, Mo: PE4Life; 2004.
31. Action for Healthy Kids. A mission becomes a mandate; campaign for school wellness. Available at: http://www.actionforhealthykids.org/special_exclusive.php. Accessed June 23, 2007.
32. Taras HL, Duncan P, Luckenbill D, Robinson J, Wheeler L, Wooley S. Health, Mental Health, and Safety Guidelines for Schools. Available at: <http://www.schoolhealth.org>. Accessed June 23, 2007.
33. National Association for Sport and Physical Education. Opposing Substitution and Waiver/Exemptions for Required Physical Education. Reston, Va: National Association for Sport and Physical Education; 2006.
34. Centers for Disease Control and Prevention. Physical Education Curriculum Analysis Tool. Atlanta, Ga: US Department of Health and Human Services; 2006.
35. National Association for Sport and Physical Education. Position on Dodgeball in Physical Education. Reston, Va: National Association for Sport and Physical Education; 2004.
36. Parsad B, Lewis L. Calories In, Calories Out: Food and Exercise in Public Elementary Schools, 2005. NCES 2006-057. US Department of Education. Washington, DC: National Center for Education Statistics; 2006.
37. Jarrett OS, Maxwell DM, Dickerson C, Hoge P, Davies G, Yetley A. Impact of recess on classroom behavior: group effects and individual differences. *J Educ Res*. 1998;92:121-126.
38. National Association for Sport and Physical Education. Recess in Elementary Schools. Reston, Va: National Association for Sport and Physical Education; 2006.
39. Pellegrini AD, Davis PD. Relations between children's playground and classroom behaviors. *Br J Educ Psychol*. 1993;63:88-95.
40. Sluckin A. Growing Up in the Playground: The Social Development of Children. London: Routledge & Kegan Paul; 1981.
41. Wechsler H, Devereaux RS, Davis M, Collins J. Using the school environment to promote physical activity and healthy eating. *Prev Med*. 2000;31(2):S121-S137.
42. US Department of Transportation Federal Highway Administration. SAFETEA-LU Section 1404. Safe Routes to School Program. Washington, DC: US Department of Transportation Federal Highway Administration; 2005.
43. Harrison PA, Gopalakrishnan N. Differences in behavior, psychological factors, and environmental factors associated with participation in school sports and other activities in adolescence. *J Sch Health*. 2003;73(3):113-120.
44. Vilhjalmsson R, Kristjansdottir G. Gender differences in physical activity in older children and adolescents: the central role of organized sport. *Soc Sci Med*. 2003;56(2):363-374.
45. Katzmarzyk PT, Malina R. Contribution of organized sports participation to estimated daily energy expenditure in youth. *Pediatr Exerc Sci*. 2000;13:378-385.
46. Pate R, Trost S, Levin S, et al. Sports participation and health-related behaviors among US youth. *Arch Pediatr Adolesc Med*. 2000;154:904-911.
47. Seefeldt V, Ewing ME. Youth sports in America. *Research Digest*. 1997;2(11):1-12.