May 2004

SERVICES AND SUPPORTS FOR SECONDARY SCHOOL STUDENTS WITH DISABILITIES

A Special Topic Report of Findings from the National Longitudinal Transition Study-2 (NLTS2)

Prepared for:
Office of Special Education Programs
U.S. Department of Education

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SRI International
333 Ravenswood Avenue Menlo Park, CA 94025

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Prepared for:
Office of Special Education Programs
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Prepared by:
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EXECUTIVE SUMMARY

The success that youth with disabilities achieve in school can be influenced by access to a range of services that support their education goals. As part of its mandate, the Individuals with Disabilities Education Act Amendments of 1997 (IDEA '97) requires the provision of related services and supports to students with disabilities who are deemed to need them to benefit from a free appropriate public education, yet little information has been available nationally about the extent to which such services and supports actually are provided. This report fills this gap in the knowledge base by considering the following questions for secondary-school-age youth with disabilities:

- What related services[1] and other supports[2] are provided to secondary-school-age students with disabilities during a 1-year period, and to what degree are they provided by or through the schools?
- What is involved in parents' acquiring services, including how they learn about services, the amount of effort they expend, and barriers they encounter?
- What is the unmet need for services, according to parents?

These questions are addressed by using data from the first wave of telephone interviews with parents of students with disabilities, which were conducted in 2001 as part of the National Longitudinal Transition Study-2 (NLTS2), funded by the Office of Special Education Programs (OSEP) of the U. S. Department of Education. NLTS2 is a 10-year study that is documenting the characteristics, experiences, and outcomes of a nationally representative sample of more than 11,000 youth who were ages 13 through 16 and were receiving special education services in grade 7 or above in the 2000-01 school year. NLTS2 findings generalize to youth with disabilities nationally and to youth in each of the 12 federal special education disability categories in use for students in the NLTS2 age range.[3]

Key themes from the report are highlighted below.

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[1] This report includes parents' responses to questions regarding their children's receipt of the following related services: assistive technology services or devices, audiology services for a hearing problem; career counseling, help in finding a job, training in job skills, or vocational education; medical services for diagnosis or evaluation related to a disability; nursing care; occupational therapy; orientation and mobility services; physical therapy; psychological or mental health services or counseling; a reader or interpreter, including sign language; respite care; social work services; speech-language pathology or communication services; transportation because of a disability; and tutoring.

[2] Schoolwide programs other than special education are addressed in this report with information provided on the NLTS2 student's school program survey about participation in the National School Lunch Program; programs for English language learners; summer school; reproductive health education or services, substance abuse prevention education or substance abuse services; teen parenting education or services; and conflict resolution, anger management or violence prevention programs.

[3] Further details, including other NLTS2 reports, are available at http://www.nlts2.org.

This is the Executive Summary of Levine, P., Marder, C., & Wagner, M. (2004). *Services and Supports for Secondary School Students with Disabilities. A Special Topic Report from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.

The Important Role of Schools in Providing Related Services and Supports

Parents depend on their children's schools to provide information about services and ultimately to arrange for the services and supports included as part of their sons' and daughters' individualized education programs (IEPs).

- Schools overwhelmingly function as the primary source of information about related services for families; parents of 81% of youth with disabilities report learning about services from their children's schools.
- Overall, 72% of secondary school students with disabilities are reported by parents to receive at least one of the related services investigated in NLTS2; 60% of students with disabilities receive one or more related services from school sources.
- Almost all students who receive speech-language pathology services, occupational therapy or vocational services, have a reader for the classroom, or use transportation services are provided those services through their schools. On the other hand, outside agencies or individuals are more likely to provide psychological or mental health services, social work services, physical therapy, diagnostic medical services, and respite care.
- Schools also provide service coordination for four to six times as many youth with disabilities as do other professionals or family members.

Service System Barriers to Accessing Related Services

- Although navigating the multiple service systems that provide related services to some youth with disabilities can be complicated, 60% of students with disabilities have parents who report that finding services for their children with disabilities took only "a little effort" or "almost no effort." However, 40% of youth with disabilities have parents who report expending greater effort to obtain services, including approximately one in five who report it required "a great deal of effort" to obtain services.
- Seventy-two percent of students with disabilities who receive one or more related services have parents who report that those services are enough to meet students' needs; conversely, 28% of youth who receive services reportedly continue to have unmet needs for more services.
- A lack of information about services or the unavailability of a service itself are the barriers parents encounter most often in their efforts to obtain services for youth with disabilities; almost one-fourth of youth have parents who report these barriers to meeting their children's service needs.
- Issues of time, cost, location, or eligibility rules are reported as barriers to service acquisition for 15% to 17% of youth with disabilities. In addition, one in five students with disabilities have parents who are unhappy with the quality of services available.

This is the executive summary of Levine, P., Marder, C., & Wagner, M. (2004). *Services and supports for secondary school students with disabilities. A special topic report from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.

The Implications of Poverty

The fact that cost is cited as a barrier to acquiring services for some youth with disabilities hints at the important relationship between household income and service acquisition. NLTS2 findings underscore the fact that household poverty poses obstacles to accessing related services for youth with disabilities and their families.

- Students with disabilities living in low-income households (i.e., those with annual incomes of $25,000 or less) are more likely than their more affluent peers (i.e., those from households with incomes of more than $50,000) to have parents who report expending "a lot of effort" to obtain services; facing barriers to service access related to transportation, location, or language; and needing to go beyond the school to learn about services.
- Parents of low-income youth with disabilities report that their sons or daughters are less likely than more affluent students to have a case manager, and when they do, they are far less likely to obtain this service through the school.
- Youth with disabilities living in low-income households are less likely to be reported by their parents as having enough related services to meet their needs. Although these unmet needs are related to individual household income, they are not related to students' attending schools with high concentrations of low-income students.
- Reported receipt of most services does not differ significantly across income groups, with the exception that students with disabilities in low-income households are less likely than students in more affluent households to receive tutoring services or assistive technology devices or services.
- The more apparent difference between students of different income groups is in the significantly more prominent role of the schools as the source of services for lower-income students with disabilities. For example, although youth living in low-income households are about equally likely as their peers living in higher-income households to receive mental health/psychological services or diagnostic/medical services, lower-income youth are more likely to receive these services from or through their schools.
- Additionally, almost all low-income students who receive tutoring services do so through their schools, whereas only about half of students with disabilities in higher-income households who receive tutoring get that help at school.

The Challenges of Autism

The impairments and functional challenges associated with some disabilities are particularly complex, and it may require greater effort to find and access the wide array of needed services for youth with such disabilities. This struggle appears to be most challenging for students with autism.

- Their parents are more likely to report investing considerable effort to obtain services, including almost one-third who report needing to spend "a lot of effort" on behalf of their children to obtain services for them.
- Parents of youth with autism are more likely than those in other categories to cite most of the barriers to obtaining services for their sons or daughters. Half of students with autism have parents who say the services their children need are not available, and they are the

most likely to have parents who report that their children are ineligible for available services or that those services are of poor quality.

- Parents of youth with autism also are more likely than parents of youth in other disability categories to report seeking information or help outside the school. These parents rely more on family members, other parents, or parent groups to learn about services.
- They also are more likely to rely on nonschool professionals for their sons' or daughters' case management than parents of youth in other disability categories who have case managers.
- Secondary school students with autism are least likely to be reported by their parents as having sufficient services.

Differences in Receipt of Various Related Services

Differences in service provision between disability categories can reflect the functional, cognitive, academic, psychological, or social difficulties associated with certain impairments; some services are most relevant to the functional needs of youth in particular disability categories (e.g. physical therapy for youth with orthopedic impairments). Yet some services are more broadly applicable and appear in educational programs of students across all disability categories:

- **Academic tutoring** is provided to approximately one in five students with learning disabilities, hearing impairments, other health impairments, or traumatic brain injuries. Smaller shares of students in other disability categories receive help from tutors.
- **Medical services for diagnosis or evaluation related to a student's disability** are used by about one-quarter of students with disabilities. More than half of youth with deaf-blindness, orthopedic impairments, visual impairments, or multiple disabilities receive diagnostic medical services during a 12-month period, as do approximately 40% of youth with hearing or other health impairments, autism, traumatic brain injuries, or emotional disturbances.
- **Mobility and sensory enhancements.** Students with orthopedic impairments, multiple disabilities, deaf-blindness, or visual impairments are the most likely to use specialized transportation, assistive technology services or devices, and orientation and mobility services. Audiology services or classroom readers or interpreters are received predominantly by students with hearing impairments (76% and 40%, respectively) or deaf-blindness (70% and 31%, respectively)—fewer than 10% of students in other disability categories are reported to use these services.
- **Nursing and respite care.** Although nursing care and respite care are used by fewer than 1% of students with disabilities as a whole, 10% or more of youth with orthopedic impairments, multiple disabilities, or deaf-blindness receive nursing services, and parents of one in five students with multiple disabilities or autism report using respite care for their sons or daughters. These personal care services are the only services for which more students are reported by parents to be on waiting lists than are reported to be receiving the services.
- **Physical or occupational therapy.** Eleven percent of students with disabilities are reported to receive occupational therapy, and 4% receive physical therapy. However, from 6 to 10 times as many students with orthopedic impairments, multiple disabilities, or deaf-

blindness as students in other disability categories receive these services; students with autism also are relatively frequent consumers of occupational therapy. The school is a provider of occupational therapy for nearly all students who receive it; non-school sources are more frequently involved in providing physical therapy.

- **Psychological or mental health services or counseling** are received by approximately one-third of students with disabilities nationwide. The largest share of students who receive mental health services are those with emotional disturbances (69% of whom receive them), but these services also are received by 38% to 46% of students with autism, other health impairments, traumatic brain injuries, or multiple disabilities, and by about one-fourth of students in other disability categories. Overall, at least half of students who receive mental health services receive them from sources outside of school.
- **Speech-language pathology or communication services** are received by about one-fourth of students with disabilities in a given year. The majority of youth with speech or language impairments (71%) receive speech-related services, but this service also is reported to be received by 62% to 75% of students with autism, multiple disabilities, hearing impairments, or deaf-blindness, and by 44% of students with mental retardation. Almost all speech-language pathology services are provided through the schools.

Participation in Schoolwide Programs

Students with disabilities participate in a variety of programs at school for which they are eligible for reasons other than their disabilities. Two of these addressed in NLTS2 are federal programs that serve all eligible students in a school and aim to reduce the limitations imposed by such factors as poverty or limited English proficiency. NLTS2 also has investigated the prevalence of students' participation in summer school.

- According to school staff, 40% of secondary school students with disabilities receive free or reduced-price lunches through the National School Lunch Program.
- Two percent of students with disabilities participate in bilingual education or instruction specifically for English language learners, among whom poverty can be a confounding factor.
- Three-fourths of youth with disabilities in low-income households receive free or reduced-price lunches, and 3% of whom participate in programs for English-language learners. These are rates two to five times higher than participation by students with disabilities in the next higher income group.
- School lunch programs serve larger shares of African American and Hispanic youth with disabilities than their white peers. Hispanic youth also are more likely than others to participate in programs for English language learners.
- Approximately twice the proportion of students with mental retardation as students in most other disability categories are reported by school staff to receive free or reduced-price lunches, largely because this disability category has the largest proportions of African-American and low-income students.

- The fact that students with deaf-blindness or hearing impairment are the most likely to participate in bilingual or English language learners programs suggests that staff who reported program participation may have included students who take part in language programs that focus on broader communication issues than English language acquisition.
- School staff report that 12% of secondary school youth with disabilities participated in summer school programs the previous summer. Summer school participation rates are from two to six times greater among youth with autism (43%), multiple disabilities (38%), or deaf-blindness (29%) than among youth in other disability categories.

Programs That Target Youth Risk Behaviors

Some school-based programs serve students who demonstrate or at risk for behaviors often associated with negative consequences for adolescents. The four such programs investigated in NLTS2 include teen parenting education or services; conflict resolution, anger management, or violence prevention programs; substance abuse prevention education or substance abuse services; and reproductive health education or services.

- According to school staff, about one in five secondary school students with disabilities (21%) receive teen parenting education or services, and 28% take part in behavior programs addressing conflict resolution, anger management, or violence prevention. Education or treatment programs related to substance abuse are more common (41% of students with disabilities receive them), as are reproductive health education or services (received by 53% of students with disabilities).
- Students with learning disabilities or emotional disturbances are more likely than students in other disability categories to participate in programs that focus on risk behaviors.
- For each of the programs that target risk behaviors that are investigated in NLTS2, approximately one-third of students with disabilities do not participate but would benefit from them, according to school staff. Youth with emotional disturbances have the highest proportions of unmet needs for each of the four kinds of risk behavior programs.
- Significantly larger shares of low-income students are perceived to have unmet needs for programs that target reproductive health, teen parenting, and substance abuse. African-American and Hispanic youth also are perceived to have unmet needs for these programs in greater proportions than white students.
- Youth with disabilities who attend schools with smaller concentrations of low-income students (i.e., those receiving free or reduced-price lunches) are less likely to have perceived unmet needs for programs that target risk behaviors than are youth with disabilities who go to schools where low-income students are greater proportions of the student body.

These findings depict the range of services and supports provided to youth with disabilities, some of the challenges encountered in acquiring them, and perceptions of unmet needs, as indicated by their parents and school staff. Longitudinal analyses in subsequent waves of NLTS2 will enable a look at the effects these services, supports, and programs may have on later outcomes, as youth with disabilities transition from school to early adult life.

This is the executive summary of Levine, P., Marder, C., & Wagner, M. (2004). *Services and supports for secondary school students with disabilities. A special topic report from the National Longitudinal Transition Study-2 (NLTS2)*. Menlo Park, CA: SRI International.

1. RELATED SERVICES, SUPPORTS, AND SPECIALIZED PROGRAMS FOR SECONDARY SCHOOL STUDENTS WITH DISABILITIES

Students come to school with a wide range of personal characteristics, family dynamics, and functional, cognitive, and social abilities that contribute to how they learn, how much they benefit from their secondary school experiences, and how well they manage the transition to adulthood. Some youth, particularly those with disabilities, need supports and interventions besides the traditional classroom experiences to be successful at school. Recognizing this fact, the Individuals with Disabilities Education Act Amendments of 1997 (IDEA '97, P. L. 105-17) mandate that "…all children with disabilities have available to them a free appropriate public education (FAPE) that emphasizes special education and related services designed to meet their unique needs and prepare them for employment and independent living" [IDEA '97 Final Regulations, Section 300.1(a)] (U.S. Department of Education, 1999).

IDEA '97 defines related services in this context as "transportation and such developmental, corrective, and other supportive services as are required to assist a child with a disability to benefit from special education" [IDEA '97 Final Regulations, Section 300.24(a)]. Related services, as highlighted in IDEA '97, include:

- Speech-language pathology and audiology services
- Psychological services
- Physical and occupational therapy
- Recreational, including therapeutic recreation
- Early identification and assessment of disabilities in children
- Counseling services, including rehabilitation counseling
- Orientation and mobility services
- Medical services for diagnostic or evaluation purposes
- School health services
- Social work services in schools
- Parent counseling and training
- Transportation. [IDEA '97 Final Regulations, Section 300.24(a)].

It is important to note that the list of related services is not exhaustive; related services may include a wide variety of disability-related services and supports, reflecting the fact that youth with disabilities are diverse in the types and amounts of related services they need.

The provision of related services and supports is established by the team responsible for developing a student's Individualized Education Program (IEP), which includes teachers, other professionals, parents, and, where appropriate, students. Related services personnel may be included in the IEP team if a particular related service is discussed [IDEA '97 Final Regulations, Section 300.344(a)]. Details regarding the related services a student needs to benefit from special education and how often, where, and by whom those services will be provided are included in a student's IEP. Further, "if it is determined through [IDEA's] evaluation and IEP

requirements that a child with a disability requires a particular supportive service in order to receive FAPE…, that service can be considered a related service…and must be provided at no cost to the parents."

In addition to related service needs, IDEA '97 requires that the IEP team, "in the case of a child whose behavior impedes his or her learning or that of others, consider, if appropriate, strategies, including positive behavioral interventions, strategies, and supports to address that behavior" [IDEA '97 Final Regulations, Section 300.346(a)(2)(i)]. For example, recent research demonstrates relationships between academic performance and nonacademic indicators of health and well-being, such as alcohol and substance use, exposure to violence, school safety, caring relationships, and high expectations at school (Hanson & Austin, 2003). Examples of what an IEP may call for in this regard are anger management or conflict resolution programs, substance abuse education or treatment, or behavioral interventions (Sprague, 1995; Sprague et al., 2001).

This report, one in a series from the National Longitudinal Transition Study-2 (NLTS2), provides the first national picture of the services and supports provided to secondary school youth with disabilities in a single school year. Its findings will be augmented in the next few years of NLTS2 as youth develop transition plans, complete their high school careers, and navigate the multiple systems that provide postschool services and supports. These data will elucidate how the types and extent of services and supports students receive during their secondary school experiences affect long-term support needs and outcomes.

Background on NLTS2

The Office of Special Education Programs (OSEP) of the U.S. Department of Education is working to provide the information needed to improve the education and outcomes of secondary school students with disabilities through NLTS2. NLTS2 is a 10-year study that is documenting the characteristics, experiences, and outcomes of a nationally representative sample of more than 11,000 youth who were ages 13 through 16 and were receiving special education services in grade 7 or above in the 2000-01 school year. NLTS2 findings generalize to youth with disabilities nationally and to youth in each of the 12 federal special education disability categories in use for students in the NLTS2 age range.[1]

Focus of This Report

This report considers the following questions for secondary-school-age youth with disabilities:

- What related services and other supports are provided to students with disabilities during the secondary school years, and to what degree are they provided by or through the schools?
- What is involved in parents' acquiring services, including how they learn about services, the amount of effort they expend, and barriers they encounter?
- What is the unmet need for services, according to parents?

[1] Additional information about the NLTS2 design, methods, and measurement, including definitions of disability categories, is contained in Appendix A. Further details, including other NLTS2 reports, are available at http://www.nlts2.org.

- To what extent do secondary school students participate in specialized programs, including programs whose goal is to prevent or ameliorate risk behaviors, and what are school staffs' perspectives on students' unmet needs for these programs?
- How do these factors differ for students who differ in their primary disability classification and selected demographic characteristics?[2]

These questions are addressed by using data collected from parents and school staff who serve NLTS2 youth.[3] Parents or guardians[4] of NLTS2 study members provide a unique and valuable perspective on "how it's going" with their adolescent children with disabilities, both in and out of school. In addition, parents relay information regarding special programs their students participate in, or related services and supports they receive. Telephone interviews conducted with parents in the spring and summer of 2001 addressed these important topics; mail questionnaires were administered to parents who could not be reached by phone. An 82% response rate resulted in interview/survey data for 9,230 students, who were ages 13 through 17 at the time.

Given this report's focus on students' participation in school-based programs and services, it also relies on information provided by staff in the schools attended by NLTS2 study members. Three mail surveys of school staff were conducted in the spring of the 2001-02 school year (students were ages 14 through 18 at the time), with each garnering about a 60% response rate. Data in this report are from the students' school program survey, a multipurpose survey of staff members identified as the most knowledgeable people about the overall school programs of individual students; respondents often were special educators. One purpose was to obtain information on related and support services, as well as specialized programs provided to students, including those that focus on prevention of risk behaviors, such as reproductive health education, substance abuse prevention, and conflict resolution/anger management.

Technical Notes

Readers should remember the following issues when interpreting the findings in this report:

- **Findings are weighted.** NLTS2 was designed to provide a national picture of the characteristics, experiences, and achievements of youth with disabilities nationally in the NLTS2 age range. Therefore, all the statistics presented in this report are weighted estimates of the national population of students receiving special education in the NLTS2 age group, as well as each disability category individually. Each response for each sample member is weighted to represent the number of youth nationally that are in his or her disability category in the kind of school district (defined by region, student enrollment, and proportion of students in poverty) or special school from which he or she was selected.
- **Standard errors.** For each mean and percentage in this report, a standard error is presented that indicates the precision of the estimate. For example, a variable with a weighted estimated value of 50% and a standard error of 2 means that the value for the

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[2] Appendix B provides an overview of key disability and demographic characteristics of the youth represented in NLTS2.

[3] The specific interview and survey items that generated the data used in this report are included in Appendix C.

[4] For simplicity, parents and guardians are referred to here as parents.

total population, if it had been measured, would, with 95% confidence, lie between 48% and 52% (i.e., within plus or minus 2 percentage points of 50%). Thus, smaller standard errors allow for greater confidence to be placed in the estimate, whereas larger ones require caution.

- **Small samples.** Although NLTS2 data are weighted to represent the population, the size of standard errors is influenced heavily by the actual number of youth in a given group (e.g., a disability category). Groups with very small samples have comparatively large standard errors (in fact, findings are not reported separately for groups that do not include at least 35 sample members). For example, because there are relatively few youth with deaf-blindness, estimates for that group have relatively large standard errors. Therefore, readers should be cautious in interpreting results for this group and others with small sample sizes and large standard errors.
- **Significant differences.** In discussions of the descriptive statistics, only differences among groups that reach a level of statistical significance of at least .05 are mentioned in the text; significance levels usually are noted in the text.

Organization of the Report

The chapters in this report generally correspond to the research questions posed. Chapter 2 provides information on disability-related services and supports provided to secondary school students with disabilities during the 12 months preceding the parent interview, including those provided both by the school and by sources other than the school. Chapter 3 describes students' participation in schoolwide programs that may be appropriate to students in the general population as well as those with disabilities, including the free or reduced-price lunch program, programs for English language learners (ELL or ESL), and summer school. Participation in services and programs that focus on risk behaviors typically associated with adolescence, such as substance abuse prevention, teen parenting education, reproductive health services, and conflict resolution, also is highlighted, as are school staffs' reports of students' unmet needs for these services. The final chapter reviews the key findings and their implications. Appendix A provides additional information on NLTS2 methodological issues, Appendix B includes a description of the individual and household characteristics of students represented in NLTS2, Appendix C contains the questions from the parent interview and the student's school program survey that generated data described in this report, and Appendix D provides the unweighted sample sizes for all data tables in the report.

2. RELATED SERVICES AND SUPPORTS RECEIVED BY YOUTH WITH DISABILITIES

As noted in Chapter 1, students with disabilities can receive a variety of related services or supports when they are deemed necessary for students to benefit from their special education programs. These services and supports differ in the benefits intended for students. For example, some students participate in therapies to enhance functioning (e.g., occupational or physical therapy or speech-language pathology services), whereas others receive one-on-one study skills instruction to support their academic attainment, and still others, such as students with some sensory, health, or orthopedic impairments, may receive assistive technology or sensory augmentation (for example, interpreters or large-print monitors). It is important to keep in mind that the regulations governing related services and supports allow for flexibility so that services are individualized; some students may need many services to benefit from their education, and others may need none.

Although IDEA '97 does not describe every possible related service, it does set forth clear definitions and guidelines regarding certain related services and supports. The following definitions are provided by the National Dissemination Center for Children with Disabilities (NICHCY, 2001, pp. 5-11)[1] from the IDEA '97 final regulations (U. S. Department of Education, 1999):

- "An **assistive technology device** means 'any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability' (Section 300.5). Assistive technology devices may be used for personal care, sensory processing of information, communication, mobility, or leisure."
- "An **assistive technology service** means '…any service that directly assists a child with a disability in the selection, acquisition, or use of an assistive technology device' (Section 300.6). School districts are responsible for helping individuals with disabilities select and acquire appropriate assistive technology devices and for training them in their use, if doing so is necessary for them to receive FAPE (Section 300.308)."
- **"Counseling services** are services provided by qualified social workers, psychologists, guidance counselors, or other qualified personnel [Section 300.24(b)(2)]. A school counselor is a certified professional who meets the State's certification standards. In some schools, the counselor may also perform some functions similar to those of the school psychologist."

  "Counselors may also help students with future planning related to setting and reaching academic goals, developing a positive attitude toward learning, and recognizing and utilizing academic strengths. Other counseling services may include parent counseling and training and rehabilitation counseling (that is, counseling specific to career development and employment preparation) (Maag & Katsiyannis, 1996)."

[1] IDEA definitions are provided just for those services that may require more clarity for data interpretation. For more details regarding IDEA definitions and explanations of related services, see NICHCY (2001).

- **"Rehabilitation counseling services** are 'services provided by qualified personnel in individual or group sessions that focus specifically on career development, employment preparation, achieving independence, and integration in the workplace and community.... The term also includes vocational rehabilitation services provided to a student with disabilities by vocational rehabilitation programs funded under the Rehabilitation Act of 1973, as amended' [Section 300.24(b)(11)]."
- **"Medical services** are considered a related service only under specific conditions. By definition, the term 'means services provided by a licensed physician to determine a child's medically related disability that results in the child's need for special education and related services' [Section 300.24(b)(4)]. Thus, medical services are provided (a) by a licensed physician, and (b) for diagnostic or evaluation purposes only."
- **"School health services**…means 'services provided by a qualified school nurse or other qualified person' [Section 300.24(b)(12)]. These services may be necessary because some children and youth with disabilities would otherwise be unable to attend a day of school without supportive health care. School health services may include interpretation, interventions, administration of health procedures, the use of an assistive health device to compensate for the reduction or loss of a body function (Rapport, 1996), and case management."
- **Orientation and mobility (O&M) services** "are defined as 'services provided to blind or visually impaired students by qualified personnel to enable those students to attain systematic orientation to and safe movement within their environments in school, home, and community' [Section 300.24(b)(6)(i)]."
- "[T]he term **psychological services** includes 'administering psychological and educational tests and other assessment procedures; interpreting assessment results; obtaining, integrating, and interpreting information about a student's behavior and conditions relating to learning; consulting with other staff members in planning school programs to meet the special needs of children as indicated by psychological tests, interviews, and behavioral evaluations; planning and managing a program of psychological services, including psychological counseling for students and parents; and assisting in developing positive behavioral intervention strategies' [Section 300.24(b)(9)]."
- **"Social work services** in schools includes 'preparing a social or developmental history on a child with a disability; group and individual counseling with the child and family; working in partnership with parents and others on those problems in a child's living situation (home, school, and community) that affect the child's adjustment in school; mobilizing school and community resources to enable the child to learn as effectively as possible in his or her educational program; and assisting in developing positive behavioral intervention strategies' [Section 300.24(b)(13)]."

As mentioned in Chapter 1, IDEA '97 also requires that the IEP team, "in the case of a child whose behavior impedes his or her learning or that of others, consider, if appropriate, strategies including positive behavioral interventions, strategies, and supports to address that behavior" [Section 300.346(a)(2)(i)].

This chapter describes parents' reports of several aspects of these and other services and supports received by secondary school students with disabilities, including:

- Receipt of related services and supports in the previous year from all sources and from or through a student's school.
- The process of acquiring services, including the source of information regarding services, the effort required to obtain services, and barriers encountered in the process.
- Unmet needs for services, including parents' reports of the sufficiency of their children's services and services for which youth are on a waiting list.

Findings are presented for students with disabilities as a whole and for students who differ in their primary disability category and selected demographic characteristics, where significant.

Related Services and Supports Received by Youth with Disabilities

Parents are an important source of information about the full range of services youth with disabilities receive because they are aware of services arranged for privately and those that may be provided by family members themselves (e.g., respite care). Parents were asked whether their adolescent child with a disability had received any of 15 specific services in the preceding 12 months and, if so, whether that service had been provided from or through their child's school or district.[2] The services were read to parents and responded to one by one. Because providing a definition for each service would have been too burdensome in the context of a telephone interview, parents may have differed in their interpretations or definitions of a service. It also is possible that parents may have had different understandings of what it meant to receive a service "from or through the school or district" (e.g., whether they mentioned only direct services provided on the school grounds or included services the school arranged that were provided outside of school).

The following is a list of the services and supports investigated in NLTS2 as they were read to parents during the telephone interview, clustered according to their primary function or benefit:

Personal counseling

- Psychological or mental health services or counseling
- Social work services

Therapeutic services

- Speech or language therapy or communication services
- Physical therapy
- Occupational therapy or life skills therapy or training

Health-related services

- Medical services for diagnosis or evaluation related to a disability
- Nursing care

Vocational services

- Career counseling, help in finding a job, training in job skills, or vocational education

[2] See Appendix C for the wording of questions in the parent interview.

Academic enhancements

- Tutoring

Services to increase access and mobility

- Transportation because of a disability
- Assistive technology services or devices, such as help getting or using any kind of equipment that helps people with a disability, such as a tape recorder or reading machine
- Audiology services for hearing problems
- Orientation and mobility services

Personal assistance

- Reader or interpreter, including sign language
- Respite care

Other

- Because students with disabilities could receive an array of services too numerous to list, parents were asked whether their son or daughter received any other service not on the list.

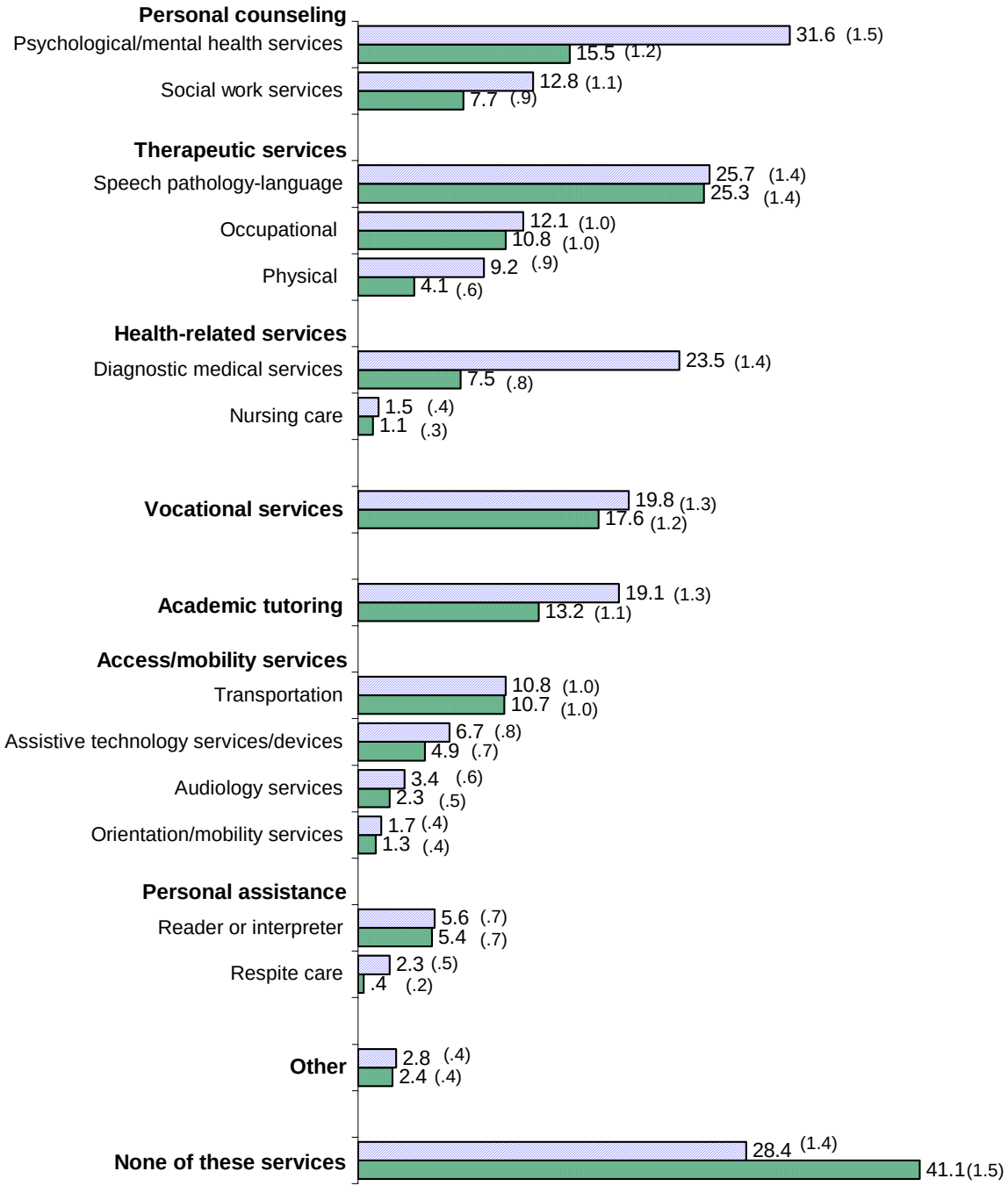
The most common type of service received by youth involves psychological or mental health counseling or services (Exhibit 2-1); approximately one in three students receive such services, and 13% receive social work services in a given year. Therapeutic services is the next most common cluster of services received, with speech-language pathology services being the most frequently accessed service; approximately one in four youth receive it. In addition, occupational and physical therapy each are received by about 1 in 10 youth with disabilities. Approximately one in four youth receive services from a health professional, mainly diagnostic or medical services; only about 2% receive nursing care.

Vocational services and academic tutoring also are commonly provided services; approximately one in five youth receive each of them. In contrast, no more than about 1 in 10 youth receive any one of the services to increase access and mobility.[3] With the exception of transportation services, which 11% of youth receive, each service in this category is received by fewer than 7% of youth. The services of a personal assistant also are fairly rare; 6% receive the services of a reader or interpreter, and the families of 2% receive respite care.

Many services are provided almost entirely by schools, including speech-language pathology services and occupational therapy, nursing and vocational services, and all access and mobility services. In contrast, most youth who receive psychological or mental health counseling, social work services, physical therapy, diagnostic medical services, or respite care are reported by parents to receive these services from sources other than their school or district.

[3] Note that orientation and mobility (O&M) services are available only to students with visual impairments.

Exhibit 2-1
RELATED SERVICES RECEIVED BY YOUTH WITH DISABILITIES FROM ANY SOURCE AND FROM OR THROUGH THEIR SCHOOL



Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

Although the types of services youth with disabilities could receive address a wide range of needs and functional limitations, 28% of youth with disabilities have parents who report they had received none of the services addressed in NLTS2 in the preceding year, and 41% received none of them from or through their school. About one-fourth (26%) reportedly had received one service, virtually all of those from the school; 45% had received two or more services from any source, including 32% who had received two or more services from their school.

The related services and supports provided to students with disabilities are meant to be coordinated and integrated into a student's overall educational program. To ensure this coordination and integration of services, a case manager is assigned to some students by their schools. A case manager "…coordinates and oversees services on behalf of the student. In some schools, this person might be the child's special education teacher. In other schools, supervisory school district personnel may assume this responsibility" (NICHCY, 2001, p. 14). For the 72% of youth with disabilities who receive services, particularly those who receive multiple services, case management can be an important support through which services are coordinated so they are most effective and least burdensome for youth and families, and so that problems of duplication or gaps in service are avoided.

Exhibit 2-2
CASE MANAGEMENT SUPPORT FOR YOUTH WITH DISABILITIES WHO RECEIVE RELATED SERVICES

	Percentage	Standard Error
Percentage of youth receiving services:		
Who have a case manager	53.0	1.8
Whose case manager is:		
Someone at school	44.0	1.8
A professional outside of school	10.3	1.1
A family member	6.7	.9

Source: NLTS2 Wave 1 parent interviews.

Parents were asked if their adolescent children have "a case manager or someone who coordinates the services he or she receives; that can include a family member or friend." Among youth with disabilities who receive any of the related services addressed thus far, 53% are reported to have a case manager to coordinate services (Exhibit 2-2). When a youth with disabilities has a case manager, he or she is highly likely to be someone at the youth's school; 44% of youth have a case manager at school (83% of those with a case manager). Professionals other than school staff and family members are case managers for 10% and 7% of youth with disabilities who receive related services, respectively. Eight percent of youth are reported to have case management from more than one of these sources.

Acquiring Related Services and Supports

The wide array of services students with disabilities could potentially access can involve multiple service systems, including education, health, child welfare, and vocational rehabilitation, for example. Parents and youth may not be aware of the services provided through all of these systems. Further, these multiple systems can have different, even incompatible, eligibility criteria and sometimes complex processes for establishing qualifications for services. Other barriers to service also may be encountered in attempting to obtain services, including cost, accessibility, and availability. These complexities and barriers can challenge parents, youth, and even schools in acquiring the services they believe are needed for youth with disabilities to function most effectively.

To learn about aspects of the process parents engage in to acquire services for their adolescent children with disabilities, parents were asked to identify where they generally learn about services. Their open-ended responses were coded into eight broad categories.[4] Parents also were asked "how much effort did it take for you or your family to get the services for [name of child] during the last 12 months?"; responses read to parents from which they chose included "almost no effort," "a little effort," "some effort," or "a great deal of effort." Finally, they were asked whether they or their sons or daughters with disabilities experienced any of 10 barriers to "getting or dealing with services" for their disability.

Sources of Information about Services

Given the important role of schools as a source of many services and much of the case management received by youth with disabilities, it is not surprising that most youth with disabilities (81%) have parents who report that they receive information about related services through their child's school (Exhibit 2-3). About 10% have parents who cite the Internet or print materials, such as newsletters or magazines, as a source of information, and a similar percentage have parents who cite personal contacts other than family members, including other parents, parent groups, physicians, or professional consultants. About 7% of youth with disabilities have parents who report learning about related services through family members and 3% through trainings, workshops, or conferences.

Exhibit 2-3
PARENTS' REPORTS OF SOURCES OF INFORMATION ABOUT RELATED SERVICES FOR YOUTH WITH DISABILITIES

	Percentage	Standard Error
Percentage whose family reports learning about services through:		
School	81.0	1.3
Internet, newsletters, magazines	11.6	1.0
Other parents or parent groups	11.4	1.0
Physician	10.3	1.0
Professional consultant	10.1	1.0
Family members	6.8	.8
Training, workshops, conferences	3.1	.6
Other sources	5.5	.7

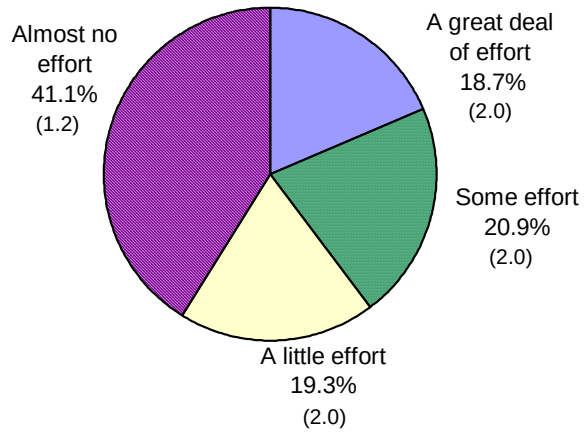
Source: NLTS2 Wave 1 parent interviews.

Effort to Obtain Services

Obtaining services for their children is not particularly difficult for some parents; parents of 41% of students report they were able to obtain services with "almost no effort" (Exhibit 2-4), and parents of another one in five students indicate that obtaining services took only "a little effort." However, parents of one in five students report having to expend "some effort," and parents of a similar share indicate that they had to expend "a great deal of effort" to obtain services. Not surprisingly, those who report expending a great deal of effort to obtain services for youth are more likely to be parents of youth who receive multiple services. For example, 39% of youth whose parents report expending "a great deal of effort" to obtain services had received four or more services in the preceding 12 months, compared with fewer than half that many youth whose parents report they expended "almost no effort" ($p<.001$).

[4] More than one response could be provided.

Exhibit 2-4
PARENT REPORTS OF EFFORT TO OBTAIN SERVICES FOR YOUTH WITH DISABILITIES

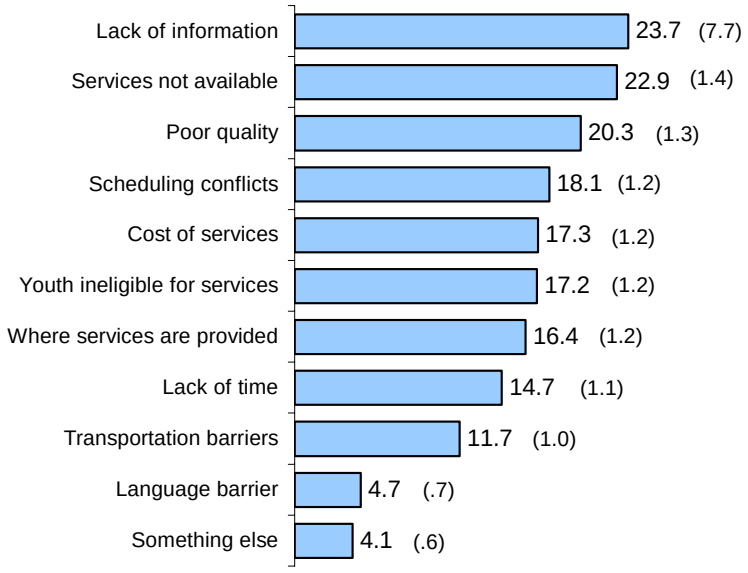


Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

Barriers to Services

Parents report encountering a variety of barriers in their efforts to obtain services for their adolescent children with disabilities. The barriers to receipt of services most commonly cited by parents are lack of information and unavailability of services (Exhibit 2-5). Almost one-fourth of parents report facing each of these barriers. Poor service quality is cited as a problem by parents of 20% of students, and more than 10% of students have parents who cite problems related to scheduling, cost,[5] eligibility requirements, location, lack of time, and transportation.

Exhibit 2-5
PARENTS' REPORTS OF BARRIERS TO OBTAINING SERVICES FOR YOUTH WITH DISABILITIES



Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

Lack of transportation and lack of specialized medical services, therapeutic interventions, or mental health services have been shown to pose serious barriers for youth with disabilities living in rural communities (Levine, Richardson, Lishner, & Porter, 2001). However, NLTS2 explored the relationship between barriers to service and the communities in which students live and found no significant differences between youth with disabilities living in urban, suburban, and rural areas in the prevalence of any of the reported barriers to obtaining services investigated in NLTS2.

[5] Under IDEA '97, students with disabilities are entitled to a free appropriate public education, including special education and related services, and are entitled to receive these services at no cost to themselves or their families (NICHCY, 2001). Parents who report cost barriers may be unaware of this provision in special education law and regulations or they may be referring to services they sought for their children apart from those indicated on their IEP.

Reported Unmet Needs for Services

Despite the fact that 72% of youth with disabilities are reported to have received at least one related service in the preceding year, some apparently are not receiving all the services their parents believe are needed. Overall, parents of 72% of youth with disabilities who had received one or more related services in the preceding year report that their sons or daughters receive enough services, leaving about 16% of all youth with disabilities reported to have unmet service needs. In addition, parents report that 4% of youth with disabilities (including both those receiving and those not receiving related services) are on a waiting list for one or more services.

Parents' perceptions of whether their adolescent children with disabilities are getting enough services is strongly related to the effort they report expending to obtain those services. Those who expended the greatest effort to obtain the services their children receive also are the most likely to express unmet needs for additional services. Fewer than half of students with disabilities (45%) whose parents report that it took "a great deal of effort" to obtain services for them report that those services are enough to meet students' needs. In contrast, almost twice as many students (87%) whose parents report expending "almost no effort" to obtain services indicate that those services are sufficient for their children ($p<.001$).

Disability Differences in Experiences with Related Services and Supports

Given the great diversity in the abilities and limitations of students with disabilities, it is not surprising that many aspects of their experiences with related services and supports differ markedly for students with different primary disability classifications, as outlined below.

Receipt of Related Services and Supports

As expected, youth with disabilities tend to receive services and supports relevant to the functional limitations and academic challenges associated with the impairments that define their disability category (Exhibit 2-6). For example, psychological or mental health services are most commonly received by youth with emotional disturbances (69%, $p<.001$ for comparisons with all other disabilities), whereas physical therapy is significantly more common for students with orthopedic impairments (57%) or multiple disabilities (47%) than for youth with other disabilities ($p<.05$). Predictably, students with hearing impairments or deaf-blindness are the most likely to receive services from an audiologist (76% and 70%, respectively) or an interpreter (40% and 31%, respectively), whereas students with visual impairments or deaf-blindness are the most likely to receive orientation and mobility training (47% each) or assistive technology services or devices (57% and 51%, respectively). Respite care is used by families of one in five youth with multiple disabilities or autism ($p<.001$), and nursing care is used in higher proportions by youth with deaf-blindness, multiple disabilities, or orthopedic impairments (10% to 18%, $p<.01$ compared with other categories).

Exhibit 2-6
RELATED SERVICES RECEIVED BY YOUTH FROM ANY SOURCE AND FROM THEIR SCHOOLS, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Percentage reported to have received service in the past 12 months:												
Personal counseling												
Psychological/mental health services												
From any source	25.2 (2.1)	21.0 (2.0)	27.4 (2.3)	68.9 (2.4)	27.0 (2.6)	22.7 (3.0)	22.7 (2.4)	44.8 (2.4)	46.2 (2.7)	39.1 (4.4)	37.5 (2.6)	29.7 (4.8)
From the school	11.5 (1.6)	11.0 (1.6)	15.4 (1.9)	36.3 (2.5)	17.9 (2.2)	10.4 (2.2)	8.6 (1.6)	17.9 (1.8)	22.6 (2.3)	21.5 (3.7)	24.1 (2.3)	19.8 (4.2)
Social work services												
From any source	7.8 (1.3)	10.2 (1.5)	16.0 (1.9)	32.9 (2.4)	12.0 (1.9)	17.3 (2.7)	19.5 (2.2)	11.9 (1.6)	27.7 (2.4)	18.0 (3.5)	32.3 (2.5)	23.9 (4.6)
From the school	4.9 (1.1)	6.0 (1.2)	9.7 (1.5)	19.6 (2.1)	7.7 (1.6)	12.2 (2.3)	9.6 (1.7)	6.3 (1.2)	16.6 (2.0)	11.8 (3.0)	17.6 (2.1)	15.0 (3.8)
Therapeutic services												
Speech-language pathology services												
From any source	19.0 (2.0)	71.3 (2.3)	44.1 (2.6)	15.0 (1.9)	62.7 (2.8)	20.5 (2.9)	32.7 (2.6)	18.1 (1.9)	74.6 (2.4)	33.9 (4.2)	72.1 (2.4)	61.8 (5.1)
From the school	18.8 (1.9)	71.0 (2.3)	43.3 (2.6)	14.0 (1.8)	61.3 (2.8)	20.0 (2.8)	31.7 (2.6)	17.2 (1.8)	73.1 (2.4)	31.9 (4.2)	71.2 (2.5)	60.4 (5.2)
Occupational therapy												
From any source	6.9 (1.3)	5.5 (1.1)	25.1 (2.2)	13.6 (1.8)	14.5 (2.1)	28.0 (3.2)	41.7 (2.8)	13.3 (1.6)	49.0 (2.7)	32.3 (4.3)	60.4 (2.7)	52.8 (5.3)
From the school	5.8 (1.2)	5.1 (1.1)	23.9 (2.2)	11.8 (1.7)	13.5 (2.0)	25.6 (3.1)	37.3 (2.7)	10.6 (1.5)	46.4 (2.7)	26 (4.0)	58.2 (2.7)	49.1 (5.3)
Physical therapy												
From any source	7.1 (1.3)	5.6 (1.2)	12.5 (1.7)	6.0 (1.2)	8.2 (1.6)	19.2 (2.8)	56.6 (2.8)	8.5 (1.3)	17.3 (2.0)	23.2 (3.9)	46.9 (2.7)	33.7 (5.0)
From the school	1.4 (.6)	2.2 (.7)	9.3 (1.5)	2.2 (.8)	4.9 (1.3)	15.7 (2.6)	43.6 (2.8)	3.3 (.9)	13.7 (1.9)	13.2 (3.1)	42.9 (2.7)	30.3 (4.9)
Health-related services												
Diagnostic medical services												
From any source	15.8 (1.8)	16.8 (1.9)	28.2 (2.3)	40.1 (2.5)	39.2 (2.8)	53.4 (3.5)	58.6 (2.8)	44.7 (2.4)	46.9 (2.7)	41.4 (4.4)	51.9 (2.7)	59.0 (5.2)
From the school	4.6 (1.0)	5.0 (1.1)	11.5 (1.6)	15.3 (1.9)	15.1 (2.1)	21.2 (2.9)	13 (1.9)	10.5 (1.5)	15.3 (1.9)	9.9 (2.7)	13.5 (1.9)	26.1 (4.7)
Nursing care												
From any source	.6 (.4)	.7 (.4)	2.4 (.8)	1.4 (.6)	4.3 (1.2)	5.7 (1.6)	10.5 (1.7)	3.3 (.9)	4.8 (1.2)	5.1 (2.0)	13.0 (1.8)	17.8 (4.0)
From the school	.6 (.4)	.6 (.4)	1.8 (.7)	.9 (.5)	3.7 (1.1)	3.6 (1.3)	4.7 (1.2)	2.2 (.7)	3.4 (1.0)	2.1 (1.3)	7.6 (1.4)	10.1 (3.2)
Vocational services												
From any source	17.6 (1.9)	11.1 (1.6)	24.7 (2.2)	26.2 (2.3)	21.1 (2.4)	27.6 (3.2)	19.4 (2.2)	20.2 (1.9)	26.0 (2.4)	25.4 (4.0)	28.6 (2.5)	35.4 (5.1)
From the school	15.6 (1.8)	10.4 (1.5)	23.1 (2.2)	22.6 (2.2)	19.8 (2.3)	24.1 (3.0)	18.3 (2.2)	18.1 (1.8)	24.3 (2.3)	24.5 (3.9)	26.2 (2.4)	32.6 (5.0)

Exhibit 2-6
RELATED SERVICES RECEIVED BY YOUTH FROM ANY SOURCE AND FROM THEIR SCHOOLS, BY DISABILITY CATEGORY (Concluded)

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Percentage reported to have received service in the past 12 months:												
Academic tutoring												
From any source	20.8 (2.0)	19.3 (2.0)	13.1 (1.7)	15.7 (1.9)	21.0 (2.4)	17.1 (2.7)	17.1 (2.1)	22.2 (2.0)	14.3 (1.9)	24.2 (3.9)	15.7 (2.0)	16.5 (3.9)
From the school	13.9 (1.7)	12.9 (1.7)	10.4 (1.6)	12.7 (1.7)	16.4 (2.2)	13.3 (2.4)	11.7 (1.8)	12.5 (1.6)	8.7 (1.5)	20.5 (3.7)	11.8 (1.8)	12.5 (3.5)
Mobility and access services												
Transportation												
From any source	2.6 (.8)	6.2 (1.2)	24.8 (2.2)	21.7 (2.1)	28.7 (2.6)	39.1 (3.4)	51.7 (2.8)	12.5 (1.6)	54.6 (2.7)	22.3 (3.8)	54.5 (2.7)	58.5 (5.2)
From the school	2.5 (.8)	6.0 (1.2)	24.2 (2.2)	19.4 (2.1)	27.6 (2.6)	36.1 (3.4)	48.2 (2.8)	11.2 (1.6)	52.6 (2.7)	20.5 (3.8)	52.2 (2.7)	54.6 (5.2)
Assistive technology services/devices												
From any source	5.7 (1.2)	5.5 (1.1)	5.6 (1.2)	3.4 (.9)	25.1 (2.5)	56.6 (3.5)	23.4 (2.4)	8.6 (1.3)	15.7 (2.0)	13.7 (3.1)	21.4 (2.2)	51.1 (5.3)
From the school	4.0 (1.0)	4.2 (1.0)	4.3 (1.0)	2.4 (.8)	19.7 (2.3)	48.9 (3.6)	17.8 (2.2)	5.9 (1.1)	13.6 (1.9)	10.6 (2.8)	18.3 (2.1)	45.4 (5.3)
Audiology services												
From any source	1.7 (.6)	3.7 (.9)	5.1 (1.1)	1.5 (.6)	76.5 (2.5)	2.2 (1.0)	3.5 (1.0)	2.5 (.7)	2.5 (.8)	2.6 (1.4)	8.2 (1.5)	70.4 (4.8)
From the school	1.3 (.6)	1.5 (.6)	3.4 (.9)	0.5 (.4)	52.6 (2.9)	1.8 (.9)	1.9 (.8)	1.4 (.6)	1.7 (.7)	2.2 (1.3)	5.4 (1.2)	46.6 (5.2)
Orientation/mobility services												
From any source	.2 (.2)	.9 (.5)	3.4 (.9)	1.5 (.6)	.9 (.5)	47.4 (3.5)	14.6 (2.0)	2.5 (.8)	4.8 (1.2)	9.9 (2.7)	15.5 (2.0)	46.9 (5.4)
From the school	.1 (.2)	.8 (.4)	2.8 (.8)	1.3 (.6)	.9 (.5)	43.5 (3.5)	11.3 (1.8)	1.5 (.6)	3.9 (1.0)	6.8 (2.3)	13.8 (1.9)	45.3 (5.4)
Personal assistance												
Reader or interpreter												
From any source	5.7 (1.1)	3.9 (1.0)	5.1 (1.1)	2.2 (.8)	40.1 (2.8)	16.9 (2.7)	5.1 (1.2)	3.0 (.8)	6.1 (1.3)	9.2 (2.6)	8.4 (1.5)	31.0 (4.9)
From the school	5.5 (1.1)	3.7 (.9)	4.7 (1.1)	2.2 (.8)	38.0 (2.8)	15.4 (2.6)	5.0 (1.2)	2.6 (.8)	5.6 (1.2)	8.0 (2.4)	8.3 (1.5)	29.5 (4.8)
Respite care												
From any source	.5 (.3)	1.1 (.5)	5.3 (1.1)	4.0 (1.0)	1.6 (.7)	3.1 (1.2)	13.2 (1.9)	2.1 (.7)	19.6 (2.1)	5.4 (2.0)	21.1 (2.2)	14.9 (3.8)
From the school	.0	.6 (.4)	2 (.7)	.6 (.4)	.6 (.4)	.7 (.6)	1.5 (.7)	.0	3.3 (1.0)	1.3 (1.0)	2.9 (.9)	2.8 (1.7)
None of these												
From any source	33.7 (2.3)	22.6 (2.0)	24.7 (2.1)	18.6 (1.9)	9.1 (1.6)	14.3 (2.4)	10.0 (1.6)	20.2 (1.9)	6.5 (1.3)	16.8 (3.4)	7.1 (1.4)	15.9 (3.6)
From the school	47.7 (2.4)	26.7 (2.1)	30.2 (2.3)	35.3 (2.4)	13.3 (2.9)	20.3 (2.8)	18.4 (2.1)	40.3 (2.3)	10.2 (1.6)	28.2 (4.1)	10.0 (1.6)	19.4 (3.9)

Source: NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

In contrast, some services are more broadly applicable to a variety of disabilities. For example, a large majority (71%) of students with speech impairments receive speech-language pathology services, but students with autism or multiple disabilities are just as likely to receive these services (75% and 72%, respectively); 63% of students with hearing impairments and 44% of students with mental retardation also receive them. Similarly, specialized transportation services are fairly common for youth with many kinds of disabilities; more than half of youth with orthopedic impairments, autism, multiple disabilities, or deaf-blindness use such services. About one-quarter of students in many categories are reported by their parents to receive vocational services, and diagnostic medical services are received by 28% to 59% of youth in all categories except learning disabilities or speech impairments. The likelihood that youth in the different disability categories receive each service from their schools generally follows the same patterns as the percentages of youth receiving the service at all.

Although students with learning disabilities comprise the largest proportion of students receiving special education services, comparatively few of them are reported to receive related services or supports. About one-third of youth with learning disabilities (34%) are reported to have received no related services in the preceding year, and almost half (48%) had received none from or through their school. Only personal counseling and tutoring are provided to 20% or more of youth with learning disabilities. Youth with speech impairments or mental retardation also are among the least likely to have received services from any source, and youth with emotional disturbances or other health impairments join students with learning disabilities as among the least likely to have received services from or through their schools.

Mirroring their relatively low level of receipt of services in general, youth with speech impairments or mental retardation who do receive services are the least likely of all youth (about 45%) to have case managers (Exhibit 2-7). In contrast, more than 60% of youth with visual impairments, autism, multiple disabilities, or deaf-blindness who receive services have case managers to help coordinate their services ($p<.01$ or $p<.001$ for all comparisons). Although

Exhibit 2-7
CASE MANAGEMENT SUPPORT FOR YOUTH WHO RECEIVE SERVICES, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Percentage of those receiving services who have a case manager	53.1 (2.9)	44.4 (2.7)	46.9 (2.8)	56.0 (2.8)	55.1 (3.0)	66.6 (3.5)	59.9 (2.9)	56.1 (2.6)	63.6 (2.6)	58.3 (4.7)	60.8 (2.7)	65.1 (5.1)
Percentage with a case manager whose case manager is:												
Someone at school	49.3 (2.9)	41.3 (2.7)	30.2 (2.6)	36.9 (2.7)	43.1 (3.0)	48.5 (3.7)	36.3 (2.8)	46.5 (2.6)	35.8 (2.6)	46.7 (4.8)	32.0 (2.6)	38.8 (5.2)
Nonschool professional	5.4 (1.3)	3.9 (1.1)	17.4 (2.2)	20.3 (2.2)	12.5 (2.0)	24.3 (3.2)	24.9 (2.5)	10.1 (1.6)	30.3 (2.5)	10.5 (3.0)	30.3 (2.6)	24.3 (4.6)
A family member	6.6 (1.5)	3.7 (1.0)	4.7 (1.2)	8.2 (1.5)	7.6 (1.6)	10.1 (2.2)	10.3 (1.8)	7.3 (1.4)	8.1 (1.5)	10.5 (3.0)	10.8 (1.7)	17.6 (4.1)

Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

youth with learning disabilities are the least likely to receive services overall, those who do receive services are as likely as many other groups of youth to have a case manager (53%).

Regardless of a youth's disability category, if he or she has a case manager, the person is most likely to be someone at school. The percentages of youth whose services are coordinated by school staff range from 30% of youth with mental retardation to almost 50% of youth with learning disabilities or visual impairments ($p<.001$). Nonschool professionals are case managers for fewer than 15% of youth with learning disabilities; speech, hearing, or other health impairments; or traumatic brain injuries, but for approximately 25% of youth with visual or orthopedic impairments or deaf-blindness and 30% of youth with autism or multiple disabilities. Family members act as case managers for about 10% or fewer of youth with most types of disabilities; the exception is youth with deaf-blindness, almost 20% of whom have family members as their case managers.

Acquiring Services

Sources of information. As presented earlier for youth with disabilities as a whole (Exhibit 2-3), the school tends to be the primary source of information for families of the majority of youth in each disability category (Exhibit 2-8). It is a particularly frequent source of information for youth with learning disabilities (86%) or speech impairments (83%). In addition, about three-fourths of students with mental retardation or hearing or visual impairments have parents who report obtaining information from their children's schools. Parents of youth with most types of disabilities are about equally likely to learn about services from professionals as from family members, other parents, or groups; however, parents of youth with emotional disturbances or orthopedic or other health impairments are more likely to learn about services from professionals (31% to 40%) than from nonprofessionals (19% to 29%, $p<.05$). In fact, parents of youth with orthopedic impairments are the most likely to learn about services from professional consultants or physicians (40%), whereas parents of youth with

Exhibit 2-8
SOURCES OF INFORMATION ABOUT SERVICES, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Percentage with parents reporting learning about services from:												
School	85.7 (1.7)	83.2 (1.9)	78.1 (2.2)	69.0 (2.4)	76.3 (2.5)	73.6 (3.1)	62.4 (2.7)	69.8 (2.2)	64.6 (2.6)	67.0 (4.3)	68.4 (2.5)	71.6 (4.8)
Professional consultant or physician	14.3 (1.8)	13.9 (1.8)	20.4 (2.1)	31.2 (2.4)	23.2 (2.5)	27.7 (3.2)	40.5 (2.8)	30.8 (2.2)	31.1 (2.5)	30.7 (4.2)	31.5 (2.5)	33.9 (5.0)
Family, other parents, or parent groups	15.0 (1.8)	15.3 (1.8)	16.1 (1.9)	18.9 (2.0)	23.6 (2.5)	20.1 (2.9)	29.0 (2.6)	23.4 (2.1)	35.4 (2.6)	22.7 (3.8)	32.9 (2.6)	29.9 (4.9)
Web, newsletters, print	10.4 (1.5)	9.7 (1.5)	11.2 (1.7)	13.1 (1.8)	16.7 (2.2)	15.4 (2.6)	17.8 (2.2)	18.1 (1.9)	25.4 (2.4)	10.6 (2.8)	17.3 (2.1)	18.8 (4.1)

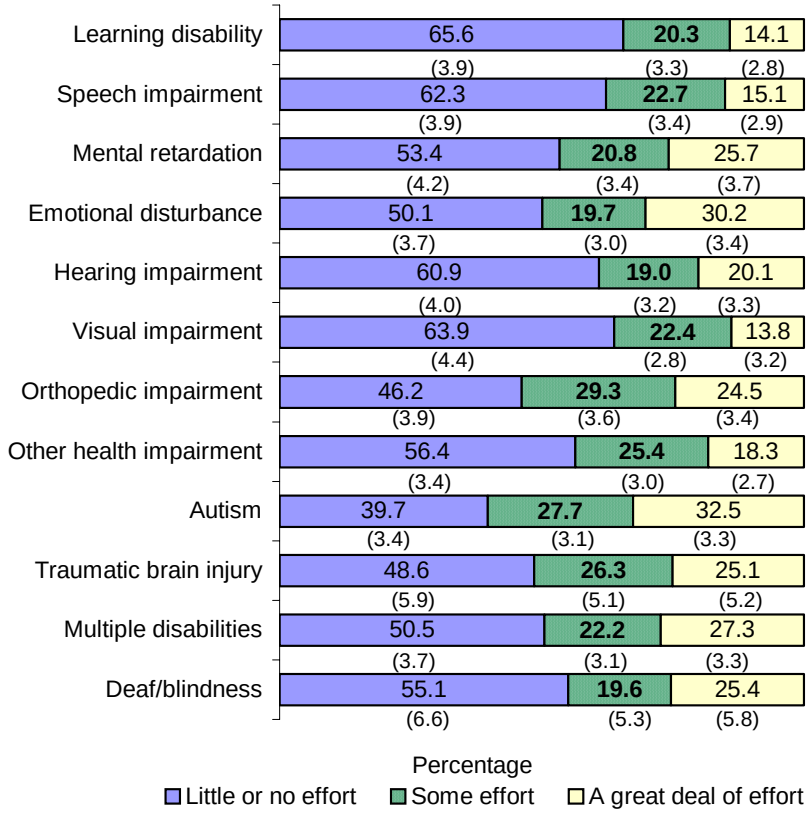
Source: NLTS2 Wave 1 parent interviews.

Standard errors are in parentheses.

autism are the most likely to learn about services through family, other parents, groups (35%), or the media (25%). Parents of youth with learning disabilities or speech impairments are the least likely to learn about services through sources other than schools.

Effort required. Parents of between 40% and 66% of youth with disabilities report having to expend "little or no effort" to receive services for their sons or daughters (Exhibit 2-9), and parents of between 19% and 29% of youth report that it took "some effort" to secure services. However, parents of some youth in each disability category report expending "a great deal of effort" to obtain services, with a wide range in the frequency of this report across categories. Whereas only about 15% of youth with learning disabilities or speech or visual impairments have parents who report expending "a great deal of effort" to obtain services for them, the parents of about twice as many youth with emotional disturbances or autism report expending that level of effort. In addition, about one-fourth or more of youth with mental retardation, orthopedic impairments, traumatic brain injuries, multiple disabilities, or deaf-blindness have parents who report expending "a great deal of effort" to obtain services for their sons or daughters with these disabilities.

Exhibit 2-9
PARENTS' REPORTS OF EFFORT TO OBTAIN SERVICES FOR YOUTH, BY DISABILITY CATEGORY



Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

Barriers encountered. As shown earlier in this chapter (Exhibit 2-5), service information, availability, and quality are the three most commonly cited obstacles to obtaining services reported by parents of students with disabilities as a whole. However, parents' experiences with the various barriers to obtaining services vary across disability categories (Exhibit 2-10). In general, parents of youth with autism or deaf-blindness are the most likely to report problems with each barrier, followed by youth with emotional disturbances, orthopedic impairments, or multiple disabilities. For example, parents of between 34% and 43% of youth with emotional disturbances, orthopedic impairments, autism, multiple disabilities, or deaf-blindness lack information about needed services. Similarly, between 34% and 49% of youth in these same categories have parents who report that needed services are not

Exhibit 2-10
PARENTS' REPORTS OF BARRIERS TO OBTAINING SERVICES FOR YOUTH, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Percentage with parents reporting barriers to acquiring services:												
Lack of information	21.0 (2.0)	20.0 (2.0)	23.4 (2.2)	34.1 (2.5)	22.7 (2.4)	24.0 (3.0)	36.2 (2.7)	27.8 (2.2)	40.4 (2.7)	31.1 (4.2)	34.3 (2.6)	42.8 (5.2)
Services not available	18.8 (1.9)	18.1 (1.9)	25.6 (2.2)	33.5 (2.4)	29.0 (2.6)	30.0 (3.2)	39.8 (2.8)	29.3 (2.2)	49.3 (2.7)	29.4 (4.1)	40.1 (2.7)	42.5 (5.2)
Poor quality	17.1 (1.9)	19.9 (2.0)	20.6 (2.1)	30.2 (2.4)	22.8 (2.4)	22.7 (3.0)	28.6 (2.6)	28.0 (2.2)	34.6 (2.6)	26.2 (4.0)	29.6 (2.5)	32.7 (4.9)
Scheduling conflicts or lack of time	21.2 (2.0)	22.7 (2.1)	22.3 (2.1)	35.4 (2.5)	31.1 (2.7)	28.2 (3.2)	36.2 (2.7)	30.5 (2.2)	38.1 (2.6)	30.1 (4.2)	33.0 (2.6)	41.6 (5.2)
Cost of services	14.8 (1.8)	14.5 (1.8)	17.4 (1.9)	25.4 (2.2)	22.6 (2.4)	21.3 (2.9)	28.9 (2.6)	20.9 (1.9)	33.9 (2.6)	26.3 (4.0)	26.8 (2.4)	37.3 (5.1)
Youth ineligible for services	14.5 (1.8)	16.9 (1.9)	18.4 (2.0)	24.2 (2.2)	18.9 (2.3)	16.8 (2.6)	29.3 (2.6)	23.0 (2.0)	33.2 (2.6)	26.6 (4.1)	25.2 (2.4)	29.9 (4.9)
Transportation barriers or location of services	18.8 (1.9)	13.0 (1.7)	23.6 (2.2)	33.6 (2.4)	28.3 (2.6)	28.7 (3.2)	36.3 (2.7)	24.6 (2.1)	38.2 (2.6)	29.4 (4.2)	38.5 (2.6)	49.7 (5.3)
Language/communication barrier	3.9 (1.0)	8.1 (1.4)	7.4 (1.3)	3.4 (.9)	14.8 (2.1)	2.2 (1.0)	5.5 (1.3)	3.3 (.9)	14.3 (1.9)	5.4 (2.1)	9.5 (1.6)	17.7 (4.0)

Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

available. Most of these categories also are among the most likely to have youth whose parents report expending a great deal of effort to obtain services.

The higher percentages of youth in particular disability categories who experience these barriers do not mean that they are not problems for youth with other types of disabilities. In fact, each of these barriers is reported as a problem by between approximately 20% and 30% of youth with other types of disabilities. Particularly noteworthy is that parents of approximately 25% of youth with mental retardation and approximately 30% of youth with hearing, visual, or other health impairments or traumatic brain injuries report that needed services are unavailable for their sons or daughters. Both cost and eligibility are issues for youth with traumatic brain injuries (parents of about 26% report each of these types of problems), and language is a barrier for significantly higher proportion of students with hearing impairments than of other types of disabilities except autism or deaf-blindness (15%, $p<.05$).

Reported Unmet Needs for Services

Although the majority of youth with disabilities as a whole have parents who report that the services youth receive are sufficient, this aspect of services, too, varies widely across disability categories (Exhibit 2-11). As was true regarding the effort to acquire services and barriers encountered, parents of students with autism stand out from those of youth with disabilities in

Exhibit 2-11
REPORTED UNMET NEEDS FOR SERVICES, BY DISABILITY CATEGORY

	Learning Dis-ability	Speech/ Language Impair-ment	Mental Retar-dation	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties	Deaf-Blind-ness
Percentage who receive related services with parents who report they are sufficient to meet youth's needs	74.8 (3.6)	81.6 (3.1)	68.7 (3.9)	64.6 (3.6)	80.0 (3.3)	78.5 (3.8)	64.1 (3.8)	68.3 (3.2)	57.4 (3.5)	69.0 (5.5)	69.2 (3.4)	76.4 (5.7)
Percentage on a waiting list for one or more services	2.9 (.8)	1.8 (.7)	5.6 (1.2)	5.4 (1.2)	4.5 (1.2)	8.4 (2.0)	13.4 (1.9)	3.4 (.9)	17.4 (2.0)	6.3 (2.2)	16.3 (2.0)	11.6 (3.4)

Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

most other categories in that they are the least likely to report that their sons or daughters are receiving sufficient services (57%). These parents' reports differ significantly from those of the parents of three-quarters or more of students with learning disabilities; speech, hearing, or visual impairments; or deaf-blindness who report that their sons or daughters are receiving enough services ($p<001$). Youth with autism, along with those with multiple disabilities, are the most likely to be on a waiting list for one or more additional services (17% and 16%), a situation that is quite rare for youth with learning disabilities or speech or other health impairments, for example (2% or 3%, $p<.01$).

Demographic Differences in Experiences with Related Services and Supports

Many of the aspects of related services described thus far do not vary among youth with different demographic characteristics. For example, there are no significant differences between boys and girls with disabilities in any of these experiences with related services. Similarly, only with regard to receipt of speech-language pathology services and vocational services are there differences among younger and older teens with disabilities. Specifically, 13- and 14-year-old students with disabilities are more likely than 17-year-olds to receive speech-language pathology services (32% vs. 21%, $p<.05$), whereas the reverse is true regarding vocational services (8% of younger students receive them, compared with 32% of 17-year-olds, $p<.001$). However, variations among youth with disabilities who differ in the level of their household income and in their racial/ethnic background are more numerous, as noted below.

Exhibit 2-12
RELATED SERVICES RECEIVED BY YOUTH FROM ANY SOURCE AND FROM THEIR SCHOOL, BY HOUSEHOLD INCOME

	$25,000 or less	$25,001 to $50,000	More than $50,000
Percentage reported to have received service in the past 12 months:			
Tutor			
From any source	15.2 (1.9)	18.8 (2.4)	23.9 (2.6)
From the school	13.2 (1.8)	13.0 (2.0)	13.9 (2.1)
Assistive technology services and devices			
From any source	4.1 (1.0)	6.8 (1.5)	9.9 (1.8)
From the school	3.4 (1.0)	4.0 (1.2)	7.6 (1.6)
Psychological/mental health services			
From any source	36.0 (2.5)	30.9 (2.8)	28.9 (2.7)
From the school	19.5 (2.1)	16.3 (2.2)	11.1 (1.9)
Diagnostic or medical services			
From any source	25.0 (2.3)	21.6 (2.5)	23.1 (2.5)
From the school	10.6 (1.6)	5.4 (1.4)	5.7 (1.4)
Percentage of those receiving services who have a case manager	40.8 (2.9)	53.0 (3.6)	64.3 (3.2)
Percentage with a case manager whose case manager is someone at school	29.8 (2.7)	43.9 (3.3)	57.2 (3.3)

Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.
Note: The exhibit includes only the services that differ across demographic groups.

Students' Household Income

Receipt of services. Household income appears unrelated to the likelihood that students with disabilities receive most types of services, although there are a few exceptions that indicate greater service receipt for youth from wealthier households (Exhibit 2-12). According to parents, youth living in households with incomes of more than $50,000 are more likely than those in the lowest income category to receive help from tutors (24% vs. 15%, $p<.01$), with the difference between groups being entirely in tutoring acquired from sources other than the school. Students with disabilities from higher-income households also are more likely than their lower-income peers to use assistive technology services or devices (10% vs. 4%, $p<.01$) and to receive them from schools (8% vs. 3%, $p<.05$).

In addition, although parents across all income levels report that about one-third of youth receive psychological or mental health services from any source, students in the lowest income category are more likely than their peers living in the most affluent households to receive such services from their schools (20% vs. 11%, $p<.01$). Similarly, although about one-fourth of students at all income levels are reported to receive diagnostic medical services from all sources, students from lower-income households are the most likely to receive them from their schools (11%, compared with 5% and 6% of middle- and upper-income households respectively, $p<.05$). These differences may be related to NLTS2 findings regarding disparate health insurance coverage between household income levels, which may enable more youth from higher-income families to receive these services from nonschool sources (Marder, Levine, Wagner, & Cardoso, 2003).

According to parents, students with disabilities who receive services are more likely to have a case manager the more affluent their families are; almost two-thirds of students whose household income exceeds $50,000 and who receive related services have case managers, compared with about half of students whose household income is between $25,000 and $50,000 ($p<.05$) and 41% of students whose household income is $25,000 or less ($p<.001$). Higher household income also is associated with having a case manager from the school; however, there

are no significant differences across the income groups in the likelihood of having nonschool professionals or family members as case managers.

Acquiring services. Although the majority of families of youth with disabilities learn about related services through their children's schools (Exhibit 2-13), schools are a source of information for a smaller share of families with lower incomes than of those with medium incomes (78% vs. 85%, $p<.05$). There are no significant differences in the percentages of families that learn about services from other sources.

Exhibit 2-13
ASPECTS OF OBTAINING RELATED SERVICES FOR YOUTH WITH DISABILITIES, BY HOUSEHOLD INCOME

	$25,000 or Less	$25,001 to $50,000	More than $50,000
Percentage of youth whose family learned about services through school	77.8 (2.2)	85.1 (2.2)	80.3 (2.4)
Percentage with parents reporting expending a great deal of effort to obtain services for youth	26.3 (4.0)	20.8 (3.8)	14.1 (2.9)
Percentage with problems obtaining services due to:			
Transportation	19.9 (2.1)	9.2 (1.7)	6.0 (1.4)
Language barrier	7.3 (1.4)	2.9 (1.0)	3.1 (1.0)

Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

In addition, there are income-related differences with regard to the effort parents report expending to obtain services for their adolescent children with disabilities. Whereas obtaining services took a great deal of effort for 14% of parents with annual incomes of more than $50,000, it took that degree of effort for almost twice as many parents with annual incomes of $25,000 or less (26%, $p<.05$). Nonetheless, parents' experiences with barriers to obtaining services are similar for families with different income levels, with two exceptions. Greater problems with transportation and language barriers are associated with being from a low-income household. The former is a barrier for 20% of low-income families, compared with 6% of higher-income families ($p<.001$), and the latter is a barrier for 7% of low-income families, compared with 3% of middle- or higher-income families ($p<.05$).

NLTS2 explored whether the fact that lower-income families report expending greater effort to obtain services is associated with lower-income students' attending schools with large proportions of low-income students (i.e., those eligible for the free or reduced-price lunch program) and, therefore, schools that potentially have fewer resources for serving students with disabilities. If students do attend such schools, their families may need to expend greater effort to seek services outside the school than families of students in wealthier schools that could provide more services. However, no significant relationships were found between the concentration of low-income students in the school and parent-reported effort to obtain services or the extent to which parents encountered particular barriers to obtaining services. Thus, it appears to be household poverty, not the level of poverty in the student body of students' schools, that relates to the perceived effort required to obtain services and the extent to which barriers are encountered in doing so.

Unmet need. There are no income-related differences regarding the extent to which parents report that services received by youth with disabilities are sufficient or in the frequency with which youth with disabilities are on waiting lists for additional services.

Students' Racial/Ethnic Background

Receipt of services. As with household income, students' race or ethnicity appears to be unrelated to receipt of the majority of services and supports. However, Hispanic students are less likely than white or African-American students to receive vocational services from any source and from their schools ($p<.05$; Exhibit 2-14). They also are less likely than white students to receive assistive technology services or devices ($p<.01$) at all or from their schools.

Although students of the three racial/ethnic groups are about equally likely to receive diagnostic or medical services, African-American students are more likely than white students to receive such services from their schools (11% vs. 6%, $p<.05$). In addition, among students who receive services, white students are more likely than African-American or Hispanic students to have case managers (60% vs. 39%, $p<.001$) and to have that person be someone at school (52% vs. 28% and 30%, $p<.001$).

Exhibit 2-14
EXPERIENCES WITH RELATED SERVICES, BY RACE/ETHNICITY

	White	African American	Hispanic
Percentage reported to have received service in the past 12 months:			
Vocational services			
From any source	19.9 (1.6)	23.1 (2.9)	12.8 (3.0)
From the school	17.6 (1.6)	21.2 (2.8)	11.5 (2.9)
Diagnostic medical services			
From any source	23.6 (1.7)	22.8 (2.9)	23.8 (3.8)
From the school	6.2 (1.0)	11.3 (2.2)	9.2 (2.6)
Assistive technology services or devices			
From any source	7.5 (1.1)	6.2 (1.7)	2.6 (1.4)
From the school	5.9 (1.0)	3.4 (1.3)	1.4 (1.1)
Percentage of those receiving services who have a case manager	60.0 (2.2)	38.7 (3.7)	39.4 (5.1)
Percentage with a case manager whose case manager is someone at school	52.0 (2.2)	28.1 (3.4)	29.9 (4.8)
Percentage with parents reporting expending a great deal of effort to obtain services	15.5 (2.1)	32.3 (5.9)	15.5 (6.3)
Percentage with problems obtaining services due to:			
Cost of services	18.4 (1.6)	19.8 (2.8)	8.6 (2.5)
Language barrier	2.9 (.7)	4.4 (1.4)	13.3 (3.1)

Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.
Note: The exhibit includes only services that differ across demographic groups.

Acquiring services. Race/ethnicity is not associated with differences in where families learn about services. However, twice as many African-American as white or Hispanic youth have parents who report expending "a great deal of effort" to obtain services (32% vs. 16%, $p<.01$ and $p<.05$). Of the various barriers to obtaining services investigated in NLTS2, Hispanic students differ from white and African-American students in two regards. They are less likely to have parents who report that cost presents a barrier to services; 9% of Hispanic students, compared with 18% of white and 20% of African-American students, report that cost is a barrier. This difference may relate to the fact that Hispanic youth with disabilities also are more likely to rely on their schools for services; services specified on students' IEPs are to be provided at no cost to families. On the other hand, language is more problematic for Hispanic families; 13% of Hispanic students, compared with 3% of white and 4% of African-American students, indicate that language is a barrier.

Reported unmet needs. African-American students are less likely than white students to have parents who report that their sons or daughters receive sufficient services (61% vs. 74%, $p<.05$). There are no differences between racial/ethnic groups in the extent to which youth with disabilities are on waiting lists to receive services.

This chapter has shown that students with disabilities receive a wide variety of services that are related to their disabilities, as reported by their parents. The next chapter examines student participation in specialized programs and participation in other types of school-based programs, as reported by school staff.

3. PARTICIPATION BY YOUTH WITH DISABILITIES IN SCHOOL PROGRAMS OTHER THAN SPECIAL EDUCATION

Many students receiving special education services come to school with barriers to learning that are not directly related to their disabilities but that, in combination with other risk factors, may jeopardize their chances for success. Examples of such barriers are limited English proficiency and poverty. In addition, some secondary school students, both with and without disabilities, may need supports that address behaviors and habits exhibited during adolescence and the early adult years that can place youth at risk for school failure, personal harm, or grim futures, such as substance abuse or gang activity. Some youth with disabilities are particularly vulnerable to these risk factors, in part because of emotional, social, or cognitive impairments associated with some disabilities. These types of impairments can interfere with youth's ability to make sound judgments or maintain the level of self-control necessary to avoid alcohol or substance abuse, impulsive responses, violence, or unhealthy sexual behaviors.

This chapter describes information provided by school staff [1] about students' participation in programs aimed at compensating for the effects of poverty or language barriers, as well as low academic achievement due to factors other than disability. It also examines students' participation in and reported unmet needs for programs that target risk behaviors associated with adolescence. Information is reported for students with disabilities as a whole and for those who differ in their primary disability category and selected demographic characteristics, where significant.

Participation by Youth with Disabilities in Schoolwide Programs

Participation by youth with disabilities in three schoolwide programs is considered here. The National School Lunch Program is a federal program that serves students from low-income families. A second program provides bilingual education or other supplemental instruction for English language learner (ELL) students, whereas the third program, summer school, does not target any particular demographic group but rather serves any student with academic challenges or interests who wants or needs to pursue additional instruction beyond the standard school year.

Free or reduced-price lunch program. The National School Lunch Program was established in 1946 to ameliorate health problems among the nation's youth that are associated with poor diet (Food Research and Action Center, 2002). Since then, considerable research has linked poor nutrition with low academic achievement (e.g., Alaimo, Olson, & Frongillo, 2001; Center on Hunger, Poverty, and Nutrition Policy, 1995; Glewwe, Jacoby, & King, 1999; Murphy & Kleinman, 2000). Thus, from an educator's perspective, subsidized meals in school are important because they improve children's readiness to learn, as well as their physical health.

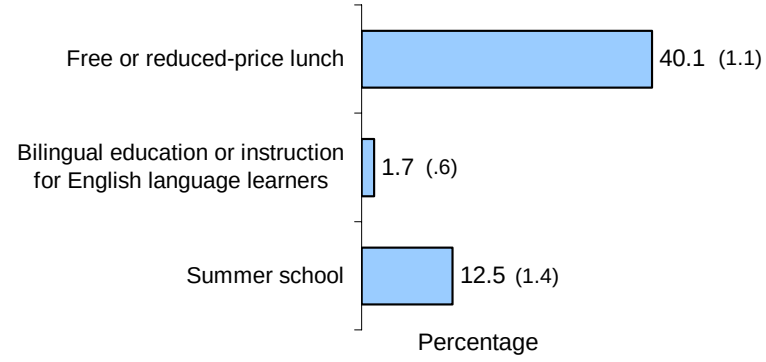
Students from households with incomes below 185% of the federal poverty level are eligible for reduced-price lunches, and students from households with incomes below 130% of poverty are eligible for free lunches. In the 2000-01 school year, 57% of students in the general

[1] The source for the bulk of the information in this chapter is the NLTS2 Wave 1 student's school program survey. This survey is completed for each student in the study by the school staff member who is most knowledgeable about the student's overall program of study and related services and supports, including data contained in student records.

population received free or reduced-price lunches on a typical school day, primarily at the elementary school level (Food Research and Action Center, 2002; Hoffman, 2002). NLTS2 data indicate that 11% of secondary school students with disabilities are in schools in which more than three-fourths of students participate in the program, whereas 45% attend schools in which one-fourth or fewer of students participate (Wagner & Levine, 2003).

According to school staff, 40% of secondary school students with disabilities are eligible to receive free or reduced-priced lunches at school (Exhibit 3-1). This implies that 4 out of 10 students with disabilities in middle and high school live in households with incomes below 185% of the federal poverty level, a finding consistent with parent reports that one-fourth of students with disabilities live in households in poverty (Marder, Levine, Wagner, & Cardoso, 2003).

Exhibit 3-1
PARTICIPATION OF YOUTH WITH DISABILITIES IN SCHOOLWIDE PROGRAMS



Source: NLTS2 Wave 1 student's school program survey.
Standard errors are in parentheses.

Programs for English language learners. In a recent summary of the No Child Left Behind Act of 2001 (NCLB), the federal legislation that guides elementary and secondary education in this country, it was estimated that approximately 5 million people in the United States are English language learners (U.S. Department of Education, 2003). One of the goals of NCLB focuses on schools' role in closing the achievement gap between students who are not proficient in English and their classmates who are. IDEA '97 also stipulates that the IEP team shall "in the case of a child with limited English proficiency, consider the language needs of the child as those needs relate to the child's IEP" [IDEA '97 Final Regulations, Section 300.346(2)(ii)].

According to parents, 7% of secondary school students with disabilities use a spoken language other than English at home most of the time[2] (Marder, Levine, & Wagner, 2003). However, school staff report that 2% of students with disabilities in secondary schools participate in bilingual education or instruction specifically for English language learners, suggesting that the majority of youth with disabilities who use a spoken language other than English at home may have mastered English well enough not to require the services of an ELL program.

Summer school. The past decade has seen a renewed interest in the benefits of summer school, especially for children and youth who are not meeting academic promotion standards or who have excessive absentee rates (Harrington-Lueker, 2000; Mathews, 2000). Summer

[2] Data on use of languages other than English should be interpreted with caution. Because English and Spanish are the only languages in which the NLTS2 parent interview and family survey are conducted, youth who speak languages other than English in the home are almost certainly underrepresented in the study.

programs also can provide enrichment opportunities in such areas as the arts, athletics, and technology. Overall, research suggests that summer school programs have positive effects on students, especially programs that provide small classroom environments and individualized instruction, focus on alleviating learning deficiencies, and include some form of parent involvement (Cooper, Charlton, Valentine, & Muhlenbruck, 2000; National Center for Education Statistics, 1999). Its benefits are potentially important enough for students with disabilities that Section 300.309 of the IDEA'97 Final Regulations requires that extended school year services be provided if the IEP team determines that such services are necessary in the provision of a free appropriate public education to a student with a disability.

NLTS2 school staff report that 12% of secondary-school-age youth with disabilities spent a portion of the previous summer in a summer school program. This percentage is similar to the approximately 10% of the total school-age population who attended summer programs in recent years (Cooper, 2001).

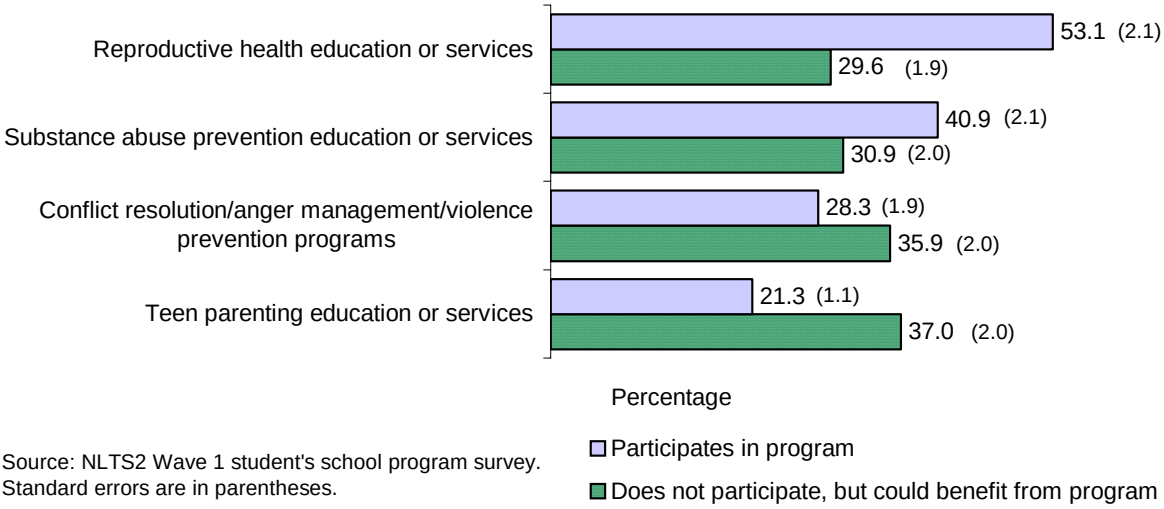
Participation in and Unmet Need for School-Based Programs Targeting Risk Behaviors

Youth with disabilities may participate in an array of programs that focus on preventing specific risk behaviors through education or that serve youth who already engage in those behaviors. Programs to educate students about the abuse of alcohol, drugs, and other harmful substances can help youth make informed choices and behave responsibly, whereas treatment programs support youth in freeing themselves of substance abuse. Helping youth make informed choices also provides the framework for reproductive health education. Preventing teenage parenting through reproductive health education and services is optimal; however, structured parenting education programs can be important for teenage parents and also may help youth who may plan to become parents as adults. Other programs teach students how to manage conflict and anger, develop healthy relationships, and take on the responsibilities and privileges of adulthood. Developing a mature recognition of the connections among risk behaviors, personal choice and responsibility, and the subsequent short- and long-term consequences are at the crux of these programs.

School staff were asked "whether this student will have received each of the following from or through the school system during this school year. These activities could be part of a class." The activities in question are: "reproductive health education or services," "substance abuse prevention education or [substance abuse] services," "conflict resolution, anger management, violence prevention [programs]," and "teen parenting education/services." Staff then were asked to indicate for each of these four activities that the student does not take part in, whether they "believe he or she could benefit from it."

Sizable percentages of youth with disabilities participate in each of the programs that target risk behaviors investigated in NLTS2 (Exhibit 3-2), yet many additional youth are reported by school staff as being able to benefit from them.

Exhibit 3-2
PARTICIPATION OF YOUTH WITH DISABILITIES IN SCHOOL-BASED PROGRAMS TARGETING RISK BEHAVIORS



Source: NLTS2 Wave 1 student's school program survey.
Standard errors are in parentheses.

Approximately half of all students with disabilities participate in programs that provide reproductive health education or services; however, only approximately one in five participate in teen parenting programs. Interestingly, there are no differences in the rates of receipt of these services by students who attend schools that are reported to have a reproductive health education or teen parenting program and by those attending schools that do not, suggesting that this subject matter may be addressed in courses (e.g., reproductive health education included in a biology class), rather than through programs that are separate from classes.

Approximately two in five students with disabilities participate in programs that provide substance abuse prevention education or services. Unlike the services noted above, receipt of these services is much more common among students who attend schools that report specific programs that address these issues than among students who do not (47% vs. 28%, $p<.001$). Twenty-eight percent of students are reported to participate in conflict resolution or anger management programs.

School staff perceive considerable unmet need for these programs. According to their reports, approximately 30% of youth with disabilities do not receive reproductive health education or services but could benefit from them; a similar level of unmet need is reported for substance abuse education or services. Approximately 36% of students do not take part in conflict resolution/anger management programs or receive teen parenting education or services but reportedly could benefit from them.

Disability Differences in Students' Participation in School-Based Programs Other than Special Education

Schoolwide Programs

There is considerable variation across disability categories in the percentages of students who participate in the various schoolwide programs investigated in NLTS2 (Exhibit 3-3). Approximately one-third of students in most disability categories are eligible to receive free or reduced-priced lunches. Notable exceptions are youth with mental retardation, multiple disabilities, or deaf-blindness, the categories with among the highest rates of household poverty[3]; 67%, 50%, and 45% of these youth, respectively, are eligible to participate in the program. At the other end of the spectrum are youth with other health impairments, 22% of whom are eligible for free or reduced-price lunches; these youth have among the lowest poverty rates of any category.

Exhibit 3-3
PARTICIPATION OF YOUTH WITH DISABILITIES IN SCHOOLWIDE PROGRAMS, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Percentage reported to participate in:												
Free or reduced-price lunch	35.7 (3.6)	31.2 (3.6)	67.4 (3.4)	39.1 (4.6)	37.1 (4.4)	35.1 (5.3)	32.1 (3.7)	21.8 (3.0)	34.8 (3.4)	32.5 (6.7)	49.9 (4.1)	45.1 (7.4)
Bilingual education/ instruction for English language learners	1.7 (.8)	3.5 (1.3)	2.1 (1.0)	.4 (.5)	6.9 (2.1)	3.9 (2.0)	1.5 (.9)	.4 (.4)	.8 (.6)	.0	1.8 (1.1)	14.0 (4.7)
Summer school during the previous summer	10.2 (2.0)	9.6 (2.1)	19.2 (2.7)	13.4 (2.8)	12.6 (2.8)	18.2 (3.9)	20.8 (2.9)	7.0 (1.7)	43.1 (3.4)	16.5 (4.6)	38.0 (3.8)	29.3 (6.0)

Source: NLTS2 Wave 1 student's school program survey.

Standard errors are in parentheses.

School staff report that bilingual education or special programs for English language learners are attended by no more than 2% of students with most types of disabilities, but by 4% of students with speech/language or visual impairments, 7% of students with hearing impairments, and 14% of students with deaf-blindness. The higher participation rates for these latter two groups suggest that school staff may be reporting participation in language programs that focus on broad communication issues rather than on the challenges specifically related to learning a new spoken language.

Despite the fact that summer school offers an opportunity for students who are falling behind academically or missing particular credits to catch up with their age peers and secure promotion to the next grade level for the new school year, only 10% of students with learning disabilities are reported to attend summer school. In contrast, between about 20% and 43% of youth with mental retardation, orthopedic impairments, autism, multiple disabilities, or deaf-

[3] Appendix B presents information on the household incomes of youth in each disability category.

blindness participate in summer school. The higher rate of summer school enrollment by students in these categories may reflect implementation of the extended school year provision of IDEA '97.

Programs Targeting Risk Behaviors

Participation. Some students in every disability category participate in programs that focus on helping youth learn concepts or strategies, gain skills, and/or receive services to prevent or ameliorate risk behaviors (Exhibit 3-4). Yet there is not a consistent pattern of higher participation across programs for youth in particular categories. For example, youth with speech impairments have one of the higher rates of receipt of substance abuse education or services but among the lowest rates of participation in anger management or conflict resolution programs. Similarly, youth with learning disabilities are among the most likely to participate in reproductive-health-related and teen parenting programs but are no more likely than others to

Exhibit 3-4
PARTICIPATION OF YOUTH IN SCHOOL-BASED PROGRAMS TARGETING RISK BEHAVIORS, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Percentage participating or who could benefit from:												
Reproductive health education/services												
Participating	54.0 (3.1)	47.1 (3.3)	43.2 (3.2)	51.0 (4.0)	54.0 (3.9)	43.9 (4.7)	39.9 (3.3)	49.9 (3.1)	28.0 (3.0)	51.5 (5.8)	32.1 (3.5)	39.4 (6.2)
Not participating, could benefit from program	28.1 (2.9)	32.4 (3.2)	33.7 (3.1)	34.1 (3.9)	25.1 (3.4)	24.0 (4.1)	30.4 (3.2)	28.2 (2.8)	30.9 (3.1)	24.8 (5.2)	24.4 (3.2)	25.2 (5.7)
Teen parenting education/services												
Participating	21.6 (2.6)	19.5 (2.6)	17.3 (2.5)	17.0 (3.0)	19.5 (3.1)	21.9 (3.9)	12.5 (2.3)	18.1 (2.4)	7.1 (1.7)	22.0 (4.9)	12.3 (2.4)	14.8 (4.5)
Not participating, could benefit from program	36.9 (3.2)	32.2 (3.2)	39.3 (3.2)	44.0 (4.1)	34.8 (3.9)	25.2 (4.3)	27.8 (3.2)	32.9 (3.0)	18.6 (2.7)	31.1 (5.5)	19.4 (3.0)	25.2 (5.8)
Substance abuse education/services												
Participating	41.5 (3.2)	45.0 (3.4)	34.7 (3.2)	47.1 (4.1)	44.2 (4.0)	36.4 (4.7)	32.5 (3.3)	38.5 (3.1)	25.3 (3.0)	44.7 (6.1)	31.4 (3.5)	41.0 (6.5)
Not participating, could benefit from program	31.6 (3.0)	24.0 (2.9)	30.3 (3.1)	35.5 (3.9)	25.8 (3.5)	22.4 (4.1)	23.4 (3.0)	31.3 (2.9)	14.4 (2.4)	25.7 (5.3)	14.6 (2.7)	18.0 (5.1)
Conflict resolution/ anger management												
Participating	23.1 (2.7)	23.8 (2.8)	29.1 (3.0)	43.4 (4.0)	30.3 (3.6)	24.3 (4.1)	20.1 (2.7)	27.5 (2.8)	33.8 (3.1)	31.5 (5.4)	30.7 (3.4)	36.3 (6.1)
Not participating, could benefit from program	36.1 (3.1)	30.9 (3.2)	33.9 (3.1)	44.2 (4.0)	34.0 (3.8)	26.7 (4.3)	29.8 (3.2)	35.4 (3.1)	19.1 (2.7)	31.9 (5.5)	19.0 (2.9)	23.6 (5.6)

Source: NLTS2 Wave 1 student's school program survey.

Standard errors are in parentheses.

take part in conflict resolution or anger management programs. Students with emotional disturbances are significantly more likely than youth in most other categories to participate in anger management or conflict resolution programs, reflecting the social and behavioral issues challenging many youth in that category, but they have among the lowest rates of participation in teen parenting programs.

The one exception to the absence of a consistent pattern of participation across programs for students in different disability categories concerns youth with autism. They are the least likely to participate in reproductive health (28%), teen parenting (7%), or substance abuse programs (25%, $p<.001$ for all comparisons with students with learning disabilities).

Unmet needs. According to school staff, between about one-fourth and one-third of students in most disability categories do not participate in each type of progam but could benefit from participating. The shares of students who teachers feel could benefit from each program are highest for youth with emotional disturbances, with teachers reporting that 34% of these youth have unmet needs for reproductive health education or services, 44% for teen parenting education or services, 36% for substance abuse prevention or services, and 44% for conflict resolution or anger management programs. Youth with learning disabilties or mental retardation also are at the high end of the continuum of unmet needs for teen parenting programs (37% and 39%, respectively). They are joined by youth with other health impairments in having relatively high levels of unmet needs for substance abuse education or services (32%, 30%, and 31% for students with learning disabilities, mental retardation, and other health impairments, respectively). However, youth with mental retardation are among the most likely to have unmet needs for reproductive health education or services (34%), whereas youth with learning disabilities are among the most likely to have unmet needs for conflict resolution/anger mangement/violence prevention programs (36%). Youth with multiple disabilities are among the least likely to have unmet needs for each type of program, according to school staff, and, together with youth with autism, they are the least likely to have unmet needs for teen parenting and programs that relate to substance abuse or conflict resolution/anger management.

Demographic Differences in Students' Participation in School-Based Programs Other than Special Education

Differences other than disability are found to differentiate the participation of students with disabilities in the school-based programs examined in this report, including their grade level, gender, household income, and racial/ethnic background.

Grade Level

Participation in the National School Lunch Program declines steadily over the grade levels, such that 54% of 7th and 8th graders with disabilities participate, but only 32% of 11th and 12th graders do so ($p<01$; Exhibit 3-5). This decrease is consistent with findings for the general population of students (National Center for Education Statistics, 1995; U.S. Census Bureau, 2001). There are no significant differences across the grade levels in participation in programs for English language learners or in summer school.

Participation in three of the four programs targeting risk behaviors does not differ significantly across the grade levels; however, the share of youth with disabilities receiving teen parenting education or services doubles, from 13% in the 7th and 8th grades to 26% in the

Exhibit 3-5
PARTICIPATION OF YOUTH WITH DISABILITIES IN SCHOOL-BASED PROGRAMS OTHER THAN SPECIAL EDUCATION, BY GRADE LEVEL

	Grade Level			
	7th and 8th	9th	10th	11th and 12th
Percentage of students who participate in free or reduced-price lunch program	53.8 (6.2)	44.6 (5.5)	38.7 (4.6)	32.2 (3.7)
Percentage participating in or who could benefit from:				
Reproductive health education/services				
Participating	59.2 (5.6)	49.1 (4.5)	56.9 (4.1)	53.0 (3.5)
Not participating, could benefit from program	32.0 (5.3)	40.2 (4.5)	26.0 (3.7)	24.1 (3.0)
Teen parenting education/services				
Participating	13.3 (4.0)	21.2 (3.8)	21.1 (3.4)	25.5 (3.1)
Not participating, could benefit from program	39.1 (5.7)	41.9 (4.6)	36.0 (4.0)	33.3 (3.4)
Conflict resolution, anger management, or violence prevention				
Participating	34.7 (5.5)	27.5 (4.1)	25.3 (3.6)	28.2 (3.2)
Not participating, could benefit from program	40.9 (5.6)	42.0 (4.5)	36.1 (4.0)	30.9 (3.3)

Source: NLTS2 Wave 1 student's school program survey.
Standard errors are in parentheses.

Household Income

As expected, students' participation in programs that focus on compensating for educational gaps caused by poverty differs significantly by household income (Exhibit 3-6). Differences are most dramatic for participation in the National School Lunch Program, with 75% of students with disabilities whose family incomes are $25,000 or less participating, compared with 38% of students whose family incomes are between $25,000 and $50,000 and 11% of students whose family incomes exceed $50,000 ($p<.001$). Although differences are much smaller, students from the lowest-income families also are more likely than students from higher-income families to be in programs for English language learners (3% vs. less than 1%, $p<.05$).

Although participation in most programs that target risk behaviors does not vary for students from households with different income levels, the proportions of students with reported unmet needs for several programs do. Coming from a low-income household is associated with greater unmet need for reproductive health education or services, teen parenting programs, and substance

11th and 12th grades ($p<.05$). In contrast, the percentage of youth with unmet needs for such programs stays fairly constant over the grade levels. Reported unmet needs for reproductive health education and services and conflict resolution, anger management, or violence prevention programs decrease after the ninth grade. Approximately 40% of 9th graders with disabilities are reported to have unmet needs for each program, whereas approximately 24% of high school juniors and seniors are reported to have unmet needs for reproductive health education or services, and 31% are reported to have unmet needs for conflict resolution, anger management, or violence prevention programs ($p<.05$).

Gender

The few differences between girls and boys with disabilities in program participation involve the greater propensity of girls to be eligible for free or reduced-price lunches (47% vs. 37%, $p<.05$) and to receive teen parenting education or services (27% vs. 18%, $p<.05$).

Exhibit 3-6
PARTICIPATION OF YOUTH WITH DISABILITIES IN SCHOOL-BASED PROGRAMS OTHER THAN SPECIAL EDUCATION, BY HOUSEHOLD INCOME

	$25,000 or Less	$25,001 to $50,000	More than $50,000
Percentage of students who participate in:			
Free or reduced-price lunch program	75.3 (3.7)	37.8 (4.9)	10.9 (2.8)
Bilingual or ELL instruction	3.3 (1.4)	.6 (.7)	.4 (.5)
Percentage who do not participate in program but could benefit from:			
Reproductive health education/services	37.3 (3.7)	29.4 (3.8)	24.6 (3.5)
Teen parenting education/services	48.7 (3.9)	36.3 (4.1)	28.3 (3.8)
Substance abuse education/services	36.5 (3.7)	30.2 (3.8)	26.0 (3.6)

Source: NLTS2 Wave 1 student's school program survey.
Standard errors are in parentheses.

abuse education or services. Whereas school staff perceive approximately one-fourth of students whose household incomes exceed $50,000 to have unmet needs for each program, they report 37% of students whose household incomes are $25,000 or less and who are not receiving services to be able to benefit from reproductive health education or services, a similar percentage to be able to benefit from substance abuse education or services, and almost half to have unmet needs for teen parenting programs ($p<.05$ for all comparisons).

Some of the unmet need for services that is associated with individual student poverty, as determined by students' household income, may reflect the more limited resources often available in schools attended by large proportions of low-income students. Students with disabilities who attend schools where fewer than one-fourth of the student body are eligible for free or reduced-price lunches are significantly less likely to be reported to have an unmet need for each of the programs that targets risk behaviors than are students with disabilities who attend schools where half or more of the student population are eligible for this program (Exhibit 3-7). For example, 24% of students in schools with the smallest concentration of students in poverty have a reported unmet need for reproductive health education or services, compared with 38% of youth in schools where more than half of students are eligible for free or reduced-price lunches ($p<.05$). The greatest difference in unmet needs among students who go to schools with different concentrations of low-income students concerns teen parenting programs; they are reported to be needed by 27% of students in schools with the fewest low-income students but by more than half of students attending schools with the highest levels of student poverty ($p<.001$).

Exhibit 3-7
REPORTED UNMET NEEDS OF YOUTH WITH DISABILITIES FOR SCHOOL-BASED PROGRAMS OTHER THAN SPECIAL EDUCATION, BY SCHOOL POVERTY INDICATOR

	Proportion of Student Body Eligible for Free or Reduced-Price Lunches		
	Less than 25%	26% to 50%	More than 50%
Percentage who do not participate in program but who could benefit from:			
Reproductive health education/services	23.7 (2.9)	33.7 (3.7)	37.9 (4.3)
Teen parenting education/services	27.4 (3.1)	40.4 (3.9)	51.8 (4.5)
Conflict resolution/anger management/violence prevention	38.7 (3.1)	41.2 (3.8)	42.0 4.4
Substance abuse education/services	23.1 (2.9)	36.9 (3.8)	36.2 4.3

Source: NLTS2 Wave 1 school characteristics and student's school program surveys.
Standard errors are in parentheses.

These differences are in contrast to findings reported in Chapter 2, which indicate that there is no relationship between the concentration of low-income students in the overall population in schools attended by students with disabilities and the effort parents of students with disabilities report needing to expend to obtain services for their children or in barriers encountered in that process.

Students' Racial/Ethnic Backgrounds

The association between household income and race/ethnicity is apparent in the differential program participation rates of youth of the three racial/ethnic groups (Exhibit 3-8). Both African-American and Hispanic students with disabilities participate in the free or reduced-price lunch program at far greater rates than their white peers (70% and 57% compared with 27%, $p<.001$). Not surprisingly, Hispanic youth are more likely than white or African-American students to participate in programs for English language learners (8% vs. less than 1%, $p<.05$).

Exhibit 3-8
PARTICIPATION OF YOUTH WITH DISABILITIES IN SCHOOL-BASED PROGRAMS OTHER THAN SPECIAL EDUCATION, BY RACE/ETHNICITY

	White	African American	Hispanic
Percentage of students who participate in:			
Free or reduced-price lunch program	26.8 (2.6)	69.7 (4.8)	56.9 (7.0)
Bilingual or ELL instruction	.1 (.2)	.8 (.9)	8.1 (3.5)
Percentage who do not participate in program but could benefit from:			
Reproductive health education/services	26.3 (2.3)	33.8 (4.4)	41.0 (6.1)
Teen parenting education/services	32.6 (2.5)	43.6 (4.6)	52.1 (6.3)
Substance abuse education/services	27.5 (2.3)	38.9 (4.6)	36.3 (6.1)

Source: NLTS2 Wave 1 student's school program survey.
Standard errors are in parentheses.

Although rates of participation in school programs that target risk behaviors do not vary across racial/ethnic groups, perceived unmet needs for programs are greater for African-American and Hispanic youth than for white youth. Compared with white youth, both groups are reported to have greater unmet needs for teen parenting education or services (44% and 52%, respectively, vs. 33%, $p<.05$). In addition, Hispanic youth are reported to have greater unmet needs than white youth for reproductive health education or services (41% vs. 26%, $p<.05$), and African-American youth with disabilities are perceived to have greater unmet needs than white youth for substance abuse education or programs (39% vs. 28%, $p<.05$).

In sum, the school-based programs examined in this chapter, regardless of their specific focus, serve many secondary school students with disabilities. However, there are reported unmet needs for some programs, and both participation and the prevalence of unmet needs differ for youth with different primary disability classifications and demographic characteristics.

4. RELATED SERVICES AND PROGRAMS FOR YOUTH WITH DISABILITIES: KEY FINDINGS

The success that youth with disabilities achieve in school can be influenced by access to a range of services that support their education goals. The Individuals with Disabilities Education Act Amendments of 1997 (IDEA '97) require the provision of related services and supports to students with disabilities who are deemed to need them to benefit from a free appropriate public education. In this document, NLTS2 reports information from parents of secondary school students with disabilities and school staff who serve them regarding students' receipt of related services[1] and participation in school-based programs other than special education.[2] This information depicts the variation in services and supports students with disabilities receive in middle and high school, as well as some indication of the extent to which students' support needs remain unmet. Key themes are highlighted below.

The Important Role of Schools in Providing Related Services and Supports

Almost three-fourths of secondary school students with disabilities are reported by parents to receive at least one of the related services investigated in NLTS2. Importantly, parents report that several of these services are most often provided from or through their children's schools or school districts—60% of students with disabilities receive one or more related services from school sources. For example, almost all students who receive speech-language pathology services, vocational service, or occupational therapy; have a reader for the classroom; or use transportation services are provided those services through their schools. On the other hand, outside agencies or individuals are more likely to provide services that require traditionally nonacademic professionals, such as psychiatrists or psychologists, medical diagnosticians, and social workers.

In addition, schools overwhelmingly function as the primary source of information about related services for families; parents of 81% of youth with disabilities report learning about services from their children's schools. Schools also provide service coordination for four to six times as many youth with disabilities as do other professionals or family members.

Thus, parents depend on the schools to provide information and service coordination and ultimately to arrange for the services and supports included as part of their sons' and daughters' IEPs. Clearly, schools have a responsibility for students with disabilities that extends well beyond the classroom and that requires education resources and policies that are implemented effectively. Future NLTS2 reports will explore the relationships among comprehensive service provision for students with disabilities, the schools' role in this provision, student achievement, and their early postschool outcomes.

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[1] In IDEA '97, related services include speech-language pathology and audiology services, psychological services, physical and occupational therapy, recreational services (including therapeutic recreation), early identification and assessment of disabilities in children, counseling services (including rehabilitation counseling), orientation and mobility services, medical services for diagnostic or evaluation purposes, school health services, social work services in schools, parent counseling and training, and transportation.

[2] School-based programs other than special education that have been examined in this report include the National School Lunch Program, programs for English language learners, summer school, reproductive health education or services, substance abuse prevention education or substance abuse services, conflict resolution/anger management/ violence prevention programs, and teen parenting education/services.

Challenges to Accessing Related Services

Service System Barriers

Although navigating the multiple service systems involved in providing the related services needed by some youth with disabilities can be complex, 60% of students with disabilities have parents who report that finding services for their sons or daughters with disabilities took only "a little effort" or "almost no effort," and approximately three-quarters have parents who report that the services their sons or daughters are receiving are enough to meet students' needs. However, this generally positive report of the ability of families to traverse service systems and arrange sufficient services for their adolescent children with disabilities should not overshadow the fact that 40% of youth with disabilities have parents who report expending greater effort to obtain services, including approximately one in five who report that it required "a great deal of effort" to obtain services. Further, according to parents, more than one-fourth of youth who receive services reportedly continue to have unmet needs for more services.

Some of the effort required to arrange for services and the perceived inability to obtain sufficient services may result from barriers encountered in the process of acquiring or attempting to acquire them. A lack of information about services or the unavailability of a service itself are the barriers parents encounter most often in their efforts to obtain services for youth with disabilities; almost one-fourth of youth have parents who report these barriers to meeting their children's service needs. Issues of time, cost, distance, and eligibility rules are reported to be barriers to service acquisition for one in six to one in eight youth with disabilities. In addition, the parents of one in five youth are unhappy with the quality of services available.

The Implications of Poverty

The fact that cost is cited as a barrier to acquiring services for some youth with disabilities hints at the important relationship between household income and service acquisition. NLTS2 findings underscore the fact that poverty poses obstacles to accessing related services for youth with disabilities and their families.

Students with disabilities living in low-income households (i.e., those with annual incomes of $25,000 or less) are more likely than their more affluent peers (i.e., those from households with incomes of more than $50,000) to have parents who report expending a great deal of effort to obtain services; facing barriers to access related to transportation, location, or language; and the need to go beyond the school to learn about services. Parents of low-income youth with disabilities report that their sons or daughters with disabilities are less likely to have a case manager, and when they do, they are far less likely than more affluent students to obtain this service through the school. Youth with disabilities living in low-income households are less likely to be reported by their parents as having enough related services to meet their needs. Although these unmet needs are related to individual household income, they are not related to students' attending schools with high concentrations of low-income students.

Parents' reports that low-income students with disabilities have fewer services than needed may reflect students' greater need, rather than a difference in the actual rate at which students from households with different levels of income receive services. Reported receipt of most services does not differ significantly across income groups, with the exception that students with

disabilities in low-income households are less likely than students in more affluent households to receive tutoring services or assistive technology devices or services.

The more apparent difference between students of different income groups is in the significantly more prominent role of the schools as the source of services for lower-income students with disabilities. For example, although youth living in low-income households are about equally likely as their peers living in higher-income households to receive mental health/psychological services or diagnostic/medical services, lower-income youth are more likely to receive these services from or through their schools. This difference may relate to the fact that obtaining these types of services from sources other than the school often is determined by availability of medical insurance, which has been shown in previous NLTS2 reports to be less available to low-income families (Marder, Levine, Wagner, & Cardoso, 2003); thus, these families and their children may be more dependent on school resources for these types of services. Yet, other types of services, too, are more likely to be provided by schools to low-income students with disabilities than to others. For example, almost all low-income students who receive tutoring services do so through their schools, whereas only about half of students with disabilities in higher-income households receive tutoring help at school.

The Challenges of Autism

The impairments and functional challenges associated with some disabilities are particularly complex, and it may require greater effort to find and access the wide array of needed services for youth with such disabilities. For example, about half of youth with emotional disturbances, orthopedic impairments, traumatic brain injuries, or multiple disabilities have parents who report having to expend "some effort" or "a great deal of effort" to access services. This struggle appears to be most challenging for students with autism, whose parents are more likely to report investing considerable effort to obtain services, including almost one-third who report needing to spend "a lot of effort" on behalf of their children to obtain services for them. Parents of youth with autism also are more likely than those in other categories to cite most of the barriers to obtaining services for their sons or daughters. Half of parents of students with autism say the services they need for their sons or daughters are not available, and they are the most likely to report that their children with autism are ineligible for services that are available or that those services are of poor quality. Parents of youth with autism also report more often than many others that they seek information or help outside the school, and they rely more on family members, other parents, or parent groups to learn about services. They also are more likely to rely on nonschool professionals for their sons' or daughters' case management than parents of youth in other disability categories who have case managers. With this pattern of experience, it is not surprising that secondary school students with autism are least likely to be reported by their parents as having sufficient services. The recent rapid growth in the prevalence and identification of children and youth with autism suggests the importance of developing a greater understanding of and paying closer attention to both the academic and related service needs of these students.

The Implications of Disability for Receipt of Related Services

Differences between disability categories regarding service provision can reflect in large part the functional, cognitive, academic, psychological, or social difficulties inherent in students' impairments; some services are most relevant to the functional needs of youth in particular disability categories (e.g., physical therapy for youth with orthopedic impairments). Yet some services, such as mental health counseling or tutoring, are more broadly applicable and appear in educational programs of students across all disability categories, as noted below.

Widely Accessed Services

Psychological or mental health services or counseling. According to parents, the most common type of related services received by secondary school students with disabilities are psychological counseling and mental health services, which are received by approximately one-third of students with disabilities nationwide. Although it would be expected that the largest share of students who receive mental health services are those with emotional disturbances (69% of whom receive them), these services also are received by 38% to 46% of students with autism, other health impairments, traumatic brain injuries, or multiple disabilities, and by about one-fourth of students in other disability categories. Overall, at least half of students who receive mental health services receive them from sources outside of school. Thus, communication between non-school-based mental health professionals and school staff regarding students' psychological needs or progress may be an important element in these students' success in school.

Academic tutoring. Tutoring has been shown to have beneficial effects on students' academic performance and behavior (DuPaul, Ervin, Hook, & McGoey, 1998; Franklin, Griffin, & Perry, 1994; Longwill & Kleinert, 1998). Although academic lags are a serious impediment for many youth with disabilities, according to parents, tutoring is provided to approximately one in five students with learning disabilities, hearing or other health impairments, or traumatic brain injuries. Even smaller shares of students in other disability categories receive help from tutors. Considering the current emphasis on improving achievement scores for all students, as mandated in the No Child Left Behind Act of 2001 (NCLB), and the particular challenges of meeting those expectations for students with disabilities, expanding tutoring services for them is an investment worth considering.

Speech-language pathology or communication services are the second most common services received by students with disabilities overall, about one-fourth of whom receive it in a given year. As expected, the majority of youth with speech or language impairments (71%) receive speech-related services, but this service also is reported to be received by from 62% to 75% of students with autism, multiple disabilities, hearing impairments, or deaf-blindness, and by 44% of students with mental retardation. As mentioned earlier in this chapter, almost all speech or language therapeutic interventions are provided through the schools.

Medical services for diagnosis or evaluation related to a student's disability, the third most common service type reported by parents, is used by about one-quarter of students with disabilities. More than half of youth in four disability categories (deaf-blindness, orthopedic impairment, visual impairment, and multiple disabilities) receive diagnostic medical services during a 12-month period, as do approximately 40% of youth in five other disability groups (other health impairment, autism, traumatic brain injury, hearing impairment, and emotional disturbance).

Many youth with these disabilities are characterized by various functional, sensory, or health-related impairments that require ongoing diagnostic or medical intervention. Others may need medications and maintenance checks to control aspects of their disabilities that interfere with learning or social adjustment (e.g., seizures, attention deficits, mental illness).

More Disability-Focused Services

Physical or occupational therapies, or life skills therapy or training. Overall, 11% of students with disabilities are reported to receive occupational therapy, and 4% receive physical therapy. However, from 6 to 10 times as many students with orthopedic impairments, multiple disabilities, or deaf-blindness as students in other disability categories receive these services; students with autism also are relatively heavy users of occupational therapy. For example, 60% of students with multiple disabilities receive occupational therapy and almost half receive physical therapy. In contrast, in five disability categories, including the largest, fewer than 15% of students receive occupational therapy, and similar percentages of students in six disability categories receive physical therapy. The school is a provider of occupational therapy for nearly all students who receive it. Nonschool sources are more frequently involved in providing physical therapy.

Mobility and sensory enhancements. Mobility limitations pose serious problems for many students with orthopedic impairments, multiple disabilities, deaf-blindness, or visual impairments. It follows that larger shares of students with these than with other disabilities use such services as specialized transportation, assistive technology services or devices, and orientation and mobility services to help them gain access to their schools and communities and enjoy greater independence. Some services are associated with a specific impairment; examples are audiology services or classroom readers or interpreters, which are received predominantly by students with hearing impairments (76% and 40%, respectively) or deaf-blindness (70% and 31%, respectively)—fewer than 10% of students in other disability categories are reported to use these services.

Nursing and respite care. These services usually are needed by the few students whose disabilities require intensive or frequent intervention or ongoing maintenance care. The physical, sensory, or neurological impairments that impede independent movement or functioning for some youth with orthopedic impairments, multiple disabilities, or deaf-blindness can require daily assistance for personal care needs. In particular, some students with severe disabilities may need nursing care to attend to intensive medical needs (e.g., feeding tubes, seizure control) at home and in school, and respite also may be necessary for families and school staff who need periodic relief from the care required for some students with severe disabilities. Although nursing care and respite care are used by fewer than 1% of students with disabilities as a whole, 10% or more of youth with orthopedic impairments, multiple disabilities, or deaf-blindness receive nursing services, and parents of one in five students report using respite care for their sons or daughters with multiple disabilities or autism.

Importantly, personal care services are the only services reported to have more families on waiting lists than are receiving them. Twice as many families are waiting for nursing care and three times as many for respite services as are receiving them. Although these personal care services are needed by a small proportion of secondary students with disabilities, the compelling nature of the services themselves implies that the long waits to obtain them could potentially impede the ability of youth who need them to succeed at school, at home, and in the community and compound the challenges already faced by their families.

Participation in School-Based Programs

Students with disabilities participate in a variety of programs at school for which they are eligible for reasons other than their disabilities. Some of these are federal programs that serve all eligible students in a school and aim to reduce the limitations imposed by such factors as poverty or limited English proficiency. Others serve students who demonstrate or are at risk for behaviors often associated with negative consequences for adolescents.

Participation in Schoolwide Programs

According to school staff, 40% of secondary school students with disabilities receive free or reduced-price lunches through the National School Lunch Program. In addition, 2% participate in bilingual education or instruction specifically for English language learners, among whom poverty can be a confounding factor for many students. Participation in these programs concentrates among youth with disabilities in low-income households, three-fourths of whom receive free or reduced-price lunches and 3% of whom participate in programs for English language learners. These are rates two to five times higher than participation by students with disabilities in the next higher income group. School lunch programs also serve larger proportions of African-American and Hispanic youth with disabilities than their white peers, underscoring the association between household income and race/ethnicity. Income and racial/ethnic backgrounds are not the only demographic factors that distinguish participation in these programs. More than half of students with disabilities in seventh and eighth grades participate in the school lunch program, a proportion that declines steadily to one-third of students among high school juniors and seniors. Girls with disabilities also are 10 percentage points more likely than boys with disabilities to receive free or reduced-price lunches.

There also are differences in participation rates for these programs among youth in different disability categories, which largely reflect the differences in the distribution of poor and minority youth across categories. For example, African-Americans and students living in poverty are significantly higher proportions of students with mental retardation than of students in any other disability category; 41% live in poverty and one-third are African American, compared with 30% and 25% of students with emotional disturbances, the category with the next highest representation of these students. Therefore, it is not surprising that approximately twice the proportion of students with mental retardation as of students in most other disability categories are reported by school staff to receive free or reduced-price lunches. Students with deaf-blindness or hearing impairments are most likely to participate in bilingual or English language learner programs, suggesting that staff may be reporting students' participation in language programs that focus on communication issues as well as on English language acquisition. On the other hand, Hispanic youth also are more likely than others to be participants in programs for English language learners.

Finally, NLTS2 also investigated students' participation in summer school programs, which are designed to help students who are lagging behind academically or who desire to expand their instructional options beyond those available during the school year. NLTS2 school staff report that 12% of secondary school youth with disabilities participated in summer school programs the previous summer, with slightly more girls than boys among the participants. The summer school participation rates are from two to six times greater among youth with autism (43%), multiple disabilities (38%), or deaf-blindness (29%) than among youth in other disability categories. These

differences imply that IEP teams may be including extended-school-year services on the IEPs of these youth with disabilities as part of the provision of a free appropriate public education.

Programs That Target Youth Risk Behaviors

As noted earlier in this report, IDEA '97 requires that the IEP team, "in the case of a child whose behavior impedes his or her learning or that of others, consider, if appropriate, strategies, including positive behavioral interventions, strategies, and supports to address that behavior" [IDEA '97 Final Regulations, Section 300.346(a)(2)(i)]. According to school staff, most youth with disabilities participate in at least one program aimed at preventing or ameliorating behaviors that place students at risk for poor outcomes, ranging from about one in five students receiving teen parenting education or services to more than half receiving reproductive health education or services. School staff also perceive that approximately one-third of students with disabilities do not participate in these programs but would benefit from them. It is noteworthy that the percentages of students reported to have unmet needs for conflict resolution/anger management/violence prevention or teen parenting programs are larger than the percentages of those participating in them.

Students in every disability category participate to some extent in these programs, although participation rates vary widely across disability categories. Unlike the greater prevalence of related-service participation among students in such categories as autism or multiple disabilities, students in higher-incidence categories are more likely to participate in programs that focus on risk behaviors. For example, students with learning disabilities or emotional disturbances are reported to participate in these programs at relatively higher rates than others. Nonetheless, youth with learning disabilities or emotional disturbances also are among the students reported to have relatively high levels of unmet needs. In fact, according to school staff, youth with emotional disturbances have the highest proportions of unmet needs for each of the four risk behavior programs.

With the exception that more girls than boys with disabilities receive teen parenting education, participation rates vary little for students of different demographic characteristics. In contrast, the proportions of students with unmet needs for these programs differ by household income, race/ethnicity, and grade level. Specifically, significantly larger shares of low-income students are perceived to have unmet needs for programs that target reproductive health, teen parenting, and substance abuse. African-American and Hispanic youth also are perceived to have unmet needs for these programs in greater proportions than white students. In addition, unmet needs are reported for relatively high proportions of students at middle school grade levels, but are greatest for ninth graders. Because ninth grade marks the transition from middle to high school for most students, eighth- and ninth-grade youth with disabilities who do not have access to prevention and treatment programs aimed at risk behaviors may be headed for a difficult transition, discipline problems, and a higher likelihood of dropping out of school. School staff's perceptions of unmet needs for these programs decrease after ninth grade, perhaps reflecting an increase in the cumulative percentages of youth who have been served by these programs or, alternatively, the possibility that students with unmet needs for such programs may have dropped out.

Finally, school poverty, as measured by the proportion of the student body that are eligible for free or reduced-price lunch, is associated with some unmet programmatic needs for students with disabilities. Youth with disabilities who attend schools with smaller concentrations of low-income

students are less likely to have perceived unmet needs for programs that target high-risk behaviors than are youth with disabilities who go to schools where low-income students are a greater proportion of the student body. Thus, increased investments in such programs might well be targeted toward secondary students who attend high-poverty schools.

This report has described the receipt of related services and participation in school-based programs by secondary school students with disabilities. Findings depict the range of services and supports provided to youth, some of the challenges encountered in acquiring them, and perceptions of unmet needs, as indicated by their parents and school staff. Longitudinal analyses in subsequent waves of NLTS2 will enable a look at the effects these services, supports, and programs may have on later outcomes, as youth with disabilities transition from school to early adult life.

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APPENDIX A

NLTS2 SAMPLING, DATA COLLECTION, AND ANALYSIS PROCEDURES

This appendix describes several aspects of the NLTS2 methodology relevant to the Wave 1 data reported here, including:

- Sampling local education agencies (LEAs), schools, and students
- Data collection procedures and response rates
- Weighting the data
- Estimation and use of standard errors
- Unweighted and weighted sample sizes
- Calculating statistical significance
- Measurement issues.

NLTS2 Sample Overview

The NLTS2 sample was constructed in two stages. A stratified random sample of 3,634 LEAs was selected from the universe of approximately 12,000 LEAs that serve students receiving special education in at least one grade from 7th through 12th grades. These LEAs and 77 state-supported special schools that served primarily students with hearing and vision impairments and multiple disabilities were invited to participate in the study, with the intention of recruiting 497 LEAs and as many special schools as possible from which to select the target sample of about 12,000 students. The target LEA sample was reached; 501 LEAs and 38 special schools agreed to participate and provided rosters of students receiving special education in the designated age range, from which the student sample was selected.

The roster of all students in the NLTS2 age range who were receiving special education from each LEA[1] and special school was stratified by disability category. Students then were selected randomly from each disability category. Sampling fractions were calculated that would produce enough students in each category so that, in the final study year, findings will generalize to most categories individually with an acceptable level of precision, accounting for attrition and for response rates to the parent/youth interview. A total of 11,276 students were selected and eligible to participate in the NLTS2 parent interview/survey sample.

Details of the LEA and students samples are provided below.

[1] LEAs were instructed to include on the roster any student for which they were administratively responsible, even if the student was not educated within the LEA (e.g., attended school sponsored by an education cooperative or was sent by the LEA to a private school). Despite these instructions, some LEAs may have underreported students served outside the LEA.

The NLTS2 LEA Sample

Defining the Universe of LEAs

The NLTS2 sample includes only LEAs that have teachers, students, administrators, and operating schools—that is, "operating LEAs." It excludes such units as supervisory unions; Bureau of Indian Affairs schools; public and private agencies (e.g., correctional facilities); LEAs from U.S. territories; and LEAs with 10 or fewer students in the NLTS2 age range, which would be unlikely to have students with disabilities.

The public school universe data file for 1999 maintained by Quality Education Data was used to construct the sampling frame because it had more recent information than the alternative list maintained by the National Center for Education Statistics. Correcting for errors and duplications resulted in a master list of 12,435 LEAs that met the selection criteria. These comprised the NLTS2 LEA sampling frame.

Stratification

The NLTS2 LEA sample was stratified to increase the precision of estimates, to ensure that low-frequency types of LEAs (e.g., large urban districts) were adequately represented in the sample, to improve comparisons with the findings of other research, and to make NLTS2 responsive to concerns voiced in policy debate (e.g., differential effects of federal policies in particular regions, LEAs of different sizes). Three stratifying variables were used:

Region. This variable captures essential political differences, as well as subtle differences in the organization of schools, the economic conditions under which they operate, and the character of public concerns. The regional classification variable selected was used by the Department of Commerce, the Bureau of Economic Analysis, and the National Assessment of Educational Progress (categories are Northeast, Southeast, Midwest, and West).

LEA size (student enrollment). LEAs vary considerably by size, the most useful available measure of which is student enrollment. A host of organizational and contextual variables are associated with size that exert considerable potential influence over the operations and effects of special education and related programs. In addition, total enrollment serves as an initial proxy for the number of students receiving special education served by an LEA. The QED database provides enrollment data from which LEAs were sorted into four categories serving approximately equal numbers of students:

- **Very large** (estimated[2] enrollment greater than 14,931 in grades 7 through 12)
- **Large** (estimated enrollment from 4,661 to 14,931 in grades 7 through 12)
- **Medium** (estimated enrollment from 1,622 to 4,660 in grades 7 through 12)
- **Small** (estimated enrollment from 11 to 1,621 in grades 7 through 12).

LEA/community wealth. As a measure of district wealth, the Orshansky index (the proportion of the student population living below the federal definition of poverty, Employment

[2] Enrollment in grades 7 through 12 was estimated by dividing the total enrollment in all grade levels served by an LEA by the number of grade levels to estimate an enrollment per grade level. This was multiplied by 6 to estimate the enrollment in grades 7 through 12.

Policies Institute, 2002) is a well-accepted measure. The distribution of Orshansky index scores was organized into four categories of LEA/community wealth, each containing approximately 25% of the student population in grades 7 through 12:

- **High** (0% to 13% Orshansky)
- **Medium** (14% to 24% Orshansky)
- **Low** (25% to 43% Orshansky)
- **Very low** (more than 43% Orshansky).

The three variables generate a 64-cell grid into which the universe of LEAs was arrayed.

LEA Sample Size

On the basis of an analysis of LEAs' estimated enrollment across LEA size, and estimated sampling fractions for each disability category, 497 LEAs (and as many state-sponsored special schools as would participate) was considered sufficient to generate the student sample. Taking into account the rate at which LEAs were expected to refuse to participate, a sample of 3,635 LEAs was invited to participate, from which 497 participating LEAs might be recruited. A total of 501 LEAs actually provided students for the sample, 101% of the target number needed and 14% of those invited. Analyses of the region, size, and wealth of the LEA sample, both weighted and unweighted, confirmed that that the weighted LEA sample closely resembled the LEA universe with respect to those variables.

In addition to ensuring that the LEA sample matched the universe of LEAs on variables used in sampling, it was important to ascertain whether the stratified random sampling approach resulted in skewed distributions on relevant variables not included in the stratification scheme. Several analyses were conducted.

First, three variables from the QED database were chosen to compare the "fit" between the first-stage sample and the population: the LEA's racial/ethnic distribution of students, the proportion who attended college, and the urban/rural status of the LEA. This analysis revealed that the sample of LEAs somewhat underrepresenting African American students and college-bound students, and overrepresenting Hispanic students and LEAs in rural areas. Thus, in addition to accounting for stratification variables, LEA weights were calculated to achieve a distribution on the urbanicity and racial/ethnic distributions of students that matched the universe.

To determine whether the resulting weights, when applied to the participating NLTS2 LEAs, accurately represented the universe of LEAs serving the specified grade levels, data collected from the universe of LEAs by the U.S. Department of Education's Office of Civil Rights (OCR) and additional items from QED were compared for the weighted NLTS2 LEA sample and the universe. Finally, the NLTS2 participating LEAs and a sample of 1,000 LEAs that represented the universe of LEAs were surveyed to assess a variety of policies and practices known to vary among LEAs and to be relevant to secondary-school-age youth with disabilities. Analyses of both the extant databases and the LEA survey data confirm that the weighted NLTS2 LEA sample accurately represents the universe of LEAs.

The NLTS2 Student Sample

Determining the size of the NLTS2 student sample took into account the duration of the study, desired levels of precision, and assumptions regarding attrition and response rates. Analyses determined that approximately three students would need to be sampled for each student who would have a parent/youth interview in Wave 5 of NLTS2 data collection.

The NLTS2 sample design called for findings to be generalizable to students receiving special education as a whole and for the 12 special education disability categories currently in use and reported in this document. Standard errors were to be no more than 3.6%, except for the low-incidence categories of traumatic brain injury and deaf-blindness. Thus, by sampling 1,250 students per disability category (with the two exceptions noted) at the outset, 402 students per category were expected to have a parent or youth interview in year 9. Assuming a 50% sampling efficiency (which is likely to be exceeded for most disability categories), 402 students would achieve a standard error of estimate of slightly less than 3.6%. All students with traumatic brain injury or with deaf-blindness in participating LEAs and special schools were selected. Students were disproportionately sampled by age to assure that there would be an adequate number of students who were age 24 or older at the conclusion of the study. Among the eligible students, 40.2% will be 24 or older as of the final interview.

LEAs and special schools were contacted to obtain their agreement to participate in the study and request rosters of students receiving special education who were ages 13 through 16 on December 1, 2000, and in at least 7th grade.[3] Requests for rosters specified that they contain the names and addresses of students receiving special education under the jurisdiction of the LEA, the disability category of each student, and the students' birthdates or ages. Some LEAs would provide only identification numbers for students, along with the corresponding birthdates and disability categories. When students were sampled in these LEAs, identification numbers of selected students were provided to the LEA, along with materials to mail to their parents/guardians (without revealing their identity).

After estimating the number of students receiving special education in the NLTS2 age range, the appropriate fraction of students in each category was selected randomly from each LEA and special school. In cases in which more than one child in a family was included on a roster, only one was eligible to be selected. LEAs and special schools were notified of the students selected and contact information for their parents/guardians was requested.

Data Sources

Data reported here are drawn from a survey of parents of NLTS2 youth, conducted by telephone and mail, and mail surveys of staff in schools attended by NLTS2 sample members.

Parent Interview/Survey

The NLTS2 conceptual framework suggests that a youth's nonschool experiences, such as extracurricular activities and friendships; historical information, such as age when disability was first identified; household characteristics, such as socioeconomic status; and a family's level and type of involvement in school-related areas are crucial to student outcomes. Parents/guardians

[3] Students who were designated as being in ungraded programs also were sampled if they met the age criteria.

are the most knowledgeable about these aspects of students' lives. They also are important sources of information on outcomes across domains. Thus, parents/guardians of NLTS2 sample members were interviewed by telephone or surveyed by mail in 2001, as part of Wave 1 data collection.

Matches of names, addresses, and telephone numbers of NLTS2 parents with existing national locator databases were conducted to maximize the completeness and accuracy of contact information and subsequent response rates. A student was required to have a working telephone number and an accurate address to be eligible for the parent interview sample.

Letters were sent to parents to notify them that their child had been selected for NLTS2 and that an interviewer would be attempting to contact them by telephone. The letter included a toll-free telephone number for parents to call to be interviewed if they did not have a telephone number where they could be reached reliably or if they wanted to make an appointment for the interview at a specific time.

Computer-assisted telephone interviewing (CATI) was used for parent interviews, which were conducted between mid-May and late September 2001. Ninety-five percent of interviews were conducted in English and 5% in Spanish.

All parents who could not be reached by telephone were mailed a self-administered questionnaire in a survey period that extended from September through December 2001. The questionnaire contained a subset of key items from the telephone interview. Exhibit A-1 reports the responses to the telephone and mail surveys.

Exhibit A-1
RESPONSE RATES FOR NLTS2 PARENT/GUARDIAN TELEPHONE INTERVIEW AND MAIL SURVEY

	Number	Percentage
Total eligible sample	11,276	100.0
Respondents		
Completed telephone interview	8,672	76.9
Partial telephone interview completed	300	2.7
Complete mail questionnaire	258	2.3
Total respondents	9230	81.9
Nonrespondents		
Refused	738	6.5
Language barrier	138	1.2
No response	1,170	10.4
Total nonrespondents	2,046	18.1

Overall, 91% of respondents reported that they were parents of sample members (biological, adoptive, or step), and 1% were foster parents. Six percent were relatives other than parents, 2% were nonrelative legal guardians, and fewer than 1% reported other relationships to sample members.

School Data Collection

Data sources for the findings reported here also include for each NLTS2 student a mail survey of a school staff-person who was most knowledgeable about the student's overall school program. The first step in the school data collection process was to identify the school attended by NLTS2 students during the 2001-02 school year. School attendance data had been collected as part of the parent interview during the summer and fall of 2001. Parent responses relating to schools were coded (e.g., address, phone) using the Quality Education Data (QED) database. For identified schools not in the QED database or for students for whom there was no parent interview, school district records collected

for sampling were used to identify students' schools. Names of students thought to attend each school were sent to schools for verification using the School Enrollment form. In addition to verification of enrollment, this form requested that schools provide the name of a school staff member who would be willing to coordinate the distribution of school surveys for NLTS2 students attending each school. Participation agreements were signed by coordinators, who received reimbursement for their efforts at varying levels, depending on the number of NLTS2 students in the school.

In March 2002, survey packets were sent to each coordinator and to school principals in schools that did not name a coordinator. A second packet was sent in April 2002. Additional mailings were conducted to individual teachers in May 2002. By the end of the survey period, completed school program surveys were returned for 6,038 students, or 59% of eligible sample members.

Weighting Wave 1 Data

The percentages and means reported in the data tables throughout this report are estimates of the true values for the population of youth with disabilities in the NLTS2 age range. The estimates are calculated from responses of parents and school staff of NLTS2 sample members. The response for each sample member is weighted to represent the number of youth in his or her disability category in the kind of LEA (i.e., region, size, and wealth) or special school from which he or she was selected.

Exhibit A-2 illustrates the concept of sample weighting and its effect on percentages or means that are calculated for students with disabilities as a group. In this example, 10 students are included in a sample, 1 from each of 10 disability groups, and each has a hypothetical value regarding whether that student participated in organized group activities outside of school (1 for yes, 0 for no). Six students participated in such activities, which would result in an unweighted value of 60% participating. However, this would not accurately represent the national population of students with disabilities because many more students are classified as having a learning disability than orthopedic or other health impairments, for example. Therefore, in calculating a population estimate, weights in the example are applied that correspond to the proportion of students in the population that are from each disability category (actual NLTS2 weights account for disability category and several aspects of the districts from which they were chosen). The sample weights for this example appear in column C. Using these weights, the weighted population estimate is 87%. The percentages in all NLTS2 tables are similarly weighted population estimates, whereas the sample sizes are the actual number of cases on which the weighted estimates are based (similar to the 10 cases in Exhibit A-2).

Exhibit A-2
EXAMPLE OF WEIGHTED PERCENTAGE CALCULATION

Disability Category	A Number in Sample	B Participated in Group Activities	C Example Weight for Category	D Weighted Value for Category
Learning disability	1	1	5.5	5.5
Speech/language impairment	1	1	2.2	2.2
Mental retardation	1	1	1.1	1.1
Emotional disturbance	1	0	.9	0
Hearing impairment	1	1	.2	.2
Visual impairment	1	1	.1	.1
Orthopedic impairment	1	0	.1	0
Other health impairment	1	1	.6	.6
Autism	1	0	.2	0
Multiple disabilities	1	0	.1	0
TOTAL	10	6	10	8.7
	Unweighted sample percentage = 60% (Column B total divided by Column A total)		Weighted population estimate = 87% (Column D total divided by Column C total)	

The students in LEAs and state schools with data for each survey were weighted to represent the universe of students in LEAs and state schools using the following process:

- For each of the 64 LEA sampling cells, an LEA student sampling weight was computed. This weight is the ratio of the number of students in participating LEAs in that cell divided by the number of students in all LEAs in that cell in the universe of LEAs. The weight represents the number of students in the universe who are represented by each student in the participating LEAs. For example, if participating LEAs in a particular cell served 4,000 students and the universe of LEAs in the cell served 400,000 students, then the LEA student sampling weight would be 100.
- For each of the 64 LEA cells, the number of students in each disability category was estimated by multiplying the number of students with that disability on the rosters of participating LEAs in a cell by the adjusted LEA student sampling weight for that cell. For example, if 350 students with learning disabilities were served by LEAs in a cell, and the LEA student sampling weight for that cell was 100 (that is, each student in the sample of participating LEAs in that cell represented 100 students in the universe), there would be an estimated 35,000 students with learning disabilities in that cell in the universe.
- For the state schools, the number of students in each disability category was estimated by multiplying the number of students with that disability on the rosters by the inverse of the proportion of state schools that submitted rosters.
- The initial student sampling weights were adjusted by disability category so that the sum of the weights (that is, the initial student sampling weights multiplied by the number of students with completed interviews) was equal to the number of students in the geographical and wealth cells of each size strata. The adjustments were typically small and essentially served as a non-response adjustment. However, the adjustments could become substantial when there were relatively few interviewees (as occurred in the

small and medium strata for the lowest-incidence disabilities) because in these cases, there might not be any interviewees in some cells, and it was necessary to adjust the weights of other interviewees to compensate. Two constraints were imposed on the adjustments: (1) within each size stratum, the cells' weights could not vary from the average weight by more than a factor of 2, and (2) the average weight within each size strata could not be larger than 4 times the overall average weight. These constraints substantially increased the efficiency of the sample at the cost of introducing a small amount of weighting bias (discussed below).

- In a final step, the weights were adjusted so that they summed to the number of students in each disability category, as reported to OSEP by the states for the 2000-2001 school year (Office of Special Education Programs, 2001).

The imposition of constraints on the adjusted weights increased sampling efficiency at the cost of introducing a small amount of bias. The average efficiency increased from 51.7% to 67.4%; the largest increases in sampling efficiency occurred for youth with emotional disturbances (from 44.4% to 81.0%) and for those with multiple disabilities (from 32.1% to 56.8%). Biases introduced by the imposition of constraints on the student weights generally were very small. The largest bias in size distribution was for youth with visual impairments (decreasing from 17.1% in the smallest size stratum to 11.6%) and those with autism (decreasing from 21.3% in the smallest size stratum to 17.5%). All other changes in the size distribution were 1.5% or less, and the average absolute change was only 0.4%. The largest bias in wealth distribution was for those with multiple disabilities (from 22.2% in wealth stratum 3 to 16.6%, and from 18.3% in wealth stratum 4 to 22.0%). All other changes were 2.1% or less, and the average absolute change was only 0.6%. All biases in regional distribution were 2.1% or less, and the average absolute change was only 0.5%. Considering the increase in sampling efficiency, these biases are considered acceptable.

The reason for the reduction in the proportion of students represented in the cells mentioned above is that there were relatively few students with interview/survey data in those cells. For example, small LEAs had only 21 students with visual impairments with data, requiring that they represent an estimated 1,701 students with visual impairments from small LEAs. The weighting program determined that the average weight required (i.e., 81.0) violated the constraints, and therefore reduced these weights to a more reasonable value (i.e., 56.2).

Estimating Standard Errors

Each estimate reported in the data tables is accompanied by a standard error. A standard error acknowledges that any population estimate that is calculated from a sample will only approximate the true value for the population. The true population value will fall within the ranged demarcated by the estimate, plus or minus the standard error 95% of the time. For example, if the cohort 2 estimate for youth's current employment rate is 29%, with a standard error of 1.8 (as reported in Exhibit 5-7), one can be 95% confident that the true current employment rate for the population is between 27.2% and 30.8%.

Because the NLTS2 sample is both stratified and clustered, calculating standard errors by formula is not straightforward. Standard errors for means and proportions were estimated using pseudo-replication, a procedure that is widely used by the U.S. Census Bureau and other federal

agencies involved in fielding complex surveys. To that end, a set of weights was developed for each of 32 balanced half-replicate subsamples. Each half-replicate involved selecting half of the total set of LEAs that provided contact information using a partial factorial balanced design (resulting in about half of the LEAs being selected within each stratum) and then weighting that half to represent the entire universe. The half-replicates were used to estimate the variance of a sample mean by: 1) calculating the mean of the variable of interest on the full sample and each half-sample using the appropriate weights; 2) calculate the squares of the deviations of the half-sample estimate from the full sample estimate; and 3) adding the squared deviations and divide by (n-1) where n is the number of half-replicates.

Although the procedure of pseudo-replication is less unwieldy than development of formulas for calculating standard errors, it is not easily implemented using the Statistical Analysis System (SAS), the analysis program used for NLTS2, and it is computationally expensive. In the past, it was possible to develop straightforward estimates of standard errors using the effective sample size.

When respondents are independent and identically distributed, the effective sample size for a weighted sample of N respondents can be approximated as

$$Neff = N \times (E^2[W] / (E^2[W] + V[W]$$

where Neff is the effective sample size, $E^2[W]$ is the square of the arithmetic average of the weights and V[W] is the variance of the weights. For a variable X, the standard error of estimate can typically be approximated by sqrt (V[X]/Neff), where V[X] is the weighted variance of X.

NLTS2 respondents are not independent of each other because they are clustered in LEAs, and the intra-cluster correlation is not zero. However, the intra-cluster correlation traditionally has been quite small, so that the formula for the effective sample size shown above has worked well. To be conservative, however, the initial estimate was multiplied by a "safety factor" that assures that the standard error of estimate is not underestimated.

To determine the adequacy of fit of the variance estimate based on the effective sample size and to estimate the required safety factor, 24 questions with 95 categorical and 2 continuous responses were selected. Standard errors of estimates were calculated for each response category and the mean response to each question for each disability group using both pseudo-replication and the formula involving effective sample size. A safety factor of 1.25 resulted in the effective sample size standard error estimate underestimating the pseudo-replicate standard error estimate for 92% of the categorical responses and 89% of the mean responses. Because the pseudo-replicate estimates of standard error are themselves estimates of the true standard error, and are therefore subject to sampling variability, this was considered an adequate margin of safety. All standard errors in Wave 1 are 3.0% or less, except for categories of deaf-blindness, traumatic brain injury, and visual impairments, where sample sizes are small. For these disability categories, the standard errors were at most 4.9%, 4.9%, and 3.5% for dichotomous variables.

Unweighted and Weighted Sample Sizes

As indicated above, standard errors accompany all estimates reported in the descriptive data tables. How close an estimate comes to a true population value is influenced by the size of the sample on which the estimate is based. Larger samples yield estimates with smaller standard

errors, indicating that those estimates are closer to true population values than estimates with larger standard errors based on smaller samples.

The actual, or "unweighted." sample sizes for each variable reported in the descriptive data tables are included in Appendix D. However, some readers may be interested in determining the number of youth in the nation represented by a particular estimate (e.g., if 22% of youth are employed at a given time, how many youth in the country are employed?). A first step in determining these "weighted" sample sizes involves multiplying the percentage estimate by the actual number of youth in the nation represented by that estimate (see example below). However, 95% of the time, the true population value is likely to diverge from that estimate by as much as the amount of the standard error. Therefore, it is more appropriate to use the standard error to calculate a range in the number of youth represented by an estimate, rather than relying on the single value resulting from multiplying the estimate by the size of the population it represents.

Consider the example depicted in Exhibit A-3. NLTS2 findings indicate that 25.1% of youth with learning disabilities are currently employed (see Exhibit 6-15). The standard error accompanying that estimate is 2.1, indicating that the true current employment rate for the population is likely to fall between 23% and 27.2%. There are 1,130,539 youth with learning disabilities in the NLTS2 age range. Multiplying the percentages by this population size yields a single-point estimate of 283,765 and a range of 260,024 to 307,507, within which the actual population size will fall, with 95% confidence.

Exhibit A-3
EXAMPLE OF CALCULATING WEIGHTED SAMPLE SIZES

A	B	C	D	E	F
Percentage Estimate	Standard Error	Range around Estimate (Column A Plus or Minus Column B)	Population Size	Single-point Weighted Population Affected (Column A x Column D)	Range in Weighted Population Affected (Column C x Column D)
25.1	2.1	23.0 to 27.2	1,130,539	283,765	260,024 to 307,507

Because percentage estimates are provided not only for the full sample of youth with disabilities, but also for youth who differ in primary disability category, readers must have the actual population size for each of these subgroups to calculate weighted sample sizes for some estimates. These population sizes are presented in Exhibit A-4.

Exhibit A-4
POPULATION SIZES OF GROUPS REPRESENTED BY NLTS2

Groups	Number
All youth with disabilities	1,838,848
Disability category:	
Learning disability	1,130,539
Speech/language impairment	76,590
Mental retardation	213,552
Emotional disturbance	203,937
Hearing impairment	22,001
Visual impairment	8,013
Orthopedic impairment	21,006
Other health impairment	98,197
Autism	14,637
Traumatic brain injury	6,379
Multiple disabilities	34,865
Deaf-blindness	340

Calculating Significance Levels

In general, references in the text of the report to differences between groups highlight only differences that are statistically significant with at least 95% confidence, (denoted as $p<.05$). Beyond the differences highlighted in the text, readers may want to compare percentages or means for specific subgroups to determine, for example, whether the difference in the percentage of students who are male between students with learning disabilities and those with hearing impairments is greater than would be expected to occur by chance. To calculate whether the difference between percentages is statistically significant, the squared difference between the two percentages of interest is divided by the sum of the two squared standard errors. If this product is larger than 3.84, the difference is statistically significant at the .05 level—i.e., it would occur by chance fewer than 5 times in 100. Presented as a formula, a difference in percentages is statistically significant at the .05 level if:

$$\frac{(P_1 P_2)^2}{SE_1^2 + SE_2^2} > 1.96^2$$

where P_1 and SE_1 are the first percentage and its standard error and P_2 and SE_2 are the second percentage and the standard error. If the product of this calculation is 6.63 to 10.79, the significance level is .01, products of 10.8 or greater are significant at the .001 level.

Measurement and Reporting Issues

The chapters in this report provide information on specific variables included in analyses. However, several general points about NLTS2 measures that are used repeatedly in analyses should be clear to readers as they consider the findings reported here.

Categorizing students by primary disability. Information about the nature of students' disabilities came from rosters of all students in the NLTS2 age range receiving special education services in the 2000-01 school year under the auspices of participating LEAs and state-supported special schools. In data tables included in this report, students are assigned to a disability category on the basis of the primary disability designated by the student's school or district. Although there are federal guidelines in making category assignments (Exhibit A-5), criteria and methods for assigning students to categories vary from state to state and even between districts within states. Thus, there is the potential for substantial variation in the nature and severity of disabilities included in categories (see for example, MacMillan & Siperstein, 2002). Therefore, NLTS2 data should not be interpreted as describing students who truly had a particular disability, but rather as describing students who were categorized as having that primary disability by their school or district. Therefore, it is appropriate to conclude that descriptive data are nationally generalizable to youth in the NLTS2 age range who were classified as having a particular primary disability in the 2000-01 school year.

Exhibit A-5
DEFINITIONS OF DISABILITIES[4]

Autism: A developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age 3, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences. The term does not apply if a child's educational performance is adversely affected primarily because the child has a serious emotional disturbance as defined below.

Deafness: A hearing impairment so severe that the child cannot understand what is being said even with a hearing aid.

Deaf-Blindness: A combination of hearing and visual impairments causing such severe communication, developmental, and educational problems that the child cannot be accommodated in either a program specifically for the deaf or a program specifically for the blind.

Hearing impairment: An impairment in hearing, whether permanent or fluctuating, that adversely affects a child's educational performance but that is not included under the definition of deafness as listed above.

Mental retardation: Significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period that adversely affects a child's educational performance.

Multiple disabilities: A combination of impairments (such as mental retardation-blindness, or mental retardation-physical disabilities) that causes such severe educational problems that the child cannot be accommodated in a special education program solely for one of the impairments. The term does not include deaf-blindness.

Orthopedic impairment: A severe orthopedic impairment that adversely affects educational performance. The term includes impairments such as amputation, absence of a limb, cerebral palsy, poliomyelitis, and bone tuberculosis.

Other health impairment: Having limited strength, vitality, or alertness due to chronic or acute health problems such as a heart condition, rheumatic fever, asthma, hemophilia, and leukemia, which adversely affect educational performance.[5]

[4] From ERIC Digests (1998).

[5] OSEP guidelines indicate that "children with ADD, where ADD is a chronic or acute health problem resulting in limited alertness, may be considered disabled under Part B solely on the basis of this disorder under the 'other health impaired' category in situations where special education and related services are needed because of the ADD" (Davila, 1991).

Exhibit A-5
DEFINITIONS OF DISABILITIES (Concluded)

Emotional Disturbance:[6] A condition exhibiting one or more of the following characteristics, displayed over a long period of time and to a marked degree that adversely affects a child's educational performance:

- An inability to learn that cannot be explained by intellectual, sensory, or health factors
- An inability to build or maintain satisfactory interpersonal relationships with peers or teachers
- Inappropriate types of behavior or feelings under normal circumstances
- A general pervasive mood of unhappiness or depression
- A tendency to develop physical symptoms or fears associated with personal or school problems.

This term includes schizophrenia, but does not include students who are socially maladjusted, unless they have a serious emotional disturbance.

Specific Learning Disability: A disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. This term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. This term does not include children who have learning problems that are primarily the result of visual, hearing, or motor disabilities; mental retardation; or environmental, cultural or economic disadvantage.

Speech or language impairment: A communication disorder such as stuttering, impaired articulation, language impairment, or a voice impairment that adversely affects a child's educational performance.

Traumatic brain injury: An acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance. The term applies to open or closed head injuries resulting in impairments in one or more areas, such as cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual and motor abilities; psychosocial behavior; physical functions; information processing; and speech. The term does not apply to brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma. As with autism, traumatic brain injury (TBI) was added as a separate category of disability in 1990 under P.L. 101-476.

Visual impairment, including blindness: An impairment in vision that, even with correction, adversely affects a child's educational performance. The term includes both partial sight and blindness.

The exception to reliance on school or district category assignment involves students with deaf-blindness. District variation in assigning students with both hearing and visual impairments to the category of deaf-blindness results in many students with those dual disabilities being assigned to other primary disability categories, most often hearing impairment, visual impairment, and multiple disabilities. Because of these classification differences, national estimates suggest that there were 3,196 students with deaf-blindness who were ages 12 to 17 in 1999 (National Technical Assistance Center, 1999), whereas the federal child count indicated that 681 were classified with deaf-blindness as their primary disability (Office of Special Education Programs, 2001).

[6] P.L. 105-17, the Individuals with Disabilities Education Act Amendments of 1997, changed "serious emotional disturbance" to "emotional disturbance." The change has no substantive or legal significance. It is intended strictly to eliminate any negative connotation of the term "serious."

To describe the characteristics and experiences of the larger body of youth with deaf-blindness more accurately and precisely, students who were reported by parents or by schools or school districts[7] as having both a hearing and a visual impairment were assigned to the deaf-blindness category for purposes of NLTS2 reporting, regardless of the primary disability category assigned by the school or school district. This increased the number of youth with deaf-blindness for whom parent data were collected from 24 who were categorized by their school or district as having deaf-blindness as a primary disability to 166. The number of students reassigned to the deaf-blindness category and their original designation of primary disability are indicated in Exhibit A-6.

Exhibit A-6
ORIGINAL PRIMARY DISABILITY CATEGORY OF YOUTH ASSIGNED TO DEAF-BLINDNESS CATEGORY FOR NLTS2 REPORTING PURPOSES

Original Primary Disability Category	Number
Deaf-blindness	24
Visual impairment	46
Hearing impairment	43
Multiple disabilities	31
Orthopedic impairment	7
Mental retardation	6
Traumatic brain injury	4
Other health impairment	3
Speech/language impairment	1
Autism	1
Total	166

Demographic characteristics. Findings in this report are provided for youth who differ in age, gender, household income, and race/ethnicity when differences are statistically significant. For the large majority of youth, age, gender, and race/ethnicity were determined from data provided by students' schools or districts. For youth for whom information was not provided by schools or districts, data for these variables were taken from the parent interview/survey. Classifying the household income of students' households relied exclusively on information provided during the parent interview/survey.

Reporting statistics. Statistics are not reported for groups with fewer than 35 members. Statistics with a decimal of .5 are rounded to the nearest even whole number.

[7] Some special schools and school districts reported secondary disabilities for students. So, for example, a student with visual impairment as his or her primary disability category also could have been reported as having a hearing impairment as a secondary disability.

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APPENDIX B

DEMOGRAPHIC CHARACTERISTICS OF YOUTH WITH DISABILITIES AND THEIR HOUSEHOLDS

Understanding the characteristics of youth with disabilities is a crucial foundation for serving them well. Youth bring to their educational experiences a complex history and background that is shaped by demographic characteristics, such as age, gender, and ethnicity; by family background and circumstances, such as parents' education and household income; and by the nature of the students' disabilities. These factors help structure the involvement of youth at home, at school, and in the community, as well as the ways in which they, their parents, school staff, and other service personnel work together toward positive results for youth. Thus, individual and household characteristics are essential elements of the context for many major life experiences of youth, including those at school, and understanding that context will inform how these experiences are interpreted.

A brief summary of selected individual characteristics and household risk factors of youth with disabilities is presented below.[1]

Individual Characteristics

For youth, age is a major determinant of development that influences their competence and independence. Yet, there is quite a bit of variation in maturation among teens, resulting in sizable differences in abilities and activities between youth of the same age. Gender is a defining human characteristic, and during adolescence, when young people are exploring their sexuality and gender roles, it can shape their experiences and choices in powerful ways. In addition, racial/ethnic and language background can be associated with rich cultural traditions, patterns of relationships within families and communities, and strong group identification, which can generate important differences in values, perspectives, expectations, and practices.

The importance of understanding the demographic makeup of the population of youth with disabilities is crucial in interpreting NLTS2 findings for the group as a whole and for youth with particular disability classifications. It also is a foundation for interpreting comparisons between youth with disabilities and those in the general population.

Below, the primary disability classifications among youth with disabilities are reported, and other traits that are important to their experiences are described. These are presented for youth with disabilities as a whole, compared with the general population when possible, and then described as they vary for youth with different primary disability classifications.

[1] A more detailed discussion of these characteristics can be found in Marder, Levine, and Wagner (2003) and Marder, Levine, Wagner, and Cardoso (2003).

Primary Disabilities of Youth

In the 2000-01 school year, students who received special education constituted 13% of all 13- to 16-year-olds who were enrolled in school.[2] Exhibit B-1 depicts the primary disability classifications assigned by schools to those students (Office of Special Education Programs, 2002). Overall, 62% of students receiving special education in this age group were classified as having a learning disability. Youth with mental retardation and emotional disturbances comprised 12% and 11% of students, respectively. Another 5% of youth were classified as having other health impairments, and 4% were identified as having speech impairments. The seven remaining disability categories each comprised 1% or less of the total child count or, taken together, about 5% of youth with disabilities. Thus, when findings are presented for youth with disabilities in this age group as a whole, they represent largely the experiences of those with learning disabilities.

Exhibit B-1
DISABILITY CATEGORY DISTRIBUTION OF YOUTH WITH DISABILITIES, AGES 13 TO 16

Primary Disability Classification	Federal Child Count[3]		NLTS2 Weighted Percentage
	Number	Percentage	
Specific learning disability	1,130,539	61.8	62.0
Speech/language impairment	76,590	4.2	4.0
Mental retardation	213,552	11.7	12.2
Emotional disturbance	203,937	11.2	11.4
Hearing impairment	22,001	1.2	1.3
Visual impairment	8,013	.4	.5
Orthopedic impairment	21,006	1.2	1.2
Other health impairment	98,197	5.4	4.6
Autism	14,637	.8	.7
Traumatic brain injury	6,379	.2	.3
Multiple disabilities	34,865	1.2	1.8
Deaf-blindness	340	<.1	.2
TOTAL	1,838,848	100.0	100.0

It is important to note that, although students receiving special education often are referred to as "students with disabilities," the population of those with disabilities is larger than those receiving special education. For example, parents of 6% of the general population of children under age 18 report that their children have a visual impairment, 13% have a hearing impairment, and almost 16% report that their children have a speech impairment (National Center for Health Statistics, 2001). Yet, the number of students who receive special education services primarily for those impairments combined constitute fewer than 3% of all students under age 18 (Office of Special Education Programs, 2002). This difference points up the fact that many children and youth experience some degree of disability that does not require specially designed instruction.

Exhibit B-1 demonstrates that the weighted distribution of NLTS2 youth very closely approximates that of youth with disabilities in the nation. Thus, weighted findings from NLTS2 provide an accurate picture of the characteristics, experiences, and achievements of youth with the range of disabilities highlighted in Exhibit B-1.

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[2] General student enrollment is available by grade level rather than age. Grades 7 through 10 were used in calculating the general student enrollment (National Center for Education Statistics, 2001).

[3] Data are for youth ages 13 to 16 who were receiving services under IDEA, Part B, in the 2000-01 school year in the 50 states and Puerto Rico (Office of Special Education Programs, 2002).

Age

Although the youth included in NLTS2 were ages 13 through 16 when they were selected, by the time school data were collected in the 2001-02 school year, 17% of youth were 14 and more than one-third (38%) were 17 or 18 (Exhibit B-2). Therefore, findings are reported here for youth who are 14 through 18, with an average age of almost 16.

Each successive age cohort includes youth who were identified as eligible for special education services at that age, as well as those identified earlier who still are receiving special education. However, each age cohort does not include students who left school or special education at earlier ages. Thus, the disability mix shifts across the age cohorts because some disabilities are more prevalent among younger students whereas others do not emerge until later, and because school-leaving disproportionately affects some disability categories.

Youth in each disability category are distributed across the age groups in a similar pattern, with one exception. Almost one-fourth (24%) of youth with speech impairments are age 14, and a similar percentage are 17 or 18 making them significantly younger, on average, than those in almost every other disability category ($p<.05$ to $p<.001$).

Exhibit B-2
YOUTH'S AGE ON MARCH 15, 2002, BY DISABILITY CATEGORY

Age	All Youth	Learning Disability	Speech/ Language Impair-ment	Mental Retar-dation	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Disabili-ties	Deaf-Blindness
14	17.2	18.5	23.5	12.9	15.9	14.4	15.6	9.1	14.2	17.1	9.6	13.9	14.4
	(1.5)	(2.4)	(2.7)	(2.2)	(2.9)	(2.7)	(3.4)	(1.9)	(2.1)	(2.5)	(3.4)	(2.6)	(4.4)
15	21.7	20.9	26.5	22.0	24.7	22.4	17.7	24.5	22.5	21.4	22.8	16.7	24.8
	(1.7)	(2.5)	(2.9)	(2.7)	(3.4)	(3.2)	(3.6)	(2.9)	(2.6)	(2.7)	(4.9)	(2.7)	(5.4)
16	23.5	23.9	23.9	23.3	20.2	19.8	24.0	27.4	25.9	25.3	21.6	23.0	23.8
	(1.7)	(2.6)	(2.8)	(2.7)	(3.2)	(3.1)	(4.0)	(3.0)	(2.7)	(2.9)	(4.8)	(3.1)	(5.3)
17 or 18	37.6	36.7	26.1	41.9	39.3	43.3	42.7	39.0	37.5	36.2	46.0	46.4	37.0
	(2.0)	(3.0)	(2.8)	(3.2)	(3.9)	(3.8)	(4.6)	(3.3)	(3.0)	(3.2)	(5.8)	(3.7)	(6.0)
Mean	15.9	15.9	15.6	16.0	15.9	16.0	16.1	16.0	15.9	15.9	16.1	16.1	15.9
	(<.1)	(.1)	(.1)	(.1)	(.1)	(.1)	(.1)	(.1)	(.1)	(.1)	(.1)	(.1)	(.1)

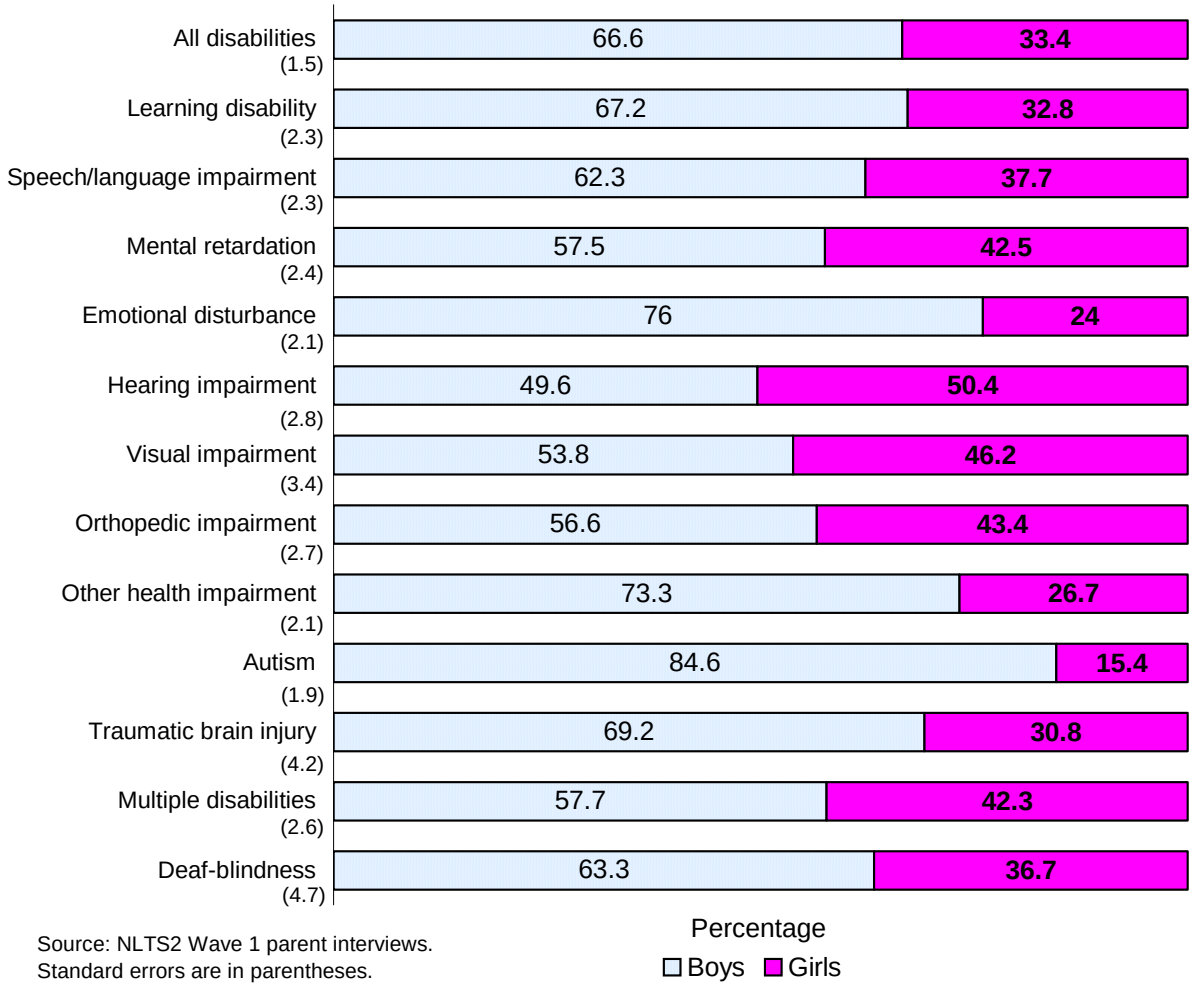
Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

Gender

Two-thirds of youth with disabilities in the NLTS2 age range are boys (Exhibit B-3). The 2:1 ratio among children with disabilities has been found among infants and toddlers (Hebbeler et al., 2001), as well as among elementary and middle school students (Marder & Wagner, 2002).

Boys make up between 58% and 77% of youth in most disability categories, but among youth with autism, 85% are boys. In contrast, among youth with hearing or visual impairments, the percentages come close to the distribution of boys in the general population (50% and 54%). Thus, youth with different disability classifications can be expected to differ in their experiences and achievements because of their gender composition, as well as their disability differences.

Exhibit B-3
STUDENT GENDER, BY DISABILITY CATEGORY



Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

Race/Ethnicity

Although white students make up approximately the same percentage of youth with disabilities as they do of the general population, differences are apparent between the two populations for youth of color, particularly African American youth (Exhibit B-4). They constitute almost 21% of youth with disabilities, compared with 17% of youth in the general population ($p<.01$).[4] This finding is consistent with research that has demonstrated that disability is most prevalent among African Americans across the age range (Bradsher, 1995). Small differences between youth with disabilities and youth in the general population in other racial/ethnic groups are not statistically significant.

[4] National Center for Education Statistics (2002).

Exhibit B-4
RACIAL/ETHNIC BACKGROUNDS OF YOUTH, BY DISABILITY CATEGORY

	All Youth	Learning Disability	Speech/ Language Impair-ment	Mental Retarda-tion	Emotional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Traumatic Brain Injury	Multiple Dis-abilities	Deaf-Blind-ness
Percentage whose race/ ethnicity is:													
White	62.1 (1.5)	62.3 (2.3)	64.7 (2.3)	54.8 (2.4)	61.4 (2.4)	59.9 (2.8)	62.1 (3.4)	64.3 (2.6)	76.6 (2.0)	62.0 (2.6)	68.5 (4.2)	65.6 (2.5)	62.4 (4.7)
African American	20.7 (1.3)	18.4 (1.9)	17.7 (1.8)	33.3 (2.3)	25.0 (2.2)	17.5 (2.1)	20.1 (2.8)	15.5 (2.0)	13.3 (1.6)	23.7 (2.3)	17.9 (3.5)	18.4 (2.1)	14.7 (3.4)
Hispanic	14.1 (1.1)	16.2 (1.8)	14.2 (1.7)	9.6 (1.4)	10.2 (1.5)	17.3 (2.1)	14.0 (2.4)	16.4 (2.0)	7.7 (1.2)	8.9 (1.5)	10.0 (2.7)	11.6 (1.7)	19.5 (3.9)
Asian/Pacific Islander	1.3 (.4)	1.0 (.5)	2.1 (.7)	1.2 (.5)	1.4 (.6)	4.1 (1.1)	3.0 (1.2)	3.2 (1.0)	1.2 (.5)	4.0 (1.0)	2.3 (1.4)	1.8 (.7)	2.9 (1.6)
American Indian/ Alaska Native	1.2 (.3)	1.3 (.5)	.9 (.5)	.5 (.3)	1.6 (.6)	1.2 (.6)	.3 (.4)	.4 (.3)	.7 (.4)	.7 (.4)	1.2 (1.0)	2.3 (.8)	.0 (.0)

Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

The disproportionality of African Americans among youth with disabilities is concentrated in a few categories. Whereas the racial/ethnic composition of youth with learning disabilities; speech, hearing, or orthopedic impairments; or multiple disabilities resembles the general population, African Americans comprise significantly larger percentages of youth with mental retardation (33%) and emotional disturbances (25%). The percentage of Hispanic youth is particularly small among those with other health impairments (8%) or autism (9%). These racial/ethnic differences between disability categories may contribute to differences in the experiences of youth, apart from their differences in disability.[5]

Household Risk Factors

A child's household is his or her first educational setting. At home, children form their first emotional attachments, achieve their early developmental milestones, and acquire the foundation for their subsequent growth and learning. During adolescence, the family can be the context within which a youth wrestles with his or her desire for independence and separation, and the need to stay connected to family and home. Thus, as children grow up, what they need from their families and others who share their households may change, but children and youth continue to have their values, expectations, and preferences shaped by their experiences at home.

This section examines several aspects of households that can be risk factors in children's development: living with other than two parents, having a poorly educated or unemployed head of household, or living in a low-income household (see for example, Duncan & Brooks-Gunn, 1997). These factors are described for youth with disabilities as a whole compared with the general population, and then for youth who differ in their primary disability classification.

[5] Reports of NLTS2 findings only report data separately for White, African-American, and Hispanic youth; other categories include too few youth to report separately.

Exhibit B-5
HOUSEHOLD CHARACTERISTICS OF YOUTH WITH DISABILITIES AND YOUTH IN THE GENERAL POPULATION

	Youth with Disabilities	Youth in the General Population
Percentage living:		
With two parents	61.4	73.8[a]
	(1.6)	(1.0)
With one parent	31.1	22.5[a]
	(1.5)	(1.0)
With relative(s)	5.3	3.2
	(.7)	(.4)
With a legal guardian/not a relative	1.1	[b]
	(.3)	
In foster care	1.0	[b]
	(.3)	
In another arrangement	.3	.5
	(.1)	(.2)
Percentage with:		
Head of household who is not a high school graduate	21.0	10.0[c]
	(1.3)	(.6)
Unemployed head of household	17.0	11.0[c]
	(1.2)	(.6)
Percentage with annual household income of:		
$25,000 or less	36.6	19.7[d]
	(1.6)	
$25,001 to $50,000	30.0	25.5
	(1.5)	
More than $50,000	33.4	54.6
	(1.5)	
Percentage in poverty	23.5	16.3[e]
	(1.4)	

Source: NLTS2 Wave 1 parent interviews.

[a] Computed using data for 13- to 17-year-olds from the National Longitudinal Study of Adolescent Health, 1999.

[b] Youth living with a legal guardian, in foster care, or in residential school or institution are included in the "other arrangement" category.

[c] Computed using data for 13- to 17-year-olds from the National Household Education Survey, 1999.

[d] Data are for youth 12 through 17 years old. U.S. Census Bureau (2002a).

[e] U.S. Census Bureau (2002b).

Standard errors are in parentheses.

Household Risk Factors for Youth with Disabilities and the General Population

Like youth in the general population, a majority of youth with disabilities (61%) live in households with two parents (either biological, step, or adoptive parents, Exhibit B-5). This is substantially below the 74% of youth in the general population who do so (p<. 001). Another 31% live with one parent. Thus, 92% of youth with disabilities live with a parent. Five percent of youth live with other adult family members in households that do not include one of their own parents, and 1% live with a legal guardian who is not a family member. One percent of youth with disabilities live in foster care; few live at a residential school or institution.[6]

The heads of household of youth with disabilities tend to have lower levels of education than parents of the general population of youth. In the general population, 10% of heads of household are not high school graduates, whereas more than twice as many heads of household of youth with disabilities have not graduated from high school (p<.001). Similarly, heads of households of youth with disabilities are more likely to be unemployed (17%) than those in the general population (11%, p<.001).

Consistent with lower education levels and rates of employment, youth with disabilities are more likely than others to be poor. Almost one-fourth of them live in poverty, compared with about 16% of youth in the general population (p<.001). Poverty

[6] These include residential or boarding schools, hospitals, mental health facilities, group homes, and correctional facilities.

has been shown to have negative impacts on children and youth with disabilities and their families in multiple domains, including health, productivity, physical environment, emotional well-being, and family interaction (Park, Turnbull, & Turnbull, 2002).

Disability Differences in Household Risk Factors

The prevalence of risk factors among households of youth with different disabilities shows quite a wide range (Exhibit B-6). Most striking, youth with mental retardation are more likely than others to experience high levels of each kind of risk, as are youth with emotional disturbances to a somewhat lesser degree. These youth are the least likely to live with two parents and among the most likely to live in foster care. They also are the most likely to come from households in poverty and those with heads of household who are not employed.

In contrast, youth with other health impairments have the lowest rates of some kinds of risk factors. For example, they are among the least likely to be living in poverty or in a household where the head of household is unemployed, and most likely to be living with two parents. In fact, they are somewhat less likely to experience some of these risk factors than youth in the general population. Youth with physical and sensory impairments are in the mid-range among the disability categories on many risk factors.

Exhibit B-6
HOUSEHOLD CHARACTERISTICS, BY DISABILITY CATEGORY

	Learning Disability	Speech/ Language Impair-ment	Mental Retarda-tion	Emo-tional Distur-bance	Hearing Impair-ment	Visual Impair-ment	Ortho-pedic Impair-ment	Other Health Impair-ment	Autism	Trau-matic Brain Injury	Multiple Disabili-ties	Deaf-Blind-ness
Living:												
With both parents	63.3 (2.4)	69.7 (2.3)	54.8 (2.6)	48.7 (2.6)	65.8 (2.8)	61.0 (3.5)	66.9 (2.7)	71.9 (2.2)	67.5 (2.5)	61.2 (4.5)	63.6 (2.6)	60.3 (5.2)
With one parent	30.6 (2.3)	24.8 (2.2)	34.5 (2.5)	38.1 (2.6)	26.0 (2.6)	30.7 (3.3)	27.4 (2.5)	22.2 (2.0)	27.0 (2.4)	30.3 (4.2)	24.9 (2.4)	35.7 (5.1)
With relative(s)	5.0 (1.1)	3.5 (.9)	6.2 (1.3)	7.9 (1.4)	5.3 (1.3)	5.8 (1.7)	3.6 (1.1)	2.8 (.8)	2.3 (.8)	5.7 (2.1)	4.3 (1.1)	3.4 (1.9)
With a legal guardian (not a relative)	.6 (.4)	.6 (.4)	2.3 (.8)	2.2 (.8)	2.5 (.9)	2.0 (1.0)	1.1 (.6)	1.0 (.5)	1.1 (.6)	1.6 (1.2)	2.3 (.8)	.0 (.0)
In foster care	.5 (.4)	1.2 (.5)	1.8 (.7)	2.8 (.9)	.3 (.3)	.1 (.2)	.5 (.4)	1.7 (.6)	1.7 (.7)	.9 (.9)	2.6 (.9)	.0 (.0)
In another arrangement	.1 (.2)	.1 (.2)	.4 (.3)	.4 (.4)	.2 (.4)	.3 (.4)	.4 (.5)	.3 (.4)	.4 (.4)	.2 (.6)	2.3 (.9)	.7 (.9)
With head of household who is:												
Not a high school graduate	20.3 (2.0)	19.7 (2.0)	32.3 (2.4)	19.5 (2.1)	18.3 (2.3)	15.1 (2.6)	14.9 (2.0)	13.3 (1.6)	11.2 (1.7)	15.1 (3.4)	14.2 (1.9)	18.4 (3.9)
Not employed	14.0 (1.7)	14.8 (1.8)	28.2 (2.3)	24.0 (2.3)	14.2 (2.1)	17.5 (2.8)	16.3 (2.1)	12.5 (1.6)	16.0 (2.0)	17.0 (3.6)	20.1 (2.2)	19.4 (4.0)
In poverty	22.1 (2.1)	19.2 (2.1)	41.4 (2.6)	29.8 (2.4)	20.2 (2.4)	19.7 (2.9)	20.4 (2.4)	15.0 (1.8)	15.0 (1.8)	18.8 (3.6)	24.0 (2.5)	24.3 (4.7)

Source: NLTS2 Wave 1 parent interviews.
Standard errors are in parentheses.

Summary

Youth with disabilities constitute 13% of all 13- to 16-year-olds who were enrolled in school in the 2000-01 school year, when NLTS2 sample members were selected. Although they include students with 12 different primary disability classifications, 85% are classified as having either learning disabilities, mental retardation, or emotional disturbances as their primary disabilities.

NLTS2 youth were 14 through 18 years old when school surveys were conducted, although youth with speech/language impairments are somewhat younger, as a group.

Almost two-thirds of youth with disabilities are boys. Boys are little more than half of youth with sensory impairments, but they are about three-fourths of youth with emotional disturbances and other health impairments and more than 80% of youth with autism.

African American youth are a larger proportion of youth with disabilities relative to the general population. This difference between the two populations of youth is consistent with patterns found among infants and toddlers with disabilities or developmental delays, as well as among elementary- and middle-school-age students receiving special education. However, disproportionality is concentrated among youth in a limited number of disability categories. African Americans make up particularly large proportions of those with mental retardation or emotional disturbances. The percentage of Hispanic youth is particularly small among those with other health impairments or autism.

The households of youth with disabilities also differ significantly from the general population in the prevalence of several risk factors for poor outcomes. Of particular note is the significantly higher rate of low-income households among youth with disabilities, probably a reflection, in part, of the overall lower levels of education and employment among heads of households of youth with disabilities. Several risk factors are particularly prominent among youth with mental retardation and emotional disturbances.

Awareness of these important differences between youth with disabilities and those in the general population, and of the highlighted differences between youth with different primary disability classifications, is an important foundation for understanding the experiences described in this report.

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APPENDIX C

NLTS2 WAVE 1 PARENT INTERVIEW, STUDENT'S SCHOOL PROGRAM SURVEY, AND SCHOOL CHARACTERISTICS SURVEY QUESTIONS THAT GENERATED DATA FOR THIS REPORT

The National Longitudinal Transition Study-2 (NLTS2)
Parent Interview Questions

My next questions are about services YOUTH might be receiving.

F1a. During the last 12 months has [YOUTH] received any of the following services? READ EACH ITEM

F1b. Was any of that from or through [his/her] school or district?

F1c. Is [he/she] getting that service now? [FROM ANY SOURCE, NOT JUST FROM SCHOOL].

		A. RECEIVED SERVICE IN PAST 12 MONTHS				B. FROM OR THROUGH SCHOOL OR DISTRICT				C. RECEIVES SERVICE NOW			
	Service	Y	N	DK	R	Y	N	DK	R	Y	N	DK	R
a.	Speech or language therapy, or communication services	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
b.	Audiology services for hearing problems	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
c.	Psychological or mental health services or counseling	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
d.	Physical therapy	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
e.	Social work services	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
f.	Occupational therapy or life skills therapy or training	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
g.	Orientation and mobility services	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
h.	Medical services for diagnosis or evaluation related to [his/her] disability	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
i.	Personal assistant/or an in-the-home or in-the-classroom aide	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
j.	Tutor	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
k.	Reader or interpreter, including sign language	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
l.	Nursing care	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
m.	Assistive technology services or devices, such as help getting or using any kind of equipment that helps people with a disability, such as a tape recorder or reading machine.	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
n.	Transportation because of [his/her] disability)	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
o.	Respite care	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
p.	Career counseling, help in finding a job, training in job skills or vocational education?	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
q.	Financial aid, like paying for college classes and training.	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2
r.	Other services because of [his/her] special needs.	1	2	-1	-2	1	2	-1	-2	1	2	-1	-2

CHECKPOINT: IF THERE ARE ANY YESSES IN RECEIVING SERVICES [ANY YESSES IN F1a through r] ASK F2a, ELSE GO TO F4.

F2a. Does YOUTH have a case manager or someone who coordinates the services he receives, that can include a family member or friend?

GO TO F2b	Yes	1
GO TO F3	No	2
	Don't know	-1
	Refused	-2

F2b. Is that case manager READ CATEGORIES AND CODE AS MANY AS APPLY.

Someone at the school?	1
A professional outside of school	2
You or another family member, or	3
Someone else SPECIFY	4
DON'T KNOW	-1
REFUSED	-2

F3. Overall do you think YOUTH is getting enough services?

Yes	1
No	2
Don't know	-1
Refused	-2

F4. Overall, how much effort did it take for you or your family to get the services for YOUTH during the last 12 months? Would you say: READ CATEGORGIES. CODE ONE.

A great deal of effort	1
Some effort	2
A little effort, or	3
Almost no effort	4
DON'T KNOW	-1
REFUSED	-2

F5. Where does your family usually learn about services that might be appropriate for (NAME OF YOUTH)? CODE AS MANY AS APPLY.

School	1
Professional consultant	2
Physician	3
Other parents/parent group(s)	4
Family members	5
Web, computer	6
Newsletters, magazines	7
Trainings, workshops, conferences	8
Other, Specify:	9
Don't know	-1
Refused	-2

F6a. Is [NAME OF YOUTH] on the waiting list for any services?

GO TO F6b	Yes	1
GO TO F7	No	2
	Don't know	-1
	Refused	-2

F6b. Which services is [he/she] on a waiting list for? DO NOT READ CATEGORIES. CODE ALL THAT APPLY.

Service	
Speech or language therapy	01
Audiology services for hearing problems	02
Psychological or mental health services or counseling	03
Physical therapy	04
Social work services	05
Occupational therapy or life skills therapy	06
Orientation and mobility services	07
Medical services for diagnosis or evaluation	08
Personal assistant/or an in-the-home or in-the-classroom aide	09
Tutor	10
Reader or interpreter, including sign language	11
Nursing care	12
Assistive technology services or devices, such as help getting, or using any kind of equipment that helps people WITH A disability.	13
Transportation (DO NOT READ IF B1a=2 [NO DISABILITY], ELSE ADD: because of [his/her] disability)	14
Respite care	15
Service coordination or case management	16
Other services (DO NOT READ IF Bic=2 [NO DISABILITY], ELSE ADD: because of [his/her] disability. SPECIFY	17
Don't know	-1
Refused	-2

F7. Have any of the following been a problem in getting or dealing with services? (IF NECESSARY, ADD: Thinking across all services).

READ EACH ITEM. CODE RESPONSE IN COLUMN A.

			Y	N	DK	R
	a.	Cost of services	1	2	-1	-2
	b.	Where services are provided	1	2	-1	-2
	c.	Services not being available	1	2	-1	-2
	d.	Poor service quality	1	2	-1	-2
	e.	Scheduling conflicts	1	2	-1	-2
	f.	Language problems	1	2	-1	-2
	g.	Lack of time for services	1	2	-1	-2
	h.	Transportation	1	2	-1	-2
	i.	YOUTH not being eligible for the service	1	2	-1	-2
	j.	READ IF YOUTH HAS PHYSICAL IMPAIRMENT physical accessibility of services	1	2	-1	-2
	k	Getting information about services	1	2	-1	-2
	l	Anything else? SPECIFY	1	2	-1	-2

The National Longitudinal Transition Study-2 (NLTS2)
Student's School Program Survey

A2. Does this student participate in any of the following?
*PLEASE CIRCLE **ONE** NUMBER ON **EACH** LINE.*

Yes	No	Don't know	
1	2	-1	Program for gifted and talented students
1	2	-1	Title I
1	2	-1	Bilingual education or instruction for English language learners
1	2	-1	Summer school or extended school year program during the previous summer
1	2	-1	Free/reduced-price lunch program

A4a. Please indicate in **Column A** whether this student will have received each of the following from or through the school system during this school year. These activities could be part of a class.

A4b. For any activity this student does not take part in, please indicate in **Column B** whether you believe he or she could benefit from it.

		A Received?		**B** Could benefit?	
		Yes	No	Yes	No
a.	Reproductive health education or services	1	2 ➔	1	2
b.	Teen parenting education/services	1	2 ➔	1	2
c.	Child care for children of parenting teens	1	2 ➔	1	2
d.	Conflict resolution, anger management, violence prevention	1	2 ➔	1	2
e.	Substance abuse prevention education or services	1	2 ➔	1	2

D7. Which of the following services has been provided this student from or through the school system during this school year (including services the school contracted from other agencies). *PLEASE CIRCLE **ONE** NUMBER ON **EACH** LINE.*

		Service provided?		
		Yes	No	Don't Know
a.	Adaptive physical education	1	2	-1
b.	Assistive technology services/devices	1	2	-1
c.	Audiology	1	2	-1
d.	Behavioral interventionist/specialist	1	2	-1
e.	Speech or language therapy	1	2	-1
f.	Communication services (e.g., instruction in sign/manual communication or lip reading, augmentative communication)	1	2	-1
g.	Health services (e.g., administering medication, oxygen)	1	2	-1
h.	Mental health services, personal/group counseling, therapy, or psychiatric care	1	2	-1
i.	Mobility training	1	2	-1
j.	Occupational therapy	1	2	-1
k.	Physical therapy	1	2	-1
l.	Service coordination/case management	1	2	-1
m.	Social work services	1	2	-1
n.	Special transportation because of disability	1	2	-1
o.	Vision services (e.g., Braille instruction)	1	2	-1
p.	Training, counseling, or other supports/services provided to student's family	1	2	-1
q.	Other:_____	1	2	-1

The National Longitudinal Transition Study-2 (NLTS2)
School Characteristics Survey Questions

B5. About what percentage of your school's students are eligible for the free or reduced-price lunch program?
*PLEASE CIRCLE **ONE** NUMBER.*

1 Less than 25%
2 26% to 50%
3 51% to 75%
4 More than 75%

E1. Which of the following best describes the community in which this school is located?
*PLEASE CIRCLE **ONE** NUMBER.*

1 Rural community
2 Small city or town of fewer than 50,000 people that is not a suburb of a larger city
3 A medium-sized city (50,000 to 99,999 people)
4 A suburb of a medium-sized city
5 A large city (100,000 to 500,000 people)
6 A suburb of a large city
7 A very large city (over 500,000 people)
8 A suburb of a very large city
9 A military base or station
10 An Indian reservation

C10. Which of the following services, resources, or programs does your school have available to students, either as part of the curriculum or before or after school hours? *PLEASE CIRCLE **ALL** THAT APPLY.*

Additional academic programs

1 Academic supports, such as homework club, tutoring or mentoring assistance outside of regular classes, or Saturday academies
2 Diagnostic and prescriptive services provided by professionals to identify learning problems and plan programs
3 Programs for gifted and talented students
4 Summer school
5 College and career awareness and preparation activities
6 Supplemental instructional services in reading or language arts
7 Supplemental instructional services in math

Enrichment and recreation programs

8 Enrichment or recreational clubs or activities outside of classes (e.g., literary magazine, cultural activity groups, pep club)
9 Weekend program for students
10 Band, chorus, drama, or other performing opportunities for students
11 Organized school sports activities

Adolescent support services

12 School-based health clinic
13 Counseling or pupil services
14 Reproductive health/pregnancy prevention **education**
15 Reproductive health/pregnancy prevention **services** (e.g., contraceptive distribution, STD testing or treatment)
16 Drop out prevention program or services
17 Substance abuse **education**
18 Substance abuse treatment **services**
19 Teen parenting program
20 Child care for children of parenting teens
21 Conflict resolution/conflict management program
22 Services for out-of-school youth (e.g., GED program)
23 School-to-work activities and employment services

Other programs/initiatives

24 Title I
25 Bilingual or ESL classes
26 A class size reduction initiative
27 A school-wide reform project (e.g., Success for All, Comer Schools, Accelerated Schools)
28 An Obey-Porter grant to support a school-wide reform model (i.e., a grant from the federal Comprehensive School Reform Demonstration Program)

APPENDIX D

UNWEIGHTED SAMPLE SIZES

Exhibit D-1
UNWEIGHTED SAMPLE SIZES FOR EXHIBIT 2-1

	From any source	From the school or district
Exhibit 2-1		
Psychological/mental health services	8,629	8,620
Social work services	8,617	8,606
Speech/language pathology services	8,610	8,604
Occupational therapy	8,595	8,584
Physical therapy	8,671	8,666
Diagnostic medical services	8,645	8,632
Nursing care	8,741	8,739
Vocational services	8,625	8,610
Academic tutoring	8,650	8,639
Transportation	8,676	8,674
Assistive technology/ services	8,635	8,623
Audiology services	8,718	8,707
Orientation/mobility services	8,718	8,712
A reader or interpreter	8,655	8,650
Respite care	8,725	8,716
Other	8,660	8,658

Exhibit D-2
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS FOR ALL STUDENTS WITH DISABILITIES: EXHIBITS 2-2 TO 2-5, 3-1, 3-2

	N
Exhibit 2-2	
Has a case manager	7,670
Source of case management	4,271
Exhibit 2-3	8,550
Exhibit 2-4	4,261
Exhibit 2-5	8,552
Exhibit 3-1	
Free or reduced-price lunches	4,189
Bilingual education or instruction for English language learners	4,189
Summer school	4,189
Exhibit 3-2	
Reproductive health education/services	5,311
Substance abuse prevention/treatment	5,211
Conflict resolution, anger management, or violence prevention	5,206
Teen parenting education or services	5,107

Exhibit D-3
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS FOR DISABILITY CATEGORIES: EXHIBITS 2-6 TO 2-11, 3-1, 3-4

	Learning Disability	Speech/ Language Impairment	Mental Retardation	Emotional Disturbance	Hearing Impairment	Visual Impairment	Orthopedic Impairment	Other Health Impairment	Autism	Traumatic Brain Injury	Multiple Disabilities	Deaf-Blindness
Exhibit 2-6												
Psychological/mental health	823	800	787	781	800	642	859	878	882	357	876	141
Social work services	821	800	787	775	798	639	858	877	880	357	875	141
Speech-language pathology services	819	798	784	774	797	639	856	877	880	357	874	141
Occupational therapy	819	795	782	772	795	639	855	874	877	356	873	139
Physical therapy	828	805	794	786	807	645	862	879	885	359	883	142
Diagnostic medical services	825	802	791	782	801	644	860	878	883	358	879	142
Nursing care	853	826	807	799	820	650	866	886	891	363	888	143
Vocational services	853	826	807	799	820	650	866	886	891	363	888	143
Academic tutoring	826	803	791	782	802	644	860	878	883	358	879	142
Transportation	829	805	795	787	808	646	862	879	886	360	884	142
Assistive technology services/devices	824	801	790	782	800	642	860	878	883	357	877	141
Audiology services	836	810	803	787	810	647	862	880	887	360	884	142
Orientation/mobility services	846	822	805	787	810	648	862	881	888	362	885	143
Reader or interpreter	826	804	792	783	803	644	860	878	884	358	879	142
Respite care	847	823	805	790	812	650	863	883	888	363	887	143
None of these	813	793	781	769	793	637	851	871	873	355	860	136
Exhibit 2-7	605	684	652	678	766	590	807	742	854	321	832	139
Has a case manager												
Source of case management												
Exhibit 2-8	812	784	769	770	796	643	854	866	882	357	876	141
Exhibit 2-9	309	302	304	374	394	393	457	424	525	184	506	89
Exhibit 2-10	825	801	795	777	808	649	856	876	881	358	882	143
Exhibit 2-11												
Meeting students' needs	303	300	305	374	392	390	450	422	519	183	504	89
On a waiting list for services	826	801	795	780	807	646	854	878	883	360	882	142
Exhibit 3-1												
Free or reduced-price lunches	367	331	442	248	428	360	446	433	476	157	430	71
Bilingual education or instruction for ELL	367	331	442	248	428	360	446	433	476	157	430	71
Summer school	367	331	442	248	428	360	446	433	476	157	430	71
Exhibit 3-4												
Reproductive health education or services	509	448	533	334	551	450	564	567	553	204	507	91
Substance abuse prevention	495	437	519	334	545	442	553	554	537	202	503	90
Conflict resolution/anger management/violence prevention	490	432	521	345	527	439	551	550	547	204	511	89
Teen parenting education or services	485	427	524	319	524	435	539	535	540	197	494	88

Exhibit D-4
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS BY HOUSEHOLD INCOME: EXHIBITS 2-12 AND 2-13

	$25,000 or Less	$25,001 to $50,000	More than $50,000
Exhibit 2-12			
A tutor	2,762	2,415	2,811
Assistive technology/ services	2,760	2,410	2,809
Psychological/mental health services	2,760	2,409	2,808
Diagnostic medical services	2,762	2,412	2,810
Have a case manager,	2,420	2,138	2,547
Case manager is someone at school	1,129	1,161	1,658
Exhibit 2-13			
Learned about services through school	2,728	2,392	2,790
Reporting a great deal of effort to obtain services for youth	1,128	1,158	1,657
Problems with obtaining services	2,729	2,383	2,790

Exhibit D-5
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS BY HOUSEHOLD RACE/ETHNICITY: EXHIBITS 2-14 AND 3-8

	Race/Ethnicity		
	White	African American	Hispanic
Exhibit 2-14			
Vocational services	5,262	1,721	1,130
Diagnostic medical services	5,272	1,727	1,134
Assistive technology/ services	5,272	1,726	1,133
Have a case manager,	4,702	1,527	983
Case manager is someone at school	2,985	716	440
Reporting a great deal of effort to obtain services for youth	2,859	713	431
Problems with services	5,484	1,733	1,155
Exhibit 3-8			
Free or reduced-price lunch program	2,731	844	447
Bilingual or ELL instruction	2,731	844	447
Percentage who do not participate in program but could benefit from			
Reproductive health education/services	3,492	1,044	562
Teen parenting education/services	3,360	1,000	542
Substance abuse education/services	3,431	1,019	549

Exhibit D-6
UNWEIGHTED SAMPLE SIZES FOR EXHIBITS BY GRADE LEVEL: EXHIBIT 3-5

	7th or 8th	9th	10th	11th or 12th
Exhibit 3-5				
Free or reduced-price lunch program	583	808	1,029	1,347
Percentage participating or who could benefit from:				
Reproductive health education/services	728	1,109	1,331	1,656
Teen parenting education/services	687	1,049	1,290	1,607
Conflict resolution, anger management, or violence prevention	707	1,087	1,308	1,620

Exhibit D-7
UNWEIGHTED SAMPLE SIZES FOR EXHIBIT BY SCHOOL POVERTY: EXHIBIT 3-7

	Less than 25%	26% to 50%	More than 50%
Exhibit 3-7			
Percentage who do not participate in program but who could benefit from			
Reproductive health education/services	777	767	812
Substance abuse prevention/services	826	825	937
Conflict resolution/anger management/violence prevention	915	912	1,038
Teen parenting education or services	1,082	1,074	1,245