Introduction to ASQ

Second Edition

A major obstacle to the timely delivery of early intervention services is the early and accurate identification of infants and young children who have developmental delays or disorders. The first step in obtaining needed services for infants and young children and their families is the establishment of comprehensive, first-level screening programs. The goal of comprehensive Child-Find programs is to separate accurately the few infants and young children who require more extensive evaluation from the children who do not. To be useful, first-level screening programs need to assess large numbers of children and, therefore, require screening measures or procedures that are easy to administer, at a low cost, and appropriate for diverse populations. The *Ages & Stages Questionnaires (ASQ): A Parent-Completed, Child-Monitoring System, Second Edition,* meets these criteria for a first-level comprehensive screening program. The ASQ screening system is composed of 19 questionnaires designed to be completed by parents[1] or primary caregivers. Questionnaire intervals include 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 42, 48, 54, and 60 months of age. In most cases, these questionnaires can identify accurately infants or young children who are in need of further evaluation to determine whether they are eligible for early intervention services.

Each questionnaire contains 30 developmental items that are written in simple, straightforward language. The items are divided into five areas: communication, gross motor, fine motor, problem solving, and personal-social. An Overall section addresses general parental concerns. The reading level of each questionnaire ranges from the fourth to the sixth grade. Illustrations are provided when possible to assist parents and caregivers in understanding the items. For the 30 developmental items, parents check *yes* to indicate that their child performs the behavior specified in the item, *sometimes* to indicate an occasional or emerging response from their child, or *not yet* to indicate that their child does not yet perform the behavior. Program staff convert each response to a point value, total these values, and compare the total score to established screening cutoff points.

[1]Throughout this sampler and in the *Ages & Stages Questionnaires* themselves, "parents" is used to refer to individuals central to a child's life, including parents, grandparents, and other primary caregivers.

ASQ MATERIALS

The ASQ materials consist of 19 reproducible master questionnaires; 19 reproducible, age-appropriate scoring and data summary sheets; and this *User's Guide.* The master set of questionnaires allows program personnel to select age intervals and reproduce the necessary number of copies, depending on the participating children and families. A Spanish translation master set of questionnaires is also available. This *User's Guide* contains vital information about planning, using, and evaluating the monitoring system as well as summary information on the psychometric studies conducted on the ASQ system. Instructions for scoring questionnaires; sample letters to parents, agencies, and service providers; and activities sheets for parents that correspond to the ASQ age intervals are also included in this *User's Guide.* A supplementary videotape, *The Ages & Stages Questionnaires on a Home Visit* (Farrell & Potter, 1995), describes procedures for using the questionnaires while conducting home visits.

USING THE ASQ SYSTEM

The questionnaires can be used for two important purposes. First, they can be used for comprehensive, first-level screening of large groups of infants and young children. For example, parents can complete questionnaires on their child prior to a kindergarten roundup or at well-baby checkups. Second, the questionnaires can be used to monitor the development of children who are at risk for developmental disabilities or delays resulting from medical factors such as low birth weight, prematurity, seizures, serious illness or from environmental factors such as poverty, parents with mental impairments, history of abuse and/or neglect in the home, or teenage parents.

Use of the questionnaires is flexible for either first-level screening or monitoring programs. For example, questionnaires can be used at 6-month intervals, one time only (e.g., 12 months), or at a few selected intervals (e.g., 12, 24, and 33 months).

The questionnaires are designed to be completed by the child's parents or caregivers in the home. Questionnaires can be mailed to parents or caregivers, who can then try each activity with the child and observe whether he or she can perform the designated behaviors. Questionnaires are then returned by mail to a central location for scoring or brought to a primary care clinic for scoring and discussion during a well-child examination. Alternatively, questionnaires can be completed during home visits with the assistance of service providers. In addition, questionnaires can be completed in waiting rooms, clinics, schools, and child care environments by parents or other caregivers.

ADMINISTRATION AND SCORING

Each questionnaire can be completed in 10–20 minutes. Scoring can be done by clerical staff or paraprofessionals who have been instructed by professional staff; scoring can take as little as 1 minute and no more than 5 minutes. An ASQ Information Summary Sheet is included for each age interval. This form provides space for scoring the questionnaire as well as space to record demographic information about the family and overall comments of the parents or

caregivers. This sheet permits professional staff to keep a one-page summary of questionnaire results while allowing parents to keep the questionnaire for further reference about their child's developmental level.

To score a questionnaire, the parents' responses—*yes, sometimes,* and *not yet*—are converted to points—*10, 5,* and *0,* respectively—and are totaled for each area. These five area scores are then compared with empirically derived cutoff points that are shown on bar graphs on the ASQ Information Summary Sheets. If the child's score falls in the shaded portion of the bar graph in any developmental area (e.g., fine motor, communication), then further diagnostic assessment is recommended.

Although the questionnaires are designed to be completed by parents, the system requires professional involvement. One or more professionals will be needed to establish the system, develop the necessary community interfaces, train individuals who will score the questionnaires, and provide feedback to parents of children who are completing the questionnaires. Paraprofessionals can operate the system once it is established, score the questionnaires, and provide routine feedback to families of children who are not identified as requiring further assessment.

RESEARCH ON THE ASQ SYSTEM

Study of the ASQ began in 1980 when it was first called the Infant/Child Monitoring Questionnaires. Since 1980, a number of investigations have examined the validity, reliability, and utility of the ASQ. To examine the validity of the ASQ, children's classifications on parent-completed questionnaires were compared with their classifications on professionally administered standardized assessments, including the Revised Gesell and Armatruda Developmental and Neurological Examination (Knobloch, Stevens, & Malone, 1980), the Bayley Scales of Infant Development (Bayley, 1969), the Stanford-Binet Intelligence Scale (Thorndike, Hagen, & Sattler, 1985), the McCarthy Scales of Children's Abilities (McCarthy, 1972), and the Battelle Developmental Inventory (Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1987). Overall agreement on children's classifications was 83%, with a range of 76%–91%. Sensitivity, specificity, underreferral and overreferral rates, and positive predictive values are reported in Appendix F of this book.

Studies on the reliability of the questionnaires have examined interrater and test–retest reliability as well as internal consistency. Test–retest information was collected by asking a group of 175 parents to complete two questionnaires on their children at 2- to 3-week intervals. Classification of each child based on the parents' scoring of the two questionnaires was compared and was found to exceed 90% agreement. Interrater reliability was assessed by having a trained examiner complete a questionnaire on a child shortly after the parent had completed one. Overall agreement on the classification of the child among 112 parents and 3 trained examiners exceeded 90%. These and other reliability data are discussed in Appendix F of this book.

ADVANTAGES OF THE ASQ SYSTEM

Assessments of infants and young children should be done on a regular and periodic basis because of the rapid developmental changes in the early years

(Meisels & Provence, 1989; Squires, Nickel, & Eisert, 1996). Because professional assessments are expensive and are usually not performed at regular intervals, the use of more cost-effective means (e.g., parent-completed tools) may be better suited for the periodic monitoring of early development.

The ASQ system relies on parents to observe their child and to complete the simple questionnaires about their child's abilities. In addition to being cost-effective, using parents to complete developmental questionnaires may enhance the accuracy of screening assessments because of the variety and array of information parents have about their children (Clark, Paulson, & Conlin, 1993). Another advantage is that using parent-completed tools such as ASQ fulfills the spirit of the Individuals with Disabilities Education Act Amendments of 1997 (PL 105-17), which call for parents to be partners in their child's assessment and intervention activities.

A final advantage is the flexibility of the ASQ system. The ASQ system can be adapted to a variety of environments, including the home, primary care clinics, child care environments, preschool programs, and teen parenting programs. Questionnaires may be completed by parents during home visits from nurses, social workers, or paraprofessionals.

Using the master set, screening programs may choose ASQ age intervals that fit their populations, program goals, and needs. For example, medical practitioners may use the 6 month ASQ interval because it corresponds to the time of well-child visits. Public health home visiting programs may choose the 4 and 8 month ASQ age intervals because they correspond to home visiting schedules. Head Start programs may use only the 48 month questionnaire, and toddler programs may choose to use the 12, 14, 16, 18, 20, 22, 24, 27, and 30 month questionnaires. The ASQ system is flexible and can fit the needs of diverse monitoring and screening programs.

COST OF THE ASQ SYSTEM

Costs to administer the ASQ will vary according to the types and salaries of professionals, the procedures used to complete the ASQ with parents, and the extent of follow-up and referral services. The Watch-Me-Grow Program, a model National Easter Seals Society (1990) project, calculated costs at $25 per child annually for mailing and scoring two to three ASQ questionnaires and providing feedback to parents. These costs included personnel time and supplies but did not include overhead or start-up costs for the project.

The Follow-Along Program (FAP), a computer-assisted child-find system in 17 counties in Southwest Minnesota, conducted a cost analysis of their ASQ system. The FAP includes two components: an initial home visit by a nurse to enroll interested parents and subsequent mailings of the ASQ at 4 and 6 month intervals (Chan & Taylor, 1998). The annual cost per child for the ASQ component, including direct costs (i.e., personnel, supplies, mileage) was calculated at $37.67 per year. Adding indirect costs (i.e., overhead, including utilities, telephone, computer, managerial costs), the figure rose to $45.80 annually per child. (The cost of the home visit by nurses was calculated separately and averaged $78 per visit.) Chan and Taylor concluded that "using parent-completed ASQ is a low-cost strategy for child-find and screening" (1998, p. 78). Using professionals to administer even one screening test—rather than having parents perform more frequent screenings throughout the year—would result in costs many times higher.

REFERENCES

Chan, B., & Taylor, N. (1998). The Follow-Along Program Cost Analysis in Southwest Minnesota. *Infants and Young Children, 10*(4), 71–79.

National Easter Seals Society. (1990). *Watch-Me-Grow-Program*. Chicago: Author.