

bathtub, 53 percent, is notable. Although data on populations at risk were not available for this study, our data and data from other studies suggest a higher risk of drowning among those with seizure disorders (3,11).

In conclusion, most drownings probably are not "accidents" that are attributable to chance or unfortunate occurrences. We encourage the use of information from this study to further characterize hazardous situations and behaviors contributing to drownings, and to develop more effective strategies of drowning prevention. The premature deaths of about 6,000 Americans yearly warrant such attention.

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Use and Sources of Payment for Health and Community Services for Children with Impaired Mobility

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Synopsis.....

A survey was made of the parents of 380 children whose mobility impairments require the

use of a wheelchair, walker, or braces. They were asked about equipment, health services, related services, and family support services used during the previous year.

There was extensive use of equipment and traditional medical and health services, such as visits to primary care and specialist physicians; there was moderate use of related health services, such as physical or occupational therapy and child counseling; and there was very little use of community-based family support services, such as respite care, after-school care, homemaker services, and summer camp.

The cost of health care, particularly medical specialty care, was defrayed in large part by private insurance and public programs, such as Medicaid and Title V Programs for children with special health care needs, while financial support for related services, such as physical therapy and speech therapy, came largely through the schools. Compared to funding for health and related services, financial aid for community-based family support services is largely lacking.

THE PROVISION of services to children with disabilities changed dramatically in the decades of the 1960s and 1970s. Children who previously would have been placed in large institutions, or cared for primarily in hospital settings, began to receive their care in the community and to live at home (1). Through the efforts of civil rights advocates and parents, schools became more active in effecting social changes in support of children with disabilities (2).

Both State and local health and human services agencies, public and private, began to provide missing services to children with disabilities. Health, welfare, and school systems initiated innovative community-based services to meet the needs of these children and their families.

We examined the services provided children with mobility impairments who lived in three large, geographically dispersed metropolitan areas. Our objective was to determine what medical, educational, health-related, and mental health services the mobility-impaired children were receiving, under whose auspices, and with what financial burden on the family. The subject groups were selected according to defined functional abilities in order to provide comparability of samples among sites, recognizing that a range of conditions and levels of severity would be encountered.

Methods

The sites selected for the study were Houston, TX; Milwaukee, WI; and Santa Clara County, CA. In each a census was taken in the fall of 1984 of all school-age children (ages 8 to 17 years) in public schools who required wheelchairs, braces, or walkers. Children were included in the study whether or not they were designated as special education students, but they were excluded if they lived full time in an institution.

The sample sizes were 179 in Houston, 109 in Milwaukee, and 193 in Santa Clara County; the corresponding consent rates for these samples were 63 percent, 87 percent and 61 percent. A comparison of those parents who consented to interviews and those who refused revealed no statistically significant differences in race, ethnicity, family income, mother's education, or distribution according to school placement.

Forty-three percent of the children had cerebral palsy, 12 percent had myelodysplasia, 8 percent had muscular dystrophy, and 37 percent had other etiologies for mobility impairment. The degree of

functional limitation among the children was in general quite severe (table 1). Almost three-quarters of the children required assistance in bathing, almost two-thirds in dressing, and almost half in eating. Sixty-three percent experienced difficulty in writing, and 45 percent in speaking. There were no significant differences by race-ethnicity or any of the functional status measures.

Parents were asked to participate in a 45-minute telephone interview conducted by personnel from the University of Illinois Survey Research Laboratory. The interview was designed to elicit information on the disabled child's functional status, services used, financial constraints encountered in obtaining health services, and sources of funding. Information was obtained on services used and the particular funding source for each service by reading a list of specific services, and a list of possible funding sources if that service had been used during the previous year. In each case, parents were read a list of options to which they responded either yes or no.

Regarding equipment used, parents were asked: "Does the child currently use eyeglasses, a hearing aid, crutches or a walker, an electric wheelchair, a regular wheelchair, braces, artificial limbs, or respirator?" The question concerning services used was asked in three formats:

(a) During the last year, has the child seen a pediatrician; general or family practitioner; nurse practitioner of physician's assistant; orthopedic surgeon; neurologist or neurosurgeon; psychiatrist; dentist; speech therapist; occupational or physical therapist; child counselor, social worker, or psychologist; or another physician specialist (specify)?

(b) Regarding the child's condition, has the family seen a family counselor, social worker, or therapist? During the past year, has the child received any of the following types of services—homemaker services, summer camp, residential care, respite care or home companion, after-school or recreational programs, or other services (specify)?

(c) Regarding funding sources, did the parents receive help from any source (on a list of specific sources for services) in the previous year? Was any part of the cost of a particular service paid by the child's family, private health insurance, Medicare, Medicaid coverage or Title 19, Crippled Children's Program or Title V, the child's school, or anyone else?

Whenever possible, items in the interview were selected from established survey instruments which

provide national or other community norms (for example, the National Health Interview Survey) (3,4).

Whenever data from different cities were pooled, weights were based on the mean for each site rather than on the numbers of children in each school system. Although the findings are generalized for each of the three large school systems, they should not be applied to others like them or to all school systems in the country.

Parental reports have inherent limitations. Parents are reasonably reliable in their short-term recall of whether services were paid out of pocket or by a third-party source. However, they probably do not know the precise source of certain third-party payments (for example, the Title V, Crippled Children Program is difficult to separate from other public insurance sources).

Results

Services received. Services used during the past year by children with impaired mobility were categorized into four types: equipment; health services (primary care physician, specialist, nurse practitioner, psychiatrist, and dentist); related services (occupational or physical therapy, speech therapy, child counseling, family counseling); and family support services (summer camp, after-school programs, respite care, and homemaker) (table 2).

There was extensive use of equipment (77 percent of the sample used wheelchairs and 54 percent used braces), traditional medical and health services (76 percent had at least one visit to a primary care provider, 79 percent had a specialist visit, and 59 percent had a dentist visit), and some health-related services (71 percent had at least one visit to a physical or occupational therapist). Other health-related services were used less frequently (40 percent had at least one visit to a speech therapist and 36 percent to a child counsellor). By contrast, one-fifth or less of the overall population received any of the services which we classified as "family support services," such as respite care (15 percent), after-school care (18 percent), homemaker services (4 percent), and summer camp (21 percent).

Sources of payment for services. Parents in the three cities seldom paid the entire cost of wheelchairs, braces, crutches, walkers, or artificial limbs. Eye glasses and hearing aids were less frequently covered, but presumably were less expensive as well. The costs of health care, particu-

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Table 1. Functional status of 380 students with mobility impairments

| Functional status | Percent |
|---------------------------------------|---------|
| Requires personal care assistance in: | |
| Bathing..... | 73.7 |
| Dressing..... | 65.9 |
| Toileting..... | 47.1 |
| Eating..... | 36.1 |
| Communicative: | |
| Writes with difficulty..... | 63.3 |
| Speaks with difficulty..... | 44.5 |
| Cognitive: | |
| Mental retardation..... | 37.8 |
| Other learning problems..... | 22.8 |
| Physical: | |
| Under medication..... | 44.2 |
| Subject to seizures..... | 26.1 |
| Psychosocial: | |
| Behavioral problems..... | 35.4 |
| Emotional problems..... | 17.2 |

NOTE: Median number of limitations of activities of daily living is 5.0

larly medical specialty care, were defrayed in large part by private insurance sources and public programs (for example, Medicaid and Title V). Specialty care was paid out of pocket only 7 percent of the time. Although one-fifth of the children required out-of-pocket payment for the entire cost of the most recent visit to a primary care physician or dentist, this figure compares favorably with the percentage of visits paid out of pocket for the larger population of all children with special needs in these sites (5).

Financial support for 71 percent of physical or occupational therapy visits and 89 percent of speech therapy visits came through the schools, either directly from educational revenues or indirectly from health department funds allocated to the school program. Payment for two-thirds of all child counseling as reported by the parent also came from the school system. This pattern stems from the related services provisions of Public Law 94-142, The Education for All Handicapped Children Act (2,6).

Table 2. Percentage of 380 mobility-impaired students using various aids and services during the prior year, and sources of payment for the services

| Aid or service | Percent using | Number using | Sources of payment (percent reporting payment source) | | | | | | |
|----------------------------------|---------------|--------------|---|----------------|----------------------------|--------------|-------------|--------------------|---------------|
| | | | Family only | Insurance only | Family-insurance copayment | Title V only | School only | Other combinations | Other sources |
| Wheelchair | 77 | 293 | 5 | 35 | 17 | 8 | 2 | 17 | 15 |
| Braces, crutches, walker | 54 | 205 | 11 | 21 | 19 | 8 | 1 | 23 | 16 |
| Eyeglasses, hearing aid | 34 | 129 | 52 | 31 | 9 | 1 | 1 | 4 | 2 |
| Artificial limbs | 2 | 9 | 11 | 20 | 0 | 33 | 0 | 11 | 22 |
| Respirator | 1 | 5 | 20 | 0 | 20 | 20 | 0 | 0 | 40 |
| Primary care physician | 76 | 290 | 21 | 48 | 23 | 1 | 1 | 3 | 3 |
| Specialist | 79 | 299 | 7 | 40 | 20 | 6 | 2 | 14 | 11 |
| Nurse practitioner | 6 | 22 | 9 | 50 | 5 | 0 | 32 | 0 | 5 |
| Psychiatrist | 5 | 20 | 10 | 15 | 25 | 5 | 35 | 0 | 10 |
| Dentist | 59 | 223 | 22 | 41 | 26 | 0 | 5 | 3 | 3 |
| Occupational-physical therapy .. | 71 | 270 | 1 | 4 | 2 | 9 | 71 | 4 | 9 |
| Speech therapy | 40 | 152 | 1 | 2 | 1 | 3 | 89 | 1 | 3 |
| Child counseling | 36 | 137 | 5 | 6 | 3 | 2 | 67 | 2 | 15 |
| Family counseling | 15 | 58 | 17 | 10 | 12 | 3 | 32 | 2 | 22 |
| Summer camp | 21 | 81 | 40 | 0 | 0 | 3 | 7 | 4 | 47 |
| After school programs | 18 | 68 | 50 | 0 | 0 | 0 | 24 | 7 | 22 |
| Respite care | 15 | 57 | 44 | 2 | 0 | 5 | 0 | 0 | 49 |
| Homemaker | 4 | 14 | 21 | 29 | 7 | 0 | 0 | 0 | 42 |

Child and family support services were almost never paid for by schools or by private or public insurance sources. Respite care, homemaker services, after-school care and summer camp were usually paid for by parents themselves, unless paid by a private religious organization or a disease-specific philanthropy (for example, the Muscular Dystrophy Association's camp program).

Discussion

Findings from this study in three communities reveal that the current discussion about case management, coordinated planning, and community-based comprehensive care for children with special needs should be taken seriously, since parents of children with impairment of mobility depend on multiple public and private agencies to obtain a wide range of needed medical and health-related services. If parents can wend their way through the maze of various local and State systems, equipment, medical, dental, health, and related services are available to their children, usually with adequate financial coverage (4-6).

Community-based social support services, which help the family to keep the child at home and integrated into the community, are largely lacking. This is lamentable because such services as respite care and homemaker services are known to be an essential component of care for many families with a child with a physical disability (7,8).

Until more attention is placed on making these family support services available, the goal of comprehensive family-centered, community-based, coordinated care for this population, as delineated at the recent Surgeon General's Conference (9), will not become a reality.

Our findings further imply the need for a more focused understanding of how to provide quality and cost-efficient, community-based, case management services for children with special needs and their families. The challenge today for both individual and family care plans, as well as program management at all levels of government, is to forge links with and across multiple programs and systems.

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Improving Disease Reporting in Los Angeles County: Trial and Results

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Synopsis

A telephone survey of physicians in Los Angeles County revealed that 50 percent of 405 contacted were unaware of the legal mechanism for reporting

communicable diseases—the Confidential Morbidity Report (CMR) card. After that survey, three measures were taken in an effort to improve reporting and surveillance: (a) use of a stamped self-addressed CMR postcard, (b) publication of the monthly newsletter "Public Health Letter," which was distributed to 23,000 health professionals in Los Angeles County free of charge, and (c) initiation of an active disease surveillance system that included 171 reporting sites contacted weekly (76 physicians, 36 schools, 33 preschools, 22 hospitals, and 4 university student health centers).

No increase in the levels of disease reporting was observed, based on 4 years' experience with the revised CMR card and the Public Health Letter. The active disease surveillance system, however, has provided anecdotal reports of disease occurrence and notification of outbreaks of both reportable and nonreportable diseases. Moreover, the authors believe it has improved rapport between the county health department and the medical community.

THE REPORTING of 57 communicable diseases—the number was 55 until AIDS (acquired immunodeficiency syndrome) was added in 1983 and listeriosis in 1985—has been mandatory in California since May 1955 (1). Anyone with knowledge of an occurrence of any of those diseases is required to report directly to local health authorities. Further, laboratories in California are required to report five diseases: diphtheria, gonorrhea, syphilis, tuberculosis, and typhoid. The primary mechanism for reporting is the Confidential Morbidity Report (CMR) card.

Responsibility for the surveillance of communicable diseases in Los Angeles County, a large urban area with an estimated population of 8 million, lies with the county health department (2). (The actual population may be considerably larger;

a substantial amount of undocumented immigration to the area occurs each year.) Specifically, the centrally located Disease Control Unit of the Los Angeles County Department of Health Services conducts routine surveillance of infectious diseases. This unit has relied upon traditional passive reporting. The usefulness of passive reporting for community disease surveillance has been well documented (3).

As in other health jurisdictions, reporting in Los Angeles County is believed to be far from complete (4-6), although the precise level of underreporting is not known. During a measles epidemic in 1977, for example, we estimated that only 10 percent of the incident cases were actually reported to health authorities (1).

Described in this paper are the efforts of the