

Core Service Report

Speech and Hearing

Consumer Category:
With / At Risk of Health Conditions

Primary Consumer Group:
**Persons with Physically
Disabling Conditions**



February 2007

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COMPANION REPORTS

In addition to the information included in this report, a report of the other core services (80 in total), community leader key informant interviews, United Way - First Call for Help staff focus groups, consumer snapshots, and e-survey of United Way funded executive directors, board presidents, and United Way Community Investment staff are available at <http://www.uws.org>.

ACKNOWLEDGEMENTS

We are grateful to the multiple public and private funders, provider agencies, experts in the various fields of interest, external reviewers, United Way Community Investment Committee clusters, and staff of United Way for their assistance, support, information, and insight.

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Suggested Citation: MCS Consulting Service. (2007). Core service report: Speech and hearing. United Way of Greater Cleveland. Available at <http://uws.org>

SNAPSHOT

AIRS Code Level I: Health Care (L)

AIRS Code Level II: Rehabilitation/Habilitative Services (LR)

Core Service: Speech and Hearing (LR-800)

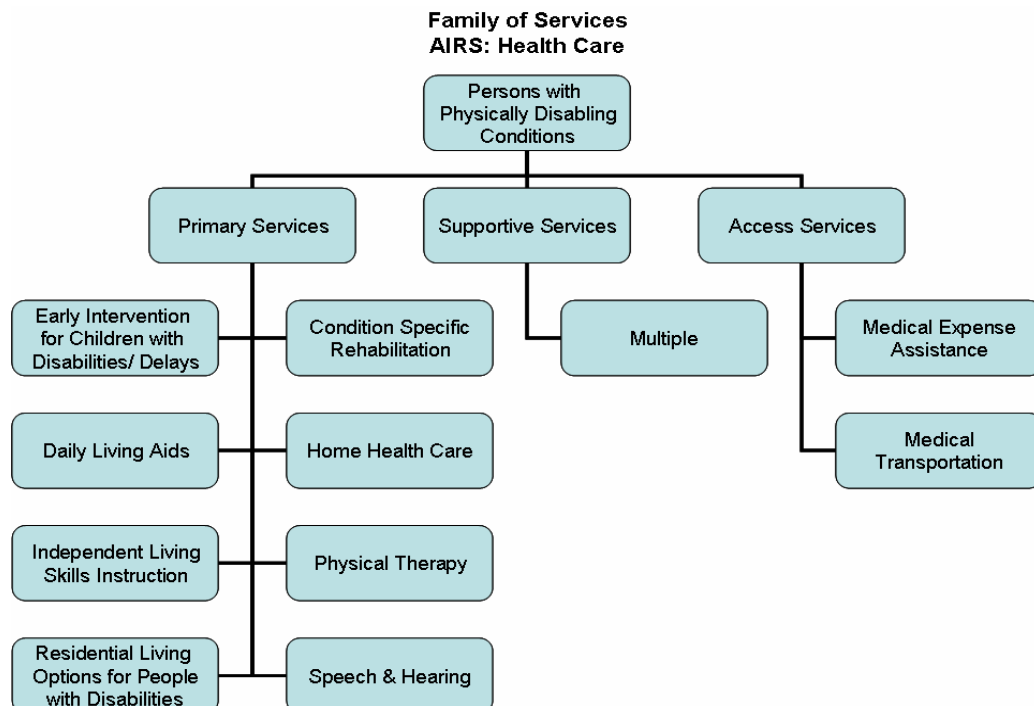
Investment Committee: Health & Caring for All

Cluster: Rehabilitation/Specialized Treatment

AIRS Definition: Programs that provide comprehensive diagnostic and treatment services for individuals who have speech and/or language problems, neurological disorders, or diseases or disorders of the middle, inner, and outer ear; larynx; tongue; mouth; or other structures whose coordination and appropriate functioning are necessary for speech and/or hearing.

Special Note: There are eight core services related to persons with physical disability conditions. The core services are organized as a continuum across the services along two dimensions: rehabilitation services (early intervention for children with disabilities/delays, condition-specific rehabilitation, daily living aids, independent living skills instruction, and speech and hearing) and long term care services (home health care and residential living options for people with disabilities). Disease/disability information is primarily related to rehabilitation services, but crossed into other physical disease categories that are not considered disabilities. To avoid duplication, early intervention for children with disabilities/delays addresses the needs of children birth to three years and condition-specific rehabilitation goes from ages 4 to 20 years.

Speech and Hearing Services are a part of the family of services for persons with physically disabling conditions. These services focus on all age groups and are one of eight services targeting this consumer group. (See figure below.)



Core Service Environment

Communication disorders are now recognized as one of the major health concerns of this country. Loss or impairment of speech or hearing may include communicative disorders resulting from genetic disorders, injury, illness, disease, developmental disabilities or delays, trauma at birth, viral infections, exposure to loud noise, certain medications, aging, or other causes. The disorders include a long list of issues including attention deficit hyperactivity disorder, dementia, dysarthria, various forms of cancer, language-based learning disabilities, stroke, and stuttering (American Speech-Language-Hearing Association, 2005).

The public policy issues related to speech and hearing include the protection of the rights of deaf and hard-of-hearing consumers, financial assistance for services and assistive hearing devices, and regulatory issues.

In March 1993, the National Institutes of Health (NIH) Consensus Development Conference recommended that all babies be screened for hearing loss before discharge from the hospital. The Ohio Revised Code requires the Ohio Department of Health to establish and maintain a statewide hearing screening, tracking, and early intervention program.

According to the U.S. Department of Labor, Bureau of Labor Statistics (2004-05), the need for both of these professions is expected to grow faster than the average for all occupations through the year 2012.

Core Service Consumers

The target population addressed in this core service report is children and adults with or at risk of hearing and speech impairments. This can include persons of all ages (especially newborns, infants, and young children) subjected to specific illnesses or diseases, trauma, and high noise levels; and older adults.

The prevalence of hearing impairment at all ages decreases as family income increases. Overall, families with incomes of less than \$10,000 are twice as likely as families with incomes of \$50,000 and over to have hearing impairment (Holt, Hotto & Cole, 1994).

The following are statistics about speech and hearing problems as reported by NICDC (2005).

- Approximately 2-3 babies per 1,000 are born each year in the United States with a detectable hearing loss.
- About 8 percent of American children in kindergarten have a disorder called specific language impairment (SLI).
- Approximately 1 out of every 200 American children is diagnosed with autism.
- Approximately 1 million American children stutter.
- Approximately 5 percent of American children entering first grade have noticeable speech disorders.
- Approximately 15 percent (or 32.5 million) of American adults report some degree of hearing difficulty, which increases with age (NICDC, 2005).
- Nearly 1 million American adults have aphasia resulting from a stroke or other brain injury.
- More than 6 million adults over the age of 60 have swallowing problems, many resulting from stroke and create risk for aspiration pneumonia.
- Fifty-five thousand Americans each year develop cancer of the head and neck.

In 2000 in Cuyahoga County, 209,097 persons were estimated to have a communication disorder. This is based on NIDAS (2005-06) estimate of 15 percent of the population. This population is expected to decrease by the year 2015 (196,446), primarily because of shifts in the county's population.

Core Service Delivery

The definition of speech and hearing for this report is: services for hearing- and speech-impaired persons including early screening, assessment, and treatment. This can include early detection of hearing loss in newborns and infants; a comprehensive assessment of hearing loss and accompanying speech and language deficits; interpreter services for deaf consumers; hearing aids; speech and language therapy; surgical procedures such as the cochlear implant; the use of sign language as communication; and preventive devices such as hearing protectors and earplugs.

Audiologists assist people with hearing, balance, and related ear problems. One of the audiologists' most important roles is the early detection of hearing loss in newborns and infants, which is critical to improving the child's speech, language, and cognitive development. When hearing loss is detected late (at 3 years and older), the critical time for stimulating the auditory pathways to hearing centers of the brain is lost. Speech and language development is delayed, affecting social and emotional growth and academic achievement.

Speech-language pathologists use written and oral tests as well as special instruments to diagnose the nature and extent of impairment and to record and analyze speech, language, and swallowing irregularities. They provide interventions to enable children with hearing loss to learn words, language, and speech. For individuals with little or no speech capability, speech-language pathologists may select augmentative or alternative communication methods, including automated devices and sign language, and teach their use.

The social and emotional aspects of hearing loss and communication ability can be devastating and problematic. Addressing them is also part of the treatment process.

Based on United Way - First Call for Help's (FCFH) database (2004), there are 40 speech and hearing providers operating from 47 different sites, 16 of which are government and 24 are nonprofit. In FY 2004, United Way funded 1 provider. FCFH call data shows a small increase in the number of total requests for speech and hearing services in the county: from 21 in 2000 to 28 in 2004 (a 33 percent increase). Over the same five-year period, FCFH had 101 requests for information about speech and hearing services. Of these requests, they were able to make referrals to 100 percent of callers.

Medicaid is major government funder of speech and hearing services. Medicare also funds a significant number of services. Children obtain substantial services from the Individual Disabilities Education Act (IDEA) through the various school districts.

There are specific issues with Medicaid and Medicare reimbursements (Henri, 2005):

- Medicaid reimbursements are approximately 60 percent of direct costs. Ohio is moving to Medicaid HMOs for the aged, blind, and disabled and possibly for other groups.
- Medicare reimbursements have an annual cap of \$1,750 for physical therapy (PT) and speech pathology services *combined*.

As of May 11, 2006, \$340,224 in revenues for speech and hearing services has been identified countywide. Thirty-one percent of the revenues are from foundations. Government funding provides 2 percent of the total countywide funding. United Way of Greater Cleveland's funds account for nearly 67 percent of the total from Investment Committee allocations and designations.

What Works; What Doesn't

On the preventative side, vaccines now prevent many illnesses such as measles, mumps, meningitis, and rubella, which once were major causes of hearing loss.

Cochlear implants allow children who have a profound hearing impairment to attend mainstream schools and allow adults to communicate more effectively.

Improved technology has enabled better hearing results for many. Hearing aids are now designed to work better in noisy environments, for example, by detecting the direction from which sounds arise.

The dispensing of hearing aids by untrained representatives of for-profit hearing aid companies has been problematic for the consumer because dispensing a hearing aid does not require a licensed audiologist. Consumers with hearing loss can still be fitted with hearing aids by unlicensed persons who are not audiologists and are likely to receive a device not best suited to the need.

According to the Better Hearing Institute (2001):

The annual cost in the U.S. in terms of lost productivity, special education, and medical care because of untreated hearing loss is \$56 billion. A study done in Australia showed that people with profound hearing loss in that country attained on average only a third grade education. Their personal loss in earning potential and quality of life is enormous. (Kochkin, 2005)

Audiologists and speech-language pathologists must be licensed to practice by the State of Ohio. They may be certified by the American Speech Language Association, which is considered in the licensure process. Interpreters for the deaf are certified by the National Registry of Interpreters for the Deaf.

Some nonprofit hearing and speech organizations are accredited by the Commission for Accreditation of Rehabilitation Facilities (CARF) under service standards for outpatient medical rehabilitation.

Gap Analysis

The estimated universe of possible consumers is 41,819 including both realized access (5,134) and unrealized access (36,685).

I. FOREWORD

INTRODUCTION

Commissioners, has initiated a large scale core service planning process to generate data and engage in community-wide dialogue about the community's safety net of core service and consumer needs in the Greater Cleveland area. In addition, UW envisions this process as an opportunity to better understand its role in the community and its long term capacity to improve the lives of Greater Clevelanders.

The primary goal of the Cuyahoga County core service research is to identify consumer needs and assess whether there are service gaps/duplications on a community-wide level. The findings from this research will guide future funding decisions at UW, and they will also be used to stimulate dialogue with other funders and groups in the community. United Way intends to continue to fund a broad array of "safety net" services that are important to the Greater Cleveland area. But it is hoped that the research findings will inform how UW dollars may be dispersed to have the greatest impact on current realities, needs, and priorities in the Greater Cleveland community.

METHODOLOGY

United Way contracted with MCS Consulting Service, LLC, to conduct the core service research, which focuses on both the consumers served and services provided. (See Attachment 1 for list of members of the research team.) The research team has obtained information about each core service from multiple data sources. At the end of the research process there will be substantial information available for some services and less for others, which will provide a clearer picture of what information *is* available and where there are *significant gaps*.

The questions addressed are:

- Including public policies, what are the environmental influences that are impacting both service consumers and the capacity for service delivery?
- Who are the service consumers? What are the factors that lead to a need for services? How many consumers are there? How many have there been in the past several years and what factors influenced the historic trend line? What are the projected numbers for the future? What is their demographic profile? Where do they reside? How many are receiving services funded by government and/or United Way?
- What is the philosophy that drives service delivery? Has it changed? What does the service consist of? Who provides the service?
- What are the funding sources? What are the annual revenues from government sources, federated fund raising organizations, foundations, and United Way of Greater Cleveland? What are the historic government funding trends and what is projected for the future? What is the reimbursement amount?
- What works and what doesn't work in service delivery?
- Are there service gaps, duplication, under-utilization?

The primary information sources used for this report are:

- Results of 20 focus groups with 159 direct service staff of United Way member agencies and non-members, and key informant interviews with 93 experts in the respective service areas (February 2005). Participants were asked about consumer populations that are increasing and those with unmet needs; they provided insight about specific service gaps and duplication, as well as services they perceive to be outdated or under-utilized.
- United Way Program Report data for FY 2004 (July 2003 to June 2004). Each year United Way member agencies submit information to their respective investment committees on each funded core service they provide. Among other things, this information includes a demographic profile of the consumers served, the zip codes where the consumers reside, and all revenue sources that support the service. The research team has aggregated this information for each core service.
- United Way - First Call for Help call data (2000 to 2004) - United Way - First Call for Help provides a 24/7 information and referral service through its 211 telephone line. The research team analyzed data from its large database, which includes the names of service providers for most core services, the activities they provide and the zip codes in which they and those they serve are located, the number of calls received, and whether the need was met or unmet. Unmet needs are those for which there was no resource to reference.
- Literature reviews on service trends and issues as well as best practices (i.e., what works/ what doesn't work in service delivery), including impact on the individual/family and on the community.
- Searches for information on public policies that are currently impacting consumers or service delivery.
- U.S. Census and American Community Survey data for various time periods.
- Data from funders on actual consumer populations and funding levels.

(See Attachment 2 for technical notes on the research methodology as well as limitations of the data.)

II. THE CORE SERVICE ENVIRONMENT

CORE SERVICE ENVIRONMENT

Communication disorders are now recognized as one of the major health concerns of this country. Loss or impairment of speech or hearing may include communicative disorders resulting from genetic disorders, injury, illness, disease, developmental disabilities or delays, trauma at birth, viral infections, exposure to loud noise, certain medications, aging, or other causes. The disorders include a long list of issues including attention deficit hyperactivity disorder, dementia, dysarthria, various forms of cancer, language-based learning disabilities, stroke, and stuttering (American Speech-Language-Hearing Association 2005).

The assessment and treatment of communication disorders are primarily done by professional audiologists and speech pathologists. According to the U.S. Department of Labor, Bureau of Labor Statistics (2004-05), the need for both of these professions is expected to grow faster than the average for all occupations through the year 2012. Several reasons are suggested:

- Because hearing loss is strongly associated with aging, rapid growth in the population aged 55 and over will cause the number of persons with hearing impairment to increase markedly.
- Members of the baby boom generation are now entering middle age, when the possibility of neurological disorders and associated speech, language, swallowing, and hearing impairments increases.
- Medical advances are improving the survival rate of premature infants and trauma and stroke victims, who then need assessment and possible treatment.
- Many states require that all newborns be screened for hearing loss and receive appropriate early intervention services.
- Greater awareness of the importance of early identification and diagnosis of speech, language, swallowing, and hearing disorders.
- Increased enrollments in elementary and secondary schools, including enrollments in special education.
- Requirement that persons have more effective communication abilities to function in today's world. (Henri & Hallowell, 2001)
- Extreme shortages of speech, language, and hearing scientists and teacher-scholars in all areas of the country, especially in inner city, rural, and less populated areas. (American Speech-Language-Hearing Association, 2005)

The American Speech-Language-Hearing Association sees a positive future for the development of the field as research continues to update it.

With genetics and hereditary research being the driving force of the future, research scientists have much to look forward to. Not only will there be opportunity to examine causality and progression issues, there will also be time to explore new techniques to prevent, identify, assess and rehabilitate speech, language, and hearing impairments ... Furthermore, the future holds great opportunity for research scientists to

investigate and examine cultural diversity in human communication (2005).

Henri (2005) also points out the role of managed care on the delivery of speech-language pathology and audiology services. Positive impacts include a focus on functional outcomes, increased accountability, improved business savvy among professionals, more research, and emphasis on preventive care. However, Henri also points out negative aspects of a managed care system such as services that are not covered, disincentives from referring to specialists, reductions in reimbursement rates, difficulty obtaining evaluation and treatment authorizations, restrictions on duration and frequency of treatments, time-consuming appeals, intervention by insurance companies in clinical matters, and disruptions in continuity of care.

There are several local issues that impact the delivery of speech and hearing services in Greater Cleveland (Henri & Hallowell, 2001).

- The declining economy in Greater Cleveland is having significant impact on the delivery of all health and human services.
- Noise pollution resulting from increased rail traffic through Cleveland and noise in Cleveland restaurants and other settings are chronic issues in the local community.
- There is need for increased transportation for children needing speech and hearing services.

PUBLIC POLICY ISSUES

The Government Relations and Public Policy Board of the American Speech-Language-Hearing Association (2005) established the following priorities for its public policy agenda: (1) the reauthorization, full funding, and implementation of the Individuals with Disabilities Education Act (IDEA); (2) the promotion of federal financial aid policies and priorities that support the recruitment of students, faculty, and researchers in communications sciences; and (3) repealing or continuing to prevent implementation of the therapy cap on speech-language pathology services under the Medicare Part B outpatient program, and seeking expanded coverage of diagnostic and rehabilitative services by audiologists and speech-language pathologists under the Medicare program and other public or private insurance health plans (American Speech-Language-Hearing Association, 2005).

In Ohio, the Ohio Speech and Hearing Governmental Affairs Coalition (OSHGAC) focuses on two public policy issues: (1) increases in Medicaid reimbursement for hearing aids, which has remained at \$414 for several years; and (2) Ohio Department of Education regulations related to caseload size and other working condition issues (Henri & Hallowell, 2001).

Below is further explanation of national and state public policy issues that affect speech and hearing programs.

NATIONAL

Reimbursement and Covered Services by Insurance

Reimbursement for speech and hearing services is a key public policy issue. Access to care for individuals with speech-language and hearing disorders, especially for children, is diminishing due to decreased coverage by governmental and third-party health plans. In response to this issue, the National Insurance Advocacy Initiative for Communication Disorders (NIAI) was

formed and is a growing grassroots network that advocates with private health plans—as well as with Medicare and Medicaid—on behalf of patients of all ages. The NIAI’s mission is to educate employers, collaborate with health plans, advocate with national nonprofit organizations, and lobby state and national legislators. The NIAI has been working on a number of reimbursement issues, including health plan coverage, advocacy efforts, model benefits, and the delineation of medical versus educational services.

Children often are excluded from coverage due to restrictive clauses in health plan policies. The NIAI’s initial goals are to target major national health plans and discuss the need for more comprehensive speech and hearing benefits. Long-term goals include developing a survey for state associations to identify their concerns, surveying nonprofit organizations and support groups to learn what coverage employers are offering, and building relationships with small business organizations and private health plans that might be likely to improve their coverage (Zeit and Johnson, 2002).

Specifically in Ohio, in 1999 the Ohio Speech-Language-Hearing Association formed the Ohio Insurance Advocacy Initiative in southern Ohio to investigate methods of improving third party reimbursements for speech and/or hearing services. Committee members are from hospital, university, clinic, private practice, and school settings. This committee represents a unified effort of speech-language-hearing professionals to advocate in multiple arenas (Zeit, n.d.).

Medicaid and Medicare

The federal government has concerns about the growth of the Medicaid and Medicare entitlement programs that have grown over the decades. States are being forced to cut back and control Medicaid funding and are taking concurrent action to keep the Medicaid costs down as they cope with the impact of the present economy. The Federal Deficit Act of 2005 made major changes in the Medicaid program.

Medicaid expenditures are the largest budget item for each state. Since the turn of the century, program expenditures (state and federal) have increased over 50 percent due to increasing health care costs and life expectancy and the loss of employer-sponsored health insurance (What Can Be, 2005). In fact, a source refutes that some companies refuse to purchase health insurance because they believe their employees can obtain public health insurance (The Economist, 2005). Additionally, Medicaid beneficiaries are more likely to seek medical attention through emergency care because private health practitioners receive so little compensation that they cannot afford to take care of them (Turner, 2005).

In the late 1990s, Medicaid spending increased due to the increase in size of populations covered, expanded coverage and utilization, the disproportionate share hospital payments, an increase in the number of advanced age and disabled individuals requiring acute or long-term care services (e.g. home-based services), technological advances for low birth weight babies and other critically ill or severely injured persons in need of continued care, increasing drug costs, availability of expensive drugs, and increasing rates to service providers (not due to inflation) (Moniz & Gorin, 2003; CMS, 2005b).

The federal government provides matching funds to states to finance the program, a share determined by a formula that compares the state’s average per capita income level to the national income average (Moniz and Gorin, 2003; CMS, 2005b). These federal medical assistance percentages [FMAPs] varied from 50 percent to 77.08 percent in 2004 (CMS,

2005b). In Ohio, each state dollar is matched by \$1.40 from the federal government (Sanford, 2005).

In addition to paying service providers directly on a fee-for-service or on a prepayment basis (for managed care providers), states must make additional payments to qualified hospitals that provide services to disproportionate numbers of Medicaid beneficiaries or low-income or uninsured persons under the “disproportionate share hospital” [DSH] adjustment (CMS, 2005b). The state may require deductibles, coinsurance, or co-payments for certain services (excluding services for pregnant women, children under 18, and hospital or nursing home patients expected to contribute most of their income to institutional care) (CMS, 2005b). Enrollees are also exempted from co-payments for emergency and family planning services (CMS, 2005b).

The Deficit Reduction Act of 2005 proposed Medicare and Medicaid reforms that are intended to save the federal government \$26.5 billion in Medicaid expenditures over a ten-year period (Pear, 2005). Although some believe that a \$10 billion cut from Medicaid (\$300 billion program) is not extraordinary (and perhaps not even enough), others are wary of the problems that this already taxed system, and much-needed source of health provision, will encounter with its paring. Under this legislation, states are allowed to charge premiums and higher co-payments for services including prescription drug coverage, physicians’ services, and hospitalization (to encourage personal responsibility); scale back benefits or eliminate coverage for services currently guaranteed by federal law; and end coverage for people who do not pay premiums after 60 days (Pear, 2005; American Public Health Association, 2006). Beneficiaries (including children) may also be required to share costs for what would be deemed “inappropriate use” of emergency services in the hospital (Corlett, 2006). The act also makes it more difficult for older adults to qualify for coverage of skilled nursing facility care after transferring their assets to children or other relatives (Pear, 2005).

The legislation requires that states ensure that half their welfare recipients are engaged in work or related activities, and applicants must produce a passport, birth certificate, or other proof of citizenship. This affects many citizens who do not have these documents at home or who may have not been born in hospitals (Pear, 2005; Benjamin, 2006). Elderly individuals must also be able to produce 60 months of records of transfers from past and present financial institutions to be reviewed by medical caseworkers (Deficit Reduction Act: Pending, 2006).

Medicaid beneficiaries whose family incomes are 100 to 150 percent of the federal poverty level [FPL] (in 2007, this is \$14,700 for a single individual and \$19,800 for a two-person family) can also be charged 10 percent of any Medicaid-funded service (Pear, 2005). For those with higher incomes, 20 percent of service costs may be required, though total co-payments for the family cannot exceed 5 percent of the family income (Pear, 2005).

The reforms are said to protect the pharmaceutical industry, the managed care industry, wealthy individuals (who would benefit from the tax cuts), and other service providers at the expense of low-income Medicaid beneficiaries who will acquire a larger cost-sharing burden, as well as children and individuals with disabilities whose coverage and benefits will be reduced (Pear, 2005; Sharrar, 2005; Ku, 2005). Federal and state tax cuts may encourage an increase in local taxes, transferring the burden of care to local communities (Sharrar, 2005). Applicants with home equities over \$500,000 would be considered ineligible and homeowners would thus be forced to bring their equity down or use their assets to pay for nursing home care (Pear, 2005, Deficit Reduction Act: Pending, 2006).

The act establishes a new eligibility group for children with disabilities who meet age, severity of condition, and family income requirements; increases funding under the Special Projects of Regional and National Significance [SPRANS] program to develop family-to-family health information centers; and funds initiatives that increase efficiency and efficacy of the program (Corlett, 2006).

Rights of Deaf and Hard-of-Hearing Consumers

The Americans with Disabilities Act has protected the rights of deaf and hard-of-hearing people including: (1) equal access to places of public accommodation, and (2) removal of barriers to communication by businesses and agencies through provision of auxiliary aids and services such as qualified interpreters, note takers, computer-aided transcription services, written materials, telephone handset amplifiers, assistive listening devices, assistive listening systems, telephones compatible with hearing aids, closed caption decoders, open and closed captioning, telecommunication devices for deaf persons (TTYs), videotext displays, or other effective methods of making aurally delivered materials available to individuals with hearing impairments (National Court Reporters Association, 2002).

Individuals with Disabilities Education Act, Part B (IDEA)

Financial assistance for school children who are deaf or hearing impaired is available for special services under the Individuals with Disabilities Education Act, Part B (IDEA) (Gallaudet University, 2005). Speech-language pathology is included as a fundable service. There is some financial assistance for hearing aids and personal assistive technology. Children with hearing loss may be eligible for assistive devices at no cost if their individualized education plan (IEP) specifies that they need such devices in order to receive a public education (HearingLoss.org, 2005).

STATE

Early Hearing Detection and Intervention Laws

In March 1993, the National Institutes of Health (NIH) Consensus Development Conference recommended that all babies be screened for hearing loss before discharge from the hospital. Currently, 42 states (plus the District of Columbia) have early hearing detection and intervention (EHDI) laws or voluntary compliance programs to screen the hearing of more than 85 percent of newborns (thirty-eight states have laws and four states have voluntary programs). The U.S. Public Health Service's Healthy People 2000 Initiative and 2010 national health objectives recommend screening infants for hearing loss by one month of age, having diagnostic follow-up by three months, and enrolling infants in appropriate intervention services by six months of age. According to the Centers for Disease Control (CDC), half (35,000) of an estimated 70,000 babies did not pass the hearing screening prior to hospital discharge and did not receive an audiological evaluation and follow-up. A May 2004 annual report card on infant hearing screenings reported a 65 percent increase in infant screening over the past five years, with an 89.8 percent newborn screening rate. Alaska, California, and Ohio were three states cited with an unsatisfactory rating (80 percent or less babies screened) of their newborn hearing screening programs (U.S. Department of Health and Human Services, 2000).

The Ohio Revised Code requires the Ohio Department of Health to establish and maintain a statewide hearing screening, tracking, and early intervention program. The department is also responsible for establishing protocols for the treatment and follow-up care of newborns and infants with hearing impairment (National Conference of State Legislatures, 2004). This includes:

...a hearing screening of each infant or newborn in a hospital or freestanding birthing center prior to discharge; other births to be screened before newborn is 30 days old; a physiologic test performed under the direction of a physician or audiologist and referral for hearing assessment for newborns who do not pass screening; results of screening and any evaluation to be reported to parents, primary care physician and health department; Department of Health to pay for screening if the facility is not reimbursed by a third party payer and parents unable to pay; parents to be provided with educational materials developed by the Health Department; implementation to be facilitated by an infant screening subcommittee appointed by the medically handicapped children's medical advisory council; implementation of a reporting system. (National Conference of State Legislatures, 2004, Ch. 3701)

One of the driving forces behind this is the estimated rehabilitative cost. "By the time a child with hearing loss graduates from high school, as much as \$420,000 can be saved in special education costs if the child is identified and given appropriate early intervention" (National Center for Hearing Assessment and Management, n.d.).

In Ohio, statewide services for the deaf and hard-of-hearing are administered by the Rehabilitation Services Commission. There are ten regional infant hearing programs, and the Cuyahoga/Northeast region is the largest of all in terms of the number of births. The state of Ohio provides financial resources for testing infant hearing.

III. THE CORE SERVICE CONSUMERS

DEFINITION OF TARGET POPULATION

The target population addressed in this core service report is children and adults with or at risk of hearing and speech impairments. This can include persons of all ages (especially newborns, infants, and young children) subjected to specific illnesses or diseases, trauma, and high noise levels; and older adults.

DEMOGRAPHIC CHARACTERISTICS

Hearing loss can be linked to genetic causes; problems in the birthing process; low birth weight and pre-maturity; jaundice; diseases such as meningitis, ear infections or measles; physical injuries; high noise levels; job related noise; chemicals; and the aging process. Speech and language development are interrelated for children; without being able to hear, children cannot imitate words, intonation, and clear speech. In adults, the ability to speak is related to the tasks of daily living.

Approximately one of every six Americans experiences some form of communication disorder that affects hearing, balance, smell, taste, voice, speech, or language (Strategic Plan, National Institute on Deafness and Other Communication Disorders (NIDCD), FY 2006-2008, 2005). As the population ages, and as survival improves for medically fragile infants and individuals who have sustained brain and other injuries or acquired disease, the number of persons with communication disorders will continue to increase.

The following statistics are from the National Institute on Deafness and Other Communication Disorders (2005):

Birth and Early Childhood

- Approximately 2-3 babies per 1,000 are born each year in the United States with a detectable hearing loss, which can affect their speech, language, social, and cognitive development.
- About 8 percent of American children in kindergarten have a disorder called specific language impairment (SLI). These children have difficulty developing and using language. These difficulties affect not only speaking but also reading and writing tasks.
- Middle ear infections are the most frequent reason that a sick child goes to the doctor. This can result in temporary hearing loss during the infection, often for some time during treatment, and may end in permanent hearing loss.
- Approximately 1 out of every 200 American children is diagnosed with autism, a disease that interferes with normal language and social development.
- Approximately 1 million American children stutter.
- Approximately 5 percent of American children entering first grade have noticeable speech (phonological) disorders, ranging from a few substituted and missing sounds to serious impairments that make

their speech difficult to understand. The majority of these speech disorders have no known cause.

- One of the consequences of untreated or late treated hearing loss is that children may require speech and language therapy and or be placed in special education classes in schools. “In the 2002-03 school year, nearly 72,000 children ages 6 to 21 years got special education services under the ‘hearing impairment’ category in the United States. An additional 1,600 children received services under the ‘deaf blind’ category. The total number of children with hearing loss is likely to be greater as some of them may have other disabilities and be served under other special education services. Still others may not be counted because they receive only regular classroom education services.” (CDC, 2004)

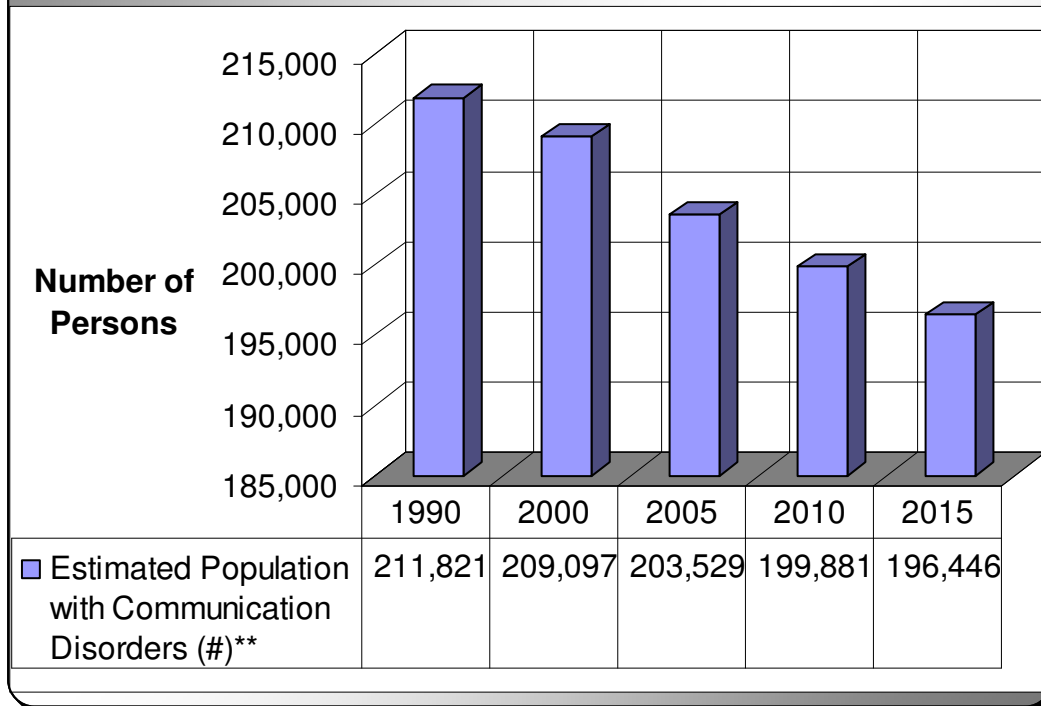
Adulthood

- Approximately 15 percent (or 32.5 million) of American adults report some degree of hearing difficulty.
- There is a strong relationship between age and reported hearing difficulty: 18 percent of American adults aged 45-64 years, 30 percent of adults aged 65-74 years, and 47 percent of adults aged 75 years or older.
- Approximately 10 percent (or 22 million) of American adults between 20-69 years old have suffered permanent damage to their hearing from exposure to loud sounds or noise at work or in leisure time activities.
- Nearly 1 million American adults have aphasia (a language disorder) resulting from a stroke or other brain injury.
- More than 6 million adults over the age of 60 have swallowing problems, many resulting from stroke and create risk for aspiration pneumonia.
- 55,000 Americans each year develop cancer of the head and neck. Treatment for these may subsequently result in a loss of hearing, balance, and the ability to speak and to swallow.

Estimated Persons in Need

In 2000 in Cuyahoga County, 209,097 persons were estimated to have a communication disorder. This is based on NIDAS (2005-06) estimate of 15 percent of the population. This population is expected to decrease by the year 2015 (196,446), primarily because of shifts in the county’s population. (See Figure 1.)

**Figure 1: Speech and Hearing
Estimated Persons in Need
Cuyahoga County, 1990-2015**



Sources:

* U.S. Census 1990, STF 1 (P11); 2000, SF3 (P8); 2005-2015, Ohio Department of Development, (July, 2003).

**National Institute for Deafness and Other Communication Disorders - 15 percent of population has a communication disorder. 2005-06. Assumes same percentage across periods.

This estimate of persons in need of speech and hearing services begins to offer some clarity about the extent of need in Cuyahoga County.

REALIZED ACCESS TO SERVICE

Realized access to service is represented by the numbers of consumers actually served. It includes the actual number of consumers reported by agencies funded by United Way and by government funders from which it was possible to obtain data. Thus, it is an underestimate of actual numbers of consumers receiving service.

In FY 2004, United Way funded 5,112 persons of all ages for speech and hearing services. Most were under 9 years old. The Cuyahoga County Department of Senior and Adult Services (DSAS) also funded 22 persons. (See Attachment 3.)



Forty-three percent of consumers funded by United Way and 32 percent of DSAS were African Americans. United Way funded 15 percent and DSAS funded 50 percent white consumers. DSAS reported that 9 percent of its consumers were Hispanic. There was no income data provided for actual consumers.

Geographically, 23 percent of United Way funded consumers resided in Cleveland and 33 percent in the suburbs. (See Attachment 4.)

IV. CORE SERVICE DELIVERY

CORE SERVICE DEFINITION

The definition of speech and hearing for this report is: services for hearing- and speech-impaired persons including early screening, assessment, and treatment. This can include early detection of hearing loss in newborns and infants; a comprehensive assessment of hearing loss and accompanying speech and language deficits; interpreter services for deaf consumers; hearing aids; speech and language therapy; surgical procedures such as the cochlear implant; the use of sign language as communication; and preventive devices such as hearing protectors and earplugs.

BACKGROUND ON CORE SERVICE

Early detection of hearing loss in newborns and infants is critical to improving children’s speech, language, and cognitive development. A comprehensive assessment of hearing loss and accompanying speech and language deficits are critical partners of the service. Interpreters for deaf consumers may be important service components in a variety of venues such as medical, legal, mental health, financial, and other environments. A number of treatment alternatives such as hearing aids, speech and language therapy, surgical procedures such as the cochlear implant, and the use of sign language as communication are available. Some preventive devices such as hearing protectors and earplugs are also available. Speech and language therapies involve certain methodologies that begin with an understanding of the source of the problem and strengthen and utilize the individual’s physical assets to resolve the problem.

A. Hearing Loss

Description

The causes of hearing loss are multiple and vary from genetic causes, problems in the birthing process, low birth weight and pre-maturity, jaundice, diseases such as meningitis, severe and persistent ear infections, measles, physical injuries, high noise levels, job related noise, chemicals, and the aging process. (CDC, 2004)

Hearing loss is related to the ability to communicate. A child’s inability to hear from birth affects his/her ability “to learn to both speak and to understand speech. This is especially true if the child is born with a hearing loss or loses his or her hearing at an early age” (CDC, 2004).

Hearing, like vision, deteriorates in the course of aging. The increase in the numbers of older adults will be accompanied by increases in the number of older adults requiring hearing aids and other assistive listening devices. “...baby boomers are ahead of schedule when it comes to hearing loss, showing symptoms in their late 40’s and 50’s. In the past, patients usually weren’t diagnosed until their 60’s or later” (Noonan, 2005).

There are four main types of hearing loss:

- **Conductive:** hearing loss caused by a problem in the outer or middle ear;

- Sensorineural: hearing loss caused by a problem in the inner ear or auditory canal;
- Mixed: a combination of conductive and sensorineural losses; and
- Central: hearing loss caused by a problem along the pathway from the inner auditory region of the brain to the brain itself. (Centers for Disease Control and Prevention, 2004).

Screening and Assessment

Audiologists work with people who have hearing, balance, and related ear problems. They examine individuals of all ages and identify those with the symptoms of hearing loss and other auditory, balance, and related neural problems. They then assess the nature and extent of the problems and help the individuals manage them. Using audiometers, computers, and other testing devices, they measure the loudness at which a person begins to hear sounds, the ability to distinguish between sounds, and the impact of hearing loss or balance problems on an individual's daily life. Audiologists interpret these results and may coordinate them with medical, educational, and psychological information to make a diagnosis and determine a course of treatment. (U.S. Department of Labor, 2004-05)

One of the audiologists' most important roles is the early detection of hearing loss in newborns and infants, which is critical to improving the child's speech, language, and cognitive development. Although most hearing problems are diagnosed by the time a child turns three, it is often too late by then. When hearing loss is detected late, the critical time for stimulating the auditory pathways to hearing centers of the brain is lost. Speech and language development is delayed, affecting social and emotional growth and academic achievement.

Treatment

Treatment for hearing disorders may include examining and cleaning the ear canal, fitting and dispensing hearing aids, fitting and tuning cochlear implants, and audiologic rehabilitation. Audiological rehabilitation emphasizes counseling on adjusting to hearing loss, training on the use of hearing instruments, and teaching communication strategies for use in a variety of listening environments. For example, they may provide instruction in lip reading and sign language. Audiologists also may recommend, fit, and dispense personal or large area amplification systems and alerting devices. (U.S. Department of Labor, 2004-05)

They may also provide preventive devices such as hearing protectors and ear plugs.

A person who is profoundly deaf may never learn to communicate using verbal means, but can be taught to use and rely on sign language or technology to communicate. In some environments where the communication between a deaf person and the hearing world is important, interpreters form an important bridge between the hearing world and the hearing-impaired individual.

There is a relationship between hearing and speech and hearing and language. Children learn by hearing words and pronunciation from others. Cognition ensues when an understanding is built between the words and their intonation, meaning, and intention. Communication is built on

an exchange of words and intentions between persons. Speech-language pathologists provide interventions to enable children with hearing loss to learn words, language, and speech.

In the last 10 to 15 years, the cochlear implant is the newest treatment for hearing loss. The implant is a wire surgically implanted into the cochlea of the ear, placing an electronic device behind the ear in the mastoid bone. Cochlear implants are done weekly at University Hospitals and at the Cleveland Clinic Foundation in Cleveland. The problem is that the surgery and follow-up procedures are costly (estimated \$40K) and may not be covered by insurance programs.

The social and emotional aspects of hearing loss and communication ability can be devastating and problematic. Addressing them is also part of the treatment process. A deaf child born to hearing parents, a hearing child born to deaf parents, or a deaf child born to deaf parents needs a variety of problem-solving techniques. Hearing parents face a variety of treatment options including accepting their child's hearing loss and learning alternative communication methods, and teaching their child to use hearing aids or the cochlear implant. A child may face difficulties with his or her peers in play and school because of their inability to hear, understand, and clearly communicate to others. School age children face obstacles in the learning process because of the primacy of verbal and auditory teaching/learning in the classroom. Treatment for hearing and speech and language problems may be a long process for child and family, and may involve speech and language therapy, special education, or education in specialized schools for the profoundly hearing impaired.

The deaf community is a tight-knit community and culture that values its ability to communicate with each other using sign language. Many members of the deaf community object to the use of cochlear implants or other implanted electronic devices.

For the adult, hearing loss is associated with loss of functional abilities and diminished physical capacity and concomitant emotional effects. Younger adults often delay acknowledging hearing loss because they don't want to wear a hearing aid. Hearing is a critical factor in job performance and the inability to hear and communicate is a significant disadvantage in the work place. A person may be declared totally disabled, unable to work, and receive Social Security. A stroke can cause brain damage that affects memory and the muscles used to speak. Speech-language pathologists can use a variety of interventive strategies to assist these persons in regaining their capacity to communicate.

Older adults also often deny hearing loss, and delaying the use of hearing aids may be a factor in an individual's social isolation (Kochkin, 2005).

Older people especially may withdraw from family and friends, becoming suspicious, even paranoid. Many who can't hear properly start believing others are talking about and laughing at them. Sometimes they are right. The strain of trying to cope as if nothing were wrong and to "keep up appearances" takes a toll. People may become irritable and anxious as they worry about whether they are speaking too softly or too loudly and struggle to keep up with conversations they cannot hear. (Kochkin, 2005)

B. Speech and Language Disorders

Description

Disorders of motor speech production can be congenital (present from birth) or acquired (resulting from stroke, head injury, or illness) (Styba, 1999). The act of producing understandable speech is very complex and may be affected by a problem in the pathway production of speech. There are several types of speech problems: (1) articulation/phonology, (2) stuttering, (3) voice disorders, (4) apraxia, and (5) dysarthria.

- Articulation is the production of speech sounds. Intelligibility is a measure of how well speech can be understood. Someone with an “articulation disorder” can be hard to understand because they say sounds incorrectly. “Phonology” is the science of speech sounds and sound patterns. Every language has rules about how sounds can be combined. If a child does not use the conventional rules for his/her language but develops his/her own, s/he may have a “phonological disorder.”
- Stuttering: Fluent speech is smooth, forward-moving, unhesitant and effortless speech. A “dysfluency” is any break in fluent speech. Everyone has dysfluencies from time to time. “Stuttering” is speech that has more dysfluencies than is considered average.
- Voice disorders are divided into two categories: organic voice disorders and functional voice disorders. Organic voice disorders stem from disease or pathology. They require medical intervention. Functional voice disorders result from abuse or misuse of the voice. They can often be managed by voice therapy.
- Apraxia is a motor disorder in which volitional or voluntary movement is impaired without muscle weakness. The ability to select and sequence movements is impaired. Oral apraxia affects one's ability to move the muscles of the mouth for non-speech purposes. Someone with oral apraxia would have trouble coughing, swallowing, wiggling their tongue or blowing a kiss when asked to do so. Verbal apraxia, or apraxia of speech is an impairment in the sequencing of speech sounds. Apraxia that happens as a result of an incident causing brain damage is said to be “acquired.” This can result from stroke, head injury, brain tumors, toxins, or infections. It can be so severe that the individual is unable to initiate speech or so mild that an individual only has occasional difficulties in conversation pronouncing multi-syllabic words.
- Dysarthria is a speech disorder that is due to a weakness or lack of coordination of the speech muscles. Speech is slow, weak, imprecise or uncoordinated. It can affect both children and adults. “Childhood dysarthria” can be congenital or acquired. It is often a symptom of a disease, such as cerebral palsy, Duchenne muscular dystrophy, myotonic dystrophy, Bell palsy. In both adults and children, it can result from head injury. In adults, dysarthria can be caused by stroke, degenerative disease (Parkinson's, Huntington's, amyotrophic lateral sclerosis, multiple sclerosis, myasthenia gravis), infections (meningitis), brain tumors, and toxins (drug or alcohol abuse, lead poisoning, carbon monoxide, etc.).

Screening and Assessment

Speech-language pathologists use written and oral tests, as well as special instruments, to diagnose the nature and extent of impairment and to record and analyze speech, language, and swallowing irregularities. They develop an individualized plan of care, tailored to each patient's needs. (U.S. Department of Labor, 2004-05)

Treatment

For individuals with little or no speech capability, Speech-Language Pathologists may select augmentative or alternative communication methods, including automated devices and sign language, and teach their use. They teach their patients how to make sounds, improve their voices, or increase their language skills to communicate more effectively. They help patients develop, or recover, reliable communication skills so they can fulfill their educational, vocational, and social roles. (U.S. Department of Labor, 2004-05)

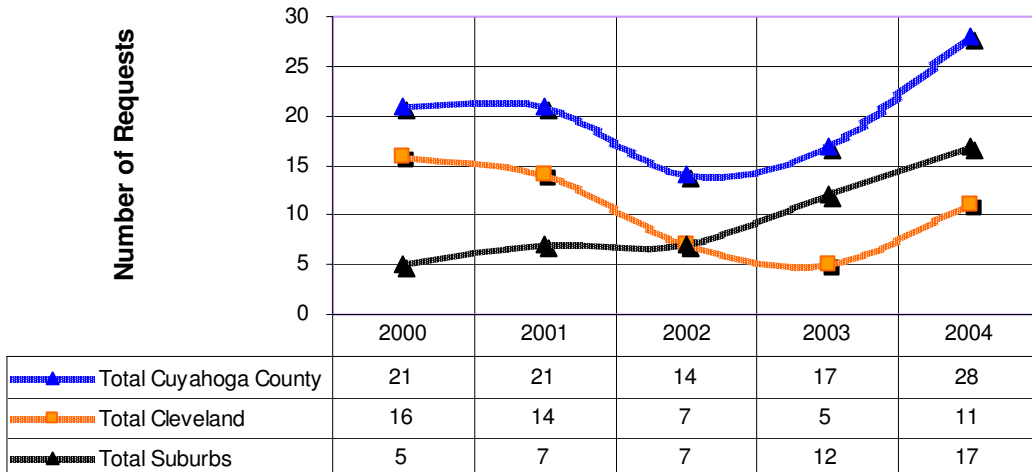
Other treatment modalities include voice therapy, strengthening the muscles used for speaking, rhythmic motor activities and drills, and learning strategies for speaking and communication (Stybna, 1999).

United Way - First Call for Help Call Data

Based on United Way - First Call for Help's (FCFH) database (2004), there are 40 speech and hearing providers operating from 47 different sites, 16 of which are government and 24 are nonprofits. In FY 2004, United Way funded 1 provider. (See Attachments 5 and 6.) There is only one provider funded by with United Way.

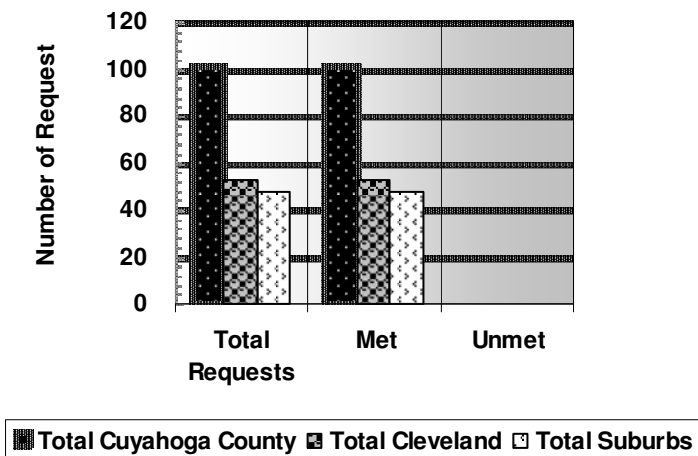
United Way - First Call for Help call data shows a small increase in the number of total requests for speech and hearing services in the county as a whole from 21 in 2000 to 28 in 2004 (33 percent increase). There was a 33 percent decrease of calls in Cleveland for the same period (16 to 11), while calls in the suburbs increased from 5 to 17. (See Figure 2 and Attachment 7.) The actual numbers of clients is relatively small and therefore, this graph should not be taken as the definitive word on demand or unmet need.

**Figure 2: Speech and Hearing
United Way - First Call for Help Requests 2000-2004
Greatest Increase/(Greatest Decrease)**



Over the same five-year period, United Way - First Call for Help had 101 requests for information about speech and hearing services. Of these requests, they were able to make referrals to 100 percent of callers. (See Figure 3 and Attachment 8.)

**Figure 3: Speech and Hearing
United Way - First Call for Help Requests 2000-2004
(TOTAL REQUESTS: n=101, TOTAL UNMET NEED: n=0)**



FUNDING OF CORE SERVICES

Major Government Funders

The major government funders of speech and hearing programs are:

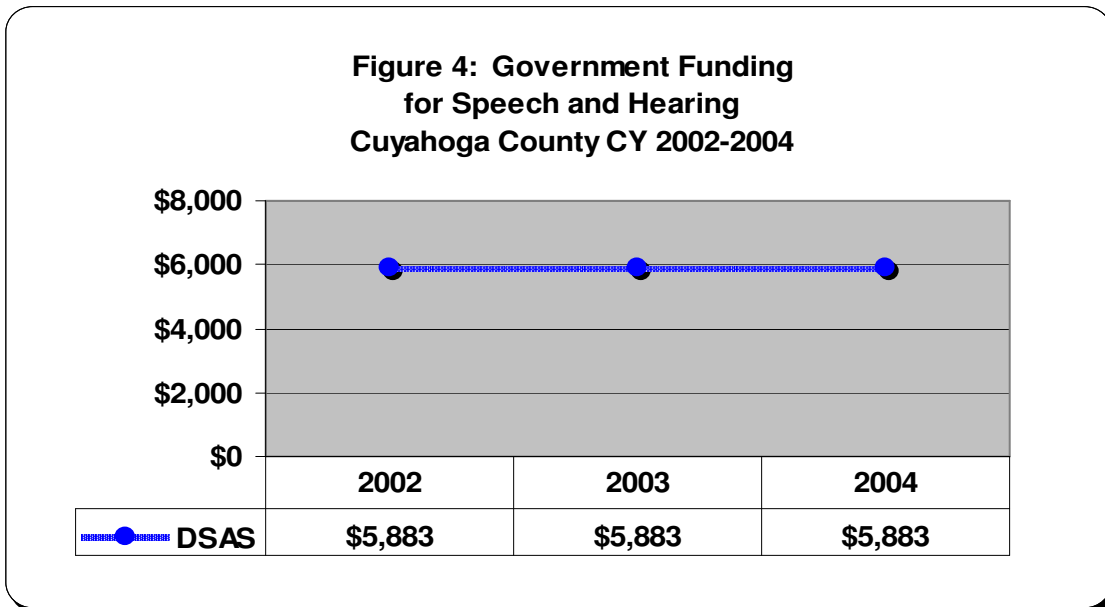
- Bureau of Children with Medical Handicaps (formerly Crippled Children’s Services – Title V of the SSA) for children with severe delays or disorders in functional development;
- Bureau of Vocational Rehabilitation for those 16 to 64 and if it is related to getting or keeping employment;
- Bureau of Workers’ Compensation if the communication disorder results from a work-related injury—most often traumatic brain injuries resulting from accidents (falls, and vehicular accidents);
- CHAMPUS (Civilian Health and Medical Program of the Uniformed Services (Henri, 2005)
- Individual Disabilities Education Act (IDEA) through various school districts
- Medicaid
- Medicare

With most of these funding sources, there is bureaucracy, required authorizations and payments that often are not completed in a timely fashion, according to a reviewer of this report.

Private pay by consumers is also a significant source of payment for speech and hearing services. One reason is that many insurance companies do not pay for speech therapy related to stuttering or foreign accent.

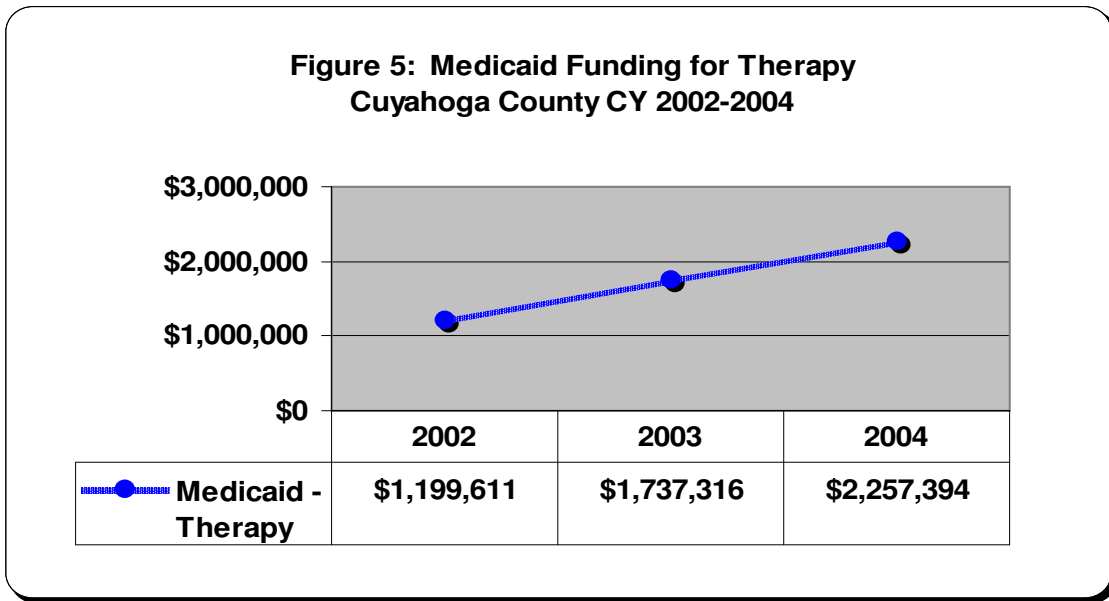
Trends of Identified Government Funders in Cuyahoga County

The Cuyahoga County Department of Senior and Adult Services funding as shown in Figure 4 is flat, and has been so for the last three years.



Source: Cuyahoga County Department of Senior and Adult Services

Ohio's Medicaid program does not distinguish speech and hearing, physical therapy, occupational therapy, and condition-specific rehabilitation. In Cuyahoga County, funding for the combined therapies increased from \$1.2 million in 2002 to \$2.2 million in 2004. (See Figure 5.) The Ohio Department of Job and Family Services (2005) explains that the increase in expenditures is a combination of increases in Medicaid enrollment and some increase in cost per member.



* Medicaid dollars for Medicaid Service - Therapy (\$2,257,394 in 2004) - Falls into AIRS 1 Health Care and has been entered as an aggregate total for that AIRS Level. Therapy includes the following Core Services: Condition Specific Rehabilitation and Speech & Hearing.

IDENTIFIED REVENUES

As of May 11, 2006, \$340,224 in revenues for speech and hearing services has been identified countywide. This includes information from foundations; federated fundraising organizations; regional, county, and municipal government; and United Way of Greater Cleveland. (See Table 1.)

Thirty-one percent of the revenues are foundations. Government funding provides 2 percent of the total countywide funding. United Way of Greater Cleveland's funds account for nearly 67 percent of the total from Investment Committee allocations and designations. United Way is a significant contributor to the overall funding environment of this core service. Note that funding for services and funding for equipment is mixed. (See Table 1.)

Table 1: Annual Revenue for Core Services: Speech and Hearing, 2003-2004.

Funder	Period	A		B	
		Identifiable Total Dollars County-wide		Total Dollars UW-Funded Agencies (Actual FY2004)	
		Amount	% of Total (A)	Amount	% of Total (B)
Total - Contributions and dues (less UW designations)			0.00%	220,000	11.43%
Britton Fund	2004	10,000			
Cleveland Foundation, The	2004	690			
Mt. Sinai Health Care Foundation, The	2003	24,044			
Prentiss Foundation, Elisabeth Severance				75,000	
Reuter Foundation, The	2004	10,000			
Saint Luke's Foundation	2004	58,200			
Other Private Foundations - Not Elsewhere Classified				121,000	
Cleveland Electric Illuminating Co. Foundation	2004	1,000			
Other Corporate Foundations - Not Elsewhere Classified	2003	1,000			
Total - Foundations & Trusts		104,934	30.84%	196,000	10.18%
Total - Special Events - Growth			0.00%	93,000	4.83%
Department of Senior and Adult Services	2004	5,883			
Subtotal Cuyahoga County Funding Sources		5,883	1.73%	0	0.00%
Medicaid				85,770	
Medicare				19,060	
Other Private Insurer				324,020	
Subtotal Third Party Payee/Direct Bill		0	0.00%	428,850	22.28%
Total - Contracts/grants from government organizations		5,883	1.73%	428,850	22.28%
Private Pay/Fee for Service				524,150	
Total - Program Service Fees		0	0.00%	524,150	27.23%
Total - Investment Income			0.00%	95,000	4.94%
Total - All Other Revenue			0.00%	98,300	5.11%
Total - Prior Period balances/interfund transfers			0.00%	40,000	2.08%
Subtotal Non - UWGrCle Support		110,817	32.57%	1,695,300	88.08%
Total - UWGrCle designations applied to program		23,500	6.91%	23,500	1.22%
Total - UWGrCle investment committee allocation		205,907	60.52%	205,907	10.70%
Subtotal UWGrCle Support - 4001, 4701 & 4703		229,407	67.43%	229,407	11.92%
Total Support/Revenue		340,224	100%	1,924,707	100%

* Medicaid dollars for Medicaid Service - Therapy (\$2,257,394 in 2004) - Falls into AIRS 1 Health Care and has been entered as an aggregate total for that AIRS Level. Therapy includes the following Core Services: Condition Specific Rehabilitation and Speech & Hearing.

REIMBURSEMENT/COST

As discussed in the public policy section, third party reimbursement for speech and/or hearing services is an important issue for this core service. Many health plans significantly limit their coverage of speech and hearing services, especially in pediatric situations. As an example, in October of 2006, Aetna, a major health plan in Ohio and nationwide, notified providers that they would be reducing their rates to 65 percent of Medicare, and Medicare pays roughly 60 percent of cost. Cleveland Speech and Hearing reports that this provider will reimburse 36 percent of cost (Bernard Henri, personal communication, October 12, 2006).

In Ohio, services for speech, hearing, and language disorders are covered by Medicaid and Medicare. Note that 33 states cover the service, and 18 do not (Kaiser Family Foundation, 2004). However, Ohio Medicaid does not isolate speech therapy reimbursements and Medicaid HMO info is not available.

There are some specific issues with Medicaid and Medicare reimbursements (Henri, 2005):

- Medicaid reimbursements are approximately 60 percent of direct costs. This is a major issue. Ohio is moving to Medicaid HMOs for the aged, blind, disabled, and possibly for other groups.
- Medicare reimbursements are also an issue. An annual cap of \$1,750 for physical therapy (PT) and speech pathology services *combined* became effective January 1, 2006. Usually, PT gets 70 percent of the monies because they get the patients first. Patients on Medicare require a 30 day recertification by the attending physician, which can be difficult to obtain in a timely fashion.

V. WHAT WORKS; WHAT DOESN'T

IMPACT ON INDIVIDUALS/FAMILIES

According to the Information Center on Disabilities and Gifted Education (1997), considerable research has been directed toward the effectiveness of cochlear implants that have been used to treat hearing loss over the past 10 to 15 years. Most early research focused on the benefit gained from cochlear implants in conjunction with speech reading (Geers & Moog, 1992). More recent research has investigated the receptive and expressive language gains experienced by users of cochlear implants (Hasenstab & Tobey, 1991). Early studies of children showed that they followed a pattern similar to adults in that most users had post-lingual hearing losses, i.e., after the age of five. More recently, benefits to pre-lingually hearing impaired (i.e., before the age of two) children have been observed. Research shows that pediatric implant users gained substantial benefit from multi-channel cochlear implants, that these benefits develop over a long course of time, and that multi-channel implants are more beneficial than single-channel devices (Hasenstab, 1989). In short, the cochlear implant can enable a young child to make the connection between hearing words and their pronunciation/intonation and speaking and understanding them from earliest years, thus enabling them to achieve school success as much as their hearing classmates.

What Works

According to the National Institute on Deafness and Other Communications Disorders (2005), over the last several decades, there have been many other forms of progress, many of them the results of research.

- First, on the preventative side, vaccines now prevent many illnesses such as measles, mumps, meningitis, and rubella that once were major causes of hearing loss. Understanding the consequences of reduced hearing in childhood has led to prompt treatment of middle ear infections in children, preventing hearing loss later in life and helping children to thrive. Newborn babies with hearing loss and toddlers with language problems are identified at an early age so that developmental consequences are minimized through prompt and early involvement in intervention. Understanding the ototoxic action of antibiotics has led to the development of strategies for minimizing damage to hearing. Understanding that exposure to noise results in hearing loss has led to the increased use of ear protection.
- Second, on the treatment side, more is known about how infants who are deaf learn sign language and how sign language compares with spoken language. The amount of linguistic input that children receive affects the rate at which they learn language and perhaps their eventual language proficiency. More is known about reading ability in adults who are deaf and this information may lead to improved methods of reading instruction. Cochlear implants allow children who have a profound hearing impairment to attend mainstream schools and allow adults to communicate more effectively.
- Third, improved technology has enabled better hearing results for many. Hearing aids are now designed to work better in noisy

environments, for example, by detecting the direction from which sounds arise. Advances in technology and science have created new opportunities to design devices that restore or improve function for individuals with balance, voice, and speech disorders. New surgical approaches and combinations of chemotherapy and radiation have improved rates of preservation of voice and speech when treating cancers of the head and neck.

- Fourth, genetic research studies have begun to identify the genes that contribute to stuttering, phonological disorders, and language disorders.

What Doesn't Work

The dispensing of hearing aids by untrained representatives who are not audiologists has been problematic for the consumer because dispensing a hearing aid does not require a licensed audiologist. More and more hearing aid manufacturers are utilizing licensed audiologists to dispense hearing aids. Prior to dispensing a hearing aid, the assessment process utilizing the most up to date audiological testing equipment is the most critical.

IMPACT ON COMMUNITY

According to the Better Hearing Institute (2001):

The annual cost in the U.S. in terms of lost productivity, special education, and medical care because of untreated hearing loss is \$56 billion. A study done in Australia showed that people with profound hearing loss in that country attained on average only a third grade education. Their personal loss in earning potential and quality of life is enormous. (Kochkin, 2005)

As noted earlier, the infant screening program can save the costs of (K-12) special education for a child with hearing loss—as much as \$420,000—if the child is identified and given appropriate early intervention (Isaacson & Vora, 2003).

ACCREDITATIONS/STANDARDS/CERTIFICATIONS

Leading practices require that hearing loss assessment take place with a state- licensed clinical audiologist and by a board-certified otolaryngologist. They recommend that the equipment used in the audiological examination conform to the standards of the American National Standards Institute (ANSI) (Isaacson & Vora, 2003).

Audiologists and speech-language pathologists must be licensed to practice by the State of Ohio. They may be certified by the American Speech Language Association, which is considered in the licensure process. A master's degree is the entry level requirement to practice in both pathology fields. On the other hand, interpreters for the deaf do not have any educational level requirements, but are certified by the National Registry of Interpreters for the Deaf. There are different levels of certification competency that focus on places (such as medical, or legal) where interpreter services occur.



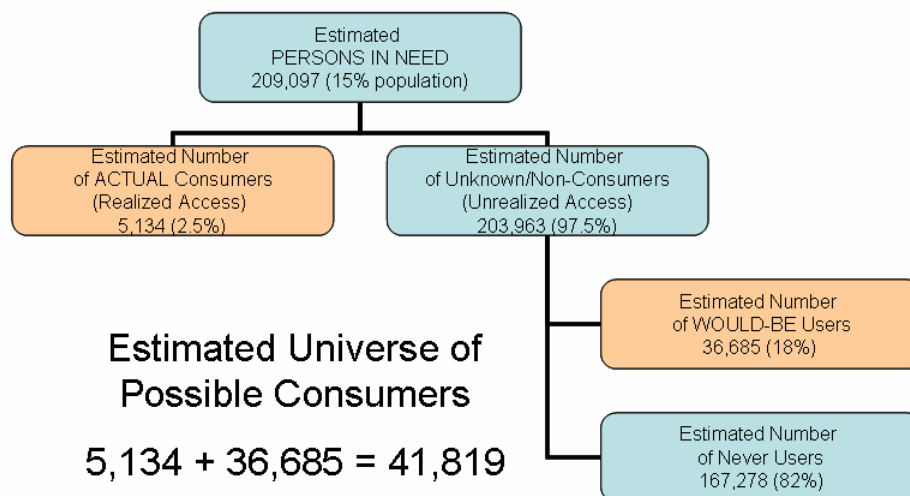
Some nonprofit hearing and speech organizations are accredited by the Commission for Accreditation of Rehabilitation Facilities (CARF) under service standards for outpatient medical rehabilitation.

VI. GAP ANALYSIS

The following is the formula for arriving at the estimated universe of possible consumers for Speech and Hearing:

- An estimated 209,097 persons need speech and hearing services, which is the estimate of persons of all ages with a communication disorder according to the National Institute on Deafness and Other Communication Disorders (2005-06).
- Based on available information about actual consumers, approximately 5,134 persons have realized access to speech and hearing services through either United Way of Greater Cleveland (5,112) or through the Cuyahoga County Department of Senior and Adult Services (DSAS) (22). It is assumed that these are unduplicated counts across the two funding sources.
- This leaves a net estimate of 203,963 persons who are unknown or non-consumers of speech and hearing services. (209, 097 – 5,134 = 203,963)
- Assuming that only 20 percent of 209,097 persons in need would consume the service results in an estimated universe of 41,819 possible consumers. (209, 097 x 20% = 41,819). In the absence of other research, this assumption is based on the finding that only one of five persons who need a hearing aid wears one (NIDCD, 2006).
- The estimated number of “would-be” consumers is 36,685 persons (41,819 – 5,134 = 36,685). This is unrealized access. (See Figure 6.)

Figure 6: Consumer Estimates: Speech and Hearing



Service Site Index

Countywide, there are 47 service sites for speech and hearing services. This is a ratio of 890 possible consumers (estimated 41,819 total) per service site countywide. Service providers report to United Way - First Call for Help which zip codes are included in their respective service areas. The Service Site Index in Attachment 9 lists the number of sites per zip code and provides a ratio of consumers to service sites for each zip code. This is a measure of potential service accessibility by possible universe of service consumers per zip code area. The lower the ratio, the greater is the chance of receiving the service.

The ratios on the Service Site Index range from a high of 37:1 in zip code 44107 (Lakewood/Cleveland) to a low of 2:1 in zip code 44040 (Gates Mills/Mayfield Village). In addition to 44107, six other zip codes have ratios greater than 30 consumers to one service site:

- 44105 (Cleveland/NewburghHts/GarfieldHts, 36:1) (high minority area);
- 44130 (Parma/Cleveland, 35:1);
- 44102 (Cleveland/Brooklyn, 34:1) (high minority area);
- 44120 (ShakerHts/Cleveland, 31:1) (high minority area);
- 44118 (ClevelandHts/UniversityHts/ShakerHts, 30:1); and
- 44109 (Cleveland/BrooklynHts, 30:1) (high minority area).

Service Capacity

Participants in focus groups conducted for United Way of Greater Cleveland's core service research (2005) identified several issues with rehabilitation services:

- The shrinkage of philanthropic as well as public resources for health and social services will make it more difficult for moderate-, middle-, low-income, or working poor persons to obtain services because consumers will be required to pay greater costs for services. Services will only be available to persons with insurance; generally this would be persons who qualify for Medicaid/Medicare or upper-income persons who are highly insured.
- Individuals will increasingly have to make greater contributions toward their health care costs in the forms of higher deductibles, co-pays, and lower reimbursements for service, as well as shrinkage in Medicaid eligibility.
- The underserved will increase. Funding will not support persons receiving the full set of services that optimal treatment for their condition would call for.
- There is a service gap with the hearing children of deaf adults. The children of deaf parents may not develop normal language.

VII. SUMMARY

In summary there are several findings that can be drawn from this review.

- Communication disorders are now recognized as one of the major health concerns in this country. Loss or impairment of speech or hearing may include communicative disorders. The disorders include a long list of issues including attention deficit hyperactivity disorder, dementia, dysarthria, various forms of cancer, language-based learning disabilities, stroke, and stuttering.
- The public policy issues in the area of speech and hearing include the protection of the rights of deaf and hard-of-hearing consumers, financial assistance for services and assistive hearing devices, and regulatory issues.
- Medicaid is a major government funder of speech and hearing services. Reimbursements are approximately 60 percent of direct costs. Ohio is moving to Medicaid HMOs for the aged, blind, disabled, and possibly for other groups.
- Medicare reimbursements have an annual cap of \$1,750 for physical therapy (PT) and speech pathology services *combined*.
- As of May 11, 2006, \$340,224 in revenues for speech and hearing services has been identified countywide.
- Children obtain substantial services from the Individual Disabilities Education Act (IDEA) through the various school districts.
- Vaccines now prevent many illnesses such as measles, mumps, meningitis, and rubella, which once were major causes of hearing loss.
- Cochlear implants allow children with a profound hearing impairment to attend mainstream schools and allow adults to communicate more effectively.
- Improved technology has enabled better hearing results for many. Hearing aids are now designed to work better in noisy environments, for example, by detecting the direction from which sounds arise.
- The dispensing of hearing aids by untrained representatives of for-profit hearing aid companies has been problematic for the consumer because dispensing a hearing aid does not require a licensed audiologist.
- The estimated universe of possible consumers is 41,819, including both realized access (5,134) and unrealized access (36,685).
- Countywide, there are 47 service sites for speech and hearing services. This is a ratio of 890 possible consumers (estimated 41,819 total) per service site countywide.

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ATTACHMENTS

Attachment 1: Researcher List

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Thanks to **The Center for Community Solutions** for providing multiple sources of information.

Attachment 2: Technical Notes

Technical Notes: Methodology, Caveats, Limitations of Data

The following provides descriptions, definitions, methodologies, caveats, or limitations of data for the following components of the core service reports:

- Unit of Analysis
- First Call for Help Data
- Funding Information for Core Services
- Consumer and Financial Data: Caveats
- Gap Analysis Methodology & Limitations
- Service Site Index

Unit of Analysis

The core service is the unit of analysis. United Way of Greater Cleveland either funds or could fund 80 core services. These are the object and subject of the research, specific to Cuyahoga County. A separate report has been developed for each service. It must be noted that the aggregate of any quantifiable data across all of the reports does not comprise a picture of the totality of health and human services in Cuyahoga County because there are many more than 80 services that comprise the community's safety net.

The unit of analysis for estimates of service consumers is the individual, the family, or the household.

United Way - First Call for Help Data

For most core services, United Way First Call for Help (FCFH), the community's resource and referral service data, was used in tables that show the number of service providers and service sites, the geographic location of service providers by zip code, the service area by zip code as reported by providers of the respective services, and to show unmet need and greatest increase/decrease in calls received by FCFH for a particular core service.

It is important to remember that FCFH receives calls from a variety of sources that include people calling on behalf of a prospective consumer such as social workers, provider agencies, relatives, etc. Not all calls come directly from a prospective consumer, so some of the zip codes are for hospitals and business addresses, although the numbers for these zip codes are relatively small.

Calls also may be from people who are not interested in receiving a service, but wish instead to make a contribution to a program such as clothing, household items, food, books, crafts supplies, etc.

Because, in many instances, FCFH codes its data with a different level of core services than the 80 core services identified by the United Way Community Investment staff as fundable services, it was necessary to develop a crosswalk. This crosswalk was used for a number of services,

however, seven services did not have a match in the FCFH database. The staff of United Way - First Call for Help gave explanations which follow each core service):

- Adolescent/Youth Counseling: A caller asking about help with their troubled teenager would be referred by the type of counseling rather than age. (Example: counseling for drugs, family, sexual abuse, etc.)
- Advocacy: FCFH does not receive calls from people about advocacy.
- Child Care: Calls are directed to Starting Point.
- Condition Specific Rehabilitation Services: FCFH would refer caller back to their primary care physician for a referral.
- Early Intervention for Mental Illness: FCFH does not receive calls for this, but if they did, they would refer to the county's Help Me Grow program.
- Family Support Centers: FCFH defines data by specific service rather than type of agency. Depending on the call, the caller may be referred to General Counseling or Early Intervention for Infants and Toddlers with Disabilities, and so on.
- Preschools: Calls are directed to Starting Point.

A different match was used for other services that had no crosswalk.

- Medical Transportation and Senior Ride: FCFH uses "Paratransit" as they do not differentiate between senior transportation, medical transportation, and transportation for the disabled.
- Outpatient Mental Health Facilities: FCFH uses "Mental Health Drop-in Centers."

It must also be noted that, for the most part, the FCFH database does not include for-profit agencies. In the case of home health care providers, we contacted the Long Term Care Ombudsman for a more complete list of provider agencies which includes for-profit organizations.

There were several instances where the FCFH database did not code a United Way-funded agency with the core service for which they were receiving funding. In these instances, the agency was added manually to the Service Provider Table along with their site locations. The core services with the respective United Way of Greater Cleveland agencies that were added are:

- Case/Care Management – Care Alliance, Cystic Fibrosis, Epilepsy Foundation, Golden Age Centers
- Comprehensive Outpatient Substance Abuse Treatment – The Covenant
- Disease/Disability Information – The Muscular Disease Society of Northeastern Ohio
- Early Intervention for Infants and Toddlers with Disabilities – United Cerebral Palsy
- Medical Expense Assistance – North Coast Health Ministry
- Medical Transportation (Paratransit in FCFH) – Kidney Foundation of Ohio
- Senior Centers – Catholic Charities Services Corporation, Jewish Community Center of Cleveland, Jewish Family Service Association of Cleveland, University Settlement House.
- Volunteer Development – Neighborhood Leadership Institute

It must also be noted that when numbers are low for trend data reported, the high percentages are slightly exaggerated.

Funding Information for Core Services

We collected financial information for each core service on a countywide level from multiple sources including major government funders, foundations, federated fund raising organizations, and United Way of Greater Cleveland. While we were successful in gathering a substantial amount of data, there is much that has not been collected. It must also be noted that even if we had all major public and private funding gathered, this would not create a total picture of health and human service funding in Cuyahoga County because there are more than 80 core services provided. The following provide highlights of data collected and some of the limitations for each source. It is important to note that funding in each source is changing and represents point in time amounts. The typical period for trend data, when available, is 2002, 2003, and 2004. Note: some services are funded by private insurance or other self-pay arrangements.

Foundation Funding

We attempted to obtain foundation funding amounts for each core service from the latest annual report or 990 PF (foundation tax return to the IRS) of each major foundation that funds social services in Greater Cleveland. Wherever a description of the grant purpose was given, we used our best judgment to match the grant to the appropriate core service. If the grant fell within more than one core service area, it was not listed. When no description was given, the grant was treated like a general operating grant and assigned to a core service only when the mission of the grant recipient fell mainly within one particular core service. In-kind donations, grants for capital and equipment expenses and administrative salaries were not used. When grants were \$10,000 or greater, they were listed by name of the foundation. All others were placed under Other Foundations and not listed. Typically, we did not attempt to provide trend financial data for foundation funding of core services because of the changing nature of funded programs from year to year.

Federated Funding Sources

We approached the major federated funders of core services in Greater Cleveland for funding and consumer information. Some data provided was for a single point in time; others provided three years of trend data. We often had to do a cross walk of United Way of Greater Cleveland funded core services against those funded by federated agencies to agree on the services.

Government Funding

We approached every major government funder for funding amounts for each core service and also did Internet searches for some federal government sources. Due to the constant state of change in government funding, it is important to note that the data provided is a snapshot in time and that many of the programs funded in 2004 have changed definition, are funded through different revenue sources, or no longer exist at all due to a lack of funding. This is particularly true of Community Development Block Grant dollars which have decreased due to shifting federal priorities.

Every effort was made to appropriately match government funding data to the correct core service area; however, this was not always possible as frequently the service definitions were not a one-to-one match. It was necessary, in some instances, to take the closest match or use the sore service which represented a majority of the services being provided.

In other cases, it was not possible to select a specific core service. An example is Medicaid in which Medicaid-defined services crossed over more than four core services in some instances. In cases where Medicaid is a significant source of revenue, the data was entered as an

aggregate total at the appropriate AIRS level. These aggregates are footnoted under the appropriate funding table.

Every effort was made to include data from municipalities. However, many did not respond after repeated requests for information. We would like to thank those who took the time to help with this project.

Medicaid Funding

A significant portion of Medicaid funding was NOT entered under the countywide total in the core service reports for two reasons: first, because many of the Medicaid services are not a one-to-one match with United Way core services, and second because some Medicaid services fall into more than one AIRS Level 1 categories. In the first instance, Medicaid funding was entered as an aggregate total at the AIRS 1 level, and in the second instance Medicaid funding was entered as an aggregate total under Third Party Payee/Direct Bill in the combined Master Revenue file of funding across all nine AIRS Levels. They are as follows:

Entered as Aggregate Total Under Appropriate AIRS Level

- Medicaid Service - Home Care (\$17,787,703 in 2004) - Falls into AIRS 1 Health Care and includes the following core services: daily living aids and home health care.
- Medicaid Service - CADAS (\$8,522,183 in 2004) - Falls into AIRS 1 Health Care and includes the following core services: comprehensive outpatient substance abuse treatment, residential substance abuse treatment programs, substance abuse education and prevention.
- Medicaid Service - Therapy (\$2,257,394 in 2004) - Falls into AIRS 1 Health Care and includes the following core services: condition specific rehabilitation, and speech & hearing.
- Medicaid Service - CMH (\$67,773,487 in 2004) - Falls into AIRS 1 Mental Health Care & Counseling and includes the following core services: supportive therapies, adolescent/youth counseling, children's residential treatment facilities, early intervention for mental illness, general counseling services (outpatient mental health facilities), and psychiatric day treatment.

Entered as Aggregate Total Under Third Party Payee/Direct Bill

- Medicaid Service - Inpatient Hospital (\$188,329,269 in 2004) - Falls into two different AIRS 1 categories: Basic needs and health care. It includes the following core services: condition specific rehabilitation and medical expense assistance.
- Medicaid Service - Waiver (\$128,921,354 in 2004) – This category included all PASSPORT services. Since we reported PASSPORT separately, in order to avoid duplication, we deducted the PASSPORT total of \$52,676,048 from this number and reported the remaining \$76,245,306. This total falls into AIRS 1 Basic Needs, Health Care and Individual & Family Life and includes the following core services: adult day care, home-delivered meals, home health care and in-home assistance.
- Medicaid Service - Habilitation (\$55,550,307 in 2004) - Falls into AIRS 1 Health Care and Individual & Family Life and includes the following core services: condition specific rehabilitation services, early intervention for infants and toddlers with disabilities/delays, and residential living options for people with disabilities.

United Way of Greater Cleveland Funding

Financial data for core services funded by United Way of Greater Cleveland was for FY 2004 (July 2003 to June 2004). It included allocations through the community investment committees

and donor designations that United Way funded agencies applied to the respective core services. It is important to note that not all United Way funded agencies applied donor designated gifts, which are unrestricted, to the core service for which they receive United Way funding. It did not include donor designations that non-United Way funded agencies used for any of the 80 core services.

United Way Agency Revenues

Annually United Way-funded agencies submit revenue budgets to United Way for each funded core service. This information for FY 2004 is reported. However, all of the agency data may not be included in the countywide data as agencies may have assigned dollars from unrestricted grants to a specific core service, or allocated a portion of grant monies that fell within two or more core service areas. It was not always possible to match countywide government or foundation funding with that reported by the agencies and that gathered from other funding sources.

Consumer and Financial Data: Caveats

The following applies to revenue sources on tables and graphs and their corresponding consumer data used in the consumer demographics and zip code tables.

All Core Services

Data was self-verified by the funder/provider. Whenever data provided by a funder appeared to be inconsistent or incorrect, an attempt was made to contact the funder. If the funder responded, the data was either adjusted according to their instructions, or the reason for discrepancies footnoted. If they did not respond, or if they said it was correct, the data was left as submitted.

Demographic and zip code data provided by the funder/provider is frequently taken from consumer intake forms which may have missing or incomplete data, or from provider agency databases which contain data entry errors or incomplete consumer intake forms. Whenever possible, the funder was asked for corrected data. In cases where a correction was not possible, the data was counted as either unknown or missing. The usage of these terms is footnoted at the bottom of each table and is explained more fully in the Gap Analysis section of this attachment.

It was not always possible to get information in the format requested as each funder tracks data differently, using different service definitions, terminology and variables. Wherever possible, data was matched to a consistent report format.

When a funder could not provide consumer demographics, but could provide an estimated percentage of consumers by category, we took the total number of consumers and applied the percentages to come up with estimated numbers for the consumer tables. For example, Medicaid tracks individual recipients throughout the year, entering new data if there is a change, each time a claim occurs. Thus, a consumer who has a birthday between claims will appear in the system for that year with two different ages.

To resolve this, the percentage of consumers in each age range was determined for the total number of duplicated consumer ages. Those percentages were then applied to the total number of unduplicated consumers for the year in order to reach a total number of unduplicated consumers for each age range.

The time periods for both revenue and consumers vary by funder/provider. United Way Program Report data is for FY 2004 (July 2003 to June 2004). Other funder/provider data is for either a January to December or July to June fiscal year.

Gap Analysis Methodology & Limitations

Based on Anderson's (1964) seminal needs assessment model, realized access is defined as the number of consumers who receive service while unrealized access is the estimated number of consumers who need and would utilize a service, but are not currently receiving it. This could be considered the service gap. Unrealized consumer access to services drives the need for change in the social service delivery system. Ensuring unrealized consumer access to services requires new models of service delivery related to access, effective use of resources, data management, and funding. There were multiple steps used to conduct a gap analysis:

- *Estimate of persons in need of the service:* Unless local research was conducted to determine need for a given service, this estimate was obtained by either using U.S. Census data for Cuyahoga County or applying percentages from national studies and reports to the census data. All references and percentages are footnoted in the respective graphs or tables. In most cases this percentage was also applied to actual 1990 Census figures and population projections 2005 through 2015 that were done by the Ohio Department of Development.
- *Estimate of number of ACTUAL consumers in the public systems (realized access):* Data submitted to United Way by funded agencies was aggregated to determine the number of consumers for each core service. The period was FY 2004, which is July 2003 through July 2004.
 - In some cases data was “unknown,” defined as data not collected by agency because no tracking system was available or the type of service delivered made it difficult (i.e., group presentations, telephone information and referral, and drop-ins). This also represents data not completed by consumers either deliberately or inadvertently on intake forms.
 - In other cases, data was missing that, for United Way data, represented computational errors or incorrect completion of online reports. For all other data, “missing” represents data funders/providers were unable to provide.
 - There was no check of the accuracy of data submitted by agencies.
 - Major government funders were asked to provide information about the number of consumers for the respective core services that they funded. In most cases, services were not defined in the same way as the United Way core services which are based on the Alliance for Information and Referral Systems (AIRS) taxonomy. To accommodate these differences, customized crosswalks were developed.
 - We assumed that the numbers of consumers across funding sources were not unduplicated and thus made a judgment about which numbers would be the best estimate of an unduplicated number.
 - The estimate of consumers is not inclusive since it does not include numbers of consumers who use their personal resources to pay for services, nor for other private resources such as insurance or agency fundraising. In addition, it was not always possible to obtain information from some government funders.
- *Estimate of number of “unknown/non-consumers”:* This is the difference between the estimated number of actual consumers and the estimate of persons in need.

- *Estimate of number of “would-be users” (unrealized access):* This is the estimate of persons who would use a service if it were available, typically based on research.
- *Estimate of number of “never users”:* This is the difference between the estimated number of unknown/non-consumers and would-be users.
- *Estimate of “universe of possible consumers”:* This is the total of those actually receiving the service (realized access) and those would-be users (unrealized access).

We recognize that this is not a perfect method for assessing either realized or unrealized access to core services. However, we opted to use an imperfect method rather than no method to demonstrate both the complexity and the usefulness of quantifying realized and unrealized access to services as a first step toward a more rigorous methodology. In the business sector this would be a form of market analysis. We also recognize that actual consumer numbers are not unduplicated across funders, or across core services. Thus, there is much work yet to be done to gain realistic estimates of needs.

The numbers we provided are on a countywide level. We recognize that there could be, and often are, differences by demographics and geographical area. In the Actual Consumer Demographics attachment, we have identified the profile of the base consumer group from census, but have little on the estimated persons in need. Occasionally, there is information from other research that describes differences among different racial, ethnic, gender, age, or income groups that is discussed in the narrative. There is also inconsistent information for consumers funded by various governmental bodies. In other words, some funders provided demographic data and others did not. In the Actual Consumer Zip Codes attachment, we have also attempted to identify the geographic profile of the estimated persons in need and actual consumers. However, this information has the same limitations as the demographics.

Service Site Index

For many services a service site index was developed. It provides a ratio of estimated consumers per service site on a countywide level and for each zip code within the county. The ratio is based on the number derived from the gap analysis described in the previous section and on the number of providers who reported to United Way – First Call for Help whether a specific service site includes a given zip code in its service area. A provider site is located in a single zip code, but could serve multiple zip codes. The ratio is a measure of potential service accessibility by estimated universe of service consumers per zip code area. This measure does not include the capacity of providers to offer the service, for example, the number of consumers that can be served on a daily basis. It is only capturing whether there is a possibility of being a consumer. The lower the ratio, the greater is the chance of receiving service. The index also gives an indication of which zip codes have higher ratios which means that consumers have a lower probability of receiving a service as well as any patterns in zip codes that have high percentages of African Americans, Asians, or Hispanics. A map is also attached which provides a graphic picture of the estimated consumers by zip code.

Based on the numbers of providers that report to FCFH whether they serve a given zip code, we had assumed that there would be greater variability across zip codes. In reality, many report that they serve the entire county. Thus the variability across zip codes is often primarily because of differences in the population numbers rather than in service sites that offer service in a given zip code.

Specific Service Issues

Senior Services

“Senior Centers” was used as a catch-all category when the funder-defined service covered more than one senior success core service and could not be accurately allocated among the separate core services. Often, funding for transportation and home-delivered meals was not broken out from senior activities and supportive services at the municipal level, so it was placed under Senior Centers. Because the core services for congregate and home-delivered meals and senior ride were tracked separately, funding for these core services was not included under Senior Centers to avoid duplication of resources, even though senior center activities can and do include congregate meals.

Senior Ride includes disabled individuals of all ages as well as seniors for most funders with the notable exception of Western Reserve Area Agency on Aging (WRAAA) that requires an individual to be 60 years of age or older in order to receive services. If the transportation service was not provided by a senior center, the number of consumers reflects the number of riders using the system and contains duplicates (e.g. paratransit).

Home improvement/accessibility data includes programs for low-income families and people of all ages with disabilities, as well as seniors.

References

- Anderson, Ronald M. (1995, March). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior*, 36(1): 1-10.
- Wan, Thomas T. H., Odell, Barbara Gill, & Lewis, David T. (1982). *Promoting the well-being of the elderly: A community diagnosis*. New York: The Halworth Press.

Attachment 3: Actual Consumer Demographics

Core Service: Speech & Hearing Core Service LR-800				
		Estimated Persons in Need	Actual Number/Percent of Consumers by Funding Source***	
	Total Population (%)*	Estimated Population with Communication Disorders (%)**	UW Program Report Data Cuy Cnty Only (%)	DSAS (%)
PERIOD	1/1/2000-12/31/2000	1/1/2000-12/31/2000		
TOTAL	1,393,978	209,097	5,112	22
Percent		15.0%		
GENDER				
Male	47.2%	N/A	47.6%	72.7%
Female	52.8%	N/A	43.6%	27.3%
Unknown Data****			8.8%	0.0%
Missing Data*****				
RACE*****				
White alone	67.1%	N/A	14.7%	50.0%
Black or African American alone/combination	27.9%	N/A	43.0%	31.8%
Asian alone/combination	2.1%	N/A	0.5%	0.0%
American Indian and Alaska Native alone/combination	0.7%	N/A	0.2%	0.0%
Native Hawaiian and Other Pacific Islander alone/combination	0.1%	N/A	0.0%	0.0%
Some other race alone/combination	2.1%	N/A	1.9%	0.0%
Unknown Data****			39.8%	0.0%
Missing Data****				18.2%
HISPANIC*****	3.3%	N/A	0.0%	9.1%
AGE				
0-4	6.5%	N/A	49.7%	0.0%
5-9	7.3%	N/A	13.2%	0.0%
10-14	7.1%	N/A	5.1%	0.0%
15-19	6.4%	N/A	1.5%	0.0%
20-34	19.1%	N/A	2.2%	0.0%
35-54	29.3%	N/A	4.0%	0.0%
55-64	8.7%	N/A	2.7%	0.0%
65-74	7.8%	N/A	3.5%	0.0%
75+	7.8%	N/A	13.9%	0.0%
Unknown Data****			4.2%	0.0%
Missing Data****				100.0%
INCOME*****				
Average Household Size	2.4	N/A	N/A	N/A
\$0-\$9,999	11.3%	N/A	0.0%	0.0%
\$10,000-\$14,999	6.9%	N/A	0.0%	0.0%
\$15,000-\$19,999	6.7%	N/A	0.0%	0.0%
\$20,000-\$29,999	13.6%	N/A	0.0%	0.0%
\$30,000 and above	61.5%	N/A	0.0%	0.0%
Unknown Data****			100.0%	0.0%
Missing Data****				100.0%
Totals	100.0%	N/A	100.0%	100.0%

Attachment 3: Actual Consumer Demographics (continued)

<p>* U.S. Census 2000, SF1 (P1); SF4 (PCT 144)</p>
<p>**National Institute for Deafness and Other Communication Disorders - 15 percent of population has a communication disorder. (2005-06)</p>
<p>***Note: Consumers could be funded by more than one funding source; thus the columns are not necessarily mutually exclusive.</p>
<p>****Unknown Data - Represents data not collected by agency because no tracking system is available or type of service delivered makes it difficult (i.e., group presentations, telephone information and referral, and drop-ins). Also represents data not completed by clients either deliberately or inadvertently on intake forms.</p>
<p>*****Missing Data - For United Way Data - represents computational errors or incorrect completion of online report. For all other data - represents data funder was unable to provide.</p>
<p>*****The race categories and data utilize US Census SF4 "Race Iterations," which allow for multiple races to be selected by census respondents. As a result, totals will add to > 100% of population. Universe is "Total Races Tallied." Except "White Alone", all racial categories are "... alone or in combination with some other race". This method isolates and minimizes the non-minority population ("White alone").</p>
<p>*****Hispanic - Amount in this field is from data provided by clients on intake forms and may not be accurate as clients may either deliberately or inadvertently provide incomplete data, or data may not be collected by the agency.</p>
<p>*****The U.S. Census reports income by household or family, not individuals. Estimates by income category were derived by applying the ratio of "total county population (1,393,978) to total households (571,606) = 2.4. The number of households in each income category was multiplied by 2.4 to arrive at an estimate of individuals by income category. The assumption is that the average household size applies to each income category which may result in more conservative estimates for children and the "old old" which may actually have larger proportions of persons in the lower income categories.</p>

Attachment 4: Actual Consumer Zip Codes

Core Service: Speech and Hearing LR-800					
			Estimated Persons in Need	Actual Number/Percent of Consumers by Funding Source ^{***}	
	City/Town (% Cleveland)	Total Population (%) [*]	Estimated Population with Communication Disorders (%) ^{**}	UW Program Report Data(%)	DSAS (%)
Period		1/1/2000-12/31/2000	1/1/2000-12/31/2000	7/1/2003-6/30/2004	2004
TOTAL		1,393,978	209,097	5,112	22
Percent			15.0%		
44017	Berea	1.4%	N/A	0.1%	0.0%
44022	Bentleyville	1.3%	N/A	1.1%	0.0%
44040	Gates Mills/Mayfield Village	0.2%	N/A	0.2%	0.0%
44070	North Olmsted	2.4%	N/A	0.3%	0.0%
44101	Cleveland (100%)	0.0%	N/A	0.1%	0.0%
44102	Cleveland/Brooklyn (95%)	3.7%	N/A	2.0%	
44103	Cleveland (100%)	1.8%	N/A	1.9%	
44104	Cleveland (100%)	2.1%	N/A	2.1%	
44105	Cleveland/NewburghHts/GarfieldHts (75%)	3.9%	N/A	3.0%	
44106	Cleveland/Cleveland Hts (60%)	2.3%	N/A	2.9%	
44107	Lakewood/Cleveland	4.0%	N/A	0.8%	
44108	Cleveland/Bratenahl (90%)	2.6%	N/A	3.5%	
44109	Cleveland/Brooklyn Hts (98%)	3.3%	N/A	1.3%	
44110	Cleveland/East Cleveland (98%)	1.9%	N/A	1.6%	100.0%
44111	Cleveland (100%)	3.1%	N/A	0.8%	
44112	East Cleveland/Cleveland	2.4%	N/A	2.4%	
44113	Cleveland (100%)	1.4%	N/A	0.8%	
44114	Cleveland (100%)	0.3%	N/A	0.2%	
44115	Cleveland (100%)	0.6%	N/A	1.0%	
44116	Rocky River	1.5%	N/A	0.1%	
44117	Euclid/Cleveland	0.9%	N/A	0.7%	
44118	ClevelandHts/UniversityHts/ShakerHts	3.2%	N/A	4.0%	
44119	Cleveland/Euclid (50%)	1.0%	N/A	0.4%	
44120	Shaker Hts/Cleveland	3.4%	N/A	2.6%	
44121	University Hts/South Euclid	2.5%	N/A	2.4%	
44122	Beachwood/Highland Hills/ShakerHts	2.5%	N/A	2.4%	
44123	Euclid	1.3%	N/A	0.6%	
44124	Pepper Pike/MayfieldHts/Lyndhurst	2.9%	N/A	3.0%	
44125	Valley View/Garfield Hts	2.1%	N/A	0.8%	
44126	Fairview Park/Cleveland	1.2%	N/A	0.1%	
44127	Cleveland (100%)	0.6%	N/A	0.7%	
44128	Warrensville Hts/Cleveland	2.4%	N/A	1.4%	100.0%
44129	Brooklyn/Parma/Cleveland	2.1%	N/A	0.4%	
44130	Parma/Cleveland	3.8%	N/A	0.7%	
44131	Independence/Seven Hills/BrooklynHts	1.5%	N/A	0.8%	
44132	Euclid	1.1%	N/A	0.6%	
44133	North Royalton	2.0%	N/A	0.5%	
44134	Parma/Cleveland	2.9%	N/A	0.5%	
44135	Cleveland/Linddale (90%)	2.0%	N/A	0.5%	
44136	Strongsville	3.1%	N/A	0.4%	
44137	Maple Hts/Cleveland	1.9%	N/A	0.7%	
44138	Olmsted Twp/Olmsted Falls	1.3%	N/A	0.1%	0.0%
44139	Bentleyville/Glenwillow/Solon	1.6%	N/A	0.5%	0.0%
44140	Bay Village	1.1%	N/A	0.2%	0.0%
44141	Brecksville	1.0%	N/A	0.6%	0.0%
44142	Brookpark/Cleveland	1.5%	N/A	0.2%	0.0%
44143	Highland Hts/Richmond Heights	1.7%	N/A	1.3%	0.0%
44144	Brooklyn/Cleveland	1.6%	N/A	0.2%	0.0%
44145	Westlake	2.3%	N/A	0.3%	0.0%
44146	Walton Hills/Oakwood/Bedford	2.3%	N/A	0.7%	0.0%
44147	Broadview Hts	1.1%	N/A	0.9%	0.0%
44149	Strongsville			0.3%	0.0%
Unknown Cuyahoga County Zip Codes*****				44.4%	0.0%
Missing*****				0.0%	0.0%
Unknown*****				16.0%	0.0%
Total Cuyahoga County*****		100.0%	N/A	100.0%	100.0%
Total Known Cleveland		30.5%	N/A	22.7%	0.0%
Total Known Suburbs		69.5%	N/A	32.9%	0.0%
Unknown & Missing				16.0%	0.0%

Attachment 4: Actual Consumer Zip Codes (continued)

* U.S. Census 2000, SF1 (P1)
**National Institute for Deafness and Other Communication Disorders - 15 percent of population has a communication disorder. (2005-06)
*** Note: Consumers could be funded by more than one funding source; thus the columns are not necessarily mutually exclusive.
****Missing Data - For United Way - represents computational errors or incorrect completion of online report. This data may contain zip codes outside of Cuyahoga County so it is not included in the total number served for Cuyahoga County. For all other data - represents data funder was unable to provide.
*****Unknown Data - Represents data not collected by agency because no tracking system is available or type of service delivered makes it difficult (i.e., group presentations, telephone information and referral, and drop-ins). Also represents data not completed by clients either deliberately or inadvertently on intake forms. This data may contain zip codes outside of Cuyahoga County so it is not included in the total number served for Cuyahoga County.
***** Totals vary because of rounding. County total population 1,393,978 does not correspond to the total of zipcodes because some zipcodes include data from adjacent counties

Attachment 5: Profile of Core Service Providers – 2005

PROFILE OF CORE SERVICE PROVIDERS – 2005		
Source: United Way - First Call for Help Refer Database February 2005		
	Count	Sub-Count: UW-Affiliated
Total Number of Providers	40	1
Number of Providers by Type		
Nonprofit	24	1
For-profit	-	-
Government	16	-
Other	-	-
Total Number of Sites	47	3
Number of Service Sites per Provider		
1	35	3
2 – 5	-	-
6 – 10	-	-
11+	-	-
Geographical Location of Service Sites, by ZIP Code		
44017 - Berea	1	-
44022 - Bentleyville	-	-
44040 - Gates Mills/Mayfield Village	-	-
44070 - North Olmsted	-	-
44101 - Cleveland	-	-
44102 - Cleveland/Brooklyn	-	-
44103 - Cleveland	-	-
44104 - Cleveland	1	-
44105 - Cleveland/Newburgh Hts/Garfield Hts	-	-
44106 - Cleveland/Cleveland Hts	5	1
44107 - Lakewood/Cleveland	2	-
44108 - Cleveland/Bratenahl	1	-
44109 - Cleveland/Brooklyn Hts	-	-
44110 - Cleveland/East Cleveland	-	-
44111 - Cleveland	1	-
44112 - East Cleveland/Cleveland	2	-
44113 - Cleveland	1	-
44114 - Cleveland	2	-
44115 - Cleveland	3	-
44116 - Rocky River	1	-
44117 - Euclid/Cleveland	-	-
44118 - ClevelandHts/UniversityHts/ShakerHts	3	-
44119 - Cleveland/Euclid	-	-
44120 - Shaker Hts/Cleveland	1	-
44121 - University Hts/South Euclid	2	1
44122 - Beachwood/Highland Hills/Shaker Hts.	2	-
44123 - Euclid	-	-
44124 - Pepper Pike/Mayfield Hts./Lyndhurst	1	-
44125 - Valley View/Garfield Hts	-	-
44126 - Fairview Park/Cleveland	-	-
44127 - Cleveland	-	-
44128 - Warrensville Hts/Cleveland	3	-
44129 - Brooklyn/Parma/Cleveland	1	-

Attachment 5: Profile of Core Service Providers – 2005 (continued)

PROFILE OF CORE SERVICE PROVIDERS – 2005		
Source: United Way - First Call for Help Refer Database February 2005		
	Count	Sub-Count: UW-Affiliated
44130 - Parma/Cleveland	3	-
44131 - Independence/Seven Hills/Brooklyn Hts	-	-
44132 - Euclid	-	-
44133 - North Royalton	-	-
44134 - Parma/Cleveland	-	-
44135 - Cleveland/Linndale	1	-
44136 - Strongsville	2	-
44137 - Maple Hts/Cleveland	-	-
44138 - Olmsted Twp/Olmsted Falls	-	-
44139 - Bentleyville/Glenwillow/Solon	1	-
44140 - Bay Village	1	-
44141 - Brecksville	-	-
44142 - Brookpark/Cleveland	-	-
44143 - Highland Hts/Richmond Heights	1	-
44144 - Brooklyn/Cleveland	-	-
44145 - Westlake	2	-
44146 - Walton Hills/Oakwood/Bedford	1	-
44147 - Broadview Hts	2	1
44149 - Strongsville	-	-

Attachment 6: Providers and Functions – 2005

Service Providers & Functions	
Source: United Way - First Call for Help Refer Database February 2005	
Agency	Services
Achievement Centers for Children	Outpatient Rehabilitation and Therapy - Youth
Baldwin-Wallace College	Hearing and Speech Clinic
Benjamin Rose	At Home Care for Elderly (3rd Party Payor / Sliding Scale)
Village of Bratenahl	Recreation - Personal Enrichment
Catholic Charities Health and Human Services - Parish and Community Ministries	American Sign Language Class
Cleveland Clinic Children's Hospital for Rehabilitation	Outpatient Therapies (Satellite Office)
Cleveland Hearing And Speech Center	Voice/Speech Treatment In Parkinson's Disease
Cleveland Heights-University Heights City School District	Community Education - Personal Enrichment Classes
Cleveland Heights-University Heights Public Library	Personal Enrichment Classes
Cleveland Municipal School District	Hearing Clinic
Cleveland State University	Hearing and Speech Services
Cuyahoga County Department of Senior & Adult Services	Home Support Services
Deaf Services of Cleveland	Deaf / Hearing Impaired Services
City of East Cleveland Helen S. Brown Senior Citizen Center	Professional Services
Easter Seals Northeast Ohio	Speech/Language Therapy and Hearing Screenings
Fairview Hospital	Hearing and Speech
Kaiser Permanente of Ohio	Hearing and Speech
Lakewood Hospital	Hearing and Speech
Menorah Park Center for Senior Living	Home Health Services
Montefiore	Rehabilitation - Outpatient and In-Home - Older Adults
National Cued Speech Association	Cued Speech Instruction
Neighborhood Child Care	Sign Language Instruction
Olivet Institutional Baptist Church	Services To The Deaf/Hearing Impaired
Parma Community General Hospital	Outpatient Services / Departments
Polaris Joint Vocational School District	Community Education - Personal Enrichment Classes
Rocky River City School District	Community Education - Personal Enrichment Classes
City of Shaker Heights	Recreation - Personal Enrichment Classes
Solon City School District	Community Education - Personal Enrichment Classes
South Euclid-Lyndhurst City School District	Recreation - Personal Enrichment Classes
Southwest General Health Center	Speech - Communication Skills
St. John West Shore Hospital	Hearing and Speech
St. Vincent Charity Hospital	Hearing and Speech
Strongsville City School District	Community Education - Personal Enrichment Classes
UHHS Bedford Medical Center	Speech

Attachment 6: Providers and Functions – 2005 (continued)

Service Providers & Functions	
Source: United Way - First Call for Help Refer Database February 2005	
Agency	Services
UHHS Richmond Heights Hospital	Speech
United Cerebral Palsy Assn. of Greater Cleveland	Muscle Strengthening for Children
United States Dept. of Veterans Affairs	Rehabilitation Services
Visiting Nurse Assn. Healthcare Partners of Ohio	Rehabilitation Services - Speech/Language Pathology
City of Warrensville Heights	Senior Center - Social Services/Recreation/Forms Completion
Warrensville Heights City School District	Community Education - Personal Enrichment Classes

Bold represents agency funded by United Way for this service.

Attachment 7: United Way - First Call for Help Speech and Hearing Requests – 2000-2004: Greatest Increase/Greatest Decrease

LR-800 Speech and Hearing								
United Way - First Call for Help Requests 2000-2004								
Greatest Increase/(Greatest Decrease)								
Zip Code		TOTAL REQUESTS					%Change*	Avg. #
		2000	2001	2002	2003	2004	00&04	Calls 00-04
44109	Cleveland/Brooklyn Hts	3	1	2	0	4	33%	2
44115	Cleveland	0	0	0	0	3	N/A	1
44124	Pepper Pike/Mayfield Hts./Lyndhurst	0	1	1	0	2	N/A	1
44022	Bentleyville	0	0	0	0	1	N/A	N/A
44017	Berea	0	0	0	0	1	N/A	N/A
44147	Broadview Hts	0	0	0	0	1	N/A	N/A
44112	East Cleveland/Cleveland	0	0	0	2	1	N/A	1
44117	Euclid/Cleveland	0	0	0	0	1	N/A	N/A
44107	Lakewood/Cleveland	0	0	1	0	1	N/A	N/A
44137	Maple Hts/Cleveland	0	0	0	0	1	N/A	N/A
44070	North Olmsted	0	0	0	0	1	N/A	N/A
44138	Olmsted Twp/Olmsted Falls	0	0	0	0	1	N/A	N/A
44130	Parma/Cleveland	0	0	0	0	1	N/A	N/A
44121	University Hts/South Euclid	0	0	0	0	1	N/A	N/A
44146	Walton Hills/Oakwood/Bedford	0	0	0	0	1	N/A	N/A
44104	Cleveland	1	3	0	0	0	(100%)	1
44111	Cleveland	2	0	0	0	0	(100%)	N/A
44102	Cleveland/Brooklyn	1	3	1	0	0	(100%)	1
44105	Cleveland/Newburgh Hts/Garfield Hts	3	0	1	1	1	(67%)	1
44118	ClevelandHts/UniversityHts/ShakerHts	3	4	0	3	1	(67%)	2
44103	Cleveland	4	3	0	0	2	(50%)	2
44108	Cleveland/Bratenahl	2	0	2	2	1	(50%)	1
**Total Cuyahoga County		21	21	14	17	28	33%	20
**Total Cleveland		16	14	7	5	11	(31%)	11
**Total Suburbs		5	7	7	12	17	240%	10
* Extremely high percentages are due to low numbers.								
** These totals do not reflect the sum of the numbers above which are the zip codes reflecting the greatest increase or decrease. Rather, they are the total of calls from ALL zip codes many of which do not appear on this table.								

**Attachment 8: United Way - First Call for Help Speech and Hearing 2000-2004:
Unmet Need**

LR-800 Speech and Hearing				
United Way - First Call for Help Requests 2000-2004				
Unmet Need				
Zip Code	TOTALS 00-04			%
	Requests	Met	Unmet	Unmet
* Total Cuyahoga County	101	101	0	0%
* Total Cleveland	53	53	0	0%
* Total Suburbs	48	48	0	0%

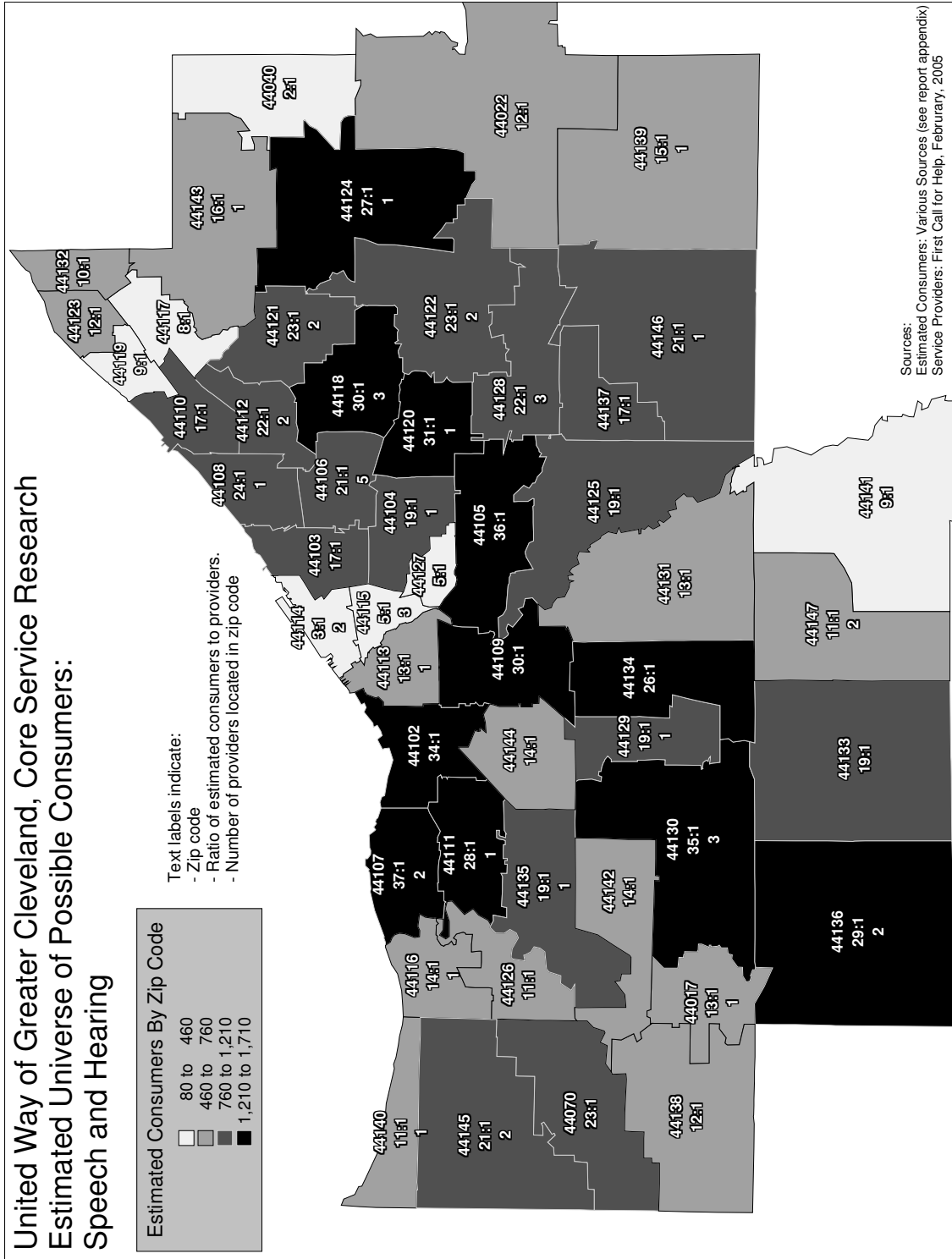
FCFH DATA NOTES				
Met = service request resulting in referral to an organization. (Does not mean agency was able to provide the service.)				
Unmet = service request for which there was no referral.				
Note: Zip Codes shared by Cleveland and surrounding suburbs whose boundaries fall 50% and greater within the city of Cleveland are highlighted and totaled as Cleveland. Others are totaled as Suburbs.				
* These totals do not reflect the sum of the numbers above which are the zip codes reflecting unmet need in 2004. Rather, they are the total of calls from ALL zip codes some of which do not appear on this table.				

Attachment 9: Service Site Index

Core Service: Speech and Hearing LR-800								
Service Site Index								
Zip	Number of Sites****	City/Town (% Cleveland)	Proportion of Minorities in Geographical Area	Total Population (#)*	Estimated Population with Communication Disorders (#)**	Estimated Universe of Possible Consumers per Geographical Area***	Number of Service SITES Serving Geographical Area (Per Agencies Reported Intended Service Area to First Call for Help)****	Potential Service ACCESSIBILITY by Service Consumers per Geographical Area Ratio of CONSUMERS to Service SITES
Period				1/1/2000-12/31/2000	1/1/2000-12/31/2000	1/1/2000-12/31/2000	1/2005	
TOTAL	47			1,393,978	209,097	41,819	47	890:1
Percent					15.0%	20.0%		
44117	-	Euclid/Cleveland	African Am 53.1%	12,078	1,812	362	46	8:1
44105	-	Cleveland/NewburghHts/GarfieldHts	African Am 61.9%	54,834	8,225	1,645	46	36:1
44106	5	Cleveland/Cleveland Hts (60%)	African Am 62.2%	32,417	4,863	973	46	21:1
44110	-	Cleveland/East Cleveland (98%)	African Am 74.7%	26,536	3,980	796	46	17:1
44120	1	Shaker Hts/Cleveland	African Am 76.7%	47,349	7,102	1,420	46	31:1
44103	-	Cleveland (100%)	African Am 80.2%	25,348	3,802	760	46	17:1
44108	1	Cleveland/Bratenahl (90%)	African Am 94.9%	36,456	5,468	1,094	46	24:1
44112	2	East Cleveland/Cleveland	African Am 95.2%	33,222	4,983	997	46	22:1
44128	3	Warrensville Hts/Cleveland	African Am 95.8%	33,612	5,042	1,008	46	22:1
44104	1	Cleveland (100%)	African Am 97.5%	28,904	4,336	867	46	19:1
44115	3	Cleveland (100%)	African Am 98.4%	8,186	1,228	246	46	5:1
44114	2	Cleveland (100%)	Asian 20.3%	3,891	584	117	46	3:1
44109	-	Cleveland/Brooklyn Hts (98%)	Hispanic 20.3%	45,783	6,867	1,373	46	30:1
44102	-	Cleveland/Brooklyn (95%)	Hispanic 20.4%	52,108	7,816	1,563	46	34:1
44113	1	Cleveland (100%)	Hispanic 23.5%	19,466	2,920	584	46	13:1
44017	1	Berea		19,005	2,851	570	45	13:1
44022	-	Bentleyville		17,720	2,658	532	45	12:1
44040	-	Gates Mills/Mayfield Village		2,883	432	86	45	2:1
44070	-	North Olmsted		34,081	5,112	1,022	45	23:1
44101	-	Cleveland (100%)		-	0	0	28	N/A
44107	2	Lakewood/Cleveland		56,710	8,507	1,701	46	37:1
44111	1	Cleveland (100%)		42,967	6,445	1,289	46	28:1
44116	1	Rocky River		21,122	3,168	634	45	14:1
44118	3	ClevelandHts/UniversityHts/ShakerHts		45,279	6,792	1,358	45	30:1
44119	-	Cleveland/Euclid (50%)		13,493	2,024	405	46	9:1
44121	2	University Hts/South Euclid		35,185	5,278	1,056	46	23:1
44122	2	Beachwood/Highland Hills/ShakerHts		34,883	5,232	1,046	46	23:1
44123	-	Euclid		18,363	2,754	551	45	12:1
44124	1	Pepper Pike/MayfieldHts/Lyndhurst		40,334	6,050	1,210	45	27:1
44125	-	Valley View/Garfield Hts		29,876	4,481	896	46	19:1
44126	-	Fairview Park/Cleveland		17,196	2,579	516	46	11:1
44127	-	Cleveland (100%)		8,403	1,260	252	46	5:1
44129	1	Brooklyn/Parma/Cleveland		29,658	4,449	890	46	19:1
44130	3	Parma/Cleveland		53,615	8,042	1,608	46	35:1
44131	-	Independence/Seven Hills/BrooklynHts		20,666	3,100	620	46	13:1
44132	-	Euclid		15,322	2,298	460	45	10:1
44133	-	North Royalton		28,685	4,303	861	45	19:1
44134	-	Parma/Cleveland		40,396	6,059	1,212	46	26:1
44135	1	Cleveland/Lindale (90%)		28,561	4,284	857	46	19:1
44136	2	Strongsville		43,858	6,579	1,316	45	29:1
44137	-	Maple Hts/Cleveland		26,107	3,916	783	46	17:1
44138	-	Olmsted Twp/Olmsted Falls		18,046	2,707	541	45	12:1
44139	1	Bentleyville/Glenwillow/Solon		22,231	3,335	667	45	15:1
44140	1	Bay Village		16,076	2,411	482	45	11:1
44141	-	Brecksville		13,676	2,051	410	45	9:1
44142	-	Brookpark/Cleveland		21,132	3,170	634	46	14:1
44143	1	Highland Hts/Richmond Heights		23,730	3,560	712	45	16:1
44144	-	Brooklyn/Cleveland		21,805	3,271	654	46	14:1
44145	2	Westlake		31,972	4,796	959	45	21:1
44146	1	Walton Hills/Oakwood/Bedford		31,648	4,747	949	45	21:1
44147	2	Broadview Hts		15,954	2,393	479	45	11:1

* U.S. Census 2000, SF1 (P1)
 **National Institute for Deafness and Other Communication Disorders - 15 percent of population has a communication disorder. 2005-2006.
 *** The estimated universe of possible consumers was derived by multiplying the estimated persons in need (209,097) by 20 percent. In the absence of other research, this assumption is based on the finding that only one of five persons who need a hearing aid wears one (NIDCD, 2006).
 ****United Way First Call for Help, February 2005

Attachment 10: Map





**United Way of
Greater Cleveland**

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uws.org/CoreServicesPlanning