

programs for the handicapped

Secretary's Committee
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The Control of Childhood Lead Poisoning

by

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Symptomatic lead poisoning in children is currently estimated at 10,000 to 20,000 cases per year. Of these cases, 2,000 to 4,000 per year will be left with some degree of neurologic damage, and about two percent of that group-- or 800 per year--will suffer mental retardation of such severity that they will require institutional care for the rest of their lives. Deaths from acute and long-term effects of lead poisoning are about 200 per year.

This report will deal primarily with epidemiological and environmental aspects of childhood lead poisoning. Information on the medical aspects is readily available

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U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Secretary's Committee on Mental Retardation

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elsewhere.* Suffice it to say here that effective treatment is available, but delay in treatment may result in irreversible damage.

An effective attack on the total problem of childhood lead poisoning is an exercise in community environmental management. It requires the mustering of all resources of the community, including the medical profession, the communications media, those who manage the housing stock, municipal officials, community leaders, and the residents themselves. All must function together as an integrated, purposeful system in the community for maximum results.

There is not enough data available on the extent of childhood lead poisoning nationwide. Most of the existing data is from several of the older northeastern cities. However, the available data and certain Bureau of Census figures, taken together, enable us to make rough estimates of the size of the problem in the nation as a whole. The Census figures can be used because of their relation to the etiology of the disease. Lead poisoning in small children is caused largely by the ingestion of peeling flakes of lead-based paint. Children with pica, the habit of eating non-food material, are especially at risk in areas of dilapidated, pre-World War II housing where flakes of paint and chips of painted plaster are likely to be readily available. (Lead-based paint has not been generally used for interiors since the early 1940's).

Based on Census housing and population data, plus the known medical aspects of childhood lead poisoning, it is estimated there are 2,000,000 children below age six at risk in metropolitan areas of the nation. Blood-test screening studies of children at risk, where such studies have been made, show that 10 to 20 percent of them have excessively high levels of lead in their blood. Applying these percentages to the 2,000,000 figure gives a very strong indication that 200,000 to 400,000 children in the metropolitan areas nationwide have elevated blood lead levels. (The Surgeon General, in a policy statement, has determined that children having 40 micrograms or more of lead per 100 milliliters of whole blood, with or without symptoms, are in danger of having or developing lead poisoning).

Only in the past few years has even the medical profession begun to suspect the real dimensions of the childhood lead poisoning problem. Dr. Evan Charney, Associate Professor of Pediatrics at the University of Rochester School of Medicine, has said, "If you live in an American city with a slum population, and you don't have many cases of lead poisoning, then your health department is not doing its job. The number of cases," he added, "depends on how hard people look."

Where doctors are not alert to the possibility of lead poisoning, its symptoms may be ascribed to other causes--and delay in treatment makes the onset of encephalopathy (acute brain swelling) more probable. At least 40 percent of the children who develop encephalopathy will sustain severe and permanent brain damage.

The cost of hospital treatment for an uncomplicated case of lead poisoning is \$1,000 to \$2,000. This cost is infinitesimal when compared to the medical, educational, social, and other costs for a mentally retarded individual throughout his life.

*See listing of U.S. Department of Health, Education, and Welfare publications on lead poisoning on page 8.



The situation as indicated is bad enough, but it may be worse. Dr. J. Julian Chisholm, Jr., a pediatrician at Johns Hopkins Medical School and Baltimore City Hospital, and a leading authority on childhood lead poisoning, has said, "Symptomatic lead poisoning is the result of very high levels of lead in the tissues. Is it possible that a content of lead in the body that is insufficient to cause obvious symptoms can nevertheless give rise to slowly evolving and long-lasting adverse effects? The question is at present unanswered but is most pertinent."

More research on lead poisoning is needed, particularly in the following three areas: (1) the quantitative extent of the problem and its geographic distribution; (2) the long-term deleterious effects on the health and behavior of individuals having had excessive lead intake as children, but without lead encephalopathy or other clinical signs; and (3) the proportion of total lead intake by children from sources other than lead-based paint.

But we already know enough to act. It has been repeated many times, by those most knowledgeable in the field, that we know the causes of childhood lead paint poisoning and that the causes can be removed. It has often been said that this disease, besides being a medical problem, is also the result of a serious housing problem--or even that it is "not a medical problem but a housing problem." High risk housing units (built before World War II) total 30,000,000 in the metropolitan areas of the nation, and several million are now in dilapidated condition. As the housing stock continues deteriorating, more units become dilapidated and thus present the lead poisoning hazard for children.



The immediate problem in the control of childhood lead poisoning is two-fold: (1) the children at risk must be located, screened for elevated blood lead levels, and treated when necessary; and (2) the dwellings in which children ingest lead-based paint must be located and deleaded. This dual approach--medical and environmental--is incorporated in Public Law 91-965, the Lead-Based Paint Poisoning Prevention Act, which was passed in January 1971.

The Bureau of Community Environmental Management was designated as the agency within the Department of Health, Education, and Welfare to administer the new law which, among other things, provides funds for grants to local communities to assist them in developing programs for prevention and control of childhood lead poisoning.

Title I of the new law provides for programs to detect and treat incidents of lead-based paint poisoning, which are to include community education, testing, and follow-up to ensure protection against repeated exposure. Based on the fiscal year 1972 appropriation of \$7.5 million, many of the children at risk can be screened, with major projects in approximately 15 cities. Treatment will be provided in those cases where children are diagnosed as having lead poisoning. In providing treatment on a continuing basis, communities will be encouraged to marshal existing resources, both local and Federal (e.g., neighborhood health care centers).

Title II provides for programs to identify those areas that present high risk of lead poisoning because of deteriorated housing. These programs are to include (a) testing to detect the presence of lead-based paints on surfaces



of residential housing, and (b) elimination of such paints when detected. Communities will be encouraged and funded to develop programs for individual self-help, neighborhood organizations for voluntary action, and programs for the development and enforcement of housing codes for attacking the problem of residential deleading.

The Bureau of Community Environmental Management will provide limited technical assistance to communities receiving grants under Titles I and II. The Bureau will help the project cities carry out effective lead control programs, including community organization and education techniques for citizen involvement, legislative and regulatory measures, screening methods and procedures, and the standardization of analytical procedures.

The Bureau coordinated the counsel and recommendations of leading authorities on childhood lead poisoning, both in and outside of Government, which resulted in the drafting and subsequent approval of the policy statement by the Surgeon General in late 1970.* The Bureau worked with the Secretary's Committee on Mental Retardation, and other units of the Department of Health, Education, and Welfare, in an intra-agency committee on the control of childhood lead poisoning.

The Bureau developed comprehensive guidelines for community control programs, initiated a program in Norfolk, Virginia, to test their effectiveness, and distributed copies to over 100 communities. The guidelines will be revised in the light of experience and critiques and made generally available in the near future.



*See listing of materials on page 8.

The Bureau of Community Environmental Management has also encouraged the development of simple, rapid, and inexpensive methodologies for detecting lead poisoning. This has led to the development of instruments called microblood detectors, by which lead poisoning can be detected with a few drops of blood from a capillary blood sample (obtained by finger-stick), thus avoiding the necessity of obtaining a larger venous sample--which can be an ordeal for small children. Another technological advance, which will facilitate the detection of lead on walls, baseboards and other areas of dwellings, is the new portable detector using the X-ray fluorescence technique.

It must be emphasized that our present methods of estimating the size of the childhood lead poisoning problem, nationwide, is a crude and unsatisfactory one; but the solid data that does exist, plus what we know about the medical aspects and the etiology of lead poisoning, indicate that the national problem is a sizeable one. Under Title III of the new law, the Department of Housing and Urban Development has awarded a contract to the National Bureau of Standards for developing a model which will yield more precise information as to the nature and extent of this scourge of the Nation's children.

As an interim step, by the publication date of this issue of "Programs for the Handicapped," the Bureau of Community Environmental Management should be well along with a survey of the children believed to be at risk in 20 to 30 communities. Though limited in scope, this survey should result in a better estimate of the nationwide dimensions of the childhood lead poisoning problem than is now available. For many areas of the Nation it will be an epidemiological assessment which has not heretofore been available.

Scheduled to run four to six months, the survey is utilizing lead surveillance teams in visits to cities located in all ten Regions of the Department of Health, Education, and Welfare. The average visits are three days per city, but local preparation may run up to two weeks. Teams consist of one or two persons from the Bureau's central office, plus Regional Office and local health department staff. The plan calls for at least 20 dwelling units and 50 children below age six to be screened in each city. Total for 30 cities: at least 1,500 children and 600 housing units. The Anodic Stripping Voltammetry (ASV) microblood method is being used for screening children. The X-ray fluorescence analyzer is being used for detecting lead-based paint in the dwellings. The survey is providing valuable field testing of the microblood and X-ray detector techniques.

Childhood lead poisoning is a preventable disease, and basically a problem of the residential environment. The Surgeon General in his policy statement said, "In fact, effective medical care of children with plumbism is almost totally dependent upon prompt and thorough environmental hygiene to present a continuing build-up of lead in their bodies."

The Bureau of Community Environmental Management looks forward to working with communities across the Nation in a systematic, expanding effort toward the complete elimination of this disease which is blighting the lives of so many of our children.

Photos from film strip, "Poison in the Walls" by MEDCOM, Inc., and American Academy of Pediatrics. For information about the film strip, write MEDCOM, Inc., 2 Hammarckjold Plaza, New York, New York 10017.

LIST OF U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLICATIONS ON LEAD POISONING

Single free copies of the following publications are available from Maternal and Child Health Service, Room 12A17, 5600 Fishers Lane, Rockville, Maryland 29852. Prices are given in the event quantities are desired. Orders for multiple copies should be sent to the Superintendent of Documents, Washington, D. C. 20402. Childhood Lead Poisoning, An Eradicable Disease, is not available from the Superintendent of Documents.

Watch Out for Lead Paint Poisoning. Maternal and Child Health Service, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare, 1971, 4 pages - price 5 cents - \$2.00 per hundred. Spanish translation should be available by November 30, 1971.

A folder warning of the ways in which children get lead paint poisoning and how this can be prevented.

Lead Poisoning in Children. Jane S. Lin-Fu. Maternal and Child Health Service, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare (PHSP No. 2108-1970) 25 pages - price 25 cents.

Presents a brief but comprehensive summary of the many facets of childhood lead poisoning. Reviews the magnitude of this health problem, its epidemiology and consequences, and analyzes the many factors that contribute to the persistence of the problem. Presents a plan of approach which includes educational campaigns, casefinding and follow-up programs, legislation, research and slum clearance.

Childhood Lead Poisoning, An Eradicable Disease. Jane S. Lin-Fu. Children, 17:2-9, January-February 1970. Reprint available from Maternal and Child Health Service.

Summarizes lead poisoning problem and latest developments in the effort to reduce it.

Selected Bibliography on Lead Poisoning in Children. Jane S. Lin-Fu. Maternal and Child Health Service, Health Services and Mental Health Administration, Public Health Service, U. S. Department of Health, Education, and Welfare, 1971, 36 pages - price 25 cents. In press - available September 30, 1971.

Lists the important reports and papers on epidemiology, sources and indices of exposure, metabolic disturbances and toxicity, prevention, treatment and management, and other aspects.

Single free copies of The Surgeon General's Policy Statement on Medical Aspects of Childhood Lead Poisoning published November 1970 (13 pages) are available from the Secretary's Committee on Mental Retardation, U. S. Department of Health, Education, and Welfare, Washington, D. C. 20201.

1971 Amendments to the Wagner-O'Day Act *

The major purposes of the 1971 Amendments to the Wagner-O'Day Act, P.L. 92-28 which was signed by the President on June 23, 1971, are to extend the special priority in the sale of certain products to the Federal Government, now reserved for the blind, to include other severely handicapped, and otherwise to strengthen and improve the existing law and its administration. The present Committee on Purchases of Blind-Made Products now becomes the new Committee for Purchase of Products and Services of the Blind and Other Severely Handicapped.

It should be noted that P.L. 92-28 includes two special protective provisions for the blind: (1) they are to have a first preference in the sale of certain products to the Federal Government and this is without any time limitation, and (2) they are to have first preference over other severely handicapped in the contracting of services until December 31, 1976.

The new Committee for Purchase of Products and Services of the Blind and Other Severely Handicapped will have a membership of fourteen, appointed by the President. This new Committee replaces the existing seven member Committee on Purchase of Blind-Made Products. There are to be three private citizen members: (1) A private citizen who is conversant with the problems incident to the employment of the blind and other severely handicapped individuals; (2) a member who is to be appointed from persons who represent blind individuals employed in qualified non-profit agencies for the blind; and (3) a member who is to be appointed from persons who represent other severely handicapped individuals employed in qualified non-profit agencies for such individuals.

The Committee will also have eleven public official members. This includes for the first time representatives of the Department of Health, Education, and Welfare, Labor, Justice, and the Veterans Administration and the General Services Administration. The Departments of Defense, Army, Navy, Air Force, Commerce, and Agriculture will also be represented, but the Departments of the Treasury and Interior will no longer be represented.

For the first time, public members of the Committee are to be compensated on a per diem basis and for travel expenses.

The new Act authorizes the appointment of the necessary staff people and also allows, on a reimbursable basis, for personnel from other government agencies. The Committee is to make an annual report to the President and to the Congress. The Act authorizes an appropriation of \$200,000 a year for fiscal 1972 and the next two fiscal years.

Services Added: Services are now added to commodities as being eligible for Government contract for purchase from the approved non-profit agencies. The Committee is to establish and publish in the Federal Register a procurement list of those commodities and services of the blind and other severely handicapped, which the Committee determines are suitable for purchase by the Government.

*from Rehabilitation Interagency Focus, Volume IV, Bulletin No. 24, June 1971.

The standard definitions of a "blind person" and of "direct" labor as used by the former Committee in its regulations are now set forth as part of the Act.

The term "severely handicapped" means an individual or class of individuals under a physical or mental disability other than blindness. This is to be determined according to criteria established by the Committee after consultation with interested Government agencies and parties representing the handicapped, as a condition which is a substantial handicap to employment and which does not allow the individual to engage in normal competitive employment.

The non-profit agency for the blind must be qualified as meeting three criteria: Incorporation as such, compliance with the Department of Labor's occupational health and safety standards, and at least 75% of the man-hours of direct labor on commodities and services of the agency during the fiscal year must be done by blind persons. Similar criteria are used to determine a qualified non-profit agency for the severely handicapped. However, 75% of the man-hours of direct labor may be performed by the blind or other severely handicapped.

Procurement Requirements: The new Act restates the existing procurement requirements now applicable to the Government, taking into account the newly included services and the addition of severely handicapped individuals who are not blind. The Committee is to designate a central non-profit agency or agencies to facilitate the distribution of orders. If either a commodity or service is on the procurement list established by the Committee, a government entity intending to obtain the service or commodity must obtain them from a qualified agency for the blind or other severely handicapped, if such are available and at the price fixed by the Committee. The priority accorded commodities produced by Federal prison industries is continued. Government entities include the U. S. Postal Service, and non-appropriated fund instrumentalities under the jurisdiction of the Armed Forces (Post Exchanges, etc.).

Audit: The U. S. Comptroller General is given the power to audit and examine the books and records of the Committee and of the order distribution agencies and the other agencies involved in the transaction under the Act. This authority is for any fiscal year in which a sale is made under the Act.

Dr. William Usdane, Assistant Commissioner for Program Development, Rehabilitation Services Administration, has been appointed as the Department of Health, Education, and Welfare official representative on the Committee.

An Estimate of Mental Retardation Among Public Assistance Recipients *

This brief note summarizes available information on the extent of mental retardation or deficiency among recipients of AFDC, APTD, and AB. The information was obtained in characteristics surveys of recipients.

Aid to Families with Dependent Children

The Children. On the basis of study data, almost one-fifth (19 percent) of the child recipients of AFDC have had the psychological testing necessary to determine on a sound professional basis, whether by any specific definition of retardation, they are mentally retarded. Also, in many instances the caseworkers have information, based on personal observation or on reports from relatives or acquaintances of the child, regarding mental retardation. In the recipient survey conducted in late 1967, caseworkers were asked to indicate for each child whether, based on professional opinion or otherwise, there was mental retardation. The reports were as follows:

4 percent of the children were reported as mentally retarded (2 percent on the basis of professional opinion and 2 percent based on workers' observations, mothers' statements, and similar sources).

82 percent of the children were reported as not retarded (17 percent on the basis of professional opinion and 65 percent from other sources).

For 15 percent of all child recipients it was unknown whether the child was mentally retarded.

The estimated number of children mentally retarded, whether based on professional or other opinion, represented 5 percent of all children other than those for whom the item was reported as unknown.

This estimate, that approximately 5 percent of AFDC recipient children are mentally retarded, may be low for two reasons. First, retardation among preschoolers is generally understated because mental retardation frequently does not come to light until after the child starts school. About one-third of all AFDC children are under age 6. Second, the bulk of the findings were based on observations by persons (mothers, caseworkers) who would ordinarily hesitate to ascribe mental retardation to a child unless rather definite evidence so indicated. Thus, "false negatives" are more likely to be reported than "false positives."

The Parents. States reported the major impairment of incapacitated fathers, whose families represented 12 percent of the AFDC families studied in late 1967. Diagnoses were reported as "mental, psychoneurotic, and personality

*from Public Assistance Statistics, National Center for Social Statistics Report A-2:1-3, December 1970, NCSS, Social and Rehabilitation Service, U.S. Department of Health, Education, and Welfare. Adapted by Howard D. Oberheu, Statistician, NCSS, from an earlier paper by Robert H. Mugge, formerly Acting Director, NCSS.

disorders" in 13 percent of the cases. We do not know how this category is broken down among mental illness and other mental disorders, but mental deficiency very likely accounts for more than half the cases in the category. In addition, it can be assumed that mental deficiency also was present in a number of cases in which another condition was considered the "major impairment." On the basis of the reported data and the foregoing assumptions, it is estimated that at least 9 percent of the incapacitated fathers could be described as mentally retarded.

Being retarded in school could be the result of mental retardation or deficiency. It is recognized that what may be called "educational retardation" is not the same as mental retardation, and that educational retardation can, of course, also be the result of many other social, cultural, physical, or circumstantial factors. That the estimate of mentally retarded incapacitated fathers may well be low is suggested by the fact that 35 percent of the incapacitated fathers had completed fewer than 5 grades of school, and 53 percent had completed fewer than 8 grades. In comparison, 43 percent of U. S. males over 25 years of age who were heads of families below the poverty level in 1969 had completed fewer than 8 grades of school.^{1/}

No direct information is available as to mental retardation among AFDC mothers, but we do have information on "educational retardation" among the mothers. Of the mothers present in the home in AFDC families, 10 percent had not completed 5 grades of school, 21 percent had not completed 8 grades, and only 18 percent had graduated from high school. Among U. S. females over 25 years of age who were heads of families below the poverty level in 1969,^{1/} 30 percent had completed fewer than 8 grades of school but 29 percent were high school graduates.

Aid to the Permanently and Totally Disabled

A survey of adult public assistance recipients, including recipients of APTD, is currently being conducted by the National Center for Social Statistics. The most recent data currently available are from the APTD survey relating to one of the months August-November in 1962. (Three States did not have an APTD program at that time).

In the survey, States reported for all recipients in the sample (1) the diagnosis of the major impairment that supported a finding of permanent and total disability, and (2) the diagnosis of the impairment (if any) that was secondary in importance in contributing to a finding of permanent and total disability. The reports are subject to the usual defects with respect to an estimate of the extent of mental retardation or deficiency; that is, (1) definitions are not uniform and may not be very precise in some States, (2) diagnoses could have been made at times by physicians who were not necessarily competent to diagnose mental ability, and (3) either not observed by the diagnostician or not considered the primary or secondary impairment supporting a finding of permanent or total disability. Nevertheless, we would expect that the findings would serve as a reasonably valid estimate of the minimum proportion of recipients who meet the generally understood definition of mentally retarded.

^{1/} Bureau of the Census, Current Population Reports, Series P-60, No. 76

Of all APTD recipients, 15 percent were reported as having mental retardation as the primary diagnosis, and 3 percent as having such a condition as the secondary diagnosis. Totaling these two figures, we estimate that at least 18 percent of all APTD recipients are mentally retarded.

Aid to the Blind

A sample survey of recipients of AB was conducted simultaneously with the APTD survey in 1962. (AB recipients are also included in the current survey of adult public assistance recipients). Since AB case records are not likely to contain reports of medical examinations (as APTD records are required to do), a different method had to be used to learn of physical and mental conditions, other than blindness, among AB recipients. The worker completing the schedule on a recipient was asked to indicate whether there was medical evidence included in records on the case that the recipient had any of a number of specified chronic physical or mental conditions. If two or more conditions were mentioned in the record, only the most serious or most disabling was to be reported for purpose of the study. Mental deficiency or retardation was reported for 5 percent of all AB recipients. In view of the problems of diagnosis pointed out earlier and the fact that only one mental or physical condition could be reported when several were known to be present, this estimate is probably an understatement of the true incidence of mental retardation among AB recipients.

National Institute of Neurological Diseases and Stroke Research Related to the Problems of the Handicapped

The following are summaries of research activities of NINDS. They provide a sampling of what research is being done at NINDS in relation to the problems of infants and children with neurological and sensory disorders.

Further information may be obtained about any of the four research activities directly from the designated office. An address is provided at the end of each summary.

* * *

Churchill, John A.: The Etiology of Cerebral Palsy in Premature Infants. From the Collaborative Study on Cerebral Palsy, Mental Retardation and Other Neurological and Sensory Disorders of Infancy and Childhood, Perinatal Research Branch, National Institute of Neurological Diseases and Stroke, . July 1, 1969 through June 30, 1970.

One of the many sub-projects of the perinatal research program of the National Institute of Neurological Diseases and Stroke has been to review the etiology of cerebral palsy in premature infants. Many of these children not only have muscle paralysis, but other brain injury which puts them functionally in the same social class as some of the mental retardates.

This study reviewed some 1364 infants weighing less than 2.0 kilograms at birth from the group of all such small babies in the collaborative project totaling 54,370 births. There were 45 diagnosed as having cerebral palsy at the age of one year. While prematurity was the most common factor of causing cerebral palsy in the total perinatal study group, this cannot be the salient etiological factor as only 5 to 10 percent of the premature infants develop cerebral palsy. Seven plausible theories were examined in this study and they are: 1) genetic; 2) traumatic; 3) anoxic; 4) infection; 5) bilirubin toxicity; 6) intrauterine blight; and 7) hemorrhagic. None of these theories was convincingly correct. There was no support for the genetic theory obtained by a study of siblings of the spastics. The anoxic theory gained no support in that Apgar and other indirect measures of asphyxia differed insignificantly between the spastic and equally premature non-spastic groups. Hypobilirubinemia levels were varied with little difference between the spastic and non-spastics. Of 18 cases of the erythroblastosis which characteristically gives pathologically high bilirubin levels, none had cerebral palsy.

Intrauterine disturbances often produce growth retardation but none of the small infants had spastic diplegia. Furthermore, 5 spastics were born by electric caesarean section, one being remarkably free from abnormal prenatal events.

There was little evidence of cranial injury conducive to birth trauma and they were no more frequent than in other prematures. The spastic cases born by caesarean section, where trauma should be minimized, weighed against the birth delivery trauma theory.

Studies on the cerebral spinal fluid were not done so that hemorrhage cannot be ruled out in all cases.

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Three-Phase Project on Minimal Brain Dysfunctions in Children. Phase One: Terminology and Identification, Phase Two: Educational, Medical and Health-Related Services, and Phase Three: Central Processing Dysfunctions in Children: A Review of Research. Washington, D. C., U. S. Government Printing Office (First report, 1966, Second, 1969, and Third, 1969).

In 1963, under the auspices of the several interested agencies of the U. S. Department of Health, Education, and Welfare and the National Easter Seal Society for Crippled Children and Adults, a committee was assembled to consider learning disabilities in minimal brain dysfunctions in children. It recommended three task forces be formed to report on designated phases of the problem.

Task Force I presented working definitions of the subject intended to draw together the knowledge and efforts of psychiatrists, psychologists, educators, neurologists, pediatricians, legislators, social workers, and researchers, so that a broad interdisciplinary assault could be launched against these disorders in children.

Task Force II analyzed existing problems of educational practices, teacher training, child services and legislation related to the needs of children with learning disabilities. When such youngsters are not actually brain damaged, mentally retarded, emotionally disturbed, deaf or blind, they may still suffer from a group of disorders known as minimal brain dysfunctions. Sometimes, these disorders are referred to as central processing dysfunctions, or, simply, learning disabilities.

Task Force III in their report not only summarize the diversity of current knowledge on the subject, but point up wide gaps in the scientific understanding of brain dysfunctions. While in the bulk of the 148-page document, disparate findings from experimental and clinical research in child psychology, education and medicine is explored, significant issues, definitions, research criteria and recommendations also emerge to establish the work as an early milestone in a budding field.

Phase One of the Three-Phase Project was cosponsored by The Easter Seal Research Foundation of the National Society for Crippled Children and Adults and the National Institute of Neurological Diseases and Stroke.

Phase Two was cosponsored by Neurological and Sensory Disease Control Program, The Easter Seal Research Foundation, National Institute of Neurological Diseases and Stroke, and Bureau of Education for the Handicapped of the U. S. Office of Education.

Phase Three report was prepared by James C. Chalfant, Ed.D., and Margaret A. Scheffelin, Ph.D., of the Institute for Research on Exceptional Children at the University of Illinois. This report is based on research performed under contract with the National Institute of Neurological Diseases and Stroke.

Information Office
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Bethesda, Maryland 20014

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The Collaborative Study on Cerebral Palsy, Mental Retardation and Other Neurological and Sensory Disorders of Infancy and Childhood, Annual Bibliographies for June 1963 through June 1968, July 1968 through June 1969, and July 1969 through June 1970. National Institute of Neurological Diseases and Stroke, National Institutes of Health.

In the three annual bibliographies of the Collaborative Perinatal Research Project are listed all publications based on core data that were presented at national and international professional conventions, and/or published in a variety of medical and public health journals or periodicals. In order to enhance the visibility of the research effort on a more concurrent basis than is possible with this annual bibliography, a quarterly bibliography of all Collaborative Project publications with summaries will be issued; the first was for the period, July-September 1970, and second for October-December 1970. Many of the published reports listed in these bibliographies focus on: "The identification of prenatal factors operative 1) in neurological problems identified in one-year-old children, 2) in neurological and developmental problems that are identified in children at 4 years and at 7 years, and 3) as precursors of deficiencies in speech, language and hearing performance."

Medical Literature Unit
Section on Project Services
Perinatal Research Branch
National Institute of Neurological
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National Institutes of Health
7C14 Wiscon Building
Bethesda, Maryland 20014

Sever, John L. (ed'd): Immunological Responses to Perinatal Infections, The Journal of Pediatrics, 75:6:Pt 2, December 1969.

The Journal of Pediatrics had printed a special supplement to its December 1969 issue devoted to proceedings of the Conference on Immunological Responses to Perinatal Infections. Participants at the conference discussed new techniques for the measurement of immunological responses in the newborn as a screening device and considered problems in methodology.

Of special interest to pediatricians at the conference was a report on a new screening test, partly developed at NIH, which can be used to alert doctors to infection in a newborn baby. Using the test, physicians can quickly determine the IgM level of a newborn baby's blood. An elevated IgM level means that the baby is reacting to either an infection the mother has passed on to him or an infection acquired in the newborn period. Therefore, the technique of measuring IgM levels is useful as an epidemiological and diagnostic tool and for research in congenital malformations.

The conference was held at NIH May 20, 1969, and sponsored by the National Institute of Neurological Diseases and Stroke, whose Collaborative Perinatal Research Project has as one of the major parts of its program the investigation of viruses and other infectious agents and their role in congenital malformations.

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A Profile of Mentally Retarded Clients Rehabilitated During Fiscal Year 1967*

Among the many different disability and socioeconomic groups served under the vocational rehabilitation program, few have manifested more striking growth in recent years in terms of the number of rehabilitations than the sector encompassed by the mentally retarded. During the ten-year period from fiscal year 1958 to 1967, the number of rehabilitated mentally retarded clients increased eleven-fold from 1,578 to 17,724 while their proportion among all rehabilitated persons rose from 2% to 10%.

The information in this report was obtained from computer tabulations of individual Case Service Reports (Form R-300) submitted by State vocational rehabilitation agencies. These tabulations cover 95% of the mentally retarded clients and 97% of the clients with other disabling conditions who were rehabilitated during fiscal year 1967. Averages, percentage distributions and rehabilitation rates were used to compare the personal and program characteristics of the mentally retarded clients with those of nonretarded clients. Rehabilitation rates express the number of persons rehabilitated as a percentage of all persons closed from the active caseload, whether rehabilitated or not. The rehabilitation rate was slightly higher for the mentally retarded, 80.2% compared to 79.4% for clients with other disabling conditions.

Some of the highlights of this study are as follows:

1. Age - The mentally retarded group was quite young, with more than two-thirds of its members less than 20 years of age at the time of referral. The average age at referral for clients who were not mentally retarded was 36 years.
2. Sex - Relatively more of the mental retardates were males. The mentally retarded males showed a higher rate of rehabilitation than the nonretarded males; the rate for retarded women, however, was lower than the rate recorded for nonretarded females.
3. Race - Roughly 20% of both groups--the retarded and the nonretarded-- consisted of Negroes who had higher rehabilitation rates in each instance than found among the other racial groupings.
4. Marital status - Relatively few (9%) of the retarded group were married or had been married, as contrasted with 66% of the nonretarded group. The highest rehabilitation rate was encountered among the married mentally retarded clients.
5. Number of dependents - Relatively few (7%) of the mentally retarded clients had dependents compared to 46% of the other clients.

*from Statistical Notes, Social and Rehabilitation Service, U. S. Department of Health, Education, and Welfare, February 1969, No. 10.

6. Highest grade of school completed - More than half of the mentally retarded had been educated in special classes not comparable to the regular school grade structure. Of more than passing interest, the highest rehabilitation rate was found among this group.
7. Source of referral - Over half of the mentally retarded clients were referred to State vocational rehabilitation agencies by educational institutions as opposed to only 10% among all other clients. Among the mentally retarded, rehabilitation rates were highest for those persons referred by educational institutions and lowest for those referred by hospitals and sanatoriums.
8. Primary source of support - Over 75% of the mentally retarded were primarily supported by their families and friends compared to only about 50% of the nonretarded clients. Within both groups, those persons with earnings as the primary source of support were most likely to be rehabilitated.
9. Work status at acceptance - An overwhelming majority (91%) of the mentally retarded clients were not working at the time they were accepted for vocational rehabilitation services. Employed persons in both groups showed higher rehabilitation rates than those who were not working at the time of acceptance.
10. Weekly earnings - Although retarded clients reported lower mean earnings both at acceptance and at closure, the increase in earnings from the time of acceptance to the time of closure was fairly comparable for both groups.
11. Public assistance - Relatively fewer of the mentally retarded clients were receiving public assistance at acceptance and at closure.
12. Prior rehabilitation experience - For both groups, the rehabilitation rate was higher for those persons who had been previously rehabilitated.
13. Number of months in referral and applicant statuses - Mentally retarded clients on the average remained in the referral and applicant statuses approximately a month and a half longer than the nonretarded clients. Rehabilitation rates among the retarded rose with increases in the length of time spent in these statuses. For other clients, however, the rehabilitation rates generally declined as the length of time increased.
14. Number of months from acceptance to closure - There was little difference in the amount of time required to rehabilitate retarded clients as compared to nonretarded clients (about 14 months each). The lowest rehabilitation rates among both groups were associated with those persons who remained longest in the active caseload.
15. Types of services received and cost - Relatively more of the mentally retarded clients received training services than the other clients (51% vs. 33%). On the other hand, only 9% of the retardates received restoration services compared to 51% for the nonretardates. The average cost of all case services was lower for the mentally retarded than for the nonretarded (\$481 vs. \$569).

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16. Occupation at closure - More than two-thirds of the mentally retarded were placed into service occupations or unskilled or semi-skilled jobs in industry compared to 42% among the nonretarded. In comparison to the nonretarded, considerably fewer of the mentally retarded clients were rehabilitated as professionals or homemakers and unpaid family workers.
 17. Vocational rehabilitation benefits - The large majority of persons in both groups experienced economic improvement. More of the mentally retarded clients showed improvement in personal adjustment and educational achievement.
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