THE CRIPPLED CHILD
IN NEW YORK CITY

REPORT OF THE
COMMISSION FOR STUDY OF CRIPPLED CHILDREN

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[New York (city) Commission for study of crippled children]

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"For every child who is . . . crippled, or otherwise physically handicapped . . . such measures as will early discover and diagnose his handicap, provide care and treatment, and so train him that he may become an asset to society rather than a liability."

(From the Children's Charter of the
White House Conference on Child
Health and Protection.)

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FOREWORD

The Commission for Study of Crippled Children was appointed by Hon. Fiorello H. LaGuardia, Mayor of the City of New York, to consider impartially the needs of the crippled child and to develop a program for his care adapted to local economic and social conditions. The report which follows is designed to lay the foundation for a program which will utilize existing community resources to greatest advantage.

During the past few years, remarkable progress has been made in the prevention of diseases which cause physical disability. The prevalence of tuberculosis of the bones and joints is diminishing and severe rickets is rarely observed in New York City. Poliomyelitis is being studied intensively and the day when it will be classified among the preventable diseases may not be far distant. Improvements in traffic control and advances in safety education may lead to a decrease in street accidents. On the basis of this knowledge, it is not unreasonable to prophesy that the number of crippled children in the city will not increase and may diminish during the next ten years.

We are still challenged with the problem of providing adequately for the twenty thousand crippled children residing in New York City at present and for those who will be born malformed or will become disabled through disease or injury each day. The extent to which we shall succeed in solving this problem will depend on the cooperation received from the numerous governmental and philanthropic organizations concerned.

The Commission makes no claim to originality in its recommendations but has endeavored to emphasize policies which it believes to be sound. Some of the recommendations can be put into effect without extensive reorganization of existing services; others will require the organization of new services with additional personnel and higher standards of training for the personnel employed. Still others will require extensive cooperation between groups and agencies which are accustomed to working individually. Many of the procedures recommended may take years of planning before they are executed completely. We believe, however, that the program is in keeping with current trends and that its development will result in a brighter future for the crippled child.

It would be impossible even to mention the numerous sources from which information and assistance in the Survey have been secured. The staffs of private institutions and agencies have made available their records and have been generous and cordial in contributing the wisdom of their experience. The Children's Bureau of the United States Department of Labor and the New York State Department of Health have supported the study financially and otherwise. The Department of Health of the City of New York has furnished office space and guidance. The Commission is deeply indebted for their invaluable assistance.

Lastly the Commission wishes to acknowledge its gratitude to Doctor Vernon W. Lippard, its Medical Director, who organized the plan of study and supervised its execution and to his loyal staff of assistants who obtained the factual material upon which its conclusions are based.

PHILIP D. WILSON, M.D.

Chairman

New York, December 15, 1939

CONTENTS

CHAPTER I

INTRODUCTION

The crippled child need not be considered a permanent social or economic burden. With adequate treatment during the period of growth, the majority may enter adult life with minor disabilities or with incapacities so well compensated that they no longer require special consideration. The ultimate goal of a program for crippled children is to encourage restorative and rehabilitative processes so that a large proportion of the group may reach this destination. The purpose of this study is to lay the foundation for such a program.

The scope of this study is confined to an analysis of the crippled child population and of facilities available for its care. *For purposes of registration and study, a crippled child is defined as an individual under 21 years of age who is so handicapped through congenital or acquired defects in the use of his limbs and body musculature, as to be unable to compete on terms of equality with a normal individual of the same age.*

Organization was initiated in July 1936 when, in response to numerous requests, Dr. John L. Rice, Commissioner of Health of the City of New York, called into conference a group of people interested in services for crippled children. The outcome of this conference was a recommendation that a survey be made to determine the number of crippled children in the city and the facilities for their care. On the basis of information on resources of the community thus assembled, it was suggested that the development of a coordinated program for the prevention of orthopaedic disorders and the treatment and rehabilitation of children already afflicted should be proposed.

The recent passage of the Social Security Act made possible the allocation of federal funds for services for crippled children. In response to a request to the New York State Department of Health and the Children's Bureau of the U. S. Department of Labor, a grant sufficient to finance the proposed survey was made available.

In March 1938, Hon. Fiorello H. LaGuardia, Mayor of the City of New York, appointed a commission to organize and supervise such a study and to make recommendations and draft a program on the basis of its findings. The commission appointed included representatives of the various governmental and voluntary services for crippled children. The director of the study was appointed on June 1, 1938 and the staff gradually assembled as the work progressed. The survey was completed and the report approved by the Commission on January 16, 1940.

In planning the survey, it was realized that the problem in New York City is unique. In rural areas, where state services for crippled children have been developed most extensively, emphasis has been placed on the discovery of neglected children and expansion or inauguration of facilities where they did not exist. The outstanding problem in New York City is to learn how the facilities already in existence may be used most effectively. Therefore, the local situation was considered most extensively and no attempt was made to consider problems which may exist in other sections of the country. It is quite possible, however, that the pattern of action recommended may be applicable to the readjustment and coordination of services in other urban areas.

It was also realized that no single aspect of the problem can be isolated and that an effective program must depend upon the integration of physical, educational, vocational and social services.

Although from the administrative point of view segregation of the various services is essential, from the standpoint of the crippled child the problem must be considered as a whole. This principle was kept in mind in planning the study and in making the recommendations which were based on the factual data assembled.

The study resolved itself into three phases: (1) a survey of agencies and institutions, (2) case-finding, (3) a case study of a representative sample of children registered. In investigating the functions, objectives and character of services offered by the numerous organizations concerned, information was obtained by visits to the institutions and agencies and statistical data assembled by means of previously prepared schedules.

Since no registry of crippled children in New York City had been established prior to the survey, it was necessary to locate these children by using every possible contact. Report forms were distributed widely and the larger organizations were assisted in reporting children under their care by members of the research staff.

A case study of a random sample of children reported was conducted in order to analyze the existing system from the point of view of the recipient of services rather than that of the administrator. Patients and their parents were visited and information secured was entered on a schedule, part of which was devoted to data that could be recorded in tabular form and part to a narrative history. The results of this investigation are incorporated in appropriate sections of the report.

A detailed description of methods employed is presented in Appendix A.

CHAPTER II

PRINCIPAL RECOMMENDATIONS

A sound community program for rehabilitation of the crippled child must be based on a common understanding of its objectives. The ultimate aim of the program is early detection and continuity of care until recovery or maturity. As knowledge of medical science progresses, measures for prevention of crippling must be put into effect as they are developed.

The majority of crippled children in need of assistance from governmental or philanthropic organizations receive medical care in hospitals. As needs for social guidance, convalescent care and public health nursing arise, they should be met after referral from this focal point.

Of equal importance is a coordinated program which provides for education and vocational guidance and training. At the elementary school level, the crippled child should receive the special attention which can only be secured in a special class, preferably in a special unit. Vocational guidance and, when advisable, vocational training, should be considered an integral part of his secondary education. Vocational guidance should be instituted at the beginning of secondary school and continued until employment is secured. To round out the program, the crippled child should be provided with opportunities to participate in recreational activities which are compatible with his physical limitations.

On the basis of factual information assembled and the experience of members of the Commission, it has been possible to make certain recommendations which should enhance the development of this program. These recommendations have been recorded at the ends of subsequent chapters of the report in which related phases of the program are considered. Certain of them, however, seem to be of sufficient importance to deserve repetition and further emphasis.

It has been apparent throughout the study that one of the outstanding needs is for more coordination and better mutual understanding on the part of the numerous organizations contributing to the program. With this in mind, *it is recommended that a coordinating service for crippled children be established in the Department of Health.* The primary functions of this service should be to maintain a central registry of crippled children under 21 years of age in New York City and to provide initiative and guidance in the coordination and development of services for the prevention and treatment of orthopaedic handicaps in childhood.

In order to develop better integration of health services, it seems essential that hospitals and public health nursing agencies work in closer cooperation. *It is therefore recommended that the hospital be designated as the focus of physical care and social adjustment and that the services of the physician, social worker and public health nurse be coordinated by means of a system whereby public health nurses and medical social workers may work more definitely under the direction of the physician in charge of the patient.* This arrangement should lead to clarification of the related responsibilities of the public health nurse and medical social worker.

Little improvement in the existing system may be expected, however, until certain changes can be brought about in the organizations of both the nursing services and the hospitals. *The orthopaedic nursing agencies should provide a liaison service to coordinate nursing and hospital services and should accept full responsibility for the health follow-up of crippled children under 21 years of age in their homes. Furthermore, the programs of the* *nursing agencies should be developed with such plans for staff education and such provision of well-qualified personnel that they may offer general health supervision for the families of crippled children.*

In the related field of medical social work, there is also a need for development of higher standards. Such standards cannot be attained until better trained personnel are employed. Adequate social service for the crippled child will be available only when all medical social service is maintained at a higher level of efficiency. Ultimately, the aim of social service departments of hospitals should be to review all admissions in order to determine which patients need attention as far as their social problems are concerned and to carry through the plan of action decided upon to a logical conclusion.

It was observed that patients tend to visit hospital out-patient departments irregularly and to transfer frequently from one hospital to another. Therefore, *it is recommended that every effort be made to induce patients to continue treatment in one hospital.* This would be encouraged by a closer personal relationship between the physician and patient and by improving the organization and equipment of out-patient departments so as to diminish waiting time. The institution of appointment systems would be an important step in this direction.

It is also recommended that in general hospitals, orthopaedic services be developed as independent departments and that the general care of the child not be lost sight of in the care of the crippling condition.

Convalescent homes occupy an important position in the provision of institutional care for crippled children. Many of them could be of even greater service if they were more directly affiliated with hospitals for the acutely ill. *The primary function of these institutions should be to carry out an active treatment pro-*

gram for non-operative and post-operative patients. Although the number of convalescent beds appears to be adequate for the group admitted at present, the services of these institutions should be expanded to care for crippled children in certain categories. *Therefore, it is recommended that convalescent home care be made available for treatment of children suffering from cerebral palsy. Custodial care should be provided for children with progressive and incurable diseases.* Minimal standards of equipment and service in convalescent homes are also recommended (Chapter VI).

Provision of financial assistance for convalescent and hospital care as well as orthopaedic appliances has been an accepted obligation of the State of New York over a period of several years. Investigations indicated, however, that this assistance should be used more extensively by residents of New York City. *It is concluded that the ideal solution of the problem of providing services to crippled children in New York City through state aid would be to amend the Children's Court Act so that responsibility for approval of applications may be removed from the courts and placed under the jurisdiction of a municipal administrative department.* In making this recommendation, however, the inherent danger of eliminating the obligation for payment forced upon the county by court order is realized. For that reason, it is suggested that no attempt should be made to transfer this function until adequate appropriations to the administrative department for services for crippled children can be assured.

It is realized that in organizing a program for crippled children, educational and vocational services should be considered as extensively as services for physical care. In keeping with the trend in other large cities, *it is recommended that classes for crippled children be consolidated in larger units, especially constructed for the purpose in new school buildings, and located at strategic points throughout the city.* In addition, one small school for crippled children should be established to serve as a demonstration center for methods to be followed in other units.

More definite criteria for admission to special classes should be established and greater flexibility in transferring children to and from these classes made possible. To aid in achieving these objectives, *it is recommended that orthopaedists be employed on a part-time basis by the Division of Physically Handicapped Children of the Board of Education to assist in the selection and control of children admitted to special classes for crippled children and home instruction.*

It is also recommended that there be a city-wide bus quota, without territorial restrictions, in order that children may be assigned to special units in elementary schools and to high schools in keeping with their educational needs.

In line with the current policy, *every effort should be made to restrict home instruction to children who are confined to bed or are so ill that transportation to school would be detrimental to their health.*

Special provision should be made in the educational and medical programs for children with cerebral palsy, so that their mental and physical education may progress simultaneously. *It is recommended that special classes for children with cerebral palsy be organized in the public schools and that responsibility for diagnosis and selection of children prior to enrollment in these classes be assigned to cerebral palsy clinics at designated hospitals.* In order to carry out an adequate educational program in these special classes, it will be necessary to employ physical therapists, especially trained in physical education for children with cerebral palsy.

It is the opinion of those concerned with the training of crippled children for a place in society that more attention should be directed toward vocational adjustment. *Specifically, it is recom-*

mended that vocational counseling begin during the first year of high school and continue until satisfactory employment has been found. Responsibility for vocational counseling of all age groups should be consolidated in the Rehabilitation Division of the State Department of Education. Responsibility for placement should be assigned to the State Employment Service. In order to supplement the work of the public agencies, it is suggested that the private agencies extend their activities into the field of research.

Adequate recreational facilities for crippled children should make possible increased social contacts and aid social adjustment. In developing these facilities, *it is recommended that segregation of the crippled child should be avoided as much as possible and that recreation in segregated groups should be provided primarily for the severely handicapped.* Opportunities for recreation for both the slightly and severely disabled should be developed in neighborhood settlement houses. Summer camps for normal children should admit crippled children not severely handicapped. Facilities of summer camps for the more severely incapacitated should be expanded, with special emphasis on the needs of the older boys.

CHAPTER III

STATISTICAL ANALYSIS OF PHYSICAL STATUS

In planning the study, it was realized that intelligent community organization cannot be developed without a detailed knowledge of the population which is to be the recipient of the proposed service. A considerable proportion of the time and energy of the research staff was therefore devoted to the accumulation and analysis of certain vital facts which may be expected to influence the scope and character of the services to be developed.

The last survey of crippled children in New York City was made by the After Care Committee on Infantile Paralysis in 1920 and was concerned primarily with enumeration and planning for children who were paralyzed during the 1916 epidemic of poliomyelitis.* Since then no central registry of crippled children has been maintained. No attempt is made to compare the results obtained with those recorded in this or other surveys. Definitions and methods of enumeration differ. Furthermore, data are influenced by local conditions, character of population and recent epidemics.

Although every crippled child in the city has not been discovered, the proportion is large enough and the sources of reports sufficiently distributed to justify detailed statistical analysis. The statistics recorded were based on analysis of two groups of patients: first, 16,731 different children registered between September 1, 1938 and June 1, 1939 and second, a random sample of 1,277 children, representing 7.6 per cent of the total. The basis of the calculations is noted in each section.

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* Wright, H. D.: *Survey of Cripples in New York City,* N. Y. Comm. on After Care of Infantile Paralysis Cases, New York, 1920.

SOURCES OF REPORTS

During a period of nine months, 28,739 reports were received. The sources of these reports are recorded in Table 1. The method of assembling and coding reports is discussed in Appendix A.

Table 1. Sources of Reports of Crippled Children.

Sources of Reports	Reports Received: Number	Reports Received: Per cent of Total
Total	28,739	100
Hospital or clinic	10,492	36.5
School or vocational service	7,848	27.3
Nursing agency	6,865	23.9
Department of Health*	2,087	7.3
Social agency or lay group	1,324	4.6
Private physician	82	0.3
Personal application	36	0.1
Interested individual	5	—

*Includes children examined in elementary schools and children attending child health stations who were reported by Department of Health physicians.

ENUMERATION OF CRIPPLED CHILDREN

During the nine-month period of case finding, 16,731 crippled children were registered. On the basis of an estimated population of 7,535,000* on January 1, 1939, the known prevalence of crippled children included in the stated definition who were discovered during the survey is 2.2 per 1000 total population. On the basis of an estimated population of 2,630,000 under 21 years of age,** the known prevalence is 6.4 per 1000 persons of the same age group.

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* Population based on the mean of July 1, 1938 and July 1, 1939 estimates computed by the Bureau of Records of the Department of Health.

** In making this estimation, it is assumed that the proportion of persons under 21 years of age has remained unchanged since the 1930 census.

Table 2. Final Distribution of Reports of Crippled Children.

	Items	Totals
1. Reports received		28,739
2. Total duplicate reports		10,656
Reported from two sources	6,755	
Reported from three sources	2,875	
Reported from four or more sources	1,026	
3. Different children reported (1 minus 2)		18,083
4. Ineligible for registration		1,199
Subsequently reported recovered	481	
Minor orthopaedic defects	335	
Non-orthopaedic defects	187	
Not resident of New York City	100	
Over 21 years old	79	
Subsequently reported dead	13	
Other	4	
5. Insufficient information available at time of analysis		137
6. 1939 Births		16
7. Registered (3 minus 4, 5 and 6)		16,731

The distribution of reports by duplication and eligibility is recorded in Table 2. Item 4 of this table requires an explanation. It was realized at the outset that it would be impossible to locate even a small proportion of the children in New York City with such minor orthopaedic defects as flat feet, round shoulders, knock knees and lordosis or infants with rickets who might reasonably be expected to recover after administration of vitamin D. In the subsequent discussion of diagnoses, it will be seen that comparatively few children reported with these diagnoses were registered and these were selected because the reports indicated extensive deformities. Another large group eventually excluded from registration were those who on further investigation or on the basis of subsequent reports were found to have recovered.

The question naturally arises as to how closely the number of children registered approaches the true census of children in New York City who would be included in the definition previously stated. The large number of sources from which reports were received would indicate that the city was fairly well canvassed. Early in the study, the possibility of conducting a house-to-house canvass in selected areas distributed according to health indices, population density and economic status was considered. It was discovered, however, that in order to conduct such a survey and obtain results which would be accurate within a range of plus or minus ten per cent, it would be necessary to canvass a population of approximately 128,000. The necessity for such a large sample is due to the fact that crippled children are generally estimated at approximately 2.5 per 1000 total population. The appropriation available was not sufficient to justify such an extensive canvass and it was felt that to attempt it on a smaller scale would result in an erroneous conclusion.

As reports were received from various sources, they were checked for duplication on a visible index file. This file was arranged according to the Russell Soundex System of alphabetical coding and on each card was recorded the name, address, date of birth, sex, color, parents' names and case number assigned. By use of this system, it was possible to identify and exclude duplicate reports with a high degree of accuracy. Toward the end of the period of reporting, approximately 70 per cent of children reported were already registered. Although this is not a static population and at no time would it be possible to secure 100 per cent duplication, it seems likely that the saturation point was approached.

By means of statistical methods outlined in Appendix B, the number of crippled children is estimated to be approximately

19,000. This represents a prevalence of 2.5 crippled children per 1000 total population and 7.2 per 1000 population under 21 years of age, which probably more closely approximates the true value than the prevalence of 2.2 children registered per 1000 total population and 6.4 per 1000 persons of the same age, previously mentioned.

AGE DISTRIBUTION

Figure 1 shows the age distribution of children registered,* of those with residual deformities after poliomyelitis and of those with diseases other than poliomyelitis. Examination of the curve for children crippled after poliomyelitis reveals a sharp peak for the eight to twelve year old group. This group is made up of children who were under five years of age at the time of the 1931 epidemic of poliomyelitis. The curve for diagnoses other than poliomyelitis takes off at a higher level than that for all diagnoses because it includes a greater proportion of congenital abnormalities and birth injuries. An apparent decrease in the prevalence of crippling from diagnoses other than poliomyelitis in persons over 16 years of age is probably false and may be explained by lack of complete reporting for these age groups. For children crippled by poliomyelitis the decrease results from the fact that fewer children of these ages were attacked by the disease. (See Appendix B). In this connection, it should be noted that a similar decrease in the prevalence of crippling in persons aged 15 to 20 is noted in an analysis of the age of crippled children on all state registers.** A detailed analysis of these data is recorded in Table 3.

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* These data include only children for whom a definite birth date was reported. To avoid the possibility of diminishing accuracy, 2,020 children reported by age in years only were not included in these calculations. The age recorded in each instance was the age in years on the last birth date prior to December 31, 1938.

** *Crippled Children on State Registers, The Child, Social Statistics Supplement,* Vol. 3, No. 9, 1939.

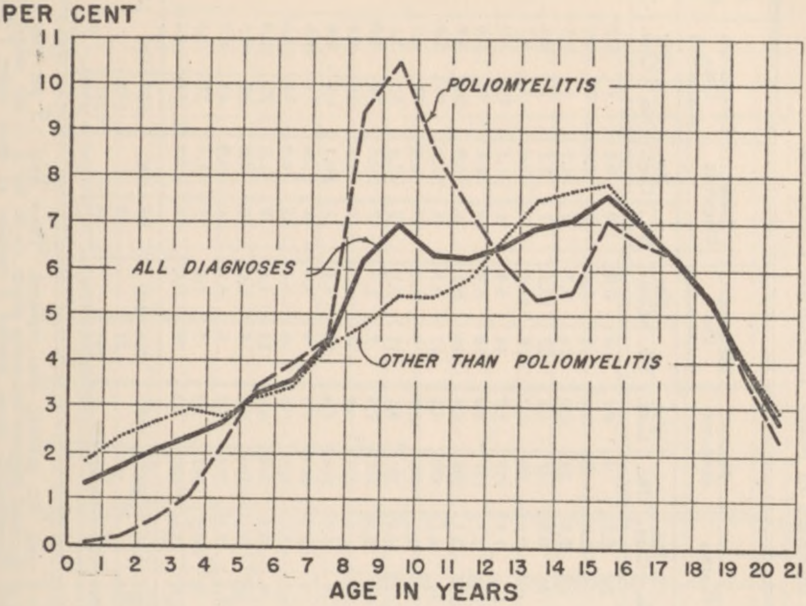

Fig. 1. Age Distribution of Crippled Children Registered.

AGE AT ONSET

In visiting children for the sample study, the age at onset of disability was recorded. The results of this inquiry are summarized in Figure 2. Thirty-three per cent of all children interviewed were disabled at birth, due to congenital abnormalities or birth injuries. Forty-nine per cent of those with diseases other than poliomyelitis were disabled at birth. Sixty-nine per cent of the children crippled as a result of poliomyelitis were disabled before their fifth and 91 per cent before their tenth birthdays. *It is apparent from these data that major emphasis should be placed on detection and treatment of children during the pre-school period.*

Table 3. Age Distribution of Children Included in Major Diagnostic Categories.*

AGE**	Total		Prenatal Influences		Birth Injury		Infection		Trauma		Polio-myelitis		Metabolic Dis-turbances		New Growths		Epiphyseal Dis-turbances		Unknown and Uncertain Causes	
	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
0	191	1.3	145	5.6	38	1.6	0	0.0	2	0.2	4	0.1	0	0.0	0	0.0	1	0.2	1	0.1
1	251	1.7	161	6.2	48	2.0	6	0.3	5	0.6	8	0.2	12	4.6	2	2.9	3	0.5	6	0.4
2	296	2.0	139	5.4	88	3.7	12	0.6	4	0.5	24	0.5	24	9.2	1	1.5	1	0.2	3	0.2
3	349	2.4	156	6.0	86	3.6	13	0.7	7	0.8	47	1.1	27	10.3	1	1.5	2	0.3	10	0.6
4	388	2.6	118	4.5	97	4.1	28	1.5	5	0.6	99	2.2	28	10.7	2	2.9	3	0.5	8	0.5
5	483	3.3	119	4.6	105	4.4	51	2.7	11	1.3	155	3.5	14	5.4	1	1.5	12	1.9	15	1.0
6	530	3.6	125	4.8	119	5.0	45	2.4	21	2.5	177	4.0	18	6.9	3	4.4	9	1.4	13	0.8
7	645	4.4	138	5.3	132	5.6	80	4.2	29	3.5	198	4.4	16	6.1	4	5.9	24	3.8	24	1.5
8	908	6.2	126	4.9	148	6.2	97	5.1	34	4.1	420	9.4	17	6.5	5	7.4	19	3.0	42	2.7
9	1,022	6.9	128	4.9	161	6.8	130	6.9	36	4.3	470	10.5	9	3.4	3	4.4	28	4.5	57	3.6
10	927	6.3	113	4.4	152	6.4	119	6.2	43	5.2	381	8.5	15	5.7	5	7.4	32	5.1	67	4.3
11	922	6.3	128	4.9	148	6.2	128	6.7	68	8,2	328	7.3	7	2.7	7	10.3	24	3.8	84	5.4
12	957	6.5	142	5.5	144	6.1	154	8.1	55	6.6	275	6.2	12	4.6	5	7.4	53	8.4	117	7.5
13	1,012	6.9	155	6.0	161	6,8	138	7.2	74	8,9	244	5.4	14	5.4	7	10.3	62	9.9	157	10.0
14	1,033	7.0	128	4.9	156	6.6	156	8.2	74	8.9	245	5.5	9	3.4	4	5.9	73	11.6	188	12.0
15	1,117	7.6	158	6.1	137	5.8	157	8.2	62	7.5	316	7.1	9	3.4	3	4.4	73	11.6	202	12.9
16	1,016	6.9	109	4.2	117	4.9	152	8.0	79	9.5	294	6.6	14	5.4	8	11.8	72	11.4	171	10.9
17	910	6.2	113	4.4	109	4.6	133	7.0	68	8.2	280	6.3	5	1.9	0	0.0	60	9.5	142	9.0
18	779	5.3	85	3.3	88	3.7	121	6.3	65	7.8	238	5,3	8	3.1	4	5.9	43	6.8	127	8.1
19	576	3.9	66	2.5	73	3.1	108	5.7	50	6.0	167	3.7	3	1.1	1	1.5	21	3.3	87	5.5
20	399	2.7	42	1.6	71	3.0	79	4.1	39	4.7	103	2.3	0	0.0	2	2.9	14	2.2	49	3.1
Subtotal	14,711	100	2,594	100	2,378	100	1,907	100	831	100	4,473	100	261	100	68	100	629	100	1,570	100
AgeUnknown	2,020		449		240		257		180		383		31		10		122		348	
Total	16,731		3,043		2,618		2,164		1,011		4,856		292		78		751		1,918	

*This table should be interpreted as follows:—In the age range 0—1 year, 191 patients were reported. These were 1.3 per cent of the total (14,711). Prenatal influences account for 145 of these 191. 5.6 per cent of the total prenatal influences group are in the 0—1 age range, etc.

**Ages recorded in years on last birthday prior to December 31, 1938. Therefore the group labelled 0 contains all those under 1 year on that date, 1 contains all those 1 but not 2, etc., to 20 which contains those 20 but not 21.

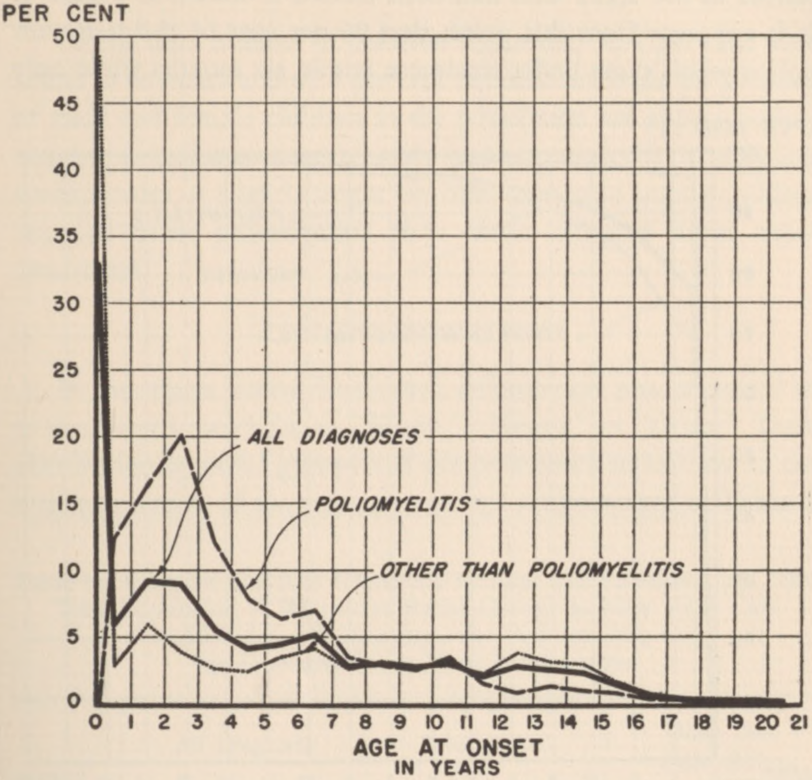

Fig. 2. Distribution at Age of Onset of Disability of Children in Sample Study.

PHYSICAL STATUS

Only 55 of the 1,277 children interviewed for the sample study had never been under treatment. This does not indicate that all the others came under treatment promptly or received continuous or effective treatment after they came to the attention of a physician. The time after onset of illness that treatment was started in the 1,222 who had been treated is shown in Figure 3. It is apparent from this graph that 96 per cent of children with poliomyelitis came under treatment within six months while only

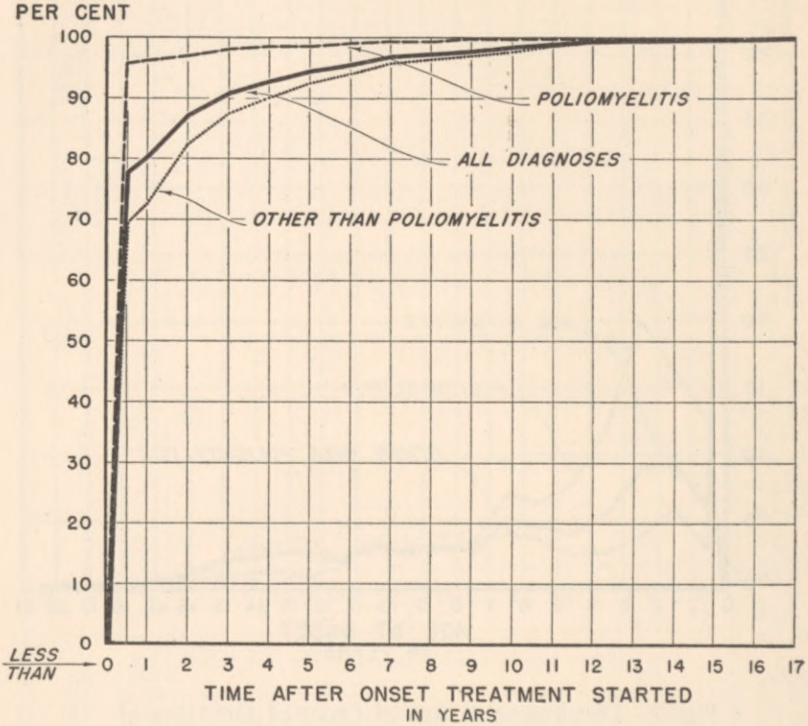

Fig. 3. Cumulative Frequency Distribution of Time After Onset Treatment Was Started Among Children in Sample Study.*

69 per cent of those with other diseases came to the attention of a physician in less than six months. It is also apparent that among those who do not come under treatment relatively promptly, the rate at which care is obtained is comparatively slow.

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*Data were recorded in intervals of six months. Since a large proportion of children, particularly those with poliomyelitis, were treated promptly, the curve for the period 0-6 months is not accurate.

SEX DISTRIBUTION

Of the total number of children registered, 52.4 per cent were found to be males and 47.6 per cent females. Since the proportions of male and female children in the population are approximately equal, this indicates a significantly higher prevalence of crippling among males. A slightly larger per cent were male among children crippled from poliomyelitis than those crippled from other conditions.

RACIAL DISTRIBUTION

In the report forms distributed, information was requested as to the race of the child, as "White," "Negro," or "Other." Their distribution by racial groups and the prevalence in relation to the total population of the respective groups are presented in Table 4.

Table 4. Crippled Children Registered by Race and Prevalence per 1000 Total Population of Respective Racial Groups in New York City. Classified for All Diagnoses, for Poliomyelitis, and for Disorders Other Than Poliomyelitis.

Race**	All Diagnoses		Poliomyelitis		Other Than Poliomyelitis	
	Number	Rate*	Number	Rate*	Number	Rate*
Total	16,731	2.22	4,856	0.6	11,875	1.6
White	15,539	2.17	4,625	0.6	10,914	1.5
Negro	1,161	3.28	228	0.6	933	2.6
Other	31	2.06	3	0.2	28	1.9

*Per 1,000 total population of respective racial group.

**The 1,341 children, for whom race was not reported, were distributed in proportion to the number known for each race.

It should be noted that, while there is a higher prevalence rate from all causes of crippling among Negroes than whites, this relationship is entirely due to conditions other than poliomyelitis. The prevalence rate of crippling from poliomyelitis of 0.6 per 1,000 total population among Negroes as well as among whites is interesting in view of the fact that both the observed incidence rate and mortality rate of the disease was lower among Negroes during the 1931 epidemic. This would seem to indicate that the crippling rate of poliomyelitis is higher among Negroes.

DIAGNOSTIC DISTRIBUTION

In order that the definition of a crippled child adopted by the Commission might be generally known, it was printed on the back of each report form distributed. A standard diagnostic classification of crippling conditions by group and specific diagnosis, adopted with modifications from the "Standard Classified Nomenclature of Disease," was also included on each report form. This arrangement made possible considerable uniformity in nomenclature and in surprisingly few instances was difficulty encountered in classifying a reported diagnosis. When a diagnosis was reported which could not be definitely classified, further information was requested. In the few cases where there was a disagreement in diagnosis on successive reports of the same child, preference was given to the most recent hospital diagnosis.

The percentage distribution in the major diagnostic categories is shown in Figure 4. In analyzing data for this chart, poliomyelitis was separated from other conditions due to infection. Furthermore, paralyses definitely attributed to birth injury were combined with those for which the reports did not state the cause. In practically all cases included in the sample study, where complete histories were obtained, the paralysis was reported to have been present since the first few months of life. Furthermore, no attempt was made to segregate children with cerebral palsy which is due to cerebral agenesis unassociated with birth injury. A detailed analysis of distribution of diagnoses reported for children registered is shown in Table 5.

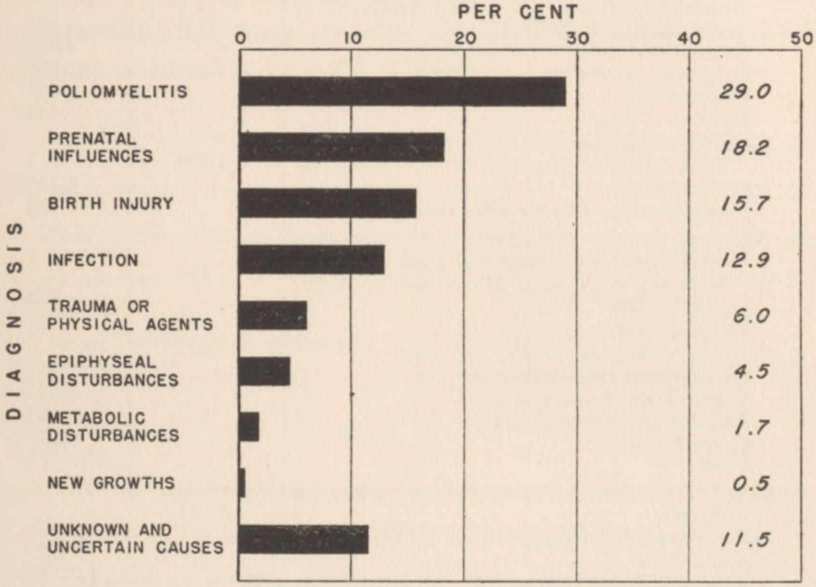


Fig. 4. Distribution of Children Registered by Diagnosis.

The diagnostic classification employed was established on an etiological basis and with few exceptions the cause of the impairment is implied by the diagnosis. Exceptions occur in Classes 2a, 3 and 7 of Table 5. Class 2a has been mentioned previously. In Class 3 (crippling conditions due to infection), further investigation of some of the cases listed as osteomyelitis revealed the fact that osseous infection occurred as a sequela of trauma. In Class 7 (epiphyseal disturbances), some of the cases reported with a diagnosis of slipped epiphysis may also have been due to injury.

Patients interviewed for the sample study were asked whether

Table 5. Distribution of Children Registered by Diagnosis.

	Totals	Sub-group
1. *Crippling Conditions Due to Prenatal Influences:*	3,043	
Congenital absence of a part		182
Congenital hypertrophy of a part		25
Supernumerary part		68
Congenital torticollis		359
Congenital deformity of a joint (exclusive of congenital club foot)		85
Congenital club foot		1,090
Congenital dislocation		528
Fusion defect		216
Other		490
2. *Crippling Conditions Due to Injury of Nervous System During Birth:*	1,880	
Cerebral palsy		1,142
Flaccid paralysis (chiefly Erb's Paralysis)		738
2a. *Additional Patients with Spastic or Flaccid Paralysis Which May or May Not Have Been Due to Injury of Nervous System During Birth:*	738	
Cerebral palsy		662
Flaccid paralysis		76
3. *Crippling Conditions Due to Infection:*	7,020	
Osteomyelitis (non-tuberculous)		764
Tuberculosis of bones or joints		901
Arthritis (non-tuberculous)		427
Poliomyelitis		4,856
Other		72
4. *Crippling Conditions Due to Trauma or Physical Agents:*	1,011	
Post-traumatic deformity		621
Amputation		282
Deformity due to burn		63
Chronic post-traumatic torticollis		16
Other (exclusive of birth injuries of structure of nervous system)		29
5. *Crippling Conditions Due to Disorders of Metabolism, Growth or Nutrition:*	292	
Postrachitic conditions (severe enough to cause disability)		277
Other		15
6. *Crippling Conditions Due to New Growths:*	78	
7. *Crippling Conditions Due to Epiphyseal Disturbances:*	751	
Slipped epiphysis		259
Epiphysitis		492
8. *Crippling Conditions Due to Unknown or Uncertain Causes:*	1,918	
Scoliosis and kyphosis (cause unknown)		1,430
Progressive muscular dystrophy		201
Postural flat foot (severe enough to cause disability)		128
Other		159

their deformities were directly attributed to accidents. Of the 112 (8.8 per cent) who replied affirmatively, 64.3 per cent had diagnoses included in the category "crippling conditions due to trauma or physical agents." The majority of the remainder had osteomyelitis following traumatic injuries. The place of occurrence of these accidents is recorded in Table 6.

Table 6. Place of Occurrence of Accidents Which Caused Residual Deformities.

Place of Occurrence of Accident	Number	Per cent of Total
Total	112	100
Street (excluding automobile)	36	32.1
Automobile	29	25.9
Home	24	21.4
Industrial	4	3.6
Other	19	17.0

PART OF BODY AFFECTED

On each of the original reports, the part or parts of the body affected by the crippling condition was indicated. The distribution of parts involved in the total group are recorded in Figure 5. The parts affected in patients with poliomyelitis, conditions due to prenatal influences (Class 1), conditions due to trauma or physical agents (Class 4) and in conditions not included in these three groups are recorded in Figures 6a and 6b. It is apparent from these data that the feet and legs are affected more frequently than other parts of the body. This is especially true among children suffering from poliomyelitis.

EXTENT OF DISABILITY

From the practical point of view and in relation to vocational adjustment, it is perhaps more important to know the extent of disability than the cause or part of body affected. It is safe to assume that the register includes a cross-section of the children in New York City who are at present afflicted with a disease, injury or abnormality of some portion of the skeletal-neuro-muscular system or their residual effects. The extent to which these children are handicapped in competing with normal individuals in pursuit of normal functions in society varies over a wide range. Furthermore, five years from now many of those registered at present will have recovered and others will have taken their places.

The data on the types of disability among children included in the sample study (see Figure 7) can be taken as a representative cross-section of the children registered. The type of disability by diagnosis is shown in Figure 8. In the few cases where a child was confined to bed or wearing a cast temporarily because of an operation or non-associated illness, his condition prior to confinement was recorded.

It should not be inferred that those who had no real disability were not suffering from a condition which demands orthopaedic treatment but only that they were, at the time of visit, not sufficiently incapacitated to interfere with approximately normal activity. The majority of these children had minor congenital abnormalities, minor residual paralyses following poliomyelitis or slight to moderate degrees of scoliosis.

The extent of difficulty in walking recorded for all children suffering from disability of locomotion (whether or not other parts of the body were also affected) is shown in Figure 9. Of this group, 40 per cent could walk with comparative ease without support yet were incapable of normal activity, 21 per cent could walk with considerable difficulty without support, 22 per cent could walk on stairs, and an additional nine per cent only on the level, with the aid of braces, crutches or canes. The remaining seven per cent were confined to wheel chairs or beds and may be considered, with few exceptions, totally incapacitated for employment.

The extent of disability of children with incapacities of the arms or hands (whether or not other parts of the body were also affected) is shown in Figure 10. Eighty-two per cent of this group had only partial loss of use of one or both upper extremities. Only five per cent had complete loss of use of both arms, or complete loss of use of one and partial of the other, and would therefore be classified as totally disabled for occupations requiring use of the upper extremities.

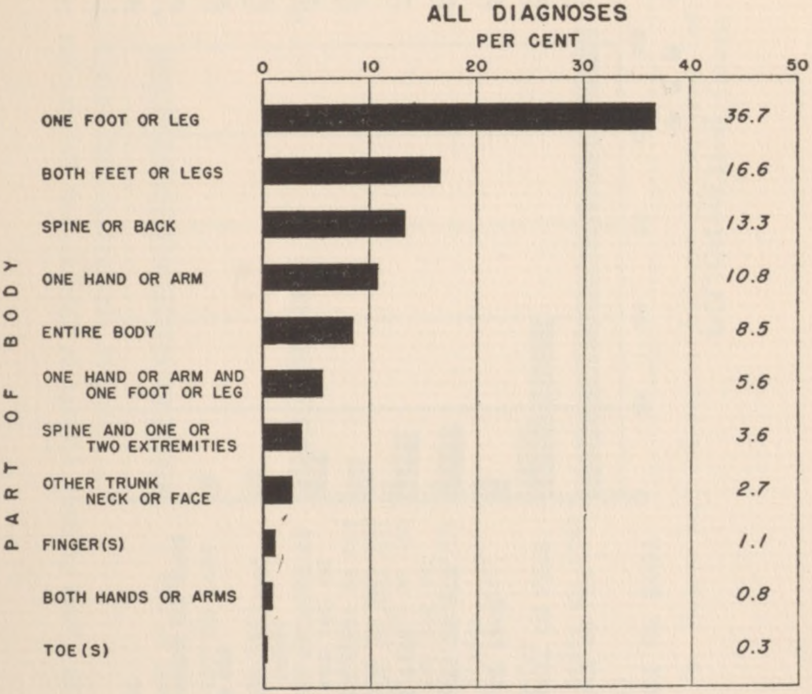


Fig. 5. Parts of Body Affected by Crippling Condition in All Children Registered.

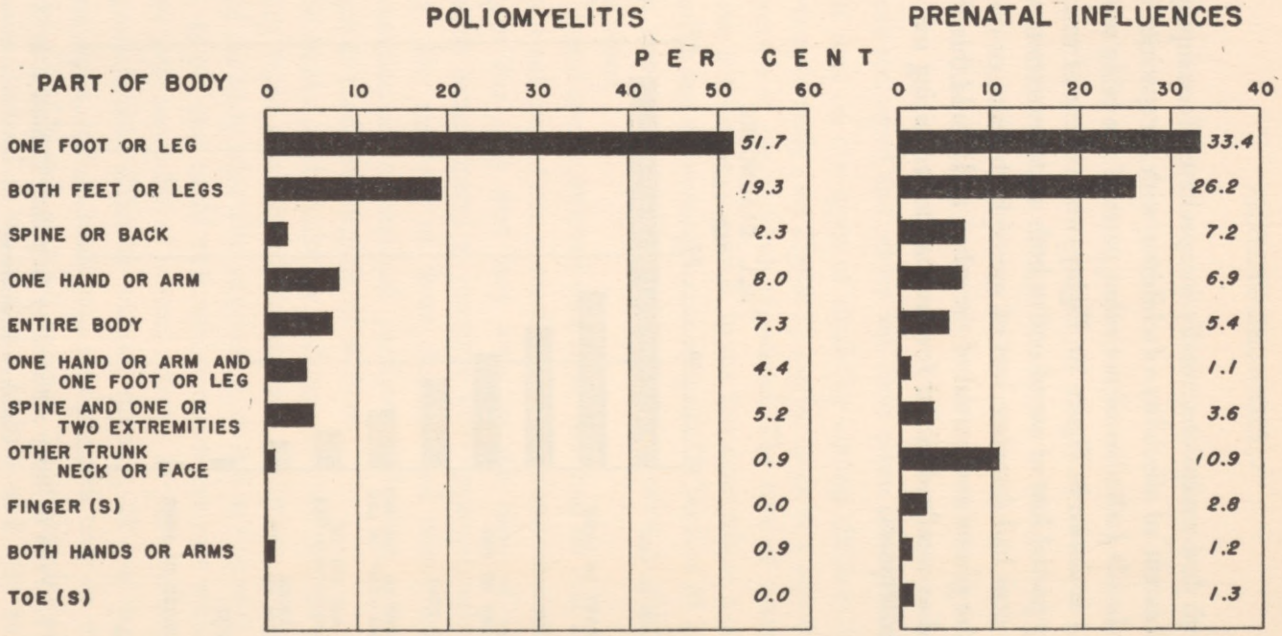


Fig. 6a. Parts of Body Affected in Children with Poliomyelitis and Conditions Due to Prenatal Influences.

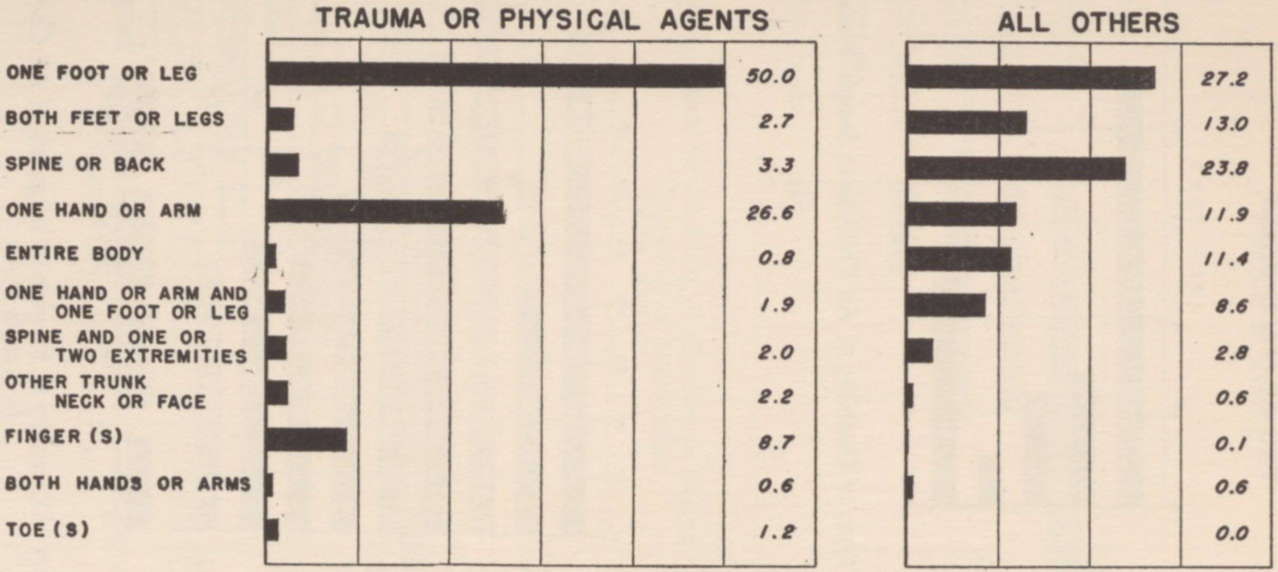


Fig. 6b. Parts of Body Affected in Children with Conditions Due to Trauma or Physical Agents and in the Remaining Groups.

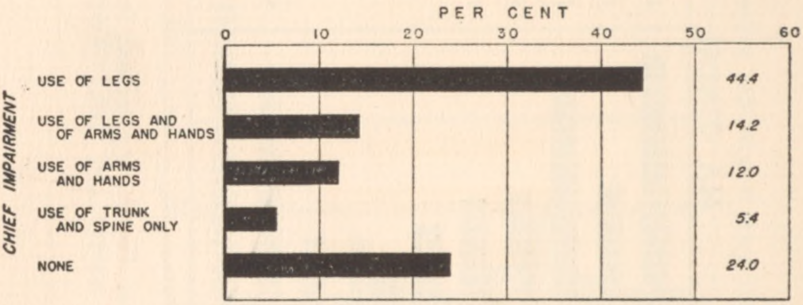


Fig. 7. Types of Disability of All Children in Sample Study.

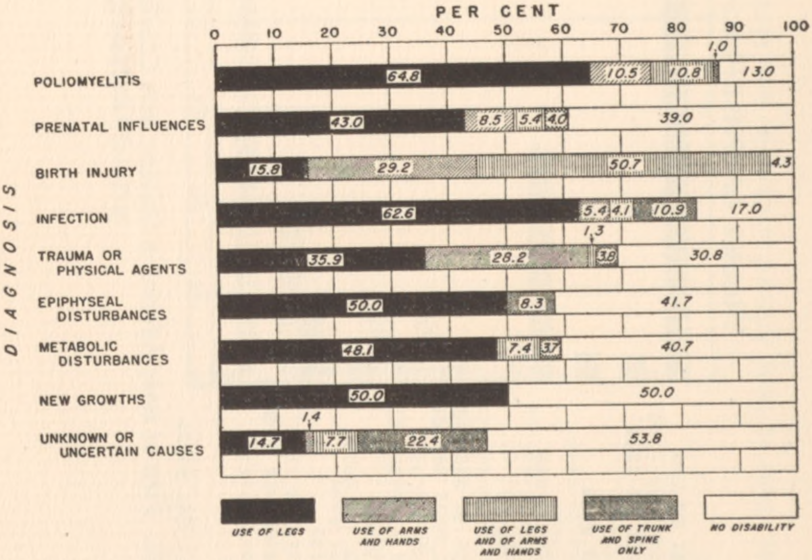


Fig. 8. Types of Disability in Relation to Diagnosis of All Children in Sample Study.

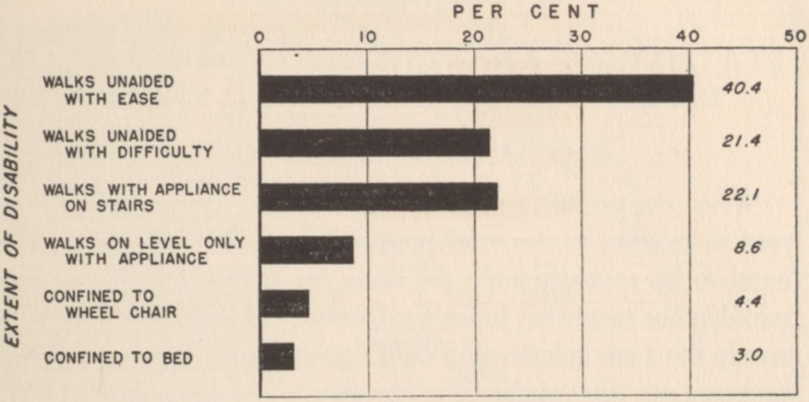


Fig. 9. Extent of Disability of Children in Sample Study with Disabilities of Locomotion.

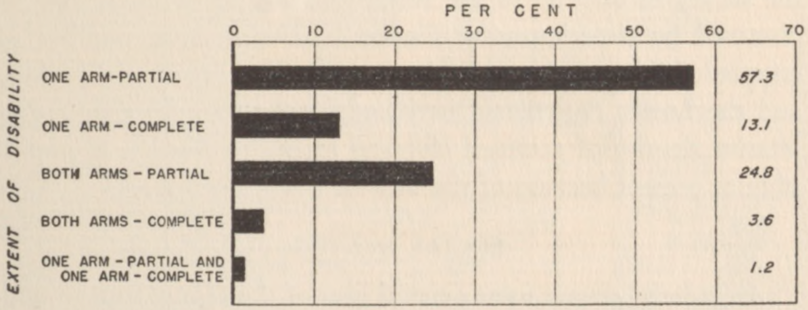


Fig. 10. Extent of Disability of Children in Sample Study with Disabilities of Arms and Hands.

CHAPTER IV

STATISTICAL ANALYSIS OF GEOGRAPHICAL DISTRIBUTION AND SOCIAL STATUS

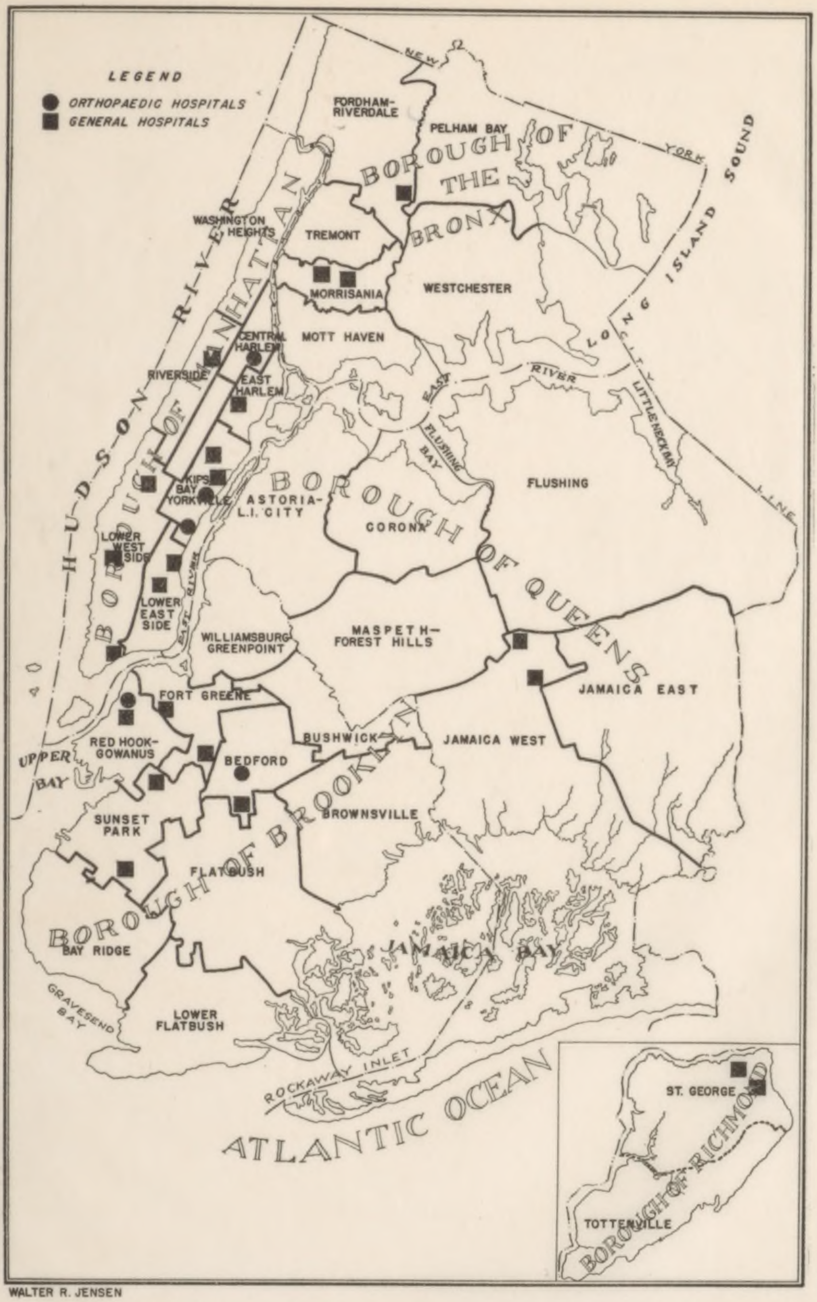
GEOGRAPHICAL DISTRIBUTION

When the prevalence of crippled children registered was analyzed in relation to the total population of the boroughs, it was found to be approximately the same for Manhattan, Bronx and Brooklyn but somewhat lower for Queens and Richmond. Approximately the same relationship held for the prevalence of children registered per 1000 of the same age group. These calculations were made on the basis of the most reliable census data available, which fall short of accuracy because they are based on estimations of population trends nine years after the 1930 census. These data are summarized in Table 1.

The number of crippled children registered by health district is shown in Figure 2. The distribution of hospitals included in the survey in relation to the residence of these children may be observed by superimposing Figure 1. The greatest number of crippled children is found in the Brownsville District of Brooklyn and the Lower East Side District of Manhattan. An estimate of relative density of crippled children in health districts is impossible at present because of the lack of a recent census.

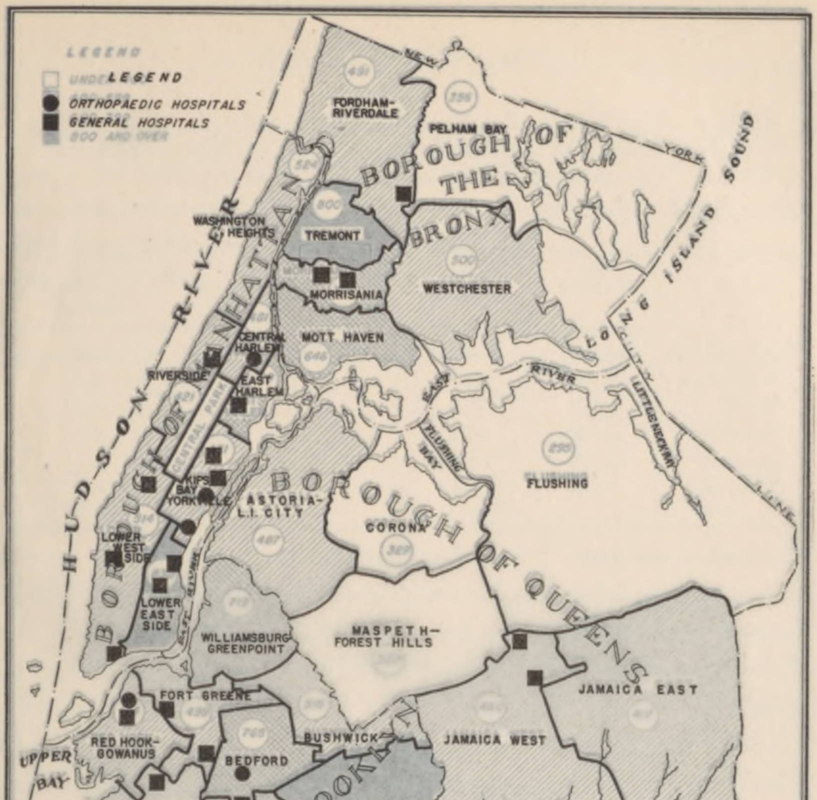
SOCIAL STATUS

In order to obtain some general idea of the family background, home conditions and economic status of the crippled child in New York City, certain questions were asked in each of the 1,277 homes visited. An analysis of the information obtained is recorded in the



WALTER R. JENSEN

Fig. 1. Location of Orthopaedic and General Hospitals with Orthopaedic Services in New York City.



WALTER R. JENSEN

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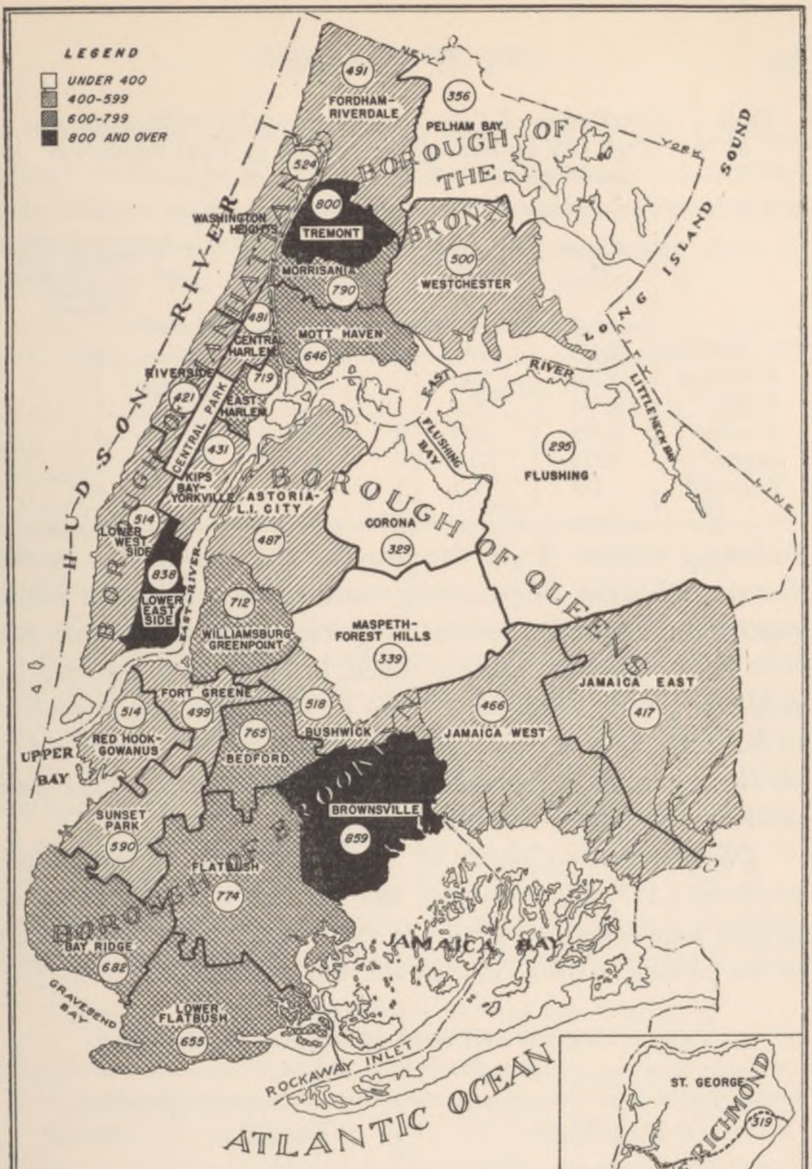

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Fig. 2. Distribution of Crippled Children Registered in Health Center Districts in New York City.

Table 1. Distribution of Crippled Children under 21 Years of Age in New York City by Borough in Relation to Total Population and Population under 21 Years of Age.

	Number of Children	Per cent of Total in City	Number of Crippled Children per 1000 Total Estimated Population	Number of Crippled Children per 1000 Persons of the Same Age Group (estimated)
New York City	16,731	100	2.2	6.4
Manhattan	3,928	23.5	2.3	6.6
Bronx	3,583	21.4	2.4	7.2
Brooklyn	6,568	39.2	2.3	6.2
Queens	2,333	13.9	1.7	5.7
Richmond	319	1.9	1.8	4.7

following sections. These data may be biased somewhat by the fact that all of the comparatively small number of children whose parents can afford the services of private orthopaedists may not have been registered. Many of them, however, were reported by public or private schools and a few by their attending physicians or hospitals. Since the principal purpose of the survey was not to obtain economic data, parents who were reluctant to reveal their economic status were not pressed to do so.

Distribution by Country of Birth of Parents. In the sample group of 1,277 children visited, 98.6 per cent of the 1,270 whose origins were stated were born in the United States. The origins of the parents of these children are recorded in Table 2.

Table 2. Nativity of Parents of Crippled Children Born in the United States.

Origin of Parents	Number	Per cent
Total	1,252	100
Two foreign-born parents	611	48.8
Two native-born parents	466	37.2
One foreign and one native parent	175	14.0

Distribution of Religious Affiliations. As several religious groups maintain social and health services primarily for families with definite religious affiliations, the distribution of religious affiliations among the children visited for the sample study is recorded in Table 3.

Table 3. Distribution of Religious Affiliations.

Religion	Number	Per cent
Total	1,271	100
Catholic	676	53.2
Hebrew	369	29.0
Protestant	217	17.1
Other	9	0.7
Not Reported	6	—

Economic Status. An index of the economic status of the families of crippled children registered was secured by obtaining information on the total family income in 1938 of the families of children included in the sample study. The results of this survey are recorded in Table 4. At least 75 per cent had yearly incomes of less than $2000. The social workers who visited the homes of these children stated that the majority of families who were reluctant to reveal their incomes were apparently in better financial situations than the average. Therefore, it seems likely that a fairly

Table 4. Yearly Income During 1938 of the Families of Crippled Children.

Family Income in 1938	Number	Per cent
Total	1,102	100
Less than $1000	419	38.1
$1000 to $2000	570	51.7
$2000 to $3000	95	8.6
More than $3000	18	1.6
Not reported	175	—

large proportion of the 175 families not reporting had incomes of more than $2000.

The sources of income in the same group of families are recorded in Table 5. Approximately 30 per cent received financial assistance during the year.

Housing Facilities. The scope of this report does not permit detailed consideration of the quality of housing facilities available to the families of crippled children. Furthermore, since the problem is inherent among a large proportion of the city's population, a detailed consideration would have no place in this report. A crude picture of the homes in which crippled children live is indicated by the monthly rent per person in the household (Table 6) and the number of rooms per person (Table 7).

Table 5. Sources of Income of the Families of Crippled Children.

Sources of Income	Number	Per cent
Total	1,255	100
Earned	884	70.4
Public assistance	270	21.5
Private assistance	9	0.7
Earned plus public assistance	81	6.4
Earned plus private assistance	6	0.5
Public plus private assistance	5	0.5
Not reported	22	—

Table 6. Rent per Month per Person in Household Paid by Families of Crippled Children.

Rent per Month per Person	Number	Per cent
Total	1,214	100
Less than $5.00	324	26.7
$5.01 to $10.00	580	47.8
$10.01 to $15.00	106	8.7
More than $15.00	14	1.2
Own home	140	11.5
Superintendent (rent free)	50	4.1
Not reported	63	—

Table 7. Number of Rooms per Person in Household of Families of Crippled Children.

Number of Rooms per Person	Number	Per cent
Total	1,248	100
Less than one	536	42.9
One to two	675	54.1
More than two	37	3.0
Not reported	29	—

CHAPTER V

HOSPITALS

The hospital is the natural focus of physical care for the crippled child. This is especially true in New York City where clinics are accessible to most of the population. Sixty-eight per cent of the crippled children registered have been admitted to hospital wards and 89 per cent to out-patient departments for orthopaedic treatment. It is equally true from the economic point of view when one considers that approximately 75 per cent of children registered are members of families whose incomes are less than $2000 per year and cannot afford the services of private physicians for prolonged and expensive treatment.

The purpose of this study was to determine the extent and availability of hospital services for crippled children in the City of New York. Other aspects of hospital care are so adequately covered in the "Hospital Survey for New York,"* recently published, that it was not necessary to consider the problem more extensively.

GEOGRAPHICAL DISTRIBUTION

The hospitals selected for inclusion in the survey are those which either offer extensive facilities for orthopaedic treatment or those with more limited facilities but so situated that they supply the only services available in certain areas. All of them maintain out-patient departments as well as ward services for treatment of orthopaedic patients. Some general hospitals which care for a limited number of orthopaedic patients in general surgical wards are not included. Furthermore, some institutions which might bet-

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**Hospital Survey for New York:* United Hospital Fund, New York, 1937.

Table 1. The Location and Auspices of Hospitals Considered in Survey.

Hospital	Location	Auspices
Beekman Street Hospital	117 Beekman St., Man.	Voluntary
Bellevue Hospital	First Ave. & 26th St., Man.	Municipal
Bronx Hospital	Fulton Ave. & East 169th St., Bx.	Voluntary
Brooklyn Hospital	DeKalb Ave. & Ashland Pl. Bklyn.	Voluntary
Fordham Hospital	So. Boulevard & Crotona Ave., Bx.	Municipal
Hospital for Joint Diseases*	1919 Madison Ave., Man.	Voluntary
Hospital for the Ruptured & Crippled*	321 East 42nd St., Man.	Voluntary
House of St. Giles the Cripple*	1346 President St., Bklyn.	Voluntary
Israel Zion Hospital	Tenth Ave., 48th & 49th Sts., Bklyn.	Voluntary
Jamaica Hospital	Van Wyck & 89th Ave., Jamaica, Q.	Voluntary
Jewish Hospital of Brooklyn	555 Prospect Pl., Bklyn.	Voluntary
Kings County Hospital	451 Clarkson Ave., Bklyn.	Municipal
Lenox Hill Hospital	111 East 76th St., Man.	Voluntary
Long Island College Hospital	340 Henry St., Bklyn.	Voluntary
Methodist Episcopal Hospital	506 Sixth St., Bklyn.	Voluntary
Morrisania Hospital	Gerard Ave. & 168th St., Bx.	Municipal
Mt. Sinai Hospital	1 East 100th St., Man.	Voluntary
New York Hospital	525 East 68th St., Man.	Voluntary
New York Orthopaedic Hospital*	420 East 59th St., Man.	Voluntary
New York Polyclinic Hospital	345 West 50th St., Man.	Voluntary
New York Post-Graduate Hospital	303 East 20th St., Man.	Voluntary
Queens General Hospital	82-68—164th St., Jamaica, Q.	Municipal
Saint Charles Hospital*	577 Hicks St., Bklyn.	Voluntary
Saint Luke's Hospital	Amsterdam Ave. & 113th St., Man.	Voluntary
Saint Vincent's Hospital (Man.)	153 West 11th St., Man.	Voluntary
Saint Vincent's Hospital (S. I.)	West New Brighton, S. I.	Voluntary
Staten Island Hospital	Castleton Ave., Tompkinsville, S. I.	Voluntary

*Orthopaedic hospital.

ter be classed as hospitals for chronic diseases are considered with the convalescent homes. The 27 institutions considered in the survey, their locations and auspices are listed in Table 1.

Five are institutions devoted primarily to the care of orthopaedic patients and the remainder are general hospitals. Five of the general hospitals are under municipal and 17 under voluntary control.

The distribution by borough in relation to the density of population of crippled children is shown in Table 2.

Table 2. Distribution of Hospitals with Organized Orthopaedic Services in Relation to Number of Crippled Children in Each Borough.

Borough	Number of Hospitals with Organized Orthopaedic Services	Number of Crippled Children Registered	Number of Crippled Children per Hospital
Manhattan	12	3,928	327
Bronx	3	3,583	1,194
Brooklyn	8	6,568	821
Queens	2	2,333	1,167
Richmond	2	319	160

The distribution of these hospitals in relation to the number of crippled children is recorded in Figures 1 and 2, Chapter IV (pp. 30a and 31). These data indicate that there is a concentration of hospitals in Manhattan, an adequate supply in Richmond and a comparative dearth in the other boroughs and that, despite excellent transportation facilities, patients living in outlying districts of all boroughs except Manhattan must spend considerable time traveling to clinics. This situation causes particular hardship among crippled children who are poorly equipped to use the ordinary means of transportation.

In order to determine how extensively crippled children are traveling long distances for clinic treatment, the schedules of the sample study were analyzed to determine the location of the last clinic visited in relation to the residence of the patient. The extent to which patients find it necessary to travel from one borough to another to secure out-patient care for orthopaedic conditions is shown in Figure 1. From this analysis, it is apparent that patients residing in Manhattan attend clinics in that borough but that those from other boroughs, particularly Bronx and Queens, find it necessary to travel to Manhattan to secure treatment.

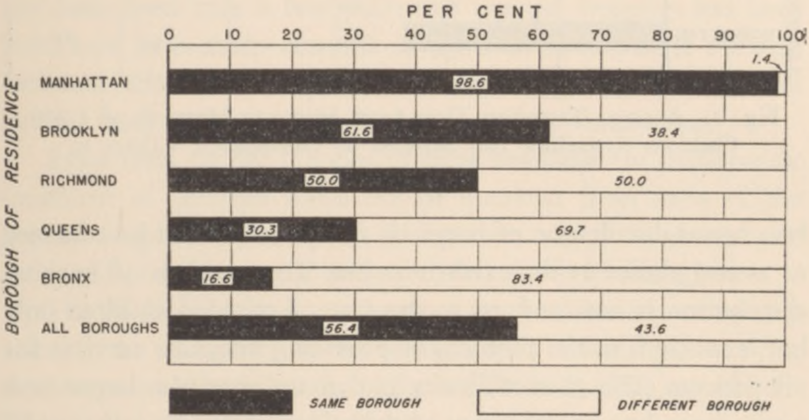

Fig. 1. Proportion of Children at Present Visiting Hospitals in Borough of Residence and Other Boroughs.

The approximate traveling time of the average patient from his home to the hospital was determined by questioning 1,208 patients on arrival at four clinic sessions in each of 25 different hospitals. The results of this investigation are recorded in Figure 2. The average child residing in Queens spends the better part of two hours in a crowded train or bus every time he visits a clinic. The Brooklyn or Bronx child is little better off. What this means in loss of energy is difficult to estimate. That it indicates a need for better distribution of clinic facilities is obvious.

If we are ever to succeed in eliminating the necessity for patients to travel long distances for clinic treatment, there must

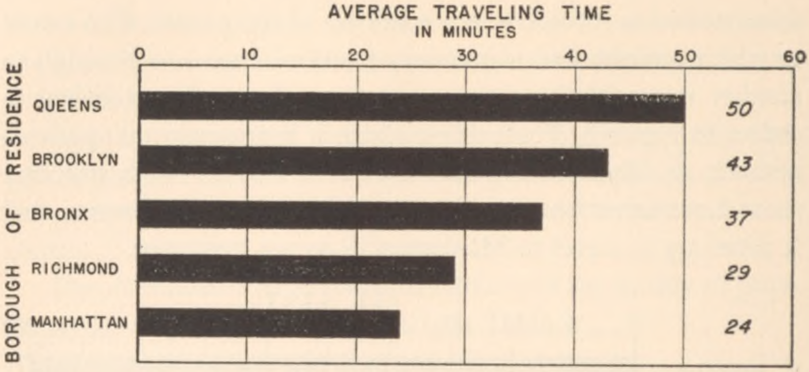

Fig. 2. Average Traveling Time from Home to Hospital of 1,208 Children Attending 100 Sessions of Orthopaedic Clinics in 25 Hospitals.

be a better distribution of hospitals and patients must be educated to attend clinics in their own districts. The problem of hospital distribution is not confined to the care of crippled children only but is inherent in the problem of providing adequate services for all patients. The chief difficulty is that many of the larger hospitals dependent on voluntary contributions, including orthopaedic hospitals, were established in Manhattan at a time when the population was concentrated in that borough. A better distribution could be brought about if orthopaedic services were established at general hospitals in districts where there are comparatively large numbers of children in need of care. If clinics of high standards cannot be developed by existing hospitals in these areas, extension services should be established by the orthopaedic hospitals.

CAPACITY AND USE OF BEDS

At some time during their treatment, the majority of crippled children require in-patient care. Of those included in the sample study, 68 per cent had been admitted to hospital wards for orthopaedic treatment and 17 per cent were admitted during 1938.

These data do not include admissions to contagious disease hospitals for treatment of acute poliomyelitis or to convalescent homes. In visiting the various hospitals, however, one gains the general impression that there is no immediate need for expansion in number of hospital beds for orthopaedic treatment of children. The superintendents state that they are able to accommodate all children demanding admission at present. This statement might not have been true a few years ago but the situation has been influenced by a sharp decrease in the incidence of bone tuberculosis and rickets and the fact that during the past four years there has not been an unusual number of cases of poliomyelitis.

Exact data on the number of beds available for orthopaedic treatment of children could not be obtained from most of the general hospitals because such patients are treated in general surgical and pediatric wards and no definite beds are assigned.

The demand for beds can be most accurately estimated by considering the occupancy of the five hospitals devoted primarily to the treatment of orthopaedic patients (Table 3). The use of beds for private patients is not included.

Table 3. Capacity and Use of Ward Beds in Five Orthopaedic Hospitals, 1937.

Total beds available	548
Patient days available	200,020
Days of use	180,597
Extent of utilization	90%

ADMISSION AND DISCHARGE POLICIES

Admission Policies. In none of the institutions considered are patients excluded because of race, religion or sex. Patients with orthopaedic disorders of all types are accepted for care. Restriction of admission on the basis of residence varies. None of the orthopaedic hospitals have geographical restrictions, although those located in Brooklyn admit a large proportion of their patients from that borough. Admissions to the general hospitals are not strictly confined to patients residing in stated districts.

Duration of Hospitalization. It was found to be impossible to obtain accurate information regarding the duration of hospitalization of children receiving orthopaedic care in general hospitals as special services are not segregated in their statistical reports. The average length of stay of 7,346 ward patients admitted to the five orthopaedic hospitals during 1937 was 24.6 days. The average length of stay in individual hospitals ranged from 15.5 to 192.4 days.

As pointed out in the discussion of convalescent homes (Chapter VI), it is possible that the duration of hospital care might be diminished in some institutions by more extensive use of convalescent facilities. Even so, most orthopaedic patients will probably require longer periods of hospitalization than the average hospital patient.

Discharge Policies. A large proportion of children discharged from hospitals require further medical supervision. The extent to which hospitals assume responsibility for continuation of care varies over a wide range. Ten of 27 report that pertinent data regarding the patient's condition and recommendations for follow-up care is sent to the referring physician routinely. Relations between hospitals and physicians would be improved if this procedure were followed more generally.

In general, there appears to be no definite policy regarding referral of patients to nursing agencies. When patients are referred, the information given to the nursing agency regarding the condition of the patient is often very meagre. A few hospitals assume all responsibility for follow-up through their own social service departments. The efficiency with which this is carried out, however, depends largely upon the number of social workers available and the staff is often found to be inadequate.

Some evidence of the extent to which children are followed was obtained by a study of 212 crippled children discharged from the wards of 25 hospitals during one typical month between September, 1937 and March, 1938. One year later only 65 per cent had ever returned to the out-patient department of the hospital from which they were discharged. The reasons for failure to return are no doubt valid in some instances, as in the case of those referred to convalescent homes or private physicians.

The result of this whole system is that children who are fortunate enough to attend certain hospitals are adequately followed after discharge while those discharged from other hospitals are left to their own devices and may or may not receive further medical attention. The gravity of this situation is eloquently illustrated in many cases. The community may invest hundreds of dollars in hospital care for a patient only to find that it has been wasted because treatment was not carried through to completion. Continuity of medical care is one of the most important problems with which we are confronted. A possible solution to this problem in which the hospital is designated as the focus of a follow-up service is discussed in Chapter XIV.

SOCIAL SERVICE

The functions of social service departments are closely allied to the problem of providing services for medical extension and social adjustment. The problem seemed of sufficient importance, however, to justify a separate chapter. (See Chapter VIII.)

MEDICAL STAFF

The care of patients in the special orthopaedic hospitals is directed by competent orthopaedic surgeons. In some general hospitals included in this survey, orthopaedic treatment is assigned to staffs of attending orthopaedists who are members of the surgical departments. In others, orthopaedic services are established as major departments with the same standing as the departments of general surgery or medicine. The latter arrangement is recommended.

There is no evidence of gross deficiency in the character of surgical treatment in any of the institutions considered. In the city as a whole, orthopaedic treatment is most likely to be found deficient in those institutions where there is no organized orthopaedic service and in which orthopaedic treatment is carried out by general surgical staffs without the supervision of a trained orthopaedist. The admission of children in need of skilled orthopaedic treatment to such institutions should be discouraged and neither municipal nor state aid should be given for the care of orthopaedic patients admitted.

A tendency to overlook the necessity for general medical care of children in orthopaedic wards is found in many hospitals. Although without exception the hospitals considered list pediatricians and internists on their attending staffs, only 21 (78 per cent) report that a pediatrician examines every child admitted as an orthopaedic patient. Only 15 (55 per cent) report that a pediatrician makes rounds on wards for orthopaedic children at regular intervals. Most careful pediatric supervision is found in general hospitals where all children are admitted to pediatric or children's surgical wards.

A tendency to place insufficient emphasis on the general condition and nutritional status of chronically ill children is also found in the initial work-up of children admitted to orthopaedic services. This is reflected in an analysis of routine diagnostic procedures recorded in Table 4.

Table 4. An Analysis of the Frequency of Certain Important Diagnostic Procedures Performed Routinely on Children Admitted to Orthopaedic Services.

Procedure	Number of Services Where Procedure is Done Routinely	Number of Services Where Procedure is Not Done Routinely
Tuberculin test	15	12
Urinalysis	26	1
Blood count	22	5
Serological test for syphilis	20	7

It would seem desirable that in the future all children admitted to orthopaedic services be examined by an attending or resident pediatrician and that certain essential diagnostic procedures be performed routinely. Recommendations made at that time should be considered and carried out jointly by the two services. Such a system would work out to the mutual advantage of both the orthopaedist and pediatrician and should be especially valuable in the training of the younger physicians.

Many institutions also fail to take advantage of the advice of neurologists and psychiatrists in the treatment of crippled children. In only three of the hospitals considered does a neurologist make rounds on orthopaedic wards regularly despite the fact that many of the conditions treated have neurological aspects. It is also obvious that many handicapped children have emotional components which deserve careful attention. Mental hygiene could be profitably introduced in selected cases while the child is in the hospital and continued when necessary in the out-patient department.

NURSING

Nursing care of orthopaedic patients is provided in 13 hospitals by a department which maintains a school of nursing and in 14 by a department which has no organized school. Of these 13 schools of nursing, 11 meet the minimum standards of the New York State Department of Education, one is accredited for affiliation in certain specialties and one is not yet accredited.

In the majority of general hospitals, orthopaedic patients are cared for in either pediatric or adult surgical wards. In three of these hospitals, children under 13, and in two children over 13, are cared for in orthopaedic wards. These facts would indicate that the problem of providing adequate orthopaedic nursing care, measured quantitatively, is not a problem by itself but is part of the problem of providing adequate nursing care for all patients.

In the 13 hospitals with schools of nursing, orthopaedic nursing is provided largely by nurses in training. Supervision of nursing care is the responsibility of nurses who have had relatively little opportunity to enlarge their knowledge of orthopaedic nursing. In only four of the general hospitals did the director of nurses state that the supervisors of wards where orthopaedic patients are cared for have had special training in orthopaedic nursing. This situation obtains because comparatively little orthopaedic nursing experience is available in schools of nursing and it is difficult to find supervisors for surgical or pediatric wards who have had specialized orthopaedic experience.

There appears to be an attempt in some of the hospitals surveyed to enlarge opportunities to provide undergraduate nurses with more experience in orthopaedic nursing and to put more emphasis on preventive orthopaedics through the use of case material available in general wards. This is in line with the recommendations made by the National League of Nursing Education in its Curriculum Guide. Part of the problem lies in the fact that the number of orthopaedic patients in general hospitals is small in comparison with the number of students who need experience in the field. Approximately the same situation exists in those hospitals which do not maintain schools of nursing. Although graduate nurses may be giving most of the nursing care, they may be without extensive background in orthopaedics. Well-prepared orthopaedic nurses can be required only where there is a segregated service.

It is recommended that the Central Registry for Crippled Children work with the New York City League of Nursing Education and the principals of schools of nursing, to study how best to use the clinical material available in the special orthopaedic hospitals for the education of all of the student nurses in the local schools. (The preparation of graduate nurses is considered in the chapter on Public Health Nursing.)

The five orthopaedic hospitals care for a large number of orthopaedic patients, yet in only one is a supplemental course in orthopaedics offered for graduate nurses. Obviously, there is considerable clinical material here which should be made available for training in orthopaedic nursing.

The question may be raised as to what differences in orthopaedic nursing care were found in the orthopaedic and the general hospitals. It was attempted to answer this question only from the point of view of who gives the nursing care. It was found that in general there is a wider use of attendants in the specialized hospitals than elsewhere. In the four specialized hospitals operating at the time of the survey, a registered graduate nurse was in charge of every ward. In some cases their services were supplemented by additional graduate nurses and in all cases by the services of attendants, some of whom had some nursing training. The division of responsibilities between these groups is not always clearly defined and the duties of attendants in some instances, seem to approximate those of graduate nurses. One sharp differentiation of function is made in all hospitals—none of the attendants give hypodermic injections or medications. The use of attendant nursing service in orthopaedic hospitals is without doubt an economical and desirable way of caring for these patients but there still remains much to be done in sorting of responsibilities, in the interest of better nursing care for the patient.

PHYSICAL THERAPY

All of the hospitals under consideration maintain physical therapy departments. The quality of service provided, however, was found to vary widely depending upon the competence of medical supervision, the number and training of technicians and the adequacy of space and equipment.

Seventeen reported that a physician with special training and experience in physical therapy is in charge, five that the physician in charge is a member of the orthopaedic or radiological attending staff and five that the person in charge is a technician. Even where the department is theoretically under the direction of a physician, the major portion of responsibility for the character of treatment may remain with the technicians. This deficiency in service would bear correction in a number of hospitals. The ideal system of supervision is probably found in those institutions where the patient is referred to the physical therapy department with specific recommendations by the orthopaedist, is re-examined and the details of technique prescribed by the physical therapist, and the treatment is carried out under his supervision by technicians. Furthermore, the patient should be referred to the orthopaedist for examination and reconsideration at regular intervals.

The quality of service may also be limited by the number of technicians in proportion to the case load and by their professional qualifications. The absolute number of technicians per hospital means very little because the volume of service varies. When the number of treatments given per technician per day was calculated, however, it was found to range from 13 to 60. There is some question as to how efficiently treatments can be given or how adequately records can be kept when a technician is required to treat as many as 60 patients per day.

The qualifications of physical therapy technicians in some hospitals were also found to fall below the standards submitted to the Children's Bureau by the Council on Medical Education and Hospitals of the American Medical Association and the American Physiotherapy Association (Appendix C). An effort should be made to bring the professional qualifications of these workers up to the standards noted.

In considering the equipment for physical therapy available in the various hospitals, it should be kept in mind that much of the physical therapy necessary in treating the orthopaedic patient can be accomplished by exercises, massage, muscle training and posture work without elaborate equipment. The quality of physical therapy cannot be judged by the amount of expensive apparatus. The equipment provided in the 27 hospitals visited is itemized in Table 5.

Table 5. Equipment for Physical Therapy Available in 27 Hospitals.

Equipment	Number of Hospitals Equipped
Swimming pool for under water treatment	4
Tank for under water treatment of one patient	9
Facilities for massage, muscle training and postural exercises	27
Electrotherapy	24
Ultra-violet	27
Baking	27

The apparatus available in a well-equipped hospital with an active orthopaedic service should include a therapeutic tank, tables and booths for massage and muscle training, mercury vapor or carbon arc lamps for ultra-violet ray therapy and equipment for heat and electrotherapy.

In order to maintain the necessary equipment and personnel, some hospitals make an additional charge for physical therapy. Fifteen of 22 voluntary hospitals charge a fee for each treatment in addition to the regular ward rate and in 17 a fee is added to the regular charge for an out-patient visit.

LABORATORY FACILITIES

There was no gross evidence of insufficient laboratory facilities for routine diagnostic procedures in any of the hospitals visited. All were equipped with apparatus for radiological and with laboratories for routine bacteriological, chemical and pathological examinations. It was not possible to determine how extensively these facilities are used.

OUT-PATIENT SERVICES

Some idea of the volume of care provided by out-patient services may be obtained when one realizes that in 1934, the ratio of patients admitted to all types of out-patient services to the population of New York City was 1:3.5 and that the number of visits per patient averaged 4.2.* There is no reason to believe that attendance has decreased since that time.

Among the crippled children reported to the Commission, it is estimated that 89 per cent have been admitted to out-patient departments of hospitals for orthopaedic treatment at some time. (Eight of the 11 per cent who have not been admitted to out-patient departments have been cared for by private physicians.) Sixty-two per cent made one or more visits during 1938.

The chief problems in providing adequate dispensary service for crippled children are inherent in the general problem of ambu-

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**Hospital Survey for New York;* vol. 2, p. 434, United Hospital Fund, New York, 1937.

latory care of all patients. The scope of this report does not permit adequate consideration of this problem except as it particularly affects the crippled child. Furthermore, it is so well covered in the Hospital Survey for New York that a detailed discussion would be repetitious. The Commission therefore subscribes in principle to the recommendations of the Committee on Out-Patient Services of the Hospital Survey for New York (see Appendix D).

Several of the chief problems affecting service to crippled children deserve special emphasis. The distribution of hospitals with orthopaedic services has been discussed. Needless to say, poor distribution affects out-patients more extensively than in-patients as the former must travel long distances repeatedly and regularity of attendance is influenced largely by this factor.

The increased demand for dispensary care in recent years has not been paralleled by increased financial support, so that space and equipment are often found to be inadequate. Furthermore, no physician can be expected to give the patient the type of care he deserves or to maintain the personal relationship which is so necessary when he is forced to work under pressure in a crowded, noisy, unorganized clinic.

Evidence of poor organization and insufficient equipment is reflected by the waiting time of patients after arrival at the clinic. The harassed, resentful mother and fatigued child waiting for hours on a crowded bench present an all too familiar picture. The interval between arrival and interview by the physician for 1,189 patients under 21 years of age visiting orthopaedic clinics in 24 hospitals on four successive weeks was determined. The results are recorded in Figure 3. Forty-six per cent of these patients waited for more than one hour and twelve and one-half per cent more than two hours before being seen by a physician. In one large hospital where the clinic is well-organized and patients are given definite appointments, 90 per cent of the patients were

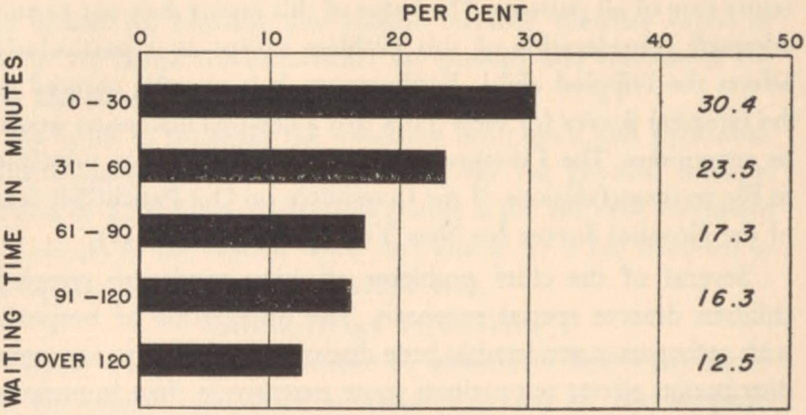

Fig. 3. Interval Between Arrival at Clinic and Interview by Physician of 1,189 Children Visiting Orthopaedic Clinics at 24 Hospitals.

interviewed by a physician within 30 minutes after arrival and the remainder within an hour. In five other hospitals over half of the patients were seen within 30 minutes. On the other hand, in five hospitals, no patient was seen in less than one hour after arrival. More extensive use of appointment systems, even if carried no further than dividing the time of arrival of patients at a clinic session into two groups, should diminish waiting time effectively. Waiting time is also influenced by the size and interest of the attending staff, organization of the clinic, physical equipment, delays in securing records, etc. The fact remains that the keystone of adequate care for the crippled child is regular and conscientious medical supervision. If a system were evolved whereby children could be interviewed promptly and carefully on arrival at the clinic, much of the wasted effort which results from irregular attendance and shopping from one clinic to another would be eliminated.

In order to determine how extensively patients are wandering from one hospital to another, a study was made of the number of hospitals attended by the 1,277 children included in the sample group. The extent to which patients are transferred is indicated in Table 6. Forty-one per cent visited two or more hospitals.

Table 6. Number of Hospitals in New York City Visited for Orthopaedic Treatment.

Number of Hospitals Visited*	Number of Children	Per cent
Total	1,277	100
One	698	54.7
Two	358	28.0
Three	96	7.5
Four	54	4.2
Five or more	13	1.1
None	58	4.5

*Communicable disease hospitals and convalescent homes not included.

The reasons why they sought treatment at several hospitals were determined by examining the histories as related by the parents of 408 patients who were treated at more than one hospital. The results were recorded only when frank statements were elicited (Table 7). The remaining 869 patients included in the sample study either visited less than two hospitals or were unwilling or unable to state clearly the reasons for transferring. On the basis of this analysis, it is apparent that the most common cause of complaint is dissatisfaction with the rate of recovery. It seems likely that transfers for that reason might be diminished if physicians and other clinic personnel would take time to explain the nature of the disorder and prognosis. The second most common reason for transferring was attributed to advice from a member of a hospital staff, usually because better facilities for treatment were available at one of the orthopaedic hospitals. Other common causes were influence by neighbors, school teachers, visiting nurses or social workers; the necessity for traveling a long distance to

Table 7. Reasons for Transfer from One Hospital to Another as Stated by Parents Interviewed.

Reason	Number of Transfers	Per cent
Total	565	100
Dissatisfied with progress	141	25.0
Recommendation of hospital	129	22.8
Influenced by outside advice	82	14.5
Distance from home to clinic	67	11.9
Dissatisfied with service	56	9.9
Distrust of operation	43	7.6
Other	47	8.3

the clinic originally selected; dissatisfaction with service, such as the attitude of staff members, crowding or excessive waiting; and distrust of operations recommended.

Although it was originally believed that one of the factors contributing to irregularity in attendance and excessive waiting in clinics might be an inadequacy of attending physicians, this is apparently not true. In the 24 of 27 orthopaedic clinics from which information was secured, the average number of patients per physician per session is from five to ten and in the remaining three, from ten to fifteen. Since the duration of a clinic session is approximately two and one-half hours, in the majority of clinics physicians treat only two to four patients per hour. Deficiencies in organization and auxiliary personnel appear to be more important than lack of physicians.

RECOMMENDATIONS

(1) That hospital services for crippled children should be redistributed but services should be established only in those institutions where highest standards can be maintained.

(2) That the duration of hospitalization be decreased by more extensive use of convalescent homes.

(3) That in general hospitals, orthopaedic services be developed as independent departments.

(4) That children admitted to orthopaedic services be examined at regular intervals by a member of the pediatric staff and that important diagnostic procedures be performed routinely. The treatment of non-surgical conditions should be carried out jointly by the two services.

(5) That the psychological aspects of the problem of the crippled child be given more serious attention.

(6) That physical therapy departments be conducted under the supervision of physicians with training and experience in that specialty. Designation of the character of treatment should, however, remain the responsibility of the orthopaedist. Furthermore, adequate equipment should be provided.

(7) That the organization and equipment of out-patient departments be improved so as to diminish waiting time. The institution of appointment systems would be an important step in this direction.

(8) That every effort be made to induce patients to continue treatment in one hospital. This would be encouraged by a closer personal relationship between the physician and patient.

(9) That the recommendations of the Committee on Out-Patient Services of the Hospital Survey for New York be put into force as rapidly as possible.

CHAPTER VI

CONVALESCENT HOMES AND CHRONIC DISEASE HOSPITALS

From the standpoint of physical care, crippled children may be divided into four general categories: (1) those who may be cared for at home or attend school if visited by a physician or taken to a clinic at regular intervals; (2) those in need of hospital care for diagnosis and intensive medical or surgical treatment over comparatively short periods; (3) those who are confined to bed or limited activity or require prolonged intensive non-surgical and supportive treatment; (4) those suffering from progressive or incurable diseases who need custodial care. Obviously, at various stages of treatment, patients may be transferred from one to another of these groups.

Facilities for care of children included in the first two groups are considered in other sections of the report. Unfortunately, institutions for care of children in the fourth group are practically non-existent. With the exception of the few who are admitted to convalescent homes or to institutions for the feeble-minded, children with progressive and incurable diseases largely remain a burden to their families.

Institutions established for the care of crippled children who are confined to bed or limited activity or who require prolonged, intensive, non-surgical and supportive treatment are called either hospitals for chronic diseases or convalescent homes. The term "convalescent home" is applied to institutions ranging from well-equipped hospitals located outside of the city caring for chronically ill patients to homes for custodial care. The convalescent

Table 1. Capacity, Location and Auspices of Institutions Covered in Survey.*

Institution	Beds available for Patients under 21 with Orthopaedic Disorders	Location	Auspices or Affiliation
Blythedale Home	62	Valhalla, N. Y.	Federation of Jewish Charities
Convalescent Home for Hebrew Children	56	Rockaway Park, Queens	New York City Federation for Support of Jewish Philanthropic Societies
Hospital for Joint Diseases, Country Home	60	Mott Ave. & Jamaica Bay, Far Rockaway, Queens	Hospital for Joint Diseases
Neponsit Beach Hospital	120	Rockaway Park, Queens	Department of Hospitals
New York Orthopaedic Dispensary and Hospital, Country Branch	97**	White Plains, N. Y.	New York Orthopaedic Dispensary & Hospital
New York State Reconstruction Home	310	West Haverstraw, N. Y.	State of New York
St. Agnes Hospital for Crippled Children	110	White Plains, N. Y.	Catholic Order of St. Francis
St. Charles Hospital, Country Home	210	Port Jefferson, L. I., N. Y.	St. Charles Hospital, Bklyn.
House of St. Giles the Cripple, Convalescent Home	58	Garden City, L. I., N. Y.	House of St. Giles the Cripple, Bklyn.
Sea View Hospital	42	Dongan Hills, S. I.	Department of Hospitals
Wave Crest Convalescent Home	68	Far Rockaway, Queens	Brooklyn Children's Aid Society

*The Montefiore Hospital for Chronic Diseases provides beds for chronically ill children but comparatively few are occupied by children with orthopaedic disorders. The Welfare Hospital for Chronic Diseases admits an indefinite number of older children with orthopaedic disorders for prolonged care.

**This institution admits children and adults according to demand. The total number of beds available is 169. The average number of beds in daily use for patients under 21 during 1938 was 97.

homes discussed in this section of the report are more or less equipped to carry out active treatment of orthopaedic disorders and are to be clearly distinguished from homes for undernourished children and those recovering from acute illnesses. Furthermore, no consideration is given to institutions for adults although a few patients of the 16 to 21 year age group may be admitted to them.

LOCATION AND AUSPICES

The institutions covered in the survey, their locations and auspices are listed in Table 1.

Although some of these institutions admit patients who are not residents of the City of New York, a large proportion are from the city. They are all located within a radius of 30 miles of Manhattan yet in general are far enough away from congested areas to allow for a country atmosphere and spacious surroundings.

Eight of 11 are under control of voluntary organizations, two under the Department of Hospitals and one under the State of New York. Although direct affiliation with hospitals which accept patients for comparatively short periods would seem desirable, only four may be considered to fall within this group. The municipal institutions are not included as their affiliations with other municipal hospitals are not sufficiently direct to provide continuity of care under supervision of the same medical staff.

In order to avoid the confusion and misinterpretation which may result from questionnaires, a member of the staff visited each of the institutions and obtained the information desired by direct observation and conversation. Uniformity in statistical data assembled was assured by use of a schedule which was filled out at the time of the visit.

CAPACITY AND USE

In the Hospital Survey for New York, it is stated that in 1934, 19.9 per cent of maximum or potential bed days for convalescent care were available in orthopaedic institutions. It is estimated that an even larger proportion of potential bed days available for children would be available for the orthopaedic group.

Table 2. Capacity and Use of Convalescent Beds for Children with Orthopaedic Disorders in 1938.

Beds available for patients under 21 years old*	1,193
Patient days available	435,445
Days of use	364,683
Extent of utilization	80.4%
Extent of utilization excluding New York State Reconstruction Home	91.2%

*Beds available for patients 16 years or under only, 670.

Analysis of the capacity and use of beds available for children with orthopaedic disorders in the institutions mentioned is recorded in Table 2. Analysis of data from individual institutions reveals the fact that the number of beds available ranges from 42 to 310. The range of occupancy varied from 62.5 to 103 per cent of capacity during 1938. As noted in Table 2, 80.4 per cent of potential bed days were utilized. Excluding the New York State Reconstruction Home, the extent of utilization was 91.2 per cent. Although seven of the 11 institutions operated at 90 per cent or greater capacity, this does not necessarily indicate overcrowding as it would in general hospitals because admissions can be regulated and a complement of unoccupied beds is not necessary as it is in the latter. None of the institutions reported that waiting lists are necessary at present, although their facilities were inadequate to fulfill demands for admissions after the 1916 and 1931 epidemics of poliomyelitis. Social service departments of hospitals also reported little difficulty in securing beds for convalescent orthopaedic children during the past few years.

It would appear on the surface that there is less need for further expansion of convalescent facilities for children with orthopaedic disorders than for other types of convalescent children. On the other hand, there is some question as to whether the facilities for convalescent care are being used as extensively as they might be. Patients are allowed to remain for prolonged periods in hospitals where the cost per patient day far exceeds that in convalescent homes. If patients were transferred to the latter at an earlier stage of convalescence or at a time when only physical therapy and supportive treatment were necessary, the cost to the community could be reduced. Furthermore, in some hospitals the attending staffs pay little attention to the future of their patients after the period of hospitalization and the benefits of hospital care are often neutralized by poor home conditions.

As will be emphasized later, facilities for institutional care of children suffering from cerebral palsy are practically non-existent. Such care could be carried out more efficiently and at less expense in convalescent homes than in hospitals.

It must also be kept in mind that an unusual demand must be expected after future epidemics of poliomyelitis. It would probably be unsound to maintain institutions for orthopaedic children equipped to handle such peak loads during intervening periods. It seems likely, however, that there is need for expansion of convalescent facilities for children in general and if the number of beds in institutions for non-orthopaedic children were increased, the additional load which follows epidemics of poliomyelitis could be more nearly absorbed.

ADMISSION AND DISCHARGE POLICIES

As expected, the admission policies of the various independent institutions are not uniform but depend upon the character of services offered and affiliations with other institutions and organizations. Some of the institutions under consideration do not maintain admission offices in the city and applications for admission may be made through the Hospital Information and Service Bureau of the United Hospital Fund. Application for admission to the remainder is made directly, through the affiliated hospital, central office of the agency or the Children's Court. Although further coordination of admission offices might bring about better use of existing facilities, the variety of sponsoring organizations makes it unlikely that such a development would be practical.

Diagnostic Restrictions. The majority of homes and chronic disease hospitals under consideration are devoted to the care of special types of children and select patients in accordance with well-defined purposes. With the exception of the Sea View Hospital and the Convalescent Home for Hebrew Children, admissions are confined to children with orthopaedic disorders. In some of the institutions, however, there is further restriction by diagnosis.

Children with tuberculosis of the bones and joints are admitted to 10 of the 11 institutions. The facilities at Sea View Hospital are particularly well adapted for the care of these patients because treatment of tuberculosis involving other parts of the body can be carried on simultaneously. This would seem to be the best institution for further development of facilities for treatment of bone and joint tuberculosis if expansion is found to be necessary. The incidence of these disorders is diminishing, however, and a continuing decrease in demand for institutional care may be expected.

All except Sea View Hospital and the Hospital for Joint Diseases Country Home admit children with post poliomyelitis and the facilities for this group seem to be sufficient to meet the current demand. Children suffering from the remaining orthopaedic disorders except cerebral palsy are admitted without discrimination to all except the two institutions previously mentioned.

Children with cerebral palsy deserve special consideration. At present none of the institutions for prolonged care admit these children in appreciable numbers or have special programs for their treatment. Improvement in the conditions of many of these children could be anticipated if facilities were available for simultaneous physical and educational treatment. Some of them could be treated adequately while living at home if special classes were available and it would be futile to attempt to organize facilities for institutional care during the entire period of development. A period of institutional care during the early stage of treatment, however, would be of inestimable value in the majority of cases. The first item in a program for expansion of convalescent facilities for crippled children should be the development of services for those with cerebral palsy.

Age Restrictions. With regard to limitation of admission on the basis of age, only the Sea View Hospital and the Country Branch of the New York Orthopaedic Hospital, among those considered, admit patients over 21 years of age. Among persons under 21 years, those most likely to suffer from lack of convalescent facilities are the adolescents between 16 and 21 years. Seven of the 11 institutions considered have age limits of 16 years, so that beds available for the older group are limited. It is hoped that this deficiency may be at least partially overcome by use of the Welfare Hospital for Chronic Diseases.

Patients are seldom accepted for convalescent home care when less than two years of age because of the danger of intercurrent respiratory infections and diarrhoea. Infants who must be removed from their homes during this period are best cared for in foster homes.

Sex, Racial and Religious Restrictions. None of the institutions for care of orthopaedically handicapped children exclude patients from admission because of sex, race or religion. By natural selection, however, a larger proportion of Catholic, Protestant or Jewish children are found in homes which are affiliated with religious organizations.

Geographical Restrictions. Patients who are residents of the five boroughs of New York City may be admitted to any of the institutions listed. Some of them are located outside the city limits and accept occasional patients from adjacent communities. With the exception of the New York State Reconstruction Home, this number is too small to influence substantially the statistics recorded.

Duration of Stay and Discharge Policies. In general, the period of institutionalization is probably somewhat greater in hospitals and homes for children with orthopaedic disorders than in convalescent homes for other children. As previously noted, most of these patients are admitted for active treatment as well as for convalescence from an operation or acute illness and consequently require more prolonged care. The length of stay of 764 patients discharged during 1938 from nine of the eleven institutions considered in the survey averaged 442 days. (In the two remaining institutions, data on patients under 21 years of age could not be segregated.) Some institutions allow patients to remain as long as five to ten years. Although such prolonged periods of care may be necessary and desirable in isolated cases because of the condition of the patient or character of home conditions, it seems likely that the primary function of these institutions should be to carry out an active treatment program. There is no objection, however, to the development of a vocational training program in institutions where it would be feasible. A special home should be provided in New York City for children with progressive and incurable diseases in need of only nursing care, and such other measures as would be of advantage.

Few institutions seem to have a definite policy in regard to discharge of patients. In general, children remain as long as improvement in their physical conditions may be expected. A more rapid turn-over of patients in some of the homes would be desirable. Children who are ambulatory and in need of treatments once or twice a week should be allowed the normal contacts of a home and school environment when home conditions are suitable.

MINIMAL STANDARDS

Medical Supervision. The professional policies of convalescent homes should be controlled directly by active medical boards made up of representatives of the attending and consulting staffs. All of the institutions considered report that they have organized medical boards responsible for professional policies. The amount of control actually exercised by these boards, however, varies considerably. In many instances, the medical boards meet infrequently and are not sufficiently acquainted with the conduct of the institutions to function effectively. Thus, an institution may be actually controlled by the lay board and superintendent nurse. A more intimate relationship between the medical board and institution would be desirable.

Every patient in a convalescent home for orthopaedic children should be seen by an orthopaedist at least once a week. In the larger hospitals, surgeons are available for consultation daily but in some of the smaller homes in outlying districts, the surgeon seldom visits more frequently than once a week. Under these circumstances, he examines only patients brought to his attention by the nurse and children may remain for months without a careful and complete examination. As these smaller institutions have not sufficiently active services to attract competent resident physicians, one solution may be to pay moderate salaries to practicing orthopaedic surgeons who might, in return, be expected to devote more time to the institution.

An arrangement should be made whereby children are examined by an attending pediatrician on admission and subsequently at intervals of two weeks. Although most of the institutions list a pediatrician as a member of the attending staff, he is called in only when patients appear to be severely ill or are suspected of having a contagious disease. This does not constitute adequate medical supervision.

If the minimal standards of medical and surgical supervision mentioned cannot be provided, it would be preferable that some of the smaller institutions combine so that such service would be made possible. The larger institutions with adequate attending and resident staffs are much better equipped to provide the active treatment which is necessary in a large proportion of cases. Closer affiliation between convalescent homes and active orthopaedic services of large hospitals would also make possible better medical supervision and continuity of care.

Nursing. An adequate staff of graduate registered nurses should be provided so that patients may be constantly under their supervision. There appears to be no reason, however, why trained attendants cannot relieve nurses of much of the care of patients who are not confined to bed provided there are sufficient nurses to perform such technical duties as changing of dressings and to supervise the general care. At the time of the survey, at least three graduate nurses were employed by each institution, so there is no evidence that nursing service is not being provided at present.

Physical Therapy. Facilities for physical therapy should be provided in all convalescent homes for crippled children and the treatment should be carried out by trained physical therapy technicians. An exception may be made for institutions which admit only children with bone and joint tuberculosis where treatments with mercury vapor or carbon arc lamps are given by the nursing staffs. Furthermore, the work of physical therapy technicians should be adequately supervised by attending physicians.

At present, physical therapy technicians are employed on a full-time basis by seven of the 11 institutions. Two institutions which do not employ technicians admit only patients with tuberculosis. One of the remainder is under municipal and the other under voluntary control.

The minimal standards of physical therapy equipment provided in institutions for care of orthopaedic patients should include a therapeutic tank for hydrotherapy, carbon arc or mercury vapor lamps, and equipment for massage, muscle re-education, baking and electrotherapy. The equipment available at present is recorded in Table 3.

Table 3. Equipment for Physical Therapy Available in the Eleven Convalescent Homes and Chronic Disease Hospitals.

Equipment	Number of Institutions in which Equipment is Provided
Therapeutic pools	2
Small tanks for hydrotherapy	5
Massage	10
Carbon arc or mercury vapor lamps	11
Baking or diathermy	9
Electrotherapy	6

Isolation. In any institution for children, facilities for isolation of new patients and those with suspected or diagnosed contagious diseases are essential. Nine of the institutions under consideration have some facilities, varying from small rooms or cubicles to separate buildings. In seven of these institutions, new patients are isolated for from seven to 21 days. Four homes do not isolate new patients. The isolation of every patient not admitted directly from a hospital for a period of approximately two weeks should be a standard policy in all convalescent homes for children.

It is neither essential nor practical to keep children with contagious diseases in convalescent homes and in the majority of instances, they can be easily transferred to a contagious disease hospital for the period of contagion. There should, however, be means of isolating children with respiratory infections and those suspected of contagious diseases or awaiting transfer to contagious disease hospitals.

Laboratory. Facilities for routine laboratory tests and X-ray diagnosis should be provided. These facilities are not available in some of the smaller convalescent homes but appear to be quite adequate in the larger institutions. Seven are equipped for X-ray diagnosis and six have clinical laboratories. Although those without laboratory facilities report that the necessary examinations are performed by other hospitals or commercial laboratories, it seems likely that examinations would be more readily requested when indicated if facilities were immediately available.

Education. Since many crippled children remain in convalescent homes for periods of months or years, provision should be made for their continued education. There is some provision for education of patients in each of the institutions listed. Classrooms are used for ambulatory patients and the remainder are taught at the bedside when their physical conditions warrant. In nine hospitals and homes, teachers are furnished by the Board of Education and in the remainder by the institution. This is one activity of the convalescent home which seems to be adequate and demands no further consideration. If facilities are developed for institutional care of children with cerebral palsy, however, teachers should be given special instruction in the educational problems of that group.

Occupational Therapy. A program of occupational therapy should be provided and should be individualized in relation to the disability of each child so that it would constitute a factor in the rehabilitation process. Too often the objective of the program is merely to keep the children occupied. All of the institutions under consideration provide some facilities for occupational therapy such as sewing, leather work, basketry, metal work, etc., usually under guidance of trained therapists.

Vocational Training. Provisions for vocational training are necessary only in the institutions which care for children beyond the age of 16 years. Comparatively few children remain institutionalized long enough to receive complete vocational training and the objective of such activities should be to develop interests which may be followed after discharge. For those children who must remain institutionalized over long periods, vocational training would be desirable.

Recreation. A recreational program should be organized under the guidance of a trained supervisor. Recreational facilities are also well-organized in most of the homes. Nine employ one or more full-time supervisors who direct such activities as indoor and outdoor games, dramatics, music, swimming, etc. In visiting these homes, one cannot avoid being impressed with the atmosphere of happiness and activity, regardless of criticisms which may be directed toward other phases of their programs.

Social Service. A social service department should be organized under direct control of the institution or affiliated organization. The functions of this department should be to arrange for admissions and to maintain home relationships and contacts with other interested institutions and agencies during the period of care.

At present, in addition to the functions previously mentioned, the social service workers in some of the institutions follow-up their patients after discharge. Convalescent care may be of little value unless the patient remains under continued supervision. There is some question, however, as to how extensively the convalescent homes should assume responsibility for follow-up service as they do not provide ambulatory care. The ideal arrangement is found in the convalescent home which is intimately associated with a hospital conducting an out-patient service to which patients may be referred for continued supervision. Where such affiliations do not exist, the responsibility of the convalescent home should terminate when the child returns to an out-patient department or private physician. Further follow-up should be carried out under the direction of the latter. Where convalescent homes have found it necessary to conduct follow-up services, the necessity has arisen from the failure of hospitals to assume their share of the burden. With adequate organization of follow-up services in the community, convalescent homes should be free to relinquish this responsibility.

Buildings. The minimum standards should include fireproof structures with either ramps or elevators between floors, cubicles or small units with proper spacing between beds, adequate bathing and toilet facilities, a gymnasium and outdoor recreational facilities, equipment and space for occupational therapy, equipment for physical therapy including a therapeutic tank, and an isolation unit. Many of the institutions in operation fall far short of these standards.

COST OF CONVALESCENT CARE

It is generally known that convalescent homes can be maintained at a lower cost per patient day than hospitals which care for acutely ill patients. Less elaborate equipment and smaller staffs are necessary. According to the Hospital Survey for New York, the cost per patient day in all convalescent homes during 1934 averaged $2.35 including estimated depreciation and $2.05 exclusive of depreciation. The average cost per patient day, exclusive of depreciation, in nine convalescent homes for orthopaedic children (excluding from the previous list the New York State Reconstruction Home and Sea View Hospital) was $2.72 during 1938. The range was from $1.93 to $3.54. These figures are somewhat higher than those previously quoted and are at least partially accounted for by the additional equipment and technical staff necessary to carry out an active treatment program for orthopaedic patients. Even so, the expense of treating a patient in a convalescent home averages $2.14 less per day than that for a ward patient in the five voluntary orthopaedic hospitals (average $4.86 per patient day, exclusive of depreciation, in 1938).

In general, these institutions admit children without consideration of their ability to share the expense of care and very few of the patients pay even a portion of this expense. In homes which operate under the auspices of voluntary organizations, this deficit is balanced by endowment, voluntary contributions and city or state aid. All of the latter receive financial assistance from the city at the rate of $1.40 per day for some of their indigent patients. Only two received state aid at the rate of $3.00 per patient day for some of their patients during 1938 although this assistance is being expanded. Only institutions which are approved by the Division of Orthopaedics of the State Department of Health are eligible to receive this assistance. This subject is discussed in more detail in Chapter XII (State Aid).

Chronic disease hospitals operated by the Department of Hospitals of the City of New York are supported by municipal taxation, although the state may also share in the cost of care for children committed by the Children's Court.

All patients admitted to the New York State Reconstruction Home are committed by the Children's Court and the city and state contribute $1.50 each toward their care. An additional appropriation from the State Legislature makes up the difference between the $3.00 per day received through regular channels for the care of committed patients and the actual cost of maintaining the service. In 1938, the total cost per patient day was $5.55, including the salaries of teachers and other non-medical facilities. In all except one of the other institutions considered, teachers are supplied, without expense to the institution, by the Board of Education.

FOSTER HOME CARE

In serving crippled children from rural areas, foster homes are used more extensively to supply the demand for homes within traveling distance of hospitals where children may receive ambulatory care. The necessity for such an arrangement seldom arises in New York City. With the exception of a few infants and young children boarded in private homes by the Speedwell Society, comparatively few children with orthopaedic defects are cared for in foster homes. It seems quite possible, however, that the period of institutional care might be decreased and children might be cared for at a smaller expense to the community if foster homes, under supervision of organizations such as the Speedwell Society, were used more extensively. Such care would be especially valuable for chronically ill children who would not benefit from intensive treatment yet would not have the advantages of proper food and supervision in their own homes.

NEW YORK STATE RECONSTRUCTION HOME

In New York City, there are adequate facilities for early and operative treatment of crippled children in hospitals located near their homes. On the other hand, there is great need for the existing well-equipped institutions which emphasize non-operative and post-operative care, education and vocational training over prolonged periods. The New York State Reconstruction Home supplies this need. During 1938, this institution, with a capacity of 310 beds, treated 310 patients and operated at 62.5 per cent of capacity. Review of its census during the past four years reveals a constant decrease in total patients admitted and in patients admitted from New York City (Table 4). A revision of its policy in regard to admission of children in need of prolonged care, including those with cerebral palsy of normal mentality, should make it possible for this institution to operate at more nearly

Table 4. Total Number of Patients Treated and Number of Residents of New York City Treated in New York State Reconstruction Home, 1935-1938.

Year	Total Patients Treated	Residents of New York City Treated	Per cent of Patients Treated Who Were Residents of New York City
1935	572	374	65.4
1936	477	329	68.8
1937	405	255	63.0
1938	310	176	56.8

normal capacity and to be of greater service to patients from New York City (See Chapter XIII).

RECOMMENDATIONS

(1) That the primary function of a convalescent home for crippled children should be to carry out an active treatment program for non-operative and post-operative patients.

(2) That a special institution be provided for children suffering from progressive and incurable diseases.

(3 That convalescent beds for children of the 16-21 year age group be increased.

(4) That there should be a more direct affiliation between hospitals for care of acutely ill patients and convalescent homes.

(5) That institutional care be made available for treatment of children suffering from cerebral palsy.

(6) That the City and State of New York continue to contribute financially for the care of children in institutions conducted by voluntary organizations. The governmental agencies should, however, reserve the privilege of granting assistance to only those institutions which maintain accepted standards of service.

(7) That the minimal standards be as follows:

(a) Professional policies should be controlled directly by active medical boards made up of representatives of the attending and consulting staffs.

(b) Every patient should be seen by an orthopaedist at least once a week.

(c) Every patient should be examined by an attending pediatrician on admission and seen subsequently at intervals of two weeks.

(d) A system of medical records comparable to those used in hospitals should be kept.

(e) An adequate staff of graduate registered nurses should be provided.

(f) Equipment for physical therapy should be provided and should include a therapeutic tank, carbon arc or mercury vapor lamp, and equipment for massage, muscle re-education, baking or diathermy.

(g) Physical therapy should be performed by trained technicians.

(h) The work of physical therapy technicians should be supervised by attending orthopaedic physicians.

(i) There should be facilities for isolation of new patients and those with suspected or diagnosed contagious diseases.

(j) There should be laboratory facilities for routine tests and X-ray diagnosis.

(k) Educational facilities should be provided.

(l) A program of occupational therapy should be organized in such a manner that it would constitute a factor in the rehabilitation process.

(m) Provisions for vocational training should be available in institutions caring for children beyond the age of 16 years.

(n) A recreational program should be organized under the guidance of a trained supervisor.

(o) A social service department should be organized under the direct control of the institution or affiliated organization.

(p) The physical structure should be fireproof and provided with either ramps or elevators between floors, cubicles or small units with proper spacing between beds and adequate bathing and toilet facilities.

CHAPTER VII

PUBLIC HEALTH NURSING

Home nursing service for orthopaedic patients has been provided in New York City for several years. This service is available in all boroughs and is provided by three agencies, two of which care for the major portion of the patients and a third which is prepared to meet the needs as they arise in a relatively small population unit. The work of these agencies is so districted that there is no duplication of service.

The Association for the Aid of Crippled Children, organized in 1900, has as its sole function work with crippled children up to 16 years of age. This service is available in three boroughs: Manhattan, Bronx and Queens. Earlier, this organization laid more stress on the social aspects of care but recently it has devoted its program largely to developing a public health nursing service for crippled children. Some members of its staff are prepared to give physical therapy.

The Brooklyn Visiting Nurse Association developed a department of orthopaedic nursing in 1912. (At that time the agency was known as the District Nursing Committee of the Brooklyn Bureau of Charities.) Every nurse in the department is prepared to give physical therapy. This service is available to persons of all ages residing in Brooklyn.

The Staten Island Visiting Nurse Association has on its staff nurses with training in orthopaedics who are prepared to provide orthopaedic nursing service to persons of all ages in the Borough of Richmond. The population unit served by this agency is small in comparison with those of the other two agencies and the demands are correspondingly small. In the discussion that follows, emphasis will be placed on the two agencies supplying the larger population units.

A somewhat different type of service is provided by the New York Orthopaedic Hospital in which the medical social service department is organized to assume responsibility for follow-up of patients admitted to its wards and dispensary. This department is staffed by graduate nurses whose function it is to meet both the orthopaedic home nursing and social service needs. In studying the nature of the nursing service given by this group, the records of 47 children included in the sample study and known to this hospital were read. These children represented approximately 20 per cent of the group in the sample study known to have been under the care of this hospital. The majority had frequent clinic contacts in 1938. Of these 47 children, it was found that four had been visited at their homes in 1938. One visit was made to each—three for arranging hospitalization and the fourth to urge return to clinic. It is possible that more of the group may have been visited in an effort to stimulate clinic attendance without a notation being made on the record. It is apparent that this is not an active nursing service and that the rather large group of children attending this hospital clinic are having a type of follow-up which does not include public health nursing. It is recommended that patients registered at this hospital, in need of public health nursing, be referred to the nursing agency covering the borough in which the patient resides.

AMOUNT AND TYPE OF SERVICE

In studying the activities of public health nursing agencies, the approach was made through a review of records, field visiting with the staff, and discussion of the service with the directors and supervisors of the agency. The record of every child in the sample study

Table 1. Distribution by Agency of Children in Sample Study Known to Orthopaedic Nursing Agencies.

Agency	Number	Per Cent
Total	655	100
Association for the Aid of Crippled Children	462	70.5
Brooklyn Visiting Nurse Association	187	28.5
Staten Island Visiting Nurse Association	6	0.9

who had been known to one of these nursing agencies was read in the agency office.

The orthopaedic home nursing services have reached a large number of crippled children in New York. An analysis of the nursing services shows that 51 per cent of the children included in the sample study have at some time been known to an orthopaedic nursing agency. The distribution of service by agency is shown in Table 1. Through the establishment of a central registry, it is probable that a larger number of crippled children in need of the service will come to the attention of the orthopaedic nursing agencies.

The extent to which the nursing services have reached the crippled children in each borough is shown in Table 2. Obviously, every child registered is not in need of orthopaedic nursing care. It is known that the existing orthopaedic nursing agencies are adequate in number but in some boroughs there may be need for increase in staff.

Intake Policies of Orthopaedic Nursing Agencies. Intake policies are stated as being on the basis of need, without restriction except that the Association for the Aid of Crippled Children accepts only patients under 16 years of age. A crippled child needing treatment, health supervision or both is eligible for care. This

Table 2. Distribution by Borough of Children in Sample Study Known to Orthopaedic Nursing Agencies.

Borough	Children Included in Sample by Borough	Number Known to Nursing Agency	Per cent Known to Nursing Agency
Total	1,277	655	51.3
Manhattan	310	207	66.8
Bronx	303	184	60.7
Queens	169	74	43.8
Brooklyn	470	184	39.1
Richmond	25	6	24.0

service is in general free but when treatment is given, a fee is charged if the family is able to pay. Need for treatment is interpreted as meaning that the child cannot be taken to the hospital sufficiently often for physical therapy.

Source of Referral. Requests for service come to the orthopaedic nursing agencies from a variety of sources, such as the Department of Health, the Board of Education, hospitals, the patient's family and other nursing agencies. Referral of patients to orthopaedic nursing agencies by organizations other than hospitals is important, as these referrals often indicate active case-finding on the part of the community. On the basis of these referrals, the orthopaedic nurse is frequently able to interest the family in obtaining medical care for the child.

In analyzing the referral policies of the hospitals and the purposes behind them, little was found which would indicate that any consistent plan of action was represented in relation to the use of the home nursing services. The form in which referral was made generally consisted of sending the diagnosis and a request for "follow-up" or orders for physical therapy.

Of the 49 per cent of the children in the sample study not known to the nursing agencies, no general statement can be made as to their needs for public health nursing. However, a review of the interviews of the medical social workers of the Commission with the parents of crippled children in the sample study indicated that there were children and their parents in this group who would have benefited by the nursing service. There has been relatively little use made of the nursing service by private physicians in some boroughs for their patients.

Amount of Nursing Service in 1938. In order to obtain a picture of current activities of the orthopaedic nursing agencies, the services received in the homes in 1938 by children included in the sample study were analyzed from the nursing records. It was found that 439 children had received care during the year and to them a total of 2,528 visits had been made. Of this group, 419 children were visited for health supervision only and to them 1,795 visits were made. Seven hundred thirty-three visits were made to the remaining 20 children for both treatment and health supervision.

The nursing agencies have a definite policy concerning the frequency of visiting and this policy is somewhat uniform, i.e., a contact at least once in every three months. Obviously, children to whom treatment is given are visited as frequently as ordered.

Type of Service Provided in 1938. It was found that the type of nursing service given fell into two categories which, to a considerable extent, were mutually exclusive. The categories were as follows:

(1) TREATMENT: The nurse visits primarily to carry out a physician's orders in regard to massage and muscle re-education. In order that treatment may be continued, a child must be re-examined at least every three months and orders for treatment renewed.

(2) SUPERVISION: The nurse visits in the interest of the general condition of the child. Visits may be made to places other

than the homes for this purpose. The Association for the Aid of Crippled Children assigns nurses to attend certain orthopaedic clinics to bring the medical and nursing services more closely together. In both agencies, nurses visit classes for crippled children in the public schools once a month. This type of visit differs from those made by nurses to the schools to give treatment on the order of a physician. The type of visits made in 1938 are recorded in Table 3.

Table 3. Type of Service Given to Children in Sample Study in 1938.

Purpose of Visits	Association for the Aid of Crippled Children		Brooklyn Visiting Nurse Association	
	Number	Per cent	Number	Per cent
Total	1,672	100	853	100
Treatment	162	9.7	452	53.0
Supervision	1,510	90.3	401	47.0

Treatment Service. Treatment service, as given by the staff in the orthopaedic nursing agencies, should be integrated with the health supervision program. Administration of physical therapy by a nursing agency is based on the assumption that the public health nurse is well-fitted, by the nature of her background and of her approach to the home, to meet the various problems which may be encountered and that treatment is but one of the services offered. These services, given to the family concurrently with treatment for the child, are based upon the nurse's understanding as far as possible the situation within the home. They include helping the family to recognize and accept their health needs and formulating plans for meeting these needs.

In both agencies it was apparent that the treatment service is considered the major interest and that other health factors beside crippling are given less consideration. This was not only found from the type of recording but was emphasized by the fact that in the Association for the Aid of Crippled Children supervision is primarily in relation to orthopaedics and there is less supervision in the field of the general health needs of the child. In the Brooklyn Visiting Nurse Association, although supervisory and consultant service is available in fields other than orthopaedics, less use has been made of it by the orthopaedic department than would seem desirable.

Ten per cent of the total visits made by the Association for the Aid of Crippled Children in 1938 to children in the sample study were for the purpose of giving treatment and 90 per cent were for general supervision. This ratio of treatment visits is true not only for the sample study but approximates the ratio which prevailed in regard to the total number of visits made by the agency staff to their entire case load in 1938 when 11 per cent of the 23,888 visits were for treatment. This represents a small proportion of visits for physical therapy. One of the reasons for the relatively small number of treatments given is that this is a new service in this agency and the number of nurses fully qualified in physical therapy is limited. It is conceivable that there may be a larger group of children for whom home treatments are indicated, in spite of the fact that in New York clinics for treatment are accessible to the majority of children. For example, there is a group of children with cerebral palsy for whom the strain of frequent clinic visits for treatment may not be advisable, yet who need systematic treatment over a long period. In addition, there are children whose home conditions make it almost impossible for them to be taken to clinic regularly and others where geographic and transportation factors make regular attendance at clinic for treatment difficult.

Assuming that there is a larger number of children residing in Manhattan, Bronx and Queens for whom home treatment is desirable than are now receiving it, it would seem that facilities for meeting this need should be instituted. Until the need for such service is more generally recognized by the hospitals, however, the nursing agency can hardly be expected to provide a large staff of adequately trained personnel.

Fifty-three per cent of the home visits made by the Brooklyn Visiting Nurse Association in 1938 to children in the sample study were for the purpose of giving treatment. This ratio is less than that which prevailed in regard to the total number of field visits made by the staff in 1938, when 69 per cent of 16,798 visits were for treatment. This agency is probably meeting the potential needs for home treatment to a considerable extent but is in the position of providing an inadequate number of nurses fully qualified in physical therapy. (Standards for training in physical therapy are discussed in section on Qualifications.)

Supervision. Health supervision is the term used to describe those visits made by the staff which are for purposes other than physical therapy. Health supervision should be primarily a mutual service in which the parents and the nurse consider jointly the the needs within the family. In order to give this type of service, the first essential is a staff of well-qualified public health nurses. A program of continuing staff education should be provided in which there is the requisite supervisory and consultant service, not only in the field of orthopaedics and of general family health, but in the allied field, such as nutrition and family case work.

Health supervision visits accounted for 90 per cent of the service given to children in the sample in 1938 by the Association for the Aid of Crippled Children and for 47 per cent of that given by the Brooklyn Visiting Nurse Association. It should be pointed out here that these percentages apply only to the number of visits, and they imply nothing in relation to the amount of time involved in giving the service, for which figures are not available.

In both agencies, observation of home visiting showed a wide range both in the recognition by the nurses of factors within the home which would affect the care given the child, and in their ability to help the family sense their needs and meet them. It was characteristic of the nurses observed that they had been able to establish a satisfactory relationship with the parents, without which nothing could have been done. Beyond that, they were skillful in their approach to the question of the orthopaedic difficulty and able to interpret this to the parents satisfactorily. In regard to the adjustment of appliances and the questions which arose about them, the nurses had an adequate background of experience. They also showed a wide familiarity with the resources of the community.

In some other fields, some of the nurses did not seem to exhibit the same adequacy to recognize and meet needs. This was found in the field of nutrition particularly. There was evidence that some need a better working knowledge of the principles of nutrition and budgeting to enable them to give concrete help to parents. In addition, they need a more adequate understanding of the fundamentals relating to the emotional and physical growth and development of children, and they should be more aware of significant factors of child behavior and of family relationships. Guidance and training in these fields is already available but should be developed more extensively.

It is a contradiction in terms to think of health supervision in relation to one member of a family. It cannot be dissociated from a consideration of the whole family and of their way of living. Observations were made in homes where the mother was pregnant. Her plans for confinement and the care of the children during that period were of primary importance to her and of necessity would affect the crippled child. In a few instances there was or had been recent illness. In other homes, there were infants whose demands upon the parents were more insistent than those of the crippled child. The specialized orthopaedic nurse is at a disadvantage in these situations. Her services are primarily intended for the crippled child, yet there are other needs, of paramount concern to the family, which must be given attention before the needs of the crippled child can be effectively considered. It is essential that she refer to and consult with other agencies providing these services.

The recording of health supervision visits showed the primary emphasis in most instances is on the orthopaedic aspects of the case. Recording was adequate as it concerned the orthopaedic condition but was not adequate in the field in which much of the work of the agencies is being done, that of health supervision.

Nursing Care. It should be noted that neither of the orthopaedic nursing agencies give any bedside care to crippled children or their families. If a child under care of the Association for the Aid of Crippled Children becomes ill, the Henry Street Visiting Nurse Service is called for bedside care. At present, no arrangement exists for the routine transfer of pertinent information between the two agencies. In case of illness of a child under care of the Brooklyn Visiting Nurse Association, emergency bedside care may be given by the orthopaedic nurse, and then a nurse from the generalized service is called and the orthopaedic nurse withdraws temporarily.

Present day thought and practice in public health nursing encourage a generalization of nursing service. The distribution of nursing service for a family among several agencies is confusing and expensive. It cannot be avoided, however, when a specialized agency is one of those concerned. This situation is susceptible to change in the Brooklyn Visiting Nurse Association and it seems likely that an orthopaedic department, ready to give the necessary bedside care and health supervision needed by a family in which there is a crippled child, would be in a more effective position. This specialized department gives the pre-natal and post-natal nursing supervision service in the families in which there are crippled children and is planning to give the post partum service. It is recommended that the plan be extended to provide all the nursing services for the family. It is recognized that a plan of this kind might have to be modified during periods of increased demand for orthopaedic services, such as would occur during or following an epidemic.

Occupational Therapy. Occupational therapy has been provided to a limited extent in the Borough of Queens for the past two years. A trained occupational therapist is employed to give service in the homes on direct orders from physicians. This service is functional and in order to continue receiving it, children have to be re-examined by their physicians every two months and the orders renewed.

Length of Contact. The orthopaedic nursing agencies have contact with their patients for relatively long periods of time, as compared with bedside nursing agencies. This is of significance in determining a program, which should provide educational service concurrent with treatment. Length of contact is of inestimable value in providing such a service.

The duration of service received by the children included in the sample study who had been discharged for various reasons is recorded in Figure 1.

Termination Policies. The records of children in the sample study who had been discharged by the nursing agencies were studied in terms of policies relating to termination. The reasons for termination of service are analyzed in Table 4. It is recommended that the Association for the Aid of Crippled Children raise the age limit of patients accepted for care to 21 years, to conform to the age limit established by the Children's Bureau and

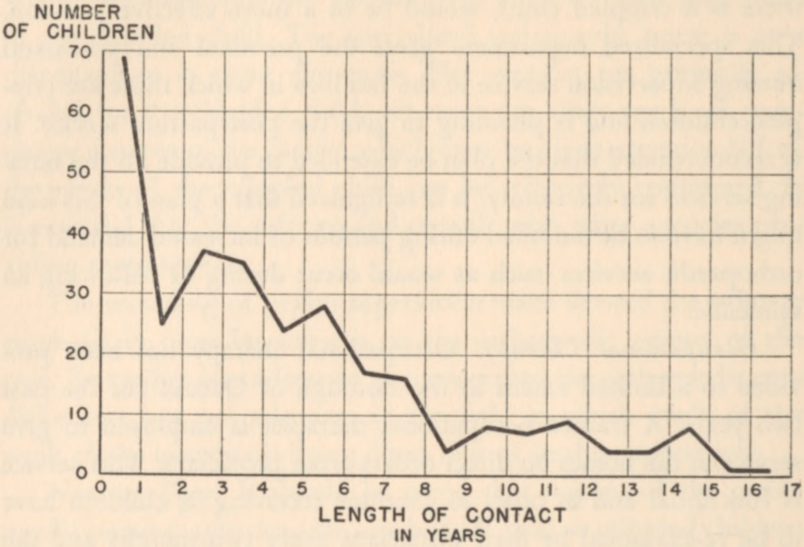

Fig. 1. Duration of Service for 297 Children in Sample Study Who Were Discharged by Nursing Agencies.

Table 4. Analysis of Reasons for Termination of Service for 297 Children.

Reason	Number	Per cent
Total	297	100
Under medical care and nursing service not requested	117	39.4
Condition stationary (maximum improvement attained or little possibility of change)	67	22.6
Over 16 years of age*	52	17.5
Unwilling to follow advice in relation to medical care	33	11.1
Moved—untraced	28	9.4

*The age limit of patients accepted for care by one agency is 16 years.

state services for crippled children throughout the country. The largest group terminated included children admitted to convalescent homes or hospitals for extended periods, those registered with the New York Orthopaedic Hospital and those under the care of private physicians who did not request nursing service. Recommendations have been made previously in respect to the referral to the orthopaedic nursing services of patients registered with the New York Orthopaedic Hospital. It is probable that through the establishment of a registry for crippled children, the number lost because of moving to an unknown address may be decreased.

RELATIONSHIP OF THE ORTHOPAEDIC NURSING SERVICES WITH OTHER AGENCIES

Other Nursing Services. In 1938, eight per cent of the 308 children or their families in the sample study known to the Association for the Aid of Crippled Children received nursing care from the Henry Street Visiting Nurse Service, the generalized nursing agency covering the same boroughs. In the same year, ten per cent of the 128 children or their families in the sample study known to the Brooklyn Visiting Nurse Association had nursing care from the generalized department of that agency. The request for the services of the generalized agencies did not necessarily come from the orthopaedic agencies. There was evidence in the records of the latter for need of more active referral to the generalized agencies.

Case-finding is as much a responsibility of nursing agencies as it is of other health organizations. One of the contributions to be expected of the orthopaedic nursing agencies is the influencing of other nurses in the community in regard to the prevention of crippling and to an early recognition of orthopaedic conditions. The National Organization for Public Health Nursing estimates there are approximately 1,400 public health nurses in New York

City in 25 different agencies. Their daily work brings them in contact with large numbers of young children, either through home visiting, clinics or schools. This body of nurses should constitute an active group of case-finders. Plans have been developed in some of the public health nursing agencies for emphasizing orthopaedics in their staff education programs. Plans should be developed for utilizing the knowledge of the orthopaedic nursing agencies in the staff education programs of all the nursing agencies.

Social Agencies. In the records of the orthopaedic nursing agencies, there was constant evidence that the help of social agencies was being sought in providing relief. Furthermore, their assistance was occasionally sought in respect to behavior problems of children who were making an obviously unsatisfactory adjustment. There was evidence, however, that a wider use of the services of the medical social work departments and the case work agencies is needed. This was especially true in those cases where there were noted on the record established or potential problems in emotional adjustment which the nurse is not equipped to handle. It is important that a nurse be constantly kept aware of the potentialities in respect to these problems and secure the necessary help for meeting them.

Nursing records frequently showed recognition of the need for vocational guidance but referral to an agency providing this service was found infrequently. This is apparently due to the fact that centers for vocational guidance are limited in relation to the need.

Public Schools. The nursing agencies have for some years provided a service to the classes for crippled children in the public schools. Treatment is given in certain schools on the order of the private physician or clinic physician when there is no other agency providing it. It is given to those children who are thought not to be able to return to clinic sufficiently often because of its interference with their educational progress.

In 1938, 2,139 treatments were given to crippled children in six schools. Treatment is not continued by the staff of the Association for the Aid of Crippled Children except on re-examination and renewal of orders by the physician every two months and by the Brooklyn Visiting Nurse Association at the beginning of each school term. This type of service is considered more fully in Chapter IX (Education).

Visits were also made at monthly intervals to classes for crippled children in 27 schools in Manhattan, Bronx and Queens and in 13 schools in Brooklyn. These visits were for the purpose of seeing the child in his school environment, of learning of his progress and his adjustment, and of interpreting to the teacher what is known of the home environment. Whether this type of supervision by the Brooklyn Visiting Nurse Association contributed materially to an understanding of the condition of the child and thus to better service is questioned, as no notation was made on the child's record in respect to the visit.

Hospitals. There is little coordination between the medical and nursing services given to crippled children. Study of records showed the nurse is handicapped by her lack of specific knowledge about the medical plans for the child. Certain exceptions to this were found in the program of the Association for the Aid of Crippled Children. In five hospitals, a staff nurse attends an orthopaedic clinic weekly or more often. She is there as liaison agent, helping to decide which cases should be referred to the nursing agency for care, and making available to the physicians information about the home conditions of those children attending clinic and also known to the nursing agency. She watches the physician's examination and relays information about the clinic visit to the staff worker of the nursing agency. She also discusses certain cases with members of the medical social work department.

A staff nurse is assigned to one of the orthopaedic hospitals on a full-time basis for a three-month period. She is expected to perform the functions described above, but in addition this assignment is used as a training experience in orthopaedics as she attends lectures and observes therapeutic and diagnostic procedures.

In the clinic for the care of children with cerebral palsy in another hospital, a somewhat similar relationship has been established on a different level. The children attending this clinic and receiving home treatment by the Association for the Aid of Crippled Children are re-examined every two months. Sessions are held for them, at which time the supervisor is in attendance.

In Chapter XIV, there is outlined a plan of cooperation between the hospitals and nursing agencies in which the related responsibilities of the two types of services are clearly defined. Briefly, this plan calls for the assignment of nurses of the approximate rank of assistant supervisors as liaison officers between the nursing agencies and the hospitals. These nurses should have been with the agency long enough to know its policies thoroughly and to speak with authority in interpreting the nursing service. They should maintain sufficient contact with the staff nurses to be familiar with problems in the field and be able to discuss these problems with the clinic physicians and medical social workers. They should be responsible for seeing that information from clinic records is made available for the nursing records and that significant information concerning the home situation from the nursing records is made available for the clinic records. Home visits and field work would continue to be carried out from the district offices of the nursing agencies as at present but the field nurses would have the benefit of specific knowledge of medical and social plans for their patients. (For details, see page 197.)

It is not expected that this plan would be effective throughout the city immediately. Certain details must be worked out between the nursing agencies and individual hospitals. It must be kept in mind, however, that comparatively few hospitals carry a large proportion of the total case load. An analysis of the 845 children included in the sample study who were known to have been under the care of a definite hospital in 1937 or 1938, revealed the fact that 53 per cent of that number were being treated at only three hospitals. Furthermore, 77 per cent of the total group were treated in ten hospitals. Seven of these ten hospitals are located in Manhattan and three in Brooklyn. It will probably be necessary to assign nurses to spend the major portion of their time in each of the three hospitals carrying the major portion of the case load. Occasional visits by these nurses to adjacent hospitals, caring for comparatively smaller numbers of crippled children, would be adequate. It is evident from this analysis that the program could be carried out with little increase in the size of the nursing agency staffs.

PROFESSIONAL QUALIFICATIONS OF NURSING STAFF

Professional qualifications of staff were studied in terms of function of the agencies, which is to provide a public health nursing service for orthopaedic patients plus massage, muscle re-education, and relaxation exercises to a limited number. The orthopaedic nursing agencies are only partly meeting desirable standards in respect to qualifications of personnel.

Public Health Nursing Background. Every nurse participating in an orthopaedic nursing program should be primarily a well-qualified public health nurse, who has had experience and theoretical training in this field in addition to her undergraduate preparation. A continuing program of staff education in general health should be provided.

Orthopaedic Nursing Background. Special staff education should provide basic knowledge in respect to orthopaedic nursing, as long as this type of education is not provided in nursing schools. Through the use of their adequate case material, it is possible for the orthopaedic nursing agencies to give their staffs an understanding of orthopaedic conditions, and the home nursing associated with them. This should include a recognition of postural defects, of the satisfactory adjustment of braces, and of the degree of progress.

Physical Therapy Background. It is the opinion of the Children's Bureau and the National Organization for Public Health Nursing that nurses supervising treatment services should have completed a recognized course in physical therapy. This standard is already being met by the two nursing agencies. It does not seem reasonable to believe that every nurse giving treatment should have completed a standard course in physical therapy but there is probably a modification of this course, both in length and content, which would equip the nurse to give muscle re-education and relaxation exercises. Further study should be carried on with orthopaedic hospitals having recognized schools of physical therapy in regard to the amount of training needed by those nurses who will give physical therapy. It is believed that the place for such training is within the school of physical therapy rather than in the office of the nursing agency. There are hospitals in New York in which the personnel are ready to cooperate in working out such a modified course of training, and it has long been a subject under consideration by the nursing agencies. A joint approach to this problem is needed to determine adequate standards.

PROGRAM

It has been recommended in this chapter that the orthopaedic department of the Brooklyn Visiting Nurse Association expand its program to give the bedside nursing in families in which there is a crippled child. It is also recommended that the orthopaedic department develop more fully the health supervision services in these families, and provide for recording of such service. This is based on the assumption that the most effective service may be provided for the child and his family in this way. It is recommended that the program of staff education for the orthopaedic nurses include more active participation by all the supervisory and consultant staff of the agency. The orthopaedic supervisors should participate more actively in the educational service for the generalized staff, with particular emphasis on the prevention and early recognition of crippling.

Generalization of the program of the Association for the Aid of Crippled Children would be in line with what is recognized today as being the soundest way of providing a public health nursing service. This could be accomplished through coordination of its services with those of a generalized nursing agency. At present such a plan could not be effected.

In both of the orthopaedic nursing agencies the program should be directed toward improving the quality of service through providing well-trained public health nurses, broadening the staff education program, and providing the necessary supervisory and consultant services. The main emphasis in the program should be on all the health needs of the crippled child. Special emphasis should be put on the mental hygiene services and on close cooperation with agencies providing vocational guidance, as emotional adjustment and the chances of becoming self supporting are of special significance to the crippled child. A teaching service in orthopaedics should be provided for the other nursing agencies of the community, to be used in a consultant capacity.

A community need exists in relation to giving field experience in orthopaedics for graduate nurses. Graduate nurses for the most part have had little experience in orthopaedic nursing. Through the development of programs for crippled children in the various states, there is a demand for field experience which is difficult to meet. Both orthopaedic nursing agencies should develop the type of service in conjunction with universities offering approved programs of study in public health nursing. In order to anticipate demand for additional orthopaedic nursing service after future epidemics of poliomyelitis, it would be desirable to have selected public health nurses instructed in the principles of orthopaedic nursing.

RECOMMENDATIONS

(1) That every nurse participating in an orthopaedic home nursing program be a well-qualified public health nurse.

(2) That supervisory and consultant service be provided in the fields of family health work, nutrition and social case work.

(3) That the staff education program provide the essential knowledge of orthopaedics.

(4) That the staff education program be broadened to cover the general health needs of the crippled child.

(5) That nursing organizations and hospitals cooperate in developing standards for the amount of training needed by graduate nurses giving physical therapy in the home.

(6) That a liaison service be provided by the nursing agencies to coordinate hospital and nursing services (See Chapter XIV).

(7) That the orthopaedic nursing agencies take the full responsibility for the health follow-up of crippled children in their homes.

(8) That the program of the agencies be developed with such plans for staff education and such provision of well-qualified personnel, that they may offer field training for public health nurses with emphasis on orthopaedics.

(9) That a plan be developed for making available to other nursing agencies in the community consultant service in order to increase their knowledge of orthopaedics.

(10) That orthopaedic home nursing service be made available for all children up to 21 years of age.

(11) That the program of the orthopaedic departments of generalized nursing agencies be expanded to provide the bedside and supervision services to families in which there is a crippled child.

CHAPTER VIII

MEDICAL SOCIAL SERVICE

The purpose of this section of the report is to analyze the social service obtained by a representative group of crippled children and to show how this service may be improved. The problem is intimately related to the development of higher standards of service for all patients, as there is not and should not be a specialized group of orthopaedic medical social workers.

The observations and analyses presented are based on data assembled in the following manner:

1. Social workers visited the homes of a sample group of 1,277 crippled children and interviewed the patient, his parents or both. Factual information was recorded in tabular form and supplemented by a narrative history.* The narrative history had as its emphasis the picture of the child with a handicap and the effect the handicap has on him, his family and his place in the community. Only factual data were recorded.

2. The first 696 of the 1,277 schedules returned were chosen for further consideration of the social work performed in their behalf. Thirty hospitals were found to be represented among those most recently visited by these children. These hospitals were visited and the hospital charts and social service records for this group were read.

3. A member of the social service department of each hospital, usually the director, was interviewed with reference to the department's activities and performance in its service to crippled children.

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*Techniques followed in the Sample Study are described in Appendix A.

4. Clearings with the Social Service Exchange were made on the 1,277 patients in the sample study. Reports were secured from agencies that had cleared with the Exchange since the year 1934 and from agencies which had cleared before that year that would seem to have pertinent information indicated by the narrative history.

5. Questionnaires were sent to 489 agencies which have membership in the Welfare Council.

ANALYSIS OF HISTORIES STUDIED

The distribution by age, diagnosis and disability of the 696 patients in this group was found to be essentially the same as that for the total group of children registered and for 1,277 chosen for the sample study. These data are considered in detail in Chapter III and Appendix A.

Eighty-two patients, at the time of this study, presented no special problem; that is, from the point of view of the patient or parent, hospital or agencies, medically they are cooperative and their social adjustment appears to be good. This situation has apparently no relation to diagnosis or handicap. The remaining 614 expressed need for assistance. It is important to note that there are more situations with no apparent problems in the group under 13 years of age. It seems likely, however, that frustrating experiences may take place in the lives of many of these children as they mature. Even though they may show considerable improvement physically, resultant minor disabilities and appliances worn may be the causes of future conflicts and sources of embarrassment as they grow older.

Hospital Attendance. The 696 patients reviewed were known to the hospitals last attended for periods of a few months to 18 years. The duration of hospital attendance for this group is shown in Table 1.

Table 1. Period of Attendance at Last Hospital Visited.

Period of Attendance	Number
Total	696
Less than 1 year	132
1 - 5 years	380
6 - 10 years	135
11 - 15 years	42
Over 15 years	4
Not known	3

Needs Expressed by Patients and Their Families. The needs for assistance of the type which a social worker might be expected to help with are summarized in Table 2.

Table 2. Outstanding Needs for Assistance Expressed by Patients and their Parents.

Outstanding Need	Number
Total	614
Vocational guidance	158
Recreation	136
Post-hospital care and plan*	121
Medical interpretation**	103
School adjustment	49
Appliances	22
Summer care	20
Convalescent care	5

**Need for post-hospital care and plan* was indicated by that group that did not return to clinic, for whom there was an obvious need to return. Discouragement of patient or parent or both was generally responsible.

***Need for medical interpretation* was indicated by parents who asked visitor for an interpretation of patient's physical condition. They frequently stated that they could get no explanation as to patient's illness and duration of treatment.

In addition to the needs for assistance noted in the above table, the following conditions were observed by the workers. Seventythree patients had physical disorders other than the orthopaedic condition from which they were suffering, such as anaemia, malnutrition, asthma, rheumatic heart disease, chorea, deafness, etc. Some of the children were receiving no care for these other conditions. In many instances this was due to the fact that they were recommended to other hospital clinics for secondary conditions and it was difficult to attend more than one clinic. The crippling condition is usually given most serious consideration because of its visibility. It is difficult for parents to leave their homes frequently for the care of the one child. In many institutions, there was no consistent follow-up to determine whether the child had gone to the second clinic or a report had been received from it.

Physical and social problems of other members of the family often affected the well-being of the crippled child. In 39 families, siblings of patients were suffering from orthopaedic or neurological disorders. Many of the siblings were reported to have behavior problems and some were known to social agencies and the courts. Thirty-three parents were reported as suffering from an illness which required medical care. In 77 homes overcrowding, bad housekeeping and uncleanliness were so obvious that related problems must have been created. These complicating factors play a role in preventing the crippled child from securing the best attention.

Expressions of Patients' Behavior Difficulties and of Parental Problems. In the home visits made by our workers, patients often showed definite reactions to their crippling conditions. Parents also revealed their children's difficulties and expressed some of their own related problems. In an analysis of 614 histories, the problems observed occurred in the following order of frequency:

Fears and anxieties
Withdrawal, day-dreaming
Destructive and unconstructive behavior

Poor habits
Resentfulness, blame, hate, etc.
Dependency on parent or on crippling

Parental problems most frequently expressed or noted were:

Anxiety (usually for future of patient)
Inadequacy to situation
Resentfulness
Over-indulgence or rejection

Medical Social Service Activity. Services rendered by the hospital social service departments as indicated in home visits and from hospital social service records for the 696 patients are noted in Table 3. More than one of the services indicated below were rendered to individual patients and in some instances the same services were repeated. Two hundred and twenty-one patients had no recorded contact with hospital social service departments. For 98 patients, medical social case workers had outlined definite plans for adjustment, including plans directed towards resolving anxieties, destructive behavior and dependency.

Table 3. Medical Social Services Rendered to 696 Crippled Children.

Service	Number
Financial adjustment	224
Appliances secured through hospital social service, by hospital social service or other agency	216
Convalescent care and camp secured (as single services)	103
Intensive care, guidance and direction	98
Follow-up for medical care	64
School adjustment	28
Diet secured	19
Vocational care and direction	10
Referred for foster home care	2
Housekeeping service	1

Reactions of Patients and Parents to Social Service. Most parents and patients interviewed were unable to make any definite responses in regard to the social service departments. To most of them, the departments seem to have been the place to secure reduction in rates for clinic care and occasionally a source through which appliances and convalescent care could be provided. Nevertheless, these same patients and families frequently and anxiously asked for guidance, interpretation and help from our visitors. A large number were confused about their disabilities and the meaning of these disabilities in terms of adaptation to life. They stressed the need for someone with whom to talk things over and to direct and guide them, indicating that the "doctors are generally too busy to talk." They seemed in need of someone to emphasize the necessity for continued treatment, to discuss their troubles, their prognosis and plan for their future. Among the common reactions from parents and patients were:

"Social worker helped secure appliance."
"Social worker helped with finances."
"Doctors don't take time to explain."
"No one tells me what to expect."
"If only there was place for him (or her) to go to meet friends."
"If only I knew or had someone to talk to before I left school."
"Where shall I go for advice?"
"What will he do later?"
"How can we meet expenses?"
"If only I were not handicapped!"
"He is too low mentally." (Yet I. Q. was found to be 88.)
"He is too low, we need help with him."
"I am too old for treatment." (Now 20 years old—no treatment for 18 years.)
"I am waiting to be called for treatment."

"I (mother) am too nervous to handle him."

"Everyone too busy in social service department."

"We can't handle him at home."

"He isn't interested in treatment."

"I want something to do."

"My father is against me."

"Treatment doesn't seem necessary." (Yet doctors ask that patient return.)

"He is a nervous child."

"I need help with school. They don't understand me."

"He refuses to wear the brace."

"He is difficult with other children."

"She won't have operation and we can't persuade her."

"She is so difficult." (I. Q. 45.)

Follow-up of Letters Sent to Federal Officials and Agencies in Washington. During the course of this study there were forwarded to the Commission copies of over 100 letters sent to federal agencies and officials in Washington by crippled children residing in New York City, their relatives or friends. The homes of 40 of these patients, chosen at random, were visited and their records were cleared with the Social Service Exchange. All of the patients were known to a hospital at the time of our visit and most of them were actively attending a clinic. Where the needs expressed in the letters were met, parents stated that this was because they were given the service they requested following the letter.

DEFINITION OF MEDICAL SOCIAL SERVICE.

A statement of the standard functions adopted in May, 1936 by the American Association of Medical Social Workers reads: "Medical social case work involves the study of the individual patient's social situation, interests and needs in relation to his illness and the medical social treatment of the patient in collaboration with him and his physician, when those social needs and interests affect the physical and mental health of the patient."

The medical social service department is a service in the hospital that gives social meaning to the total medical care received in the hospital. The social worker is a specialist in the field of social adjustment. She interprets the medical situation on a social level and with the patient's cooperation, in terms of his capacities and resources and those in his group and community, helps to direct the next steps in medical care. She furnishes the continuity for the medical forces that have come into play in the patient's medical picture. The social worker's plan for the patient looks forward also to the prevention of further invalidism or debility.

The medical social case worker, because of her objective position, her training and knowledge of community resources, assumes responsibility for the patient when she offers help and medical social guidance. Social case work treatment involves, under leadership of the physician, a concept of adjustment, whether the problems are environmental or emotional in character. The medical social case worker realizes that providing appropriate resources for the child may not always be sufficient. Treatment may begin from time of admission in clinic or hospital and carry through discharge and post-hospital care. The medical social case worker may make wide use of interpretation, which has a meaning for the agency in its policies and practices, to the community in education and understanding and to the patient in respect to treatment prescribed.

Where there are problems of behavior under guidance of a physician, with her awareness about purposes of symptomatic behavior, she may through interpretation of environment or emotional or social forces, tend to relieve the conflicting situation to such a degree that parents will extend their relationship to the patient and purposes of difficult behavior symptoms may be resolved. In dealing with crippled children, the medical social case worker must be aware of the common and different emotional responses and discern the meaning and experience of suffering the physical handicap has for them. These emotional problems are particularly acute for the handicapped. The social worker must understand these in order to call out reserves of personality in the handicapped child and the resources of his family. An opportunity to watch his growth is afforded since his attendance at hospitals usually extends over a long period.

The report on hospital standardization of the American College of Surgeons, published in 1932, states clearly the functions of a medical social service department from the standpoint of the physician. (See Appendix E.)

PROBLEMS OF MEDICAL SOCIAL SERVICE

Hospitals and Social Service Departments. All of the hospitals visited conduct orthopaedic services. As already noted in the "Hospital Survey for New York,"* "the social service departments in these hospitals range all the way from competent personnel relatively adequate in size to a department which is small in relation to the patient load of the institution and poorly prepared for professional work of this character." Four hospitals of the group studied by the Commission have, since the Hospital Survey, completely reorganized their departments and others are in the process of correcting deficiencies noted in the Survey.

In some instances the work of the departments is concerned primarily with admitting to the in-patient and out-patient services. In 25 of the hospitals visited, workers make hospital rounds with the doctors and are said to be responsible for the social needs of the patients on the ward services. The services in most of the

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**Hospital Survey for New York,* Vol. 2, page 537—United Hospital Fund, New York, 1937.

hospitals seem to be of a steering type, i. e., patients are referred to other social agencies in the community.

In 27 hospitals visited, a social worker is always on duty in the orthopaedic clinic. Three of the others are carrying on demonstration services in medical social work with special medical services, so that the social service departments accept patients from the orthopaedic services only when referred. One to six clinic sessions are held in these hospitals each week. The worker assigned to the orthopaedic service may also be responsible for other services in both in-patient and out-patient departments of the hospital. One case worker may carry the responsibility for the orthopaedic and other in-patient services and another, the responsibility for the orthopaedic and other out-patient services.

Relationship with Community Nursing Services. Many of the hospitals in Manhattan, Bronx and Queens routinely refer all crippled children under the age of 16 years to the Association for the Aid of Crippled Children. Three of the social service departments state that they refer to the nursing service only those problems that seem to fall within the functions of this agency as they understand them. A few state that they refer only those patients who need nursing, follow-up or recreational supervision.

When patients are referred, there is often no record in the hospital charts of the instructions received from the doctor, of the services rendered by the nurse or the problems encountered. Frequently, there is no notation indicating the referral to the nursing agency by the social service department. A few hospitals wrote to the nursing agency for the status of the patients whose records we were planning to read, asking for reports, since there were no notes on the record to indicate their status, even though a large number of these patients were actively attending the clinic.

The confusion that exists in the type of service to be rendered by the nursing agency and the hospital social service department seems to be responsible for many of the unmet needs expressed by patients and their families which are indicated in our earlier analysis. A routine referral of all problems to an agency, the personnel of which is not trained in social case work and hence is not prepared to deal with the emotional and social problems of the crippled child, does not afford the child the best type of service. Clarification of the functions of both professional groups in their services to crippled children is essential. Such clarification should be reached on the basis of functions and standards as determined by their respective national associations and an understanding of the background and training of the individuals engaged in these professions.

The social problems of crippled children over 16 years of age should receive more attention. At present, there seems to be little continuity of responsibility for these children. It is at this age that many of their major problems are encountered and the direction of a professional social worker can be of greatest value.

Social Service Exchange. The Social Service Exchange serves to eliminate duplication of services by social agencies. Each agency has a responsibility to other agencies to register cases on which they have pertinent data. Such information may avoid duplication of examinations, may corroborate or influence the evaluations of later examinations or may be of other assistance in case work. "The cultivation of the intelligent use of the Social Service Exchange creates a first rate opportunity for social workers to harmonize their philosophy and techniques of social work."*

There is great variability in the use of the Social Service Exchange. Some social service departments state that they register all patients admitted, some that they register "for problems only," while others have no policy as to the use of this important

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*Deardorf, N. K.: *Good Case Work and the Intelligent Use of the Exchange,* Better Times, Dec. 6, 1937.

mechanism. The social service departments accept their responsibility for registering of patients but a uniform, purposeful method is wanting. In the 696 patients analyzed, it was found through the Social Service Exchange that 357 patients or their families were known to as many as one to eight agencies. Only in 156 of these cases were we able to find that the hospital social service department had cleared through the Exchange or that it was aware of the interest of other agencies. From some of the social service records it is difficult to discern what is done with the registration. In the inadequate records there is no indication that the information thus secured has been used effectively. In the study important and pertinent data relevant to the patient's best care was found through the registrations and follow-up by correspondence. The hospital record showed no evidence of awareness of this information.

Regular and effective use of the Social Service Exchange would contribute substantially to relieving the confusion which exists in the distribution of responsibility between hospital and non-medical social services. It seems unlikely, however, that the Exchange will be used to greatest advantage unless hospital social service departments are provided with sufficient secretarial assistance.

Cooperative Work. The medical social service department is responsible for referring patients to the proper agencies in the community. In many situations the patient is carried by the hospital social service department because of the social implications of his medical problem; simultaneously another agency may be actively interested in other phases of his general welfare. The poor recording and confusion in the use of the Social Service Exchange make it difficult to appraise the cooperative case work of the medical social service departments visited.

Marginal Income Families. Families with marginal incomes find that, though they are able to meet clinic fees, their budgets do not make it possible for them to carry out recommendations for diet, special shoes and appliances. It seems to be taken for granted, however, that if a patient pays for medical care, his family can arrange to meet all his other financial, emotional and social needs. Frequently the child is deprived of auxiliary social services because the worker's attention is concentrated on the patient who cannot pay for medical care. If the social worker could review, under supervision, the picture as presented by all her patients, their problems might receive more consideration.

Mental Deficiency. The mental ratings of the patients visited ranged from low to superior intelligence. Those with low intelligence quotients were apparently neglected by all agencies. Parents of these children have a sense of hopelessness and anxiety. The New York City Commission on Mental Hygiene and the Mental Hygiene Section of the Welfare Council has just projected a program* in which "a group of cases might be given another opportunity to adjust within the community." The types of community supervision recommended are divided into the following classifications:

"1. Simple community care—those children whose behavior is generally satisfactory and whose needs could be fulfilled by psychiatric or case work service to the family as a whole or by placement in either a foster home or child caring institution.

"2. Individual case work—those children who personally require special case work services whether in true or foster homes.

"3. Psychiatric case work—those children who, in true or foster homes require special study and treatment of a mental hygiene clinic in addition to social case work services."

The New York City Committee on Mental Hygiene adds: "It

***Needs of Mental Defectives in New York City.* A Report of the Committee on the Needs of Mental Defectives in New York City of the New York City Committee on Mental Hygiene and Mental Hygiene Section of the Welfare Council, New York, Aug. 1939.

is especially important to emphasize that there is a grave lack in the care and supervision of the borderline defective group in the community. The trend of child caring agencies to specialize in case work technique with behavior problems has meant that they are reluctant to work with the borderline group. The State Schools on the other hand, have not been able to develop facilities which would give maximum education and training opportunity to this group. Inasmuch as the State Schools can handle only a limited number of the borderline defectives, it is incumbent on social agencies in the community to take wider responsibility for supervision and training."

As an aid to establishing the best care for these children, psychological examinations are recommended. Frequently children who appear mentally deficient, particularly those with cerebral palsy, are found not to be so on psychological examination.

Convalescent Care. Except in convalescent homes directly affiliated with hospitals, there is no continuity and little responsibility for follow-up after discharge, even when the child has remained in the home for several years. Frequently it is apparent that no preparation is made by his family to receive him. There are many problems associated with long periods away from home, such as a feeling of rejection of the child by his family or a feeling of strangeness due to lack of acquaintance with the problems at home or with the family's mode of living. One boy was returned to a bad home situation in which he became a problem, subsequently ran afoul of the law and is now in a training school. He showed behavior difficulties in the convalescent home. Another child relates that when he returned home he was fearful of social contacts and for a long while felt that he did not belong at home or in the community and struggled with himself to overcome his problem. He is now 16 years of age and has worked his problems out for himself after much unhappiness and loneliness.

These patients are not referred to the hospital social service department when they return home though they may be referred back to the hospital for further care. There are problems observed when adolescents attempt to adjust themselves to their own homes after several years of absence. These problems are a result of the cultural patterns of the convalescent home which differ from that of their own homes.

A program of continuity of service is required not only for the medical aspects of care but also for the social adjustments. Where there is a social worker in the convalescent home, the personality and social problems observed should be reported and considered jointly with the hospital worker when the child is returned for medical care. Responsibility for follow-up should, however, be relinquished by the convalescent home as soon as the patient returns to the hospital. Where there is no social worker in the convalescent home, the social worker in the hospital should ask for a report of the child's behavior and social adjustment. (See Chapter VI, p. 69.)

Social Agencies Other Than Hospital Social Service Departments. A program for the care of the crippled child must be integrated with the services of all social agencies in the community. With the assistance of the Welfare Council, questionnaires were sent to the affiliated agencies of the Council. These agencies were asked to indicate the number of crippled children who came to their attention in 1938. They were asked specific questions to point out the resources available in the community for the adjustment of these children and to indicate if they received adequate cooperation from the medical social service departments in the hospitals.

The paucity of crippled children reported by the non-medical social agencies raises the queries: "Where do these children receive the attention their problems require?" "Are they not referred by the hospital social service departments?" "Is it assumed that their problems are met by the hospital departments and the nursing services in the community?" It seems likely that many of the problems of these children are not met nor are they known to the existing social agencies, and that certain agencies have focused their attention on the physically able child. It is urged that these agencies develop programs for leisure time, recreation and vocational guidance to meet the needs of the crippled child. All of the agencies emphasize the dearth of facilities for children with cerebral palsy. Such service should be supplied by the existing agencies. Many of these children have particular abilities and superior intelligence. Most of these children need the services of professional personnel not only in hospitals but from other agencies in the community.

All social agencies should refer crippled children directly to physicians or hospitals and not to nursing agencies. If there is need for the services of a nursing agency, they should be referred by the physician or hospital caring for the child.

Medical and Social Service Records. The Standards Committee of the American Association of Medical Social Work emphasizes the need and professional value of accurate recording of medical social services. It also emphasizes the need for keeping statistical accounts of the services of medical social service departments. This is necessary, first, because of its responsibility to the hospital community; second, for review of its activities and to help it determine its emphasis; third, to promote its own effectiveness by the review of its further needs; fourth, for research purposes. Doctors Sheldon and Eleanor Glueck state that "until types of children supposedly requiring a specialized form of treatment are given such treatment and until such experiments have been carefully recorded, their outcomes objectively determined, the clinics will make little advance in scientific knowledge as far as therapies are concerned. To test the effects of various forms of treatment the ultimate collaboration between clinic and social agencies are indispensable."* Some hospital departments make notes on cards, clipping together any number of these cards which easily fall apart. Other departments record their activity on record-sized loose sheets. Frequently the admission and discharge dates are the only notations on the social service sheets and there is little indication of any social service activity. Often such notes on discharge as "interviewed mother" are recorded but such recording means nothing if it does not note what was involved in the interview.

Many medical charts also failed to present a picture of the patient's personality. It was the home, not the record, from which it was learned that a 14 year old boy was given a modified program at school on return from a long residence in a hospital. Following this, the boy became disinterested in school. His parents and sister frequently found him with "his eyes filled with tears," yet no one else was aware of his problem. The family said, however, that they were helpless and did not know what to do or where to go for assistance. Another parent told of her child who was found in front of the mirror several times talking to his crippled arm, exclaiming "I'll kill you, I'll kill you." This boy attended school, played with friends and when not by himself seemed well adjusted. Both of these patients were attending hospitals but there was no record of these problems anywhere in their charts.

Many of the social service records were reported lost. Some agencies kept the social service records in one file, the correspondence in another, and both of these files were separated from the medical record. Few of the hospitals keep the social service notes in the same folder with the medical record. In hospitals where

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*Glueck, S. & Glueck, E. T.: *One Thousand Juvenile Delinquents,* Harvard Univ. Press, Cambridge, 1934.

teachers are assigned by the Board of Education, the teachers generally take care of all school problems. There is no record in the chart of education received in the hospital or of the school transfer. The services of the Board of Education, nursing agency and hospital social service department do not seem to be integrated in the hospital record. Each seems to function independently of the others.

In some of the hospitals there was one secretary to a staff of as many as five or six workers. Workers report that it is difficult to do any kind of recording under circumstances that provide inadequate stenographic help and the best they can do is to "keep up with correspondence." Records are not up to date. Frequently notations are inadequate or services and activity are not recorded. Two hospitals were dependent on the changing W.P.A. clerical assistance or upon volunteer secretarial help. Inadequate secretarial assistance seems largely responsible for the poor recording generally, although inadequate selection of material recorded is a problem.

Where social service records are filed apart from the medical records there seems great confusion as to what notations to make on the medical charts. Frequently a problem is noted by the physician on the medical chart yet there is no indication that the social service department is aware of it. Reports to physicians are generally given verbally with no statement as to what was involved in these reports and what further plan was indicated or taken. There has been no joint planning with the doctors and social service department in this direction.

Joint planning is necessary if medical social service is to be of more value to the medical staff. Good recording is essential for (1) use by physicians and social workers in the hospital throughout the period patients are under care; (2) subsequent review of patient's problems and direction given him when a new worker is assigned; (3) helping the worker to be clear and definite in her plan for patient; (4) estimating the performance of a social service department that it may study and develop higher standards of service; (5) cooperation with other agencies; (6) medical social research with reference to social needs of patients.

Personnel. Emphasis on the training of the personnel of the social service departments is important and must continue. Progress since the hospital survey of 1937 is already noted. A personnel is required that is trained to recognize emotional and social problems and guide and direct their solution. They should know case work procedure and what is involved in an adequate program for the crippled child.

Case Work Load and Standards of Service. No standard has as yet been determined as to how many patients a medical social worker can carry at a given time. Studies to determine such standards are being made by the American Association of Medical Social Workers. At present the medical social case worker's duties with varying emphases in different hospitals are: (1) admission of patients to determine financial ability, (2) securing of appliances and medicines, (3) referral to other agencies (as steering services), (4) cooperative social case work, (5) sending of reports to social agencies, (6) taking social histories, (7) discovering social problems, (8) interpreting patient's medical condition and interpreting this condition so that patient and his relatives understand medical directions and are able to carry them out, (9) acting as liaison agents in the interest of the patient to the community by conferences, (10) intensive care involving a study of the medical social situation, the emotional and social components in the situation and assisting in a plan for the patient's best adjustment, (11) recording social service activity, (12) special or more general follow-up for medical care or medical research, (13) keeping statistics.

These many responsibilities, combined with the other services that medical social workers are required to cover in many hospitals, make it impossible for them to engage in medical social case work of other than the administrative and steering variety.

Consideration must be given to the following questions: (1) Is there any difference in the social case work responsibility for patients suffering from acute and chronic illness? (2) Should not the same worker carry the patient from the in-patient and out-patient department since doctors in these services frequently change? (3) Should the social service department close its service to a patient who continues to be carried by the medical service for a number of years? These questions are particularly important since for a large group of crippled children sustained service and guidance are most important factors in their care.

Quarters. Most of the departments are in crowded quarters. Workers and secretaries share common offices. Lack of room for privacy during interviews is a hindrance to the best type of service. In those instances where the social service departments have been reorganized, enlarged quarters have been afforded.

RECOMMENDATIONS

(1) That adequately trained medical social service case workers be employed and that those now engaged be encouraged to meet established professional standards by further training.

(2) That studies be conducted to determine the maximum case load per worker. When this is determined, the staffs of medical social service departments should be increased to meet this standard.

(3) That the professional status of the medical social case worker in the hospitals of New York City be clearly defined and differentiated from that of the public health nurse.

(4) That ultimately the aim of each social service department

should be to interview all patients and review their records in order to select the problems in need of the attention of a social case worker and determine the type of service to be rendered. A review of this type requires supervisory direction.

(5) That medical social service departments improve their records so that information may be readily available to physicians, public health nurses and outside social agencies concerned with the care of the patient.

(6) That medical social service departments use the Social Service Exchange more extensively.

(7) That social agencies develop their resources so that they may be available to the crippled child.

(8) That the medical and administrative staffs of hospitals become more familiar with the problems involved and cooperate more fully with the social service departments.

(9) That medical social service departments extend their activities into the field of medical social research.

(10) That integration of all services to the patient, in and out of the hospital, become the responsibility of the medical social service department.

CHAPTER IX

EDUCATION

In balancing a program for physically handicapped children, equal weight must be given to physical and educational aspects. A large proportion of this group cannot be completely rehabilitated physically. Therefore, the objectives of an educational system for physically handicapped children must include first, assurance that every handicapped child be given the advantages of a general education which are available to the normal child and second, additional special training which will make it possible for him to obtain employment in a field where his physical limitations will not prohibit competition on terms of equality with physically normal persons.

In New York City, education of the crippled child is under the jurisdiction of the Division of Physically Handicapped Children of the Board of Education. Under the supervision of this bureau is included the care of not only the orthopaedically crippled child, but also the cardiopathic, epileptic, tuberculous, malnourished and other chronically ill children in need of special attention from the physical standpoint.

Provisions for primary education of orthopaedically crippled children have fallen into three general categories: special classes in public schools, classes in hospitals and convalescent homes for the chronically ill, and home instruction for the home bound. The proportion of children, aged 6-14 years inclusive, in each of the major diagnostic categories, who received special instruction of these three types is shown in Figures 1a and 1b.

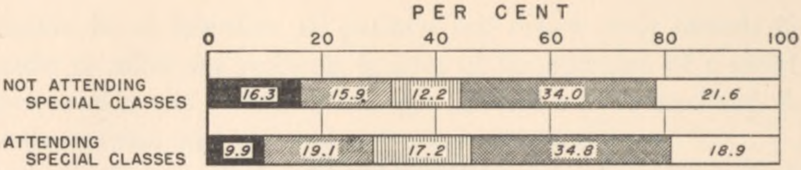

Fig. 1a. Division by Diagnosis of Crippled Children Registered, Age 6 to 14 Inclusive, Attending and Not Attending Special Classes (1938).

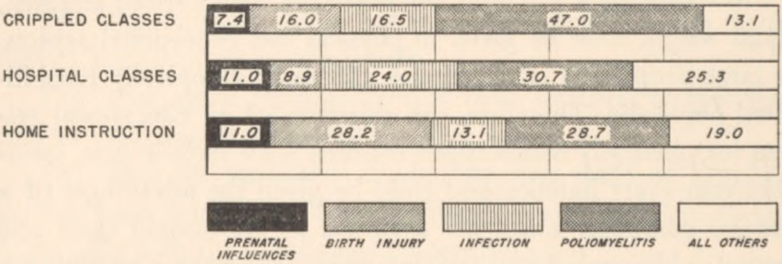

Fig. 1b. Type of Special Classes Attended by Those Receiving Special Instruction.

The educational progress of crippled children included in the sample study, including those in special classes, compared with normal children of the same ages attending regular classes in public schools of New York City is shown in Figure 2.

CLASSES FOR CRIPPLED CHILDREN

Public Elementary Schools. Special schools for crippled children which are in operation in many other large cities have been discontinued in New York City. Consequently, provision for education of physically handicapped children capable of attending school are confined to classes operating in ordinary elementary schools. The number of these classes is flexible, and varies from year to year depending upon the demand. The number of classes in operation and the total enrollment during the past 20 years are shown in Table 1.

Table 1. Classes for Crippled Children in Public Schools, Hospitals, and Convalescent Homes, 1919 to 1938.

Year	Number of Classes	Number of Children Enrolled
1919	77	1,464
1923	122	2,532
1928	132	2,716
1933	105	2,203
1938	124	2,400

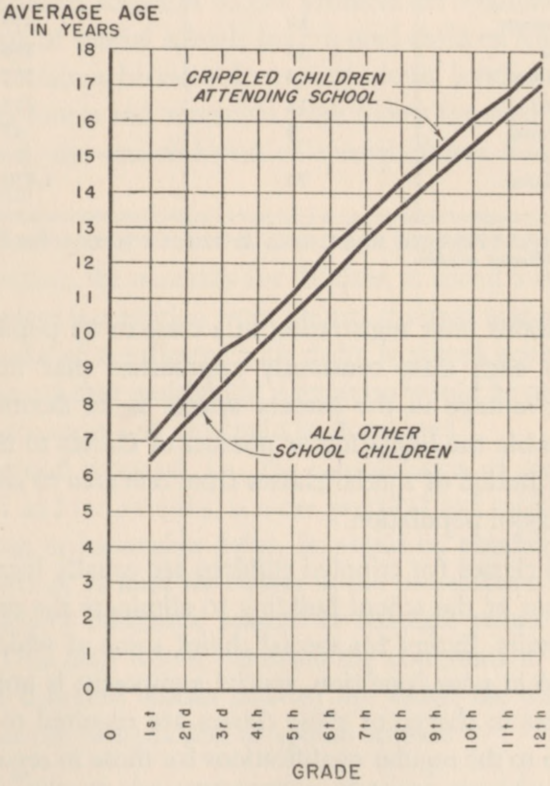

Fig. 2. Average Age in Each Grade of 932 Crippled Children Included in Sample Study Compared With Average Age of All Other Children Attending Public Schools in New York City.

The number of children attending special classes in public schools and the number of classes in each borough in 1938 are shown in Table 2.

Table 2. Distribution of Classes for Crippled Children in Public Schools, by Boroughs.

Borough	Number of Classes*	Number of Children Enrolled
Manhattan	19	377
Bronx	15	296
Brooklyn	24	537
Queens	12	213
Richmond	3	47
Total	73	1,470

*The number of classes per school varies. In 1938, for instance, the 73 classes were located in 38 different schools.

Regulations limit registration in a class to 25 pupils, and the number in each class constantly approaches that number. An obvious advantage in the present system is its flexibility which makes possible the limitation of number of classes to the demand and redistribution of special classes from one area to another with shifts in school population.

Special classes for crippled children are usually located on the ground floor of the school building to eliminate the necessity for climbing stairs. Except for special chairs, some of which are antiquated and in poor condition, special equipment is not provided.

Teachers in charge of these classes are required to have had, in addition to the regular qualifications for those in regular classes, special training in the instruction and care of physically handicapped children, and the salary schedule is higher than that for those in charge of regular classes in corresponding grades.

Although by means of this system segregation of handicapped children is theoretically avoided, they do not accompany others to school or take part in general recreational activities, and are actually as segregated as they would be if attending classes in special schools. Furthermore, not more than one or two classes are located in most schools and this system makes it necessary to assemble children ranging in age from six to 14 years, and in grades from 1-A to 7-B in one classroom.

Two obvious solutions to this problem are available; first, the construction of special schools for crippled children equipped with elevators or ramps between floors, rest rooms, lunch rooms, physical therapy rooms and accessible work rooms for vocational activities; second, the consolidation of special classes into fewer and larger units.

The disadvantages inherent in the first proposal are the expense of construction, the necessity for children to travel long distances, their complete segregation from normal children and the difficulty in adjustment of enrollment with shifts in school population. The advantages are that multigrade instruction would be restricted and adequate accessory services could be developed.

The second proposal, i.e., the consolidation of special classes into fewer and larger units, is more practical and might be carried out without unreasonable delay. It would be possible to include special units of at least six classes in the construction of new elementary school buildings, located at strategic points throughout the city. This plan would eliminate the objections to the present system of scattered classes and yet not entail the disadvantages inherent in the construction of special schools.

In addition to the construction of these special units in elementary schools, it is recommended that one small school for crippled children be established to serve as a demonstration and experimental center for the study of methods which could be followed in other units.

Hospitals and Convalescent Homes. Provision for instruction of children confined to hospitals and convalescent homes is an essential adjunct to a general educational system. Prolonged periods of institutional care are necessary for many of these children at times when they are in comparatively good general condition and can carry on school work as well as more fortunate children of the same ages.

Specially trained teachers have been assigned to instruct children in hospitals and convalescent homes for several years. Instruction is available in classes and at the bedside for not only orthopaedically crippled children, but also those confined to institutions for other chronic diseases. As in the case of the special classes, the hospital population is constantly changing and frequent adjustments in the distribution of hospital classes are necessary. In May, 1938, 1,009 crippled children were receiving instruction under the supervision of teachers furnished by the Board of Education in 50 classes in 30 hospitals or convalescent homes. Teachers are even furnished to convalescent homes which admit New York City children but are located outside of the city limits.

The general character of instruction and regulations governing classes in institutions are essentially the same as those in public schools and require no further explanation.

Home Bound Children. Children who are confined to their homes because of physical disabilities constitute an unusual educational problem. Some of them are permanently disabled and may never be able to take an active part in the life of the community. For this group, education makes possible the comparative happiness which may be associated with an active mind. A much larger proportion of home bound children are confined to their homes temporarily and may look forward at some time in the future to more active lives. They must be given an opportunity for normal educational progress during the period of confinement.

In May, 1938, 1,582 children were receiving home instruction under the supervision of 174 regularly appointed special teachers. Three hundred and fifty others were receiving home instruction from 56 W.P.A. teachers who were on temporary appointments. Assuming that the same proportions held in the two groups, approximately 925 of the total number were suffering from orthopaedic diseases, including 225 with cerebral palsy. Approximately 80 per cent of the total were enrolled in grammar school classes and the remainder in high schools.

During the elementary school period, the same course of study is followed by the home bound and children in regular classes. Courses of study for home bound children of high school age have been carefully selected for the purpose of affording opportunity for their special training and self-support. The following courses are now available—four year commercial course, two year modified commercial course for over-age students, four year course in industrial arts, two year course in industrial arts for over-age students, and other vocational courses majoring in dressmaking, dress designing and hand craft, all of which may be conducted as four year courses leading to a diploma or two year modified courses for over-age students leading to a certificate of study.

The selection of these courses was made in consideration of the fact that there are a very limited number of high school home teachers available, and therefore, practical and successful courses leading to the training and eventual placement of physically handicapped children had to be planned for them. High school teachers are not provided for short term cases, nor are they assigned for coaching purposes. Many of the subjects of an academic or a general course cannot be conducted in homes successfully by one teacher. Furthermore, these courses have no definite relationship to training which makes the physically handicapped child self-supporting at the end of his high school education.

Teachers assigned to home bound children, like those in other special classes, are required to have special technical training in the field and receive additional compensation. A teacher supervises the work of eight children, each of whom is visited three times weekly.

Every effort is made to confine this service to those who are physically incapable of attending special classes. In order that such instruction may be confined to those absolutely in need of it, applicants should be visited by a physician representing the Board of Education to insure that the child is really incapacitated, capable of profiting by instruction and unable to attend a special class.

High Schools. With the exception of the children previously mentioned who receive home instruction at the high school level, there are no special educational facilities for this age group. The general policy is to avoid segregation and to encourage older children to compete with normal students.

Bus service is provided for transportation of handicapped children to 28 high schools, several of which emphasize vocational training. In February 1939, 828 children, approximately half of whom are assumed to have orthopaedic handicaps, were being transported. (In addition, a large number of crippled children reach high schools by means of other conveyances.) The selection of schools afforded to the child in need of special transportation is limited by the district covered by the bus. This is arranged in order to reduce bus travel to a minimum and to reduce the cost of bus transportation.

In high schools other than those for vocational and industrial training, students have a choice of three courses: general, academic or commercial. The general course may be modified to meet the interests, skills and abilities of the students who have been referred for vocational training, which should be distinguished from the industrial training offered in the vocational or technical schools.

In the industrial and vocational high schools, there are from 13 to 22 vocational and industrial courses which may be selected. If bus service were provided for handicapped children of high school age on a borough-wide, rather than on a district basis, the choice of industrial and technical courses would be increased. It is recommended that this service be altered so as to provide a greater selection of schools and, consequently, a greater selection of courses.

Children who are transported to high schools or receive home instruction at a high school level do not constitute the total number of crippled children who are receiving a high school education. Among the children encountered in the sample study who had completed elementary school, 83 per cent were attending or had been graduated from high school. Every effort should be made to encourage handicapped children to continue their education at least through high school. They are poorly equipped to do manual labor and are particularly in need of the broad background of a general education as well as special training for a specific occupation. The problem of vocational guidance and training is discussed in more detail in Chapter X.

TRANSPORTATION

All those attending special classes for crippled children in elementary public schools, as well as those with moderate to severe cardiac disorders, are transported to and from school in buses provided by the Board of Education. An additional group of children with orthopaedic and cardiac disorders previously mentioned are transported to high schools.

By carefully distributing special classes throughout the city, it has been possible to limit the district covered by a bus to a comparatively small area. Pin maps and time tables are used and the routes are frequently changed in order to reduce the length of bus trips. This system makes it possible to transport most children to school in a reasonable length of time. It has been suggested that the time consumed might be diminished by the use of smaller buses with a capacity of 15 to 20 children.

If the recommendation that classes for crippled children be consolidated in fewer and larger units is carried out, consideration might be given to the suggestion that transportation areas be laid out with relation to main routes of travel, in conjunction with the location of crippled children's homes, rather than on the basis of a plotted area of given dimensions. Such an arrangement might make possible a further reduction of time consumed in transportation.

One of the present difficulties encountered in arranging the most efficient distribution of bus service is attributed to the fact that contracts for bus service are awarded by districts. It is recommended that there be a city-wide bus quota without territorial restrictions in order that children may be assigned to special units in elementary schools and to high schools in keeping with their educational needs. It is also recommended that the school buses be owned by the city and operated by municipal employees.

The estimated cost of this service for the school year 1938-1939 is $239,518.00. It seems likely that this is an unavoidable expense which would not be reduced by either increasing the amount of home instruction or establishing central schools for handicapped.

Transportation from schools to clinics is provided in Manhattan and Bronx by the Association for the Aid of Crippled Children and in Brooklyn by the Brooklyn Bureau of Charities. At least half a day is consumed in going to and from the clinics and the visits may not be as frequent as would be desirable.

ADMISSION AND DISCHARGE POLICIES

Children are admitted to special classes in schools or hospitals or are accepted for home instruction only on recommendation in writing by the attending physician. If the application is made directly by the parents, the child is referred back to the last physician or clinic visited. Re-application and a certificate from the attending physician is required at the beginning of each term and children are not discharged without his consent.

It is both necessary and desirable that there be some central point of control because the average physician is not familiar with the facilities available or the regulations governing admission or transfer and may request changes in the status of crippled children without due consideration of their educational needs. It was the impression of orthopaedists who visited the special classes, however, that many of the children enrolled should not have been segregated for any physical reason. From the standpoint of the educational administrator, this situation is explained by the fact that assignment to a regular class may require stair-climbing and strenuous activities in which even the slightly crippled child may not be able to participate. In a mass organization, not individual privileges but the safety of all children must be the basic consideration. Occasional delays in transfer of children from one class to another are unavoidable because it is often difficult for a child to adjust himself to a new class in the middle of a term and transfer at that time may result in his not being promoted.

It is recommended that orthopaedists be employed on a part-time basis by the Division of Physically Handicapped Children of the Board of Education to assist in the selection and control of children admitted to special classes for crippled children and home instruction.* With this additional staff, many of the difficulties inherent in the existing system would be eliminated. As under the present system, however, the recommendations of the attending physician should be given serious consideration. In Chapter XIII (Program for Children with Cerebral Palsy), special provision is made for selection of applicants for admission to classes for children with cerebral palsy.

The Division of Physically Handicapped Children of the Board of Education should be encouraged to continue its efforts to diminish the number of children awaiting admission to special classes and home instruction. An increase in the administrative staff at the central office of the Division is essential and a slight increase in the number of special teachers would make possible greater flexibility in total enrollment.

MEDICAL SUPERVISION AND TREATMENT

At present, physical therapists employed by outside organizations are treating crippled children in three high and six elementary schools. The schools in which treatment are given and the organizations sponsoring this service on February 1, 1939 are listed in Table 3.

Obviously, this service is reaching a very small proportion of the school population. If it is desirable, it should be expanded to cover all classes for crippled children, and if not, should be abolished.

Treatments are carried out only with the consent of the patient's parents and attending physician, and the prescription

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*If the Board of Education cannot assume this responsibility, it is suggested that orthopaedists employed by the Department of Health be assigned to the Division of Physically Handicapped Children of the Board of Education for this purpose.

Table 3. Facilities for Treatment of Children in Special Classes.

Borough	School	Number of Children Treated	Number of Children in Classes	Organization Sponsoring Service
Manhattan	Julia Richman H. S.	20	No special classes	Crippled Children's After Care, Inc.
	Seward Park H. S.	19	No special classes	Crippled Children's After Care, Inc.
	P. S. 31	4	66	Association for the Aid of Crippled Children
Bronx	James Monroe H. S.	21	No special classes	Philanthropic League
	P. S. 90	20	59	Philanthropic League
Brooklyn	P.S. 30, 219, 238	31	165	Brooklyn Visiting Nurse Association
Queens	P. S. 42	7	17	Association for the Aid of Crippled Children

must be renewed at the beginning of each term or more frequently, depending on the organization. Physical therapy given under this arrangement is said to be supplementary to that received at clinics or the offices of private physicians. It seems likely, however, that parents would often consider no further care necessary and actual medical supervision may be rather remote. Filling out a form does not constitute medical supervision. The Commission is of the opinion that prescriptions for physical therapy should not extend over a period greater than two months.

It should be mentioned that some of the organizations accept for treatment in the schools only children who would be likely not to receive it elsewhere, such as those whose parents cannot afford private treatment, and for some reason are unable to take them to clinics frequently. Many of these children would go without treatment if it were not given in the school. Obviously, the same treatment given at home would require a greater number of visits and would be more costly.

Although a satisfactory system of treatment might be worked out under more clearly defined medical supervision and with better equipment if special classes were consolidated in fewer schools, extensive development of the existing arrangement should not be encouraged. The policies governing treatment in those schools should be controlled by an advisory board of orthopaedists and representatives of the Department of Health. Actual prescription for treatment should remain the responsibility of the private physician or clinic in charge of the patient. Provision for physical education of those enrolled in proposed classes for children with cerebral palsy is discussed in Chapter XIII (Program for Children with Cerebral Palsy).

Physical therapy in the home under guidance of the Board of Education has been recently abolished and should not be encouraged. Where such treatment is necessary, it should be carried out by direct arrangement between the physician or clinic and agency. This subject is discussed in more detail in Chapter VII (Public Health Nursing).

THE WALTER SCOTT SCHOOL

In addition to the special facilities for instruction of crippled children provided by the Board of Education, the Walter Scott Free Industrial School for Crippled Children, established in 1903, maintains a school at 55 West 68th Street, New York City, and summer home at Claverack, New York. Both school and summer home are supported by voluntary contributions. Forty-five children residing on the west side of Manhattan are admitted to classes from kindergarten through the eighth grade. Transportation is provided by the school.

RECOMMENDATIONS

(1) That classes for crippled children be consolidated in larger units, especially constructed for the purpose in new ele-

mentary school buildings, and located at strategic points throughout the city. The minimum size of such a unit should be six classes.

(2) That one small school for crippled children be established to serve as a demonstration center for methods which may be followed in other units.

(3) That every effort be made to restrict home instruction to children who are confined to bed, or are so ill that transportation to school would be detrimental to their health. No child should be deprived of the companionship and broadening influences which result from contact with other children of his age.

(4) That orthopaedists be employed on a part-time basis by the Division of Physically Handicapped Children of the Board of Education to assist in the selection and control of children admitted to special classes for crippled children and home instruction.

(5) That the form which is filled out by the referring physician be revised and amplified so that the examining physician in the school may have a more thorough understanding of the referring physician's opinion.

(6) That a more definite criterion for the admission of children to special classes be established and that greater flexibility in transferring these children to and from these classes be made possible.

(7) That effort be made to decrease the waiting list for admission to special classes and home instruction.

(8) That when special units for crippled children are established, equipment and personnel for physical therapy be provided. The policies governing treatment in these units should be controlled by a group of orthopaedists representing the Advisory Council to the coordinating service for crippled children. Actual prescription for treatment should continue to be the responsibility of the private physician or clinic in charge of the patient.

(9) That there be a city-wide bus quota, without territorial restrictions, in order that children may be assigned to special units in elementary schools and to high schools in keeping with their educational needs.

CHAPTER X

VOCATIONAL GUIDANCE AND TRAINING

Vocational guidance and training is inextricably interwoven with the educational program. "The minor under 17 years of age who is not a graduate from a four year high school course of study and who has not taken up employment is required by law to attend upon full time instruction."* At the age of 17, a young person should be on his way to developing the skills he needs for his life work, whether it be in industry or the professions. Vocational guidance is dependent upon elementary school preparation and adjustment in life should be easier if guidance is begun early. The President's Advisory Committee has stated: "Few young people have received adequate vocational orientation. Thousands leave school not only without formal occupational preparation but also without a plan. They have nothing to do—they do not know what they are able to do." How true then is this for the handicapped?

A program concerned with the occupational activity of the crippled child should consider four principal groups:

First: Those with minor residual handicaps whose physical care, mental and emotional adjustment is satisfactory so that, given the guidance received by the physically able, they should not need more service than do the normal members of their class. However, in this group there may be those whose physical adjustment, though good, may carry over emotionally some early reactions to the original physical condition and find in the resultant minor

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**Public High Schools of City of New York*—Information for Graduates of Elementary and Junior High Schools.

deformity a basis for withdrawal or dissatisfaction. This group needs, for preventive reasons, understanding and adjustment in the emotional spheres simultaneous to receiving physical care and guidance, whether educational or vocational.

Second: Those who have serious crippling conditions and are dependent on crutches or other appliances, but for whom there is hope of diminishing the extent of their handicaps by further orthopaedic treatment. In planning vocationally for this group, it is necessary to predict as far as is possible whether, with continued medical care, such aids as those used during the training period will be necessary when the individual is ready for employment.

Third: Those who present severe, permanent physical disabilities and who should be so directed that their eventual occupations may be pursued despite this disability.

Fourth: Those whose crippling is so severe that even with the aid of appliances they are unable to leave their homes.

Some in each of these categories need sheltered workshop experience to determine (1) if they can work at all, with the hope that they may eventually be gainfully employed; (2) if they can work part-time; (3) if they need curative workshop care so that they may find compensatory outlets.

The agencies in the community concerned with the guidance, training and placement of handicapped fall into two broad categories, private and public. Most of these agencies are meeting the needs of orthopaedic and other handicapped persons. In the description of these agencies which follows, only those are described which are directly concerned with guidance, training and placement of the crippled child. The activities of the family and children's agencies, whose services in this area are indirect, are omitted since for the most part they refer to and collaborate with those directly concerned when the problem is of a vocational nature.

PRIVATE AGENCIES

Institute for the Crippled and Disabled—400 First Avenue, New York City. The goal of the Institute for the Crippled and Disabled is to see the physically handicapped guided into a situation where they are earning their own living, or a portion of it, and participating in the social life of their communities with their physically able contemporaries. To accomplish this end, it maintains an artificial appliance shop providing limbs and braces at approximate cost; vocational schools teaching trades adaptable to particular disabilities; a sheltered workshop providing remunerative employment for disabled persons who cannot, currently or permanently, meet the conditions of commercial employment; a home bound service providing remunerative employment for those who, due to physical disabilities, cannot leave their homes; recreational services for those in training to better fit them to take part in normal community life; special physical education to adapt them for the tasks required in vocational pursuits; social case work for those being served; vocational guidance and other counseling; an employment service for clients of the Institute and those of the New York Rotary Club. The program of the organization is flexible and clients may progress from one service to another as they show their abilities.

The service is designed primarily for the orthopaedically disabled but also includes those suffering from cardiac disease and the deaf. Clients of both sexes are admitted. The minimum age for service is sixteen years, except in the artificial appliance shop where there is no age limit.

Brooklyn Association for Improving the Condition of the Poor—401 State Street, Brooklyn. This agency conducts a sheltered workshop for crippled, blind and other disabled men and women over 15 years of age. It also offers a vocational guidance and training program and an attempt is made to give the handicapped trade training so that they may eventually find employment in the community. When the need is indicated, training opportunity in trades and schools are afforded. Because the effect of public relief has been felt by private agencies in their case work with families, the A. I. C. P. plans to expand its program in the field of services for the handicapped.

Brooklyn Bureau of Charities—285 Schermerhorn Street, Brooklyn. This agency, through its Department for the Blind and Crippled, serves adult blind women and adult orthopaedic handicapped men and women residing in Brooklyn. Admissions to these groups are handled by a special case worker. The services of this Department of the Brooklyn Bureau of Charities are: (1) Case work for problem cases; (2) home visiting, training, and in some instances paid homework for the home bound crippled and older blind women; (3) sheltered workshop training and employment in the Bureau Mailing Service (a commercial letter-shop) or in a toy and novelty work room; (4) vocational counseling and guidance for the younger applicants and referral where advisable to other agencies when the Bureau's services are not available or sufficient to meet the need.

Men's League in Aid of Crippled Children—370 Seventh Avenue, New York City. The Men's League aids orthopaedically handicapped people to become self-supporting by providing vocational training and guidance. League activities include also such other services for crippled young people as may reasonably form an essential part of a vocational training program. Ages range from 15 to 25 years. For high school students, small monthly allowances are given to cover lunch, transportation and sundry expenses. Funds to cover tuition and laboratory fees, text books, equipment, maintenance and transportation are afforded students attending recognized colleges, business and trade schools. The League does not duplicate the activities of the State Rehabilitation Division but in many instances it supplements the state allowance and accepts cases which the state is restricted by law in financing. The applicant is urged to plan his own future, though suggestions and advice are given as to the feasibility of the contemplated program of vocational training. In recent years the League has undertaken placement of its clients but as its placement facilities are limited, it also uses the New York State Employment Service and private agencies for this purpose. The Men's League is active in efforts to have the State Education Law amended to provide greater opportunities for the employment of crippled persons in the civil service.

Vocational Adjustment Bureau—421 East 88th Street, New York City. Psychological and vocational testing, interviewing and follow-up are offered by this bureau. Girls between the ages of 14 and 17 years are received for testing and vocational advice only. An employment service is conducted for women between the ages of 17 and 30. It also conducts classes in novelty hand work, speech and personality adjustment. It does not specialize in training and placement for the crippled child but occasionally such children are referred for advice and guidance and reports of findings are sent to the sending agency.

Rehabilitation Clinic for the Disabled—28 East 21st Street, New York City. This agency conducts a work clinic operated for the purpose of restoring muscular function and preventing or overcoming discouragement and other emotions which follow injury or disease and destroy employability. It is primarily a clinic for the rehabilitation of orthopaedically disabled men and women, preferably in the occupation previously followed. The disabled worker by actual participation in selected jobs regains confidence in himself and after a short time generally returns to work. When a man is so disabled that he cannot return to his former occupation, a work program is planned and training, if necessary, is secured for him in a new occupation compatible with his disability. It provides the opportunity, by observing these workers while employed, to determine their maximum physical and mental possibilities and consequently to estimate their wage earning capacity.

The Rehabilitation Clinic is not a sheltered workshop. It neither offers permanent employment nor pays patients while attending. In its treatment, practical work projects are used to produce interest, stimulating self-motivated function in the injured member and sick mind rather than imposed activity, passively accepted.

The selection of individual projects is left to the patient but he is guided in this selection so that the work in which he engages will be stimulating mentally and physically. Every effort is made to remove conscious and subconscious mental restrictions, to release the mind from dwelling upon the disability, and thus give muscular function its greatest opportunity to improve. This activity also affords the possibility of discovering abilities.

Most of the patients are over 21 years of age and have been employed, but a few are accepted who have not been employed previously if it is considered they can profit by the service.

PUBLIC AGENCIES

Rehabilitation Division of the New York State Department of Education—80 Centre Street, New York City. The district office of the Rehabilitation Division of the New York State Department of Education is responsible for the administration of this service not only in New York City but in Long Island, Westchester and Rockland Counties. Its work consists of determining the possibility of satisfactory adjustment of the disabled in competitive employment and includes planning and supervising of the vocational service necessary to secure that goal. It serves two groups: (1) those who are crippled from childhood and (2) those crippled by disease and public or industrial accidents in later life. Since the objective is employment, the minimum age is the employable age. Seventeen is considered the minimum age for satisfactory employment consideration.

Patients are interviewed regarding interests and capabilities and a thorough investigation, by collecting data from other agencies, is made on application to determine the degree of employability. A medical report is required giving the diagnosis and prognosis. When it is indicated that the applicant may need physical care, an attempt is made to bring about maximum physical improvement before his vocational needs are considered. If physical improvement without operative treatment appears possible, the applicant is directed to a sheltered workshop or other agency to restore maximum physical function. Thus, the degree of disability is first established.

Suitable and satisfactory employment is the goal and by counseling, guidance or training, an effort is made to fit the applicant for an occupation best suited to his particular needs. When vocational training is given, the applicant is usually sent to a private school for six months to a year and tuition is paid by the state. When the service is completed and he is ready for employment, the Division secures employment through its own efforts and the cooperation of other agencies. Only when a person has been placed and holds that job for at least 30 days is he considered satisfactorily employed and rehabilitated. Persons so placed are followed in employment for one year after placement.

New York State Employment Service—342 Madison Avenue, New York City. The New York State Employment Service conducts 30 offices in Greater New York to handle employment and unemployment insurance functions. Seventeen special interviewers for handicapped applicants are located in ten of these offices where proximity to industry and convenience to lines of transportation offer the greatest opportunity for placement, which is the main purpose of the special service. Special interviewers obtain medical data to determine work abilities, try to effect the placement of the more severely handicapped which the regular service finds difficult to place, and seek to interest employers in the vocational possibilities of the handicapped. A dynamic relationship exists with other agencies. Cases of doubtful employability are referred for "try outs" to sheltered workshops who refer the applicant back for placement in private industry if the "try out" indicates the applicant is employable. All available resources in the community are used when training is indicated as necessary and the special interviewer assumes responsibility for placement when training has been completed. The special service also assumes responsibility for follow-up in placement.

This agency has among its junior applicants a large number securing unemployment insurance benefits. In the case of benefit and non-benefit applicants, if a job previously secured by the individual himself seems unsuitable because of his disability, he may be referred for training in some other type of work or for direct placement in another line if training is not practical. Referral for re-training is made when it seems likely that with more training the individual may be more readily placeable.

A testing service is available to a limited number of handicapped juniors through the Junior Consultation Service, a cooperative arrangement with the Vocational Service for Juniors (a private agency) and the New York State Employment Service. The Consultation Service exists mainly as a testing and consulting resource for non-handicapped juniors but a carefully selected number of handicapped juniors, preferably in the higher intelligence group, may be referred for tests. Patients with cerebral palsy, as a rule, are not referred to this service because of the lack of adequate conditions for testing such cases. A small sum of money is available for scholarships and for incidentals which may make training feasible or vocational or personal adjustment more likely.

Board of Education—500 Park Avenue, New York City. The Board of Education conducts day and evening classes for vocational and industrial training in high schools. Graduates of elementary or junior high schools, including the handicapped, may attend these schools. In special cases, non-graduates of elementary schools are admitted to selected vocational high schools within the limits of their capacities. The courses in the evening trade schools and evening high schools are open to pupils over 16 years of age who are not attending day schools. The trade courses supplement the day-time occupations of these pupils.

In the vocational high schools an exploratory course is given in the first year. At the end of the first year, pupils are either sent to the central vocational high schools or may remain in their respective schools if the terminal course is offered.

There are approximately 50,000 pupils attending the vocational high schools. It has been estimated that about 1,500 of these students are handicapped. Because of the growing demand for trade training on the part of industry, the fact that youth remains in school to a later age and that many are now turning to vocational high schools rather than academic high schools, the Board of Education has had to refuse admission to thousands of applicants. The city is being urged to add 20 vocational schools to meet the present and growing demand. Before new vocational high schools are organized, industry and labor are consulted regarding the placement possibilities for prospective pupils.

Each vocational school, through its placement units, makes every effort to find employment for the students. Care is taken when placing students to guard against sub-standard wages and also to insure good working conditions. Beginning in 1939, the placement department aims to secure employment for students several months before they are graduated instead of waiting until after commencement. Of all those graduated from vocational high schools in 1938, "72 per cent found jobs in their own trade and 13 per cent were placed in allied trades."

The W.P.A. Adult Education Program of the Board of Education—Gramercy Center—124 East 28th Street, New York City. The W.P.A. Adult Education Program of the Board of Education conducts 14 guidance centers of which one, the Gramercy Center at 124 East 28th Street, is for the physically handicapped only. The present organization has been in existence since December, 1938. The minimum age of the applicant is 17 years and the maximum usually is 60 years. Forty-eight per cent of their applicants are in the 17 to 21 year old group. Prior to May, 1939, 275 handicapped individuals of all ages had been registered. Referrals come through personal recommendation of friends, through private and public agencies, public schools and the W.P.A. Educational program. Others are attracted to it through the press and the radio. This agency aims to enable the applicants through tests and interviews to make better adjustments and wherever necessary, it enters into the family and social relationships in order to supply facts upon which reliable judgments may be made. The unit furnishes physical examinations, mental tests, educational and vocational counseling, offers information about schools suitable for the individual, occupational opportunities are pointed out and training and re-training in the trade and vocational schools of the city are suggested. It also affords avocational counseling. The agency has a placement worker and conducts a follow-up service to test the success of placement. Though this unit has its own placement worker, it also uses the W.P.A. Placement Services and the State Employment Service for unemployment insurance adjustment. They report that placement success has been small and their problems in placement difficult.

Table 1 indicates the relative activity of the agencies listed in providing guidance, training and placement for youth under 21 years of age. These data are important only in illustrating the limitation of such services rendered. They are misleading as an

Table 1. Number of Orthopaedically Handicapped Under 21 Years of Age Who Received Guidance, Training or Placement During 1938, Under the Auspices of Agencies Listed.

Agency	Number of Applicants	Number Accepted	Number Given Guidance	Number Given Training	Number Referred to Sheltered Workshop	Number Placed and Employed	Auxiliary Service in Connection with Vocational Care*	Awaiting Guidance	Referred to Other Agencies	Number Declined
Brooklyn Bureau of Charities	22	13	1	7	2	—	2	2	9	9
Brooklyn A. I. C. P.	9	9	4	5	5	2	5	—	2	—
Institute for the Crippled and Disabled	479	479	168	127	52	41	31	60	—	—
Men's League in Aid of Crippled Children	24	17	7	5	—	4	12	1	9	7
Vocational Adjustment Bureau	4	4	3	1	—	—	—	—	—	—
Rehabilitation Clinic	6	6	—	6	—	—	—	—	—	—
Rehabilitation Division, New York State Department of Education	198	63	63	63	—	25	—	6	—	129
New York State Employment Bureau—Junior Division	—	—	—	—	—	96	—	—	—	—
W. P. A.—Guidance Service	85	85	2	81	—	—	20	2	—	—

*The auxiliary services noted in this table were rendered during training and indicate such needs met as carfare and lunch allowances, typewriters furnished, clothing supplied and medical care given.

estimate of the number of beneficiaries because they include numerous cross-referrals. Since the number of persons aged 17 to 21 reported to the Commission is 2,664, it is obvious that a comparatively small proportion of the total group is receiving any formal vocational guidance or training from these agencies. A fairly large proportion of the remainder is probably in need of similar direction.

Explanation of Table 1: (1) The Brooklyn Bureau of Charities states that the nine persons declined by them were referred to other agencies. Training of those accepted was given by the Brooklyn Bureau of Charities, Institute for the Crippled and Disabled, and the Rehabilitation Division of the New York State Education Department.

(2) The Brooklyn A. I. C. P. reports that training was given by its own agency. The two placements, however, were made by the State Employment Bureau and the Board of Education.

(3) The Institute for the Crippled and Disabled states that the 52 persons placed in sheltered workshops also include some given home bound service. The 31 auxiliary services were services afforded in the Artificial Limb Shop. This agency always has pending a number of cases on its waiting list. Most of the clients accepted are 21-29 years of age.

(4) The Men's League states that seven applications were rejected because the need expressed in six were for services other than vocational care, such as convalescence, vacation care, and wheel chair. These requests were referred to other agencies. The seventh case was rejected as not susceptible for training because of subnormal mentality.

(5) Vocational Adjustment Bureau reports one case referred to the Rehabilitation Division for training.

(6) The Rehabilitation Clinic reports that the six crippled children known to their service had cerebral palsy and were of low mentality. One was discharged because of lack of interest and cooperation by family, a second because he was felt to be subnormal mentally and a third because of lack of interest.

(7) Data submitted by the Rehabilitation Division of the New York State Department of Education are for the fiscal year 1936-1937. (The data for 1938 were not available.) The 129 cases closed without service are discussed as follows:

44 not susceptible: Unemployability on the basis of severe physical handicap, low mentality, unfavorable personality traits and mental peculiarities and twists, etc.

36 declined: The applicant either stated definitely he did not care for the assistance of the Division or very clearly evidenced by his attitude that he was entirely disinterested.

24 not needed: These young people were fully qualified either by training or

past work experience for jobs in keeping with their employment possibilities.

13 re-employed: They had either secured jobs at the time of application, which were either considered satisfactory or which they would not leave regardless of advice to the effect that they should improve their vocational status.

4 uncooperative:

4 disappeared: They moved and could not be located.

4 not eligible: Under the law they did not qualify as eligible to the service.

Of the 63 given training:

12 were closed because they were not susceptible or cooperative for employment, declined the service, or were re-employed in a job not in keeping with the training given.

10 are now in training following guidance.

25 were rehabilitated and secured employment consistent with training given.

16 were trained and are awaiting placement.

(8) W.P.A. Guidance Service: Sixty-three persons were referred to the New York State Rehabilitation Division. Types of training were ultimately decided by the Rehabilitation Division, although suggestions and recommendations were submitted by the Guidance Service. Fifteen were referred following guidance to the W.P.A. Adult Education Program, and three to the Vocational Adjustment Bureau.

DIFFICULTIES EXPRESSED BY AGENCIES

(1) *It is difficult to secure vocational care for the cerebral palsied group.* Most children with cerebral palsy reach maturity before much attention is paid to their vocational possibilities and with few exceptions it is doubtful if much can be done for them at that time. There is a great need to know more about their endurance levels and their variabilities in performance in order to be able to direct and train them adequately. A clinic, serving as a laboratory, where work would be varied and where understanding of the patient's physical, mental and educational background would be considered, would prove invaluable in estimating the work direction for many of the more severely handicapped. Many cerebral palsied have good intelligence and may be directed into professional channels. Those who are little handicapped can have the advantage of a vocational program designed for other crippled children.

(2) *The beginner has little chance of finding employment.* Agencies state that it is difficult to obtain the first position but once placed, the crippled person usually changes jobs less frequently and often proves to be a better, more reliable employee than the physically normal person. The attitude has been to reject the disabled on the basis of appearance rather than to gauge his place in productive society on the basis of what he can do in terms of his training, education, physical and mental ability. The employer must be convinced of the desirability of employing the crippled individual. This must be accomplished in terms of this ability and training and not on sympathy. This is true despite the experience shown that they usually work well. A large proportion of crippled persons could be utilized if existing prejudices were overcome. The experiences at Henry Ford Trade School and formerly at the Western Electric Company is indicative of a possibility of placing the handicapped if a vocational training program is planned on a broad scale. A study of jobs held by applicants at the former Employment Center for Handicapped revealed that 322 different kinds of jobs were held by 713 men disabled in one leg. It is also stated that during the period of depression, it was possible for the Division of Handicapped in the New York State Employment Service to place handicapped people in a variety of jobs and industries; for example, 1,266 placements of all types of handicapped were made with 700 different employers in 1934.* Furthermore, an earlier lay-off of the W.P.A. personnel on the basis of production and quality of work showed that fewer handicapped were removed than normally physical persons.

(3) *There is need for more experienced counsellors in the schools and training centers* and for more cooperation between the schools, social agencies, hospital social service departments and the

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**How Physically Handicapped People Find Work.* A Manual of Placement Procedure, New York State Emplyoment Service, Department of Labor, New York State, 1935.

vocational agencies. The child is usually referred to the vocational agency after he leaves school, and often after he has tried, with sad consequences to himself, to find a job. All the agencies stated that the crippled child should be reached earlier if a chance to compete with his more normal fellows is to be afforded him. Guidance must commence before he enters a definite course in high school. Much preventive work of a psychological nature could be accomplished in this way.

(4) *High schools should be more aware of the needs of the crippled child.* There is a tendency to be either too concerned about some individuals and too casual about others. A great deal of attention may be paid those obviously severely crippled and too little attention to those who can get around but cannot compete with normal individuals in finding employment. Many crippled children arrive at the agencies several years after leaving school at which time it may be found that they have physical defects which, if corrected earlier, would have made them more susceptible for guidance and training. The need was also expressed for a better system of following up children from school to industry. Some agencies stated that better vocational guidance must be introduced in the high schools, for at present the crippled child may be shuffled about with others and often trained for work he cannot handle. A program devised for early vocational guidance would give him confidence while he is learning. Such a program would influence him to consider his future occupation early, and not when he is actually at the point of looking for a job. Guided early, the high school period should be most productive in specific training as well as providing a broad base in general education.

(5) It is indicated that many of the children in the high and trade schools come from families of the lower economic thresholds of non-relief status, as well as from families on relief, and are unable to pay for their carfares and other incidental expenses. *For*

these, a small maintenance fund is necessary to relieve them and their families of additional anxiety and concern.

(6) *There should be more frequent conferences between the social workers referring their patients and the workers in the vocational agencies.* The training and placement agencies feel that they could learn more of the doctor's interpretation of the patient's disability through such conferences and that at the same time, the social worker could learn more of the limitations of the vocational agencies' services in both resources and industry. Such conferences would point out the further needs of the community and with the help of community councils and public opinion, work to the meeting of these needs.

(7) *There is a need for more sheltered workshops for the crippled.* The supervisors of these workshops should be adequately trained, should understand the functions of a workshop program, the assets and liabilities of the various types of crippling and where the recipients of the service may find their places in the community.

(8) *A clarification of the aims of sheltered workshops is indicated.* Should a sheltered workshop serve as a therapeutic service for unemployables? Should it serve as an exploratory service for young people who are learning a trade and need a protected environment during the learning period? Should it aim to furnish partial self-support for those handicapped who cannot work full time? Should it serve in all these fields, with its aims in each well-defined and clarified, and make it possible for the individual to be shifted from one category to another in terms of his performance? It is indicated that a well-organized sheltered workshop should comprise: (a) a work treatment shop where a person unable to work a full day or a full week would be given graded activity in the field in which his future occupation is expected to be; (b) training shops where definite prescribed training would be

given as a result of tests, which point out the individual's aptitudes and interests, serving as an exploratory period as to the individual's ability to perform in the chosen field, and aiming to eventual employment in this field; and (c) a sheltered workshop where regular employment is given to men and women whose physical handicap is such that they would never work in industry. These divisions should be clearly defined but at the same time, flexible in terms of the individuals' moving about from category to category, since in so many instances the degree of performance in any one category with continued medical care will shade imperceptibly into another.

Leaders in the field of sheltered workshops state the workshops must not undersell industry or pay lower wages because sick or handicapped persons are employed. The workshops must have industry's approval, both for possible placement of the handicapped and the marketability of their finished products. They also state that a policy should be established with relief agencies with reference to those attending workshops who are supported by the relief agencies. The relief agencies should supplement the earnings of the individual in the workshop to the regular budget allowance rather than expect him to manage on these earnings when they are below the accepted budget. It is economically more profitable to have him partially self-supporting than to maintain him entirely and the psychological effects of occupation cannot be measured. Furthermore, there is always the possibility that some of the persons in the sheltered workshops may eventually be able to maintain themselves entirely through gainful employment.

(9) *The State Civil Service Law needs broader interpretation particularly by the Civil Service Commission of New York City.* It is stated that the physical examinations required by the Commission are often unrelated to the job. Many handicapped have the education and qualifications to fulfill the requirements of cer-

tain jobs scheduled, but the physical requirements restrict these individuals from taking the examinations and from getting placed. In recent months, a more enlightened viewpoint has been taken and the physical examinations given have a more definite relation to the job in view. The Amendments to the Civil Service Law passed in April, 1938 have helped considerably in this direction.

Difficulty, however, is encountered in getting placed. It is suggested that a job analysis be made of the positions in the city services and the requirements of each, and during this analysis that department heads be canvassed to determine their attitude in appointing handicapped people in their departments. This should be of great help to the Rehabilitation Division which is training people for civil service, spending state funds for this purpose. It seems inconsistent to use state funds for rehabilitation if another state department is not aiding in securing the best possible results from this expenditure. Such direction on the part of the city may also set the example to private fields of endeavor. It would, too, fall in line with the policy of the United States Civil Service Commission, which has stated, "The Commission is anxious to do all within its power to give equal opportunity to handicapped persons to secure employment in tasks which they are competent to perform and has endeavored to follow this line of procedure."

(10) *There is much confusion in the use of the term "employability."* It is possible that this term is being used arbitrarily. Some agencies will accept for training only those persons they consider "susceptible for training" and who seem good employment risks. The "not susceptible group" denotes unemployability on the basis of severe physical handicap, low mentality, unfavorable personality traits. This definition allows for many loopholes. Many of this group labelled "unemployable" should be provided an opportunity to show whether they are definitely untrainable and poor risks by tests. Attempts should be made to

help those with personality difficulties which may be responsible for their being temporarily unemployable. Relief or assistance should be given only to those who are so hopelessly handicapped that they are unable to perform productive tasks. Care must be taken not to remove the handicapped able to produce from the competitive field.

(11) *Duplication of efforts in placement work is noted.* All of the agencies listed, except one, have their own placement services. Whether this is advisable is questioned and it is the feeling of some agencies that the placement services should be centralized.

(12) *The individual should be trained not for specific jobs but in a constellation of the skills within the trade into which it is expected that he will enter.* This will facilitate shifts from one skill to another in a given trade. The skilled person today, because of the technological developments and because skills are now highly refined, must be far better prepared than previously.

(13) From the reports received from the agencies employed in vocational care, *no clear picture is given as to what happens to the crippled children who are found "not susceptible" for training and are declined or rejected by the agencies.* Misunderstanding is created in the minds of many of these children and their parents, as indicated by our sample study findings.

(14) *The home bound group presents a great need.* For those temporarily confined, direction should be given and an attempt should be made to ascertain their aptitudes and interests that they may enter high schools, trade schools or the apprenticeship fields when able physically. With reference to those permanently home bound, it is noted that from time to time legislation is enacted which tends to prohibit or regulate industrial homework. We are all familiar with the abuses in industrial homework and feel the need of regulatory legislation in this direction. However, it must never be forgotten that such work is of vital necessity for the

orthopaedically handicapped who are not able to leave their homes. Such occupation furnishes them with some spending money and affords them a sense of self-sufficiency and accomplishment.

A project for the future might well consider a colony set up for the home bound which, supervised by able persons and good managers, might engage in the manufacture of a marketable product. Such a colony would house this group, give them gainful employment, could perhaps be largely self-maintained and could find outlets for persons of most severe disabilities.

OBSERVATIONS FROM SAMPLE STUDY

Comparatively few crippled children have the advantage of vocational guidance. As recorded in Table 2, only four per cent of 208, aged 17 to 21 years, who were visited by social workers during the course of the sample study, had the benefit of this service. Although 43 per cent received vocational training, a large proportion of that number attended commercial high schools where they took prescribed commercial courses without consideration of the possibilities of future employment.

Table 2. Vocational Guidance and Training Received by Persons 17-21 Years of Age Included in Sample Study.

	Vocational Guidance		Vocational Training	
	Number	Per cent	Number	Per cent
Total	208	100	208	100
Received	8	3.8	90	43.3
Not Received	200	96.2	118	56.7

Of the 1,277 crippled children visited in the sample study, 418 were elementary school graduates and of that number, 287 were still attending high school. The present activities of those who

Table 3. Present Activities of Elementary School Graduates Included in Sample Study Who Are Not Attending High School.

Activity	Elementary School Graduates Who Failed to Complete High School		High School Graduates	
	Number	Per cent	Number	Per cent
Total	81	100	50	100
Employed	18	22.2	7	14.0
Able but not employed	39	48.1	13	26.0
In sheltered workshop	0	0.0	0	0.0
Special training	5	6.2	5	10.0
Too ill for employment	17	21.0	1	2.0
College	0	0.0	19	38.0
Employed and attending college or trade school	2	2.5	5	10.0

were graduated from high school or left before completion are recorded in Table 3. The 48 per cent of those who failed to complete high school and 26 per cent of the high school graduates who are able but remain unemployed present a real problem. It is hoped that a more adequate program of guidance and training may, in the future, prepare a larger number for suitable employment.

The following additional observations from histories obtained in the sample study, although not suitable for statistical analysis, reveal outstanding problems:

(1) Children taking commercial courses in high school often do so without guidance or proper consideration of their aptitudes. Many expressed interests in the trades or college rather than in the commercial courses in which they were engaged. Some of the boys recognize the commercial course as a woman's field and ques-

tion whether they will be employed in it. Many of the children were being transported to school and were taking commercial courses with no apparent recognition of the problem of securing employment in commercial fields after graduation.

(2) Many of those who are pursuing the college preparatory course are doing so without advice or direction. Of 102 children interviewed who are now attending high school and registered in the college preparatory course, 52 indicated clearly that they do not know what they will do on graduation. Others specifically stated that they hoped to go to college but recognized that the financial status of their families may make this impossible. Many of those who have been graduated from the college preparatory course in high school are not prepared for any skilled work and are eagerly seeking advice, while many are apparently doubtful of the value of visits to agencies for guidance and training.

(3) The school progress of some crippled children is retarded by hospitalization or convalescence. As a result, some of them leave school as soon as possible unprepared for any work activity. Many parents were regretful that the children were allowed to leave school but reported that at the time there seemed to be no one with whom to discuss the matter. These children and their parents are now discouraged and ask for advice as to where they can go to secure guidance and training.

(4) A number of children did not graduate from elementary school because of either retardation due to illness or retardation in mentality. Others had attended ungraded classes. Neither of these groups received vocational assistance. The National, State and City Committees for Mental Hygiene are at present concerned with a program for keeping in the community the mentally retarded who can function adequately. With this in view, the crippled child of low mentality, able to work in the community, must

be prepared to work at tasks compatible with his physical and mental equipment.

(5) The home bound crippled child deserves more adequate attention. These children ranged mentally from very high to subnormal intelligence. Even the most intelligent home bound of high school age are often given commercial courses regardless of their interests and abilities. Some accept the courses as a means of keeping occupied, while others believe that they will eventually secure work as a result of this commercial training. In many instances these hopes without doubt prove false. It would seem that some stimulation and plan should be given them so that they may at least derive interest from their pursuits and feel that they are studying with a more definite purpose.

Many of the home bound group who could express themselves, notably those with cerebral palsy, had a feeling of bitterness and frustration. They had a strong drive to make more of their lives and seemed to feel they could be helped if they could reach the right source.

The children who were most severely handicapped accepted conditions more cheerfully. Many of these children had not walked for years and seemed to know that they would be progressively more helpless, yet were apparently reconciled to enjoy what was available to them. The craft work in which many of them were engaged is valuable as occupational therapy but it is apparent that the articles made can usually be duplicated at a ten cent store and would be of no value as a source of income.

PROPOSED PROGRAM

Direct Service to the Child. A correlation of the medical care, education and personality must be considered in a vocational program. Guidance should be followed with opportunities for training in fields of activity where crippled persons may compete for placement with their more normal fellows. The opportunity for training must not be afforded blindly but rather as a result of job analysis, thus insuring as far as is possible, that there are placements to be had in these fields. The handicapped strives to be useful and productive. He wants to contribute his share to the general welfare by engaging in work for which he is suited and for which he should receive a fair return.

Closer relationships between the classroom and working world are important in a coordinated program. It is the opinion of leaders in educational and vocational fields that planned counseling should be available to all children, and especially the physically handicapped, before they graduate from elementary school. Although statistics show that industry seems reluctant to hire those who lack high school diplomas, a diploma may be of little value if the education which it represents has not equipped the child for a place in society.

The first contact between the crippled child and vocational counsellor should occur during the first year of high school. At that time, the child should be given an opportunity to discuss his interests with and receive the advice of a person who is acquainted with the possibilities of eventual placement. He should be directed in terms of his physical and mental equipment to an academic high school, vocational high school or other trade school and not allowed to waste time in training which offers little possibility of future employment. Guidance and training must also take into consideration the social and economic picture of the child's family.

During the year before graduation from high school or at the time of leaving school prior to graduation, he should be interviewed again. With adequate counseling early in the high school course, a large proportion of the group may be found ready to seek employment or to continue their education without further assistance when they graduate from high school. Others may need further training and should be provided not only with advice but also financial assistance when necessary. Still others, whose mentality and personality may not justify their continuing through high school, should be guided into trade schools when they reach the age of seventeen.

All of the counseling could be done by the Rehabilitation Division of the State Department of Education. The counsellors of this bureau have a wide knowledge of job requirements and a thorough understanding of the problems faced by the handicapped child. It seems likely that their work could be much more effective if they could see the child at a time when his ambitions are not too definitely crystallized and before he has been exposed to the shocks which are likely to occur when he discovers that his education has not provided him with a means for gaining a livelihood.

Placement should be concentrated in the State Employment Service where well-equipped social interviewers are provided in permanent employment offices, staffed for the purpose and already used by employers. The State Employment Service, which is in constant contact with industry, has a trained personnel in a position to develop such a service. Operation of employment services by two state departments, the Rehabilitation Division and State Employment Service, does not seem necessary and may be confusing to the public. Such a program should not require much increase in expenditure, at least during the first year. With the divisions of labor outlined for each service, the local branches of the public agencies would develop a relationship similar to those which exist in the national bureaus.

Relationship of Vocational Guidance to Physician. Close consultation between the physician and the counsellor is most important in planning for the crippled child's vocational care. This is essential so that the counsellor may know the degree of disability and what improvement in physical condition may be expected.

Furthermore, many of these children are known to the physician for a period of several years, and he should be in a position to advise the counsellor regarding the child's personality and interests.

At any point in the proposed program, uncorrected physical and personality problems may be encountered. Students with such problems should be referred back to the physicians or hospitals under whose care they have been or are active. Progress in the correction of these problems should be continued simultaneously with the vocational guidance program.

Research. Coordination of the public agencies in their program for the care of the orthopaedically handicapped child would offer the private agencies the rare opportunity and rich field for research in vocational possibilities for crippled children, particularly those with cerebral palsy. The private agencies should also be encouraged to concentrate on the adult handicapped. There are many important questions to be answered. What becomes of handicapped persons who have had sheltered workshop experience or other types of special training? What are the satisfying occupations of the adult years of these persons? What was their job experience and what relation did it have with the vocational training given? What becomes of the groups labelled "non-susceptible" and "unplaceable"? What tests can be established for "employability"? What types of individuals are "unemployable"?

A research bureau could also conduct employment analyses in the community. The skills necessary in the various occupations could be tabulated and handicapped persons trained in terms of the necessary skills. With employment analyses available, new avenues of work might be opened and new ideas for training and placement developed. Furthermore, by stimulating the interest of industry in these studies, cooperation of employers should be made more accessible.

RECOMMENDATIONS

(1) That a program for vocational counseling be developed in which physical care, vocational training and the capacity of the person to perform a specific job may be considered simultaneously.

(2) That vocational counseling begin during the first year of high school and be continued until satisfactory employment has been found.

(3) That the responsibility for vocational counseling of all age groups be consolidated in the Rehabilitation Division of the State Department of Education.

(4) That the responsibility for placement be assigned to the State Employment Service.

(5) That active relationship and guidance be maintained with the physician treating the crippled child.

(6) That the private agencies supplement the services of public agencies by extending their activities into the field of research.

(7) That industry be induced to cooperate in analyzing the vocational possibilities for handicapped persons and in opening opportunities for apprenticeship training and employment.

(8) That the functions of sheltered workshops be clarified and that additional workshops with clearly defined purposes be established.

(9) That persons suffering from cerebral palsy be given further consideration in vocational guidance and training programs. They should be studied in relation to their endurance levels and work habits so that new occupational fields may be opened to them.

(10) That guidance be made available to the home bound group of high school age. For the older group, there should be occupational outlets and, where talent and mental ability is indicated, assistance in securing an opportunity to develop this ability.

(11) That the existing municipal civil service laws be more broadly interpreted to make available opportunities for employment of handicapped persons in public service, in accordance with their ability to perform the services required.

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CHAPTER XI

RECREATION

The crippled child should be encouraged to have as normal a life of work and play as is possible. In providing recreation, the objective should be to adopt the programs of play for normal children for the use of crippled children and to develop programs solely for the latter only when they are too handicapped to participate in normal activities.

Recreation for children in New York City is provided through the efforts of parents and friends, clubs, settlement houses, neighborhood associations, playgrounds and summer camps. The majority of organized facilities for recreation are intended primarily for the normal child and the extent to which the crippled child can participate is determined by the severity of his handicap.

Settlement houses and neighborhood associations offer throughout the year opportunities for recreation, through their wide programs of games, clubs, music, arts and crafts. They usually offer some activity in which the crippled child can obtain wholesome satisfaction, through participating on equal terms with children not handicapped. This is a desirable form of recreation and extension of these facilities should be encouraged in order that the crippled child may have opportunities for group play which otherwise would be denied him.

Scouting offers some opportunities for crippled boys and girls with minor handicaps and should be made available to as many crippled children as possible. Gymnasiums and playgrounds afford fewer opportunities, as they seldom offer the type of activity or the supervision necessary for the child who is handicapped. A number of organizations provide outings and picnics for crippled children and others foster so-called "alumni" clubs which meet at intervals for social activities.

Swimming is one form of physical activity in which crippled children may excel. Many of them would benefit if more opportunities to use swimming pools were made available. Swimming should be considered, however, as a form of recreation and not of therapy. There is great doubt as to the therapeutic value of unsupervised swimming and it should be clearly distinguished from under-water therapy carried out in a clinic under the immediate direction of a physician.

Recreation in the form of vacations is provided by sending crippled children to camps and private homes outside of New York City. In addition, a small number of convalescent homes not connected with hospitals admit crippled children during the summer. An extension of the latter type of service is desirable provided the crippled children can be housed separately from those who are convalescing.

Opportunity to attend camp, with its potential returns in enjoyment, health and education, affords a type of experience which is valuable for the crippled child. It is recognized that camp care need not be provided for all crippled children, but for those children whose parents are financially unable to provide sufficient recreation and whose handicap is such that they could participate in and enjoy a camp program, it is desirable that opportunity be available.

Children in the sample study from six through 15 years (the usual camp ages) fell into the following groups in relation to degree of handicap: 57 per cent wore no appliances, could get about with ease and attend to their own wants; 38 per cent get about or care for themselves with varying degrees of difficulty and include those wearing appliances; five per cent were confined to chair or bed. These percentages were applied to the total number of children on the register from six through 15 years. There were found to be approximately 5,200 crippled children in New York City whose handicap is such that they could participate in the program of a camp designed for normal children. Approximately 3,400 children have a marked disability or get about with the aid of appliances. Many of the latter would need to be taken care of in a camp for the severely handicapped but there are undoubtedly others in this group who could be admitted to a camp for normal children, provided modified activities were planned. For the group of approximately 500 who are confined to chair or bed there would be few opportunities, with the exception of those provided by one camp which accepts children confined to wheel chairs.

The Children's Welfare Federation of New York City reports that in 1938 there were 178 welfare camps with facilities for a two-week vacation for over 91,000 New York children. The average cost for operating these camps was estimated to be $9.57 per child per week.

At present, crippled children whose handicaps do not interfere with a reasonable degree of activity are admitted to approximately 40 camps for normal children. Opportunities for crippled children in these camps should be expanded, with emphasis on absorbing into them as many of the handicapped as is possible. Through such an experience, there are values in cooperation and understanding to be gained by both handicapped and normal children.

A small number of camps are operated entirely for crippled children whose severity of handicap would not enable them to go to another type of camp. In these camps, the length of stay ranges from two weeks to three months. The New York Philanthropic League maintains such a camp for girls and the Crippled Children's East Side Free School and the Walter Scott Free Industrial School maintain camps for both boys and girls. A camp for crippled boys, sponsored by the Rotary Club of New York, was destroyed in the hurricane of 1938 and has not been rebuilt. The loss of this camp represents an acute need, i.e., vacation care for older boys with severe handicaps. In addition to the foregoing, the New York Orthopaedic Hospital and the Hospital for the Ruptured and Crippled are each granted the facilities of a camp exclusively for crippled children, and St. Charles Hospital uses the facilities of another camp for its crippled children for a two-week period.

The total number of children who can be accommodated in these camps for the severely handicapped is 500. Obviously, there is need for extension of these facilities, if more of the severely crippled children are to have the opportunity for a camp vacation. In the extension of such facilities, particular attention should be paid to the needs of older boys, and of children who suffer from cerebral palsy, for whom facilities are particularly meager.

RECOMMENDATIONS

(1) That recreation in segregated groups be provided only for the severely handicapped child.

(2) That opportunities for year 'round recreation for crippled children be developed in neighborhood agencies.

(3) That summer camps for normal children admit crippled children not severely handicapped.

(4) That the facilities for recreation and convalescent care during the summer be provided for severely handicapped children, with special emphasis on the needs of older boys and of children with cerebral palsy.

(5) That opportunities for vacations for crippled children in convalescent homes be developed.

CHAPTER XII

STATE AID

Over a period of many years, the State of New York has assumed an increasing amount of responsibility for the welfare of physically handicapped children. This has been a natural development as the financial burden entailed has been such that it cannot in the majority of cases be borne by the parents or voluntary agencies without public assistance.

The passage of the Social Security Act (Title V, Part 2) in 1935 has made it possible for the states to expand services for the physical care of the orthopaedically handicapped child by obtaining federal assistance. The coordination and development of such services has been assigned to the Children's Bureau of the U. S. Department of Labor and is administered by the Crippled Children's Division of that bureau. Although the law does not permit the federal agency to take an active part in conducting services within the states, it is responsible for the distribution of funds and acts in an advisory capacity in controlling the character of services for which federal grants are used. Appropriations to states are made on the basis of a blanket grant of $20,000 plus an additional amount which depends upon the number of crippled children in need of service and the cost of providing care locally. Data on funds available for these services and the amounts received by the State of New York are presented in Table 1.

Examination of this table reveals the obvious fact that the State of New York is not receiving its share of federal funds available. In 1938, the last year for which complete data were assembled, $102,965.82 remained unexpended. This is probably

Table 1. Federal Funds Available for all States,[1] for the State of New York Alone, and Payments Made to the State of New York for Services for Crippled Children for the Fiscal Years 1936,[2] 1937, 1938 and 1939[3].

Fiscal Year	Federal funds available for services for crippled children; total for all states[4]	Federal funds available for services for crippled children in State of New York[4]	Amount received by State of New York
Five months ended June 30, 1936	$1,096,488.09	$64,537.00	$61,213.00
Fiscal year ended June 30, 1937	3,550,530.55	150,380.50	74,162.72
Fiscal year ended June 30, 1938	4,298,656.85	223,274.28	120,308.46
Fiscal year ended June 30, 1939	4,490,913.10	272,034.42	92,927.55

[1] Including Alaska, Hawaii and the District of Columbia.
[2] Last five months.
[3] Payments through quarter ended March 31, 1939.
[4] Including allotment for year, the remaining portions of allotments available from previous years not paid to States, and the unexpended funds in States on June 30.

a temporary situation depending in part upon the inability of the state and federal governments to reach an agreement as to how funds should be used. At least a portion of this amount should be available for services for crippled children in the City of New York.

Under the provisions of the laws of the State of New York in relation to physical care and education of physically handicapped children, supervision of educational aspects is assigned to the State Education Department and of physical care to the State Department of Health. The Education Law and the Children's Court Act which make possible appropriations for these services define a physically handicapped child as follows: "A physically handicapped child is a person under twenty-one years of age who by reason of a physical defect or infirmity, whether congenital or acquired by accident, injury or disease, is or may be expected to be totally or partially incapacitated for education or for remunerative occupation." In the Children's Court Act, the deaf and blind are definitely excluded.

EDUCATION

The Education Law makes it possible for the state to reimburse the county or city for one-half the cost of services provided by the orders issued by the judges of the children's courts. Services authorized by such orders, however, must be approved by the Commissioner of Education or the Commissioner of Health, or both. The educational services which the judge of a children's court may order are home teaching, transportation, tuition and maintenance. Responsibility for organization and supervision of these services in the state is assigned to the Bureau of Physically Handicapped Children of the State Education Department.

In New York City, the education of physically handicapped children is centralized in the Division of Physically Handicapped Children of the Board of Education and application for this service is made directly to the Division. Approval is granted by the State Commissioner of Education by a single application submitted for the entire group at the beginning of each term. The city is thus reimbursed for educational services to handicapped children without unnecessary legal complications.

PHYSICAL CARE AND APPLIANCES

As previously stated, the State of New York may provide financial assistance for the care of physically handicapped children only by order of the children's courts. Responsibility for approval of such orders and for other supervisory and advisory services is assigned to the Division of Orthopaedics of the State Department of Health. In general, the policies of the State Department of Health in regard to granting of state aid appear to be essentially sound. A certain amount of control in selection of institutions to which patients may be committed and in the quality of appliances purchased is necessary if public funds are to be used to greatest advantage. Major activities of the Division of Orthopaedics are as follows:

1. Periodic orthopaedic clinics to rural communities by a staff of district state orthopaedic surgeons.
2. Orthopaedic field nursing service by a staff of district state orthopaedic nurses.
3. State-aid approval on physical care ordered by judges of the children's courts.
4. Inspection of institutions providing care on state aid to handicapped children to determine qualifications.
5. Actual orthopaedic hospital service provided by medical staff of the division.
6. Supervision of activities at the New York State Reconstruction Home.
7. Advisory supervision on state aid cases in institutions.
8. Consultation service to physicians, hospitals and other state departments on orthopaedic problems.
9. Advice to public and private agencies on physical care of handicapped children.
10. Posture clinics and advice in schools with adequate facilities.
11. Maintenance of a central register of handicapped children, exclusive of New York City.

It should be emphasized that although this division is conducting an effective program in the remainder of the state, the majority of the activities listed have not been carried out in New York City. The principal function of the division in relation to New York City is the approval of applications for state aid following order by the children's court. The procedures for obtaining state aid are discussed in the following sections.

Procedure for Obtaining Surgical Appliances Costing Less Than $10.00. Recipients of home relief may obtain appliances costing less than $10.00. Those costing less than $7.00 are granted directly by the Department of Welfare of New York City. Applications for appliances costing between $7.00 and $10.00 must be approved by the New York State Department of Social Welfare and New York State reimburses the city for 40 per cent of the cost.

The Home Relief Bureau reports the following amounts expended during 1937 for children under 16 years of age:

Number of patients	127
Amount expended	$978.16
Average cost of appliances	$ 7.70

During 1938, data on amounts expended for children were not segregated but are estimated to have been in the same range.

Only recipients of home relief may obtain financial assistance for purchase of these appliances. It is assumed that all others, including recipients of relief from private agencies and W.P.A. workers, can afford this amount or obtain assistance elsewhere. It seems likely that private agencies must continue to bear the burden of supplying assistance to this intermediate group. This should be possible if state aid could be made readily available for financing the purchase of all more expensive apparatus. If the amount spent at present by private organizations for purchase of appliances costing more than $10.00 were spread over a larger area, it should be adequate.

Procedure for Obtaining Appliances or Medical Care Costing More Than $10.00. Services costing more than $10.00 are available through state aid to children of families who cannot afford private care, whether or not they are receiving public assistance.

The procedure for receiving this care is as follows:

1. A petition is filed at the Children's Court.
2. The child is examined by a physician appointed as a representative of the court and the family circumstances may be investigated by a probation officer. If the application is for an appliance such as a brace, prosthetic device or specially built shoes, the physician notifies three dealers who may measure the child at the time of visit to his office and written estimates are submitted to the court with the petition. If the patient is to be admitted to the New York State Reconstruction Home, he must also be examined by a member of the attending staff of that institution.
3. The parent must then appear before the judge of the Children's Court, who is authorized to order physical care, the expense of which is charged against the city. However, the court may designate that the whole or any part of the expense be paid by the parent or guardian. This is a comparatively simple and informal procedure.
4. The order is then forwarded to the State Commissioner of Health and if approved, the city is reimbursed by the state to the extent of one-half the expenditure approved.
5. Upon receipt of tentative approval by the Children's Court, the court order or commitment is completed. The order and certified copies of the data are then sent to the State Department of Health for final approval.

The judge has authority to designate the hospital to which a patient is assigned. In practice, however, the child is almost invariably committed to the hospital recommended by the referring agency. The court order is usually used as sufficient authority to proceed with hospitalization or purchase of appliances and the child is usually admitted without further delay.

The period of commitment to an institution is not limited by law and is at the discretion of the court and the court physician.

It is usually for a period of a few months. At the end of that time, the hospital may report that the child is improving and in need of further care. If, after re-examination, the court physician agrees, a new petition is filed and the child is recommitted for another period. If the hospital reports that there is no hope of further improvement or if the child is mentally retarded, further care is not recommended.

Payments for institutional care are based on an established rate of $3.00 per day and there is no additional payment for operations or accessory services. When the court has ordered that the patient's parents share in the expense of institutional care, the mechanism for collection is the same as that for institutional care of dependent children. Payments are made at the borough office of the Society for the Prevention of Cruelty to Children and forwarded to the Department of Finance. This does not seem to be a very desirable arrangement but is unavoidable because payments must be made at frequent intervals.

This procedure appears to be cumbersome and may involve more steps than would seem to be essential. The fact remains, however, that it works and that a large number of children are being cared for by this arrangement who might otherwise be neglected. Suggestions for revision are discussed at the end of the chapter.

TIME ELEMENT IN SECURING STATE AID

One of the objections to the procedure of court commitment for state aid frequently raised is that the interval between the time of application and the time the child is admitted to an institution or receives an appliance is unnecessarily long. During this interval, children are said to suffer from lack of proper care and increase in deformities because of insufficient mechanical support. An investigation was therefore carried out to determine how much time is actually consumed. The children's courts in four boroughs cooperated in making available to the staff the records of all petitions filed in 1938. There were no applications from the Borough of Richmond during that year. Three hundred and twenty-three petitions were examined and 14 could not be located. The time required for the various procedures is summarized in Table 2.

Table 2. Time Required for Various Procedures in Obtaining State Aid for Crippled Children.

Interval (in days)	Manhattan		Bronx		Brooklyn		Queens	
	Average	Extreme	Average	Extreme	Average	Extreme	Average	Extreme
a. Interval between date of referral and date petition filed in court, including time for examination by court physician and receipt of estimates for appliances	10	23	30	250	14	50	11	36
b. Interval between date petition filed and date of court order or commitment, including time for receipt of tentative approval from State Department of Health and financial investigation	7	34	20	120	11	34	9	26
c. Interval between commitment or order and final approval	14	85	48	255	21	100	14	34
d. Total interval from date of referral to final approval	31	87	105	269	46	202	34	63

Manhattan and Queens. In Manhattan and Queens, there was very little delay in securing the required services. As patients are usually admitted to institutions and orders for appliances are usually forwarded to the dealers when tentative approval has been received and the court order completed, the average interval between application and the time when services were available was only 17 and 20 days respectively. The additional interval of 14 days between commitment and final approval by the State Department of Health rarely affected the patient. Unusual delays were in most instances found to be due to the necessity for satisfactory mental examinations for children with cerebral palsy or failure of parents to keep appointments.

Brooklyn. In Brooklyn, a longer time is required and the interval between the date of referral and court order averages 25 days. As noted above, the additional interval of 21 days between commitment and final approval rarely affected the patient.

Bronx. In the Bronx the court waits for the formal approval before authorizing the dealer or institution to give the necessary service. Patients to be admitted to the New York State Reconstruction Home are excepted. The average time required for a case to go through the Bronx court from the time of referral to the final approval is 105 days, or about three and one-half months. The slowest case noted required almost nine months. Eight other cases were found to require over five months. Out of a total of only 32 cases during the entire year, there were not more than eight which could be said to have been put through within a reasonable interval. There were many cases where no explanation could be found for the delay and in which it could only be assumed that the case had been overlooked or mislaid for weeks or months until an inquiry from an agency would bring it to light and activity again. The greatest delay was found in the interval between the court order and the state approval. The reasons for these delays were usually found in letters from the State Department of Health in which it was often necessary to request financial data several times so the records could be completed and approved. In many instances, the orders were returned by the state because of minor oversights in filling out the petition or other clerical errors.

It is apparent from this investigation that much of the criticism leveled against the procedure of court commitment for state aid may be attributed to delays in applications submitted to the Bronx Children's Court.

Time Required for Delivery of Braces. Figures are not available as to how long it takes for the child to get the appliance after the order is issued to the brace maker, as the matter is then out of the court's hands. The Brooklyn court clerk follows up the cases to be sure the brace is delivered and instructs the parents to inform her if there is any delay. In the other boroughs arrangements are left to the parents and the brace maker. Since the dealer, the family and the referring agency are notified of approval, there seems to be no reason why there should be a delay.

Time Required for Securing Hospitalization. Admissions to the institutions are usually arranged within a few days after the court order is granted. In many instances, the patient was admitted before the petition was filed and the hospital accepted responsibility for payment if the application should be rejected. There is no evidence that unnecessary delay occurs at this stage.

Credit for many of the desirable features in the existing system should be given to the physician who is employed on a part-time basis as medical examiner to the Children's Court with the title of Director of the Pathological Laboratory. Through his efforts in assembling estimates for appliances and other details before the case comes to the attention of the court, much of the delay which might otherwise be involved is eliminated. Should this position fall into the hands of a less interested person, the whole program would be seriously affected. Examination of physically handicapped children, in addition to other services for the court, was delegated to this physician several years ago. Neither an increase in compensation, office space nor secretarial assistance was provided and the service has increased to the point where it occupies most of the time of both himself and a voluntary assistant. Furthermore, patients must be examined in his own private office.

If the court is to maintain the power of granting state aid, a physician and assistant should be employed on a full-time basis and adequate office space for examining patients should be provided.

VOLUME OF SERVICES

In talking with people engaged in providing various services for crippled children, it became apparent that due to lack of understanding and confusion regarding the availability of state aid, assistance from that source may not be used as frequently as it should be. Information on expenditures for services through state aid was therefore obtained from the New York City Department of Finance and the New York State Reconstruction Home, and is recorded in Table 3.

The figures quoted do not include a large sum paid by the Department of Hospitals for care of non-committed crippled children in hospitals and convalescent homes conducted by voluntary organizations for which the city is not reimbursed by the state. There is no legal reason why the state should not share the expense of care for a large proportion of this group.

All children admitted to the New York State Reconstruction Home are committed by the Children's Court in the county of residence of the patient.

The committing county is billed $3.00 per day for each patient admitted from that county, and all money collected by the institution is forwarded to the State Department of Taxation and Finance as a miscellaneous receipt. Funds for maintaining the Reconstruction Home are by direct appropriation of the State Legislature and the gross expense is a direct charge to the maintenance of the institution and includes surgical, medical and nursing services, physical therapy treatment, education, special apparatus, shoes, braces—new and repair—and much of the clothing. All are included in the charge made. The average net payment by

Table 3. Volume of Services Secured and Expenditures for State Aid for Residents of New York City, 1937 and 1938.

	1937	*1938*
New York State Reconstruction Home		
Number of different children from New York City	250	172
Number of patient days for children from New York City	63,400 days	36,545 days
Average length of stay per child (calculated on basis of $3.00 per day)	254 days	213 days
Amount billed to New York City for their care ($3.00 per day)	$190,218.00	$109,635.00
Reimbursement from New York State received or expected (50% of total)	$ 95,109.00	$ 54,817.50
Average net payment by New York City or New York State (50% each) per child	$ 380.44	$ 318.70
Municipal Hospitals		
Number of different orthopaedically handicapped children receiving state aid	124	50
Number of patient days for children receiving state aid	21,896 days	7,959 days
Average length of stay per child (calculated on basis of $1.50 per day)	179 days	159 days
Reimbursement from State of New York received or expected ($1.50 per day)	$ 32,845.00	$ 11,938.25
Average net payment to New York City by New York State per child	$ 268.06	$ 238.76

Table 3. Volume of Services Secured and Expenditures for State Aid for Residents of New York City, 1937 and 1938 (*Continued*).

	1937	*1938*
Voluntary Hospitals and Convalescent Homes		
Number of different orthopaedically handicapped children receiving state aid	37	43
Number of patient days for children receiving state aid	976 days	4,909 days
Average length of stay per child (calculated on basis of $3.00 per day)	26 days	114 days
Amount billed to New York City for their care ($3.00 per day)	$ 2,928.00	$ 14,728.45
Reimbursement from New York State received or expected (50% of total)	$ 1,464.00	$ 7,364.22
Average net payment by New York City or New York State (50% each) per child	$ 40.00	$ 171.26
Totals for Institutional Care		
Number of different orthopaedically handicapped children receiving state aid	411	265
Number of patient days for children from New York City	86,279 days	49,433 days
Average length of stay per child	210 days	187 days
Amount billed to New York City for their care ($3.00 per day)	$258,836.00	$148,239.95
Reimbursement from New York State received or expected (50% of total)	$129,418.00	$ 74,119.97
Average net payment by New York City or New York State (50% each) per child	$ 314.37	$ 279.69

Table 3. Volume of Services Secured and Expenditures for State Aid for Residents of New York City, 1937 and 1938 (*Concluded*).

	1937	*1938*
Appliances		
Number of different orthopaedically handicapped children receiving appliances through state aid	83	186
Amount billed to New York City	$ 3,856.35	$ 5,965.16
Reimbursement from New York State received or expected (50% of total)	$ 1,928.18	$ 2,982.58
Average net payment by New York City or New York State (50% each) per child	$ 23.23	$ 16.03

New York City of $380.44 for 1937 and $318.70 for 1938, includes the items mentioned. The facilities available at the New York State Reconstruction Home and the extent to which its services are used by residents of New York City are considered in more detail in Chapter VI.

An analysis of the distribution of applications received during 1938 by borough and their disposition also reveals some interesting information (Table 4).

The majority of applications submitted are legitimate and comparatively few are rejected. One frequently hears the complaint that necessary appliances are not available, yet only about 200 applications for state aid were received during an entire year. Furthermore, comparatively few of the many reputable institutions in the city take advantage of state aid for their patients. There is also an uneven distribution of assistance in the various boroughs. No applications were received during 1938 from Richmond. Only 2.1 applications per 100,000 population were received from the Bronx while 7.5 applications per 100,000 population were received from Brooklyn.

Table 4. Applications for State Aid for Crippled Children from New York City and Their Disposition, 1938 (Renewals not Included).

	Manhattan	Bronx	Brooklyn	Queens	Total
Committed to New York State Reconstruction Home	7	3	21	11	42
Committed to Blythedale Home	16	7	8	1	32
Committed to Hospital for the Ruptured & Crippled	3	1	6	0	10
Committed to St. Agnes Hospital	3	0	2	0	5
Committed to Kings County Hospital	0	0	15	0	15
Committed to St. Charles Hospital	0	0	1	0	1
Total committed to institutions	31	11	57	12	111
Applications for appliances granted	21	18	150	12	201
Applications rejected or withdrawn	3	3	3	2	11
Total applications	53	32	206	26	317

PROPOSED REALLOCATION OF POWER TO GRANT STATE AID

Careful consideration of the preceding review brings to light the fact that the existing system of granting state aid to crippled children of New York City leaves much to be desired. The system works, but not very well, and the increased burden on this service which may be expected during the next few years is likely to result in its complete disintegration.

The fact that the system functions effectively in smaller communities in the remainder of the state is no excuse for its continuation in New York City. The close personal relationship between the court and patient which exists in the smaller community cannot be expected here. Furthermore, this is clearly a medical and social problem which should be divorced from the court. The crippled child has the right to demand adequate care and should not be required to appeal to court to obtain it.

The ideal solution to this problem would be to transfer the power to grant state aid for physically handicapped children in New York City to an administrative department. This procedure would be in agreement with the general policy followed by other states. The State of New York is one of only five remaining states in which the policy of granting state aid to crippled children by court commitment is still in force. Such a revision, however, would require an amendment to the Children's Court Act. Furthermore, it should be kept in mind that commitment by the court makes it obligatory that the city and state assume their shares of the expense. Considering the present tendency of local governments to make arbitrary attempts to economize, transfer of this function to an administrative department might be extremely dangerous. A budget item in the range of $250,000 might be necessary within the next few years. Failure of the municipal government to provide for such an appropriation would result in immediate abolition of the entire program. For that reason, it may be more desirable to tolerate the present system for a few years until the need for these services is more generally recognized.

RECOMMENDATIONS

(1) That the ideal solution to the problem of providing services to crippled children in New York City through state aid would be to amend the Children's Court Act so that responsibility for approval of applications may be removed from the courts and placed under the jurisdiction of a municipal administrative department. In making this recommendation, the inherent danger of eliminating the obligation for payment forced upon the city by court order is realized. For that reason, it is suggested that no

attempt should be made to transfer this function until reasonable appropriations based on present needs be made available to the administrative department for services for crippled children.

(2) That a larger proportion of federal and state funds appropriated for services for crippled children be made available to New York City.

(3) That institutions and organizations caring for crippled children be made more aware of assistance offered through state aid and that this assistance be used more extensively.

(4) That whenever necessary, appliances costing more than $10.00 be secured through state aid.

(5) That appliances costing less than $10.00 for children of families unable to pay for them independently be purchased by the Home Relief Bureau or private organizations.

REFERENCES

Annual Reports of the Domestic Relations Court of the City of New York.

Endres, J. J.: *The Education and Care of Physically Handicapped Children; Services Authorized through Children's Courts; Procedure; State Aid,* Univ. of the State of New York Bulletin 1132, 1938.

CHAPTER XIII

PROGRAM FOR CHILDREN WITH CEREBRAL PALSY

Crippled children in New York City most likely to suffer from lack of care are those afflicted with cerebral palsy. This is not due to the fact that methods of education and treatment have not been developed but because insufficient interest has been shown by both educators and physicians.

The magnitude of the problem is not such that it is insurmountable. It is estimated on good authority that the birth rate of infants with cerebral palsy is seven per 100,000 total population per year. Therefore, approximately 525 may be expected to be born each year in New York City. Assuming that the infant mortality rate is somewhat higher for this group than for the general population, at least 475 may be expected to survive the first year. It is estimated that 25 per cent would be mentally deficient and excluded from further consideration, leaving 350 susceptible to rehabilitation. These estimates are higher than those obtained in this survey as only 1,804 persons under 21 years of age with a diagnosis of cerebral palsy were reported. This may be due to the fact that the lack of available facilities for adequate care of these children has discouraged parents and they are not being brought to the attention of agencies.

A program for these children must be established in such a manner that physical and mental education may progress simultaneously. Fundamental action patterns which develop without training by the age of one or two years in the normal child may require ten or 12 years of training the child with cerebral palsy. Since mental education cannot be delayed until such motor patterns are well established, it must be an integral part of the same educational process.

If given the advantages of an educational program such as recommended in the following sections, at least 50 per cent of cerebral palsied children of normal mentality in New York City may be expected to become self-supporting. At least 25 per cent would be considerably improved and partially self-supporting. Very few of the remainder would be unable to dress, feed and otherwise take care of themselves.

HOSPITAL SERVICES

In discussing a program for care of children with cerebral palsy, hospital services may be considered first because most of these children are seen at clinics before they reach school age. Furthermore, the ideal time for institution of treatment is between the ages of one and four when it is not necessary to overcome undesirable habit patterns already formed.

An adequate program cannot be anticipated, however, until special clinics at which treatment may be supervised by physicians and physical therapists with experience in this field are developed. It is recommended that such clinics be established at a few selected hospitals distributed over the five boroughs.

The first responsibility of these clinics should be to distinguish between the sub groups encompassed in the general term "cerebral palsy." There is a general tendency to overlook the fact that all children with cerebral palsy cannot be handled in the same way. Although the term "spastic" is frequently applied to the whole group, only about half of them have any spasticity which can be attributed to destruction of the cerebral cortex or pyramidal tract. The symptoms observed in the other sub groups, athetosis and ataxia, are due to destruction or anomalies in the basal ganglia or cerebellum and are characterized by involuntary motion. The involuntary motion may be regular or irregular, depending upon the structures involved. Both athetosis and ataxia are often confused with spastic paralysis because of voluntary tension adopted to control involuntary motion. After careful examination and repeated observation, each child can be assigned to one of three diagnostic categories: spastic paralysis, athetosis or ataxia. The subsequent program of physical education differs for the three groups.

Physical education may be instituted during the pre-school period as soon as the diagnosis is established. When it is possible for the child to be brought to the clinic, he should have training periods of about 30 to 60 minutes three times weekly, supplemented by prescribed training at home.

When the child reaches school age, physical training should be continued as part of the general educational program in the schools but he should remain under the supervision of the clinic where necessary surgical procedures or deviations from the standard pattern of training may be prescribed.

Another function of hospitals where cerebral palsy clinics are established should be the selection of children to be admitted to special classes for children with cerebral palsy in the public schools. The necessity for this system is apparent when one considers the fact that no program of physical education for these children can be expected to be of any value without a proper diagnosis.

SPECIAL CLASSES FOR CHILDREN WITH CEREBRAL PALSY

In the chapter on Education (Chapter IX), it was recommended that special classes for crippled children be consolidated so that a greater number of children would be cared for in each school. It was also recommended that one school for crippled children be established experimentally to serve as a demonstration center for methods which may be followed in other classes. In providing adequate educational facilities for children with cerebral palsy, this arrangement would be particularly desirable because it would make it possible to assemble a sufficiently large number of these children at certain schools and to create special classes for them.

The necessity for segregation of these children in separate classes is apparent to anyone visiting the special classes for crippled children now in operation. The atmosphere of these classes is no more conducive to progress in a child with cerebral palsy than that of an ordinary class. They present an educational problem not encountered among children with other orthopaedic disabilities. The speech mechanism is often involved and difficulty of expression is increased by exposure to a busy class. This inevitably leads to a feeling of inferiority or an increase in tension which defeats its purpose.

Special classes for children with cerebral palsy having been established, a definite admission policy should be considered. Responsibility for selection of children to be admitted to these classes should be assigned to a group of approved cerebral palsy clinics in hospitals designated by the Advisory Committee to the Central Registry for Crippled Children. Prior to enrollment in public schools, children should be observed in these clinics, or in hospitals when necessary, until a diagnosis is clearly established and a plan of physical education is definitely prescribed. As previously stated, the educational program for children with cerebral palsy can be standardized in three general patterns, depending upon the diagnosis, and little progress can be anticipated unless the diagnostic groups are differentiated.

Another problem involved in selection of children for these classes concerns their mental status. Under the existing system, children with cerebral palsy admitted to classes for crippled children or home instruction groups are tested for determination of intelligence quotients. In hospitals, these tests are performed by hospital psychologists, in the home by a psychologist employed by the Board of Education or visiting teacher and in special classes usually by the class teacher. The Binét-Simon technique is usually followed and children are accepted for instruction only when the quotient is 50 or above. If admission is refused, the parents are told to return with the child in a year and the test is repeated. It is the opinion of most experts in this field that such tests are of little value in determining the mental status of this group because they depend upon motor response for their accuracy and if the motor response mechanism is disturbed, the accuracy of the test is disturbed to a like degree. In a recent publication, Phelps* states that the only accurate method of testing these children's mentality is by exposure to special education and determination of their response over a period of months. It seems likely that a considerable number of these children are being excluded from the advantages of an education by the present method of selection.

In order to overcome this difficulty, it is recommended that the primary selection be made by the cerebral palsy clinics and that borderline cases be admitted to special classes for periods of approximately three months. At the end of this observation period, education may be continued or terminated, depending on the rate of progress.

Assignment to these special classes should be flexible, since remarkable improvement may be expected in some children after three or four years of intensive education. Such children may be transferred to regular classes or classes for other crippled children. Furthermore, if adequate training is provided in elementary

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*Phelps, W. M.: *Cerebral Palsy and Poliomyelitis as They Concern the Family Doctor, the Orthopaedist and the Neurologist,* J. Med. Soc. N. J., Feb. 1938.

schools, the majority who are mentally capable of doing high school work should be ready to enter regular high school classes on graduation from elementary school.

The educational program in these classes should combine the psychological and physiological approach. In order to make this possible, there must be employed, in addition to the classroom teacher, a physical therapy technician for each group of approximately 20 children. This ratio would be necessary because a period of 30 to 60 minutes of individual physical education should be allowed for each child three times weekly. Technicians taking part in this program should have preliminary training in the care of children with cerebral palsy in addition to a background in either physical therapy or physical education.

CARE OF THE HOME BOUND

Comparatively few children of normal mentality suffering from cerebral palsy need be home bound. With transportation to schools available, they should be encouraged to take advantage of the opportunities offered in the proposed educational program. For those who are unable to walk and consequently would find it difficult to attend a clinic several times weekly, occasional clinic visits should be supplemented by home treatment. In accordance with the general program described elsewhere in the report, this treatment should be provided by orthopaedic nursing agencies and carried out under supervision of the clinic physician. The Board of Education is prepared to provide home instruction for home bound children of school age.

INSTITUTIONAL CARE

The need for facilities for institutional care of children with cerebral palsy was mentioned in Chapter VI (Convalescent

Homes). In relation to the program for care of these children in hospitals and public schools previously described, institutional care should be available for a selected group of average or higher than average mentality whose homes are such that family cooperation cannot be obtained. An additional advantage in admitting a selected group of these children to at least one such institution would be that a training center for technicians taking part in the school program would be provided.

The logical institution for development of this service is the New York State Reconstruction Home, at present occupied to only about 60 per cent of normal capacity. The equipment and technical staff is available and the only alteration in its program necessary is a revision of its policy in regard to admsission of children with cerebral palsy.

Those of definitely subnormal mentality who cannot be cared for at home should be admitted to institutions for the feebleminded.

RECOMMENDATIONS

(1) That a program for care of children with cerebral palsy who are not of subnormal mentality be organized in which mental and physical education may progress simultaneously.

(2) That cerebral palsy clinics be established at selected hospitals distributed over the five boroughs.

(3) That special classes for children with cerebral palsy be organized in the public schools.

(4) That responsibility for diagnosis and selection of children prior to enrollment in these classes be assigned to cerebral palsy clinics at designated hospitals.

(5) That physical therapists, especially trained to carry out a program of physical education for children with cerebral palsy, be assigned to these classes in a ratio of 1 : 20 children.

(6) That the facilities of the New York State Reconstruction Home be made available to a selected group of children with cerebral palsy of average or higher than average mentality, whose homes are such that family cooperation cannot be obtained.

CHAPTER XIV

COORDINATION OF SERVICES

In the previous chapters, the facilities available and the problem of providing services in the various fields related to the care of crippled children have been reviewed. An attempt has been made to consider the excellencies and, perhaps to a greater extent, the deficiencies of the program in each field. Furthermore, specific recommendations for the further development of these services have been made. Out of this mass of information, one fact stands out clearly—the crippled child in New York City is likely at some time to come to the attention of some agency or institution but the attention received may be irregular and poorly distributed. Twenty-one per cent of the children interviewed for the sample study received no orthopaedic care from a private physician, institution or nursing agency during 1938. The outstanding need is for development of services which will assure continuity of care from the onset of disability to recovery or adult life. To attain this end, all resources must be concentrated in a cooperative attack on the problem.

It may be argued that many facilities are available and that the responsibility for utilizing these facilities should be vested in the parents. Unfortunately many parents, left to their own devices, cannot be relied upon to cooperate in this manner without stimulation. The crippled child should not be allowed to suffer because his parents are negligent or uninformed. Society has an interest in his rehabilitation which extends beyond the family circle.

In the field of hospital care, it was shown that 41 per cent of crippled children receive orthopaedic treatment in more than one hospital in New York City. Granted that a certain amount of shopping is unavoidable because of change in residence or because the facilities at the original hospital were not suitable for treatment of the condition, there still remains a large group who wandered from one hospital to another for apparently unnecessary reasons.

The waste of community resources, both financial and otherwise, which results from such duplication of effort is beyond estimation. In each hospital, a complete history and physical examination is performed, consultations are necessary, expensive diagnostic procedures such as radiological and chemical examinations are repeated. At the end of several visits, treatment may be started where it was discontinued and the patient is no better off than he was when he last visited the previous hospital. His progress may have been retarded because valuable time has been lost during the interval between visits to the first and second hospitals. Even when transfer is indicated, as when a child is sent to a convalescent home, months may pass between discharge from the home and return to the hospital.

When a patient continues to attend the same clinic but visits irregularly, the results in loss of effort and lack of progress may be essentially the same as if he wandered from one hospital to another. Very few hospitals make any consistent effort to follow patients after discharge from their wards and even fewer to assure continuous attendance in out-patient clinics.

In the field of orthopaedic home nursing care, two nursing agencies assume a major portion of the burden. In one orthopaedic hospital, both social service and home nursing are combined in one department. Where duplication of effort occurs, i.e., where more than one agency is found to be providing health service in the same home, the second agency is usually a general nursing service or the social service department of a hospital. Family service and public relief agencies may also be in the picture but it is outside the scope of this study to attempt to untangle complications in the relief area.

The predominating problem is to clearly define the functions of the orthopaedic home nursing service and the hospital and to bring them closer together. On January 1, 1939 the case load of the two orthopaedic nursing services was 4,594 children and constituted 27 per cent of the children registered. Eighty-one per cent of the children who were on the active files of the nursing agencies in 1938 also received in-patient or out-patient hospital care during that year.

Does the hospital know what the nursing agency is doing and does the nursing agency know what the hospital is doing? It has been previously shown that there is a general tendency on the part of many hospitals to blindly refer any problem involving a crippled child to the nursing agency. In doing so, the hospital may consider itself relieved of all responsibility for follow-up of its own patients. The referral is by means of a letter, telephone call or simple form conveying very little detailed information. The nursing agency, in turn, takes another history and establishes another record which is not available, except by transcript, to the physician or social worker in the hospital. Conversely, except by direct investigation or transcript, the hospital record is not available to the nursing agency. In time, new problems arise which may be handled by the hospital, the nursing agency, both or neither. In summary, it appears that the close relationship and integration of functions which would make possible better service to the patient at a lower cost to the community does not exist in the present system.

ORGANIZATION OF A COORDINATING SERVICE

The necessity for centralized guidance of all services relating to the care of the crippled child is obvious. Apparently it was equally obvious 20 years ago because one of the principal recommendations of the Survey of Cripples in New York City, published in 1920, was that a central bureau be established. It is the opinion of the Commission that responsibility for leadership in services for crippled children should be delegated to the Department of Health. This would be in keeping with a general trend throughout the country.

The interplay involved in such a broad program necessitates the cooperation of other administrative departments of the municipal government as well as private organizations. Even though the Department of Health may assume responsibility for leadership, it need not enter into the field of direct service to patients. The functions of the Department of Hospitals and the Board of Education are clearly established and the recommendations for improvement of their services mentioned elsewhere in the report can be carried out without extensive changes in their present organizations.

To insure community representation and responsiveness, it is proposed to have an advisory council composed of recognized leaders in the various related fields. Members of the council would be appointed by the Commissioner of Health and would serve without salary for overlapping periods of three years to provide continuity in office. It is suggested that the council include representatives of the various municipal departments concerned, including the Departments of Health and Hospitals and the Board of Education, the Rehabilitation Division of the State Department of Education and other interested organizations and persons.

The functions of a service established by the Department of Health would be as follows:

(1) *Maintenance of a permanent registry of crippled persons under 21 years of age.* This registry should be developed as a

continuation of the one established during the survey. Its purpose would be to maintain a continuous record of each child from the onset of disability to recovery or adult life. By means of such a registry, each child would be known to be under the supervision of a stated agency and transfers from one hospital to another or lapses in care would be recognized. It would also provide a continuous census from which statistical data could be readily obtained.

(2) *Coordination.* A small staff intimately acquainted with all services for crippled children conducted by public and private agencies throughout the city, working closely with an advisory committee, would be in a position to provide the necessary guidance for development of the program recommended by the Commission and for continued progress in the future. The guidance thus provided need not be confined to health services but should encourage development of services for crippled children in other fields by group conferences.

(3) *Public education in prevention and the necessity for early and continuous treatment of orthopaedic disorders.* In order to accomplish this function, the service should work closely with the Division of Physically Handicapped Children of the Board of Education and cooperate with other public and private agencies interested in the problem.

It is recommended that the following permanent staff be established in the New York City Department of Health:

(1) Director. A physician trained in public health and with administrative experience.
(2) Medical Social Worker.
(3) Secretary.
(4) Clerk.
(5) Typist.
(6) Statistician.

It is recognized that, in order to adequately carry out the recommendations of the Commission, *additional* personnel in the following positions is essential:

(1) Consultant in Public Health Nursing
(2) Consultant in Medical Social Work
(3) Clerk
(4) Typewriting-Copyist
(5) Consultant in Orthopaedic Surgery—part-time

The staff recommended to be established in the New York City Department of Health should, therefore, be augmented by means of financial support from the State and Federal governments providing for the above additional required personnel.

Budgetary allowance should include provision for adequate office equipment and supplies. Funds should also be available for training public health nurses in orthopaedics and physical therapy.

CENTRAL REGISTRY

As a result of experience in other sections of the country, a central registry has been found to be of prime importance as a focal point for services for crippled children. Only by means of such a system has correlation of various services offering assistance to crippled children been found possible. The Commission recommends that such a registry be established for the City of New York and that reporting of crippled children under care by physicians and hospitals be made compulsory.

During the survey, it was demonstrated that the establishment of a central registry in New York City is possible and practical. It cannot be expected to function efficiently, however, unless every institution and organization in the city accepting crippled children for care will report them when services are initiated and discontinued. The value of services provided by these organizations should be enhanced by the development and use of the registry.

In return, these same organizations must assume the responsibility for keeping the registry active.*

In hospitals, it is suggested that the record librarian be responsible for reporting children in need of further care at the time of discharge from hospital wards. Children accepted for treatment in out-patient departments should be reported by the clinic aide or other person in charge of records. The latter should also report children previously registered whose treatment is discontinued. In the same manner, convalescent homes should report children on admission and discharge.

If the register is to be complete and representative, physicians should be required to report private patients under their care.

The Division of Physically Handicapped Children of the Board of Education is in a position to be the most valuable source of reports of children of elementary school age. It is hoped that this bureau will continue to report children at the time of admission to special classes or home instruction.

The system inaugurated during the survey whereby school physicians and nurses are responsible for reporting crippled children attending regular classes in the public and parochial schools should be continued.

The nursing agencies can make an important contribution by continuing to report children when they are accepted for supervision and discharged.

Vocational and social services and other agencies should also be encouraged to report children who come to their attention.

Ultimately, the value of the central registry will be in direct proportion to the extent to which it is supported by organizations in the community. With adequate cooperation, it can be a valuable mechanism for keeping the crippled child under care.

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*Until the coordinating service is established in the Department of Health, the registry will be maintained by the Commission for Study of Crippled Children. Report forms may be obtained from and reports should be forwarded to the headquarters of the Commission at 303 Ninth Avenue, New York City.

HOSPITAL AND NURSING SERVICES

In the previous sections, a plan for a centralized coordinating service was proposed. The next problem is to show how such a service would function in relation to the hospitals and nursing services and to clearly define the relations of the latter.

Coordination is essential in two areas: physical care and social service. General nursing care and physical therapy of home bound children are services which can be performed only by nursing agencies. The supervision of such physical care, however, should remain the responsibility of the attending clinic physician. If this supervision is to be direct, there must be a close relationship between the nurse carrying out the treatment and the physician prescribing it. This cannot be possible as long as the nurse and physician function independently and the only connection is a referral slip from the clinic, which is often not even filled out by the physician. The logical solution to this problem is to bring the physician and nurse closer together by designating the hospital as the focus of all physical care. (An exception should be made for patients under care of private physicians. The latter may request home nursing service by direct referral to the nursing agency).

The need for coordination of social and follow-up services is even greater. At several points in the report, it has been emphasized that both the public health nursing agency and the social service department of the hospital may be following the same child or that neither of them are. Why should not these two professional groups work together for the common good of the patient? Here again, the logical solution is the concentration of forces in the hospital where physician, public health nurse and social worker may work on common ground.

There is outlined in the following section a plan of action which may be established on a working basis, in which the understanding and cooperative relations developed during the progress of the study may be used effectively. It is proposed that the physical care, social guidance and follow-up of each crippled child receiving ward or clinic care be centralized in the hospital. In order to carry out this plan, it will be necessary for the existing orthopaedic nursing services to assign to each hospital providing an orthopaedic service a supervising nurse to coordinate the work of the hospital and nursing agency. In some of the general hospitals where the number of crippled children under care may not be sufficient to justify the full-time services of a nurse, the work could be combined with that of adjacent hospitals. Home visits and other field work would continue to be carried out from the district offices of the nursing agencies as at present.

The responsibilities of the staff of the *orthopaedic public health nursing agency* would be as follows:

Supervisor:

(1) To be present at regular sessions of the orthopaedic clinic, go over the records and discuss the treatment of home bound children who visit the clinic at long intervals and are seen by a physician only periodically.

(2) In the same manner, to discuss the home treatment of other children who may be ambulatory and still unable to attend the clinic at as frequent intervals as may be considered desirable.

(3) To enter progress notes in the hospital record as to the number and character of treatments given in the home and other observations.

(4) To relay medical and nursing orders of the physician through regular channels to the field worker.

(5) To consult with the social service department of the hospital regarding social problems which arise in relation to the crippled child or his family and to refer to the social service department complicated social problems.

(6) To consult with the social service department concerning

the purchase of orthopaedic shoes and appliances prescribed.

Field Workers:

(1) To provide general health teaching in the home through demonstration and to supervise the care given by relatives.

(2) To interpret to the family the character of treatment given and necessity for its continuation.

(3) To give massage and muscle re-education in the home when prescribed by the attending physician. (This service to be provided only by members of the staff who are trained in physical therapy).

(4) To see that special shoes and appliances prescribed by the attending physician are kept in good condition and properly worn.

(5) To visit for follow-up children who fail to keep regular appointments.

(6) To discover and bring under medical care crippled children not receiving treatment.

(7) To discover and report to social service workers emotional and social problems.

The responsibilities of the *medical social service* department in relation to the care of the crippled child would be as follows:

(1) To consult with the public health nurse regarding social problems which may be handled by the nurse.

(2) To enter in the social service record the results of conferences with the public health nurse.

(3) To accept for social case work problems which demand more extensive investigation and adjustment and may be handled more effectively by a trained social worker.

(4) To maintain contacts with other social agencies in the community.

In order that a mutual relationship between the medical social service department and supervising orthopaedic nurse may be established, it is proposed that the latter be provided with desk space in the social service department and access to both medical and social service records. Although she would be employed by the nursing agency, the fact that she will work closely with the hospital necessitates the development of a system of joint responsibility. In actual practice, a system can be worked out whereby it would be seldom necessary for a medical social worker and public health nurse to be visiting the same home simultaneously. The only exception would occur when extensive social case work is necessary in a family where a child is receiving active nursing treatment. In such a case, both workers should visit only after carefully defining their respective functions in the given situation by conference.

In regard to territorial distribution of nursing service, there is no apparent reason why the existing distribution need be altered. The Association for the Aid of Crippled Children would operate through the hospitals in Manhattan, Bronx and Queens, the Brooklyn Visiting Nurse Association in Brooklyn and the Staten Island Visiting Nurse Service in Staten Island. As pointed out elsewhere in the report, a number of children residing in Brooklyn and Staten Island are under care in the out-patient departments of Manhattan hospitals. Being aware of this problem it is hoped that the nursing agencies will work out a satisfactory method of transferring information as suggested in Chapter VII.

EDUCATIONAL, VOCATIONAL AND HEALTH SERVICES

There is an increasing demand that educational aspects of the care of the physically handicapped child be brought into closer alignment with physical care. In a previous section of the report (Chapter IX, Education), a plan for a cooperative relationship between the Department of Health and Board of Education was proposed. Furthermore, a plan for providing vocational guidance of crippled children was suggested (Chapter X, Vocational Guidance and Training). Such systems may not be expected to operate effectively unless there is made available to the educational bureaus an appraisal of the patient's physical status and probability of expected improvement. A coordinating service should serve as a focus for the development of joint programs in which the physical and mental aspects of problems related to the crippled child may be given equal consideration.

MANAGEMENT OF POLIOMYELITIS DURING THE ACUTE AND CONVALESCENT STAGES

On the basis of past experience, it seems likely that there are in New York City adequate hospital facilities to cope with epidemics of poliomyelitis. During the 1931 epidemic, in which 4,046 cases were reported, 76.4 per cent of patients were admitted to hospitals during the acute stage of the disease.*

Therefore, prevention of deformities is largely the responsibility of the hospital. In this regard, the situation in New York City differs from that in rural areas where the majority of patients are treated at home and may reach the hospital only when corrective operations are indicated. For patients who are not hospitalized during the acute stage, however, special provisions are necessary.

Control of poliomyelitis as a communicable disease is a function of the Department of Health. Treatment of the patient, however, remains the responsibility of the attending physician. It is important that the patient remain under active medical supervision during the acute and early convalescent period when much can be done to limit the occurrence and extent of residual deformities. If weakness or paralysis is observed, the patient should be brought under the care of a competent orthopaedist. The following regu-

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*Best, W. H.: *A study of the Epidemic of Acute Anterior Poliomyelitis in the City of New York,* 1931, Ms., Library of the Dept. of Health, New York, 1932.

lations for control of poliomyelitis as a communicable disease are in force:

(1) Patients with acute poliomyelitis are reported to the Department of Health by the attending physician or hospital, in accordance with Section 86 of the Sanitary Code.

(2) Patients reported by private physicians are visited by a Department of Health nurse and, if regulations of the Department are not complied with, are removed to a hospital (Sanitary Code, Section 89). These regulations should require adequate and proper nursing care.

It is recommended that the services of the Department of Health be expanded to include the following:

(1) On receipt of a report from a private physician which indicates that a patient is under care at home, a pamphlet of instructions concerning early orthopaedic treatment should be mailed to the reporting physician. The following instructions should be included in the pamphlet.*

(a) The patient should remain at absolute rest until the temperature has returned to normal and muscle tenderness has disappeared, even if there is no evidence of paralysis.

(b) The bedclothes should be kept off the feet with a cradle and if the hips are weak, the patient should not be allowed to sit up.

(c) If the patient complains of tightness or pain in the chest or difficulty in breathing, he should be removed immediately to a hospital where a respirator is available.

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*For further details, see:

(1) *Care During the Recovery Period in Paralytic Poliomyelitis,* Public Health Bull. 242, Washington, D. C., 1938.

(2) *The Essential Features of Poliomyelitis,* Thompson, T. C., Public Health Nursing, 1938.

(3) *Practical Suggestions on Poliomyelitis,* American Medical Association, 1939.

(d) Light braces, splints, or plaster casts should be applied at once to affected parts. In designing these supports, it should be kept in mind that their purpose is not only to protect weakened muscles but also to prevent contractures.

(e) Voluntary movement, massage and muscle exercises should not be started until the muscles are no longer tender. There is no danger in too much rest or immobilization during this stage and a great deal of harm may be done by too early inauguration of active treatment.

(f) When the patient is allowed to be ambulatory, weak parts should be supported with braces. Continued emphasis should be placed on rest of affected muscles and the prevention of contractures of stronger muscles. Warm packs, warm clothing and gentle stroking may be used to stimulate circulation in affected extremities. Muscle re-education may also be started at that time.

(2) When patients are discharged from isolation, in accordance with Section 89, Regulation 5c, of the Sanitary Code, the physician or hospital should report to the Central Registry for Crippled Children those with residual paralysis or weakness. This report should indicate whether or not provision has been made for continued care and by whom it is to be given. If the patient is under care, it should be noted in the registration file and would provide a basis for further follow-up. If not under care, the patient should be referred to an orthopaedic nursing agency for follow-up and brought under treatment. The orthopaedic nursing agency should then inform the Central Registry under whose supervision the patient has been placed.

(3) If patient is reported to be under care after discharge from isolation, the Central Registry should consult the responsible hospital or physician one month later to make sure that there has been continuity of care. Thereafter, the mechanism should be the same as that for other registered children.

RECOMMENDATIONS

(1) That a coordinating service for crippled children be established in the Department of Health.

(2) That the primary functions of this service should be to maintain a central registry of crippled children under 21 years of age in New York City and to provide initiative and guidance in the coordination and development of services for prevention and treatment of orthopaedic handicaps in childhood.

(3) That a salaried staff be employed to carry out these functions.

(4) That an advisory council, composed of recognized leaders in the various related services, be appointed in order to insure community representation and responsiveness.

(5) That, except for patients under the care of private physicians, the hospital be designated as the focus of physical care and social adjustment.

(6) That the services of the physician, social worker and nurse be coordinated by the development of a plan described in which the orthopaedic public health nurse may work more closely with hospitals conducting orthopaedic services.

(7) That the responsibilities of the public health nurse and medical social worker in relation to the care of the crippled child be clearly defined as outlined.

(8) That the territorial distribution of existing orthopaedic nursing services remain unaltered.

(9) That the education and vocational training of the crippled child be brought into closer association with physical care by cross-referral and consultation.

APPENDIX A

PLAN OF STUDY

In planning the study, an effort was made to consider the problem from the broadest possible point of view. It was realized that treatment of the crippled child is not confined to operative surgery and application of braces but depends upon the combined efforts of the medical, nursing, educational, vocational and social services of the community. Furthermore, it was realized that little could be accomplished until the magnitude of the problem was determined. The study resolved itself into three phases: (1) case-finding and registration; (2) a case study of a representative sample of children registered; (3) a survey of agencies and institutions.

CASE-FINDING AND REGISTRATION

Case-finding and registration occupied the staff during a major portion of the study. No previous attempt had been made to develop a central register of crippled children in the city. Consequently, it was necessary to make a concerted effort to locate these children by using every conceivable contact. The success attained in this activity is due largely to the cooperation received from the numerous institutions and organizations in the city interested in the health and welfare of children.

The Department of Health cooperated by distribution of report forms and instructions to physicians and nurses engaged in school and child health services. Reports were thus obtained on all crippled children in grades 1-A and 7-B routinely examined in elementary public and parochial schools, and on those who were examined in the 67 child health stations.

Registration of children attending special classes for the handicapped in elementary schools, hospitals and home-instruction groups was accomplished by reviewing the files at the Division of Physically Handicapped Children of the Board of Education. In order to locate children in elementary school classes not routinely examined and in the high schools where regular health examinations are not conducted, an order was issued to all principals and teachers by the Superintendent of Schools. This order requested teachers to refer to the school physician for reporting all children suspected of having physical impairments of an orthopaedic nature. In high schools where there are no physicians in regular attendance, the supervisors of health education submitted some reports from their records and referred other children to physicians for diagnosis. When this order was issued, forms and instructions were distributed to 939 public schools. A similar arrangement was made with the Catholic School Boards of the two dioceses and forms were distributed to 394 parochial schools. Letters requesting cooperation were also mailed to 80 private schools in the city.

In order to secure the cooperation of hospitals and convalescent homes, a member of the staff visited each institution in which orthopaedic patients are treated. In 24 larger hospitals, a social worker was assigned to review the records of patients who were recently discharged or under supervision in hospital or clinic. The smaller institutions reported their patients without assistance. All have agreed to continue reporting as new patients are admitted, although this activity will require further stimulation if the register is to be continued.

The records of the two nursing agencies which have orthopaedic services were also reviewed by a member of the staff and other nursing services reported crippled children with whom they came in contact in the course of their work.

Either by visit or letter, arrangements were made for reporting children from 471 social agencies, settlement houses, and day nuseries. A few patients were reported by letter after articles appeared in newspapers.

The support of practicing physicians was enlisted by means of articles in medical society and Department of Health publications and announcements at meetings. Thirteen thousand report forms were distributed in copies of "Neighborhood Health," issued by the Department of Health and 14,500 in "Preventive Medicine," issued by the New York Academy of Medicine.

By means of these various approaches, 28,739 reports, representing 16,731 different children were received between September 1, 1938 and June 1, 1939. Many of these reports contained incomplete information and further investigation was necessary. At the office, each report passed through the following procedures: (1) the report was checked on a visible index identification file for duplication and if not previously registered an index card was typed; (2) the following items were coded numerically: age, sex, color, health area and borough of residence, source, diagnosis and part of body affected; (3) the information was typed on a permanent registration card; (4) the report was reviewed by the director for completeness and declared eligible or ineligible for registration on the basis of diagnosis and other information; (5) the registration card was punched for sorting.

CASE STUDY

The second phase of the survey involved a case study of a representative sample of children registered. Many surveys include only an enumeration of subjects and a general review of facilities. It was felt that a more scrutinizing analysis of the system from the point of view of the recipient rather than from the point of view of the administrator might be more productive. Furthermore, by means of this approach, it was possible to obtain information concerning the emotional reaction and attitude of the patient to his handicap.

A sample of 1,678 patients was chosen by selecting every tenth name from an alphabetical file. The group thus selected was then analyzed and found to be representative of the total group according to distribution by age, sex, location of residence and diagnosis within the limits of expected statistical variation.

A schedule was prepared in the form of a four-page folder. Two pages were devoted to data which could be recorded in tabular form and the other two to a narrative history. In order that the data assembled might be uniform, social workers who visited patients were instructed by means of conferences and detailed outlines which explained the interpretation of each item.

Home visits were made on each of the patients selected. Whenever possible, information obtained from the mother was supplemented by talking with the child. All children over 14 years of age were interviewed. Additional information on the care of these patients from the standpoint of the agency or institution providing the service was obtained by consulting the records of the agencies concerned. In order to be certain that all such services were considered, each case was cleared with the Social Service Exchange.

Of the original group of 1,678 children selected, 1,277 were located readily and constitute the final sample of 7.6 per cent of children registered. Four hundred and one children originally selected for inclusion in the study were eliminated from calculations for the reasons noted in Table 1.

Table 1. Patients Not Included in Tabulations of Sample Study for Reasons Noted.

Reason	Number	Per cent of Total Sample of 1,678 Children
Total	401	23.9
Not located	248	14.8
Uncooperative	31	1.8
Minor disability (ineligible for registration)	57	3.4
Dead	32	1.9
Other	33	2.0

Statistical comparison of the group finally included in tabulation of the sample study with the total registration, after home visits were completed, revealed the fact that the validity of the sample had not been altered substantially by deletion of these cases. Comparative distribution of children registered and of those included in the final analysis by borough of residence, age and diagnosis is recorded in Table 2.

The data accumulated by means of the case studies was made an integral part of the report by entering related information in chapters which deal with various phases of the problem.

Five social workers were employed to visit the homes of children selected for the sample study. These five workers devoted a total of 2,980 hours to the study, making calls and writing histories. They made 2,431 calls and completed 1,321 schedules. The difference between the number of calls and completed schedules

Table 2. Comparison of Expected and Actual Results of Distribution by Borough, Age and Diagnosis of Children Registered and Children in Sample Study.

	Per cent Registered	Most Probable Value in Sample of 1,277	Actual Values	Possible Difference Due to Chance	Actual Difference
BOROUGH					
Manhattan	23.5	300	310	±45	+10
Bronx	21.4	274	303	±44	+29
Brooklyn	39.2	501	470	±52	—31
Queens	13.9	178	169	±37	— 9
Richmond	1.9	24	25	±14	+ 1
Total	100	1,277	1,277		
AGE					
0— 4	10.0	127	117	±32	—10
5— 9	24.4	310	340	±46	+30
10—14	33.0	420	424	±50	+ 4
15—20	32.6	415	391	±50	—24
Total	100	1,272*	1,272		
DIAGNOSIS					
Poliomyelitis	29.1	372	400	±48	+28
Prenatal influences	18.2	232	223	±41	— 9
Birth injury	15.6	199	209	±39	+10
Infection	12.9	165	147	±36	—18
Trauma	6.0	77	78	±26	+ 1
Epiphyseal disturbances	4.5	57	48	±22	— 9
Metabolic disturbances	1.7	22	27	±14	+ 5
New growths	0.5	6	2	± 8	— 4
Unknown causes	11.5	147	143	±34	— 4
Total	100	1,277	1,277		

*Ages of five not reported.

represents calls to incorrect addresses, and repeated visits because families were not at home or because both mother and child could not be interviewed on the initial visit. The average time spent per call was 1.22 hours and the average time per completed schedule, 2.25 hours.

SURVEY OF AGENCIES AND INSTITUTIONS

In investigating the functions, objectives and character of services offered by the numerous organizations involved, the usual method of mailing questionnaires was avoided. Information was obtained by visits to the institutions and agencies and statistical data assembled by means of previously prepared schedules.

APPENDIX B

ESTIMATION OF THE CRIPPLED CHILD POPULATION OF NEW YORK CITY

The 16,731 crippled children registered during the survey represent the number definitely known. It is realized that an unknown number of children were not reported during the comparatively short period of study. A survey from which the true prevalence of crippled children could be reliably estimated could not be carried out without an expensive canvass of the city. Therefore, the following method was developed for estimating the number of crippled children who were not reported to the Commission.

It was considered advisable for purposes of study to establish a separate curve for crippling due to poliomyelitis and another curve for crippling due to all other causes, as the number of children exposed to the risk of crippling from poliomyelitis was definitely known.

A. *Poliomyelitis.* It was assumed that the curve for the age distribution of children crippled from the disease should vary in direct relation to the curve for all children who have survived an attack of the disease. In order to determine from this relationship whether all children crippled from poliomyelitis have been registered with the Commission, the age distribution for all survivors was estimated. For all children who would have been less than 21 years of age on December 31, 1938, deaths from poliomyelitis were subtracted from cases of the disease which were reported to the Department of Health, and the remainders were adjusted for expected deaths from other causes. A comparison of the contours of this curve with the one for crippled children (Figure 1) reveals striking similarities, though, of course, the curve for all survivors is above the one for the crippled survivors. It is, therefore, concluded that the Commission's registration of children crippled by poliomyelitis is reasonably complete.

B. *Diseases Other Than Poliomyelitis.* This curve (Figure 2) reveals approximately uniform increments for ages four through 15. On the assumption that crippling from these causes continues to cumulate through age 20, a straight line was fitted to the data for these ages by the method of least squares. This curve, $Y = 82.5 + 49.5\ X$ ("Y" is the number of crippled children at age "X", with origin at less than one year of age,) was then projected through age 20. The ordinates under this theoretical curve, therefore, which are not accounted for by the curve for registered children, approximate the number of children who were not reported to the Commission. It is thus estimated that 2,271 children in the upper age groups were not reported.

It is assumed that the same relationships will hold among those whose ages

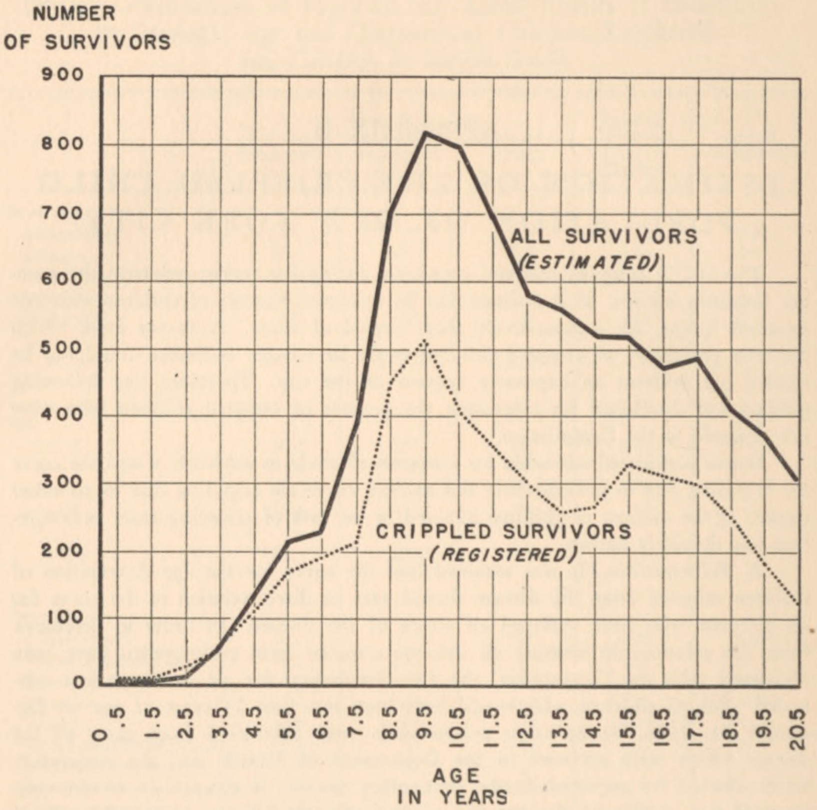

Fig. 1. Curve Used for Estimate of Unreported Children Disabled by Poliomyelitis.

were not known. The sum of the following figures results in an estimate of 19,365 crippled children under 21 years of age; 2.5 per 1000 total population or 7.2 per 1000 population under 21 years of age:

Poliomyelitis:	Known ages, reported	4,473
	Unknown ages, reported	383
	Estimated, not reported	0
All Others:	Known ages, reported	10,238
	Unknown ages, reported	1,637
	Known ages, estimated, not reported	2,271
	Unknown ages, estimated, not reported	363
	TOTAL	19,365

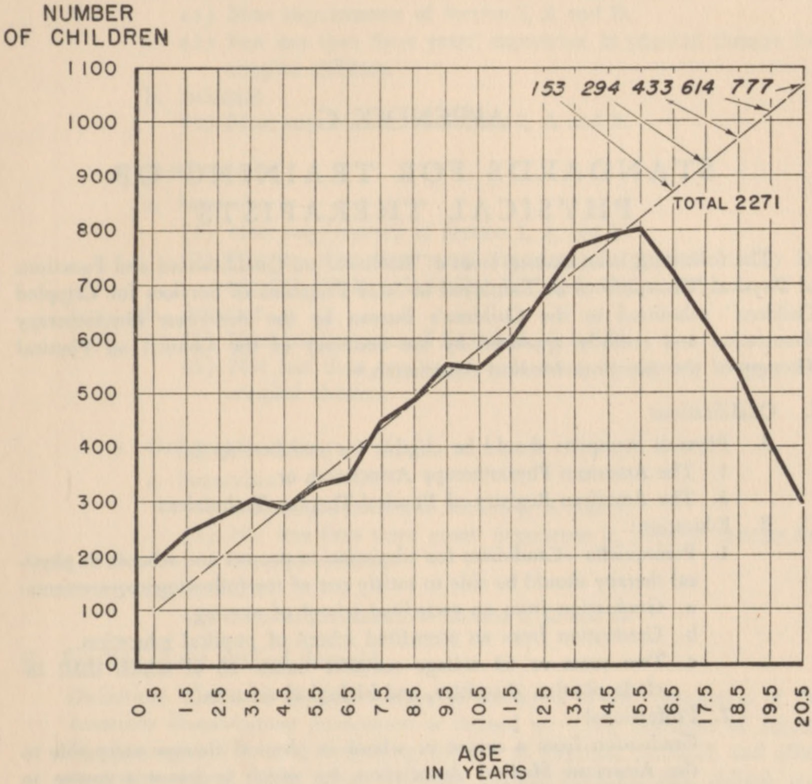

Fig. 2. Curve Used for Estimate of Unreported Children Disabled by Diseases Other Than Poliomyelitis.

APPENDIX C

STANDARDS FOR TRAINING OF PHYSICAL THERAPISTS

The following is an excerpt from a "Statement on Qualifications and Functions of Physical Therapists to be Employed in State Programs of Services for Crippled Children" submitted to the Children's Bureau by the American Physiotherapy Association and recently approved by the Secretary of the Council on Physical Therapy of the American Medical Association.*

I. Qualifications
   A. Physical therapists should be eligible for membership in:
      1. The American Physiotherapy Association or
      2. The American Registry of Physical-Therapy Technicians.
   B. Education:
      1. Prerequisite—Candidates for admission to courses and schools in physical therapy should be able to satisfy one of the following requirements:
         a. Graduation from an accredited school of nursing.
         b. Graduation from an accredited school of physical education.
         c. Two years or 60 college semester hours, 26 of which shall include physics, chemistry, and biological sciences.
      2. Professional
         Graduation from a course or school in physical therapy acceptable to the American Medical Association, by which is meant a course in physical therapy of not less than nine months.
         (If anything could be gained by offering training to nurses already employed, in portions less than the nine months consecutively in those schools already approved, the Council would show no objection to their splitting it, provided they register for the entire course and no less than two years intervene for the entire course. These special courses should be taken in two periods of 4½ months each or one 6-month period and one 3-month period. The latter combination would probably be most advantageous. Not more than two years should elapse between the beginning of the first and the end of the second period).
   C. Experience of physical therapists employed:
      1. Hospital

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*Personal Communication.

- a. Supervisor
    - (1) Meet requirements of Section I, A and B.
    - (2) Not less than three years' experience in physical therapy for crippled children.
- b. Assistant
    - (1) Meet requirements of Section I, A and B.

2. Field Service
    - a. Supervisor
        - (1) Meet requirements of Section I, A and B.
        - (2) Not less than three years' experience in physical therapy for crippled children, including field and administrative work.
    - b. Assistant
        - (1) Meet requirements of Section I, A and B.
        - (2) Not less than two years' experience in physical therapy for crippled children.

3. Orthopaedic School
    - a. Supervisor
        - (1) Meet requirements of Section I, A and B.
        - (2) Not less than three years' experience in physical therapy for crippled children.
    - b. Assistant
        - (1) Meet requirements of Section I, A and B.

II. Function of the physical therapist.

Definition: The term physical therapy as employed in the constitution of the American Physiotherapy Association is defined as: "The treatment of disease by non-medicinal means, comprising the use of physical, chemical, and other properties of heat, light, water, electricity (except Roentgen rays, radium, and electro-surgery), massage, and exercise."

- A. To administer physical therapy only upon the prescription of a qualified physician.
- B. To carry out the principles of physiological rest by means of splints, braces, frames, etc., as prescribed by the physician.
- C. To instruct the patient or guardian in the essential principles of treatment and to supervise their application in the daily care as prescribed by the physician.
- D. To keep accurate record of the treatment given in accordance with the written prescription of the physician.
- E. To report to the physician at stated intervals, or when requested, the progress or present condition of the crippled child.
- F. To be familiar with the services of all social and medical agencies of a community and to cooperate with them in working for the welfare of the crippled child.

APPENDIX D

RECOMMENDATIONS OF THE COMMITTEE ON OUT-PATIENT SERVICES OF THE HOSPITAL SURVEY FOR NEW YORK*

That general dispensaries organized both administratively and professionally as units of voluntary and governmental general hospitals, or branches of these appropriately located in relation to transportation facilities and to population, be developed to the most effective extent throughout the New York Metropolitan Area; and

That this development be supported wherever additional facilities are needed for the ambulatory sick, in preference to any increase in the number or capacity of out-patient departments devoted to a limited or special field of medicine or surgery, and in preference to independent dispensaries whether for general medicine or surgery or for any of the specialties. Exception is made in favor of out-patient services connected with mental and tuberculosis hospitals.

That agreements be arrived at by the voluntary hospitals and independent dispensaries on the one hand, and the Department of Hospitals of New York City or the competent authority of other local government outside of the city, on the other hand, whereby payment at an established rate will be made by civil government to voluntary institutions for services of acceptable quality rendered in the respective dispensaries to patients eligible for free medical care at public expense. A similar arrangement for payment by the Emergency Relief Bureau to voluntary institutions for dispensary care of its clients is advised.

That the control of the source of patients for dispensary care be accomplished by appropriate and sufficient distribution of dispensary facilities rather than by putting into effect a compulsory system of districting.

That out-patient departments of hospitals and independent dispensaries restrict the admission of patients to a number which can be adequately served.

That the appointment system of admitting patients to dispensary care be employed so far as practicable.

That hospital out-patient departments recognize their responsibility when accepting a patient for dispensary care to provide bed care for him in the hospital proper if the progress of his disease requires it.

That the ratio of all non-medical personnel engaged in the work of the dis-

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***Hospital Survey for New York,* Vol. 2, p. 497, United Hospital Fund, New York, 1937.

pensary to total number of patients admitted daily be maintained on the average at about one to fifteen.

That, where they do not now exist, standards be agreed upon by institutions engaged in dispensary work, in collaboration with accredited representatives of the appropriate county medical societies, and with public welfare bodies, for determining the eligibility of dispensary patients for free care.

That, when standards of service have been made more nearly uniform, fees charged by dispensaries for admission or for special diagnostic treatment services be agreed upon by the institutions concerned and the appropriate county medical society, and that these be observed throughout New York City for equivalent services, and similarly within a given county of the metropolitan area.

That payment of physicians serving in dispensaries be made by voluntary and municipal institutions when and as financial resources for this purpose are provided.

That borough or county and interborough or other regional coordinating bodies concerned with improvement in the quantity and quality of organized care of the sick make serious and sustained effort to bring order and method into the future planning and present performance of dispensary services in the various parts of the New York Metropolitan Area, and that among the matters needing early remedy or attention, in addition to the problems referred to above, the following should have first consideration: additional facilities for care of diseases of the eye, and particularly for refraction tests for school children; more facilities for physical therapy for ambulant patients; more facilities for the treatment of syphilis and gonorrhea; additional dental dispensary facilities; increase in the use of dietitians in the larger general dispensaries; improved standards of professional work, best accomplished by the organization of unit medical staffs in each institution.

APPENDIX E

THE FUNCTIONS OF A HOSPITAL SOCIAL SERVICE DEPARTMENT AS STATED IN THE "REPORT ON HOSPITAL STANDARDS," AMERICAN COLLEGE OF SURGEONS, 1932

"The social service worker fills an important role in the hospital today. At the very door of the institution, the admission desk, she has an opportunity to participate in the study and care of the patient. Here she may obtain an accurate background of information pertaining to the patient's social life which will be of material aid to the physician in making more accurate diagnoses and planning treatment. Not infrequently at the bedside the patient may disclose to the social worker pertinent information hitherto unknown, which may assist the physician in a more intelligent study of the case and comprehensive plan of treatment. Further, in the home following treatment she may be able to make such adjustments as will be beneficial in stabilizing the scientific results of hospital care.

"In many ways the trained social worker fits into the trend of medicine today. This is a period in which every effort is made to view the patient from the numerous facets which make up his life in order that every possible clue may be utilized for correct diagnosis and effective treatment. It is true that the family physician of a few years back knew intimately the various social aspects of his patient's life, but he seldom attempted to apply such knowledge in the diagnosis and treatment of disease. The modern, progressive physician, seeks to correlate all such information and depends on the social worker for these data. In this way, through medical social case study the social worker has become an important factor in assisting the clinician in his scientific work.

"The primary purpose of a hospital social service department is to further the medical care of the patient by medical social case study and treatment. The major activity of the department, therefore, should be medical social case work. The method is that of social case work correlated with medical treatment; it requires the assembling and analyzing of data, the outlining and carrying through of an integrated medical social plan.

"Through the hospital's work with individual patients the social aspect of many of its functions has become apparent. Two such functions are the admission of patients and the regular attendance of patients at clinic. The attendance of patients at a clinic depends on each patient's understanding what is expected of him, and sometimes necessitates social adjustments in order to accomplish this. The social service department may participate in these hospital functions as a part of its service to the individual patients, namely, to further the medical care of the patient on an individual basis.

"It is important to the hospital that its medical and social work be closely integrated in function and organization. The social service department, therefore, should function as an integral part of the institution.

"Medical social case work requires personal conferences with various individuals in matters which are often of a confidential character. This makes it necessary that the department have office facilities which afford as great privacy as possible and at the same time are readily accessible to patients and physician.

"The department should keep records of its medical social case work which should be readily available for use in the medical treatment of the patient. The facts of the social case record should at all times be safeguarded. The record should give the case accurately, state clearly why medical social study and treatment were or were not undertaken, the problems presented, those dealt with, the social treatment given. It should include a statement at the time the case is closed, which will give reasons for closing and status of the case at that time.

"Besides the major function of individualizing the patient in treatment the social worker must also seek to show the patient just what the doctor and hospital workers are trying to accomplish. This phase of social work is of value in getting the patient to come regularly for treatment, to follow a definite regime and to continue taking treatments that require months or years before good results are apparent.

"Through bringing the patient back for re-examination, through additional information collected from time to time, and through social adjustments, much can be done not only to stabilize end results, but to advance the knowledge of these diseases as effecting diagnosis and treatment, as well as to stimulate better preventive measures. This cannot be accomplished effectively without a properly functioning social service department. The social worker in true form must take a definite place in the physician's team just as much as the nurse, the laboratory worker, the X-ray worker and the dietitian. She must be the link or liaison between the doctor and the discharged patient. In fact, it is difficult to separate the social worker from the history, the diagnosis, the treatment, or the end results in the scientific care of patient.

"An efficient social service department in a hospital presupposes adequate, well trained personnel under competent supervision and direction. This should include in addition to the director, such assistants and clerical staff as is necessary. Another essential for the success of this work is the maintaining of the utmost cooperation between this and all other departments of the hospital."

This report states further: "Existing economic conditions have thrown much greater work and responsibility on the department as already referred to in connection with the out-patient department. The social worker's funcions, relations, responsibilities and other requirements, as set forth in this report, need to be more thoroughly understood and appreciated by hospital administrators and members of medical staffs. In such instances where the social service worker has closer contact with the administration and the medical staff, there is increased interest as well as more thorough and complete care and consideration of the patient. In this work it would be well for all hospitals to follow very carefully the recommendations made in the report and develop the service on the broadest possible basis in order that better care of the patient may be assured socially and scientifically."

thoroughly understood and appreciated by hospital administrators and members of medical staffs. In such instances where the social service worker has closely contact with the administration and the medical staff, there is increased interest as well as more thorough and complete care and rehabilitation of the patient. In this work it would be well for all hospital social workers who [illegible] carefully the [illegible] these needs in the [illegible] and [illegible] the [illegible] possible tools in order that better [illegible] of the patient [illegible] scientifically.